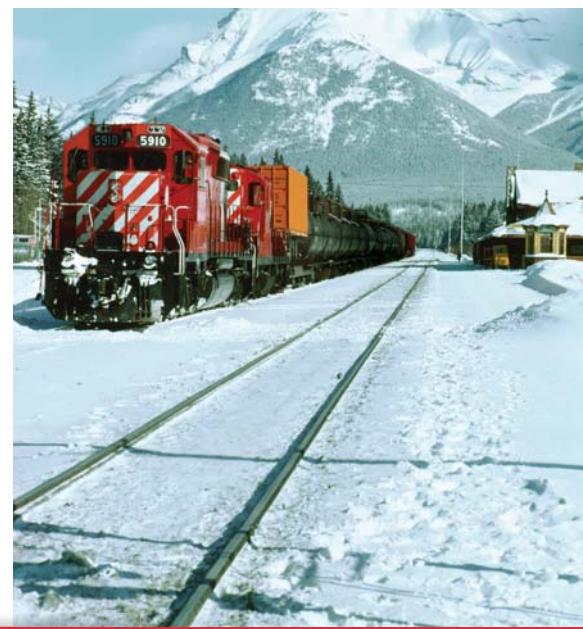
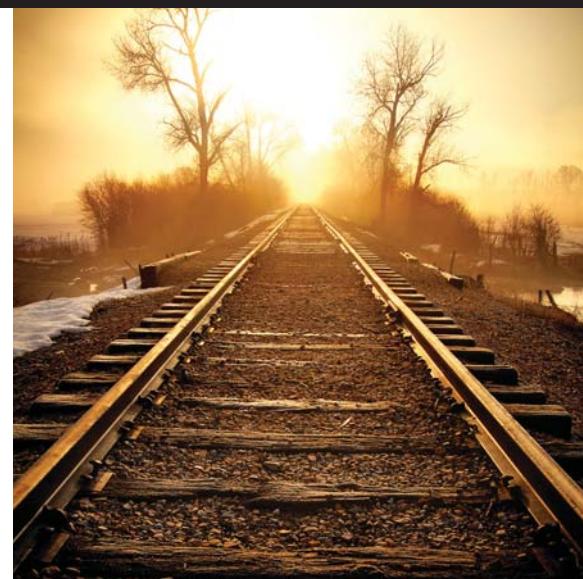


# LOCOMOTIVE FUEL FILTRATION



**Lower Maintenance Costs & Better Performance**

**Improved Reliability Through Cleaner Fuel**

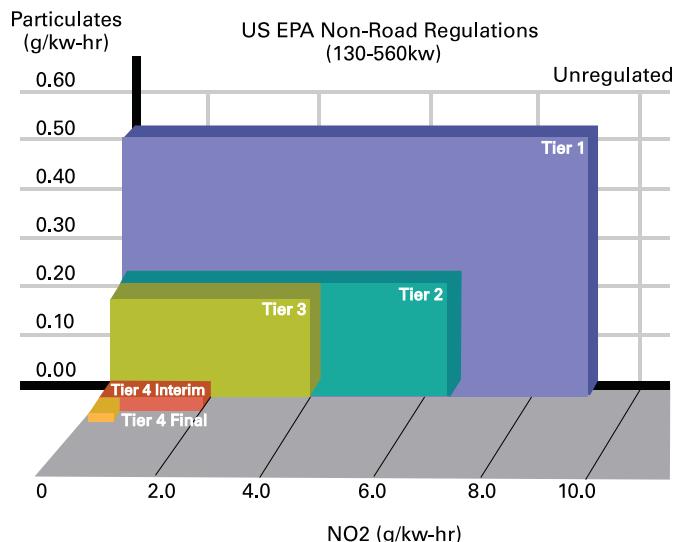
**Twice the Service Life with Low  $\Delta P$**

## Locomotive Fuel Filtration Application Explained

The driving force in Diesel Fuel Filtration are the requirements that Tier 3 and 4 engines will need to meet to lower particulate entrainment levels, as well as, reduced tolerance for entrained water. Non Tier 4 locomotives will also benefit by removing particulates that cause wear and tear and malfunctions of critical components, enhancing the life of the locomotive.

## Why Advanced Diesel Filtration Now?

Moving to Zero Emissions



### Three Key Characteristics of any Filter

- ♦ **Dirt Holding Capacity:** Amount of debris the elements can hold. This dictates service life of the elements between change outs.
- ♦ **Efficiency:** How effective is the element at removing particulate (ISO Code 4406 looks at three specific particle size ranges < 4 micron, < 6 micron and < 14 micron)
- ♦ **Pressure Drop:** Amount of resistance in PSI the fuel must overcome to travel through the element. Lower pressure drops equal improved fuel flow

### Power Drives / Schroeder Industries Solution

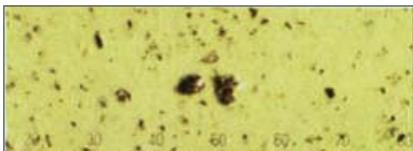
Optimized design to give you the best of all three characteristics

#### KIT PD15046G1

Contains (1) Top Element and (1) Bottom Element



Sample of a patch magnified to 100X showing a fluid at a cleanliness of approximately ISO 22/21/18, fairly typical of new unfiltered Diesel Fuel at the filling pump.



Sample of a patch magnified to 100X showing a fluid at a cleanliness of approximately ISO 10/2/2, slightly above the target level for clean diesel fuel.



### Advantages & Benefits of changing to PDI / Schroeder Fuel Filtration Elements

#### Fully Synthetic Design with Dual Layered Media

- Increases Dirt Holding capacity by 242% vs OEM filter
- Efficiency 99.98% of particle @ 4 micron or greater
- Clean Pressure Drop reduced by more than 50%

- Doubles the life between change outs
- Over 50% reduction in maintenance installation time
- Improved cleanliness per ISO code, which exceeds Tier 4 locomotive requirements

## Physical Enhancements to the Elements

### Improved End Cap Design and Handle

- More robust end cap prevents deformation
  - Allows element to sit flush and seal properly
  - Corrects common misalignment problems

#### Power Drives / SI

Optimized handle design and OD



Handle design  
allows element to sit flush  
and improve sealing



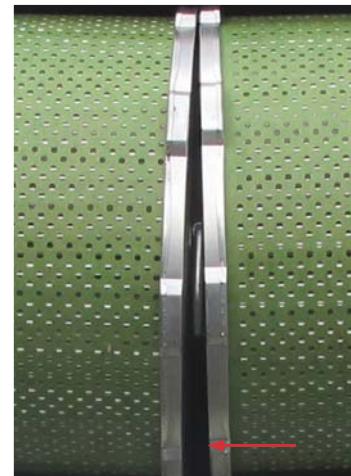
#### Competitor

Existing handle design and OD



Top element  
rests on these

End cap allows misalignment  
and premature failure



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**About Power Drives, Inc.**

Founded in 1945, PDI designs, manufactures and distributes pneumatic and hydraulic components, assemblies and systems. Driven by our culture of quality, commitment to innovation and focus on people, PDI is a world-class partner that delivers an exceptional value for our customers. With over 200 employees in multiple locations, we are proud to provide premier industrial distribution and manufactured products and engineering expertise to help solve problems and meet your goals.