INSTRUCTIONS FOR OIL FILTER SYSTEM

NOTE: This system is for mineral based oil which is what should be used when cutting rocks in a slab saw, I have not tried it with any other cutting coolants.

Here is a list of the materials and tools you will need to make this DIY filter system:

Material

1. 1 ea. Regular 5 gallon paint type bucket in good shape, with no holes or cracks
2. 1 ea. 5 gallon landscape bucket ( like you would buy a rose bush in from the nursery)
3. 1 ea. 2 X 4 piece of wood or brick or rock approx. 2 x 4 x 4
4. 2ea. Large paper bags from the grocery store with no tears or hole
5. 2 or 3 plastic shopping bags from the grocery store

Tools:

1. Drill w/ ½” metal bit

A few notes before you get started, note you may need to make more than one of these filtering systems depending on the size of the saw and tank on the saw you want to filter out, also if your oil is extremely thick with sludge you might need an additional filter. Here is a chart giving approximate filters needed to filter all the saw’s oil / sludge at one time.

10 / 12 inch slab saw 1 filter

14 inch slab saw 2 to 3 filters

16 inch slab saw 3 to 4 filters

18 inch slab saw 3 to 5 filters

20 inch slab saw 5 to 6 filters

24 inch slab saw 6 to 7 filters

30inch slab saw 9 to 13 filters

36 inch slab saw 10 to 15 filters

Note these are approx. numbers based on factory made saws like the Highland Park or Fran Tom saws, your saw might have smaller or larger tanks, have oil circulating systems or might have oil displacement items placed in the tank to reduce the amount of oil you need to use.

Another way to calculate the number of filters you need is to figure 1 filter for every 2.25 gallons of clean oil your saw needs to work.

Instructions:

1. Using the drill with the ½ bit, drill holes from the outside to the inside of the 5 gallon LANDSCAPE bucket, 2 to 3 “ on center all around the bucket from top to bottom and even several on the bottom. Clean off any burs that might be on the inside of the Landscape bucket.
2. In the bottom of the larger 5 gallon paint bucket, place the piece of 2 x 4, brick or rock on the bottom. This will allow the 5 gallon landscape buckets rim to be raised slightly above the 5 gallon paint type bucket, this will make it easier to remove the filter bucket and it allows a reservoir on the bottom for the filtered oil to collect
3. Place one large paper bag inside the other and then place both of them into the 5 gallon landscape bucket that you have drilled the holes into. (This is why you needed to deburr the inside of the landscape bucket to avoid ripping or puncturing the paper bag filters). Spread the bags out as much as you can in the landscape bucket but they do not have to be touching the sides perfectly because once you start putting oil soaked sludge into the center bag, it will naturally spread the bag out in to the bucket. Once again be careful not to tear or puncture the bags or some of the sludge will get into your nice filtered oil.
4. Start scooping out the oil soaked sludge form your saw or if it isn’t real thick drain the dirty oil into the center paper bag. Fill the filter bag to the top of the 5 gallon landscape bucket only, not to the top of the bag as the filtered oil will overflow the 5 gallon paint bucket. Periodically remove the landscape filter bucket and place it in another 5 gallon paint bucket temporarily and pour the filtered oil into a container or back into the saw, then return the filter bucket back to the paint bucket to resume filtering. You should check the filtered oil level periodically to make sure the clean oil isn’t too far up the side of the filter bucket in the paint bucket as this will slow the filtering time down. The more air on the side the quicker the oil will filter.
5. If the room temperature is very cold the oil wont filter as fast so you can put an electric heater , not an open flame heater, in the same room as the filter buckets, with ventilation, and allow the room temperature to get up to at least 65 degrees for the oil to filter more quickly ( 50 to 60 degrees will take the oil approx. 4 to 5 days or longer to filter, 70 degrees or above the oil will be 90% to 95% filtered in as little as 48 hours )
6. Once the sludge in the paper bag filters has become a hard clay you have recovered over 95 % of the oil and the process is complete. You can now fold the bags over and flip the filter container containing the clay over into a couple of plastic shopping bags for disposal, I use regular plastic bags from the grocery store and double them or triple them up for added strength as the clay type remains can be quite heavy . Make sure you dispose of bags in a safe and legal way, per your local regulations. If you have used pure Mineral oil this should not be a problem, other lubricants might have special regulations for disposal. Please check your local government for directions.

*Instructions are courtesy of John Scofield.*