

The introduction of the spin-on filter in the mid 50's slowly replaced the cartridge style filter on many automobiles in oil lubrication system. However, automobile manufactures for many reasons are returning to the older style cartridge, and care should be used.

There are many different housing and filter styles, and vary greatly across manufacturers. Understanding the recommended procedure, and taking extra care, is key for the successful oil filter service.

Here is an overview of some basic steps to follow when servicing the oil in a cartridge style filter.



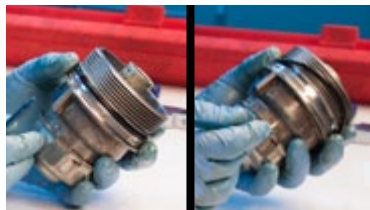
*CAUTION: These steps are general recommendations. Moving parts and high engine temperatures pose a significant hazard and may result in serious personal injury. Improper servicing can result in personal injury and severe engine damage. Always know and follow the manufacture's specific guidelines when servicing the oil and filter.*

1. Drain the oil by removing the oil pan plug. Collect and dispose of used oil as recommended in your area. Inspect plug and gasket; replace worn or damaged items.



2. If a housing or cap has a drain plug, remove it to allow any remaining oil to drain from housing. If there is no drain plug, proceed using appropriate tools to remove the filter cap from housing. If applicable, note the location of the O-ring on the drain plug seal and remove.

3. Clean both the filter housing cap and the housing. Examine for damage such as cracks, breaks, or damaged threading. Check the O-ring seatings, making sure they are undamaged and clean. Replace damaged components if needed. While removing the used O-ring, note its proper placement on the cap or housing.



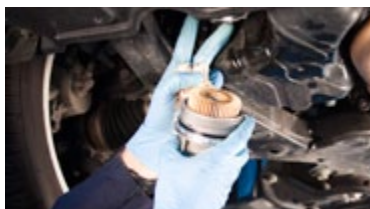
4. Remove the used filter and dispose of in accordance with all appropriate regulations and local requirements.

5. Install the new filter and O-ring sets accordingly. Caution must be used when placing the new O-ring in the housing or on the cap. Make sure the O-ring is not twisted or misshapen before applying. Once properly positioned, the new O-ring must be lubricated with clean, new, engine oil, and slipped on by rolling the O-ring on its intended groove O-rings can be installed in housing caps, housing grooves, or other locations. .



*CAUTION: Do not re-use any previous O-rings. Engine damage and leaks may result.*

6. Make sure all drain plugs have been properly reinstalled and tightened. Install the new filter cartridge in the housing cap or housing and install housing. Tighten the housing cap as recommended by the manufacturer. This may require the use of special tools .



7. Again, make sure all plugs and seals are installed correctly, and add new engine oil as per the engine specifications. Once filled, run the engine for several minutes and check for any leaks around seals and plugs. After the engine is turned off and has had time to cool, again check for leaks and ensure oil level on the dipstick is at the correct level.