

TECHNICAL BULLETIN



Subject: Cartridge Oil Filter Installation Tips

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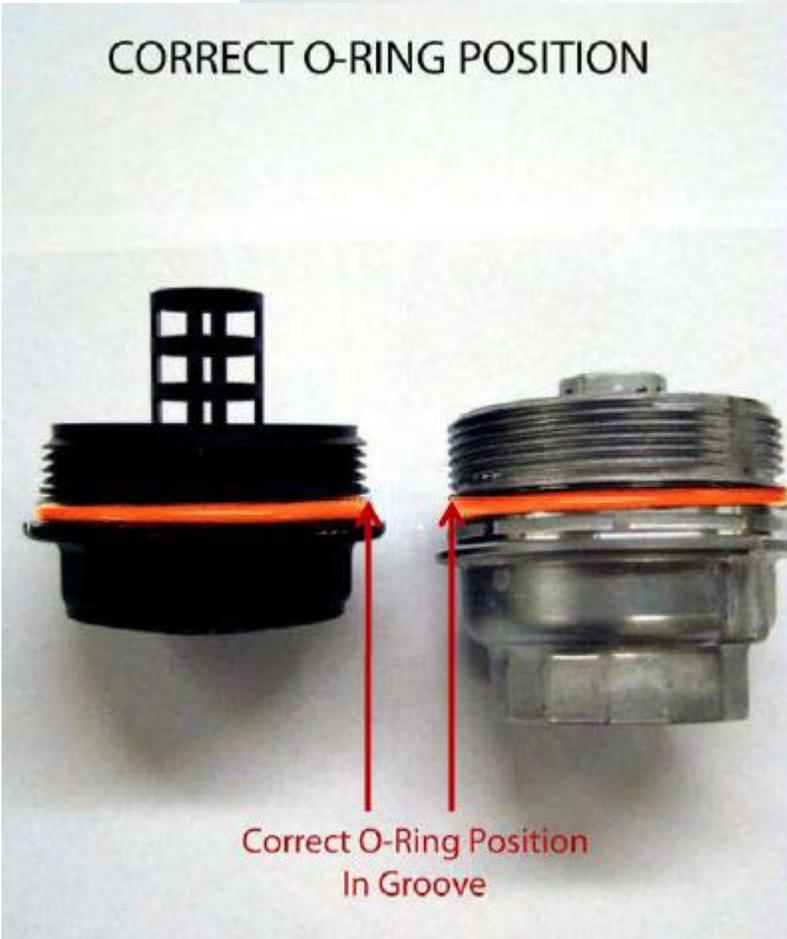
Cartridge filters are becoming increasingly popular in new vehicle applications. Although they are relatively easy to change and dispose of, extra care must be taken when installing a replacement filter. **Failure to follow proper installation procedure may result in oil leakage and engine damage.** Applications may differ slightly, but the following installation instructions should be applicable to most.

1. Drain oil from oil pan by removing pan plug. Dispose of used oil in an acceptable method.
2. Locate filter housing and remove drain plug from housing cap (if applicable) allowing any residual oil to drain from housing. Using an appropriate tool, remove the filter cap from housing. Note location of o-ring seal on housing cap drain plug (if applicable) and housing cap, remove o-ring(s) making note of where they were removed and set aside. Remove filter cartridge from cap or housing and set aside.
3. Clean both filter housing cap and filter housing. Use a flashlight to examine for damage such as a breakage, cracks, or damaged threads. Make certain that the groove in which the o-ring(s) seat are clean and un-damaged. If necessary, replace damaged components.
4. Compare the new filter cartridge and included o-ring(s) with the used filter and o-ring(s) that were set aside previously to make certain that you have the correct filter for your application. If a washer seal is included for the oil pan drain plug, replace the seal at this time. **Do not re-use any of the old o-ring(s) as they are not designed for multiple service intervals. Re-use of the old o-ring(s) may lead to oil leakage and possible engine damage.**
5. Apply clean engine oil to the new o-ring(s) and the o-ring grooves in the housing cap. Install the new housing o-ring onto the housing cap by rolling the o-ring evenly into place in its groove. Make sure the o-ring is positioned in its correct location when in place (see photo). If the o-ring appears to be twisted, slide the o-ring around in the groove and allow it to straighten out.
6. Place the new filter cartridge in the housing cap or the filter housing and install housing cap on filter housing by hand until you feel the o-ring compress. Using an appropriate tool, tighten the housing cap as indicated on the cap or in the owner's manual. Do not over-tighten the cap. Install the housing cap drain plug o-ring (if applicable) into the groove on the drain plug or the housing cap. Install the housing cap drain plug by hand into cap and tighten as indicated on the plug or in the owner's manual.
7. Install the engine oil pan drain plug by hand. Tighten as indicated in the owner's manual.
8. Add new engine oil as indicated in the owner's manual. Run engine several minutes. Use a flashlight to look for leaks at drain plug(s) and housing. Turn engine off and allow several minutes for the oil to drain back to the pan. Check oil level on dipstick and confirm oil is in recommended operating range.

INCORRECT O-RING POSITION



CORRECT O-RING POSITION



O-Rings Highlighted in Orange for Demonstration Purposes Only