



Tech Tip

OIL FILTERS 123

OIL FILTER LEAKAGE Honda's SUV Fires Linked to Botched Oil Changes

The automotive information network has been filled with warnings and cautions concerning the 2003–2004 Honda CR-V Sport Utility Vehicles and fires occurring after an oil change. When twenty-seven of the mentioned vehicles turn into an inferno following a lube service, it naturally causes concern. We have received reports that some lube shops are refusing to perform a lube service on the mentioned vehicles and instead referring the customer back to the Honda dealer for service. It's not just the independent shops encountering the problem. I have spoken with one Honda dealer tech who encountered a leaking oil filter following his lube service. Negligence on his part contributed to the oil leak while performing a routine oil and filter change. Pressed for time, he failed to notice that the gasket from the filter he just removed was stuck to the engine. This resulted in a double gasket installation when he installed the new filter. Within seconds following the start-up, the undercarriage of the vehicle was dripping with oil. Fortunately, no damage occurred.

In addition to the research performed by Honda, the National Highway Traffic and Safety Administration (NHTSA) has been involved in the investigation and evaluation of the damaged or destroyed vehicles. The conclusion of their investigation was the same as that provided by Honda. The conditions had been a direct result of improperly performed lube services and installer error when changing the oil filters. While no injuries have been reported, many of the vehicles were destroyed, some with less than 10,000 miles on their odometers. According to the study by Honda and NHTSA, improperly installed oil filters had been the reason for the fires. The leaking filters sprayed oil directly onto the hot exhaust system and ignited.

HONDA DEALER NOTIFICATION

Honda responds to its dealers in a notice of awareness involving the proper service procedures when per-

forming a lubrication service. While the problems and encounters are rare, the results of an incorrectly performed oil change can be a costly encounter involving engine damage and the potential for fire damage, resulting in a partial or total loss of the vehicle.

With an increase in the number of complaints of oil leakage following a lubrication service, Honda emphasizes that proper installation of the oil filter must be performed. Honda's focus is on the condition of the filter gasket, preventing a double gasket installation, or actual damage to the gasket during installation. Any of the mentioned can promote leakage, resulting in engine damage and the potential for a fire.

Honda emphasizes that the following guidelines should be followed when changing the oil filter to prevent the potential for leakage:

- 1) Thoroughly inspect the engine for evidence of the old filter gasket.
- 2) The sealing surface of the engine that makes contact with the filter gasket must be clean and free of any contaminants. Wipe the surface with a clean shop cloth.
- 3) Inspect the new filter gasket and clean the filter threads and gasket surfaces accordingly.
- 4) It is imperative that a light coat of clean engine oil be applied to the filter gasket. Making a dry installation will roll the gasket and disrupt its sealing ability, or it can shear the gasket when tightening the filter (see illustrations).
- 5) Make certain the filter is properly tightened to obtain compression and sealing of the gasket, to prevent leakage (see footnote).*
- 6) Once the oil has been installed and the recommended oil level has been confirmed, Honda recommends running the engine for more than three minutes to confirm there is no leakage.

*** Footnote:** In the above guideline number 5, Honda was not specific on how tight to tighten the filter. We pulled up a service spec on the mentioned CR-V and we found two specs based on numbers or symbols printed on the filter canister. Honda has made a consolidation from an 80mm filter to a 65mm design and that's the reason for the two specs.

- a) If the filter canister reflects numbers 1-4 or arrow symbols which represent the same counts (i.e....one arrow symbol representing number 1, two arrow symbols representing number 2, etc.) the filter is to be tightened $\frac{3}{4}$ turn once the gasket lightly seats against the engine block.
- b) If the filter canister reflects numbers 1 to 8 printed on the outside of the filter, the filter should be tightened $\frac{7}{8}$ turn once the gasket lightly seats against the engine block.

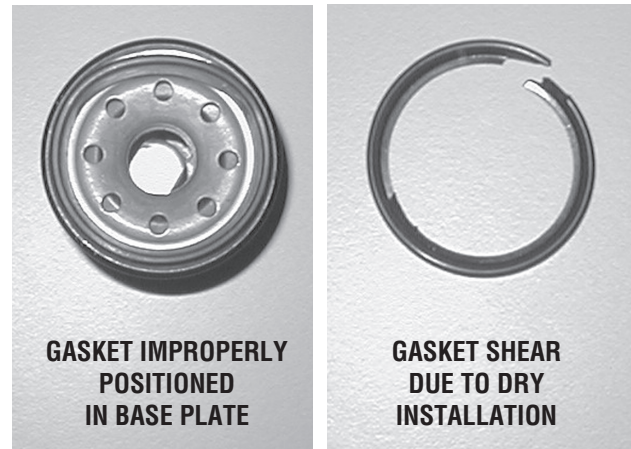
Honda currently offers the smaller 65mm filter for the mentioned application, which reflects the arrow symbols positioned on the filter's canister. This would indicate a $\frac{3}{4}$ turn of the filter once the gasket makes contact with the engine. The number of turns to tighten the filter is not something new from Honda specifically for the CR-V. Other year models and platforms reflect the same oil filter tightening procedures, some even illustrate a foot pound torque for the filter. Regardless of the number of turns a filter is tightened, always leak check the engine following a filter replacement. And remember Honda specifically states...***run the engine for more than 3 minutes and observe for leaks.***

PROTECTIVE WRAPPING

Honda cautions its dealer technicians on the proper procedure to follow when unwrapping the plastic coating on the filter to prevent engine contamination. Punching a hole through the center of the plastic in the area of the mounting hole is the normal method. Honda advises that this procedure can contaminate the filter with fragments of the plastic wrapping that can be pumped into the engine promoting a clogged oil passage, resulting in oil starvation and engine damage. The proper procedure is to hold the filter with the threaded hole pointed downward, while tearing the plastic from the side of the filter casing. This prevents any loose material from falling into the filter.

Do not disturb the integrity of the gasket when removing the plastic protective covering from any filter. Often the gasket will be pulled from the base plate retainer, resulting in leakage once installed. A thorough inspection of the gasket should be performed on any oil filter, prior to making the installation.

The unfortunate occurrence with the Honda CR-V should impress just how imperative it is to follow the proper procedure when performing a lube service on any vehicle. The ironic part concerning all the publicity with the Honda CR-V and the studies performed is that it illustrates what the automotive industry has been stressing all along. This would include: perform a thorough inspection to make certain the old gasket is not stuck to the engine, clean the surface contact areas, make certain the gasket is positioned correctly in the filter's base plate retainer, lube the gasket with clean oil, tighten the filter properly and last but not most important...leak check the filter installation.



The above illustrations reflect a gasket improperly positioned in the base plate retainer and gasket shear due to a dry installation. Major oil leakage is certain with either condition.

While this article has focused on filter sealing problems with the 2003–2004 Honda CR-V, the same filter and gasket arrangement is common to other vehicle manufacturers, including Chrysler, Kia, Mazda, Mercury, Mitsubishi, Toyota and Nissan. The same conditions and symptoms can apply to those vehicles.

**LARRY HAMMER
TECHNICAL SERVICES**