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Fleet
Talk

Messing with Microns

One of the biggest challenges for engine owners is maximizing the life cycle of the engine.

Whilst engine designers and manufacturers go to great lengths to provide sufficient filtration for the protection of engine components, fuel quality is one of the greatest variables facing the life of fuel injector equipment.

Many owners look for ways to get better performance from their existing fuel filtration system in order to combat poor fuel quality. The simplest solution would seem to be upgrade the filters that are already on the engine.

Sometimes it's about improving reliability and sometimes it's about saving a few dollars on a filter (or even about using something else when the correct filter is not on hand).

Most liquid filters are given a micron rating. The micron rating is most often what is focused on when trying to evaluate a filter for the purpose of upgrading a fuel system.

A micron rating by itself is not sufficient to identify how well the filter performs at capturing particles of a stated size. A filter's micron rating must also be accompanied by the relevant efficiency at which the filter captures the stated micron size, but how good is the filter at capturing 10 micron particles for example?

As an analogy, a sock could be a 10 micron filter. However, given that a sock might only capture a small number of the many thousands of 10 micron particles in a given volume of fuel, it is not a very efficient 10 micron filter but it could still technically be called a 10 micron filter.

Comparing a filter's price based on micron rating alone, can lead to using an underperforming filter. It's easy to say a filter is 10 micron.

Some 10 micron filters are made from paper and some 10 micron filters are made of material that has a much higher technology, such as nanofibers designed by Cummins Filtration. The difference lies in the efficiency and ultimately, the cost for that technology.

ALWAYS compare the filters micron rating AND the efficiency at which it is rated for capturing that micron size to get the true performance value and not just the cost of the filter.

Unfortunately it doesn't stop there.

A consequence of using a finer micron rating, is the reduced filter service life due to the higher restriction. This can often be viewed as a negative because of the need to change filters more often. However, engine performance can suffer with higher restriction.

Some view regular filter changes as a nuisance and wish to reduce the frequency by installing larger micron rated filters. The most obvious issue with this is reduced protection because those smaller impacting particles are getting through in larger numbers. This will result in greater wear rates leading to reduced performance, greater fuel consumption then ultimately, failure of the fuel system components.

Not all filters are the same. Consideration must also be given to the other aspects of the filter. Failure to address all of the filter characteristics can result in filter failure leading to expensive damage repairs.

Substituting a filter that does not meet the specifications of the genuine original filter will also lead to any warranty becoming void. ONLY use filters that are correctly crossed on Cummins Filtration website to ensure that you are getting a filter that is fit for purpose and covered by a warranty.

Re-engineering your fuel filtration system without considering all of the possible consequences, can lead to expensive lessons in what not to do.

Cummins Filtration has many options using high technology designs and media that can help improve fuel quality without compromising fuel system performance. Including better particulate removal and water removal filtration.

For more detailed understanding of fuel filtration and efficiency take a look at:
<https://www.youtube.com/watch?v=O7721w9VLDs&t=48s>



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