




Showerloop - Guide 1: Overview

This is the first guide of Showerloop, a real-time filtration, purification & recycling system for shower water.

 Difficulty Easy

 Duration 10 minute(s)

 Categories Energy, Science & Biology

 Cost 0 EUR (€)

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Comments

Introduction

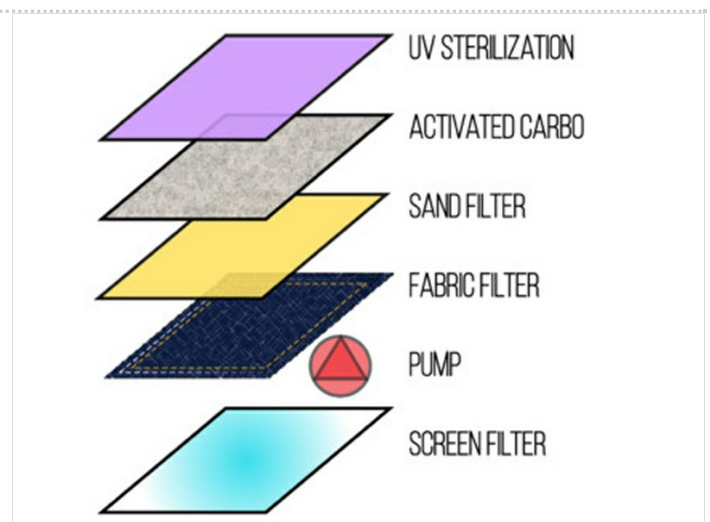
Showers are great, but pouring hot and almost drinkable water down the drain is not. Besides the obvious costs to the environment and your bills, there is also a conscious or unconscious psychological cost any time you create waste. To solve this problem we created Showerloop. It's a shower that collects, cleans and reuses the water in real time while you are showering. So now you can shower for as long as you like without wasting precious resources. To realize the gain there is a calculator: <http://showerloopcalculator.zici.fr>

Materials

Step 1 - Theory

So the main components of the filter are the pump, filter housing with the sand and activated carbon filter and the uv-lamp. Large particles like skin cells are trapped by a layer of compressed sand. Finer particles are adsorbed by a layer of compressed activated carbon, including some chemicals like nitrates (in sweat), sulphates (in soap), chlorine and fluorine (in tap water). Finally the UV-lamp is used to sterilize the water so that bacteria can no longer reproduce. It might not seem like a big deal since our bodies are covered in bacteria but the main concern is bacteria from your bum coming into contact with your eyes.

Tools

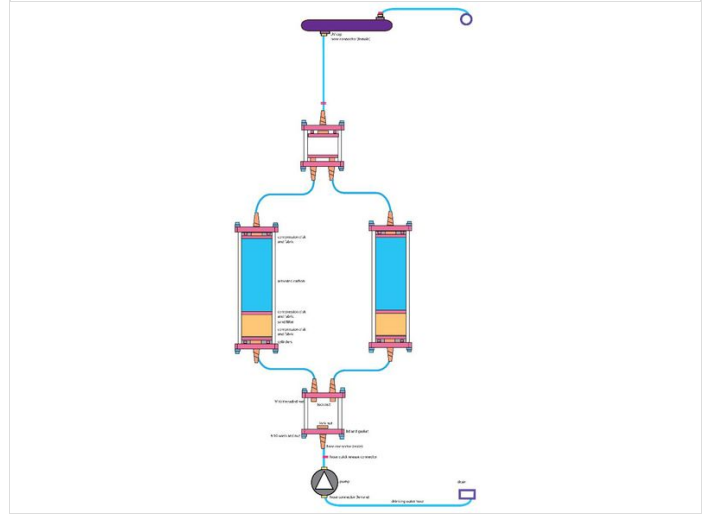
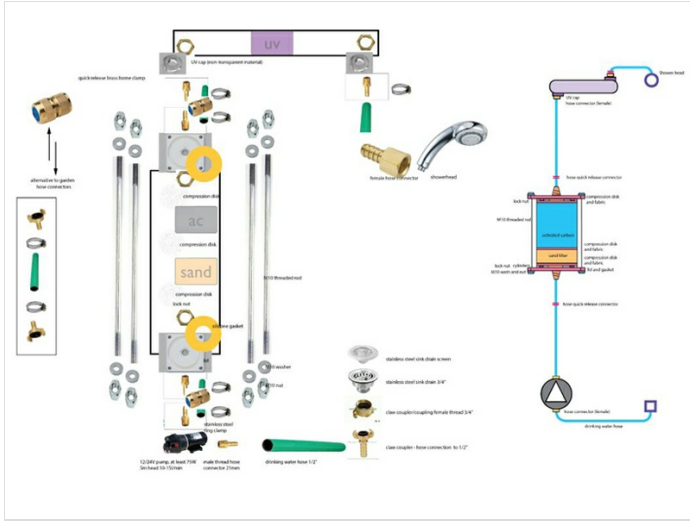


Step 2 - Assembly overview

I hope this isn't too confusing but there are many ways to setup the filters depending on your needs. Here are two different ways of setting it up. The first one is the most simple build (simply called 'Simple').

The only down side is that the filters quite wide with a 20cm tube with compression disks and lids also made to fit this.

For this tutorial, I'll be going through the 'Showerloop POC21' version, designed and built at the POC21 innovation camp (poc21.cc for more information) in France.



Step 3 - Filter bag assembly

Also for this there are two options, either just cutting the circle together (and either bolting it to the compression disk or just compressing it between the filtrates sand or activated carbon) or making a filter bag out of a landscaping geotextile.

The benefit of using the filter bag is that changing the material is much easier, the down side is that you can't see what's going on with the filter. Personally I like to see the water flowing through the filter. Thanks to Katharina for actually making the bags and these simple and amazing instructions.

