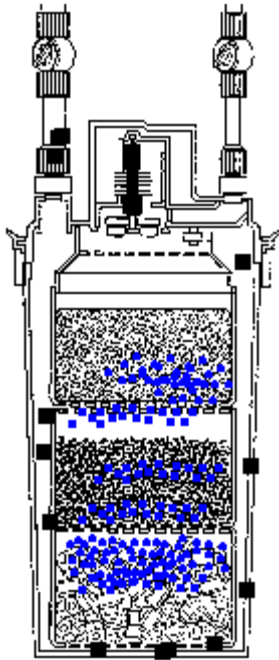


I have a second hand Fluval 403 canister to pump and filter my 100 gallon aquarium. It is the older round model, not the newer rectangular 404 model.



There are 3 media baskets inside to hold a variety of filtering material. It is listed to pump just over 300 gallons an hour. For me, it means in theory, the equivalent volume of my aquarium passes through the filter 3 times an hour. It is difficult to determine my actual through put because of the volume of the rocks, gravel, driftwood, and so on. However, after a month or so, I noticed that the volume of water coming out of the spray return bar was steadily decreasing. This is when the fun began ...

I began fiddling with the spray bar to see if I could somehow increase the flow into the aquarium. Unknown to me, the return hose from the pump had detached from the fitting that brings the water over the back edge of the aquarium. For some reason, I did not notice that water was no longer being returned to the aquarium. According to my quick calculation, about 5 gallons a minute began to pour on the wall and the carpet below the stand. I think it was about 2 minutes before my feet were wet enough that I realized what had happened.

Lesson number 1: always turn off the pump and close the valves when making adjustments to hoses and fittings

After sponging up the spill with some old towels, and reconnecting the hose, I detached the spray bar and looked inside. Wow! Lots of algae and clumps of unidentified grunge were deposited on the walls of the tube. I took a tooth brush and tried to clean it out. The tooth brush was not long enough to clean the tube, and I managed to get the brush stuck inside. After poking it out with a wooden dowel, I thought there has to be a better way. Well, Fluval has a handy cleaning tool to use on tubes and hoses for about \$4. It is a small brush with a long plastic cord in a coil that makes it easy to thread through the tube. This brush also worked well on the supply hoses to and from the pump.



Lesson number 2: regularly check for build-up in tubes or routinely clean them to avoid problems later

About 2 minutes after starting the pump again, it began to make a rattling sound. I thought some air or debris must be trapped in the impeller, so I decided I might as well open it up and clean all the surfaces inside the canister. Keep in mind that the unit has been operating for a few months and this is the first time I have opened it. After turning off the power I closed the hose valves to avoid a gush of water from the hoses siphoning water out of the aquarium. The canister has six clips holding the lid with the pump assembly unit to the filter. After undoing the clips I thought the lid would simply come off.



Lesson number 3: relieving a vacuum may require super-human strength

I tried with considerable effort to get the lid off. There was just no way, or is there? I opened the input valve in order to relieve the vacuum.

Lesson number 4: you can never have enough towels near your aquarium

The water began gushing out, because opening the valve not only released the vacuum, but also started siphoning the aquarium. After I got over my surprise, I closed the valve and went to get more towels.

I pulled out the filter media baskets. They were jammed with algae, leaves and other waste debris. This situation was also contributing to reduced water flow. It took over an hour to clean, rinse and reassemble the filter and impeller.



Lesson number 5: establish a cleaning routine, more small cleanups are better than one large infrequent cleanup

I thought getting the lid off was difficult, but putting it back on was way more effort. The filter seal ring was a real test of my patience. This rubber "O" ring was difficult to get back onto the lid and it had to be in the correct spot before the lid was put back on the canister. The filter seal ring must have rolled off at least 5 times before I got the lid back on. I reaffixed the clips, opened the valves and turned on the pump. Now water was squirting from between the canister and lid.

Lesson number 6: make sure there are no family members nearby when you are #@\*% frustrated

After turning the pump and valves off, again, I took off the lid, again, and just stared at the filter seal ring. Since it kept rolling off before, I thought if it was wet, it should just slide on very easily. Voila! The ring slid on very easily without rolling off. Even the lid slipped back on to the canister very easily. I think I waited at least a minute with several long deep breaths before opening the valves and turning on the pump. No leaks! The canister purged some air into the aquarium and the water really started to flow. The system was so clean now that it made a quiet whistle sound as the water passed through. Yea!

After two more monthly filter cleanings, I had the entire procedure down to about 10 minutes. However, I was still getting some water spilling out when I took the lid off, so the canister had to sit on a towel to try to catch any wayward water. This did not always work. Then I saw the answer to this problem on a parts rack in the aquarium store. There is a double valve system with a coupling in-between (left) to replace the original valve (right).



The coupling allows the hoses to be detached from the lid. The canister with the lid still on can now be carried to the sink. Opening a valve to relieve the vacuum still works and the water that comes out when removing the lid is no problem, because it is in the sink!

I have done about a dozen cleanings since learning the above lessons. The filter works very well and I am much happier doing regular maintenance. How about you?

All images are from the Hagen website <http://www.hagen.com>

You can see the official maintenance procedure at <http://www.hagen.com/usa/aquatic/manuals/fluve11.cfm>