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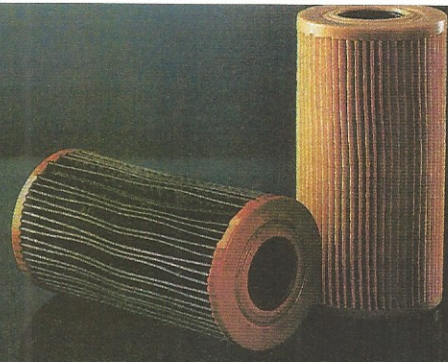


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**WIX**  
FILTERS



# THE FUTURE OF FILTRATION

**A**s an industry, we sell and install a LOT of oil filters. The City of San Diego estimates that number at roughly 425 million filters nationwide each year. From DIYers to professional service shops, that means literally TONS of waste generated annually. The recyclable steel alone adds up to 160 million tons, and nearly 20 million gallons of residual waste oil is trapped in those used filters.

Most of those filters are still of the spin-on canister type, but cartridge filters have been gaining popularity among OEMs over the past two decades. Surprisingly, the idea of engine oil filtration is only a century old, with the first commercial oil filter debuting in 1923. With a cloth media placed inside a steel container, it was essentially a cartridge filter. Cellulose paper eventually replaced the cloth media, often with metal caps and center cores adding support to the pleated element. Compared to the cartridges on our shelves today, they were bulky and less efficient, but provided added protection for those vehicles that used a filter at all. Oil filters were not a standard feature on many vehicles, even into the late 1960s, and air-cooled VW Beetles utilized a metal “strainer” rather than a disposable filter element up through 1979.

The spin-on filter we know today was not invented until the mid-1950s, but the ease and convenience of the design meant it would quickly become an industry standard for another 50 years. As environmental concerns began to dictate many OEM manufacturing and engineering decisions, increased oil change intervals and a shift toward lightweight materials led to the resurgence of the cartridge filter.

Synthetic filter media now allows for increased efficiency and longer service life, and the use of non-metallic structural materials decreases overall weight and reduces material costs. Recycling used oil filters continues to be an environmental issue, with residual oil being the most difficult element to recover. It can account for up to 45% of the weight of a used oil filter.

Cartridge filters may be the future of LOF service, but there are a few drawbacks as we transition toward that future. Where the spin-on canister filter is a self-contained disposable unit, cartridge filters live inside a permanent housing which is susceptible to damage during service. Open the filter package and you will likely discover one or more O-ring seals, indicating that there will also be “some assembly required.” Accessing the filter element often requires the use of a specialty socket to unscrew the housing cap. The O-ring(s) must be replaced to ensure proper sealing and prevent future leakage. This adds extra steps (and time) to an already low-profit service, and introduces more potential for errors. Like an oil pan drain plug, these caps also have specific torque specs that are often ignored by DIYers (and some hurried technicians), leading to leakage, and potentially damaged caps or housings.

The housing design itself may also become an issue when cataloging filters, caps and associated components. GM 1.4L and 1.8L engines are one of the most commonly miscatalogued modern filters, with some featuring housings supplied by Hengst, and others by UFI. These housings and filters are fundamentally different, and are NOT interchangeable. The Hengst housing features an integrated bypass valve, and the OEM cap is made of

black plastic. The UFI design relies on a bypass valve built into the filter element, and the OEM caps were brown in color. Note that aftermarket caps might not have the correct color plastic, or the OE supplier’s name. When in doubt, check the aluminum housing itself, or compare the filters before installation.

The Chrysler 3.6L engine is another “problem child” when it comes to the filter housing. The OE plastic housing design is prone to fluid leaks from the base gaskets, and cracking when the cap is overtorqued. The aftermarket was quick to engineer an upgraded aluminum housing, which solves many of the design flaws of the original. Vehicle applications from 2011 through 2013 use the Mopar MO744 equivalent filter. For 2014 to present, the housing was redesigned, and features a longer MO349 equivalent filter. Many aftermarket versions are available to fit either housing design, but some require use of the newer-style filter for all years. Verify the model year as well as the originality of the housing, especially for the earlier applications.

Oil filters aren’t the only application for cartridge-style elements. While fuel filters are rapidly becoming obsolete in gasoline applications, modern diesel fuel and water separator filters are shifting toward cartridge designs, and there are now a dozen or so global transmissions featuring cartridge filtration. This change benefits the environment, reduces the processing challenges and volume of shop waste, and will eventually drive down individual filter pricing as these elements become the rule rather than the exception. The future of filtration is looking pretty bright!