TECH TIPS
CONTAMINATION SOURCES

Lessen The Chance Of Contamination.

Filters are designed to promote long system life by protecting vital components from harmful contaminants. By understanding where contaminants can come from, there are measures that can be taken to lessen the chance of contamination.

Contamination can come from several sources. They can be:

- Ingested
- Built-In
- Created

Ingested contaminants come from outside the engine. They can be introduced through a variety of ways. Contaminants can enter through system components, including crankcase breathers and the air intake.

One of the most common sources of contamination is through fluids added to the system. While cleanliness levels are required for such fluids, the standards still allow for small amounts of contamination, including water. Water in engine fluids can promote the formation of acids, sludge and oxidation, that can attack internal components, cause rust and adversely affect fluid properties. Take care when performing maintenance to assure that all fluids that go in are as clean as possible.

Contaminants can also be introduced when the equipment is being serviced. Dust can be dislodged from an air filter and oil can pick up contaminants from a dirty funnel. Degraded gaskets can also cause issues if they are not carefully removed and replaced.

Built-in contaminants are left behind during the manufacture of the engine and its components. Metal filings, dirt, sand and other contaminants are commonly found in new engines.

Created contaminants appear when moving engine parts cause minute pieces to break off and enter the air or fluid stream. Sources of created contamination include combustion by-products and oxidation in the engine. Additional particles are created as fluid makes contact with cylinder walls and pistons, injectors and crankshaft bearings. These created contaminants can cause catastrophic failures if they are not filtered from the engine.

While contamination is inevitable, the damage caused by it is not. Using a quality filter designed for your specific application will help you remove contaminants and extend the life of your equipment.