Stainless Steel Micronic Oil Filter Questions and Answers

1) Has this technology been proven yet?

This technology has been in use for many years and has proven itself in NASCAR, Formula One and the Aerospace industry. These filters have been in use in the off road motorcycle world since 1995. Manufacturers like Yamaha have supplied their own version of it. The KTM factory guys have even been buying them for their own bikes (even though they can't legally endorse the product). In other words this is not a new idea, just a new application of proven technology. And of course, we run these filters on our personal bikes, street and dirt.

2) What kind of materials are used in these filters?

The filter housing and filter element end caps are carved out of a solid chunk of 6061T6 billet aluminum, which not only looks trick but aids in dissipating heat. The filter element is made from medical grade, type 304 stainless steel micronic filter cloth to provide unmatched protection against oil contamination and resultant engine damage. A super strength neodymium rare earth magnet is installed in the top of the filter element found in the spin on model, which provides magnetic pre-filtering of the oil. The adhesive used in the filter assembly process is good to 600 degrees Fahrenheit, far above the normal operating temperature of 180 to 230 degrees. The quad-ring gasket doubles the seal between the filter housing and the engine.

3) How does this type of filtration compare to paper filters?

We sent several common brands of paper filter material off to have them tested for the size of particles they would catch. We sent the material off with no names, just numbers for identification so the lab wouldn't have any idea what brand filter they were testing. The results we got back showed that the smallest particle the various material samples caught ranged between 9 and 20 microns. The LARGEST particle that was allowed to pass through ranged from 56 for the best filter to over 300 microns for the worst filter. Paper filters are rated on averages, percentages and multiple passes, so a 10 micron rated paper filter may be letting particles 50 microns and larger through. The medical grade stainless steel cloth that we use is consistent across the entire surface and is rated at 35 microns, meaning nothing larger than 35 microns should pass through the material. This type of filter material is also used in medical applications like blood filtration. Bottom line is paper is rated differently than the stainless cloth and either one works to filter your oil. Personally I like the idea of keeping the big stuff out of the engine.

4) What Are Microns?

A micron is one thousandth of a millimeter. That's approx. .00003937 inches.

35 microns is about .00138", (just over one-thousandth of an inch). The lower limit of visibity to the human eye is about 40 microns. Pollens range from about 30 to 50 microns A white blood cell is about 25 microns

5) How much oil will this filter flow?

A very important dimension of oil filters to keep in mind is the flow rate. A one-inch square of our filter material flows 1.9 gallons of oil per minute at only 1-PSI pump pressure (70 degrees F). This means the screen we use in our S1 filter can flow 57 gals/minute!

6) How does the flow rate compare to paper filters?

We have run static pressure tests between our filters and paper filters for an identical application. The stainless steel micronic filter consistently flowed over 7 times more oil for the same time period than did the paper filter (tests were run at 68 degree ambient temperature). Think about your bike during cold startup… nice thick cold oil, trying to get through that oil filter. We have read tests that reported multiple instances of oil going through the bypass valve during cold startup because of the resistance of the paper oil filter to passing the cold oil. Now think about all the crud that has had a chance to settle to the bottom of the oil pan right where the oil pickup is…. just waiting to go through the bypass valve directly to the engine components!

Another thing that could affect the paper filter is moisture. Not everyone is aware that engines get condensation in them. When paper gets wet it swells and may pass even less oil.

7) Why the "take apart" design?

Racers and motorheads have been taking their oil filters apart for ages. Our filter makes it much easier than cutting apart messy paper filters. It is a great way to get early signs of what is happening in the engine. By checking the particles that get caught in the filter you can identify abnormal wear and prevent catastrophic engine failure. It's a lot less aggravating to replace a rod bearing that's starting to go, than to be standing next to your machine staring at that same rod sticking out the side of the engine!

8) I have a high-pressure oil pump. How much pressure will the aluminum filter take?

An S1 filter was pressure tested to 1500 psi with only slight deforming of the spirol lock and housing. Let us know if you need more than that.

9) Is this filter environmentally friendly?

With the cleanable, reusable design you no longer will be sending oily paper filters to the landfills (some states don't even allow oil filters to go to the landfills… they must be go to through special, expensive disposal processes). What does come out of the reusable filter can be sent to the recycling center with the rest of your old oil.

10) What are Bypass Valves?

We have disassembled/dissected several of each brand of the more popular steel cased paper filters (Honda, HiFlo, Harley, Ducati, Fram). Each oil filter we have dissected has had a bypass valve, as does ours. The bypass valve allows oil to bypass the filter material if the engine needs more oil than the filter can pass (in case the filter material gets plugged or can't flow the oil fast enough). See "Flow Rates" above for related discussion.

11) Why don't you have an Anti Drain back Valve?

Many filters have a rubber flap over the intake holes that is an attempt to keep oil in the filter and minimize the time it takes to fill the filter when you start the engine (they call it an anti-drain back valve). A test you can perform to see how well this "valve" works is to fill a filter with oil, plug the large center spin on hole with a bolt, lay it on it's side and then see how long it takes for the oil to drain past the rubber flap. We have found (and have read other published tests) that the filter eventually ends up with the same amount of oil in it as if it didn't have the flap, it just takes longer to drain out. If the flap worked as planned it would be beneficial to have the extra oil in the filter at startup. On the other hand, that flap covering the intake holes

is one more obstacle the oil has to get by to get through the filter and back to the motor.... something to think about.

12) How much oil does this filter hold?

Slightly more or less than the stock filter depending on the specific application. It doesn't really make any difference. Continue to use your manufacturers prescribed method of checking to make sure there is the proper amount of oil in the engine (usually via a dipstick).

13) Where is the filter made?

Proudly made in the USA

14) My old filter wrench won't fit the aluminum filter. How do I remove the filter?

A cup wrench is included with most spin on filters.

15 How often should I clean the filter?

We recommend the filter be cleaned frequently when first purchased or when engine work has been performed. This will give you a feel for how much debris is being filtered out of your machines oil and help you decide how often you want to clean the filter for your application. At minimum, clean the filter with every oil change due the additional debris this superior filter will be keeping out of your motor. Remember, oil is the lifeblood of your motor, keep it clean!

16 Will this filter affect my warranty?

No. Under the Magnuson-Moss Warranty Act, 15 U.S.C. SS 2301-2312 (1982), and the general principles of the Federal Trade Commission Act, a manufacturer may not require the use of any brand of filter unless the manufacturer provides that item free of charge under terms of the warranty. So, if you are told by a dealer that anything other than a specific brand of filter will void your warranty, ask for the statement in writing (you won't get one), and request that filter be supplied free of charge. If you are charged for the filter, the dealer will be violating the Magnuson-Moss Warranty Act and other applicable law. This is a federal law and the Federal Trade Commission has authority to enforce it, including obtaining injunctions and orders containing affirmative relief. For more info do an Internet search on "Magnuson-Moss Warranty Act".