

# A SHORT HISTORY OF EARLY OIL FILTERS

by John Gunnell

Early cars did not have any sort of oil filtration system and many cars well into the '60s offered oil filters only as an extra-cost option. To early motorists, it was common to change oil every 500 to 2,000 miles. Later, when drilled crankshafts and pressure lubrication systems became common on most automobiles, some kind of oil filtration was necessary in order to protect the oil pump from damage and wear. Early filter designs used steel wool, wire mesh or metal screens placed in the oil pump intake. Many were cleanable and reusable.

The first modern oil filter was introduced in 1923. Ernest Sweetland invented the device and called it the Purolator. The company's trade name was written as "PUROLATOR". Purolator later used the slogan "First in the Field of Filtering" with full honesty. Many Classics use these filters.

The original Purolator was incorporated into a car's oiling system after the oil pump and before the oil flowed into the engine bearings. It featured an upright series of seven twill weave cloth-covered, perforated plates encased in a heavy-duty cast canister. It also had a sight feed glass on one side, enabling the owner to see the oil flow and change the filter when the flow slowed to a trickle.

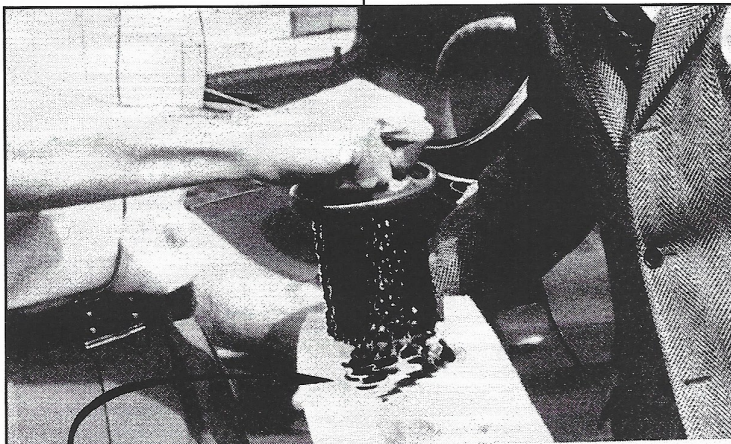
James A. Abeles saw enough potential in the Purolator to convert a New York City garage into a company called Motor Improvements Inc. His firm was developed primarily to manufacture Purolator oil filtration systems.

The Maxwell-Chalmers company also saw promise in this new product, installing a Purolator on a Maxwell automobile, which was test-driven on a round-trip from Detroit to the West Coast in 1924. The longer oil drain intervals, cleaner oil and

reduced engine wear offered by the Purolator ensured endorsement by the automotive industry. The "oil cleaners" soon became standard on many popular automobiles of the day, including Studebaker, Pierce-Arrow, Hupmobile, Peerless, Cadillac, Oakland, Gardner, Moon, Jordan, Buick and Dodge.

Over the years, innovations in oil filter technology continued to take place. In the late 1930s, cotton waste material was introduced as filtration media, providing the first filter replacement capability. Various woven fabrics were also used in some filter designs.

Prior to 1943, most oil filters were of the by-pass variety, only filtering about 10 percent of the oil at a time. The first full-flow oil filter, capable of filtering 100 percent of the motor oil, was introduced in 1943 and became standard on mass production vehicles by 1946.



By 1946, as disposable filter models became the norm and interest in saving production costs increased, materials such as pleated paper and cellulose became the filtration media materials of choice, materials that are still widely used in today's oil filters.

In 1949, Purolator Products, Inc., had facilities in Newark, N.J. and Windsor, Ontario, Canada. At that time, the company offered a range of different oil filters that fit cars and trucks from a 1931 LaSalle up to most new 1949 models, either as original equipment replacements or retrofit installations.

The OE replacements were mostly Purolator N or T Series models, while most of the install kits used the latest P-Series Micronic canisters and



elements. Some models in the P-900 series were used in applications previously serviced by the N-1600 and N-1900 series. A heavy-duty model called the P-3000, designed for vehicles with crankcases holding over 25 qts. of oil, used two filter elements inside its extra-tall canister.

In non-OE applications, the filter size recommendations were based on the crankcase capacity of the vehicle being retro-fitted. All N-1500 and P-700 series Purolators were recommended for crankcase capacities of 6 quarts or less. All N-1900 and P-900 models were for 6-14-qt. crankcases. Vehicles with 14-25-qt. crankcases were suited to N-2900 and P-2900 filters. Finally, vehicles with crankcases of 25 qts. or more were best suited to N-3000 and P-3000 filters.

In 1949, Purolator also developed a new Wing-Nut Type Micronic Filter that allowed motorists or mechanics to check the filter element as quickly and easily as checking oil. This design required no tools to unscrew the wing nut on top and lift off the cover. The P-40 filter inside came out with the

cover so it could be checked for muck. These filters were in the P-400-W series and all used the same filter element. They were recommended for Chrysler Corp. cars and trucks.

Purolator did a good job of promoting the Wing-Nut Top as a "money maker" for its dealers. A 1949 trade advertisement claimed that the new P-40 Purolator Micronic Refill had "5 times the filtering area of old-style filters" and "removed 290% more sludge." The savvy mechanic could take advantage of the facts that the P-40 trapped more sludge and was easily removable by whipping out the dirty filter each time a customer drove in. "This muck in an oil filter can mean money in your pocket!" said the ad's headline in bold type. "Show it to your customers for more Purolator sales."

WIX invented the easily detachable 'spin-on' filter in 1954. Automotive historian Matt Joseph, of Sauk City, Wis., believes Chrysler may have been first to use them. By this time, the Classic era had ended. Spin-on filters found on Classic cars will only be after market.

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