



Donaldson Delivers

## Fuel Filtration

for Cummins® QSK Engines

Cummins® is a registered trademark of Cummins, Inc.

# THE CLEANEST FUEL. PERIOD.



Donaldson.  
**BLUE**™

# Donaldson<sup>®</sup>

## BLUE<sup>™</sup>

### Treated Baffle

The treated baffle provides a clean, finished surface for superior initial cleanliness and corrosion resistance.

### Synteq XP<sup>™</sup> Media Technology

Synthetic Synteq XP media provides better contaminant removal and superior contaminant retention.



### Inner Liner

Rugged, spiral wound construction allows efficient fluid flow without compromising collapse strength.

### E-coated End Caps

E-coating creates a clean, corrosion-resistant surface with a high strength bond to the filter media.



### Single Filter Design

Our single-stage filter design ensures that the engine receives clean fuel. These filters offer high-efficiency, low flow restriction and excellent dirt-holding capacity – with no complex, back up filter required.

## Donaldson Aftermarket Filter Warranty

### YOU HAVE A CHOICE

You can always choose top-quality Donaldson filters designed specifically for your engines and equipment and – as long as you change them according to the engine manufacturer's recommendations – using Donaldson filters **will not** void your engine manufacturer's warranty.



# A Better Way to Filter Fuel

## Better Fuel Filtration is Key for Modern Fuel Systems

Today's diesel engines need to maintain high performance levels to remain compliant with stringent Tier 4 emissions regulations. Fuel filtration plays a key role, with current high pressure common rail fuel injectors operating at pressures up to 30,000 - 45,000 psi (2,000 - 3,100 bar). This means it's important to deliver **CLEAN FUEL** to today's precision designed fuel system pumps and injectors to maintain performance.

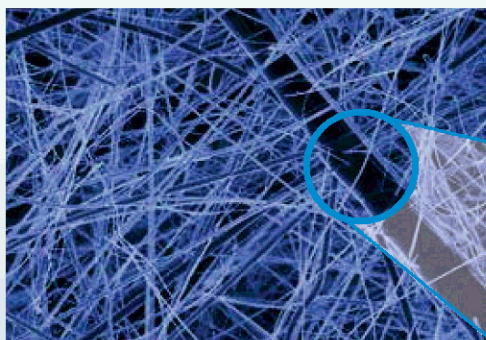
Today's engines also operate in a wide range of environments that include vibration, fuel pump pulsation and surging fuel flows. It all adds up to big challenges for your fuel filters.

### Are your fuel filters up to the challenge?

#### INDUSTRY-SHAPING SYNTEQ XP™ MEDIA TECHNOLOGY

On-engine fuel filters are your last chance to remove contaminant from your fuel system. It's key that your filters remove – and retain – as much contaminant as possible in all types of operating conditions.

**Donaldson Blue™ DBF5782** filters with Synteq XP media technology provide premium protection for your QSK engine fuel systems. They offer better contaminant removal and better contaminant retention under the dynamic operating conditions that your engines and equipment experience every day.



Donaldson's proprietary Synteq XP nanofiber media creates small, consistent inter-fiber spacing – increasing filter capacity. These unobstructed pores result in reduced pressure drop and increased surface area for capturing and retaining smaller particles.



**Resin-free, thermally-bonded fibers**  
During the media manufacturing process, the surface of the binding fiber is heat fused to bond to the surrounding micro-glass – no resin webbing to block pores.



#### Testing Vibration Effects on Fuel Filters

Donaldson reproduces modern environmental challenges with advanced performance testing. The result is consistent, superior filtration performance under dynamic engine operating conditions. The performance shown graphs are based on SAE J1985 single-pass test standards, with added vibration to simulate engine operating conditions, while monitoring filter performance and particle retention.



**Donaldson Blue DBF5782** consistently retains particles under high pressure common rail fuel system dynamics (engine vibration), protecting your hard-working equipment and maximizing your uptime.

#### PERFORMANCE UNDER ENGINE VIBRATION AND PARTICLE RETENTION

Compared to the competition's best product, the Donaldson Blue DBF5782 averages **4x CLEANER** under heavy-duty vibration testing over the life of the filter. Lower particle release means less micro-contamination is flowing downstream to the fuel injectors.

#### START TO FINISH

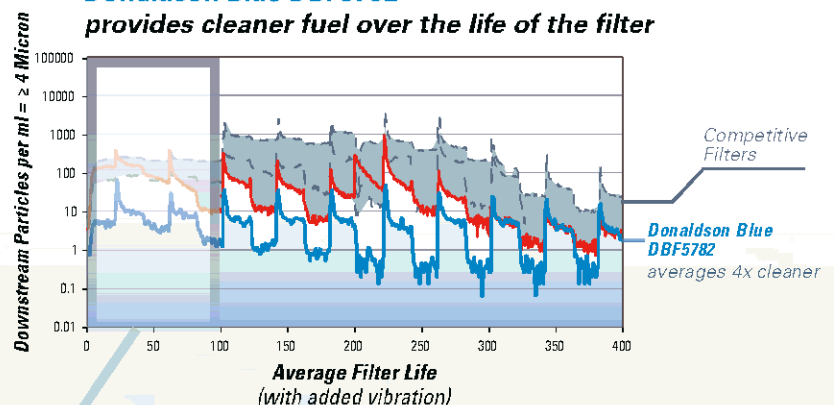
**4x** cleaner fuel  
THAN THE BEST COMPETITIVE FILTER

**Donaldson Blue DBF5782** averages 4x lower particle concentration than the competition's best product.

Particle retention was tested under SAE J1985 single-pass test standards with added vibration and increased particulate concentration. Test conducted March – April 2013 with a sample size of six filters per manufacturer.

#### Donaldson Blue DBF5782

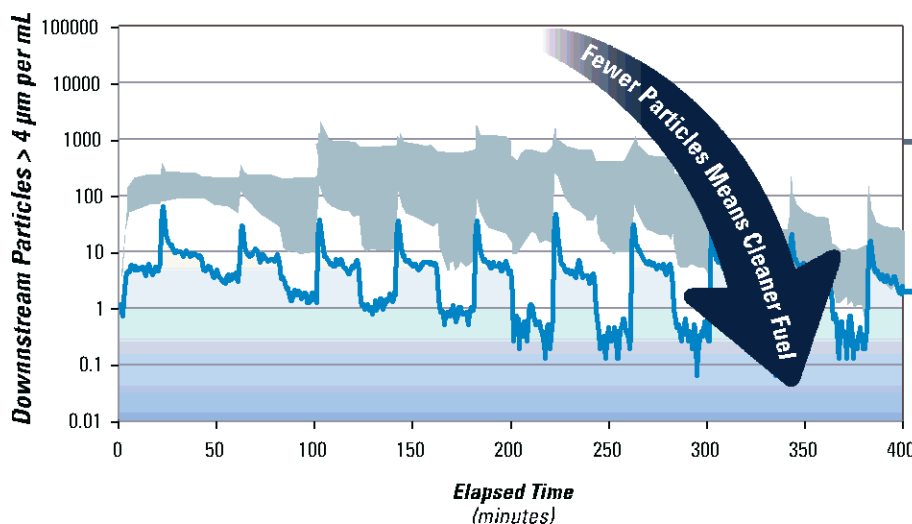
*provides cleaner fuel over the life of the filter*



#### Donaldson Blue DBF5782

*provides much cleaner fuel when first installed*

Upstream particle concentration tested at  $>100,000 @ >4\mu\text{m}$  per mL



#### ISO 24

**DIRTY FUEL IN**

#### ISO 14 -16

**COMPETITIVE FILTERS**

Fuel cleanliness range of competitive filters

#### ISO 11

**CLEAN FUEL OUT**

Under these test conditions, **Donaldson Blue DBF5782** can deliver fuel cleanliness down to ISO 11. Competitor filters need to load with contaminant before reaching peak efficiency. Donaldson filters average 20x cleaner over the first portion of the filter's life.

**Donaldson Blue™ fuel filters deliver the cleanest fuel – period.**

## Focus on Clean Fuel

# Donaldson Blue™ DBF5782 Fuel Filters Deliver Clean Fuel

### UNDERSTANDING DIESEL FUEL CLEANLINESS

ISO 4406 contamination codes consist of three numbers corresponding to the number of particles 4 microns (µm) and larger, 6 microns and larger, and 14 microns and larger present in the fuel. Determining fuel cleanliness requirements includes measuring both the particle size and count.

The following chart illustrates what it means to start with heavily contaminated fuel levels of ISO 24/22/18 and how the **Donaldson Blue DBF5782** delivers exceptionally clean fuel. These results are based on SAE J1985 single-pass test standards with added vibration to simulate dynamic engine operating conditions.

ISO 4406 Contamination Codes

Code	More Than*	Up to & Including*
24	80,000	150,000
23	40,000	80,000
22	20,000	40,000
21	10,000	20,000
20	5,000	10,000
19	2,500	5,000
18	1,300	2,500
17	640	1,300
16	320	640
15	160	320
14	80	160
13	40	80
12	20	40
11	10	20
10	5	10
9	2.5	5
8	1.3	2.5
7	.64	1.3
6	.32	.64
5	.16	.32
4	.08	.16
3	.04	.08
2	.02	.04
1	.01	.02

\*Number of particles per milliliter

**ISO 24**  
**ISO 24 / 22 / 18**  
**DIRTY FUEL IN**  
Highly contaminated fuel upstream of the filter

### INTERPRETING THE ISO CODES

Example: ISO 24 / 22 / 18

ISO   
>4 µm >6 µm >14 µm

### ISO 11

**ISO 11 / 8 / 2**  
**CLEAN FUEL OUT**

**Donaldson Blue DBF5782**

The low particle count downstream of the filter makes the DBF5782 the best in its class.







**Donaldson.**  
**BLUE™**





# Donaldson Filtration Products for Cummins QSK Engines



Donaldson Part No.	Cross Reference			
	Cummins	Fleetguard	Baldwin	Wix
<b>Primary Fuel Filtration</b>				
 <b>P552006</b> • Efficiency: 99% @ 10µm	4095189	FS1006	BF1262	33645
 <b>P551000</b> • Efficiency: 99% @ 10µm	3889716	FS1000	BF1259	33406
<b>Secondary Fuel Filtration</b>				
 <b>DBF5782</b> Donaldson Blue™ • Efficiency: 99.9% @ 4µm	4964234	FF5782	BF7932	33944
<b>Lube Filtration</b>				
 <b>P554560</b> • Efficiency: 99% @ 15µm	4920071	LF9050	BD7176	57139
 <b>P553000</b> • Efficiency: 99% @ 15µm	3825970	LF3000	BD7309	57500
<b>Coolant Filtration</b>				
 <b>P552076</b> SCA+ 8 Units • Efficiency: 99% @ >50µm	4058965	WF2076	BW5076	N/A

