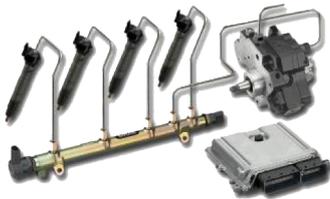


THE IMPORTANCE OF CLEAN FUEL

Manufacturers of diesel engines are utilising new technologies to meet the stringent requirement of tightening emissions regulations.

The High Pressure Common Rail (HPCR) Fuel Injection System has been broadly accepted by light and heavy diesel engine manufacturers as an integral part of meeting these new regulations. Frequently HPCR systems operate at pressure between 27,000 and 45,000 psi.



Common rail fuel system components operate under these pressure ranges multiple times every minute and they simply do not have tolerance for dirty, wet or contaminated fuel! In fact, it is now being observed that particles in the size range of bacteria are creating wear, which is frequently described as erosion. Erosion has a detrimental effect on the injectors ability to seal and contamination is frequently linked to premature fuel pump failure.

In order to protect fuel systems, many diesel engine manufacturers now specify the required cleanliness level of supplied fuel. Tank contamination in

excess of that specification may have warranty implications. On board filtration is designed relative to specified cleanliness levels.

Fuels typically leave refineries clean, but contamination levels increase and occur throughout the shipment and distribution process. Most contaminants found in bulk fuel systems occur either as the result of poor handling practices and aged/inappropriate infrastructures.

Common contaminants include rust, scale, airborne dust, various types of oxidation sludge, bacteria, water (from condensation, rain or wash water) and

fuel additives which can turn insoluble after excessive storage periods.

The introduction of new fuels such as Ultra Low Sulfur Diesel and Biodiesel have introduced new corrosion and complex contamination problems; previously stable additives can now react to form gels and sludge.

A sudden increase in filters blocking is a good indication that there is a chemical change in the fuel or oil. Generally bacteria or chemical changes in fuels or oils will block filters far more rapidly than any particulate contamination.

Remember - it's not the fault of a filter that it blocks! It's actually doing what it's designed to do. Putting on a coarser filter than what is recommended has only one effect, it will allow more contamination to pass.



1 CLEAN 2 PROTECT 3 POLISH

Donaldson not only provides on board filtration protection but also offer a complete range of user friendly bulk filtration systems utilising industry leading technologies designed to protect your systems now and in the future.

- ✓ Clean before going into storage
- ✓ Keep it clean while in storage
- ✓ Polish it at the dispensing point



Common industry ISO cleanliness ratings

ISO 22/21/18	ISO 18/16/13	ISO 16/14/11	ISO 14/13/11	ISO 22/21/18 - Common cleanliness level of fluid
				ISO 18/16/13 - Target rating for heavy gear/engine oils
				ISO 16/14/11 - Target rating for hydraulic/transmission oils
				ISO 14/13/11 - Target rating for diesel fuel

THINK FILTERS. THINK DONALDSON



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