

THE PREVENTIVE MAINTENANCE SERIES

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Oil leaks can be caused by, or prevented with, technique and parts choice. (Part 2)

Oil Pan: Use the hard paper gasket if possible because it will retain torque (original on late model). Use a hammer and socket to flatten the oil pan holes and straightedge the seal surface, adjusting as necessary. I use the hard gasket, high temp RTV, new 1" grade 8 bolts with flat and lock washers, and torque to 10 ft.lbs. You may have to search for the correct ¼" washers, the Chinese decided to change our original size. Also chase the threads when using the slightly longer bolts. There is a difference between late model and early model oil pans; the early was designed with cork gaskets, the late for hard paper gaskets. They both can be used with the paper gasket if you are careful about straightening. There is no service operation that requires removing the pan other than engine overhaul or clutch/converter housing, so take the time to do a quality job and you are set for the life of the engine.

Oil Pump Dummy Shaft: The stationary steel shaft that is part of the oil pump was installed in the aluminum housing with the end exposed. I suspect it was pressed in at the factory instead of being heat shrunk, which would broach aluminum ahead of the shaft. As the dissimilar metals heat up, a small but irritating leak can occur. Use a Dremmel tool or sandpaper to rough up the area, clean with paint prep (or similar) and apply a good two part quick set steel epoxy to cover the shaft end.

Valve Covers: Although there are some 6 hole covers (for 6 hole heads), most are divided into two categories: the narrow sealing area covers and the wide sealing area covers that also utilize the spring reinforcements. If possible, use the second design cover (wide sealing area) with grade 8 bolts and the spring reinforcement. I find the current rubber gaskets work fine put on dry and tightened until the spring reinforcement bends in and just touches the cover. There are 6 hole gaskets available if you have those heads and covers.

Be sure and straightedge the areas of the head between the bolt holes – many heads are warped slightly. You can use sealer between the bolt holes to compensate for a slight warp. Always check for warp if the heads are off since they can be straightened at a machine shop.

The threaded holes in the head are a problem sometimes, usually because of somebody before you. Chase the threads and you can use 1" long grade 8 bolts for a more secure job – you may also be able to use the longer 1" bolts if the existing threads are in poor condition. If you have stripped holes that longer bolts do not help, Helicoil installation is the preferred method of repair. The ¼ x 20 kits are available at any auto parts store but some do not include the drill bit which is 17/64.

Oil Filter and Alternator Adapter: This aluminum housing has a thin machined sealing surface that must seal against full oil pump pressure; a mistake here can be traumatic. When installing a new gasket, the sealing surfaces must be clean and free from scratches and dents. A light coat of spray Coppercoat on the gasket has worked well for me and I

use grade 8 bolts and 15 ft.lbs. in lieu of the stock 13 when applying torque. An additional help item is to cut the heads off of two 5/16 x 2 coarse thread bolts and use them for guide pins. This helps keep the gasket from moving when mounting the housing.

Engine Top Cover: The steel baffle is secured between two aluminum castings so you have different coefficients of expansion plus oil being sprayed on the area continuously. Added to that is the fan belt trying to lift the front of the cover up. You need a complete cleaning and checking for good sealing surfaces to prevent seepage or outright leaks that the cooling air picks up and sends over the crankcase and cylinders. Use a light coat of RTV and I like to use 1 1/2" grade 8 bolts, medium blue Loctite, flat washers and lock washers, and torque to 15 ft.lbs.