

FUEL FILTRATION

Product Line Overview

Filtration Solutions &
Condition Monitoring

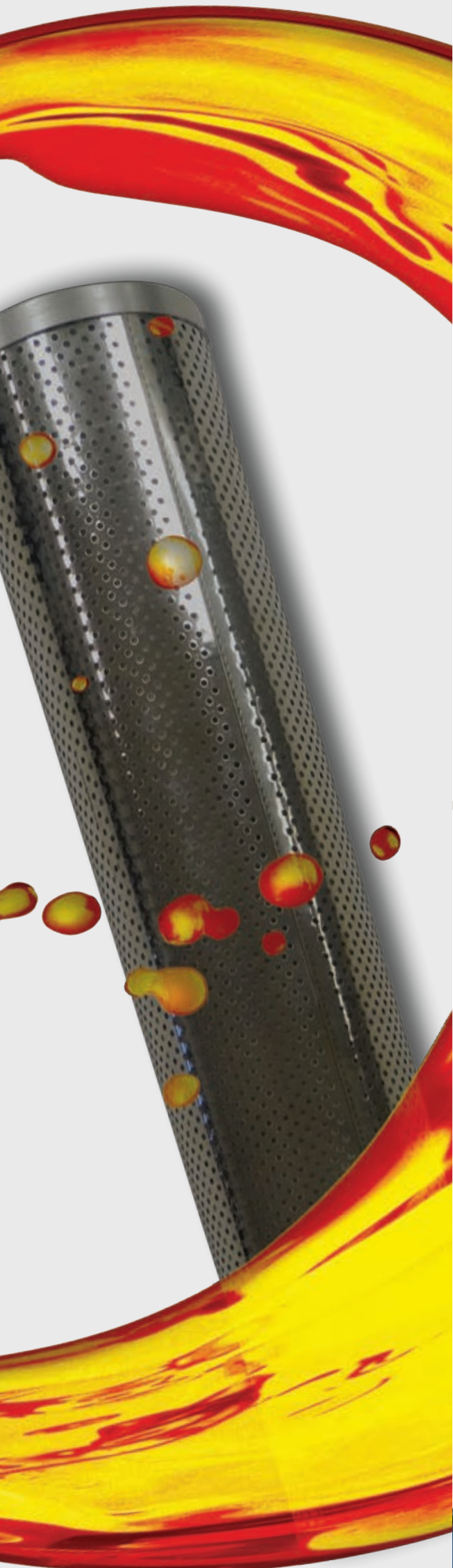
Mobile Equipment
Fuel Filtration

Particulate &
Coalescing Solutions

CNG Filtration

ASME Filtration Vessels

Turn-Key & Custom Solutions



The New World of Advanced Diesel Filtration

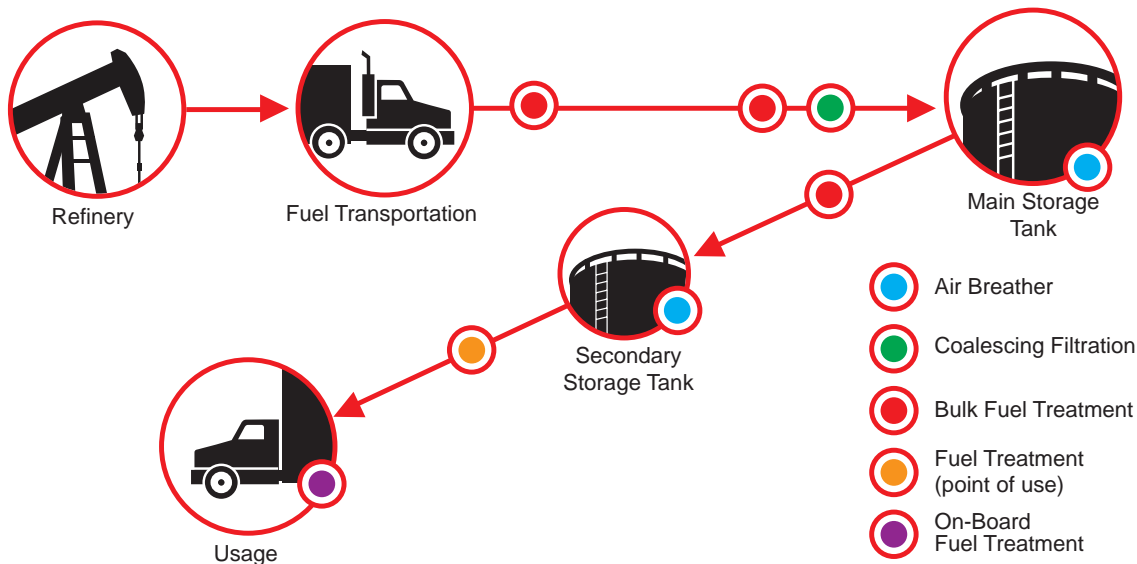
Tier IV emissions requirements and industry guidelines, such as the ones outlined by the World Wide Fuel Charter, are raising the bar for fuel cleanliness and water removal. For instance, High Pressure Common Rail systems, developed to maximize efficiency, require meticulously clean fuel to be compliant with the precision tolerances of a modern engine design. Unfortunately, the lubricity enhancing additives and biodiesel blends commonly found in today's Ultra Low Sulfur Diesel (ULSD15) sharply reduce the overall performance of previously acceptable diesel fuel/water separators by up to 40%. In short, fuel/water separators from the past that were 99% efficient in removing water are now roughly 68% efficient.

Yesterday's standard diesel fuel filters and fuel/water separators are no longer sufficient as a stand-alone solution. The fuel must be filtered and dewatered at every stage of the transport chain – from production in the refinery to the end user.

For this reason, Schroeder Industries has continuously improved our patented, ultra-high efficiency, coalescing media. When coupled with our high efficiency particulate media, we can ensure that the fuel being used by diesel-powered equipment is both clean and dry, meeting or exceeding existing published engine manufacturers' specifications.

Schroeder Industries' product range includes fuel filters, filtration systems, and condition monitoring equipment necessary to do it all. For every step of the process – from production to consumption – we provide specific products for optimum diesel fuel conditioning and monitoring:

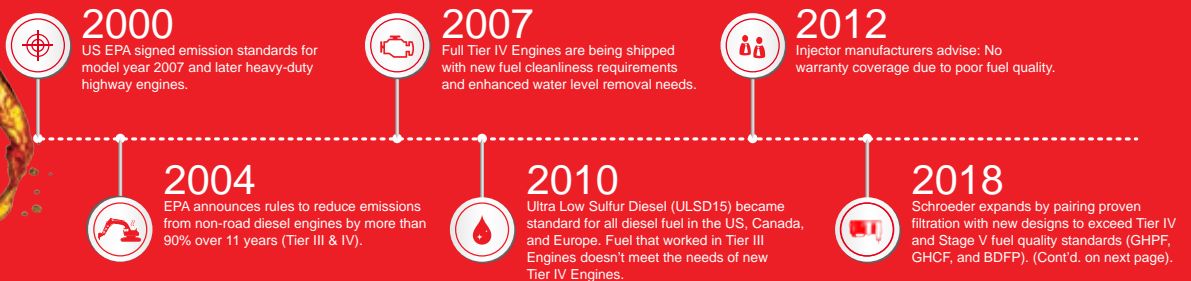
Diesel: All Around Protection



For more information on finding Schroeder - from product to consumption - reference our **L-4535 DIESEL: ALL AROUND PROTECTION** brochure



Diesel Engine Emission Standards Timeline



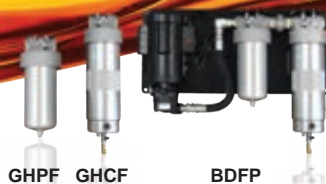
We Have Products for: **BULK STORAGE**

Coalescing filtration is a highly effective method to remove water from diesel fuels. Water may be introduced into the fuel supply through leaks and ambient humidity. Water in fuel storage tanks promotes microbial growth, creating an acidic corrosive contamination in fuel systems once established. **Because of this, Schroeder offers a complete line of stationary and mobile bulk diesel particulate and coalescing filters for eliminating microbial growth at the source:**

GHPF, GHCF, & BDFP | Coalescing & Particulate Solutions

Coalescing and particulate filters for fuel dispensing, transferring, and polishing applications

- ◆ 100 gpm (380 L/min) particulate filter (GHPF),
25 gpm (95 L/min) coalescing (fuel/water separation) filter (GHCF),
14 or 25 gpm (53 or 95 L/min) polishing system (BDFP)
- ◆ Incorporates our patented fuel filtration to improve performance and capacity
- ◆ Full Schroeder-synthetic particulate and coalescing filter media vastly increases element service life (less element change-out)



BDS Series & LVH Series | Bulk Diesel Filtration

For use in high flow fuel filtration systems

- ◆ 70 - 280 gpm (265 - 1060 L/min) bulk diesel fuel skid (BDS Series),
211 - 476 gpm (799 - 1802 L/min) low viscosity coalescing vessel (LVH-C),
211 - 951 gpm (799 - 3600 L/min) low viscosity particulate vessel (LVH-F)
- ◆ In-line, high performance filtration solutions
- ◆ Innovative fuel filtration media technology for high-efficiency, single-pass removal of water and particulate in Ultra Low Sulfur Diesel (ULSD15) and biodiesel blends



We Have Products for: **MOBILE EQUIPMENT**

Advancements in engine technology, developed to meet Tier IV standards, require cutting-edge fuel filtration and polishing solutions to meet certain challenges. For instance, Tier IV fuel injectors now operate at high pressures of 30,000 psi [2070 bar] and higher with injector component tolerances commonly 2 µm or less in order to achieve current emissions requirements. OEM and Worldwide Fuel Charter recommendations advise diesel fuel contamination levels be at or below an ISO Code of 12/9/6 and water levels below 200 ppm. **Schroeder offers a complete line of on-board diesel coalescing filters for helping your mobile machinery achieve the above mentioned requirements:**

HDP Series | On-Board Diesel Coalescing Filters

Industry leading engine fuel pre-filtration in compact, cost-effective packaged solutions

- ◆ Flow rate options available up to 476 gph (600 lph)
- ◆ Designed to protect diesel powered (mobile) equipment from failures, breakdowns, and frequent/unplanned service intervals
- ◆ Small envelope size offers a great flexibility in mounting on your diesel powered (mobile) equipment
- ◆ Exceeds Tier IV standards for particulate/water removal in Ultra Low Sulfur Diesel (ULSD15) and biodiesel fuels
- ◆ Innovative electrical primer pump and automatic water drain options available to promote seamless integration on your equipment and continuous run-time



Continued on the next page.



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We Have Products for:

CONDITION MONITORING

Now that you understand the new world of advanced diesel filtration, you'll also want to utilize the tools to help monitor the condition of your clean fuel. Schroeder offers a complete line of condition monitoring and diagnostic tools to ensure the effectiveness of your filtration, as well as to document the cleanliness and dryness of your diesel:



The CS1000 | Contamination Sensor and the FCU1315 | FluidControl Unit are valuable resources for monitoring these values. From the measurements collected, it is possible to check and evaluate the entire transit path of the diesel in respect to required cleanliness. It's always better to be preventative than reactive. By monitoring the condition at every stage, you can better schedule the maintenance at your leisure versus when it is absolutely critical to production.



CS1000 | Contamination Sensor



Hy-Trax Manually Controlled Fluid Sampling System



FCU1315 | FluidControl Unit

Protection by Filtration

Efficient fuel filtration should achieve an ISO Code of 12/9/6 or better. Machine users and OEMs demand application-specific filter systems and elements with the highest possible contamination retention capacities, coupled with compact dimensions, compatibility of the elements with biodiesel fuels, and environmentally-friendly disposal.

Protection by Dewatering

Consumers with large tanks which are only seldom used and in which the diesel is stored for a long time (emergency diesel generators) are particularly prone to heavy deposits of particle contamination on the tank floor as well as elevated water content in the tank (due to condensation).

Furthermore, free water remaining in the tank over a long period of time gives rise to diesel bug (formation of micro-organisms such as types of bacteria, fungi, etc.) which can also clog the filter and diesel fuel system(s). For these reasons, water must be removed efficiently in a single-pass from the fuel to ensure that the water content is below 200 ppm water content.



Visit us online @ www.schroederindustries.com for our complete product offering!



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