I believe this will be one of my more useful posts. Comments will verify that.

On virtually every single sailboat, you have a primary (diesel) fuel filter, and a secondary one. The primary is the large crud separator, and the secondary is on the engine to remove the small particulate left over.

The primary filter should be changed, minimally, annually, but many cruisers finding themselves changing it more often owing to bad fuel, etc.

The Primary is usually located as close to the tank as possible. And on an aft cockpit sailboat means a location under one of the aft berths.

And here's the drill…

Wrestle out aft bunk mattress.

Find removable wood insert panel closest to where fuel filter is mounted.

Realize that flashlight batteries are dying. Replace.

Now, you've likely found a filter screwed to a wooden partition of some sort.

And here it is…. Wood-screwed onto an impossible to reach corner under the bunk

Changing the filter leads to two things….

Spilled fuel, and a lot of cursing.

And the problem with spilt diesel, is that it takes ages to go away.

So, here is my method to:

Change fuel filter in less than 10 minutes.

Not have 1 drop of fuel in your boat.

And, to expand this idea into other very useful applications.

My first “trick” with this is that I never use wood screws or self-tapping in any application where the item may need to be removed for service.

I’m a huge fan of machine screw threads, and always find ways to make mounting something into threaded studs, where you can simply spin off some hex nuts, or wing nuts. The other huge advantage

of this is that by mounting threaded studs, you have a way to “hang’ the item in place while you spin the nuts on. Think of it as a third hand.

A company called Weldmount has a full line of threaded studs which have flanged bases that you can attach with high strength epoxy. In my case, I used aluminum angle scraps to achieve what I wanted.

So, the photo (above), is my generator filter. My main engine filter was mounted in an identical fashion right next to it on the same wall.

So, with a little bit of ingenuity, 10 minutes of drilling & tapping, my engine filter is now mounted like this.

Real simple… I took a short piece of aluminum angle, cut in some ¼-20 threads, wound in some bolts, and now I have a quick on-off mount for the filter. You can do this a thousand different ways. All you want it threaded studs to pop the filter on & off of. You could use a block of wood , starboard, etc. This is super-easy. BTW, you can see the mess of chewed up wood on the panel where the filter used to hang up with short wood screws. Yuk!

So,,, “big deal”….I hear you saying. “You still have to get some sort of bowl in there to try and catch the diesel when you drain the filter”

Well, no.

And this is where the magic happens.

There is a fabulous company in the US called Colder CPC , and their main products are super high quality pneumatic and liquid disconnects. I’ve used them for years. And,,, they are Industrial fittings, which mean 2 things:

They work in critical applications

And secondly, cost a fraction of something that claims to be for a “marine application”

So, the trick is that we’re going to make the entire filter assembly easily disconnect able, (in 5 seconds), drop it into a pail, change the filter either on the dock, (or in your cockpit), and then pop it back in. All without spilling a drop.

For the “first time around” on this, we’re going to drain the fuel.

Shut off the fuel at the tank, and then get a small plastic cup that you can hold underneath the filter assembly.

Now, its time to look at theses Colder fittings, and understand what they are.

There are two sides; A coupler, and a connector. Somewhat akin to M & F sides to electrical connectors.

The Colder fittings come in Valved, and non-valved versions. The valved connectors automatically shut off flow when the connectors are separated. Think of it as the gas line on your outboard, but these actually don’t leak.

The connectors then come in 2 flavors:

Panel Mount, and free hanging. I’ve used a mixture of both, but you could exclusively use free-hanging. I just thought that using the free-hanging & making a mini-manifold looked more professional

First step is to remove the hoses from the filter, noting which side is IN. (from tank), and OUT (to engine)

Depending on how poorly the filter was originally installed, you may wish to install new hoses. Fuel hose is cheap, and it doesn’t hurt to replace it after a number of years anyway.

This is what these beautiful connectors look like

The one on the left is a non-valved version. This means it has no shut-off. We will find a very good use for this in my write-up

They are solid brass, nickel plated. The latches are SS. The rings are Buna N.

These are both panel mount connectors, and come with nuts to screw onto the threads.

And this is the connectors mated. They lock Straight ON. No twisting, alignment, etc. Pushing on the CPC tab releases the lock.

And here is how my install looks. I manufactured a simple manifold out of a piece of aluminum angle. Then mounted the 4 connectors (2 for engine, 2 for generator)

Of course, you use opposite types for the IN and OUT on the filter. You can Make your own choice on this.

And here is my valve manifold

I have chosen the left side (connector) to be “from tank” and the coupling next to it as the “to engine”

I was lucky that the original engine hoses were long enough. The generator ones aren’t, and that’s why the right hand connectors aren’t hooked up yet.

The next simple thing is to cut 2 lengths of fuel hose, and connect them to the filter. Make sure they are long enough to do a graceful loop to the Manifold with the connectors on them.

And, here’s how it looks when done…


IN

So, to change the fuel filter now

Pop off 2 hoses.. (5 seconds)

Unscrew filter & put in bucket (1 minute)

Recharge filter with fuel, and re-install (5 minutes)

Yes… I'm getting to that.

One of the "nasties" when you change your fuel filter is needing to bleed the fuel lines,

This method does away with all that,

When you unplug the connectors, the fuel is trapped in the lines to engine, and from tank.

Remember I mentioned there was a version of connector being non-valved. Here is where this will come in very handy.

When you have the filter in the pail, there will be 2 hoses attached; both valved.

The "IN" hose should be the Coupler type.

Then, pop on a non-valved coupler, onto the connector on the "OUT" hose.

This is what the coupler looks like on the "IN" side of the filter. Note the small plastic tube. This is actually the shut off actuator, and is held by a spring


IDEAL

By popping a non-valved connector onto the “OUT” side of the filter, you have opened up that line completely.

Now, get some diesel, and a large syringe.

Using the syringe, you will depress the shut off valve, and start to fill the filter with diesel.

When it starts to flow out of the other coupler, the filter is full. Remove the other coupler, and your filter is pre-charged.

Keep the OUT hose at a higher level than the IN hose when you do this.

IMPORTANT….

The first time we do this, we will actually need to bleed the engine, as the filter was emptied, and there was indeed air that got into the lines. So, please understand this needs to happen once the manifold & filter are all finished.

And as they said in the Ktel commercial….

Wait… There's more.

Some high end boats have very expensive dual Racor filter systems, where you can , by actuating a valve, switch from one filter to another. These are very valuable for long passages, or in areas where contaminated fuel is common.

And for about $1500, you can have one of the systems as well.

Or for less than $50. Your choice.

All you need is an extra filter with hoses and couplings on it pre-charged with fuel hung up in the same area. In 10 seconds, you can be switched over to a new fuel filter with fresh fuel in it.

And one last item… Sometimes fuel filter housings crack, and you Have a mess in your boat until you replace the unit. Or, you're trying to diagnose why your engine wont run, and wonder if your filter is clogged.

All you need is a short length of fuel hose with valved connectors on each end. Unplug the filter, and plug in the bypass hose. (make sure its charged with fuel) You'll know right away where the culprit is. Note: this type of troubleshooting normally ends up with lots of stinky fuel in your bilge. No more!

Now, I did a really spiffy job with my manifold, which in reality took 15 minutes to make. But, you don't need it,

You can simply use free-hanging connectors, and you'll have the same result. Its up to you. But, I think the manifold approach is neater. And if you only have an engine,,,, simpler.

Good luck. Hope this is beneficial.

Lastly, The Colder company are wonderful folks to work with. They were very helpful with this project!!!