FILTER MANUFACTURERS fmc COMMUNITY

TECHNICAL SERVICE BULLETIN 89-2

# Incorrect Flow Direction in Liquid Filters

Any internal leakage of coolant into the lubricating oil in an engine can cause serious damage to the engine. Some examples of areas where coolant could enter the oil are:

1. Damaged head gasket
2. Cracked head
3. Cracked block
4. Leaking oil cooler
5. Leaking cylinder inner seals
6. Leaking injector seals

Coolant causes the lube oil to change chemically as indicated by the milky appearance of the oil. Coolant contaminated oil does not provide the high lubricity required between close tolerance parts, thus causing friction heat. The heat causes more oil deterioration. Sludge begins to form, interfering with:

1. Positive operation of lubrication system pressure regulator valves and the oil filter by-pass valve.

2. Oil filtration suffers as filter media becomes plugged. The filter may even experience such high pressure differential that interior parts may collapse.

This contaminated lube oil does not properly lubricate bearings. The first effect is excessive wear to internal engine parts. The oil does not provide the film strength needed between the rod and main bearings and the crankcase journals. High temperature friction melts and welds the bearing surfaces to the journals.

Check the coolant level regularly. Also, check the coolant recovery tank level. With a cold engine, the fluid level should be at the **"COLD LEVEL"** mark. If additional fluid is repeatedly needed to maintain the proper coolant level, then a coolant leak is likely. It must be determined whether this is an internal leak or an external leak. Corrective action should be taken immediately, especially if there is an internal leak.

**FOR ADDITIONAL INFORMATION, CONTACT:**

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