DIY WATER FILTER

Easy!

Water Filtration System

Beyond a shadow of a doubt, this is the best bang for your buck project you can do!

With just two 5-gallon buckets and a $27 ceramic filter, you can turn any water into drinking water.

These systems are sold for around two hundred dollars with stainless steel tanks and a better flow rate, but the principal is exactly the same.

This build is so simple that the only tools that you will need is a drill and a 1/2” and 3/4” drill bit.

Concept

The filter consists of two buckets. One bucket sits on top of the other. The water you want to filter is poured into the top bucket. The actual filter, which is known as a candle filter, because of its shape, is fitted into a single hole in the top bucket. In order for the water to drain into the lower bucket, it has to pass thru the ceramic filter's pores. The pores in the ceramic filter are microscopic and it is a slow process but it filters out all of the pathogens. It is an amazingly simple device. You can use two, three, or four filters per reservoir to process more water if you want.

"The microscopic pores of the ceramic filter element make it an extremely efficient filter for the reduction of particulate matter, pathogenic bacteria and fine sediment from water." - Doulton

Top half

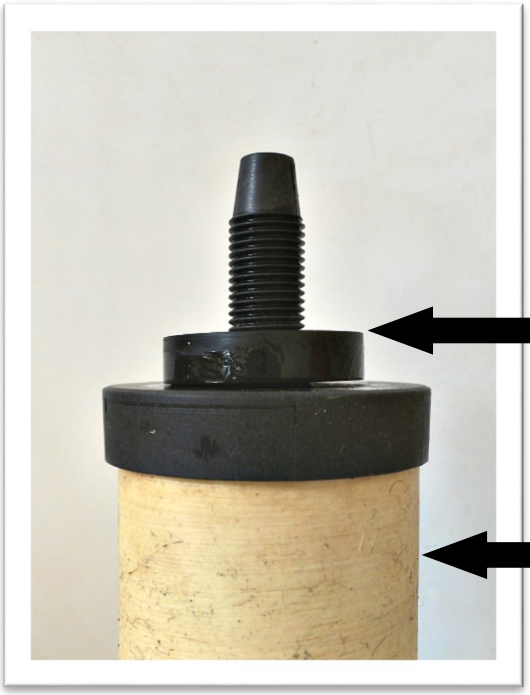
STEP 1

Using a ½” drill bit, drill a hole in the bottom of one of the buckets directly in the middle.

STEP 2

Use the same drill to put a hole in one of the lids.

Top half



Make sure that you have the rubber washer on the filter before you assemble the two halves.

STEP 3

Put the filter inside the bucket with the hole in it and push the threaded portion thru the hole you drilled. Now position the lid with the hole so that it is facing in the same direction as the one in the photo.

Use the filter's nut to tighten the bucket and lid assembly together.

Top half

Inside View

The top half of the filter should look similar to this when you get the filter attached to the bucket and the lid.

The upper half assembly is complete!

Told you it was simple!

Bottom half

STEP 4

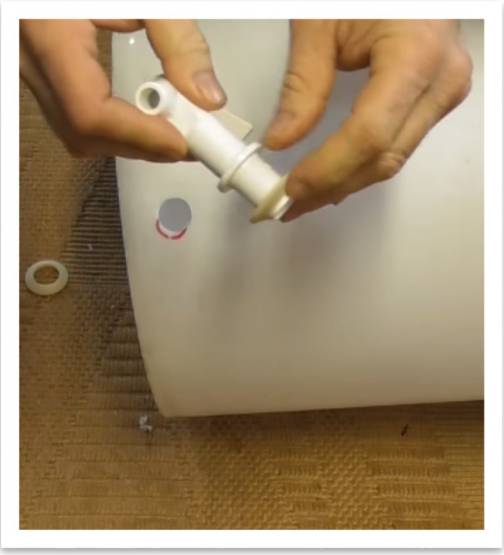
On the other bucket use a ¾” bit or hole saw to drill a hole in the side of the bucket about an inch up from the bottom of the inside.

Use the faucet dispenser nut to locate the hole if you wish by holding it inside the bucket with enough room for it to clear the bottom of the bucket, then mark the hole.

This might be hard to do on dark colored buckets but if you shine a light inside the bucket you can probably see where the nut is.

When you are finished drilling the hole it should be in about the same place as the one shown here in the picture.

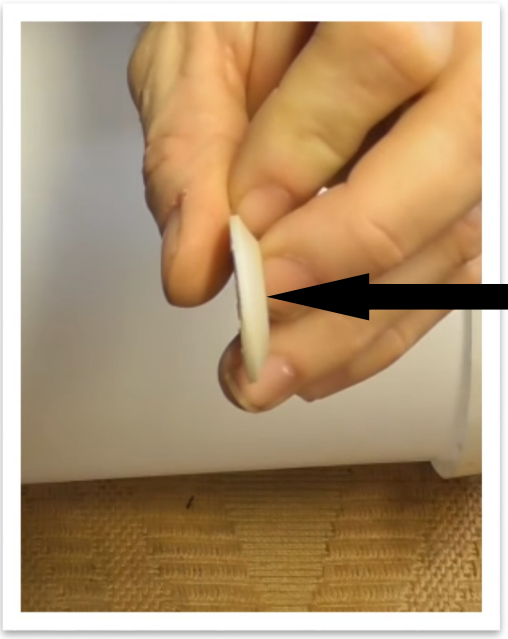
Bottom half



STEP 5

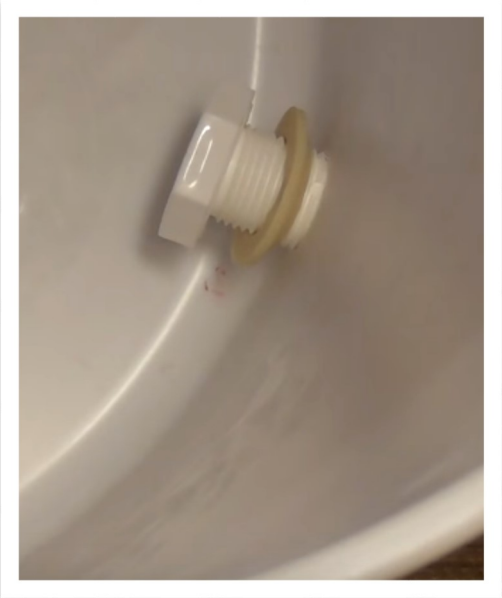
Before you install the faucet into the bucket make sure you put a washer on the threaded part first so it will seal.

Make sure you have the beveled side of the washer pointing toward the wall of the bucket.



Beveled side toward wall of bucket.

Bottom half



STEP 6

Push the threaded part of the faucet thru the hole in the bucket and then put on a washer, bevel side facing inward and then tighten then nut from the inside.

Finger tighten the nut.

The faucet should look like the one shown when you are done. There should be enough clearance so that the bucket sits flat.

Now you are finished with the build!

How easy was that?!

Operation

The filter doesn't work very fast, you need to be patient. The more water you have in the top bucket the faster the water will filter due to the "head" pressure of the water. When the water level gets pretty low the filter won't really filter anymore water. There isn't' enough pressure any more.

A new filter can process about an entire five gallons overnight. If you wanted to you could add more filters into your top bucket and do double or triple the flow rate.

One filter works well though. You'll need to clean the filters periodically. I've found that they tend to last about six months or so, it probably just depends on the condition of the water that they are filtering.

Sometimes the top bucket can get a little smelly and it needs to be washed out periodically. I like to use glass sparkling water bottles to put water into but I can say from experience that the lids will have a tendency to get moldy after a while and the threads of the bottles will too. We've begun to use wine corks instead of the lids although it was a year or so before I ever noticed the lid issue.

Parts List

You will need two five gallon buckets and at least one bucket lid. The most expensive item you will need and that you probably won't find at the big box store is the ceramic filter like the one shown here.

A Doulton ceramic filter like this one costs about $27 on Amazon.

Click on this link to purchase the filter

The other item you will need is a faucet.

A faucet like this is about $6 from Amazon.

Click on this link to purchase the faucet

Final thoughts...

After you start filtering water you'll soon realize that large particles of sand or dirt just sink to the bottom. So even water that looks pretty dirty to start with will look crystal clear in just a short amount of time as the large particulate settles out of it.

If you start collecting and filtering rainwater you will notice how off tasting tap water really is. There's so much chlorine in it, it's like drinking out of a swimming pool. I like to catch rain from the roof and filter it for drinking water. I usually let the rain fall for thirty minutes before I start catching it to wash most of the debris away first.

I sincerely hope you enjoy this project as much as I have! I hope you have found some value in this eBook. If you liked it then head on over to my website and check out my other downloads.

Thanks!

Les Dell

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