Donaldson
FILTRATION SOLUTIONS

Clean Fuel & Lubricant Solutions

Rossee Oil

Thank you for the opportunity to visit your facilities and provide our filtration recommendations. Please find below our recommendation for single pass filtration based on our recent site visits.

Donaldson's "Clean Solutions" philosophy will address specific filtration needs in detail and how it can be applied to your specific sites.

CLEAN: INLET FILTRATION

Donaldson's core philosophy is to clean fuel at the INLET, before it ever reaches the storage tank. This makes sense for two reasons:

1) It protects your tanks and current fuel investment from potential contamination by a delivery of dirty or improperly blended liquid. The problem is much smaller and easier to contain at this point than it is once your entire system is contaminated.

2) It is the most efficient place to filter. The constant flow from the delivery truck does not "shake" the filters, which would cause dirt to slough off into the fuel supply. (Every time flow stops and starts dirt is dislodged; true of any brand of filter, especially common on-vehicle.)

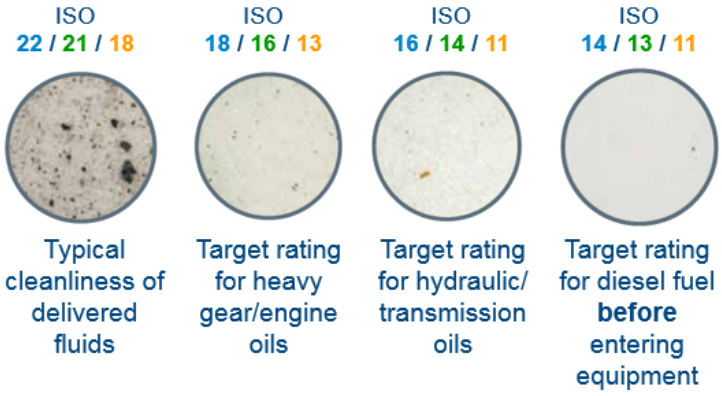
Why not simply prevent problems before they occur?

PROTECT: TANK PROTECTION

If only CLEAN diesel reaches your tanks, then keeping it clean and dry is fairly straightforward. A T.R.A.P. Breather prevents ingression of water and particulate from the atmosphere. An A.R.V. provides a constant flow of clean, dry air, eliminating the moisture created by condensation, and (with time) helps to reduce the concentration of water in your fuel, which can contribute to oxidation, microbial growth or additive drop-out in your tank.

POLISH: OUTLET FILTRATION

The OUTLET is the most **CRITICAL** place to filter, so Donaldson recommends POLISHING the fuel one last time before it enters sensitive new equipment. This ensures that unstable fluids or contamination caused by the tank itself are removed and only fuel with the target ISO cleanliness level of 14/13/11 or better enters your equipment.



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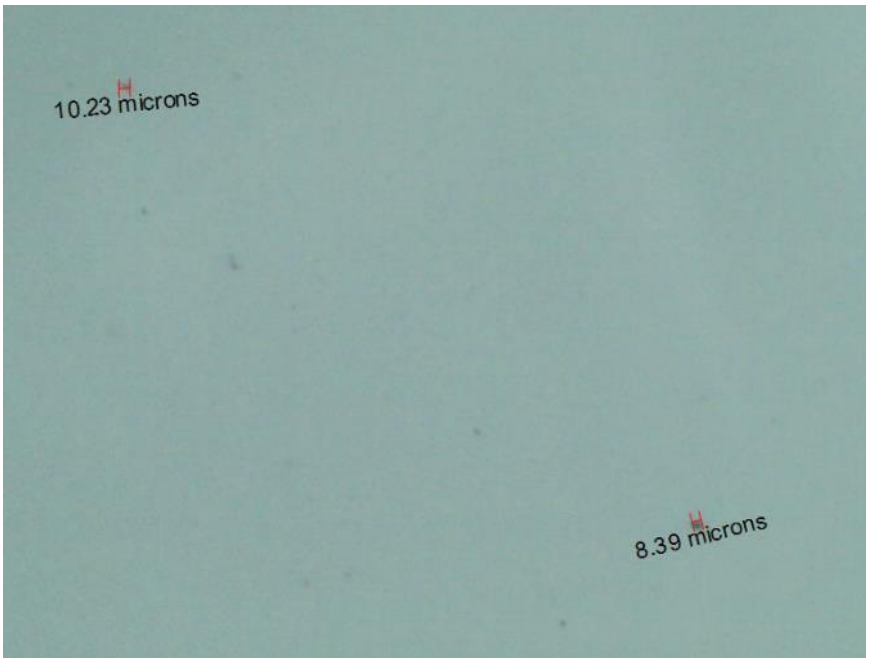
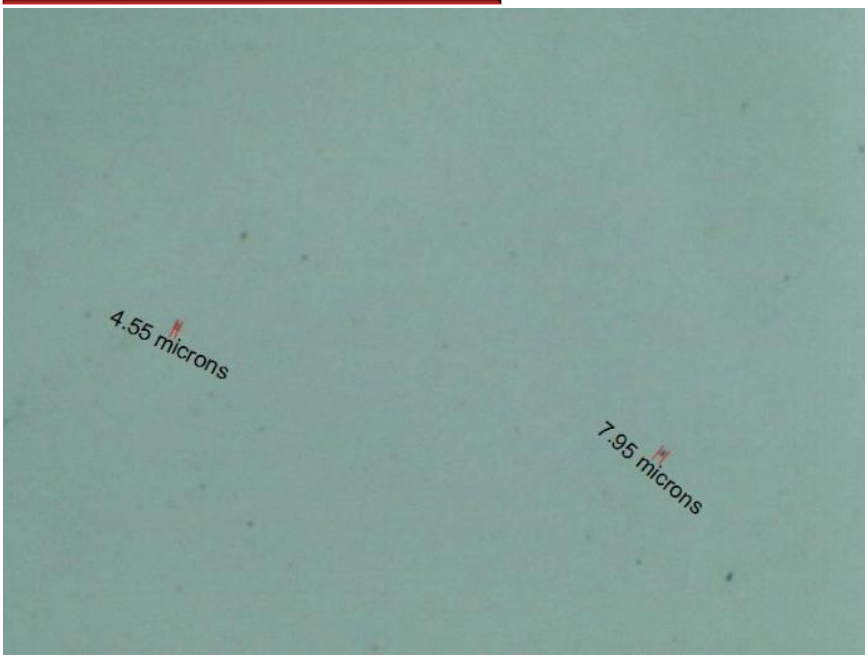
Overview: Two samples (BT & B118) were patch tested for comparison ISO Cleanliness ; see results below.

BT ISO Cleanliness Code: 14/13/11



B118 ISO Cleanliness Code: 14/13/11



PARAMETERS AND CALCULATIONS

CLEAN INLET SYSTEM SIZING (Differential Pressure and Flow Curves)

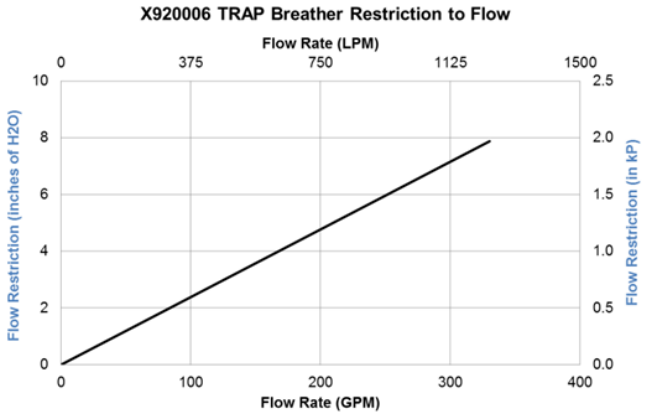
Clean differential pressure drop should be below 15 psi for the system. Service intervals depend on quantity and quality (cleanliness) of fuel as well as the user's preference in balancing filter life vs. flow rate. Typically, diesel filters are changed when differential pressure is between 30 and 50 psi.

Dirt loads slowly and evenly. If rapid (less than 60,000 gal) or sudden clogging is experienced, it indicates a different kind of fuel contamination issue which requires immediate attention (glycerin or additive dropping out of solution, typically). Please contact us if this occurs.

PROTECT BREATHER SYSTEM SIZING

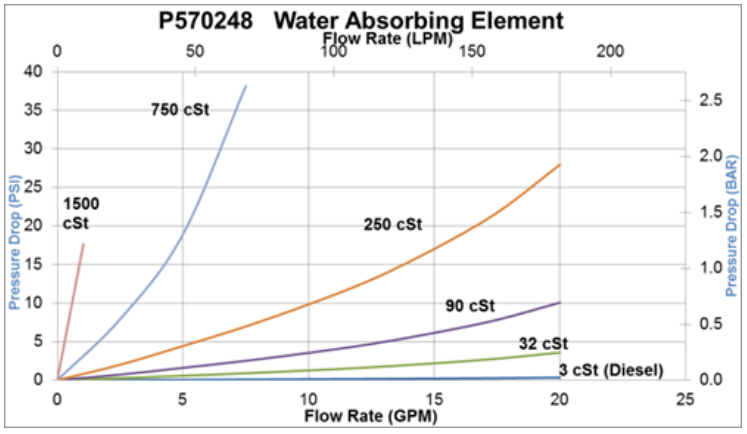
To protect your fuel while it's in the tank, we must keep out ambient contaminants and water. A T.R.A.P. Breather functions as a highly efficient air filter (3 micron) and desiccant breather in one. Unlike traditional desiccant breathers, however, the TRAP Breather self-regenerate by "blowing out" captured moisture each time the tank exhales.

The breather filter does present some restriction to airflow. Accurate tank collapse pressure ratings must be known prior to installation. If necessary, two breathers can be installed to half the pressure drop. In this case, one breather appears to be adequate.



POLISH OUTLET SYSTEM SIZING

Outlet filtration is the last chance to catch contaminant generated in tank additionally is the best location to prevent free water from entering equipment (OE's specify ZERO free water in newer engines).



Please do not hesitate to contact me with any question or concerns you may have and thank you again for this opportunity.

Nick Rowe

Nick Rowe

Regional Sales Engineer - East

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Clean Solutions & Mobile Hydraulics

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