

NTZ Micro Filtration Oil Filters

You can save money by allowing for longer intervals between oil changes.

by Cathy Williams

Standard oil filters are only effective in capturing contamination particles of 15 to 25 micron, allowing the majority of smaller contamination particles to continue to circulate in the oil. While filtering out large particles is important, smaller contamination particles, i.e., 3 to 10 micron, are shown to cause the most damage. This is due to their size and quantity in relation to smaller clearance points in engines' cams, valve guides, rings, pistons and cylinder walls.

The Society of Automotive Engineers (SAE) has documented the use of finer filtration to reduce engine wear and extend component life. Its published papers indicate that "bypass filters extend engine life through improved filtration and reduce wear, providing the lowest total cost to the engine user." It is shown that controlling smaller particles has the greatest benefit to engine wear rate reduction.

This wear also causes the system to work harder and, ultimately, to consume more fuel in the process. "Reducing particle contamination



After 10K miles, the oil tested cleaner than new.

in engine oil improved fuel economy 5 to 8 percent in automobiles," according to an article published by M. Moon, Ph.D., a research and development chemist at Bel-Ray, a performance lubricant corporation.

NTZ Micro Filtration has introduced its Police Fleet Oil Filter Kit, which contains a patented high efficiency micro filter and all the required installation components for use on police fleet engines and transmissions. The 5 micron depth filter is fitted in addition to the standard filter and will extend the useful life of the engine/transmission and reduce maintenance expenses. Oil drain intervals can be tripled by applying this fine filtration system on both standard and synthetic fluids.

The NTZ filter is installed in the oil bypass circuit. During this process, an average of 1 to 2 liters per minute of fluid passes through



An NTZ filter installed on the Hillsdale County, MI Sheriff's Ford CVPI.

the filter versus 10 to 20 liters per minute in a full flow filter. This means no inline pressure drop and no need for a bypass valve. Due to the lower flow rate, the bypass system can be more restrictive, passing slowly through a depth filter element, and it is able to remove 99 percent of the very smallest particles in the fluid. Also, it does not interfere with the function or performance of the standard full flow filter.

Synthetic fluids are not immune to contamination particles. These fluids have longer change intervals, but without improved filtration, the total amount of solid contamination in the oil may be 10 times higher than allowable. The oil will remain within its chemical specifications, but it will be even more damaging from an abrasive wear standpoint.

The use of bypass and micro filtration has been utilized for years by various OEMs. The Ford Motor Co. adopted NTZ's technology on its Super Duty TorqShift transmissions (2003-2008), and Volkswagen engineered it into its advanced dual clutch transmission.

The Hillsdale County, MI Sheriff's Department participated in an NTZ case study to document the results and determine the cost savings to their annual budget. Their conservative goal was to double their oil change interval. A Ford CVPI was fitted with one of the NTZ Police Fleet Filters, and a benchmark CVPI was followed as a control. An independent third party oil analysis lab was used to analyze the cleanliness levels of the samples taken.

After 3,834 miles, the vehicle without the NTZ Police Fleet Filter had exceeded its fluid cleanliness level and required an oil change. The oil from the vehicle with the NTZ Police Fleet Filter tested cleaner than new oil after 6,500 miles. An additional vehicle was fitted with the NTZ Police Fleet Filter and accumulated 10,000 miles. The oil sample results showed that the filter has the ability to clean fluid even further the longer it operates. The cost savings to the county budget was \$300 per car.

As vehicles are retired, the entire filter can be easily removed and fitted to the new fleet, making this a one-time investment. The NTZ Police Fleet Filter kits are model-specific with all the fittings, hose and step-by-step instructions. It can be easily installed in 45 minutes by a certified mechanic.

Cathy Williams is the director of marketing for NTZ Micro Filtration.



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