

# Hail to the Guglatech **RALLY RAID ULTRA 4 AIR FILTER** (or) Beware of the Rage Against The Sand HAVOC Machine !!

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Well, well, well....

For the ones who know how I work, you won't be surprised at all. For the rest of you, a short definition of me is quite simple: I'm overly PARANOID! For me "good" is not good enough and "best" will do only for a while. I love to test my products and if I can make them better I won't wait until next year to implement any possible improvements.

I've got jar after jar of contaminated petrol, diesel, aggressive solvents, in which my fuel filters are soaking; some of them since 2011. This is part of the ongoing testing process; I'm not in a hurry and I don't take any shortcuts. I have a responsibility to keep fuel tanks clean all over the world.

I've been preparing material for the next air filtration article, based on up-dated info from the various Labs and University with whom we are cooperating.

I woke up at 4 am in cold sweat, thinking about an important detail I'd forgotten to consider when designing my new air filtration media. (4 am seems to be when the best ideas come to my head)

How would my filters would perform after a hypothetical 10 years of crossing the whole world, with deserts, arid areas, dusty roads, and using only water to clean our ULTRA4 Air filter?

I don't have time to wait for a real life test, and no BETA test or ISO defined specs would ever do that job for me which was to test my HDM3D Shield 4 fuel neck filters. So I created the specs and had the University Lab perform them. If I could prepare fuel filter specs, why not do the same for air filters ?

So I wrote the tech-specs for the "Rage Against The Sand" HAVOC Machine that would compress 10 years of riding into a few hours.

Preparing the ingredients doing the calculations was pretty easy. I chose the BMW F800 air box for the ease of servicing and compact size, and I prepared the testing machine: The R.A.T.S.

We know how much air the bike would need; that's Math 101. We can assume that the rider is a poor chap with very little luck. A guy who always ends up riding in bad sand storms or behind 8x8 trucks columns wallowing through silt. A guy who would only wash the air filter when the bike would stutter

due to a lack of air. A guy who wants to save money by buying a quality product ONCE, then having the ability to clean it with water and continue using it forever.

Here's the testing platform, the R.A.T.S Havoc Machine. We won't share many details because it's still a company secret. Let's just say that it's designed to simulate years of riding in the worst conditions, and compress time !!!!!

All of the air that passed through the various filters we tested was eventually collected in our X-Gen media bag. The inside of the bag represents the air that's going into your carburetor or fuel injector system. If that bag is dirty, your fuel system is being contaminated by dirty air. If it's clean, the air going to your engine is clean.

Using the R.A.T.S Machine we can replicate a sand storm that no vehicle in the world would ever survive !



We tested the original OEM paper filter, off-the-shelf paper filters, two very famous Cotton/Foam competitors, and our ULTRA 4 air filter.





Filters we tested



More testing components

Paper filters - those were expensive! We went thru a bunch of them because they can't be cleaned. Use it once, then replace it for the next test. Bring money.

Cotton and Foam filters - you have no idea how much detergent and oil we had to use every time we tested them. Sure, they could be cleaned, but the process required solvents and oils, two things most riders don't have access to when they're on the road.

So, how did the Guglatech ULTRA4 perform? **It FAILED.** Yup, you heard me right. After the RATS contamination cycles they did not perform as I well as I hoped, and this is not acceptable. My customers should be able to face the worst conditions in the world with full confidence.



Cotton oiled filter – 6 cycles

In my defense **ALL THE OTHER FILTERS FAILED** the test, including Paper, OEM, Cotton/Foam. Paper filters showed heavy strain, causing contaminants to pass. Cotton filters started losing threads and developed massive holes. Foam filters started to crumble and there was an inconsistency in pores size and filtration distribution.

**These photos show the Cotton Oiled Filter.**

6 cycles



Cotton oiled filter contamination

**Guglatech Ultra 4 (our old filter design) - we ran 10 cycles.** The collection bag showed some contaminants. To us that's unacceptable. We needed to do a better job.



Guglatech Ultra 4 filter - 10 cycles



Guglatech Ultra 4 contamination

**OEM paper filter, we ran 1-1/2 cycles.** The collection bag was heavily contaminated. What this means is your engine would be contaminated because it was sucking in dirty air.



OEM Paper filter, 1.5 cycles



OEM Paper filter contamination

Here the focus on total protection was absolute. While designing a new 3D media I encountered a nice fact: this new media structure allows a much better and more compact air front in the air box, resulting in a better engine output! Damn, excuse my French, that was un-expected, but I must say really welcome.



So, we head over to R.A.T.S. Machine and ran it up to flank speed to test the ULTRA 4 Rally Raid filter.

### ULTRA 4 Rally Raid 10 cycles



Yes, there's a very slight amount of visible contamination in the collection bag; a very fine dust. But note that we ran the Rally Raid thru **TEN CYCLES** on the RATS Machine. The OEM paper filter showed the same amount of contamination after only **1.5 cycles**. What this means is the rally Raid is 7 times more effective than the OEM paper filter, and 2 times more effective than the other foam and cloth filters. Simply stated, the Rally Raid did a better job of filtering under all conditions, when compared to all other filter types.

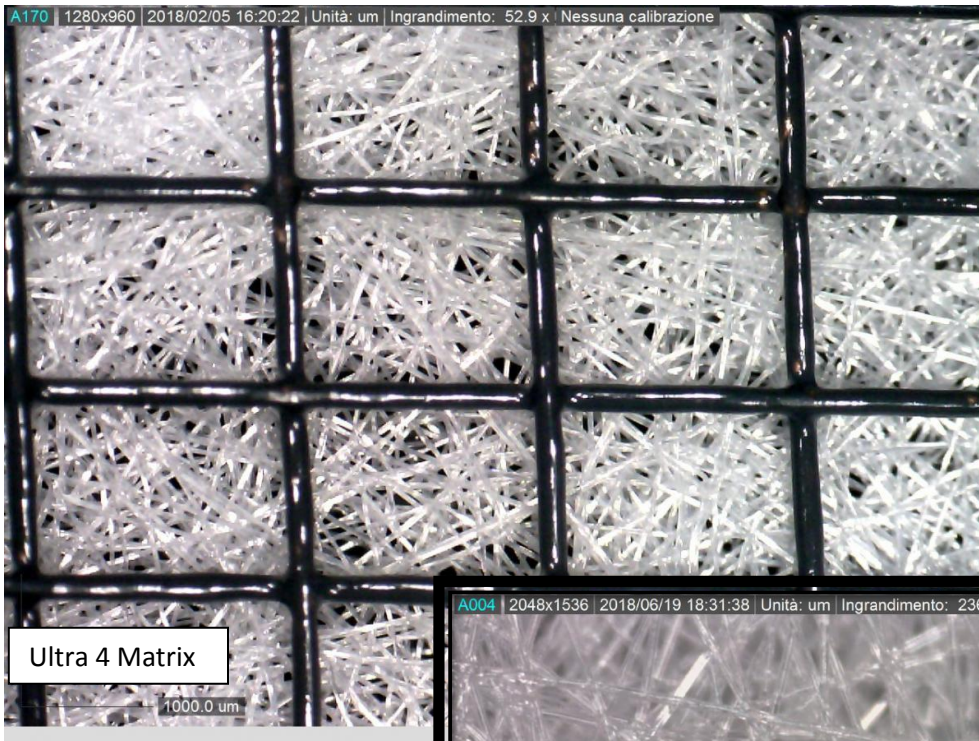
Add to this the fact that the Rally Raid can be cleaned using soap and water. In the field. Nobody else can do that because those filters need special solvents and oils.

Brilliant !!!

Not only was the Rally Raid media capable of preventing passage of some of the finest dust (down to 30 microns), but the overall mechanical resistance of the matrix made it ultra long lasting, with no decrease in efficiency nor lack of air flow.

What started as a test of long lasting quality, ended up creating a totally new product

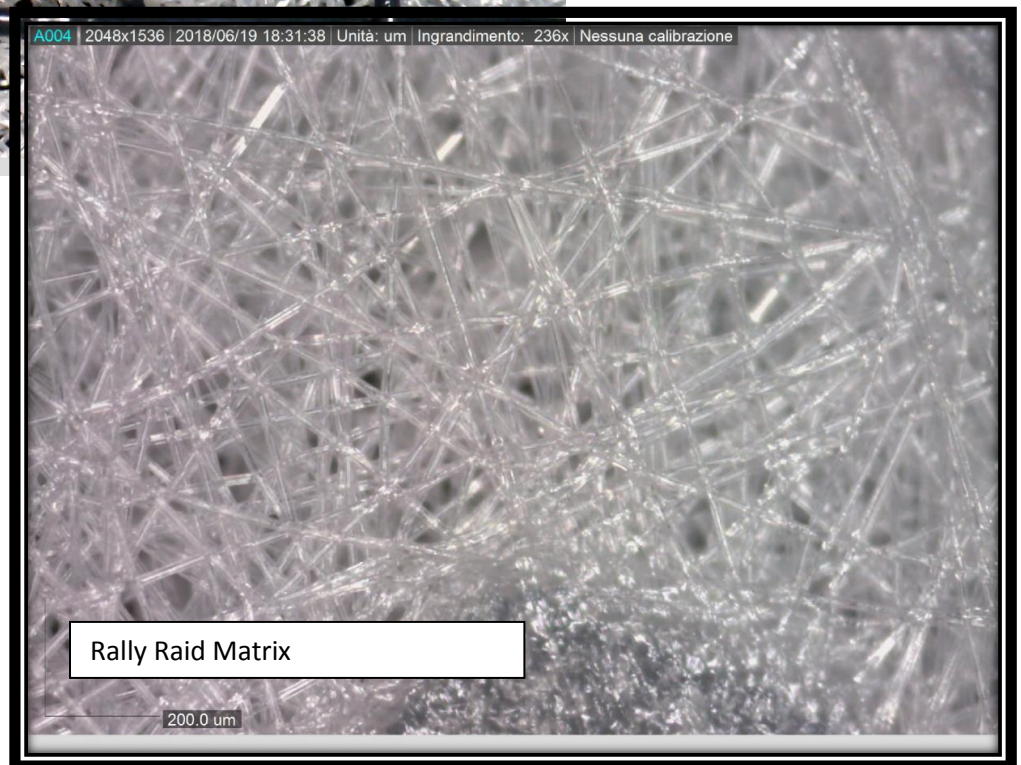
Here the comparison of the two matrix styles: Our Ultra 4 matrix at left, Rally Raid overlaid at right



The Rally Raid Matrix is so dense that it benefits from both the better flow design of a synthetic material, plus it has better flow/segregation design than paper, and better small pore distribution than foam. The Rally Raid is the best of all worlds!

So, was it worth spending soooooo many months breathing dust, oil, screwing and unscrewing the machine hundreds of time, buying soooooo many competitor's products, just to destroy them in a few days of testing?

Yeah, it was, and that's why the Guglatech ULTRA 4 Rally Raid Air Filter is the most advanced air filter in the world. We say that with total confidence and we have the data to prove it.



In our next episode we'll share more...

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