



Donaldson<sup>®</sup>  
FILTRATION SOLUTIONS

# PowerCore<sup>®</sup> Filtration Technology

Peak performance in half the space



PowerCore<sup>®</sup>  
A Donaldson Filtration Technology

# PowerCore® Filtration Technology

Invented by  
**Donaldson**  
Manufactured since  
**1999**

## Why was it developed?

Vehicle design is moving from classic to aerodynamic. This means less under-hood space, highly stylized, cost effective designs, greater operator visibility, higher horsepower engines with greater airflow and other emission requirements with hotter engines...

Therefore Donaldson developed PowerCore® Filtration Technology, to do more in less space and to allow system optimization.

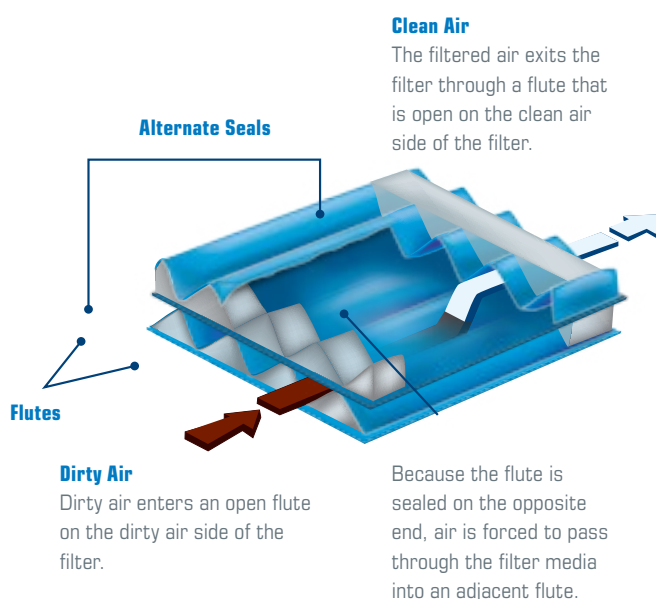
## What is it about?

- ▶ Proprietary air filtration technology developed to improve engine protection.
- ▶ Revolutionary, fluted media design for improved air filtration.
- ▶ PowerCore® media is visually unique.
- ▶ PowerCore filters can be designed, based on an approved matrix, in obround (racetrack) and round shapes.
- ▶ High density media packaging technology.
- ▶ Several features patented and IP protected.
- ▶ Backed by extensive lab and field testing



**PowerCore®**  
A Donaldson Filtration Technology

## How does it work?





Millions of units have been installed worldwide in on- and off-road applications.

## With PowerCore<sup>®</sup>, you will gain...

### **Greater Efficiency**

The straight-through fluted design of PowerCore Filtration Technology is three times more efficient than average conventional pleated filters.

### **Engine Protection**

No media movement, expansion, contraction or bunching, with less dust and dirt passed on to the engine.

### **Contaminant Encapsulation**

Dust and dirt won't dislodge during servicing.

### **Equal or Better Performance in a Small Package**

The freedom to design unique configurations to fit tight spots and overall design simplicity.

### **Donaldson Reliability**

Backed by nearly a century of innovation and experience. Donaldson supplies air filtration products to almost every vehicle manufacturer.

### **Lower Shipping and Inventory Costs**

PowerCore filters are lighter and take up less shelf space being so compact - in fact as much as half of a conventional filter.

### **Improved Handling and Maintenance**

Lighter and smaller, changing filters is a snap.

### **Improved Environment Protection**

Non-metal filters – both main and safety (where applicable).

### **System Design Flexibility**

Multiple horizontal and vertical installation positions.

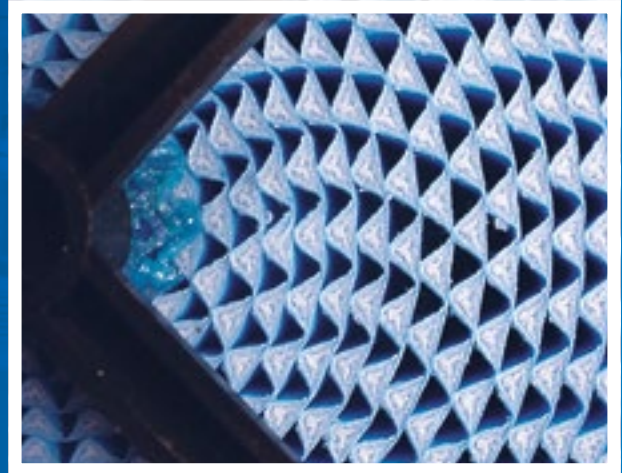
### **Dust Holding Capacity**

Gain over 100% more dust holding capacity in a given volume.

Built-In Pre-Separation and Mounting Brackets  
To eliminate the need to purchase separate.

# PowerCore G2 Filtration Technology The evolution

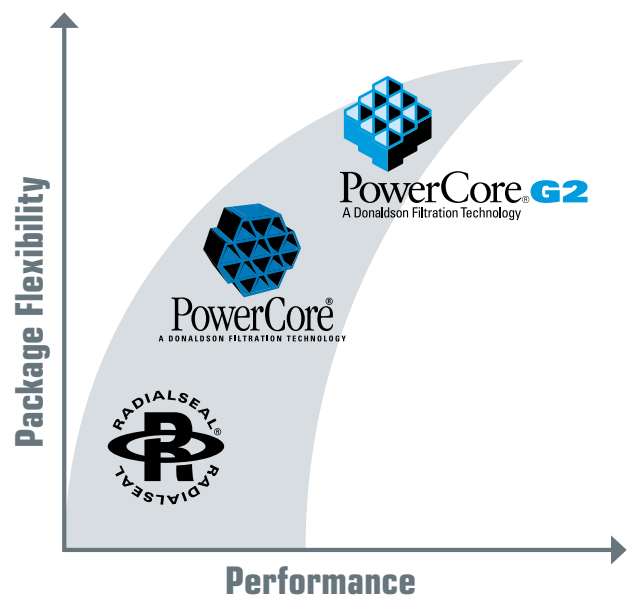
PowerCore® G2 Filtration Technology delivers **longer life** and/or **less restriction** in **less space** than our original PowerCore design.



## PowerCore® Evolution

Continuous improvement and filtration innovation bring packaging flexibility and superior filtration solutions to OEMs.

PowerCore G2 Filtration Technology offers size reduction and geometric flexibility to overcome space constraints resulting from today's complex emissions systems.



## Filter Size Comparison



**A Conventional Cellulose Filter**



**B Original PowerCore®**  
• 40% Smaller than A



**C PowerCore® G2**  
• 60% Smaller than A  
• 30% Smaller than B

## Better Performance in a Smaller Package

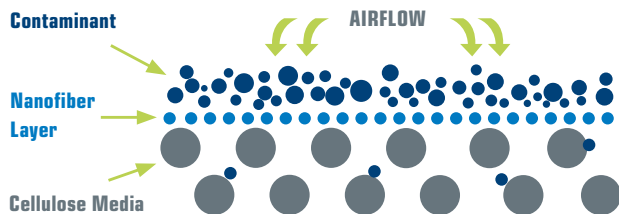
For given filter life and efficiency targets, PowerCore® G2 configurations can result in a 30% reduction in size from the first generation of PowerCore filters and a 60% reduction in size from pleated, cylindrical filters.



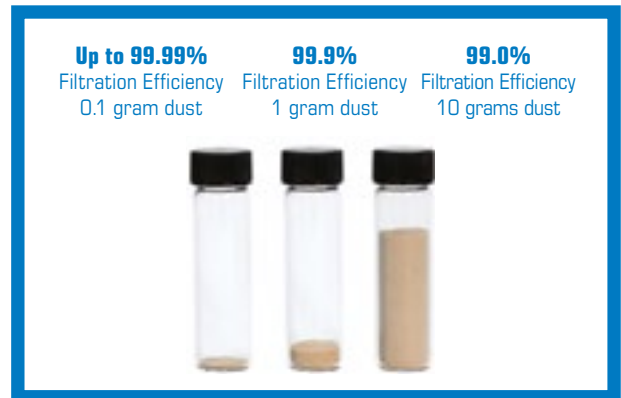
# ULTRA-WEB®

Nanofiber Filtration by Donaldson

## ULTRA-WEB MEDIA CROSS SECTION

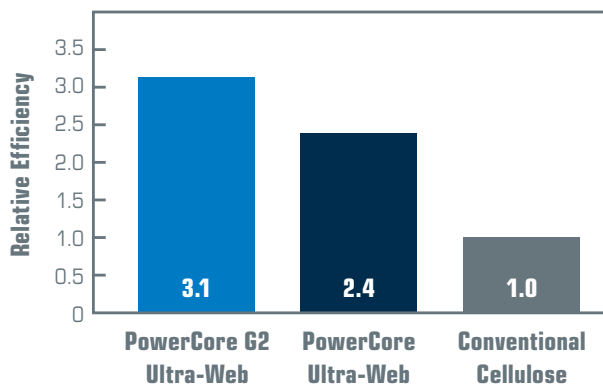


Ultra-Web nanofibers have submicron diameters and small interfiber spaces, which result in more contaminant being captured on the surface of the media and lower restriction.

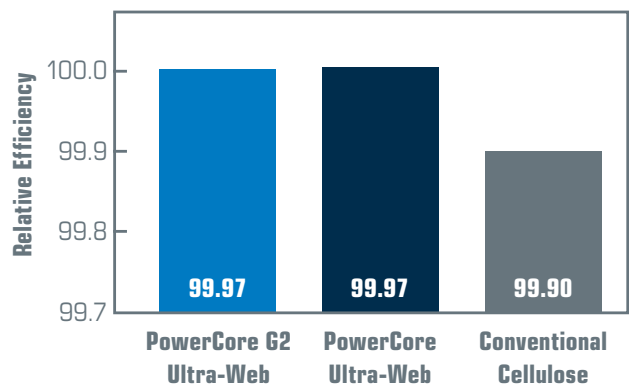


- ▶ Invented by Donaldson
- ▶ Engineered to perform in extreme temperature and humidity conditions, unlike ordinary nanofibers
- ▶ Optimized fiber structure and fiber diameter so it's stronger and lasts longer in all environmental conditions
- ▶ High efficiency – longer filter life
- ▶ High capacity – holds more contaminant
- ▶ Identifiable by the blue media color
- ▶ Proven – used in diesel engine market for nearly two decades

## DUST HOLDING CAPACITY



## OVERALL EFFICIENCY



## Our PowerCore® air cleaners deliver...

- ▶ System design flexibility
- ▶ Metal-free, lightweight materials
- ▶ Rugged construction
- ▶ Straight-through airflow technology invented by Donaldson
- ▶ Advanced sealing technology
- ▶ 3x more efficient than the average Axial pleated filter
- ▶ RadialSeal™ advanced sealing technology
- ▶ Inertial particle separation technology

This new air cleaner family offers two-stage filtration in a single, compact unit that delivers superior filtration performance using our PowerCore Filtration Technology.

For greater filtration, our PSD air cleaners are adaptable to a scavenged air system.

## Service Access on Inlet End - PSD08

Exploded view of D080020



# 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.



See Brochure F116082 for complete warranty details on all Donaldson products.

# Mounting Flexibility

With mounting locations on three sides of the housing (exception D080020 & D080026) and two separate drop tube orientations, the PSD series offers the greatest amount of flexibility for a wide variety of installations.



**D080020**  
Horizontal



**D080056**  
Vertical



**D090120**  
Horizontal



**D090073**  
Vertical



**D100072**  
Horizontal

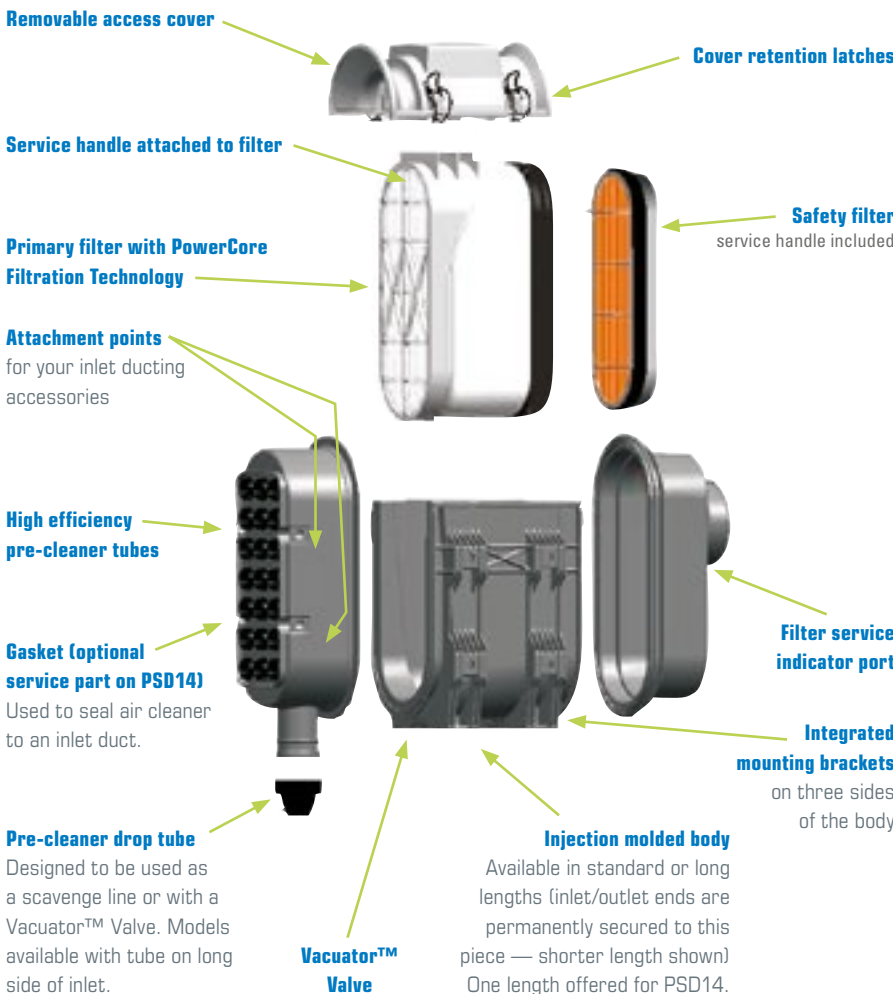


**D140078**  
Vertical

## Service Access on Side

PSD08, PSD09, PSD10, PSD12 and PSD14

Exploded view of D090073



# Why Donaldson

## Broad product offering for heavy on-road engines

- ▶ Light to heavy particle filtration
- ▶ Filtration solutions for new equipment
- ▶ Replacements for in-use equipment
- ▶ Wide variety of accessories

## Proven technology

- ▶ PowerCore® systems
- ▶ Ultra-Web® nanofiber technology
- ▶ Pleatloc™ media spacing
- ▶ Radial seal housings
- ▶ Donaldson Endurance™
- ▶ Single & two-stage filtration
- ▶ Pre-cleaners & inlet hoods
- ▶ Filter indicators & gauges

## Lasting quality & value

- ▶ Quality & environmental management practices
- ▶ TS & ISO Certified
- ▶ Durable products that protect engines and control maintenance costs

## Readily available

- ▶ Stock Product
- ▶ Ship orders same day received local availability through distributors and OE dealers

## Single filtration source

- ▶ Donaldson has air, lube, fuel, coolant, hydraulic, transmission filters for all vehicles from pick-ups and SUVs to mining haul trucks and airplanes!

## History of innovation

- ▶ Established as a filtration company in 1915
- ▶ Over 1500 active patents worldwide



Scan to watch  
THE VIDEO ▶



Donaldson Europe b.v.b.a.  
Interleuvenlaan 1  
3001 Leuven  
Belgium

[Engine-europe@donaldson.com](mailto:Engine-europe@donaldson.com)  
[www.donaldson.com](http://www.donaldson.com)

Europe +32-16-38-3811  
North America 800-374-1374  
Mexico +52-449-910-6150  
Latin Am. & Carib. +52-449-910-6150  
Brazil +55-11-2119-1604

South Africa +27-11-997-6000  
South East Asia 65-6311-7373  
Greater China 852-2405-8388  
Japan 81-42-540-4112  
Australia 61-02-4350-2033  
India +91-124-2290060

Brochure No. F116092 (02/15)  
© 2015 Donaldson Company, Inc.  
Donaldson Company, Inc. reserves the right to change or discontinue any model or specification at any time and without notice.