

Filtering System Assembly.

1. Preparing Heating Barrel.

NOTE: The element is a 240 element, but works fine with 120 but at a lower temperature. I prefer the increased surface area and lower peak temperature.

- a. Weld 3 - 1" steel bungs(threaded side out) to primary Heating barrel. One should be located at the very bottom, one just below the bottom ring, and one just above the bottom ring, or roughly 2/3 the way to the bottom. Keep in mind how your barrel will sit when complete to make sure your drains are in the right location, and that your element and thermostat are accessible.
- b. Install 1" ball valve in the bottom threaded bung, Heater element in the second one up and the other ball valve in the third bung, just above the bottom barrel ring.
- c. The bottom valve is your sediment and water drain. This will need to be drained off every ~500 gallons depending on quality of oil being processed.
- d. Mount thermostat within 4" of heating element. (I know this may seem counterintuitive. Won't mounting the thermostat next to the element cause the thermostat to shut off early? No. Assuming you have a full barrel, the heat will rise, and actually the bottom of the barrel is the last to get hot.) There are a few ways you can mount it. Recommended is to use two self tapping screws, and screw it to the barrel. Then use RTV to seal the holes from inside the barrel. Or you can also JB weld it to the barrel. However you will still have to drill a small hole for the ground.
- e. Wire up the element and thermostat. Using the supplied cord, run the black wire to the thermostat, and the white wire to the element. Then run a short jumper between the thermostat and the element. Terminal position does not matter. Seal all connections with RTV.
- f. Plug in briefly to ensure all operates properly and the element begins to get hot.
- g. Once heating barrel is complete, wrap with included bubble wrap/foil insulation.



2. Construct 5 gallon bucket filter.
 - a. Ensure 55gallon barrel lid is clean of debris and sediment. Affix bucket to lid using 6 supplied self tapping screws with sealed washers. Should look like this-



- b.
3. Now Drill a $\frac{5}{16}$ th hole through bottom middle of barrel and through the lid for mounting the all thread.
4. Then drill about 4 $\frac{1}{2}$ " holes around the center of the bucket for the drain holes. You may use more holes of a smaller size if you do not have a $\frac{1}{2}$ " bit.

5. Install allthread. Thread 2 - 5/16" nuts up from bottom leaving 10" of allthread for the filter. Tighten the two nuts against each other to prevent them from moving. Next place lockwasher then flat washer. Now install allthread from the top through the center 5/16" hole. From the Bottom place flat washer, lockwasher and 2 more 5/16 nuts. Tighten the first nut moderately snug, then secure by tightening second nut. You should now have about 10" of threaded rod coming up from the middle of the bucket and several drain holes through the bucket and barrel. Next run a bead of RTV around the base of the bucket and barrel lid.

6. Install filter over allthread, place washer in place and secure with wing nut.



7. Prepare bottom sump barrel.
 - a. Using a 1-3/4 hole saw, drill a hole about 3/4 the way up to mount a bulkhead fitting.
 - b. Tighten the brass 90 onto the solid end of the bulkhead fitting using threadsealer. Install the large pipe to JIC adapter on the other threaded end of the bulkhead fitting, again using thread sealant.
 - c. Now install bulkhead fitting in barrel with the 90 facing in. Ensure the gasket is put on the first or the twisting action of tightening the nut will squeeze the gasket out.
 - d. Drill another 1 3/4" hole for the pump cords to pass through at the top of the barrel. This does not need to be sealed, oil level should never get that high.
 - e. Install 1.5" to 3/4" adapter and 3/4" barb in sump pump and then Set sump pump in barrel and connect hose to from pump to brass fitting.

8. Prepare primary filter housing.
 - a. Tighten O-ring to JIC fittings into filter housing. They should already be placed loosely in location. Figure out suitable location for filter housing. Position does not matter.
 - b. Determine where your final “clean” tank will be and if needed install the extra bulkhead fitting in a similar fashion as done previously. Now figure hose lengths and install the JIC barbs in hose connect the sump barrel to filter, then filter to final clean tank. I have included some extra fittings to allow some flexibility in setup. Final Product should look similar to this:



c.

Tools Required:

1. Two 12" crescent wrenches
2. #2 flat blade screwdriver
3. #2 phillips screwdriver
4. 1-3/4" Hole Saw
5. Drill with bit driver set.
6. 5/16" and 1/2" drill bits
7. Hose scissors and/or sharp razor.
8. Pipe thread sealant.
9. Welder or friend with welder and a 6-pak.

Materials:

1. Tube of Black RTV
2. Short piece of 14ga wire.

Replacement Parts:

1. Donaldson P555823 filter
2. SA6629 air filter(or air filter for 92 dodge ram with Cummins)