



# Fleetguard®

## NanoForce® Air Filters.

Expanded coverage in superior air filtration for heavy duty diesel-powered equipment.

### The Cleanest Engine Air.

NanoForce air filters deliver the cleanest combustion air possible for on and off-highway engines. Nanofiber, when combined with newly enhanced pleating and pleat stabilization, delivers optimal air filter performance for superior engine protection and lower equipment operation costs.

### Small Numbers. Big Protection.

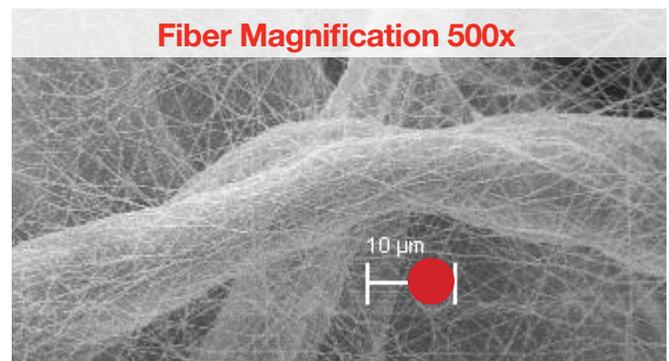
0-5 micron particles are trying to attack your engine! It's critical to use a filter that can fight particles this small. Conventional cellulose air filters might give you up to 99.97% dust removal efficiency at best, but NanoForce with 99.99% efficiency stops more of the engine-killing particles by reducing the amount of dust and dirt that can reach your engine during a typical filter service interval. Small improvements add up to big engine protection!

### Leveling the Dusty Battlefield.

In the world of heavy duty equipment, small particles can quickly bring productivity to a halt. Off-highway equipment frequently encounters dust particles in the range of 0-5 micron size due in part to the use of pre-cleaners. On-highway applications experience similar size contaminants coming from road salts, brake materials and roadway dust. These tiny dust particles wreak havoc on pistons, rings, liners and many other engine parts. NanoForce filters combat tiny particles at a submicron level, removing and retaining the particles before they reach engine components.

NanoForce nanofibers are significantly smaller in diameter than a human hair. These smaller fibers create a weave, offering higher filtration efficiency and providing many paths for unobstructed air flow. The engine receives 3X better protection vs. conventional air filters and a superior filter service life.

Magnum Part Number	NanoForce Upgrade Part Number	Typical Applications
AF879M	AF879NF	Haul Trucks: Caterpillar, Komatsu, Terex and Euclid Excavators: Hitachi, Komatsu
AF899M	AF899NF	Haul Trucks: Caterpillar, Komatsu Excavators: Liebherr
AF928M	AF928NF	International Trucks
AF891M	AF891NF	Cranes, Haul Trucks, Trucks
AF996M	AF996NF	Peterbilt Trucks
AF1817M	AF1817NF	Freightliner Trucks
AF888M	AF888NF	Peterbilt Trucks
AF979M	AF979NF	AG Chem/AGCO Equipment, Peterbilt & International Trucks
AF1616M	AF1616NF	Western Star Trucks
AF1605M	AF1605NF	Hitachi Dumpers & Excavators, Terex Loaders & Trucks



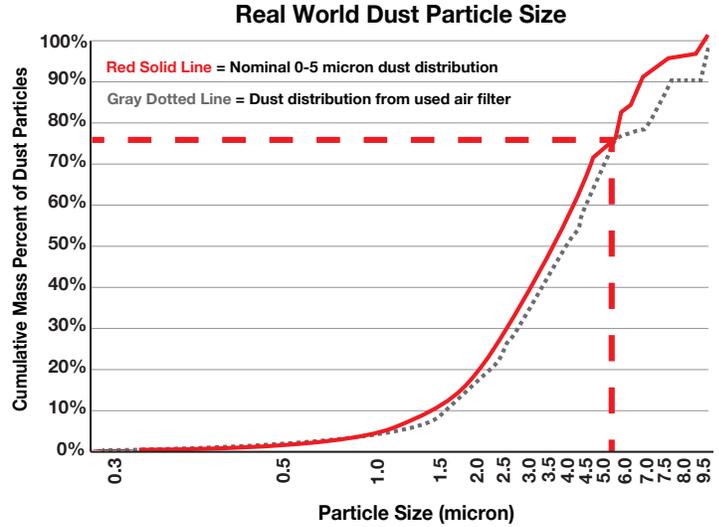
The red circle represents a dust/dirt particle of 5 micron size. NanoForce media provides a barrier to small but harmful particles.

## Real World Testing.

When your equipment is exposed to small dust particles, you need an air filter that's made for your work environment. Nearly 75% of the dust found in used air filters is smaller than 5 micron. NanoForce air filters are specifically designed to block and trap these extremely small particles. NanoForce significantly reduces downtime, which is critical to all types of equipment – both on and off-highway.

The Cummins Filtration laboratory uses dust particles that are proven to be identical to real world dust distributions. To accurately measure the effectiveness of NanoForce filters when faced with typical job site conditions, industry standard Nominal 0-5 micron dust is used for testing and development of the filters.

The graph shown at right illustrates the common nature of the dust particle size distribution between the real mine and the nominal 0-5 micron laboratory dust. Informed equipment operators know to consider dust types when comparing air filter performance values.



ensuring **real world** results



NanoForce was put to the test in field trials upon equipment in mining and agricultural applications around the globe. No premature signs of high filter restriction were shown and a greater dust capturing efficiency of 99.99% was achieved using the NanoForce filter.

providing **2X** filter change interval

- Based on multiple pieces of equipment at active mine sites
- Based on filter change by filter restriction measurement (not time)
- Results may vary due to equipment, air pre-cleaners, dust conditions at work site, engine exhaust entering the air cleaner, equipment duty cycle, etc.

## Features & Benefits.

- Nanofiber filter media provides 99.99% filtration efficiency; the best engine protection available
- 3X the engine protection vs. conventional filters; quantifiable reduction in wear particles
- Long service interval - 2X longer service life achieved versus conventional air filter; fewer air filter changes
- Robust construction enhanced with nanofiber media; reliable engine protection
- Advanced pleat geometry, spacing and stabilization; superior engine protection and longest filter service life



Find Out More about **NanoForce**

[cumminsfiltration.com/html/en/innovation/products/nanoforce\\_air.html](http://cumminsfiltration.com/html/en/innovation/products/nanoforce_air.html)

## Best Warranty in the Business.

The Cummins Filtration Warranty extends to our entire line of products, ensuring the same promise of performance and coverage beyond the competition. Visit [cumminsfiltration.com](http://cumminsfiltration.com) to learn more about the competitive benefits of the Cummins Filtration Warranty.