

# THE OVER, UNDER, AROUND AND THROUGHS OF AIR FILTER MAINTENANCE

*How to keep your all-important breather holes open and unclogged for speed's sake*

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by George Wegner

Maintaining your air filter correctly through proper cleaning and installation is cheap insurance for preserving your engine's internals: that is, keeping them as close as you can to their intended tolerances for as long as possible. In fact, it's just as important as the lubricating qualities of the oil you pump through your engine. A total or partial failure in either of these areas can have disastrous effects upon your engine's lifespan — either in an incredibly short period of time, or over the months.

Filters have come a long way in the past few years. Now there are three basic types available.

The paper type has surely been around the longest and is the least efficient design. Still, it comes stock on at least one brand. This type of element is made of interwoven pulp fibers which it relies on to trap dirt particles and prevent them from entering your engine. Since it is dry, it cannot catch as many or as small dirt particles as an oiled element. Moisture will cause the fibers to swell, seriously restricting the airflow and, therefore, engine performance. In addition, paper units have a very short life span on a bike and cannot be reused. For the price of two or three replaceable paper numbers you can buy a good foam or cloth type.

There are several variations on the basic foam filter theme. These include the single-layer type — with either a conventional smooth surface, a lumpy or irregular surface to provide more surface area, or the hairy-surface type as found on Yamahas; also available are the twin-layer variety with either conventional or lumpy surfaces, and the dual-layer Stripper model that comes with a couple of thin outer layers that can be switched to provide a fresh outer surface, or the outer one can be left dry for longer races. These foam types are designed to trap dirt against the oiled walls of many thousands of tiny tunnels. Many filter manufacturers have composed special filter compounds to give optimum filtering of dirt, dust and assorted mung while also acting as a water repellent. The twin-layer elements have different sized pores in each layer to help obtain maximum airflow and filtration simultaneously.

Finally, there is the screen-covered-cloth type; for example, the K&N. It uses the accordion-fold design to expose as much surface area as possible around its circumference. Dirt is trapped through the use of a special filter oil, as with the foam type, but it is stopped on the outside of the filter rather than within. The idea here is to let the dirt particles that build up actually help filter the air that passes around

and between these particles.

Paper elements are quickly disposed of and replaced, and replaced, and replaced . . . The K&N unit is a long-living filter, and most of the foamers should hold up about as well.

Cleaning follows basically the same routine for all the foam elements, whether single, double, lumpy or not. But, like most anything that needs doing, there's a right and wrong way to do it.

If you're some kind of clean freak, the first thing to do is drag out the vacuum cleaner and stuff its long snout down into your air box to suck out dirt balls, clods, and whatever low-flying birds may have found their way in there. While this step is not absolutely necessary, with some air box designs it helps keep dastardly dirt clods from dropping in on your carburetor. On some bikes it would be good to pull off the rubber air boot to be sure that accumulated dirt will not find its way to the wrong place when the filter is pulled out.

Cleaning solvent is the stuff to use for cleaning filters, but, some continue to use pre-mix since it's always around. Handy? Yes. Safe? Not very. Soak and wring the filter several times in a pan of solvent, using clean solvent the last couple of times. Don't get too carried away with the wringing part or you'll end up needing a new filter in no time.



Then, let it air dry for at least 20 minutes. Next, get a bucket, tub or sink full of hot water and Ivory dish-washing liquid or its equivalent (if there is one). After giving it the same wash job you gave it in the solvent, you'll be surprised to see how much dirt you left in. You're going to have to let it dry a bit longer after the dish-washing job.

Now you're all set to oil that baby up. Spread small amounts of your favorite filter oil evenly over the element's surface. You don't want to waste it, or leave your engine unprotected, either. For this reason, most of the oil manufacturers have given their product a deep color so that you can easily see when the filter is covered. Remember, don't

get carried away. If you do, wring the excess over a funnel back into the container. After all, your filter should be clean by now.

While some filters require greasing around their sealing edge, others do not. For instance, the Suzuki RM B filters fold over a screen and seal very well greaselessly. Others, you just would naturally never install without the grease for fear of something getting by.

Be sure that the filter seats perfectly all the way around by feeling it if you can't actually see it. Take your time. This is where races (or your money roll) can be won or lost.

K&N's are a whole different story. Since they utilize dirt that accumulates on the surface of the filter for additional filtration, they recommend that you thoroughly clean the filter only when extremely heavy deposits have built up. So, a regular cleaning consists of knocking off excess sand and dirt, then brushing it lightly with a toothbrush or similar small brush. Be careful not to get the dirt on the inside of the filter or to grind the particles into the fabric. Then you give it an even coating of their special oil that comes in a handy aerosol can and slip it back on. When it's Filth City, you roll it in a shallow pan of solvent. The level should be low enough so that the dirty solvent does not reach to the inside of the filter. A paint roller pan is the hot setup. Or, you can use their specially formulated cleaner and degreaser for cleaning, then their oil for oiling, and slap her on. They recommend using a light coating of grease around all sealing edges except when using their clamp-on type.

Some oils, after sitting for a week or two, will run around and collect on the bottom side of the filter, leaving the top virtually unoled. Others will dry slightly and get gummy, but will stay put and still give good protection.

The hot guys keep a fresh filter already cleaned and oiled in a sealed plastic bag ready to slip on for the second moto.

That's about it. Do it right. Do it all the time. I'm sure you'll agree, it is cheap insurance. ●