

TECH TIPS

FUEL/WATER SEPARATORS

Water is a diesel fuel system's worst enemy.

Water is the most common and most damaging contaminant in diesel fuel. Water can be found in all diesel fuels due to condensation, handling and environmental conditions. Water causes rust and corrosion, creating damaging hard particulates in the fuel, accelerating degradation. Water also reduces diesel's natural lubricity which further increases wear on high precision injection components.

Water in diesel fuel

Two types of water found in diesel fuel:

Dissolved Water – Low levels of water which can be dissolved in the fuel, measured in parts per million (ppm). Dissolved water is normal and changes with environmental relative humidity.

Free Water – Water that is created by condensation in the fuel tank and falls out of suspension in the fuel gathering at the bottom of the fuel tank. Free water is commonly caused by poor handling and storage.

Microbes in diesel fuel

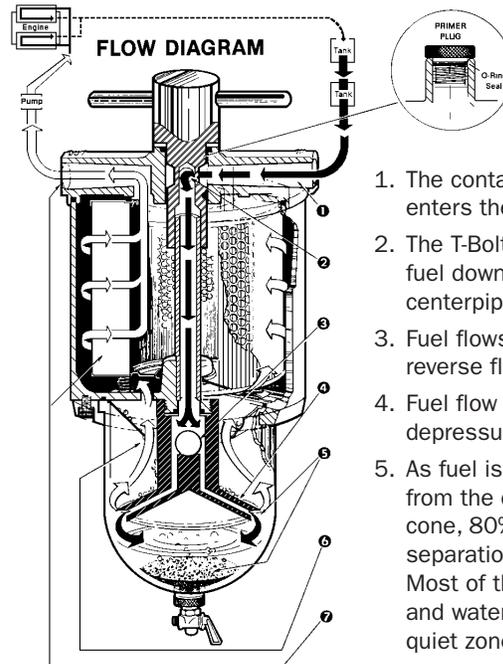
Microbes (bacteria and fungus) in diesel fuel is another serious problem. Microbial organisms need water to multiply.

If a fuel tank contains microbial contamination, a black, slimy coating will develop on the fuel filter, causing premature plugging of the fuel filter and corrosion of fuel system components. To prevent microbial growth, it is important to control water buildup in the fuel tank.

DAHL fuel/water separators

To remove water and to prevent microbial growth, it is important to filter fuel with a fuel/water separator. DAHL's functional dual-chamber 3-stage diesel fuel filter/water separators provide efficient suction side water separation and contaminant filtration. The key is the unique DAHL patented depressurizer cone which spreads the flow of the fuel. With more area to flow over, greater separation of water and dirt from the fuel is achieved.

DAHL diesel fuel filter/water separators have less mechanical flow resistance than other separators, because the fuel changes direction only twice. The DAHL unit removes virtually 100% of the water and most of the contaminants from the fuel.



1. The contaminated fuel enters the inlet port.
2. The T-Bolt redirects the fuel downward through the centerpipe.
3. Fuel flows through the reverse flow valve.
4. Fuel flow is spread by the depressurizer cone.
5. As fuel is discharged from the depressurizer cone, 80% of contaminant separation takes place. Most of the solid particles and water settle into the quiet zone of the bowl.

6. As the fuel rises upward, any remaining minute water droplets coalesce on the cone, baffle and bowl surfaces. Droplet size and weight gradually increase, causing downward flow into the sump.
7. Fuel is filtered completely by the element, which contains HydroShield™ media. The clean fuel then continues upward through the outlet port and on to the pump injection system.

FLOW RATE GPH (U.S.)

Model Series	Recommended	Maximum	Sump Capacity
65 & 75	20	30	4 oz.
100	40	65	8 oz.
100 Double	80	130	16 oz.
150	80	100	8 oz.
150 Double	160	200	16 oz.
200	120	200	24 oz.
200 Double	240	400	48 oz.
300	180	325	24 oz.
300 Double	360	650	48 oz.
300 Triple	540	975	72 oz.
500	1800	1920	11 Gallons
500 Double	3600	3840	22 Gallons
All multiple Units	Multiply Flow Rate and Sump Capacity by Number of Units		

How to Select the Right DAHL Filter

Choose the size which can accommodate the flow rate recommended in the chart. (Maximum flow rate listed is for convenience in comparing with other systems only.) For most efficient separation and filtration, select from the recommended column.

Flow Rates in Gallons Per Hour

The chart is for Fuel/Water Separators. Recyclers are limited by the pump. For example, a single 300 recycler unit has a flow rate limited to 180 GPH (U.S.), and a double 300 recycler unit has a flow rate limited to 360 GPH (U.S.)

Carquest provides single source coverage for on-highway and off-highway fleets. Carquest filters are designed and manufactured by Baldwin Filters®, America's leading heavy duty filter company for over 80 years.

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