

## TIPS FOR ENGINE FILTRATION

Too small a filter on the suction or inlet side – or too small a micron size – could plug the filter and eventually starve the pump, cavitate it, and burn it up.

More and more people are getting into the business of selling filters. It would be wise to stick with a “filter manufacturer” not a “Johnny-come-lately” who really doesn’t have the experience in the filter manufacturing process or brings filters, or any engine component, in from off shore where quality usually lacks.

With all the fittings and connectors that are used in building a working engine, this brings a lot of angles in the fuel and oil lines. However, remember, the more angles the greater the pressure drop.

Pump & filters-in-one (combinations in one housing) may not be the best direction to go. They are still new to the industry and when you are talking about protecting an expensive engine, you don’t want to have your vehicle being the guinea pig.

When you’re on a short track and a lot of fuel is pumped through the system in a very short period of time, hoses are changed frequently, a lot of lines are disconnected and then reconnected. There is a good chance for contamination to get into the engine. So it is wise to install proper filtration.

A big problem is a poorly designed fuel system. You must use the right fittings and line sizes. You’re not just putting in a fuel pump. You cannot take an existing fuel system and increase the horsepower without any changes to the system. If you put a bigger pump in you may have to resize the entire line. Did they add a blower to the car since the existing fuel system was installed? Are they running the same fuel? Increasing horsepower increases fuel demand and if you do not take into account this change when designing your fuel system you will have problems. The filter must be sized correctly to the system.

One area of consideration when sizing the filter is the flow rate of the pump. If you have an engine that will consume 40 gph why do you need a pump that will flow up to 200 gph? A properly sized filter goes hand in hand with the pump. If all you need is 40 gph, then get a pump that will handle 40 gph. That translates to .7 gpm or slightly less than 1 gpm. Now we know how to size a filter.

To prevent pressure drop don’t only look at the filter. You need to look at the fittings. Every turn creates some sort of pressure drop. If you don’t need a 90° fitting, use a 45° fitting. If you don’t need a 45° fitting, use a 30° fitting. Don’t come right out of the fuel cell and make a 90° turn and then make another 90° turn going into the pump. Disasters will occur. Cut down on pressure drop this way. If a line is sized correctly and not undersized (a line that is smaller than required), then we can take a look at proper level of filtration.

Another mistake that is made numerous times is when a racer will take the filter off to clean it, submerge it in alcohol for a period of time, take it out and put it right onto the engine. This will destroy any component that is made of aluminum and you see it mostly in filters and pumps. You have to flush them out because the alcohol creates an acid reaction that attacks the aluminum. It’s even worse than nitro-methane or gasoline ever thought about being.

Filters with cleanable and/or replaceable filter elements are the best type. The housings are reusable. Merely take the element out and clean it, let it dry, reinstall it, and continue to use the filter. Only filters with stainless steel wire cloth media should be considered cleanable.

These days when more and more high performance fuels are being developed, finer filtration is required. That is why it is important to be sensitive to the needs of the industry when it comes to new product development. Flow Ezy now offers filters that will take care of this issue. All performance racing filters are offered with filtration options to as fine as 10 micron in a stainless steel filter element. No epoxy is used in the construction of this element. End caps are soldered so they are virtually compatible with any of the new hi performance fuels available today.

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Remember clean fuel is what is needed to move a vehicle. Keep it clean. However, also remember that oil is the life blood of the engine. Insure there is proper filtration in both areas. While you are making sure that the fuel and oil are filtered adequately, do not forget the air that gets introduced to the engine. A clogged air filter will affect fuel economy, all be it not significantly, but it could hurt acceleration by up to 11%. Acceleration is harder to measure than fuel economy so you may not notice the gradual performance loss. Because of that, always inspect the air filter, as well.

With all this in mind, it makes sense to talk to a filter specialist to see if your needs are being met. Proper filter placement and adequate levels of filtration are the difference between a poorly running engine and one operating at peak efficiency. Remember, if the filtration breaks down, the engine will break down. Flow Ezy Filters has been in business for over 73 years and we know filters. Filters is our business. Contact us today.

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