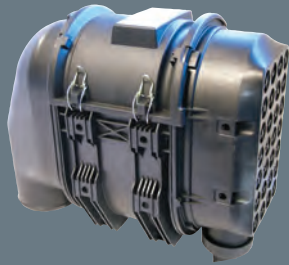




**Donaldson**<sup>®</sup>  
*Filtration Solutions*

# ENGINE AIR CLEANERS, SERVICE PARTS AND ACCESSORIES

DONALDSON DELIVERS CLEAN AIR WHEN  
YOUR ENGINE NEEDS IT MOST



Our innovative products are solving complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

Donaldson has the technical expertise, superior customer support and vast network of locations around the world to meet your toughest filtration needs - from initial system design through replacement products.



**Improve**



**Enhance**



**Protect**

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For a variation or a custom designed intake system, please call your current supplier of Donaldson products.

# Designed to Fit Manufactured to Perform



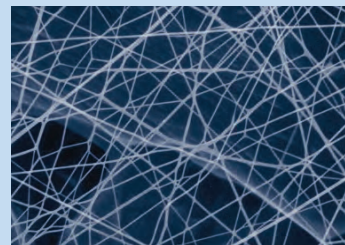
... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

## Ultra-Web® Nanofiber Filtration Technology

Donaldson has developed Ultra-Web media for usage in applications that operate in the highest level of protection.

Ultra-Web media, a web-like filtering layer applied over specially-formulated cellulose media, traps submicron contaminant on the surface of the filter. This surface loading

prevents the contaminant from dispersing throughout the media and substantially increases the filter's efficiency. In field test, filters using Ultra-Web technology hold up to five times more contaminant compared to cellulose air filters



Scanning Electron Microscope image of Ultra-Web media magnified 1000 times.

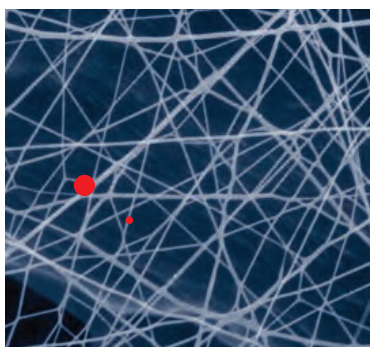
*Ultra-Web® Nanofiber Filtration Technology - a proven filter media with over 25 years in heavy-duty air filtration applications!*

*Over 90 million m<sup>2</sup> Ultra-Web media sold*

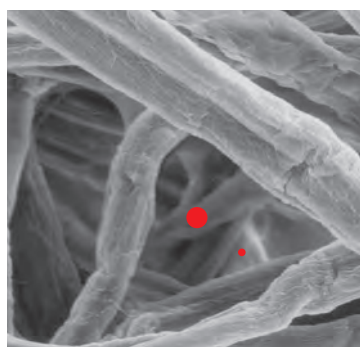
**Ultra-Web®**  
Nanofiber Filtration by Donaldson

## Ultra-Web® and Cellulose Media at Same Magnification

Red circles represent the diameter of a 2 micron and a 5 micron particle. Cellulose media is used in most air filters.



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



Cellulose fibers are larger than Ultra-Web fibers, and have larger spaces between the fibers, causing contaminant to load in the depth of the media and plug the airflow path; resulting in higher restriction and less capacity.



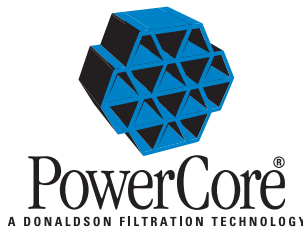
# Designed to Fit Manufactured to Perform



... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

## PSD PowerCore® Air Cleaners, Peak performance in Half the Space

Air cleaners with original PowerCore filtration technology offer maximum design flexibility. You gain equal performance in significantly less space, freedom to design unique configurations to fit tight spots, and overall design simplicity.



PSD08, PSD09, PSD10 and PSD12 housings

See the PSD PowerCore® air cleaner section for all the details.

## PowerCore® G2 Filtration Technology Big Performance, Small Footprint

The second generation of Donaldson PowerCore Filtration Technology is now available for engine air intake systems. PowerCore G2 Filtration Technology offers size reduction and geometric flexibility to overcome the tight space constraints resulting from today's complex emissions systems. In addition to size reduction, its customizable filtration performance also features lower restriction and longer filter life. For more information on PowerCore G2, please contact your Donaldson representative.



**A**  
Conventional  
Cellulose Air Cleaner



**B**  
Original  
PowerCore® Air Cleaner



**C**  
**PowerCore® G2**  
**60% smaller than A**  
**30% smaller than B**

# Designed to Fit Manufactured to Perform



... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

## RadialSeal™ Sealing Technology The best, most reliable choice for your engine

---

Filters using Donaldson RadialSeal Technology are lighter weight and easier to service than other filter designs. Invented by Donaldson in the 1980s, the urethane seal compresses radially on the outside surface of the outlet tube to create a seal around the tube.

In most applications, a safety element inside the main element seals radially to the inside of the outlet tube to provide an extra measure of protection. Filters equipped with RadialSeal Technology are easy to replace and provide leak-free seal even in adverse operating conditions such as extreme heat or cold.



## XRB Air Cleaners Smaller, Lightweight Alternative Two-Stage Air Cleaner

---

The XRB family is ideal for light- to medium-duty diesel engine trucks, agriculture, construction, mining and industrial engine applications. The XRB air cleaner is smaller, lighter and easier to install and it effectively reduces contaminants, providing a high level of engine protection. Available in three diameter sizes.

See the XRB air cleaner section for all the details.



New XRB Housings: left XRB08; middle XRB12; and right XRB10 (filters shown from XRB12 model).

## FKB Air Cleaners Smaller, Lightweight Alternative Two-Stage Air Cleaner

---

For smaller sizes of the XRB family, check out the FKB air cleaner family.

See the FKB air cleaner section for all the details.



FKB Housings and Filters: top center, FKB06; bottom left, FKB05; and bottom right, FKB04

# Designed to Fit Manufactured to Perform

Invented by  
Donaldson

... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

## Drop Down Tube Extension (Dust Dumpa) Replacement to Your Existing Dust Cup Assembly

Air cleaners operate in extreme dust conditions (mining, construction and quarrying). In some cases, the dust is so concentrated that maintenance personnel have to empty the dust cups or check the Vacuator™ Valves more frequently than they like.

These two new drop tube accessory incorporates rubber connections that improve dust evacuation from the housing during normal vehicle vibration. The clear tube allows you to easily see what's happening during daily inspections without climbing up to open or check out the Vacuator Valve.

Available for SSG and PSD PowerCore® air cleaner and also works on all other air cleaners with 76 mm drop tube. See the Accessories Section for more details.



New Dust Dumpa ship fully assembled.  
Left: Part No. X006561 / Part No. X006562 right.



## Go Twice the Distance with Donaldson Endurance™ Air Filters

Donaldson Endurance™ high efficiency air filters, made using Donaldson's advanced Ultra-Web® nanofiber technology, deliver cost saving benefits:

- Longer filter life with submicron contaminant
- Ideal for extended maintenance intervals
- Longer engine life
- Lower operating costs

Donaldson Endurance™ air filters are available for many popular Donaldson air cleaner housing models. Filters with Ultra-Web technology are easily recognized because of the blue filter media.

Finding a Donaldson Endurance air filter in this catalogue. If available for an air cleaner model, the Endurance air filters are listed in the service parts list with ES, Extended Service and HE, High Efficiency.



# Designed to Fit Manufactured to Perform

Invented by  
Donaldson

... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

## Don't forget Intake Accessories

---

Engine Air Accessories are designed to solve our customer's specific problems - such as excessive moisture or noise - or simply help maintain your systems.

- Inlet Hoods - protect air intake from large debris
- Pre-cleaners - extend air filter life and boost system efficiency
- Filter Gauges and Indicators - maximize filter life and reduce maintenance costs
- Rubber Elbows and Connectors - minimize air intake flow resistance, reduce noise levels in severe operating condition
- Vacuator™ Valves - automatically dispel dust and water from the air cleaner
- Stack Caps - protects the exhaust stack from water and debris.

See the Accessories Section for all the details.



## Donaldson TopSpin™ Pre-Cleaner Extend Filter Life in Heavy Dust Conditions

---

We recently upgraded the cover material of the TopSpin Pre-Cleaner to **increase impact resistance**. Before it was a see-through unit, now it is **black**.

This new design will even more extend your primary air filter life, boost your system efficiency and extend your engine life!

Donaldson TopSpin requires no maintenance and works great on all types of equipment, from crawler tractors to farm tractors to skid steer loaders.

See the Accessories Section for all the details.



# Designed to Fit Manufactured to Perform

Invented by  
Donaldson

... solve complex filtration challenges that improve people's lives, enhance engine and equipment performance and protect our environment.

A New Generation of Hybrid Air Cleaners  
featuring Donaldson's Unique Design Concept

**UNIQUE  
DESIGN  
CONCEPT**

Air Cleaners equipped with Donaldson's Unique Design Concept ensure you

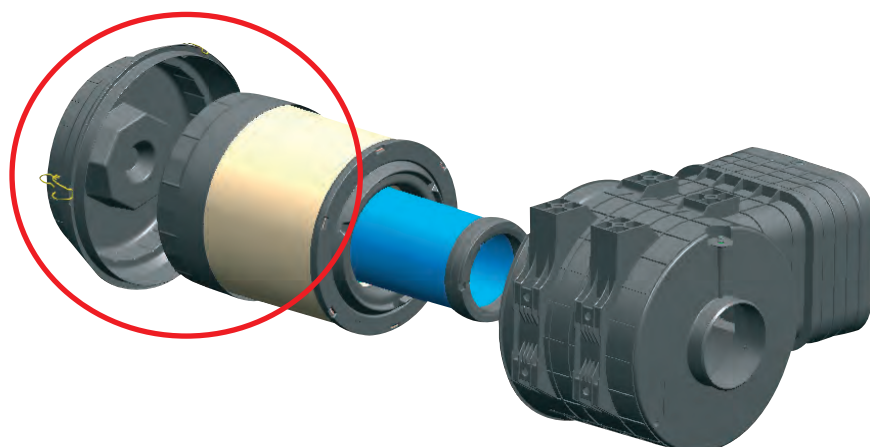
## 1) The best protection for your Engine:

- Via a unique fit of the element into the access cover, rotation of the element is prevented which improves durability of the radial seal.
- The unique interface between the primary element and access cover assures best fit and function and is achieved only with the Donaldson original elements, discouraging use of low quality will-fit elements.
- New moulded polymer closed end cap works in conjunction with the element retention system resulting in outstanding durability and safer manipulation of your element.
- A plastic liner outer instead of a metal one prevents media pleat tip wear and improves handling protection.

## 2) The best protection for our Environment:

- Reduced metal content.

See the ERB2, FRG2 and SPB2 Air Cleaner Section for more details on these next generation products.



**Built with  
Donaldson Technology.**



# Designed to Fit Manufactured to Perform

the following customers  
rely on Donaldson



Agco, Case New Holland, Claas, Deutz, Fendt,  
John Deere, Landini, Manitou, Massey Ferguson,  
McCormick, Renault Agriculture, SAME, Valtra...



BMC, Carrier Transicold, DAF, Daimler, EvoBus, FIAT,  
Ford Otosan, Freightliner, International, Isuzu, Iveco, MAN,  
Paccar, Renault Truck, Scania, Thermo-King,  
Vanhool, VDL Bus, Volvo...



AtlasCopco, Bobcat, Case New Holland,  
Daewoo, Doosan, Dynapac, Fermecc, Fiat-Kobelco,  
Furukawa, Hitachi, JCB, Komatsu, Liebherr, Linde,  
MCFE, Merlo, Sandvik, Terex, Toyota, Volvo CE...



Cummins, Detroit Diesel, Honda, Isuzu,  
Iveco, John Deere, KHD, Komatsu, Kubota, MAN  
Engines, Mercedes Benz, Perkins, Scania, Sisu,  
Steyr Motors, Yanmar Diesel...



Manitou, Hyster, JCB, Jungheinrich,  
Komatsu, Linde, Toyota...

# Donaldson Engine Aftermarket Warranty for Filtration and Exhaust Products

Donaldson warrants its Aftermarket products against failure due to defects in materials and workmanship for the period specified under Terms and Conditions for the particular product.

Donaldson's obligation under this warranty covers replacing the failed product, including transportation charges, only. If the Donaldson product failure is the sole and direct cause of damage to the equipment on which the product was properly installed, Donaldson will reimburse reasonable costs to restore the equipment to the condition it was in immediately before the failure.

This warranty does not cover failure due to misapplication, misuse, abuse, neglect, rust through and corrosion (mufflers), improper service practices or non-Donaldson approved modifications. Engine and equipment manufacturers' warranties remain in effect when Donaldson products are used.

Donaldson must be notified in writing of any claims covered by this warranty within one year of the date of failure. Donaldson, at its discretion, will either physically visit the site where the alleged failure has been found or, request that all parts, Donaldson and other relevant parts, be shipped prepaid to its General Office, in care of the Product Lab or as otherwise specified.

## Terms & Conditions

Warranty coverage begins at the date of installation to the original end-user, and expires after the indicated period or kilometres, whichever occurs first.

More detailed information can be found in the Donaldson Europe Operating Guide or can be received upon request.

## Warranty Length by Product

### Filtration Products

Air Cleaner Housing & Accessories  
Liquid Filter Assemblies & Accessories  
Air & Liquid Filters

### Warranty Period

1 year  
1 year  
Maximum 1 year

### Exhaust Products

Exhaust Assemblies On-Road  
Exhaust Assemblies Off-Road  
Exhaust Accessories

### Warranty Period

2 years - 300.000 kilometers  
1 year - 1500 working hours  
1 year

Brochure No. F116006 (11/08)

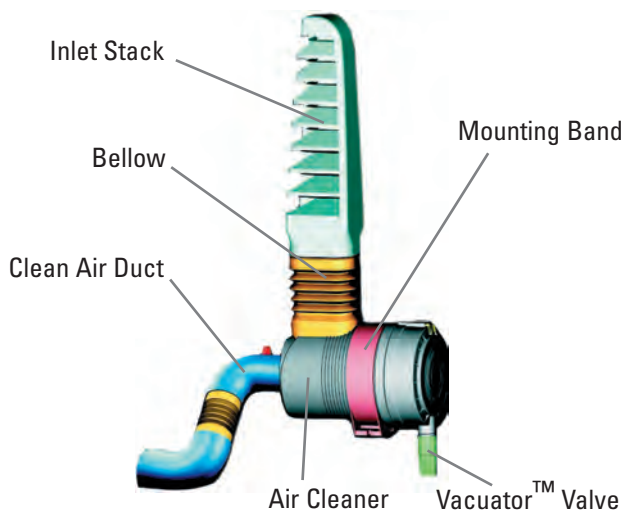
# Simple Facts on Air Filtration

... common terms and definitions.

## Why an Air Intake System?

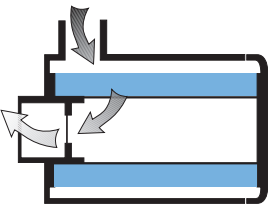
Air is a critical component of combustion for a diesel engine. If the air reaching the engine is not clean, the engine will lose efficiency and have engine wear. The engine will run longer and more efficiently with a proper air intake system that is designed to keep the engine intake air as clean as possible by removing particulate matter or debris that would cause engine wear and ultimately failure.

## Components Air Intake System



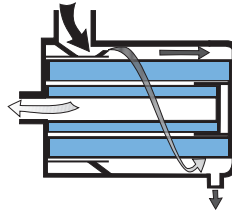
## Air Cleaner Types

### One-Stage Air Cleaners



Air Cleaners in which the air goes through the inlet and directly to the main element are considered one-stage air cleaners. One-stage air cleaners are typically used where there is less contaminate in the environment, such as in on-road applications.

### Two-stage Air Cleaners



Air entering a two-stage air cleaner is first pre-cleaned before reaching the main element. The air may either be sent through pre-cleaner tubes or cleaned by centrifugal flow around the filter. Depending on the type of pre-cleaner, the pre-cleaner removes between 75-98% of the contaminate from the air before the air reaches the main element. Two stage air cleaners are recommended for use in medium- and heavy dust environments, such as in agricultural, construction, and mining applications.

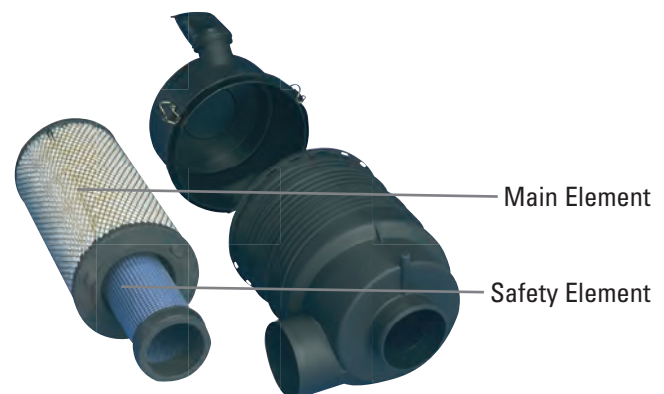
## Element types

### Main Element

Is the filter element in the air cleaner that removes around 99,9%+ of the air's dust. The air flows through the main element first.

### Safety Element

Is an optional element that protects the engine during servicing of the main element and in case of a leak in the main element.



# Simple Facts on Air Filtration

... common terms and definitions.

## Technologies

---

### RadialSeal™

RadialSeal refers to Donaldsons sealing technology, which uses the urethane end caps and the cleaners outlet tube to create the seal. This is the preferred method of sealing.



### Axial Seal

The Axial Seal sealing method requires a force between air filter and air cleaner that provides enough compression on the gasket between the parts to create a seal.



## Filtration Terms

---

### Dust Capacity

Dust capacity is the amount of contaminant that will be collected on a filter before final restriction level - as set by the engine manufacturer - is reached.

### Efficiency

Efficiency is the percentage of dust that the air cleaner with a filter removed from intake air. Donaldson air cleaners have a 99,7% efficiency level.

### Restriction

Restriction represents the resistance to the flow of air through the air cleaner system. Typical unit is kilopascal (kPa). Air cleaners with clean filters should have restrictions between 0,5 and 4 kPa.

### Filter media

Filter media is the material in the filter that removes the contaminate. Conventional media is made from cellulose fibers combined with resins to keep the fibers together.



### Dust Concentration

Dust concentration expresses the mass of dust in a specified volume of air. Typical ambient conditions are around 0,1 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ). Dirt road conditions are around 10 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ).

### Laboratory Life

This is the life of an air filter, until a defined restriction, tested at a constant dust concentration ( $\text{mg}/\text{m}^3$ ) following an ISO 5011 laboratory test procedure to determine performance and allow comparison with other air filter models.

### Field Life

This is the life of an air filter, till a defined final restriction, during its usage in the field.

### Differential Pressure

The difference in pressure between two points, generally between the inlet and outlet of an air cleaner. To be measured in pascal (Pa).

### Pascal

The SI unit to express a pressure, to be used instead of mm H<sub>2</sub>O.

Pa (pascal) - kPa (kilopascal) - mbar (millibar) - daPa (decapascal)

1 mm H <sub>2</sub> O	= 9,80665 Pa
1000 Pa	= 1 kPa
100 Pa	= 1 mbar
10 Pa	= 1 daPa

### Airflow Requirements

Air is as critical to the operation of an engine as it is to the working of the human body. Like lungs, an engine draws air from the atmosphere. The amount of air required by engine depends on the type of engine, whether there is a turbocharger, and the amount of horsepower of the engine. The airflow requirement is a specification of the engine that should be given by the engine manufacturer.

# Air Cleaner Selection by Flow Direction

Donaldson has air cleaner housings that work in a variety of dust conditions and air flow patterns (A - D, and G). For improved filtration reliability and quicker filter service compared to older axial seal style air cleaners, Donaldson recommends installing either PowerCore air cleaners or radial seal style air cleaners whenever possible.

## Flow Direction Legend

**B** = Air in the Side, Out the End

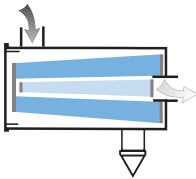
**C** = Air in the End, Out the Same End

**D** = Air in the End, Out the Opposite End

**G** = Air in the Side, Out the End

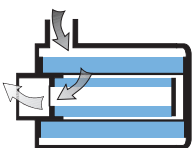
## **B** Airflow

### Air in the Side, Out the End



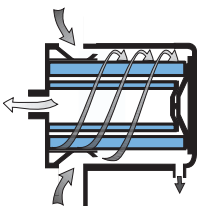
#### Light and Medium Dust - FKB

A compact housing high dust holding capacity, and comparable airflow to FPG. Two-stage filtration, side inlet, horizontal installation. Body diameters in 4", 5" and 6". Mount under hood or behind cab. Handles airflows from 2-6 m<sup>3</sup>/min. Used on off-road equipment operating in medium-dust conditions. Page 50-54.



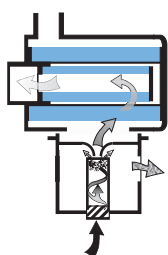
#### Light, Medium & Heavy Dust - EPB

One-stage full-plastic air cleaner. Body diameters in 7" and 8". Handles airflows of 2-7 m<sup>3</sup>/min. Used on light-, medium- and heavy-duty applications, always combined with a pre-cleaner. Page 43-48.



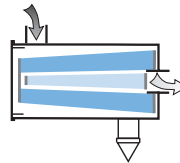
#### Heavy Dust - FLB

Two-stage air cleaner with scavange exhaust system. Body diameters in 6", 8", 10" and 12". Handles airflows of 3-17 m<sup>3</sup>/min. Designed for heavy-duty equipment. To be used with an exhaust ejector. Page 90-92.



#### Heavy Dust - SRB

Two-stage hybrid air cleaner with built-in high efficiency pre-cleaner. Body diameters in 9", 10", 11" and 13". Handles airflows of 4-18 m<sup>3</sup>/min. Designed for heavy-duty equipment. To be used with an exhaust ejector. Page 100-103.



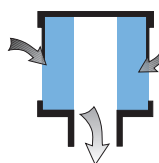
#### Medium Dust - XRB

The radial seal, plastic, two-stage air cleaner. with side inlet for horizontal installation. Body diameters in 8", 10" and 12". Mount under hood or behind cab. Handles airflows of 7.5-18 m<sup>3</sup>/min. Used on off-road equipment operating in medium-dust conditions. Page 55-59.



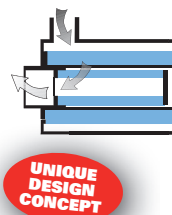
#### Heavy Dust - SPB2

Two-stage full-plastic air cleaner with built-in high efficiency pre-cleaner. Body diameter of 13". Handles airflows of 6-22 m<sup>3</sup>/min. Designed for heavy-duty equipment. To be used with an exhaust ejector. Page 97-99.



#### Light Dust - ECB

Disposable, one-stage, dry air cleaner, small, lightweight and unitized (housing and filter in one). For 2-3 cylinder, high-vibration engines. Can be vertically or horizontally mounted. Handles airflows of 6-90 m<sup>3</sup>/min. Used on light-duty applications. Page 38-42.

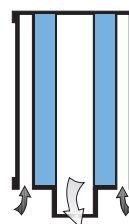


#### Light, Medium & Heavy Dust - ERB2

One-stage hybrid air cleaner. Body diameters in 10", 11", 13" and 15". Handles airflows of 8-65 m<sup>3</sup>/min. Used on light-, medium- and heavy-duty applications, always combined with a pre-cleaner. Page 43-48.

## **C** Airflow

### Air in the End, Out the Same End

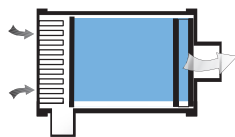


#### Light Dust - ECC

Disposable, one-stage, dry air cleaner, small, lightweight and unitized (housing and filter in one). For small 2-3 cylinder, high-vibration engines. Can be vertically or horizontally mounted. Handles airflows of 1-26.5 m<sup>3</sup>/min. Used on off-road equipment operating in medium-dust conditions. Page 38-42.

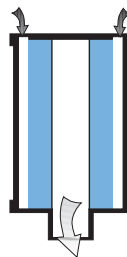
## D Airflow

### Air in the End, Out the Opposite End



#### Medium to Heavy Dust - PSD

Two-stage air cleaner with built-in high efficiency pre-cleaner using the PowerCore™ Filtration Technology. Smaller, compact with built-in mounting brackets. Can be vertically or horizontally mounted. Handles airflows of 6-30 m<sup>3</sup>/min. Body diameters in 8", 9", 10" and 12". Designed for medium- and heavy-duty equipment. Can be used with Vacuator™ Valve on the pre-cleaner or continuously scavenge of the pre-cleaner by an exhaust ejector or air blower cooling. Page 19-35.

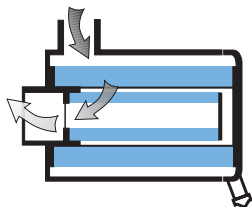


#### Light Dust - ECD

Disposable, one-stage, dry air cleaner, small, lightweight and unitized (housing and filter in one). For small 2-3 cylinder, high-vibration engines. Can be vertically or horizontally mounted. Handles airflows of 1-23 m<sup>3</sup>/min. Used on light-duty applications. Page 38-42.

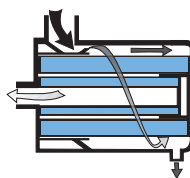
## G Airflow

### Air in the Side, Out the End



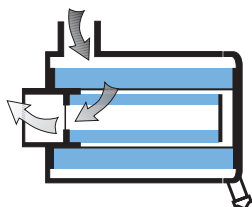
#### Medium Dust - FPG

The first fully plastic air cleaner in our two-stage filtration line. Built-in pre-cleaner. Tangential inlet, with or without safety element, body diameters from 4", 5", 7", 8" and 10". Handles airflows of 0.5-12 m<sup>3</sup>/min. Can be mounted horizontal, vertical or at an angle. Used on medium-duty applications. Page 64-69 / 76-77.



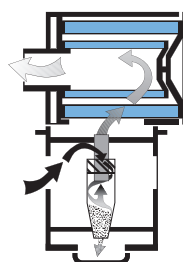
#### Medium to Heavy Dust - FTG

Two-stage air cleaner with built-in pre-cleaner. Body diameter of 21". Handles airflows of 32-59 m<sup>3</sup>/min. Used in medium- to heavy-duty duty applications. Page 78-81.



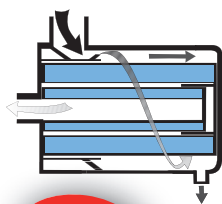
#### Medium Dust - Alexin FPG

Two-stage full-plastic air cleaner with built-in pre-cleaners. Tangential inlet, with or without safety element, body diameters from 6", 8", 9" and 10". Handles airflows of 1.5-12 m<sup>3</sup>/min. Can be mounted horizontal, vertical or at an angle. Used on medium-duty applications. Page 70-77.



#### Heavy (Severe) Dust - SSG

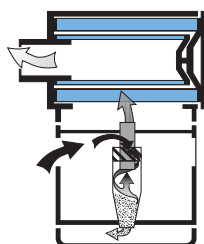
These new models are replacing our older SRG models. Donaldson's largest two-stage engine air cleaner, designed for the engines on large equipment. Handles airflows of 48-135 m<sup>3</sup>/min. The best protection for 500 to 2000 horsepower diesel engines. This new model uses radial seal sealing technology for filter retention. Used on heavy-duty applications. Page 104-110.



#### Medium to Heavy Dust - FRG2

Two-stage hybrid air cleaner which is available in body diameters of 10", 11", 13", 15" and 18". Horizontal mount required. Handles airflows from 6.5-51 m<sup>3</sup>/min. Used in medium- to heavy-duty duty applications. Page 82-88.

UNIQUE DESIGN CONCEPT



#### Heavy (Severe) Dust - STG

Two-stage - high airflow - air cleaner with built-in Donacclone™ tube pre-cleaner. Two styles available - one with a peripheral inlet and another with a tubular inlet. Handles airflows from 11-50 m<sup>3</sup>/min. Can be mounted vertically or horizontally. Used on heavy-duty applications. Page 111-117.

# Five Easy Steps to Air Cleaner Selection

## (1) Determine the Airflow Requirements of the Engine

There are 2 different formulas to estimate the airflow ( $\text{m}^3/\text{min}$ ) required by the engine.

One formula is based on Engine Displacement (Formula A). The other is based on Engine Horse Power (Formula B).

$$\text{Formula A} = \text{Airflow} = \frac{\text{Engine Displacement} \times \text{RPM} \times \text{VE}}{1000 \times \text{CF}} = \text{m}^3/\text{min}.$$

- **Engine Displacement**  
Size of the engine expressed in litres (swept volume).
- **RPM = Revolutions per minute**
- **VE = Volumetric Efficiency**

### VE Table

0,85 for 4 stroke natural aspirated diesel engine  
1,60 for 4 stroke turbo charged diesel engine  
1,85 for 4 stroke turbo charged after cooled diesel engine  
1,40 for 2 stroke scavenge blower diesel engine  
1,90 for 2 stroke turbo charged diesel engine

- **CF = Cycle Factor = 2 for 4 stroke engine**  
1 for 2 stroke engine

$$\text{Formula B} = \text{Airflow} = \frac{\text{HP(SAE)} \times \text{SA}}{1000} = \text{m}^3/\text{min}.$$

- **HP(SAE) = Horse Power**
- **SA = Specific Airflow per Horse Power**

### SA Table

0,057  $\text{m}^3/\text{min}$ . for 4 stroke natural aspirated diesel engine  
0,065  $\text{m}^3/\text{min}$ . for 4 stroke turbo charged/after cooled engine  
0,093  $\text{m}^3/\text{min}$ . for 2 stroke scavenge blower diesel engine  
0,102  $\text{m}^3/\text{min}$ . in for 2 stroke turbo charged diesel engine

### Additional Consideration

1. Please be aware that when you have High Pulsation engines the air inflow to the air cleaner is influenced by this pulsation. We recommend that you review the application and if necessary multiply the airflow - found by one of above formula - by the pulsation factor (PF).

### PF Table

**2,1 for 1 cylinder engine natural aspirated.**  
**1,5 for 2 cylinder engine natural aspirated.**  
**1,2 for 3 cylinder engine natural aspirated.**  
**1,0 for 4 and more cylinder engine natural aspirated.**

2. No pulsation factor needs to be considered for turbo charged engines.
3. Donaldson ECB, ECC, ECD Duralite™ (see page 38-42) and the FPG057505 Air Cleaners (see page 67) are not subject to the pulsation factor due to the fact that we use a specially developed High Pulsation media for these products.

### Example

A tractor is equipped with a 40 HP(SAE), 3 cylinder, 4 stroke natural aspirated diesel engine of 2 litres running at 2600 RPM.

$$\text{Formula A} = \text{Airflow} = \frac{2 \times 2600 \times 0,85}{1000 \times 2} = 2,21 \text{ m}^3/\text{min}.$$

$$\text{Formula B} = \text{Airflow} = \frac{40 \times 0,057}{1000} = 2,28 \text{ m}^3/\text{min}.$$

In High Pulsation application multiply your answer by PF table which in this case is  $2,21 \text{ m}^3/\text{min} \times 1,2 = 2,652 \text{ m}^3/\text{min}$ .

# Five Easy Steps to Air Cleaner Selection

## (2) Determine the Type of Machine and its Environment

For example, a truck of less than 8 ton will probably see light-dust, whereas dumpers used on construction sites would almost always be surrounded by an extremely heavy-dust concentration of large dirt particles. To determine the type of environment and the dust concentration level your machine works in, you can use the table below.

Environment	Applications	Dust concentration (mg/m <sup>3</sup> )
Light-Duty (On-Road, Marine)	On-Highway Trucks (< 8T), Lift Truck, Pumps for use in generators, compressors, marine, small engines and railroad.	1-5  + carbon, soot, oil vapour
Medium-Duty (Light Construction, Agricultural, Compressors)	Mixed operating Trucks (8 - 16T), Farm Tractor, Lift Truck, Mobile Compressor, Skid Steer.	5-15
Medium- to Heavy-Duty	Combines and Harvesters, Earth Moving Equipment, Loader, Dozer, Grader, Excavator, Artic Dumper.	15-20
Heavy-Duty (Construction, Mining)	Scraper, Dumper, Track type dozer, Mining Equipment, Rail Road (Middle East).	20-50
Extra Heavy-Duty	Special equipment, Military.	50-100

Note: These figures are only indications.

## (3) Select an Air Cleaner Series

You can do this by using the Air Cleaner Selection Overview on page 12-13. This correlates the Airflow Requirements of your engine (which you calculated under step 1) with the Dust Concentration level of your environment (which you calculated under step 2).

## (4) Choose a SPECIFIC Air Cleaner Model

Once you have selected your Air Cleaner Series you can look in the catalogue for the specific Air Cleaner Model according to the Air Flow Requirements your engine needs. You can do this by referring to the Air Flow Restriction Curves. If there are 2 air cleaner models that fit your parameters, choose the one with the lowest restriction to ensure maximum service life from that air cleaner series.

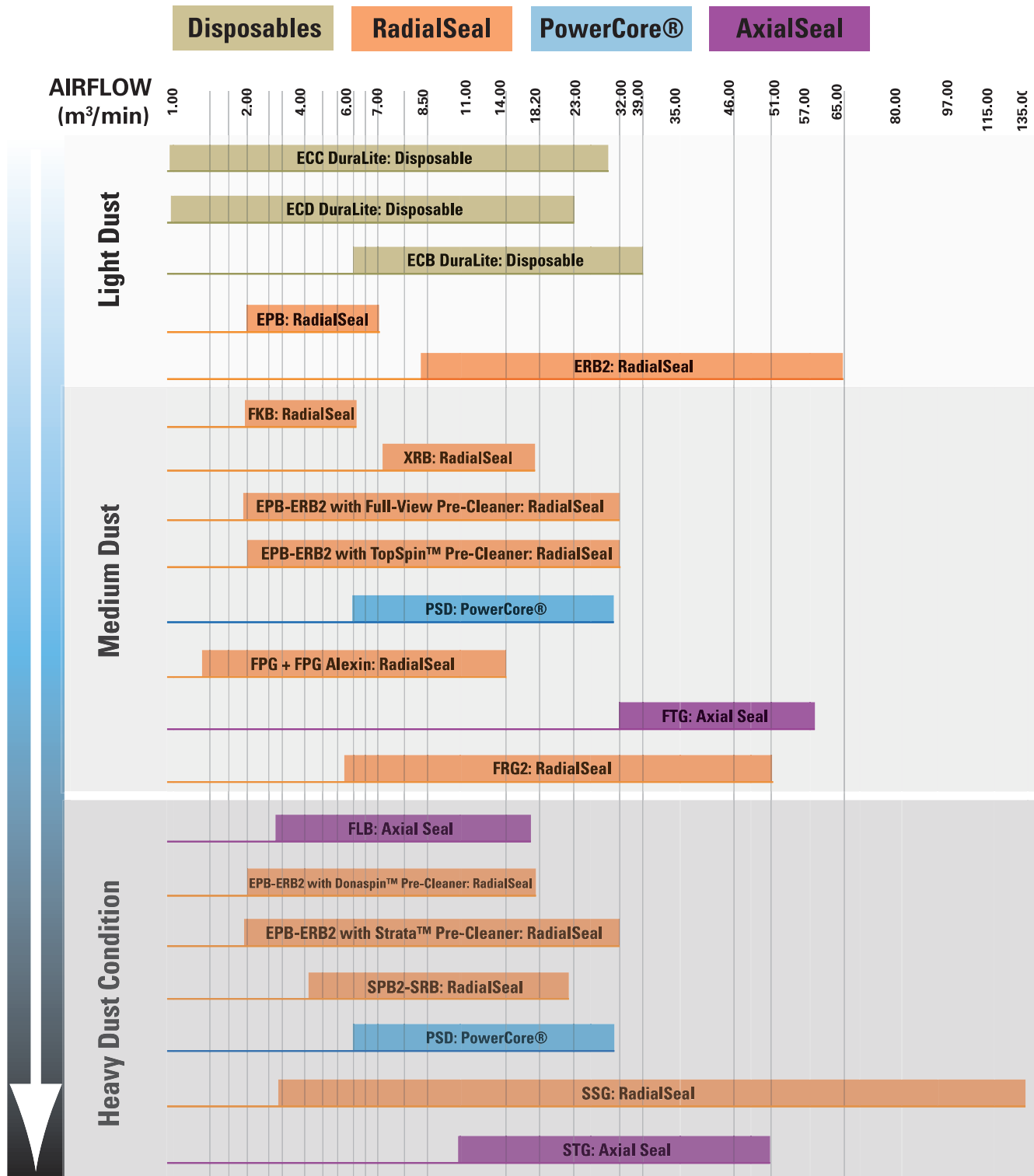
## (5) Choose Intake Accessories

Accessories are an integral and important part of the entire air intake filtration system. See the Accessories Section for more details.



# Engine Protection for All Dust Conditions

...Donaldson offers a full line of air cleaners for a wide variety of applications and operating environments



# Air Filtration Conversion Factors

## Temperature

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 5/9$$

$$^{\circ}\text{F} = (^{\circ}\text{C} \times 9/5) + 32$$

## Power

$$\text{HP} = \text{KW} \times 1,341 \text{ (metric)}$$

$$\text{KW} = \text{HP} \times 0,745 \text{ (metric)}$$

## Flow rates

$$1 \text{ l/min.} = 0,0353 \text{ cfm}$$

$$1 \text{ m}^3/\text{min.} = 35,3147 \text{ cfm}$$

$$1 \text{ m}^3/\text{h} = 0,5886 \text{ cfm}$$

$$1 \text{ English gallon/min.} = 0,1605 \text{ cfm}$$

## Length

$$1 \text{ m} = 1000 \text{ mm} = 39,37 \text{ inch} = 3,281 \text{ ft.}$$

$$1 \text{ inch} = 25,4 \text{ mm} = 0,0254 \text{ m} = 0,08333 \text{ ft.}$$

$$1 \text{ ft.} = 304,8 \text{ mm} = 0,3048 \text{ m} = 12 \text{ inch}$$

## Volume

$$1 \text{ m}^3 = 1000 \text{ litres} = 35,31 \text{ ft.}^3 = 61024 \text{ inch}^3$$

$$1 \text{ ft.}^3 = 28,32 \text{ litres} = 0,02832 \text{ m}^3 = 1728 \text{ inch}^3$$

$$1 \text{ litre} = 0,2642 \text{ US gallon} = 0,2201 \text{ Engl gallon}$$

$$1 \text{ US gallon} = 3,785 \text{ litres} = 231 \text{ inch}^3$$

$$1 \text{ English gallon} = 4,546 \text{ litres} = 277 \text{ inch}^3$$

## Weight

$$1 \text{ kg} = 2,205 \text{ lb} = 35,27 \text{ Oz}$$

$$1 \text{ lb} = 0,4536 \text{ kg} = 16 \text{ Oz}$$

$$1 \text{ Oz} = 0,02835 \text{ kg} = 0,0625 \text{ lb}$$

## Pressure

$$1 \text{ mm H}_2\text{O} = 9,80665 \text{ Pa}$$

$$1 \text{ bar} = 100 \text{ kPa} = 14,5 \text{ psi}$$

$$10 \text{ mbar} = 1 \text{ kPa} = 0,145 \text{ psi}$$

$$10 \text{ psi} = 68,95 \text{ kPa} = 0,6895 \text{ bar}$$

$$1 \text{ "Hg} = 345,4 \text{ mm H}_2\text{O} = 3,321 \text{ kPa}$$

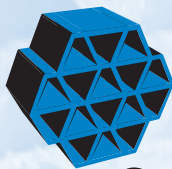
## Air Weight

$$\text{Air weight at } 0^{\circ}\text{C} = 1,293 \text{ kg/m}^3$$

$$\text{Air weight at } 20^{\circ}\text{C} = 1,205 \text{ kg/m}^3$$

$$\text{Air weight at } 25^{\circ}\text{C} = 1,184 \text{ kg/m}^3$$

# PowerCore® Delivers Improved Filtration Performance

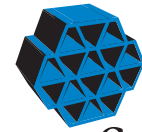


PowerCore®  
A DONALDSON FILTRATION TECHNOLOGY

## Section Index

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PSD (Medium to Heavy Dust).....	19
PSD Service Instructions .....	34



## 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...

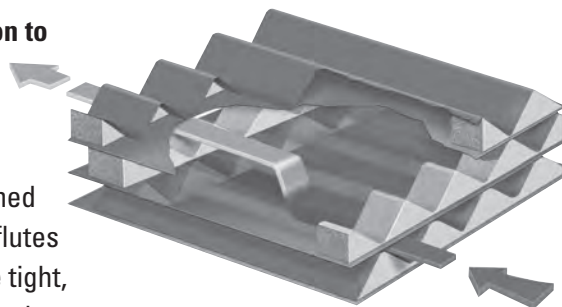
Therefore Donaldson developed PowerCore® Filtration Technology, to do more in less space and to allow system optimization.

## 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.
- Built with Donaldson Technology.
- Backed by extensive lab and field testing

## How does it work?

**Clean air travels on to your engine**



Filter media is formed into flutes - these flutes are layered to give tight, rugged structure to the filter

Fluted channels are alternately sealed: air enters an open flute and is forced to exit through an adjacent flute

Contaminants stay inside the filter - and won't drop back into an unprotected air filter housing.

**Dirty air travels in and is filtered in one pass through the media**



**Invented by  
Donaldson**

**With PowerCore, 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.

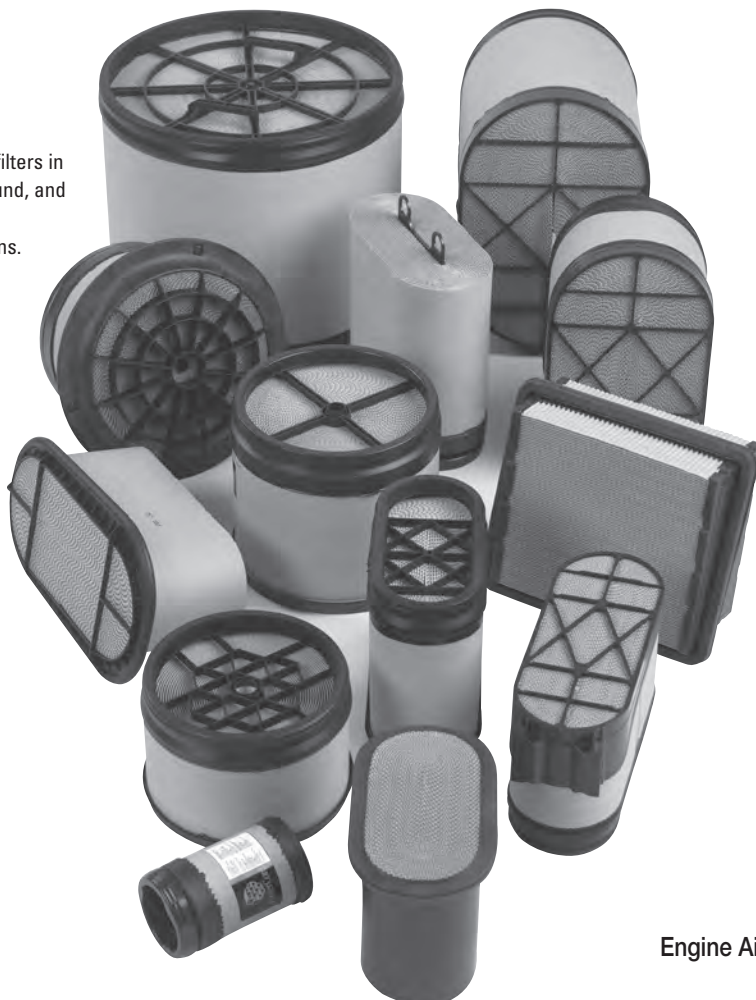
**Dust Holding Capacity**

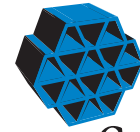
Gain over 100% more dust holding capacity in a given volume.

**Built-In Pre-Separation and Mounting Brackets**

To eliminate the need to purchase separate.

PowerCore filters in round, obround, and rectangular configurations.





## Excellent Performance in Half the Space

The PSD PowerCore<sup>®</sup> Air Cleaner is a two-stage air cleaner with built-in high efficiency pre-cleaner using PowerCore Filtration Technology.

PSD PowerCore Air Cleaners are designed especially for on and off road equipment operating in medium to heavy dust environments.

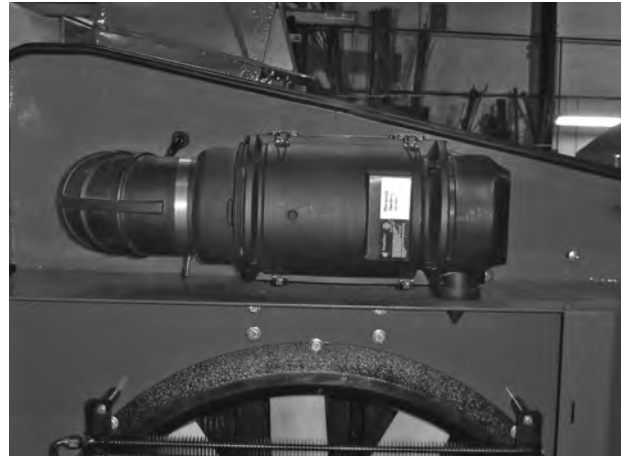
Can be used with Vacuator<sup>™</sup> Valve on the pre-cleaner or continuously scavenge of the pre-cleaner by an exhaust ejector or air blower cooling. See page 124-125 for all available Exhaust Ejectors.

### Applications

- Equipment operating in medium to heavy dust conditions with engine airflow ranges up to 30 m<sup>3</sup>/min.
- Obround housing shape allows for a narrow or wide mounting orientation. Models have either end or side filter service access
- Sustained temperature tolerance: to 82°C

### Features

- More compact at a given performance level than standard pleated filters
- Non-metal filters - both main and safety (where applicable)
- Improved engine protection: no media movement, expansion, contraction or bunching
- Improved contaminant encapsulation: dust and dirt stay contained in filter during service
- Improved filtration efficiency:
  - Three times more efficient than the average conventional pleated filter
  - PowerCore Filtration Technology with high efficiency pre-cleaner tubes improve engine protection
- Improved handling and maintenance: lighter and smaller, changing filters is a snap
- Easily serviced with clamp-on cover design
- Can be used with scavenge line or Vacuator<sup>™</sup> Valve depending on housing orientation
- Built in mounting brackets eliminate the need to purchase separate mounting bands
- Indicator thread size =
  - 1/8-27NPT (Male) for PSD08/PSD09/PSD10
  - 1/8-27NPT (Female) for PSD12



D080069 - Horizontal



D080070 - Vertical

#### Mounting Flexibility

The PSD air cleaner is available with two separate drop tube in orientations and built-in mounting brackets on the 2 long sides of the housing. The other three PSD models (09, 10 and 12) offer even more mounting flexibility with built-in brackets on three sides of the main body housing.



D090074 - Horizontal



D090073 - Vertical

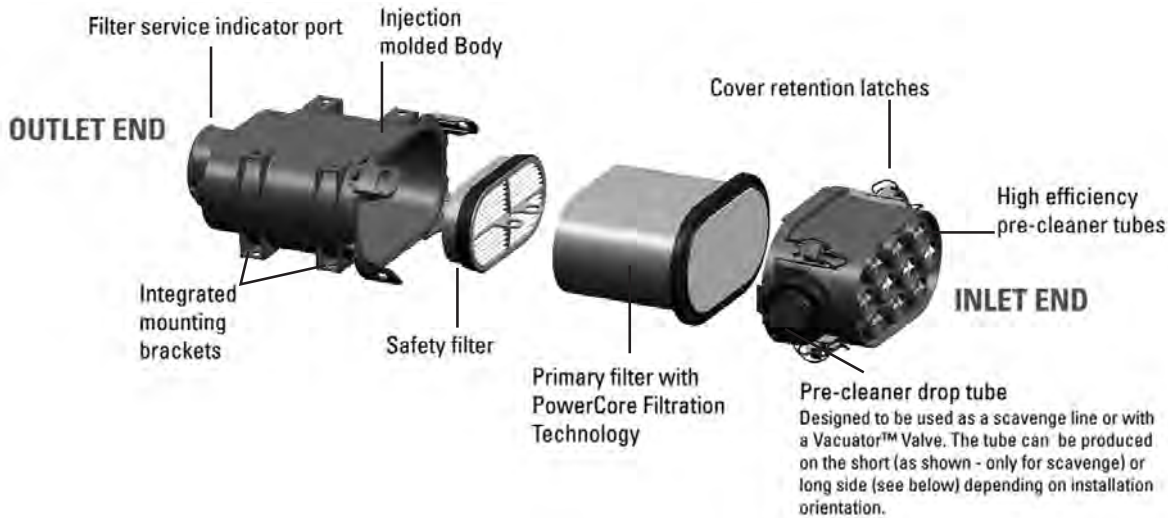


D100030 - Horizontal

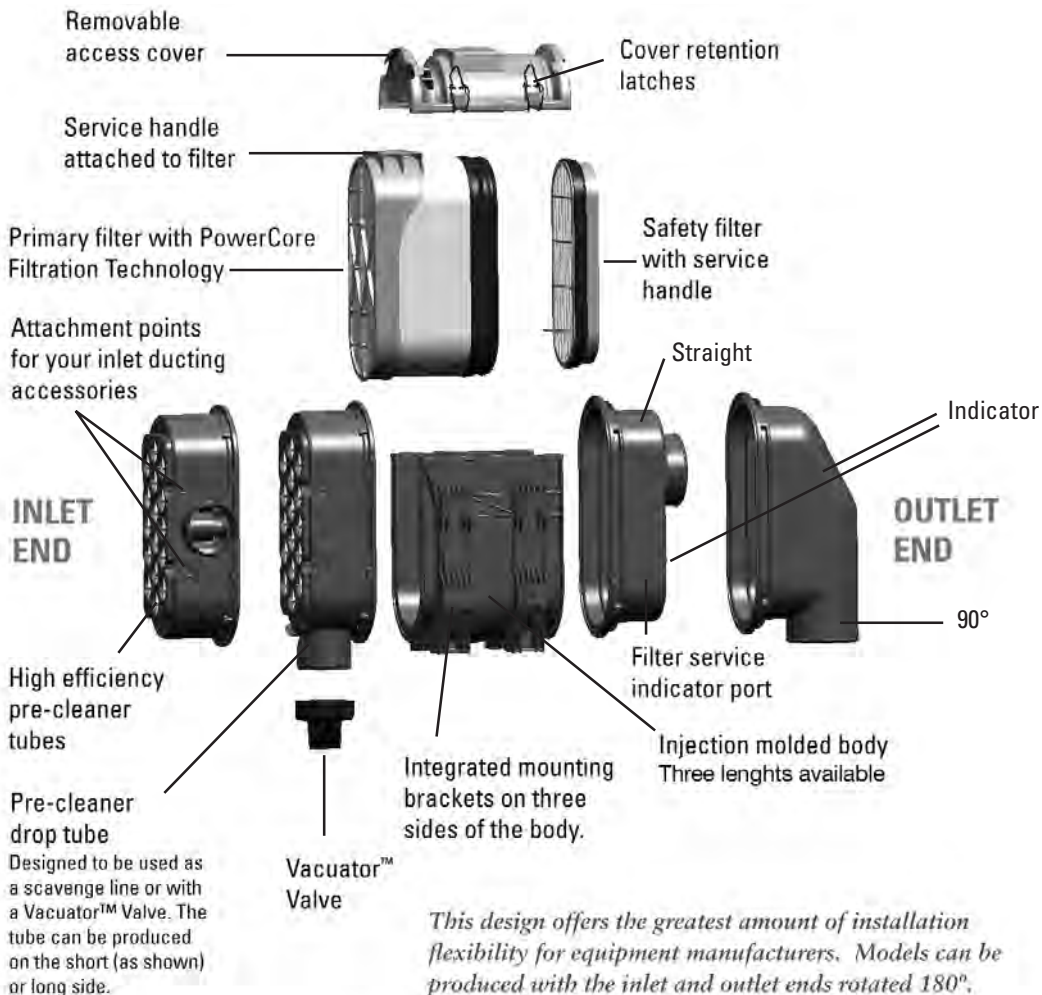


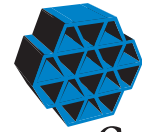
D100029 - Vertical

## PSD 08 - Service Access on Inlet End



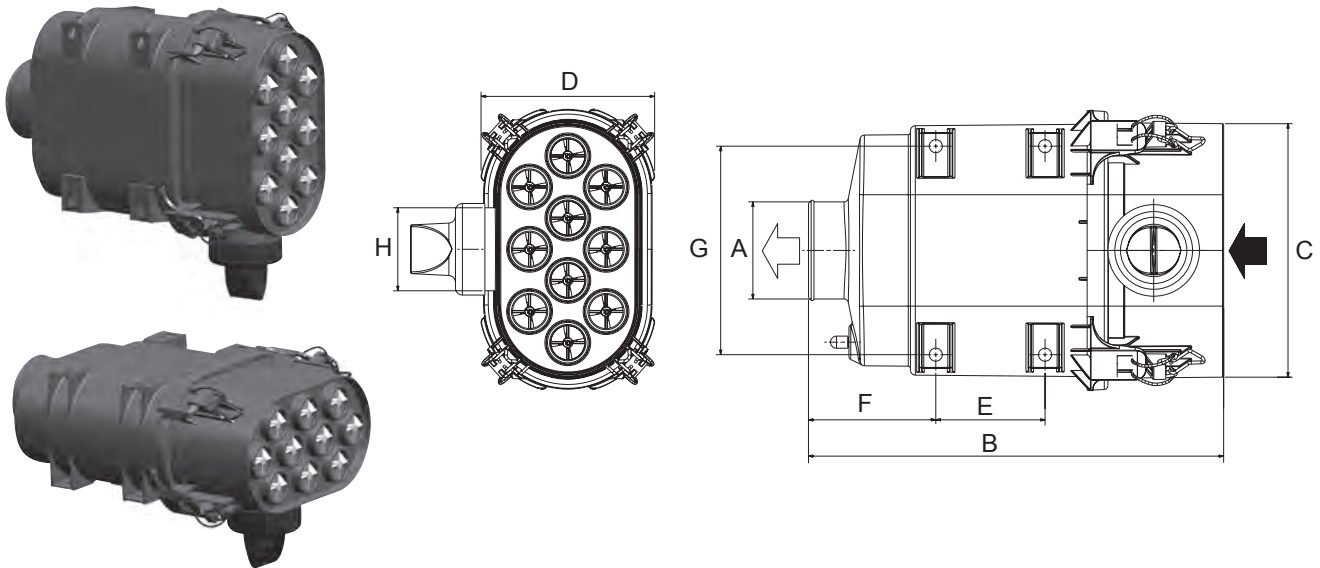
## PSD 09-10-12- Service Access on Side





## PSD 08 - Specifications

PowerCore®



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)							
		A	B	C	D	E	F	G	H
D080069 (H) D080070 (V) With Vac Valve	up to 6	89	380	257	159	100	117	191	76
D080069 (H) D080070 (V) With Scavenge Flow	up to 8,5	(H) Horizontal / (V) Vertical Installation							

### To Scavenge or Not Scavenge...

PSD air cleaners are designed to operate with or without aspiration, otherwise known as scavenging. Scavenging is accomplished by introducing a secondary airflow to the drop tube on the air cleaner (generally through the use of an ejector or ejector muffler). This flow pulls the separated contaminant from the pre-cleaner and inserts it into the exhaust stream.

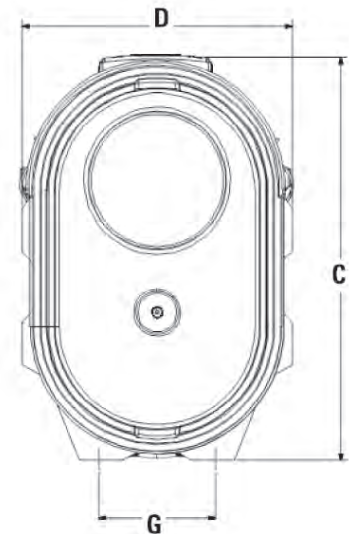
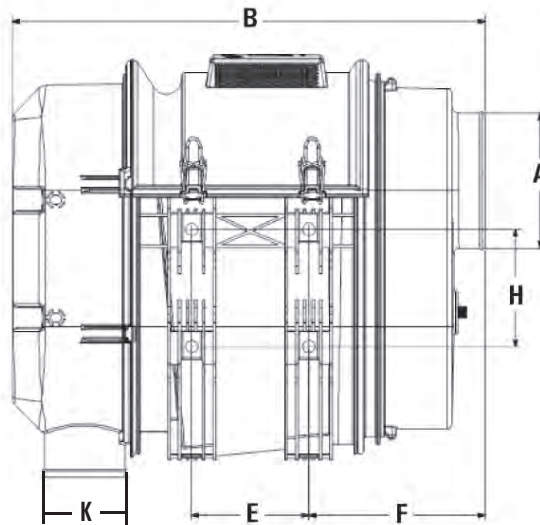
The advantages to scavenging are:

- Higher pre-cleaner efficiency (resulting in longer filter service life)
- Completely self-servicing (no regular maintenance needed on pre-cleaner)
- Drop tube can be located in variety of orientations (not just straight down as is necessary on non-scavenged systems)

Aspirating an intake system through the use of a scavenging device adds more components (an ejector and some plumbing) to the overall system, but will enhance the separator efficiency of the pre-cleaner and consequently extend the filter service life. Conversely, the PSD air cleaner and pre-cleaner will function adequately without scavenge, with the result being less filter service life than with the use of scavenging.

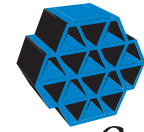


## PSD 09 - 10 - 12 Specifications



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min. With 10% Scavenge Flow	Dimensions (mm)								
		A	B	C	D	E	F	G	H	K
D090073 (V)	6-10	102	433	362	180	110	174	100	130	76,5
D090074 (H)	6-10	102	433	362	180	110	174	100	130	76,5
D090099 (V)	7-11	102	458	362	180	135	174	100	130	76,5
D090098 (H)	7-11	102	458	362	180	135	174	100	130	76,5
D090101 (V)	9-13	102	533	362	180	180	174	100	130	76,5
D090100 (H)	9-13	102	533	362	180	180	174	100	130	76,5
D090086 (V)*	6-10	102	477	362	180	110	218	100	130	76,5
D090087 (H)*	6-10	102	477	362	180	110	218	100	130	76,5
D090088 (V)*	7-11	102	502	362	180	135	218	100	130	76,5
D090089 (H)*	7-11	102	502	362	180	135	218	100	130	76,5
D090090 (V)*	9-13	102	577	362	180	180	218	100	130	76,5
D090091 (H)*	9-13	102	577	362	180	180	218	100	130	76,5
D100029 (V)	12-18	127	429	375	254	110	165	110	110	76,5
D100030 (H)	12-18	127	429	375	254	110	165	110	110	76,5
D100031 (V)	18-25	152	529	375	254	210	165	110	110	76,5
D100032 (H)	18-25	152	529	375	254	210	165	110	110	76,5
D100124 (V)*	12-18	127	505	375	254	110	241	110	110	76,5
D100123 (H)*	12-18	127	505	375	254	110	241	110	110	76,5
D100122 (V)*	18-25	127	605	375	254	210	241	110	110	76,5
D100121 (H)*	18-25	127	605	375	254	210	241	110	110	76,5
D120035 (V)	23-27	152	496	430	306	168	160	154	110	76
D120036 (H)	23-27	152	496	430	306	168	160	154	110	76
D120037 (V)	27-30	152	596	442	306	268	160	154	110	76
D120038 (H)	27-30	152	596	442	306	268	160	154	110	76

(H) Horizontal / (V) Vertical Installation \* 90° Outlet



## PSD PowerCore® - Service Parts

					Service Parts			
Air Cleaner Model No.	Air Cleaner Installation	Version	Orientation Drop Tube	Orientation Outlet	Access Cover Assy	U-Clip, Mounting (x4)	Main Element	Safety Element
D080069	Horizontal	-	Horizontal	Straight	P785236	P786050	P608533	P600975
D080070	Vertical	-	Vertical	Straight	P785237	P786050	P608533	P600975
D090073	Vertical	Short	Vertical	Straight	P785651	P784517	P608665	P606121
D090074	Horizontal	Short	Horizontal	Straight	P785651	P784517	P608665	P606121
D090099	Vertical	Medium	Vertical	Straight	P785978	P784517	P787281	P606121
D090098	Horizontal	Medium	Horizontal	Straight	P785978	P784517	P787281	P606121
D090101	Vertical	Long	Vertical	Straight	P786989	P784517	P608675	P606121
D090100	Horizontal	Long	Horizontal	Straight	P786989	P784517	P608675	P606121
D090086	Vertical	Short	Vertical	90°	P785651	P784517	P608665	P606121
D090087	Horizontal	Short	Horizontal	90°	P785651	P784517	P608665	P606121
D090088	Vertical	Medium	Vertical	90°	P785978	P784517	P787281	P606121
D090089	Horizontal	Medium	Horizontal	90°	P785978	P784517	P787281	P606121
D090090	Vertical	Long	Vertical	90°	P786989	P784517	P608675	P606121
D090091	Horizontal	Long	Horizontal	90°	P786989	P784517	P608675	P606121
D100029	Vertical	Short	Vertical	Straight	Upon request	P784517	P608666	P601560
D100030	Horizontal	Short	Horizontal	Straight	Upon request	P784517	P608666	P601560
D100031	Vertical	Long	Vertical	Straight	Upon request	P784517	P608676	P601560
D100032	Horizontal	Long	Horizontal	Straight	Upon request	P784517	P608676	P601560
D100124	Vertical	Short	Vertical	90°	Upon request	P784517	P608666	P601560
D100123	Horizontal	Short	Horizontal	90°	Upon request	P784517	P608666	P601560
D100122	Vertical	Long	Vertical	90°	Upon request	P784517	P608676	P601560
D100121	Horizontal	Long	Horizontal	90°	Upon request	P784517	P608676	P601560
D120035	Vertical	Short	Vertical	Straight	Upon request	P784517	P608667	P607557
D120036	Horizontal	Short	Horizontal	Straight	Upon request	P784517	P608667	P607557
D120037	Vertical	Long	Vertical	Straight	Upon request	P784517	<b>P608677</b>	P607557
D120038	Horizontal	Long	Horizontal	Straight	Upon request	P784517	<b>P608677</b>	P607557

### Accessories used on all PSD Air Cleaners

Vacuator™ Valve	P112803 for the European PSD Range / P158914 for the US PSD Range - See page 27. When making use of a reducer, see page 141 for all available Vac Valves
Check Valve	P784790 for the PSD Range. See page 126 for all available Check Valves.
Adapters	ø 32 = P783747 ø 38 = P783746 ø 50 = P783748 ø 25 + 90° = P786685 ø 32 + 90° = P784019 (PP) ø 32 + 90° = P784834 (PA) ø 38 + 90° = P786778
Ejectors	See page 124-125 for all available Exhaust Ejectors



### Media used on PSD PowerCore® Standard Air Cleaners

All PSD Standard Air Cleaners are equipped with White Media, Blue Ultra-Web® Media is optional. Contact your Donaldson representative for more info.

## PSD Extended Product Line

For the PowerCore™ Air Cleaner Range, Donaldson now offers you more alternatives - an extended product line. These new alternatives provide you more flexibility and mounting options. A new range of accessories is also available (see page 26).

Standard PSD PowerCore® Line		
US Models	European Models	
<b>PSD08</b>		
D080020	D080069	New
D080026	D080070	New
<b>PSD09</b>		
D090019	D090073	New
D090020	D090074	New
-	D090099	New
-	D090098	New
D090021	D090101	New
D090022	D090100	New
-	D090086	New
-	D090087	New
-	D090088	New
-	D090089	New
-	D090090	New
-	D090091	New
<b>PSD10</b>		
-	D100029	Existing
-	D100030	Existing
-	D100031	Existing
-	D100032	Existing
-	D100124	New
-	D100123	New
-	D100122	New
-	D100121	New
<b>PSD12</b>		
D120035	-	Existing
D120036	-	Existing
D120037	-	Existing
D120038	-	Existing

### PSD08 Extended Product Line - Features



- Lower initial restriction
- Mounting brackets on both sides to increase mounting options
- Drop tube diameter enlarged (same as PSD10 & 12)
- Possibility to fix different scavenge adapters > straight & 90°
- Possibility to integrate check-valve into scavenge tube of pre-cleaner
- 4 latches on service cover to improve accessibility & serviceability

### PSD09 Extended Product Line - Features

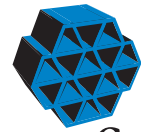


- Lower initial restriction
- Next to the short and long PSD09 we offer now a medium version
- Drop tube diameter enlarged (same as PSD10 & 12)
- Possibility to fix different scavenge adapters > straight & 90°
- Possibility to integrate check-valve into scavenge tube of pre-cleaner
- Optional 45° latch position on the cover
- New version with 90° outlet tube
- Male indicator tab with thread 1/8 27 NPT

### PSD10 Extended Product Line - New features



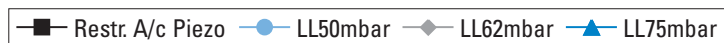
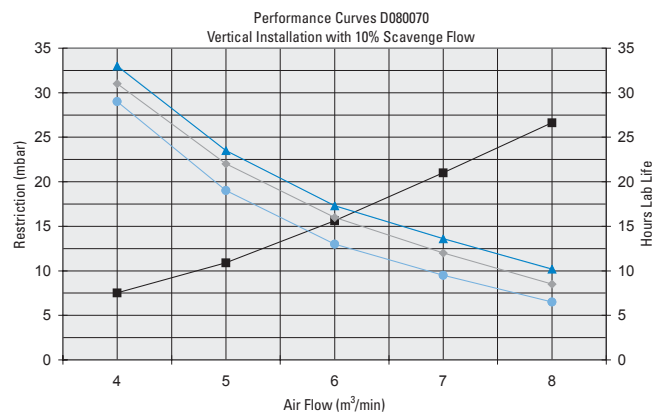
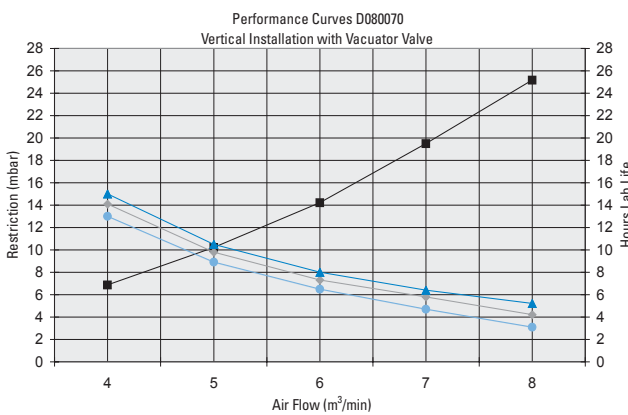
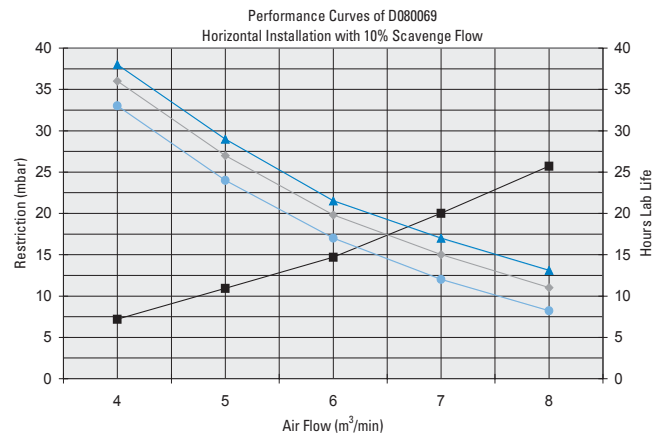
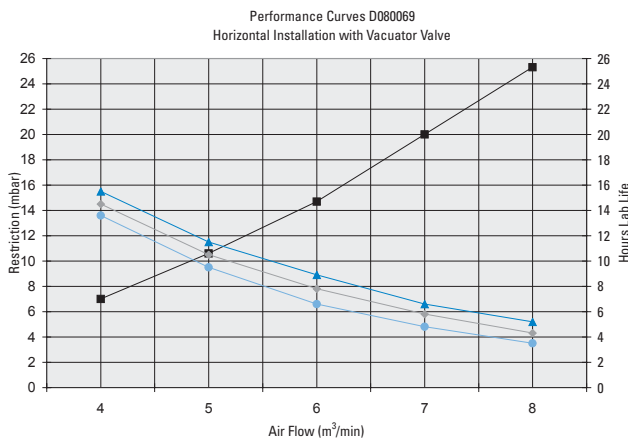
- New version with 90° outlet tube



## When specifying an Air Cleaner...

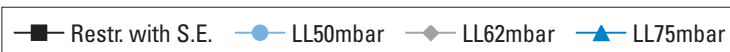
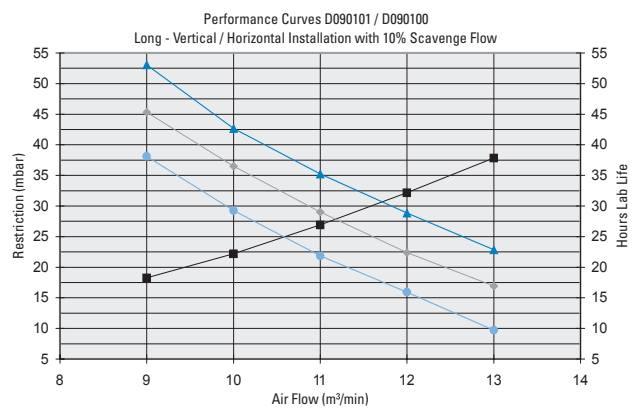
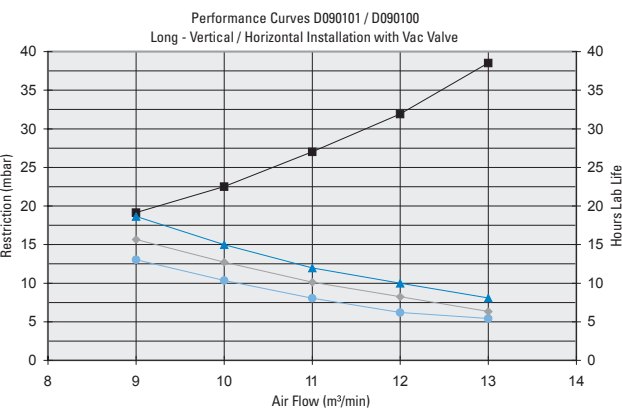
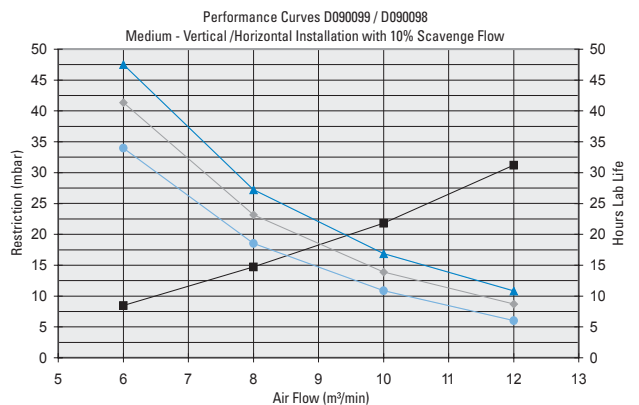
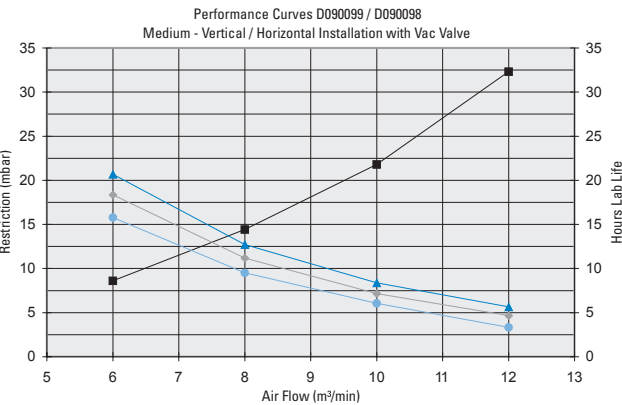
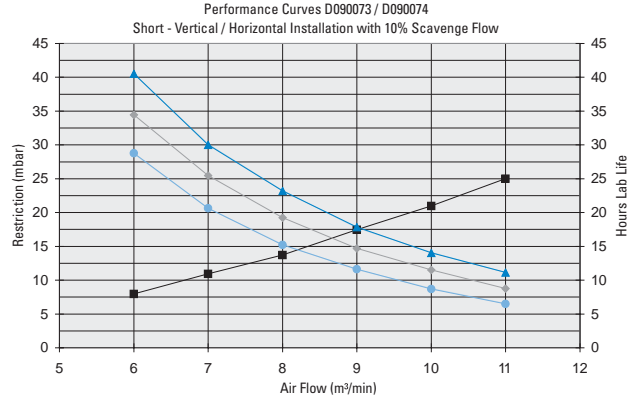
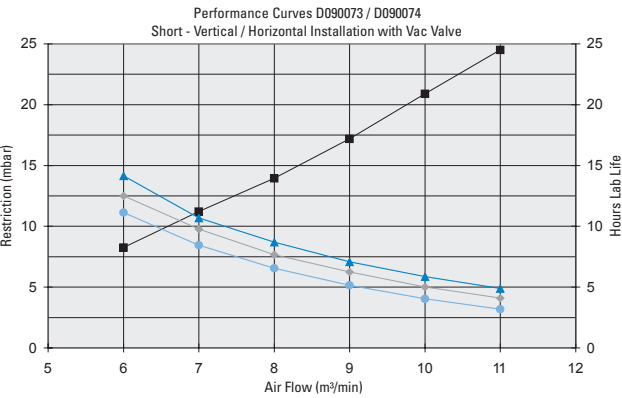
Determine the Airflow Requirements of your engine, then find the corresponding  $m^3/min$ . airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that  $m^3/min$ . When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## PSD 08 Performance Curves

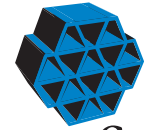


All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of  $1g/m^3$

## PSD 09 Performance Curves

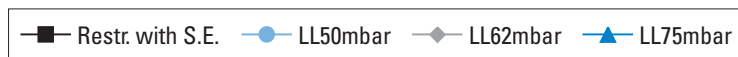
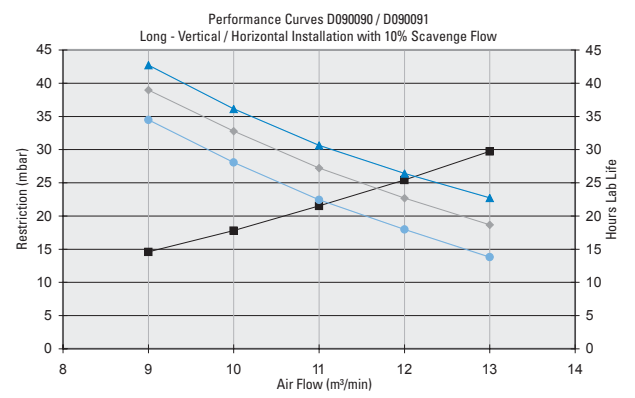
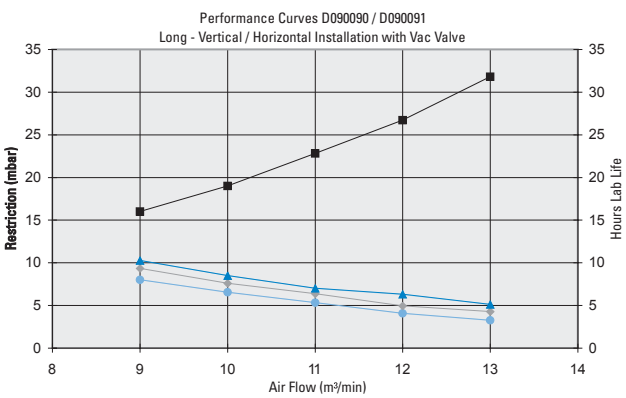
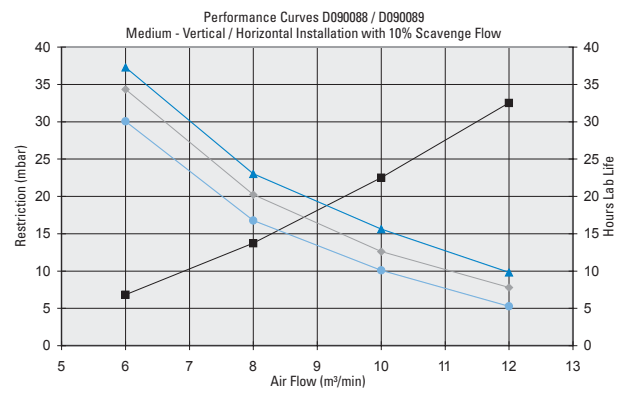
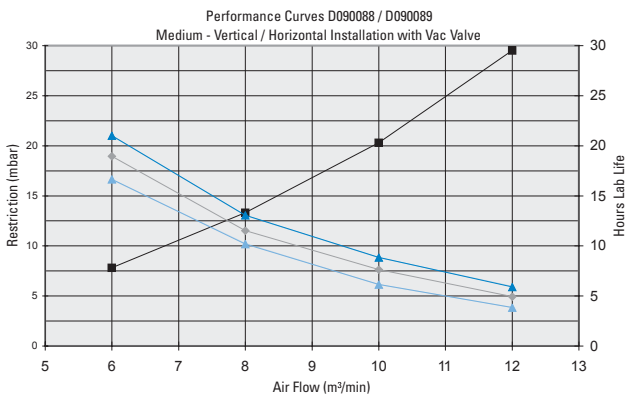
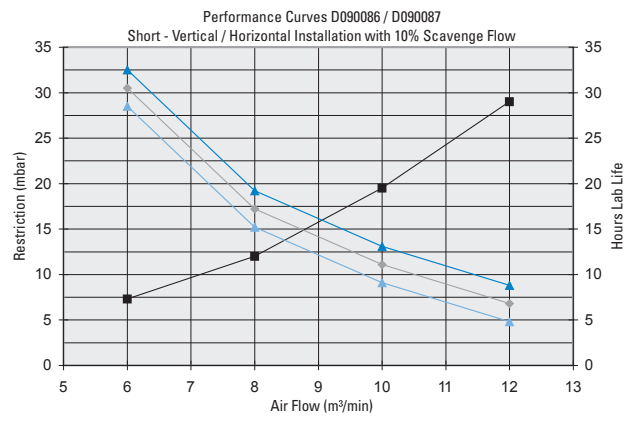
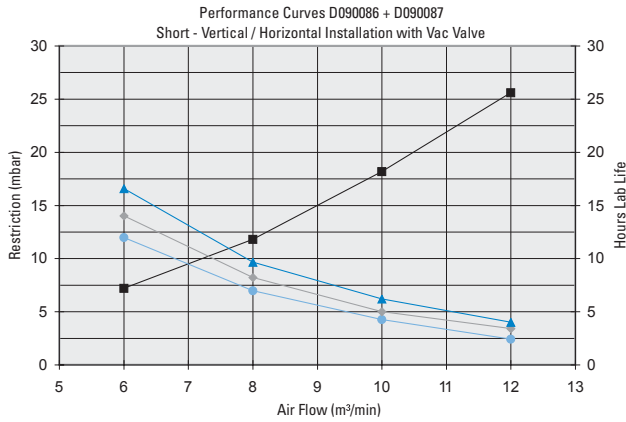


All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>



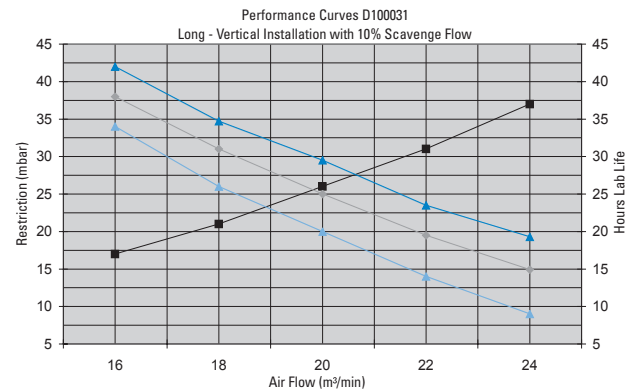
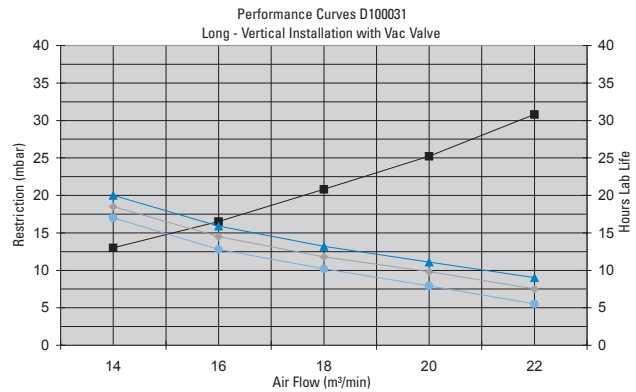
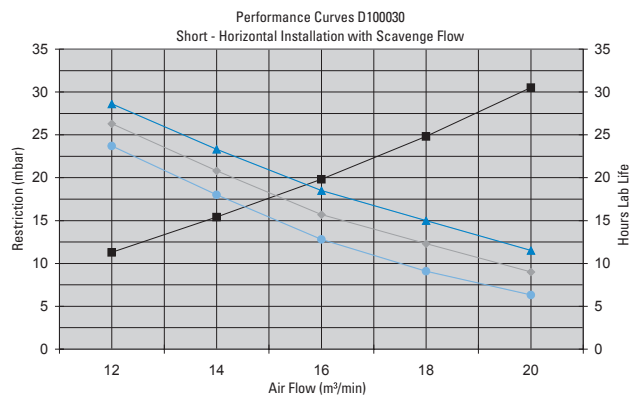
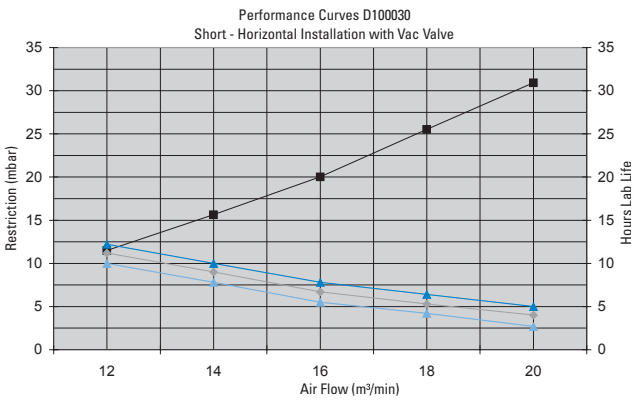
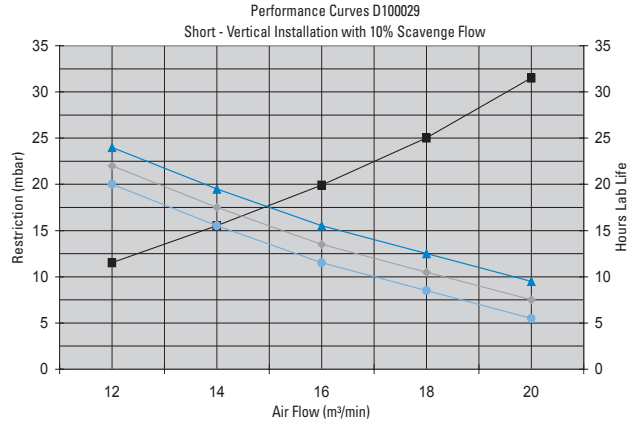
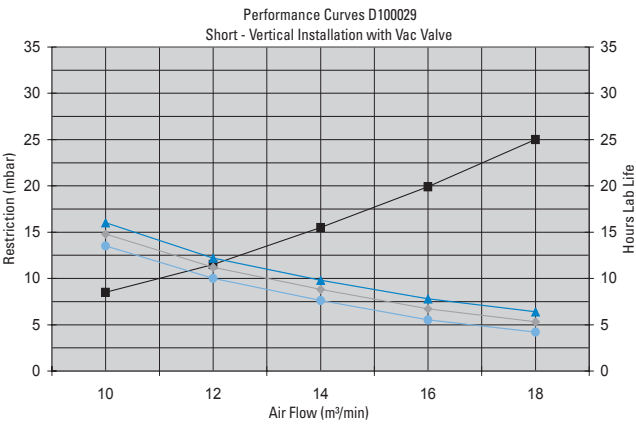
## PSD 09 Performance Curves

PowerCore®



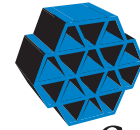
All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## PSD 10 Performance Curves



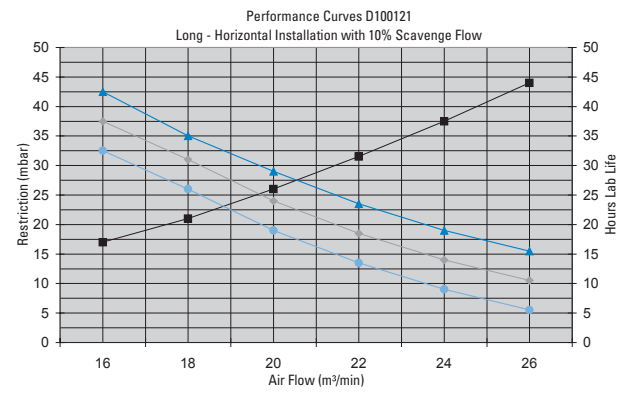
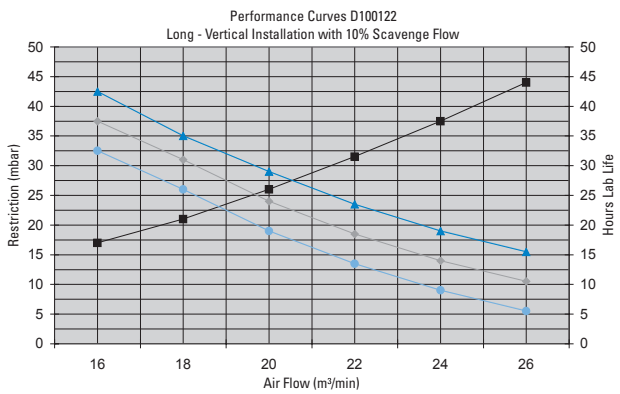
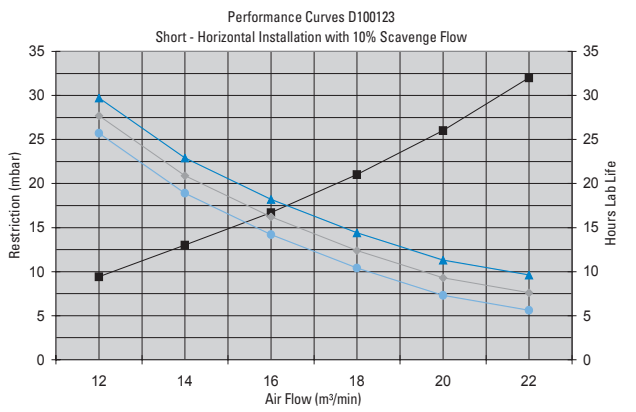
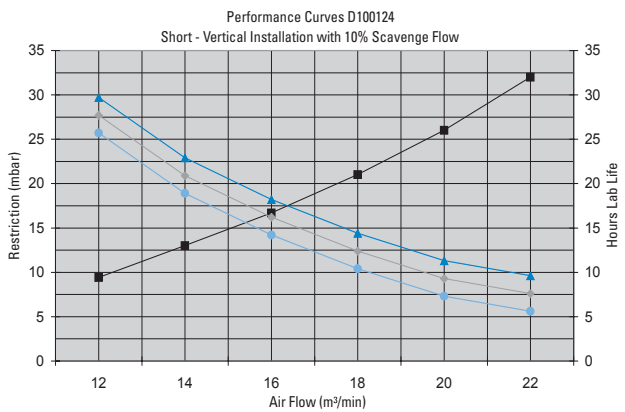
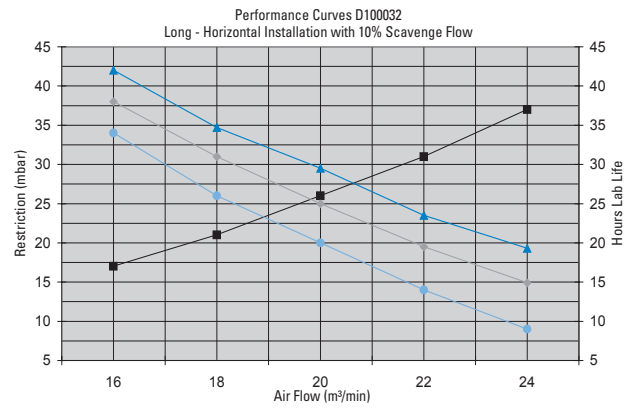
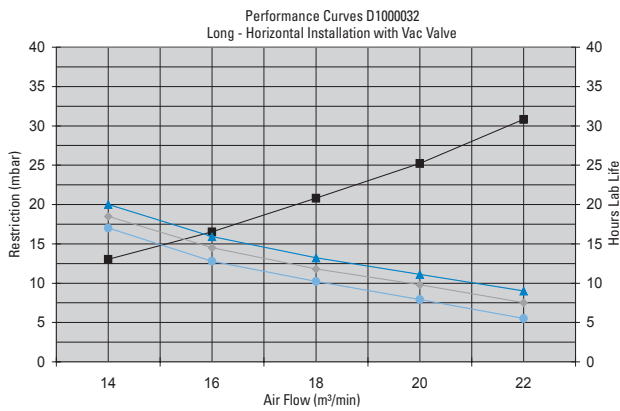
Restr. A/c Piezo  
  LL50mbar  
  LL62mbar  
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m³



## PSD 10 Performance Curves

PowerCore®



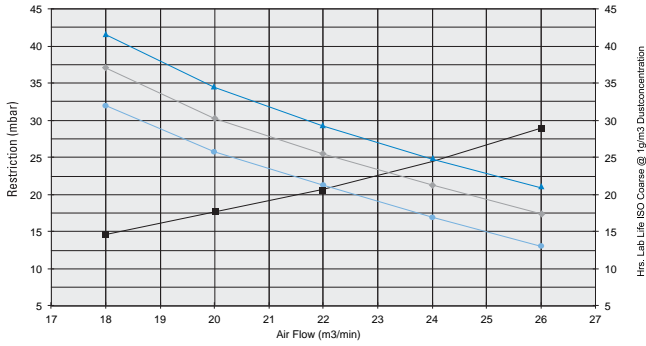
Restr. A/c Piezo    
  LL50mbar    
  LL62mbar    
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

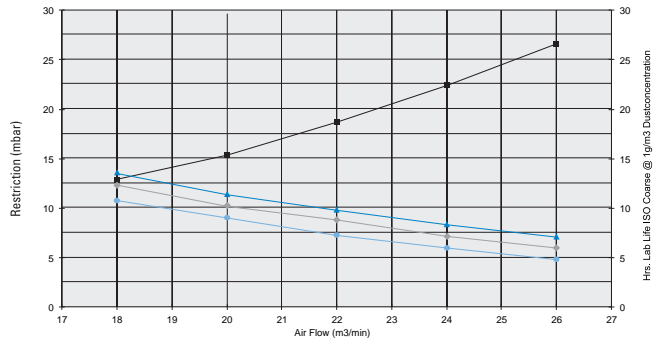


## PSD 12 Performance Curves

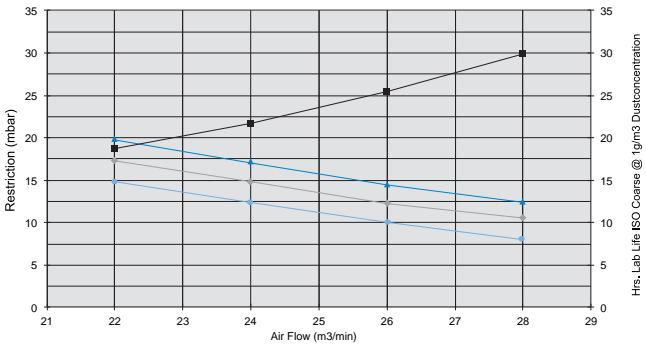
Performance Curves PSD120035/36 acc. ISO5011 with 10% Scavange (vertically installed)



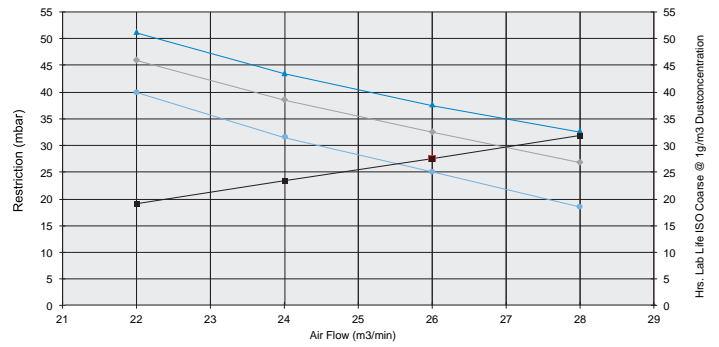
Performance Curves PSD120035/36 acc. ISO5011 with Vacuator Valve (vertically installed)



Performance Curves PSD120037/38 acc. ISO5011 with Vacuator Valve (vertically installed)



Performance Curves PSD120037/38 acc. ISO5011 with 10% scavange (vertically installed)



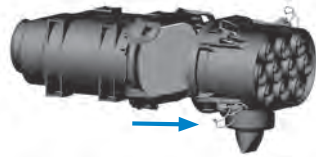
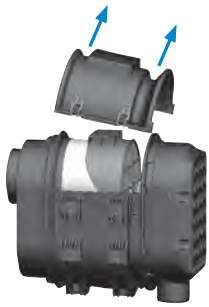
Restr. with S.E.
  LL50mbar
  LL62mbar
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

**Note:** Your air cleaner service cover may be in a different position than shown.

PSD09, PSD10  
or PSD12 Style

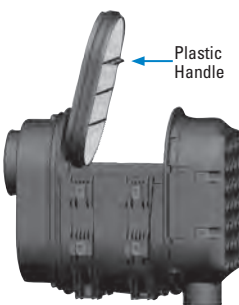
PSD08 Style



**1 Shut off engine. Unlatch and remove the housing service cover.**



**2 Remove primary filter.** Pull the filter out of housing. On PSD09, PSD10, and PSD12 you must first loosen the filter gasket seal. Using the handle, push down on the filter to loosen the seal, which will tilt the filter to approximately a 5° angle.



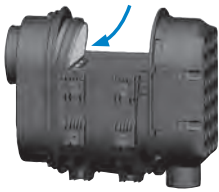
**3 Remove safety filter.** Using the plastic handle on the face of the safety filter, pull the filter toward the center of the housing and remove. **Note:** A safety filter only needs to be replaced at every third primary air filter change.



**4 Inspect the new filter before installing.** Visually check for cuts, tears, or indentations on the sealing surfaces before installation. If any damage is visible, do not install.

## PSD09, PSD10 or PSD12 Style

## PSD08 Style

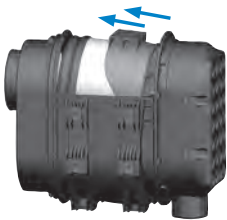


Safety Filter  
Positioning Tab Location

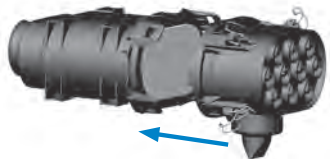


Plastic  
Handle

**5 If replacing safety,** using the plastic handle on the safety filter, slide the filter at an angle into the outlet side and push in place until the filter seats firmly and evenly within the housing. **Note:** On PSD09, PSD10 and PSD12 models, insert the safety filter tab into the positioning slot before pushing the filter in place.



**6 Insert the primary filter.** For PSD08, slide the filter into the housing until the gasket seats against the housing. For PSD09, PSD10 and PSD12, slide the filter down at approximately a 5° angle until it hits the end of the housing. Rotate the filter toward the outlet section to complete the seal.



**7 Replace the service cover.** On PSD08, tilt the service cover into place and secure latches. For the PSD09, PSD10 and PSD12, place the service cover in position and fasten the latches. **Note:** If the cover doesn't seat, remove and re-check the filter position. The cover will be difficult to install if the filter isn't installed correctly.

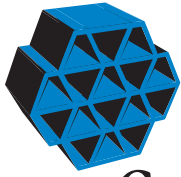


**8 Visually inspect your inlet and outlet connections.** If your air cleaner has a Vacuator Valve, inspect the valve. Replace if any signs of wear or damage are visible.

# Engine Protection

in **All Conditions**

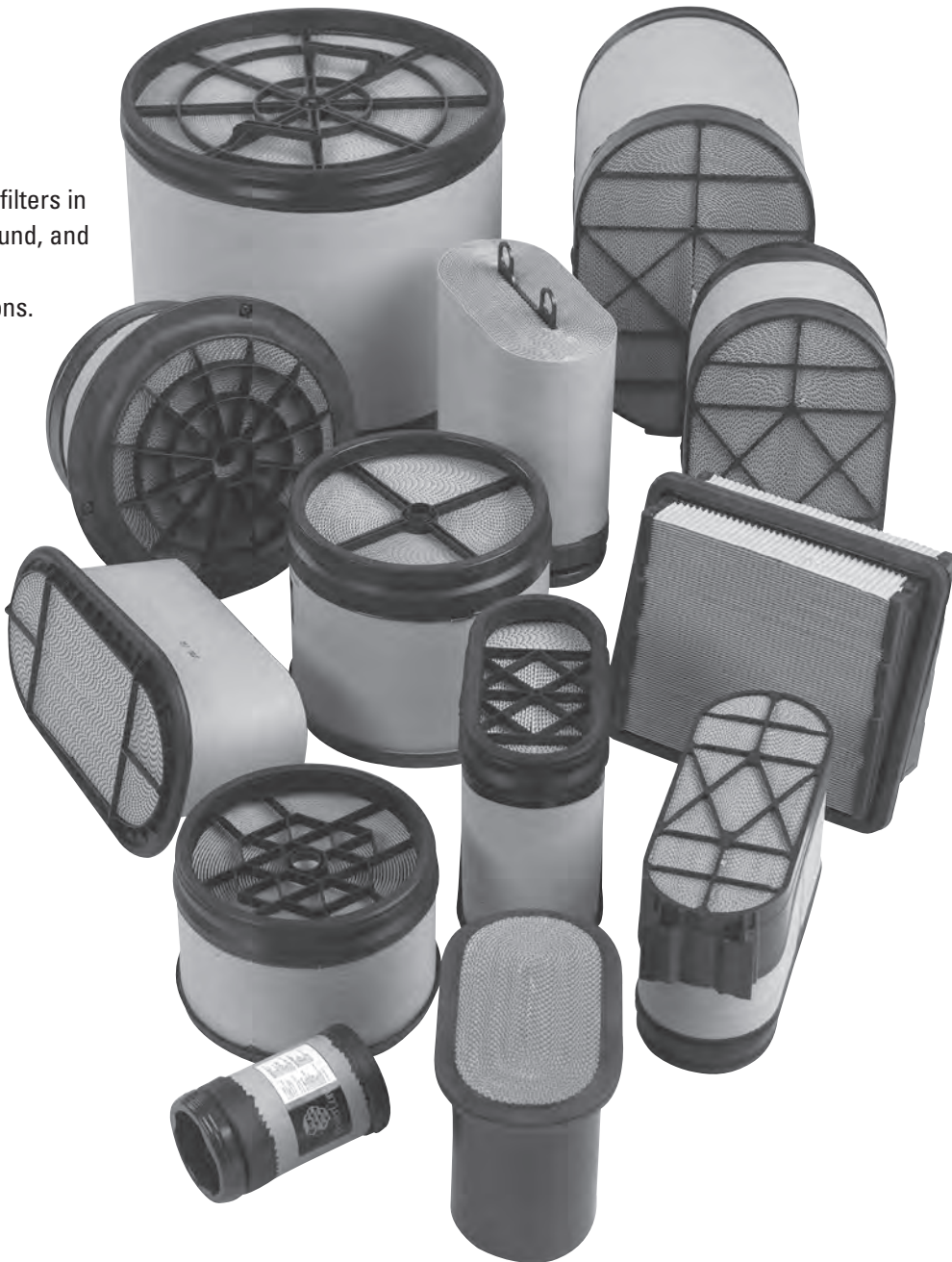
*Like Never Before!*



**PowerCore**<sup>®</sup>  
A DONALDSON FILTRATION TECHNOLOGY

**Innovative vehicle designs call for new engineering solutions plus know-how from your suppliers. We have both – and are ready to help you solve your space or configuration problems.**

PowerCore filters in round, obround, and rectangular configurations.



# Air Cleaners used in Light Dust Conditions

... Donaldson offers a full line of air cleaners for a wide variety of applications and operating environments.

## Section Index

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DuraLite™ ECB, ECC, ECD .....	38
DuraLite Service Instructions.....	42
EPB .....	43
EPB Service Instructions.....	48
ERB2 .....	43
ERB2 Service Instructions.....	48

**UNIQUE  
DESIGN  
CONCEPT**

# DuraLite™ ECB, ECC, ECD Air Cleaner

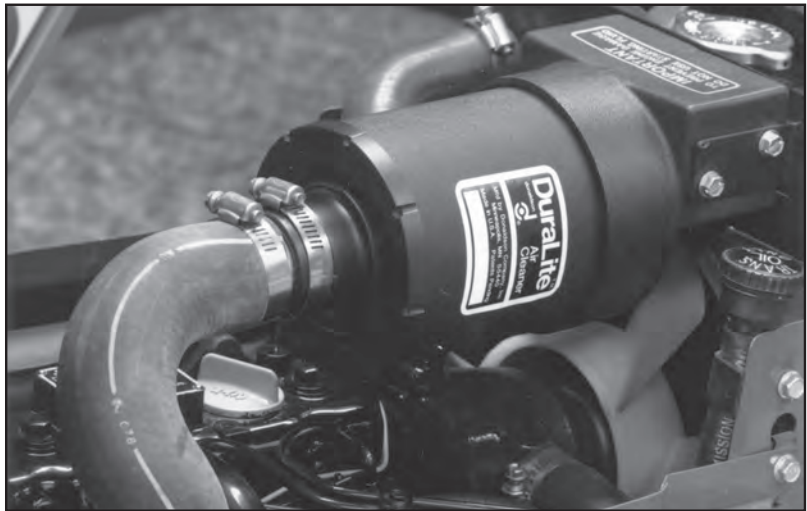


## Convenient DuraLite Disposables Rugged Air Cleaners for Small and/or High Pulsation Gas & Diesel Engines

The DuraLite™ Air Cleaners are disposable, one-stage, dry air cleaners which are used on light-duty applications like air compressors, pumps, material handling equipment, propulsion units, breathers, welders, generator sets, lawn vehicles, recreation vehicles and many more. Ideal for high pulsating small engines.

Donaldson's DuraLite™ air cleaners are tough, non-metallic, lightweight, self-supporting and completely disposable. They are also easy to install, durable, and reliable.

They are designed to function well under high and severe pulsation conditions found in many applications, especially two- and three-cylinder engines. Vibration-resistant media is potted into molded housings of rugged ABS plastic - so they don't fall apart as other designs might.



Light Dust Conditions

### Applications

- Can be mounted vertically or horizontally.
- Provides variety of airflow volumes to engine: from 1 to 90 m<sup>3</sup>/min.
- Temperature tolerance: to 83°C continuous / 105°C intermittent.

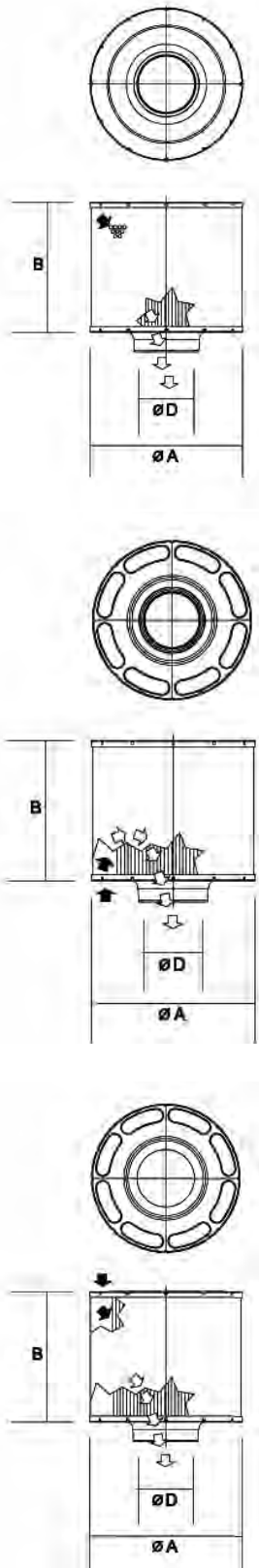


Donaldson recommends the use of a high torque clamp for DuraLite air cleaners. This clamp eliminates the need for double clamping - order one for each DuraLite™ Air Cleaner. See page 120 for more information.

### Air Cleaner Features

- No serviceable parts! Air cleaner housing and filter are one unit!
- Designed to withstand severe intake pulsation.
- Economical replacement cost.
- Self-supporting, sturdy.
- Very reliable: only one critical seal.
- Lightweight and compact in size.
- Non-metallic, non-corrosive... ideal for marine applications.
- Completely disposable... acceptable for normal trash pick-up (DuraLite™ should not be incinerated).
- Easily installed & maintained.
- Minimal removal clearance needed: only 38 mm.
- Three airflow styles available to fit virtually any engine intake configuration.
- Various media available for specific applications: high pulsation, high humidity, etc....

## DuraLite™ Specifications



Curve No.	Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)		
				A	B	D
1	ECB	B085001	6 - 12	216	279	76
1	ECB	B085048**	6 - 12	216	279	76
2	ECB	B085011	7 - 14	216	279	102
2	ECB	B085046**	7 - 14	216	279	102
3	ECB	B085056**	27 - 49	196	260	152
4	ECB	B100094**	15 - 27	267	228	102
5	ECB	B105002*	16 - 30	267	381	127
6	ECB	B105006	13 - 25	267	267	102
7	ECB	B105012**	18 - 36	267	381	127
8	ECB	B120376**	30 - 90	318	400	198
9	ECB	B125003*	16 - 31	318	381	153
10	ECB	B125005**	25 - 42	318	229	140
11	ECB	B125011**	22 - 39	318	228	127
Curve No.	Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)		
				A	B	D
12	ECC	C045001*	1 - 3	114	114	38
13	ECC	C045002*	2 - 3	114	203	38
14	ECC	C055002*	2 - 4	140	178	45
15	ECC	C055003*	1,5 - 3	140	102	45
16	ECC	C055008*	2 - 4	140	242	45
17	ECC	C065001*	2 - 3	165	102	51
18	ECC	C065002*	3 - 5	165	190	51
19	ECC	C065003*	2,5 - 5	165	127	57
20	ECC	C065004*	3 - 6	165	229	57
21	ECC	C065015**	3 - 6	165	229	51
22	ECC	C085001*	3 - 5	216	102	64
23	ECC	C085002*	3 - 6	216	165	64
24	ECC	C085003*	4 - 7	216	127	76
25	ECC	C085004*	5 - 10	216	241	76
26	ECC	C085005*	3 - 5	216	127	64
27	ECC	C085006*	3,5 - 6,5	216	241	64
28	ECC	C105003	9 - 17	267	152	102
29	ECC	C105004	10,5 - 20	267	267	102
30	ECC	C125003	10 - 19	317	152	127
31	ECC	C125004	14 - 26,5	317	279	127
Curve No.	Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)		
				A	B	D
32	ECD	D045003*	1 - 3	114	114	38
33	ECD	D045004*	1 - 3	114	152	38
34	ECD	D055004*	2 - 3,5	140	178	45
35	ECD	D065003*	2 - 3	165	102	51
36	ECD	D065008**	3,5 - 7	165	229	51
37	ECD	D085011	8 - 15,5	197	655	106
38	ECD	D085012	2,5 - 7,5	197	258	106
39	ECD	D125004	12 - 23	317	279	127

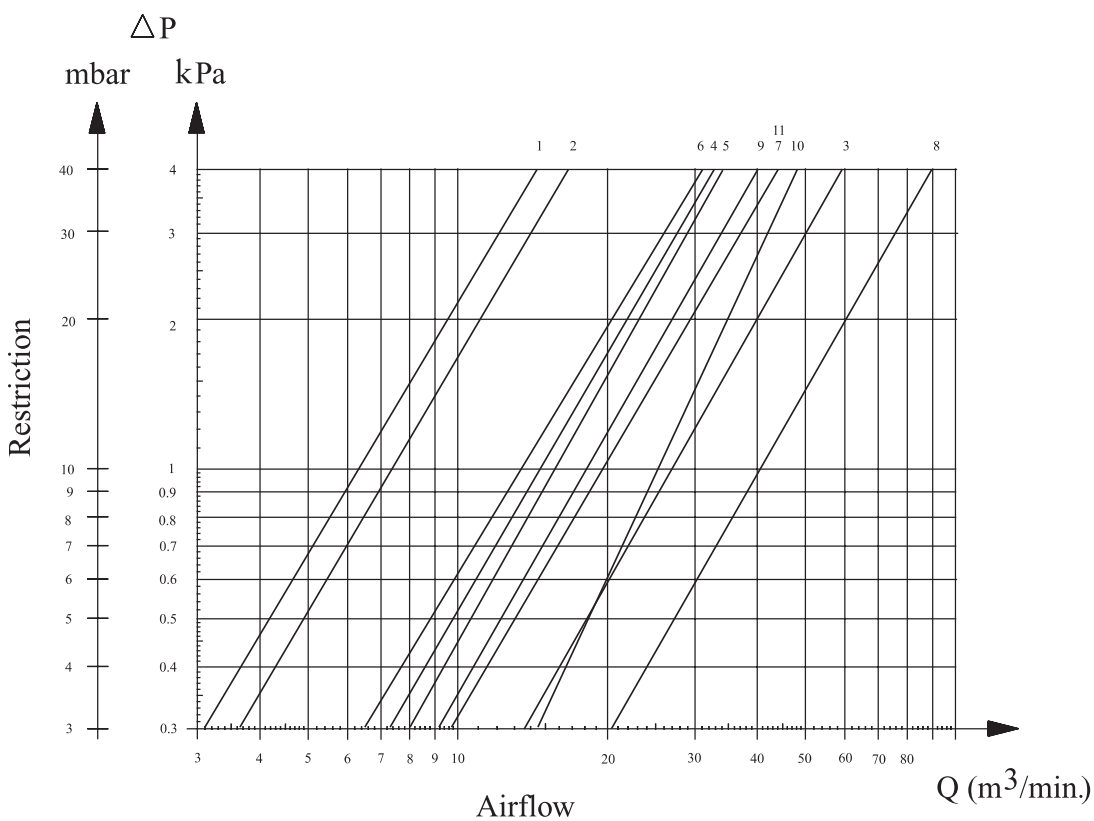
\* High pulsation media      \*\* Marine application

Light Dust Conditions

## When specifying an Air Cleaner...

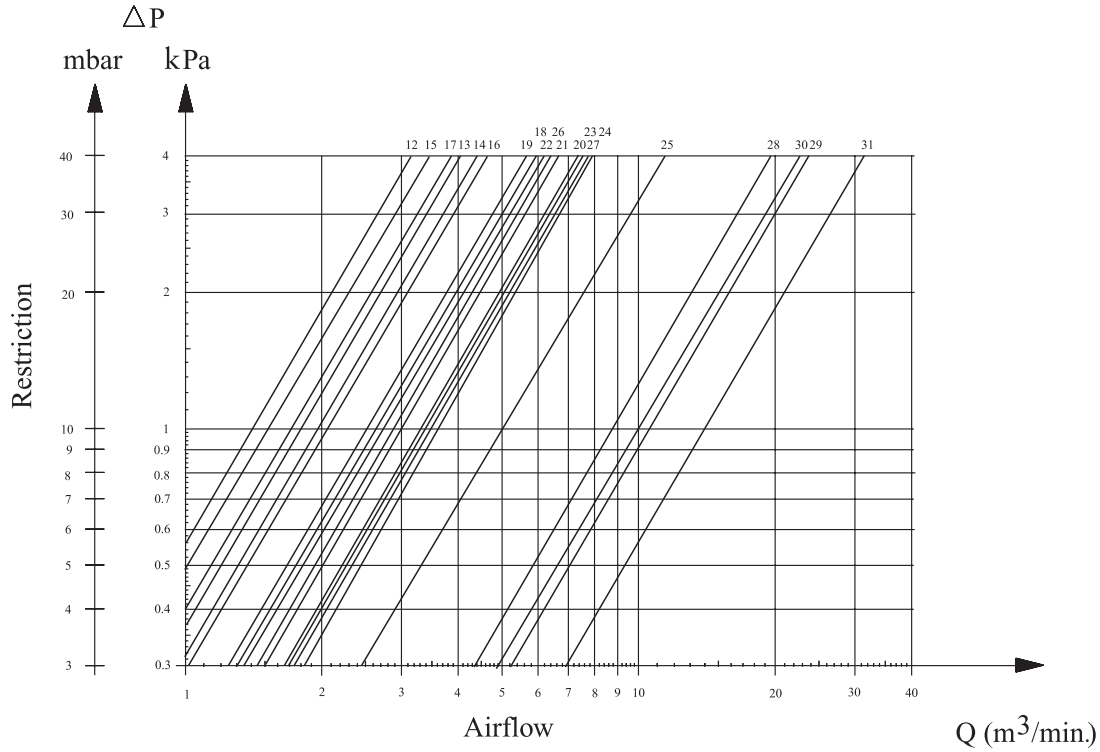
Determine the Airflow Requirements of your engine, then find the corresponding  $m^3/min.$  airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that  $m^3/min.$  If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## DuraLite™ ECB Restriction Curves

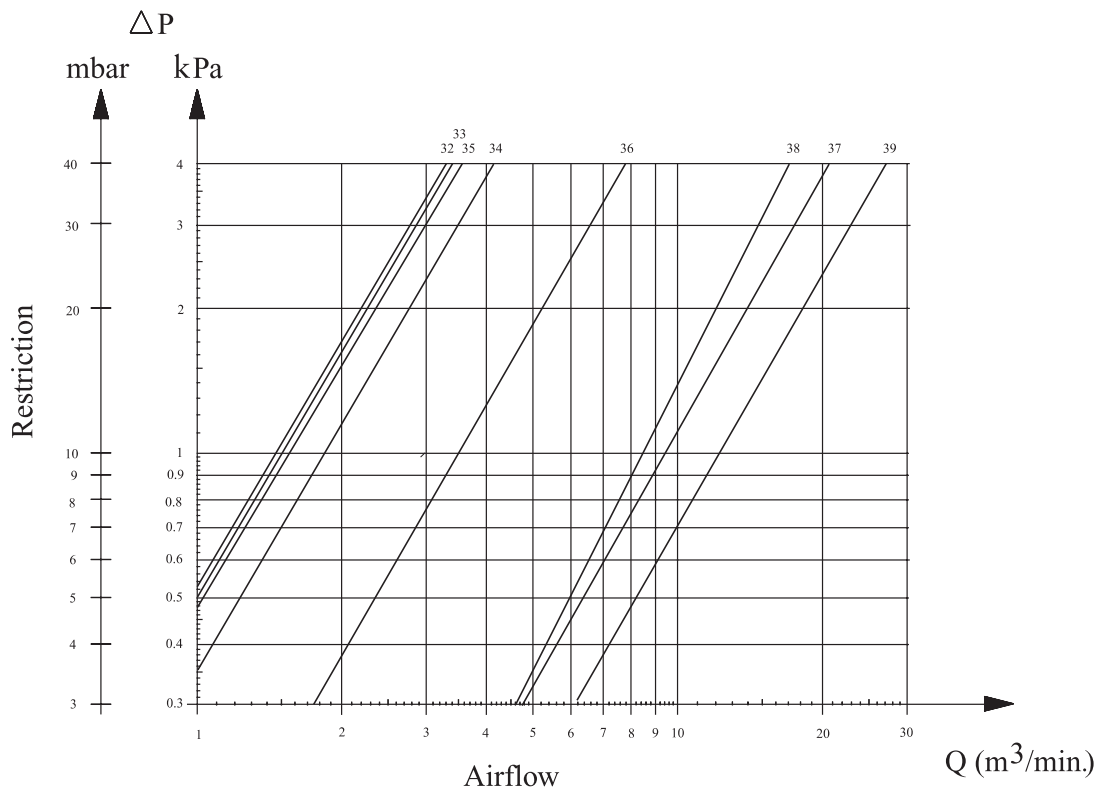




**DuraLite™ ECC Restriction Curves**



**DuraLite™ ECD Restriction Curves**



Light Dust Conditions

## Service Recommendations

### Servicing Intervals

Choose either of two types:

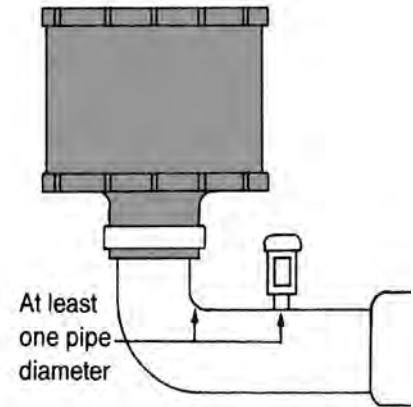
- **Scheduled maintenance.**  
DuraLite service intervals can be integrated into any existing maintenance program.
- **Restriction Maintenance.**  
This method offers the most accurate filter maintenance program, delivering maximum filter life at 99.9% efficiency, less machine downtime, and reduced maintenance costs.
- **Washing, cleaning or servicing the filter in any way voids the warranty.**

### Service Indicator Location

For proper restriction readings, a restriction fitting tap must be located between the engine intake and DuraLite outlet neck. The tap should be located in a straight section of the intake pipe at least one pipe diameter away from the manifold or any bends, elbows or reducers.

### Servicing Tips

- Do NOT judge the filter on the basis of visual inspection! If it's doing its job, it should look dirty. DuraLite filter life is longer than you may think. Change the filter only when restriction readings indicate.
- Do NOT leave the inlet ducting exposed any longer than necessary (a few minutes) during service.



### Disposal

Normal trash pick up is acceptable - never burn.

## Installation Instructions

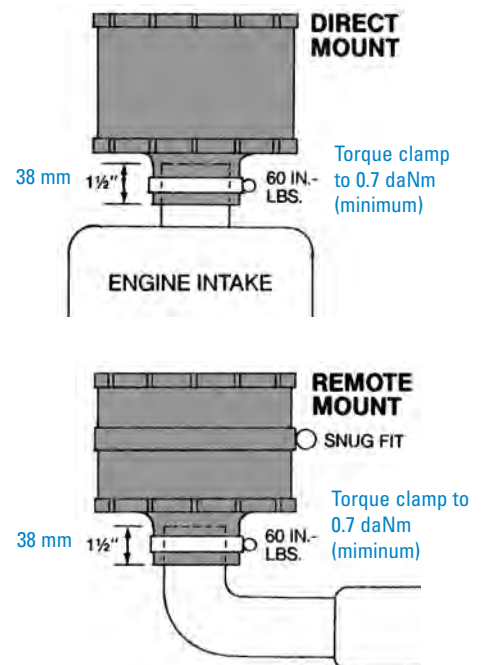
### Installation

DuraLite air cleaners can be mounted in two ways:

1. **Direct Mount:** mounted directly on the intake manifold.
2. **Remote Mount:** mounted away from engine and connected to engine with inlet piping.

### Installation Tips

- Engage outlet neck of the DuraLite™ over intake piping for a full 38 mm to insure a secure, lasting seal.
- Tighten clamp around outlet neck to 0.7 daNm minimum. A Donaldson high torque hose clamp is recommended.
- On remote mount style, avoid crushing the body with body clamps. A snug fit is best, and body clamps are not always required.
- Keep away from engine manifold and other very hot components (DuraLite™ is rated at 83°C maximum sustained temperature).
- Keep away from battery acids, brake fluid, and other caustic fluids.



## Primary Dry RadialSeal™ Air Cleaners which offer improved reliability and durability, reduced weight and costs and better serviceability.

The EPB-ERB2 Primary Dry RadialSeal™ Air Cleaners are used on light-duty applications like on-highway vehicles, stand-by generator sets and all other light-duty applications. They are also used on medium- and heavy-duty applications but than always combined with a Pre-Cleaner.

For more details on EPB-ERB2 Air Cleaners with Pre-Cleaners operating in Medium Dust conditions see page 60-63 and in Heavy Dust conditions see page 93-96 .



The EPB Air Cleaner is a one-stage full-plastic air cleaner

Built with Donaldson Technology.



The ERB2 Air Cleaner is a one-stage hybrid air cleaner. It is the Next Generation ERB Air Cleaner Product featuring Donaldson's Unique Design Concept. For more details on this UDC Feature, see page 7.

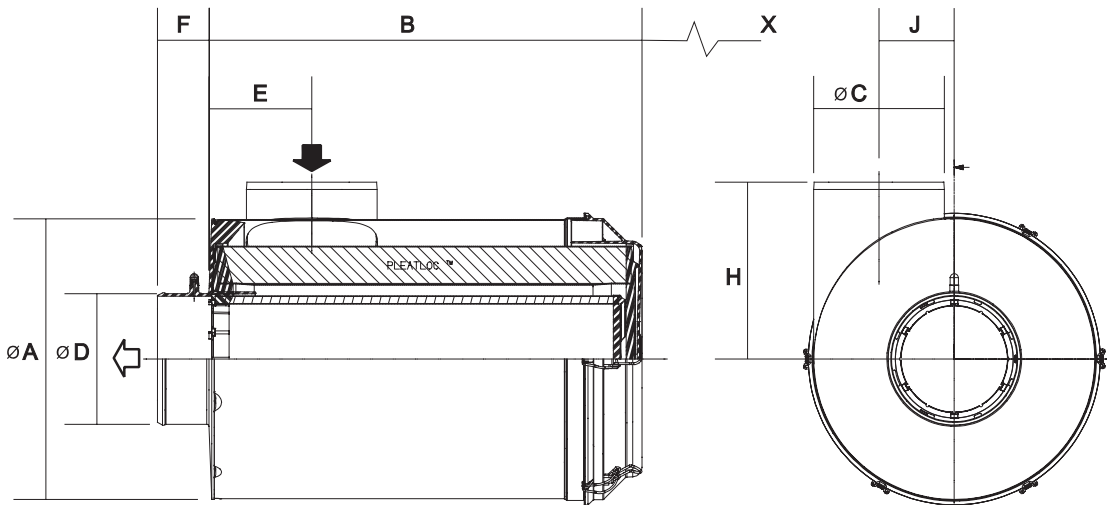
### Applications EPB-ERB2

- Can be mounted vertically or horizontally
- Provides variety of airflow volumes to engine: from 2 to 65 m³/min.
- Temperature tolerance: to 83°C continuous / 105°C intermittent.

### Features EPB-ERB2

- Cost effective / Compact and light
- Flexible installation / Conquers underhood space limitations
- Reliable, durable, high-tech and easy to service design
- Proven RadialSeal™ Technology
- Pre-cleaner can be added / Tapped for restriction indicator as standard
- Filter inside air cleaner is different from filters with metal end caps
- One-piece molded end caps encase the ends of media and filter liners
- Filter fits over the housing outlet tube, creating a reliable seal - with no hassle of separate sealing gaskets
- Indicator thread size = 1/8-27NPT (MALE)

## EPB Specifications - Service Parts



Light Dust Conditions

Air Cleaner Model No.	Airflow m <sup>3</sup> /min.	Range Dimensions (mm)									
		A	B	C	D	E	F	H	J	X°	Z°°
B070005*	2 - 5	182	334	76	76	45	27	115	145	340	45
B080067*	4 - 7	210	355	95	89	54	31,5	130	146	355	110

\* Includes safety element  
 X° Free space needed to remove main element    Z°° Free space needed to remove cover

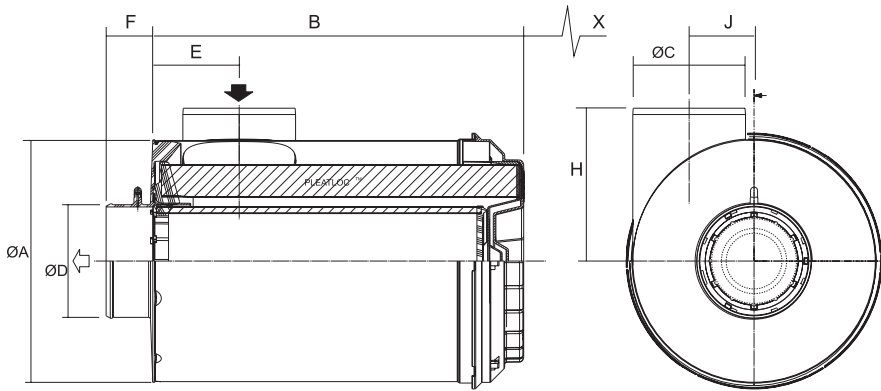
### Service Parts

Air Cleaner Model No.	Main Element	Safety Element	Access Cover Assy*	Raincap	Mounting band**
B070005	P772579	P775300	P778758	H001379	P777731
B080067	P772580	P775302	P775305	H770010	P777732

\* Spare Part only      \*\* Only one mounting band needed per Air Cleaner

## ERB2 Specifications - Service Parts

**UNIQUE DESIGN CONCEPT**



ERB2 Air Cleaners		ERB Air Cleaners	
B100126	B100120	B100120	B100120
B130057	B130010	B130010	B130010
B130058	B130013	B130013	B130013
B150058	B150025	B150025	B150025
B150059	B150028	B150028	B150028
B180016	B180011	B180011	B180011
B180017	B180012	B180012	B180012

Air Cleaner Model No.	Airflow m <sup>3</sup> /min.	Range Dimensions (mm)									
		A	B	C	D	E	F	H	J	X°	Z°
B100126*	8 - 14	259	430	114	102	143	52	205	0	400	75
B130057	18 - 30	330	530	178	152	180	58	215	0	360	95
B130058*	18 - 28	330	530	178	152	180	58	215	0	360	95
B150058*	18 - 32	381	590	178	178	136	70	241	102	540	93
B150059	18 - 32	381	590	178	178	136	70	241	102	540	93
B180016	32 - 65	457	650	254	203	282	85	328	0	600	130
B180017*	32 - 65	457	650	254	203	282	85	328	0	600	130

\* Includes safety element    X° Free space needed to remove main element    Z° Free space needed to remove cover

### Service Parts

ERB2 Air Cleaner	Main Element	Kit Number •	Access Cover Assy*	Raincap	Mounting band**
B100126	P785388	X770685	P784954	H770012	P004076
B130057	P785610	-	P783693	H770089	P013722
B130058	P785610	X770686	P783693	H770089	P013722
B150058	P785426	X770687	P784869	H770089	P016845
B150059	P785426	-	P784869	H770089	P016845
B180016	P785394	-	P785546	H770082	H770037
B180017	P785394	X770688	P785546	H770082	H770037

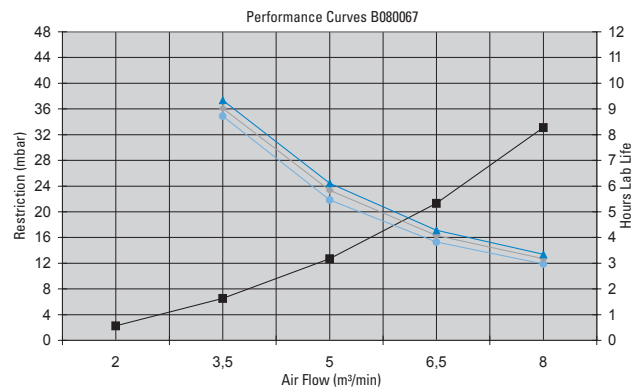
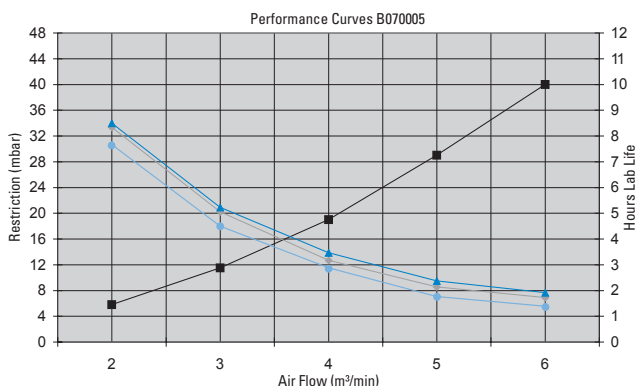
\* Spare Part only    \*\* Two mounting bands needed per Air Cleaner  
 • Safety element can only be bought as a kit meaning together with the main element

Light Dust Conditions

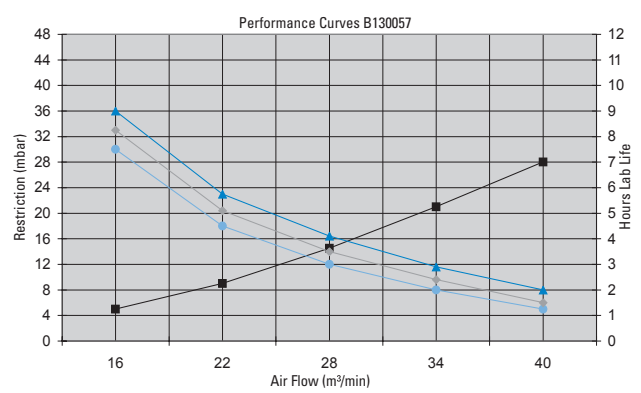
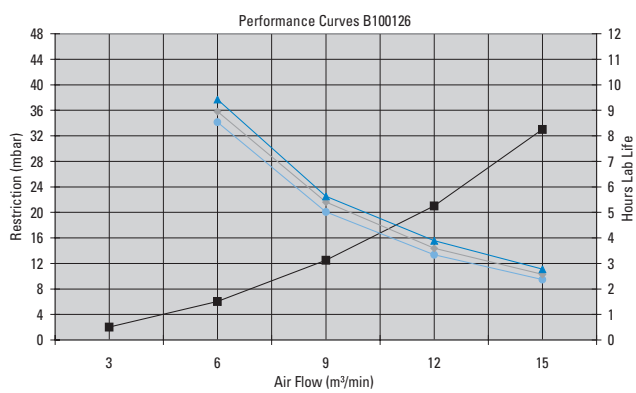
## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## EPB Performance Curves



## ERB2 Performance Curves

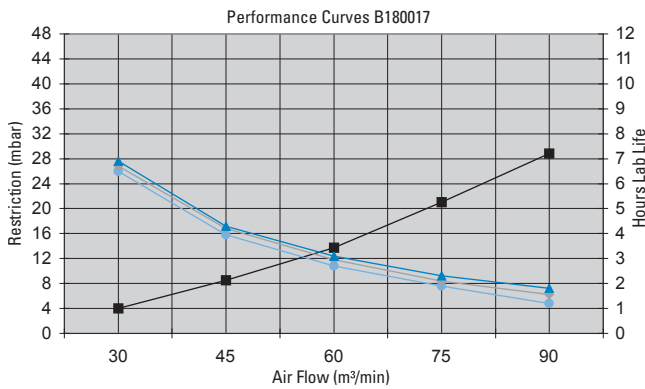
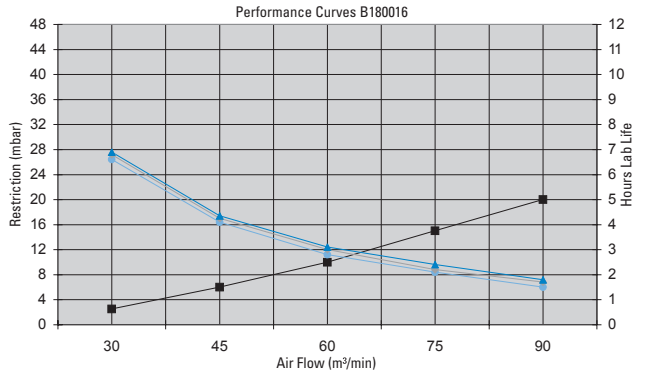
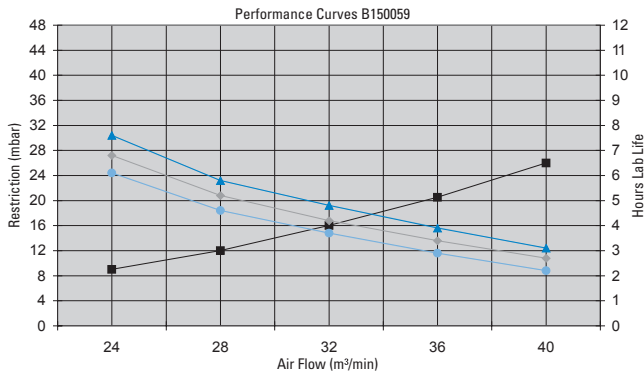
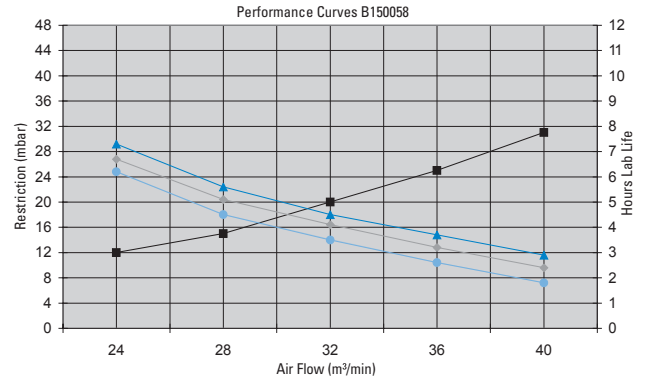
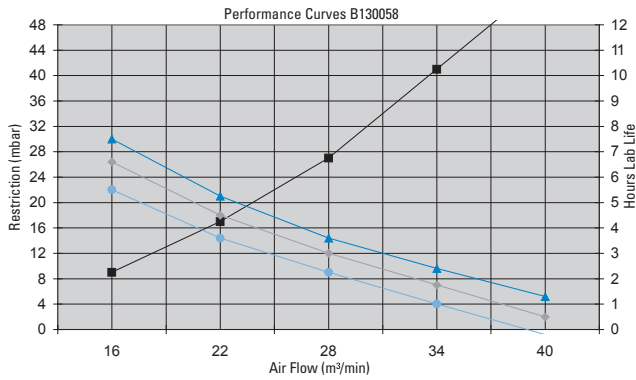


■ Restr. A/c Piezo   
 ● LL50mbar   
 ◆ LL62mbar   
 ▲ LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

Light Dust Conditions

## ERB2 Performance Curves



Restr. A/c Piezo
  LL50mbar
  LL62mbar
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

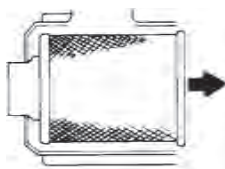
## 1 Remove the Filter

Unfasten or unlatch the service cover.

Because the filter fits tightly over the outlet tube to create the critical seal, there will be some initial resistance, similar to breaking the seal on a jar. Gently move the end of the filter back and forth to break the seal then rotate while pulling straight out. Avoid knocking the filter against the housing.



Rotate the filter while pulling straight out.



If your air cleaner has a safety filter, replace it every third primary filter change. Remove the safety filter as you would the primary filter. Make sure you cover the air cleaner outlet tube to avoid any unfiltered contaminant dropping into the engine.

## 2 Clean Both Surfaces of the Outlet Tube and Check the Vacuator™ Valve

Use a clean cloth to wipe the filter sealing surface and the inside of the outlet tube. Contaminant on the sealing surface could hinder an effective seal and cause leakage. Make sure that all contaminant is removed before the new filter is inserted. Dirt accidentally transferred to the inside of the outlet tube will reach the engine and cause wear. Engine manufacturers say that it takes only a few grams of dirt to “dust” an engine! Be careful not to damage the sealing area on the tube.



Outer edge of the outlet tube

Wipe both sides of the outlet tube clean.



Inner edge of the outlet tube

### If your air cleaner is equipped with a Vacuator Valve

Visually check and physically squeeze to make sure the valve is flexible and not inverted, damaged or plugged.



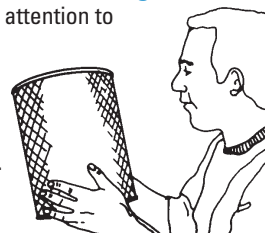
## 3 Inspect the Old Filter for Leak Clues

Visually inspect the old filter for any signs of leaks. A streak of dust on the clean side of the filter is a telltale sign. Remove any cause of leaks before installing new filter.



## 4 Inspect the New Filter for Damage

Inspect the new filter carefully, paying attention to the inside of the open end, which is the sealing area. NEVER install a damaged filter. A new Donaldson radial seal filter may have a dry lubricant on the seal to aid installation.



## 5 Insert the New Radial Seal Filter Properly

If you're servicing the safety filter, this should be seated into position before installing the primary filter.

Insert the new filter carefully. Seat the filter by hand, making certain it is completely into the air cleaner housing before securing the cover in place.



The critical sealing area will stretch slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the flexible center. Avoid pushing on the center of the urethane end cap. No cover pressure is required to hold the seal. NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.

If the service cover hits the filter before it is fully in place, remove the cover and push the filter (by hand) further into the air cleaner and try again. The cover should go on with no extra force.

Once the filter is in place, secure the service cover.

### **Caution**

**NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.**



## 6 Check Connectors for Tight Fit

Make sure that all mounting bands, clamps, bolts, and connections in the entire air cleaner system are tight. Check for holes in piping and repair if needed. Any leaks in your intake piping will send dust directly to the engine!



# Air Cleaners used in Medium Dust Conditions

... Donaldson offers a full line of air cleaners for a wide variety of applications and operating environments.

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**UNIQUE  
DESIGN  
CONCEPT**

**UNIQUE  
DESIGN  
CONCEPT**

## Smaller, Lightweight Alternative Two-Stage Air Cleaner Designed for horizontal installation

The FKB series is a family of two-stage air cleaners for medium dust conditions.

Compared to other air cleaner styles, this new air cleaner family delivers the performance of competitive larger air cleaners in a compact, rugged design.

With heavy-duty plastic construction and non-metal filters, the air cleaner is lighter, more efficient and easier to install and replace than competing products.

Another key design feature is the built-in mounting brackets. There's no need for additional mounting support.

The two stage design features a built-in pre-cleaner that separates up to 85% of airborne contaminants.



The FKB's plastic housing and durable construction enables installation in all types of medium-dust environments with engine air flow from 2 - 10 m<sup>3</sup>/min.

FKB air cleaners effectively reduce contaminants flowing into the air intake system, provide a

high level of engine protection from harmful contaminants and increase engine performance and fuel efficiency.

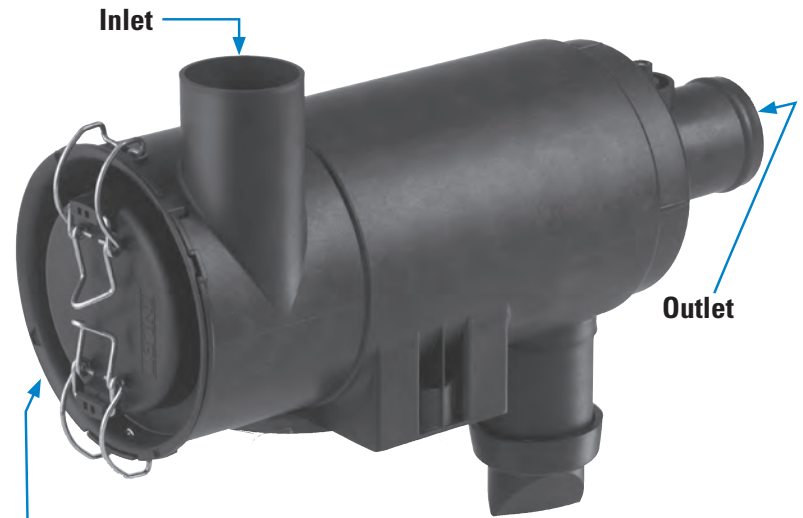
The air cleaner models ship with both the main and safety filters.



## Built-in Mounting Brackets and Filter Indicator Port Easy to service with non-metal filters

### Applications

- Off-road equipment operating in medium-dust conditions with engine airflow range of 2 to 10 m<sup>3</sup>/min.
- Installs horizontally. In case engine mount is required, contact Donaldson Representative.
- Sustained temperature tolerance: to 82°C. Do not install next to components that exceed the maximum temperature (82°C); like a turbocharger, muffler, exhaust pipe or other high temperature component



**Filter changeout is a snap with minimal service clearance required**

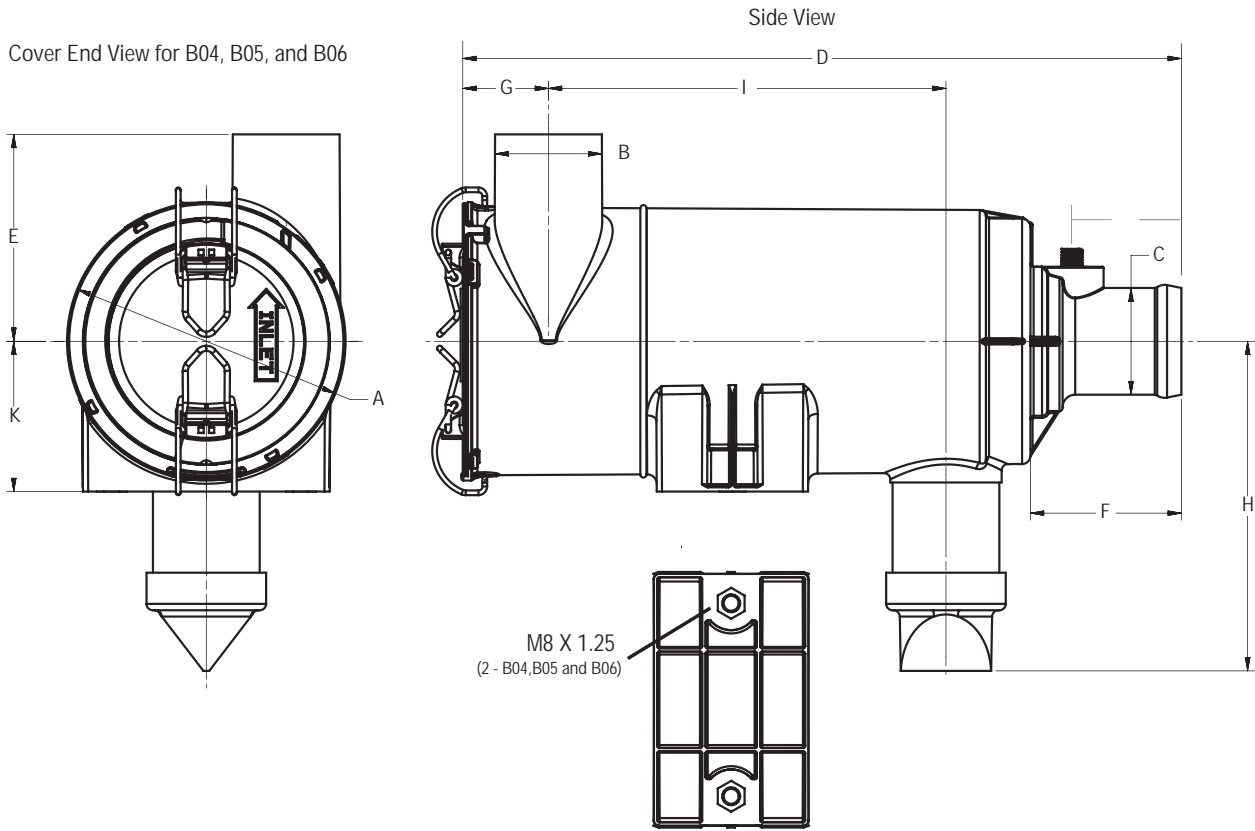
### Air Cleaner Features

- Smaller in diameter compared to competitive brands with similar airflow
- Improved handling and maintenance: lighter and smaller, changing filters is a snap
- Product design includes:
  - main filter
  - safety filter
  - filter service indicator port
- Improved filter disposal ease: no metal
- Cover latch position allows for minimum service clearance and eases filter service
- Mounting brackets built-in to air cleaner body eliminating need for mounting bands
- Indicator thread size = 1/8-27NPT (MALE)



Unique Twist & Lock Filter ensure proper positioning during filter service. Air cleaners assemblies include main and safety filters.

## FKB Specifications - Service Parts



Air Cleaner Model No.	Airflow m <sup>3</sup> /min.	Range Dimensions (mm)										
		A	B	C	D	E	F	G	H	I	J	K
B045008	2 - 3	133	51	51	342	99	72	41	157	189	52	72
B055006	3 - 4	152	64	64	404	99	73	49	157	244	52	77
B065045	4 - 6	180	76	76	408	120	73	53	188	241	52	90

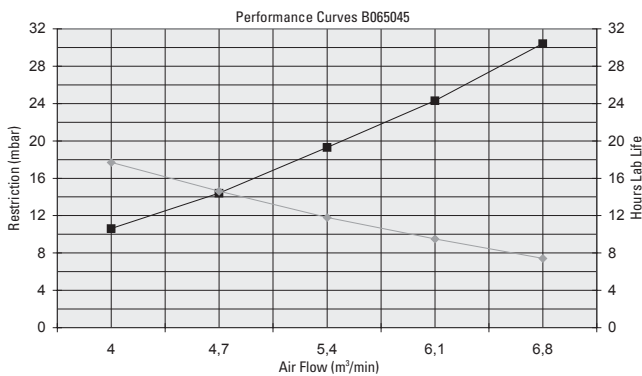
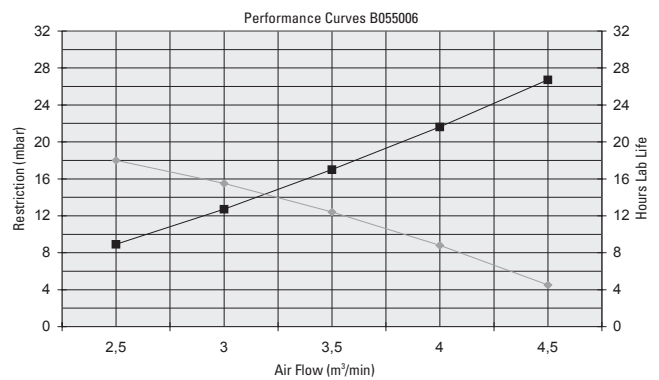
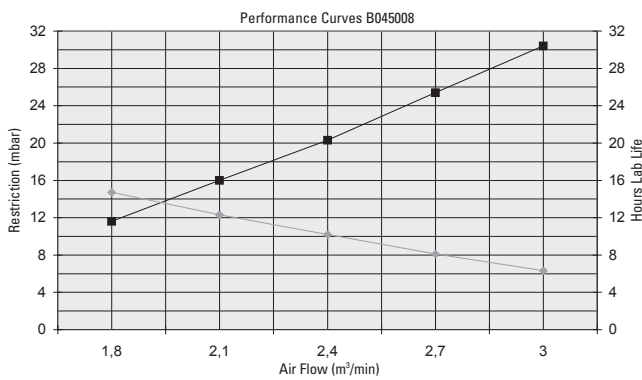
### Service Parts

Air Cleaner Model No.	Main Element	Safety Element	Access Cover Assy	Vacuator™ Valve
B045008	P604457	P603729	P606497	P158914
B055006	P609218	P602427	P609219	P158914
B065045	P609221	P608599	P608592	P158914

**When specifying an Air Cleaner...**

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

**FKB Performance Curves**



Restr. A/c Piezo    
  LL62mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## Installation Recommendations

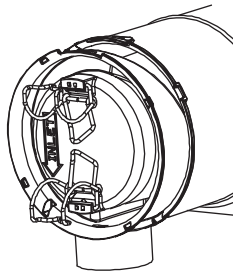
- Shut off your engine.
- Air cleaner orientation is horizontal, with the drop tube pointing down - within +/- 15°. For service clearance, allow the entire length of the filter for removal and 35mm for service cover latches.
- Mounting is M8 x 1,25 with a maximum torque of 20,34 Nm.
- Connections: Inlet/Outlet maximum torque 4,52 Nm Indicator port maximum torque 2 Nm.
- Inlet accessory note: The air cleaner housing can accommodate a lightweight inlet hood, but not a pre-cleaner or any other accessory. Use of an unapproved intake accessory will void your Donaldson warranty.

## Service Instructions

### 1 Shut off your engine

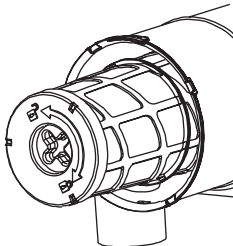
### 2 Remove service cover

Unlatch and remove the service cover. To remove the primary filter, press and rotate filter counterclockwise until filter is free.



### 3 Remove the filter

Gently pull the filter out of housing. Avoid dislodging contaminant from the filter or knocking it against the housing.

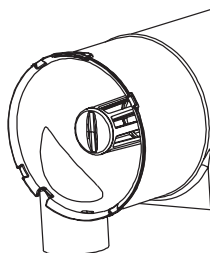


### 4 Clean the inside surface

With a soft rag, thoroughly clean the inside surface of the housing. Be careful not to introduce contaminant into the outlet tube.

### 5 Check the safety filter

Check safety filter for damage. If damaged, replace. Also check to insure that the safety filter is properly seated in the housing. It should fit snugly inside the outlet tube.



### 6 Inspect the new primary filter

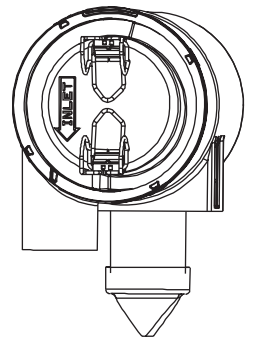
Inspect the new main filter carefully. Check for any voids, cuts, tears or indentations in the urethane-sealing surfaces.

### 7 Install the new filter

Install new filter by pressing and rotating the filter clockwise until fully engaged to stop.

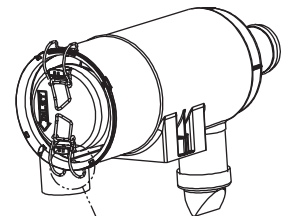
### 8 Replace the cover

Replace the service cover. The "INLET" arrow should line up with the air cleaner inlet. DO NOT force cover onto air cleaner. The cover should go on with no extra force. If cover is not flush to the body, the filter is not properly seated in the housing.



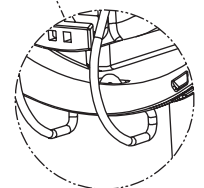
### 9 Refasten the latches

Refasten latches to secure cover. Make sure that latches penetrate the slots in both the body and the cover.



### 10 Inspect

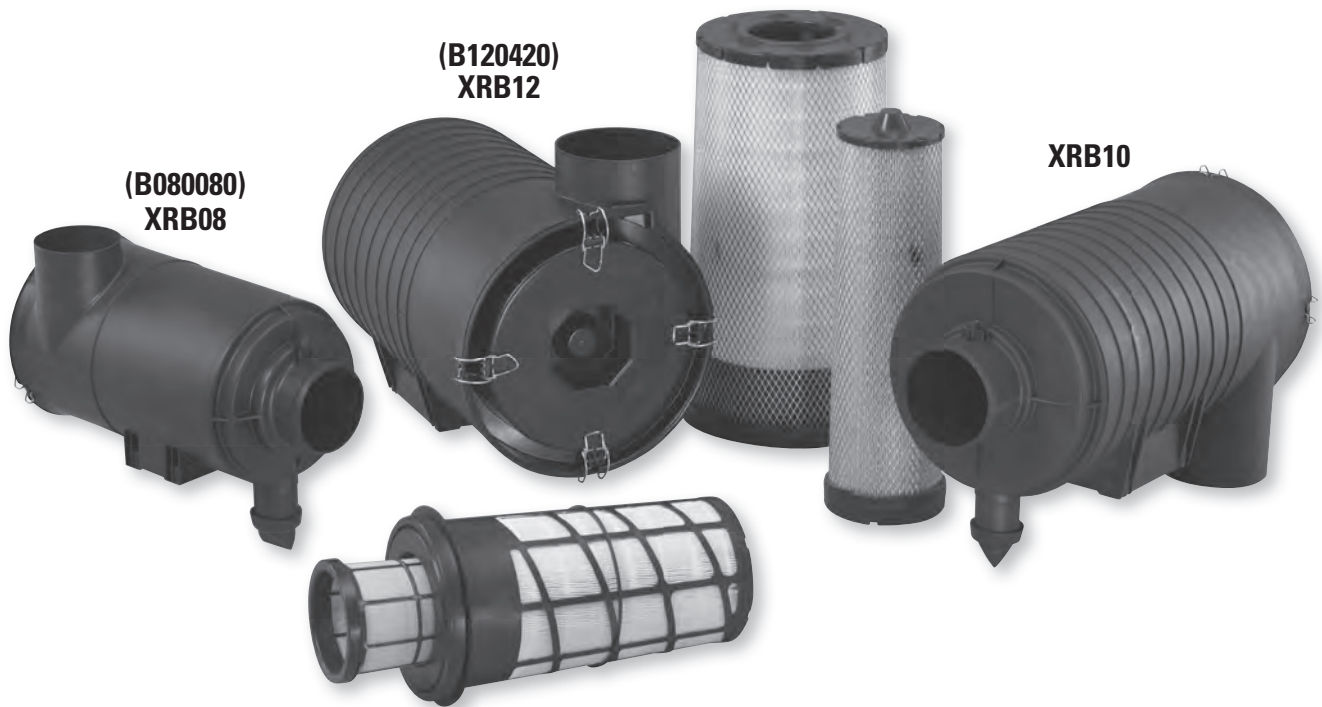
Inspect and torque all clamps, bolts and connections in the entire air intake system. Check for holes in piping, and repair if needed. If Vacuator Valve is damaged replace.



### 11 Restart the engine

## Compact, Radial Seal, Medium-Duty Air Cleaner Designed for horizontal installation

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Compared to other air cleaner styles, this new air cleaner family is smaller in size compared to competitive models with similar airflow operating ranges.

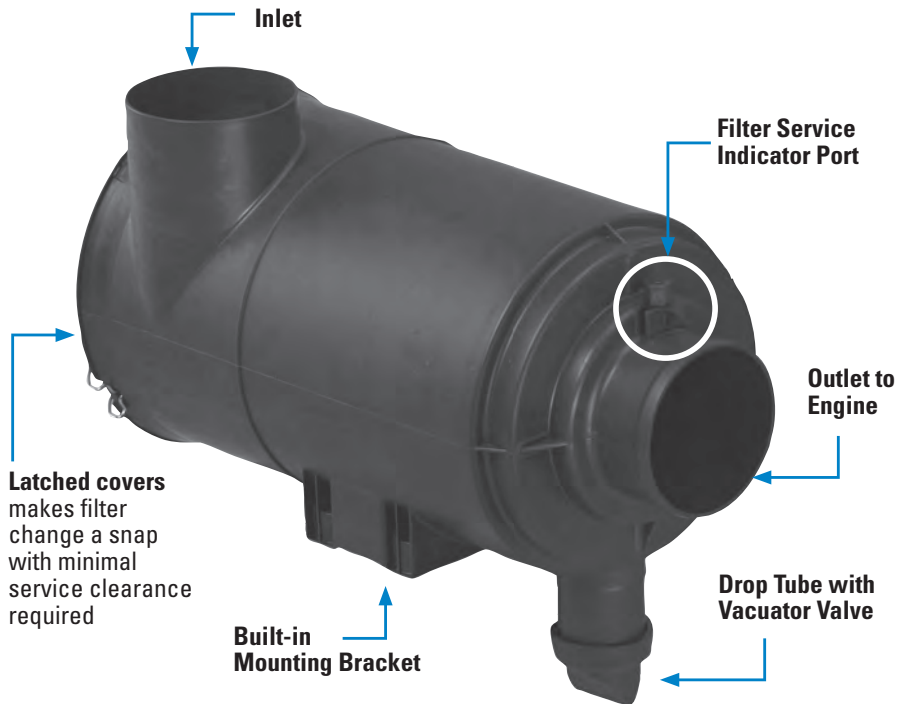
XRB air cleaners effectively reduce contaminants flowing into the air intake system, provide a high level of engine protection from harmful contaminants and increase engine performance and fuel efficiency.

The XRB's plastic housing and durable construction enables installation in medium-dust environments with engine airflow from 7,5 to 18 m<sup>3</sup>/min.

The B080080 has non-metal main and safety filters. The main filters for the B100127 and B120420 have metal outer liners. The air cleaner models ship with both the main and safety filters.

Like our FKB and PSD models, these air cleaners feature built-in mounting brackets. There's no need for additional mounting support.

## Built-in Mounting Brackets and Filter Indicator Port Easy to service with non-metal filters



### Applications

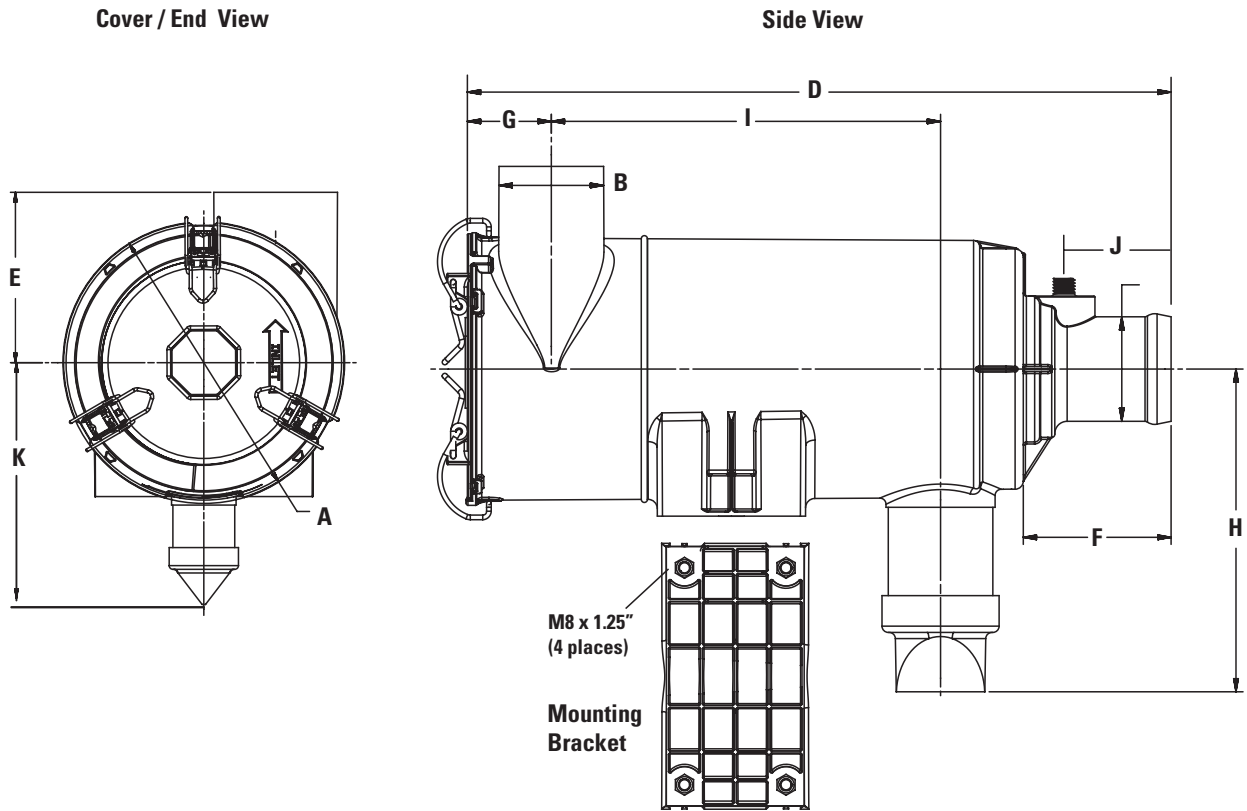
- Off-road equipment operating in medium-dust conditions with engine airflow range of 7,5 to 18 m<sup>3</sup>/min.
- Installs horizontally. In case engine mount is required contact your Donaldson Representative.
- Sustained temperature tolerance: to 82°C. Do not install next to components that exceed the maximum temperature (82°C); like a turbocharger, muffler, exhaust pipe or other high temperature component

### Air Cleaner Features

- Smaller in diameter compared to competitive brands with similar airflow
- Improved handling and maintenance: lighter and smaller, changing filters is a snap
- Product design includes:
  - main filter
  - safety filter
  - filter service indicator port
- Cover latch position allows for minimum service clearance and eases filter service
- Mounting brackets built-in to air cleaner body eliminating need for mounting bands
- Indicator thread size = 1/8-27NPT (MALE)



## XRB Specifications - Service Parts



Air Cleaner Model No.	Airflow m <sup>3</sup> /min.	Range Dimensions (mm)										
		A	B	C	D	E	F	G	H	I	J	K
B080080	7,5 - 10	231	102	102	425	140	61	80	198	375	40	110
B100127	9 - 13,5	287	127	114	565	198	72	88	225	493	50	145
B120470	13,5 - 18	330	152	128	601	218	71	100	245	526	50	165

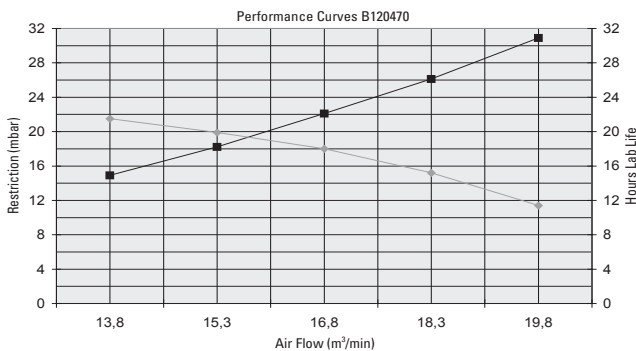
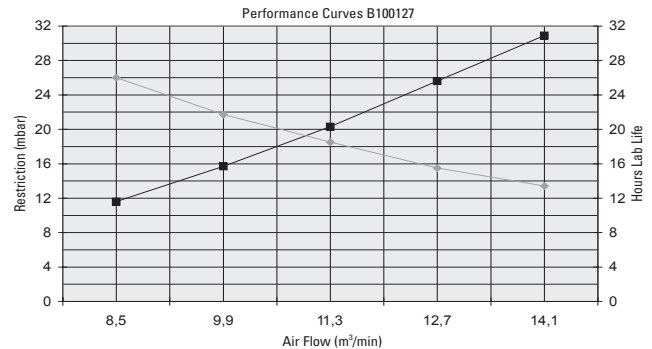
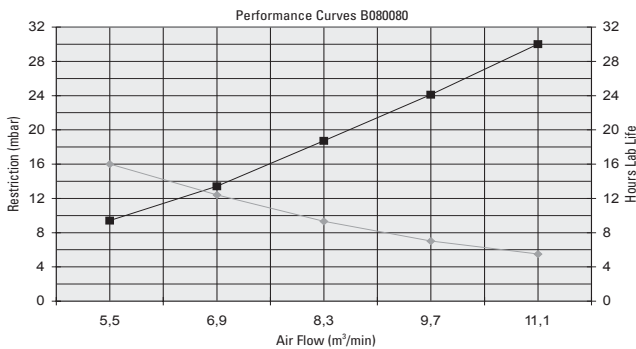
Air Cleaner Model No.	Service Parts			
	Main Element	Safety Element	Access Cover Assy	Vacuator™ Valve
B080080	P611190 •	P611189	P605731	P158914
B100127	P611539 *	P611540	P609942	P158914
B120470	P608116 *	P608391	P608117	P158914

• Non Metal    \* Metal Liner

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding  $m^3/min$  airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that  $m^3/min$ . When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## XRB Performance Curves



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of  $1g/m^3$

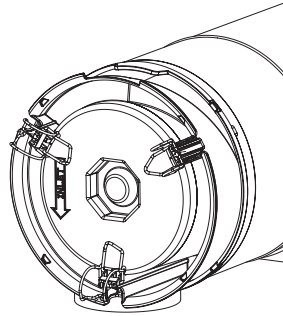
## Installation Recommendations

- Air cleaner orientation is horizontal, with the drop tube pointing down - within +/- 15°. For service clearance, allow the entire length of the filter for removal and 35 mm for service cover latches.
- Mounting is M8 x 1,25 with a maximum torque of 20,34 Nm.
- Connections: Inlet/Outlet maximum torque 4.52 Nm.
- Inlet accessory note: The air cleaner housing can accommodate a lightweight inlet hood, but not a pre-cleaner or any other accessory. Use of an unapproved intake accessory will void your Donaldson warranty.
- Filter Service Indicator port arrives with plug/cap. Order filter service indicator separately. See accessories section. Indicator port maximum torque 2 Nm.

## 1 Shut off your engine

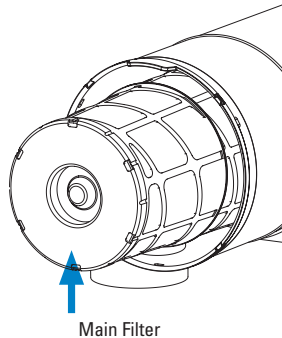
## 2 Unlatch and remove service cover

Unlatch and remove the service cover to access the main filter. Gently move the end of the filter back and forth to break the seal.



## 3 Remove the filter

The main filter makes such a tight seal, that you will encounter some initial resistance when trying to remove it. To break the seal, grab the end of the filter and gently move the filter back and forth and pull it out of the housing.



**APPLICATION NOTE** Avoid dislodging contaminant from the filter or knocking it against the housing.

## 4 Clean the inside surface

Using a soft rag, remove all the dust and debris from the inside surface of the housing. Be careful not to introduce contaminant into the outlet tube.

**APPLICATION NOTE** Failure to do so may cause contaminant to be introduced to the seal area of the main filter during reinstallation, causing a leak. Leaks result in higher restriction on the safety filter and shorter filter life.

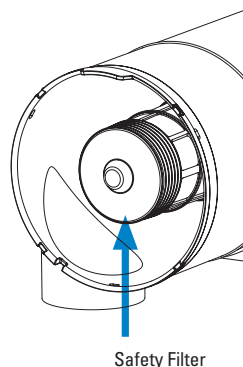
## 5 Check the safety filter. Replace every third primary filter change

The safety filter should be changed every third primary filter change out.

**APPLICATION NOTE** If the safety is not installed properly, it may attach itself to the primary filter upon removal.

Dust from the main filter may be evident on the safety filter. This is normal. At each 1st and 2nd primary filter change, check safety filter for damage. If damaged, replace.

Also check to ensure the safety filter is properly seated in the housing. It should fit snugly inside the outlet tube. Continue pushing the filter into the outlet tube until it stops.



## 6 Inspect the new main filter

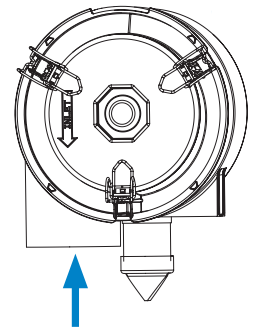
Before installing a new main or safety filter, inspect it carefully. Visually check for any voids, cuts, tears or indentations in the urethane-sealing surface. If your check reveals damage, do NOT install the filter.

## 7 Install the new filter

The critical sealing area will compress slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the center.

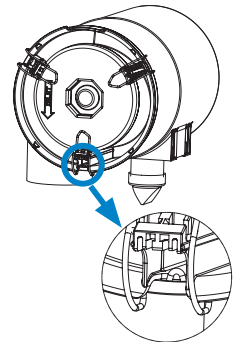
## 8 Replace the cover & refasten the latches

Replace the service cover. The "INLET" arrow should line up with the air cleaner inlet. DO NOT force cover onto air cleaner. The cover should go on with no extra force. If cover is not flush to the body, the filter is not properly seated in the housing.



**APPLICATION NOTE** Never use the service cover to push the filter into place! Using the cover to push the filter could cause damage to the housing and will void the warranty.

If the service cover hits the filter before it is fully in place, remove the cover and push the filter further into the housing and try again. The cover should go on with no extra force.



Refasten latches to secure cover. Make sure that latches penetrate the slots in both the body and the cover.

## 9 Inspect the intake system

Inspect and torque all clamps, bolts and connections in the entire air intake system. Check for holes in piping, and repair if needed. If the Vacuator™ Valve is damaged, replace.

## 10 Restart your engine

### Recommended Main Filter Change Interval

Change the main filter when the restriction level reaches your vehicle/engine manufacturer recommendation.

# EPB - ERB2 Air Cleaner with Full-View Pre-Cleaner

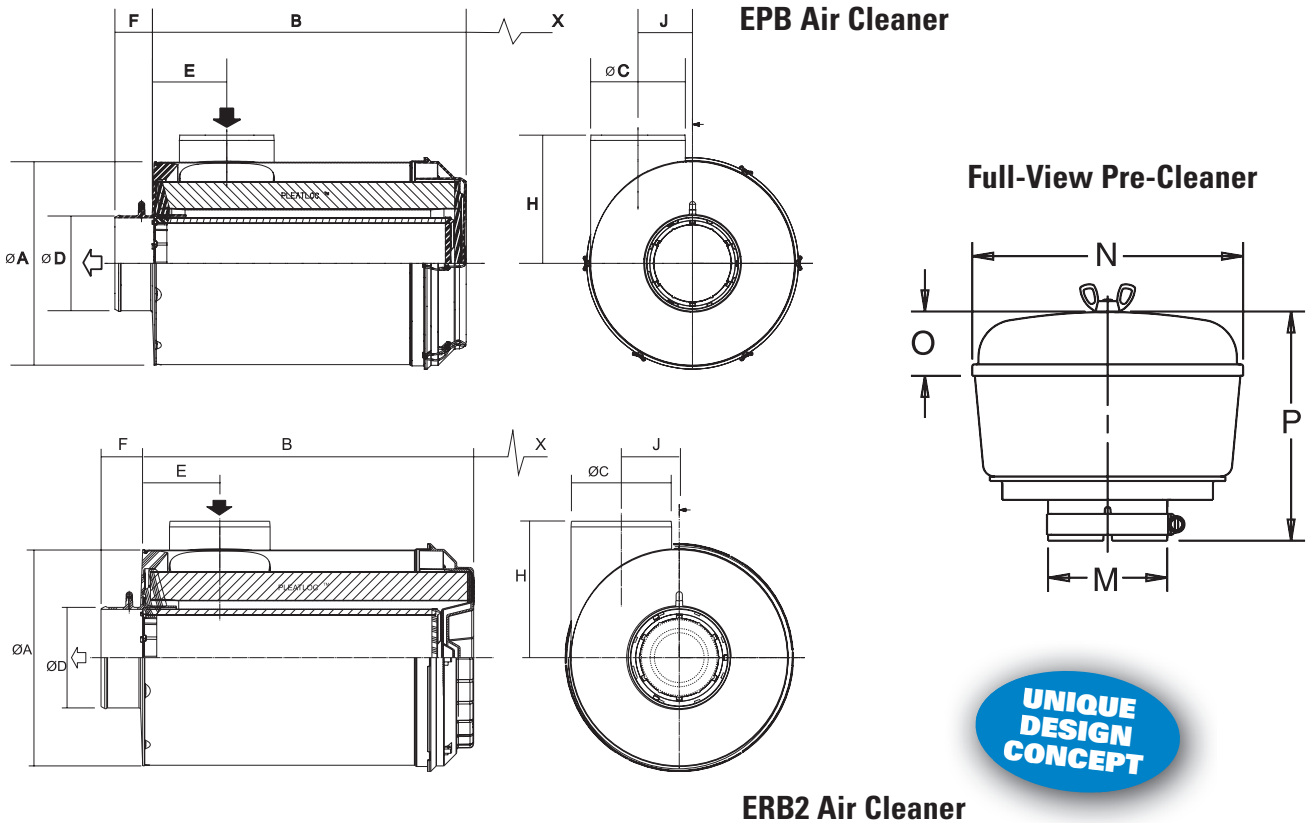
## Specifications



See page 131 for the Full-View Pre-Cleaners



See page 44-45 for EPB-ERB2 Service Parts



Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)									Pre-Cleaner	M	N	O	P
			A	B	C	D	E	F	H	J	X°					
EPB	B070005	2 - 4	182	334	76	76	45	27	115	145	340	H001249	77	187	42	158
EPB	B080067	4 - 7	210	355	95	89	54	31,5	130	146	355	H000821	96	270	47	188
ERB2	B100126	7 - 12	259	430	114	102	143	52	205	0	400	H000823	115	270	47	188
ERB2	B130058	15 - 26	330	530	178	152	180	58	215	0	360	H002224	179	412	69	258
ERB2	B150058	18 - 32	381	590	178	178	136	70	241	102	540	H002224	179	412	69	258

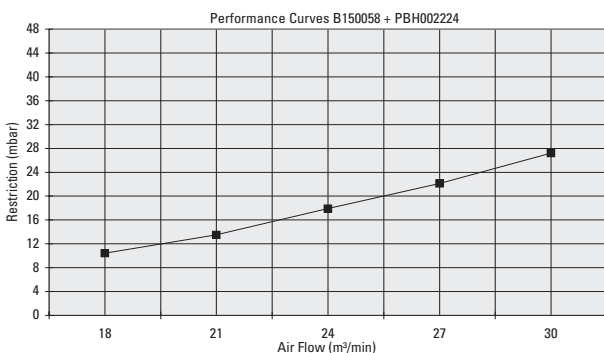
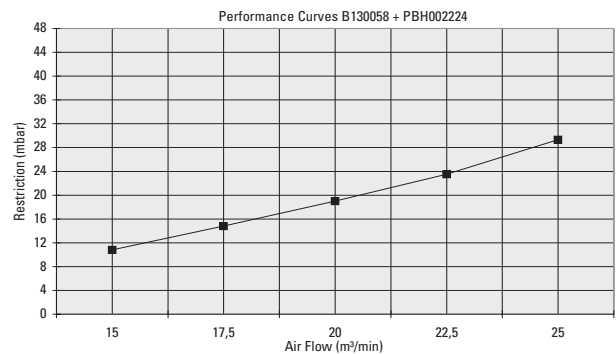
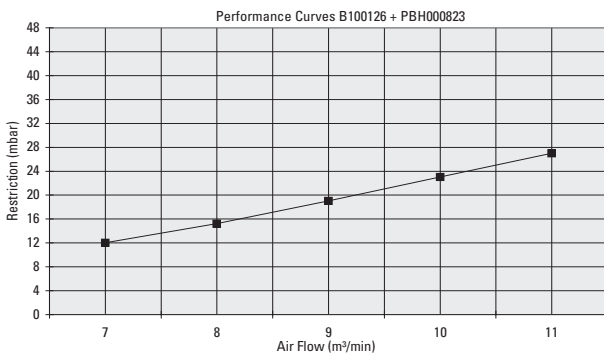
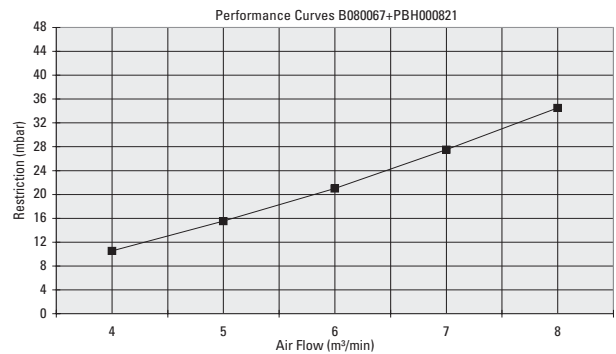
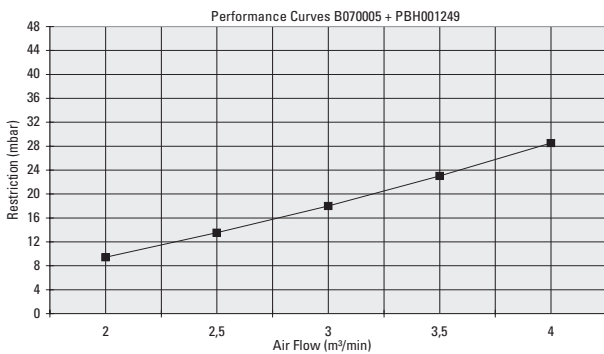
X ° Free space needed to remove main element

Medium Dust Conditions

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## Restriction Curves



—■— Restr. A/c Piezo

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

Medium Dust Conditions

# EPB - ERB2 Air Cleaner with TopSpin™ Pre-Cleaner



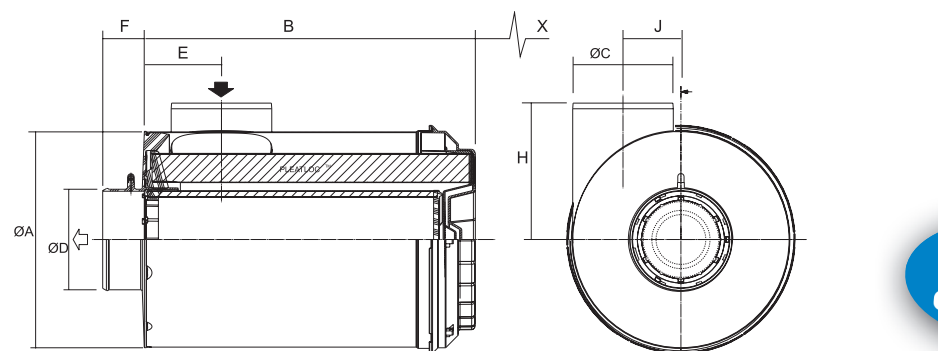
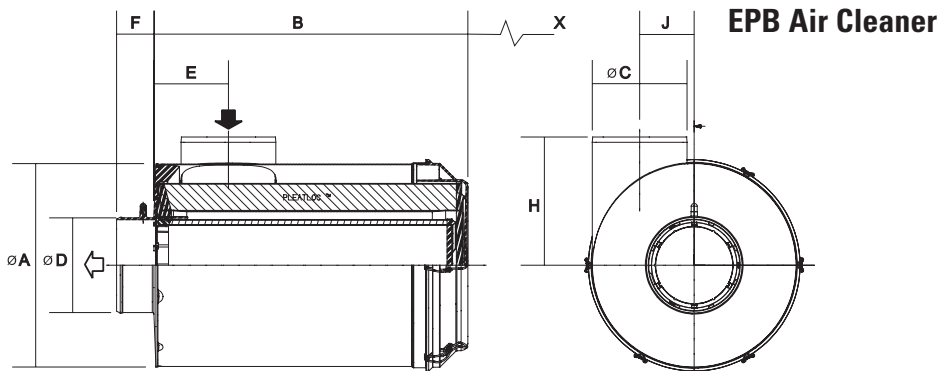
## Specifications



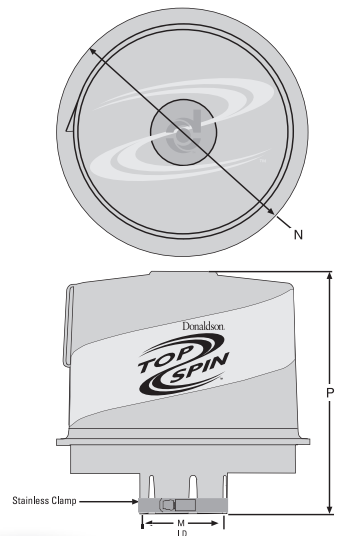
See page 132-133 for the TopSpin™ Pre-Cleaners



See page 44-45 for EPB-ERB2 Service Parts.



### TopSpin™ Pre-Cleaner



**UNIQUE DESIGN CONCEPT**

Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)										Pre-Cleaner	M	N	P
			A	B	C	D	E	F	H	J	X°					
EPB	B070005	2 - 5	182	334	76	76	45	27	115	145	340	H002437	77	162	146	
EPB	B080067	4 - 7	210	355	95	89	54	31,5	130	146	355	H002426	97	242	238	
ERB2	B100126	7 - 12	259	430	114	102	143	52	205	0	400	H002427	116	242	238	
ERB2	B130058	15 - 26	330	530	178	152	180	58	215	0	360	H002439	179	297	345	
ERB2	B150058	18 - 32	381	590	178	178	136	70	241	102	540	H002439	179	297	345	

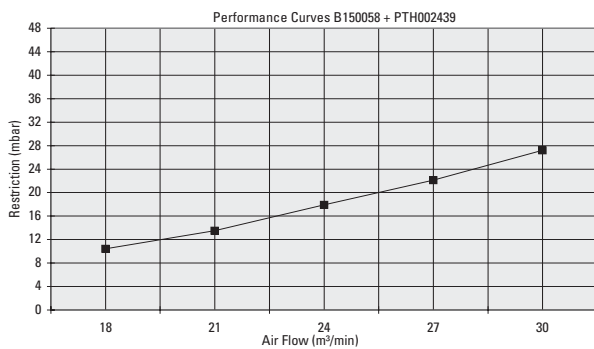
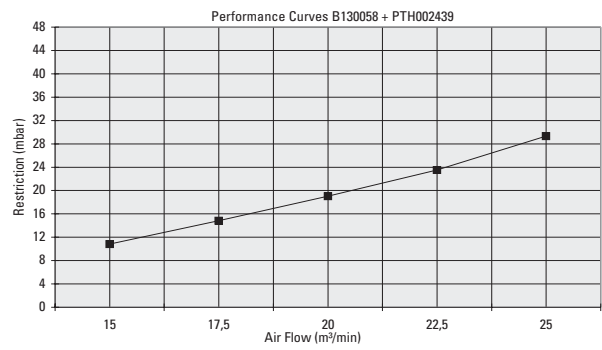
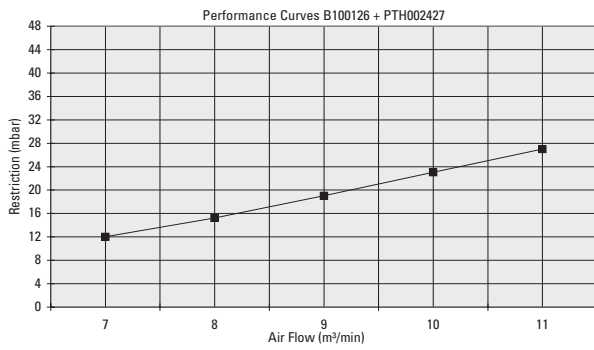
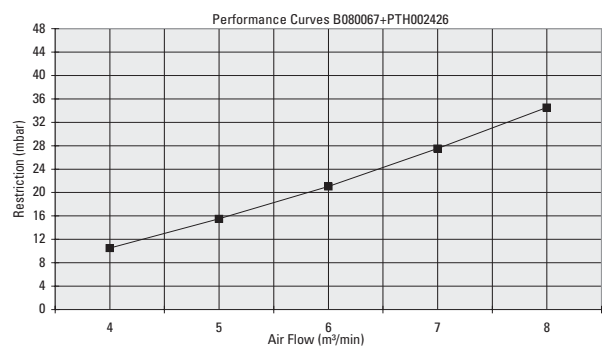
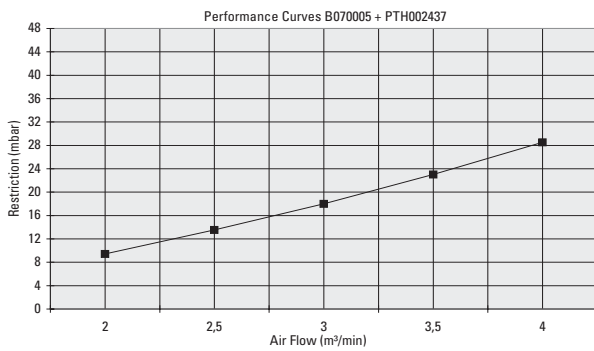
X ° Free space needed to remove main element

Medium Dust Conditions

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## Restriction Curves

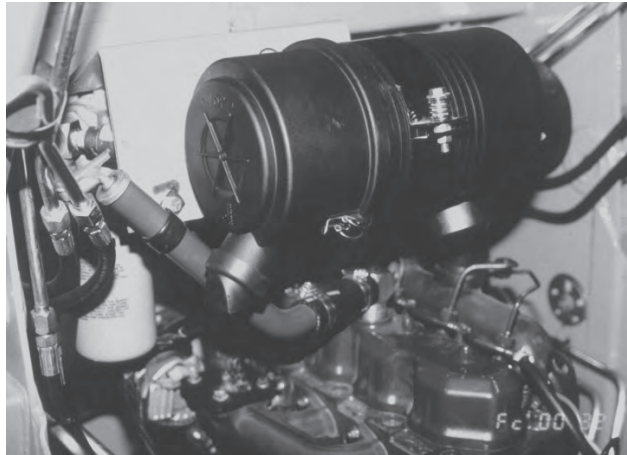


—■— Restr. A/c Piezo

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## Advanced Sealing Technology in Compact Two-Stage Design For the Most Reliable Engine Protection

The FPG Air Cleaner series are two-stage full-plastic air cleaners with a built-in Pre-Cleaner and RadialSeal™ Sealing Technology. They are used on medium-duty applications line generator sets, agricultural tractors, bulldozers, drilling equipment, marine engines, trucks, loaders, backhoe, lifttruck, construction and industrial equipment. The FPG series offers improved reliability and durability with reduced weight and costs.



Despite its compact size, the FPG Air Cleaner offers complete engine air protection – removing 99.99+% of the dust and dirt particulate that enters the engine airstream.

Ever since Donaldson developed the first air cleaner in 1915, we have worked closely with original equipment manufacturers to provide filtration solutions to meet changing design and specification requirements for diesel engines.

Because they are made of injection molded high-strength plastic, FPG air cleaners offer the flexibility to overcome space limitations for underhood air cleaners. Donaldson employs innovative plastic materials and production techniques that result in air cleaners that are corrosion-free and lighter in weight than traditional metal air cleaners - yet without sacrificing sturdiness. Our extensive vibration testing reveals this to be a more durable design than most metal air cleaners.



The filter inside the air cleaner is also quite different from the traditional design: one-piece molded urethane endcaps encase the ends of the media and filter liners, eliminating the metal caps and plastisol potting compound that were traditionally used. The glued-on gasket found on conventional filters is gone – now, the inside surface of the open end is actually the radial sealing surface.



## Small, Durable and Corrosion-Free The World's Easiest to Service Air Cleaner

### Applications

- Provides up to 16 m<sup>3</sup>/min airflow per air cleaner - double throughput by using two units
- Installation can be horizontal, vertical, or even at an angle (as long as Vacuator™ Valve points down)
- 4", 5", 7", & 10" diameter sizes
- Temperature tolerance: to 83°C sustained

(Do not install next to turbocharger, muffler, exhaust pipes, or other high-temp component.)

### Air Cleaner Features

- Easy to service! No tools needed! Usually done in 5 minutes or less!
- Durable plastic housing - corrosion-free and lightweight
- Two-stage air filtration! Built-in, tangential pre-cleaner ahead of primary filter removes up to 85% of incoming dust
- Choose 90° or straight outlet to fit your application
- Easy to fasten latches (no bolts!) retain dust cup/cover
- 45° Vacuator™ Valve orientation permits either vertical or horizontal air cleaner mounting (the dust cup can be incrementally rotated to suit specific application)
- Safety filter protects engine during in-field filter changeouts
- Already tapped to accept filter service indicator (see the Accessories section for indicator options)
- Indicator thread size = 1/8-27NPT (MALE)



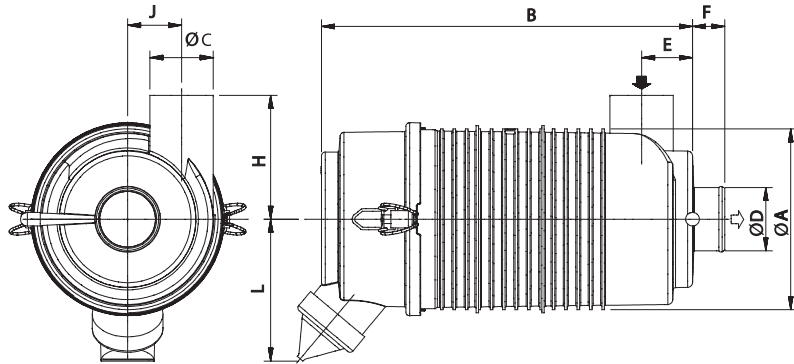
### Filter Features

- Exclusive Radial Seal Sealing Technology means reliability and easy service - the filter is self-centering and self-aligning!
- One piece, molded urethane endcaps encase the filter media and liners - reducing components, adding reliability and lowering cost

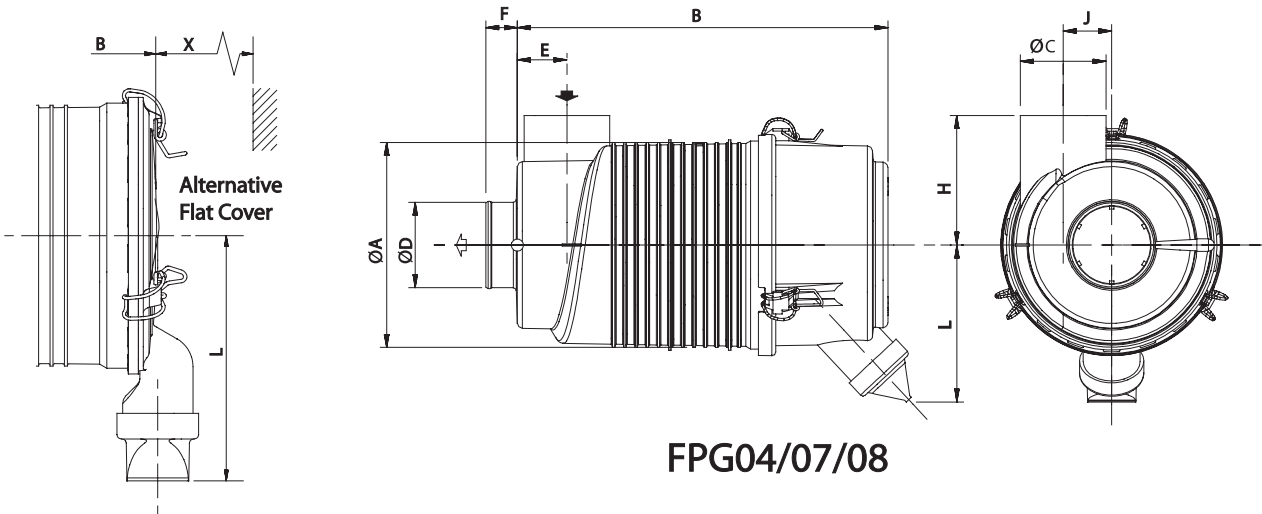


Some models are available with the twist and lock cover design and called FPG Alexin™. See page 70-77.

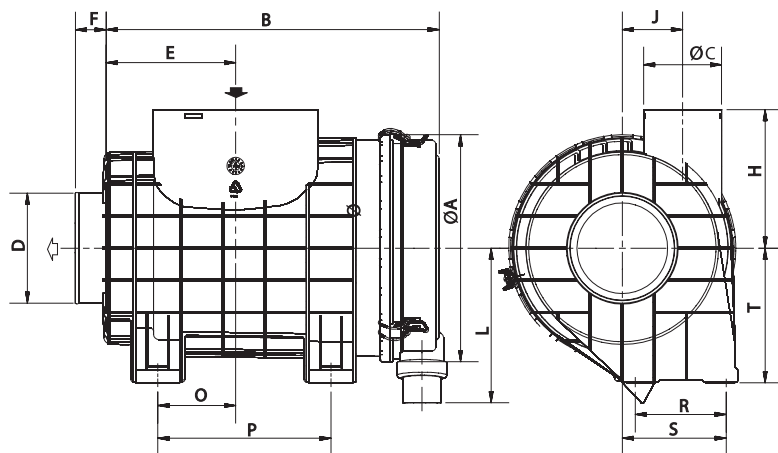
**FPG Specifications**



**FPG05**



**FPG04/07/08**



**FPG10**

## FPG Specifications - Service Parts

Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)														
		A	B	C	D	E	F	H	J	L	O	P	R	S	T	X°
G042546 •	0,5 - 1	122	189	45	45	40	25	83	37	105	-	-	-	-	-	137
G042575 * •	0,5 - 1	122	189	45	45	40	25	83	37	105	-	-	-	-	-	137
G057502 *	1 - 3	146	300	51	51	42	25	100	43,5	115	-	-	-	-	-	300
G057504	1 - 3	146	300	51	51	42	25	100	43,5	115	-	-	-	-	-	300
G057505 •	1 - 3	146	300	51	51	42	25	100	43,5	115	-	-	-	-	-	300
G070006 *	2 - 5	182	330	76	76	45	27	115	43	138	-	-	-	-	-	330
G070059 * "	2 - 5	182	334	76	76	45	27	115	43	171	-	-	-	-	-	340
G070009	2 - 5	182	330	76	76	45	27	115	43	138	-	-	-	-	-	330
G070060 "	2 - 5	182	334	76	76	45	27	115	43	171	-	-	-	-	-	340
G082503 *	4 - 8	212	355	95	89	54	30	130	48	215	-	-	-	-	-	355
G082508 *	4 - 8	212	355	95	89	54	30	130	48	215	-	-	-	-	-	355
G082505	4 - 8,5	212	355	95	89	54	30	130	48	215	-	-	-	-	-	355
G100274	6 - 12	262	385	190	127	150	35	180	69	180	90	200	105	120	156	-
G100275	8 - 16	262	530	190	127	150	35	180	69	180	90	200	105	120	156	-
G100280*	6 - 11	262	385	190	127	150	35	180	69	180	90	200	105	120	156	-

\* Includes safety element • High pulsation application  
 \*° Free space needed to remove the main element " Flat cover

### Service Parts

Air Cleaner Model No.	Main Element	Safety Element	Access Cover Assy	Vacuator™ valve	Raincap	Plastic Mounting Band**
G042546	P822686	-	P777153	P522958	H770066	P777151
G042575	P822686	P535396	P777153	P522958	H770066	P777151
G057502	P772578	P775298	P775308	P522958	H001377	P777730
G057504	P772578	-	P775308	P522958	H001377	P777730
G057505	P775631	-	P775308	P522958	H001377	P777730
G070006	P772579	P775300	P775311	P522958	H001379	P777731
G070009	P772579	-	P775311	P522958	H001379	P777731
G070059	P772579	P775300	P778758	P522958	H001379	P777731
G070060	P772579	-	P778758	P522958	H001379	P777731
G082503	P772580	P775302	P775305	P775569	H770010	P777732
G082505	P772580	-	P775305	P775569	H770010	P777732
G082508	P772580	P775302	P775305	P522958	H770010	P777732
G100274	P777588	-	P777589	P158914	P776343	Integrated
G100275	P777592	-	P777593	P158914	P776343	Integrated
G100280	P777588	P777779	P777589	P158914	P776343	Integrated

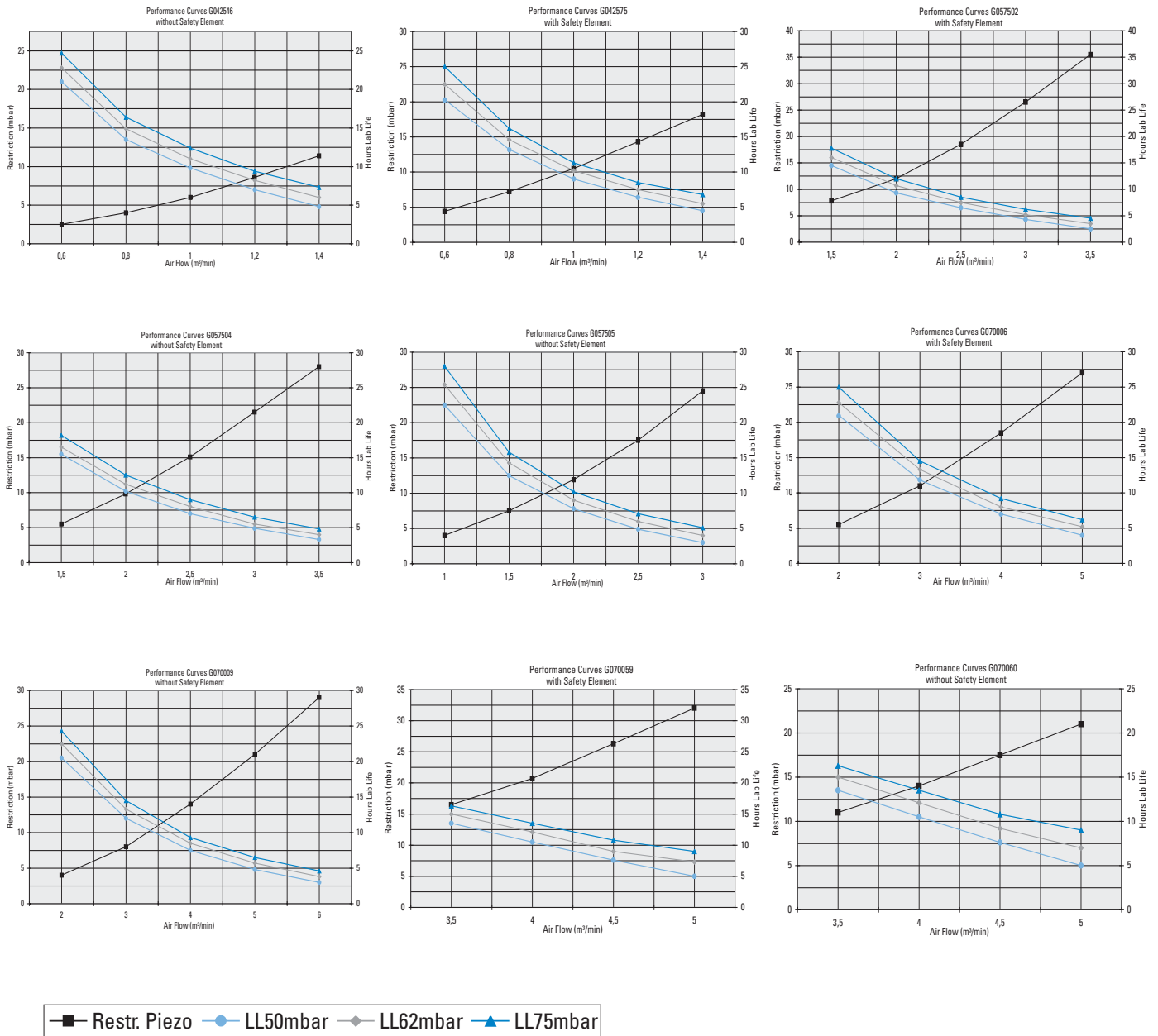
\* Spare Part only      \*\* Only one mounting band needed per air cleaner

Medium Dust Conditions

## When specifying an Air Cleaner...

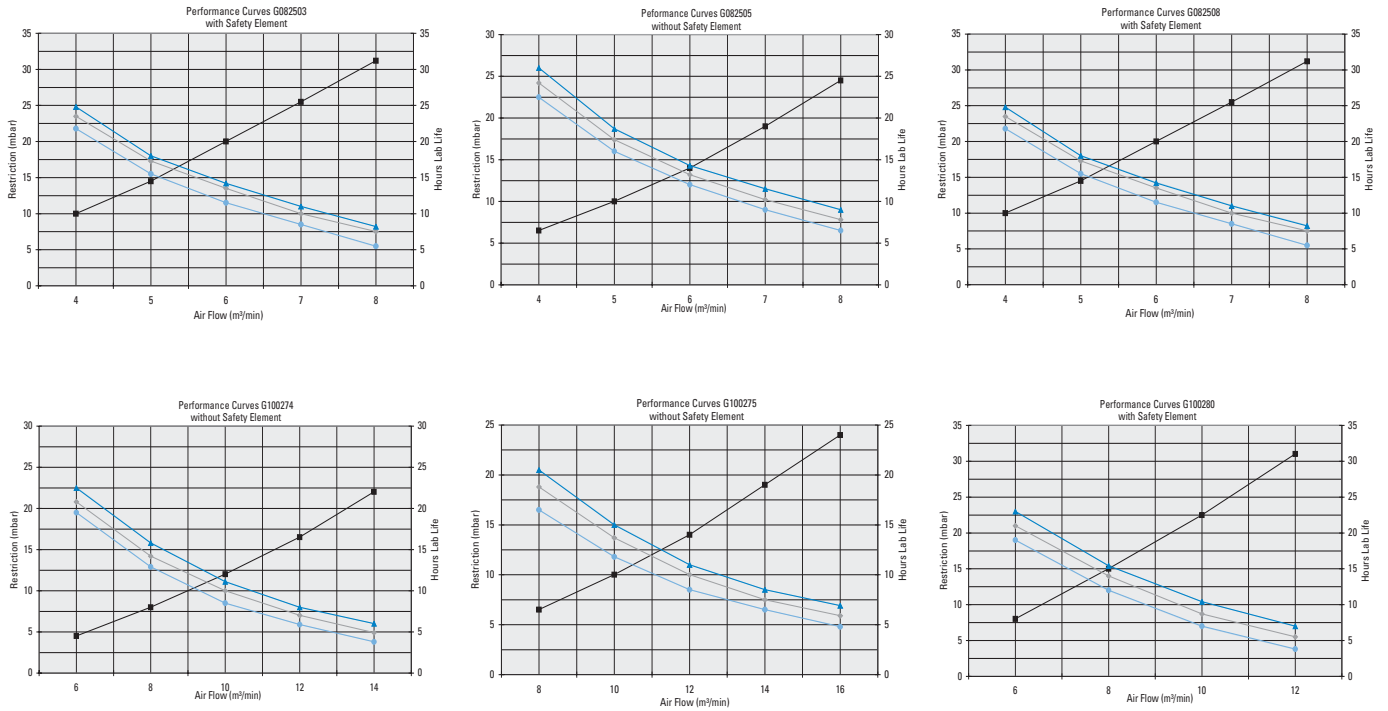
Determine the Airflow Requirements of your engine, then find the corresponding  $m^3/min.$  airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that  $m^3/min.$  When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## FPG Performance Curves



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of  $1g/m^3$

## FPG Performance Curves



Page 1



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## Advanced Sealing Technology in Compact Two-Stage Design For the Most Reliable Engine Protection

The FPG Alexin™ Air Cleaner series are two-stage full-plastic air cleaners with a built-in Pre-Cleaner and RadialSeal™ Sealing Technology.

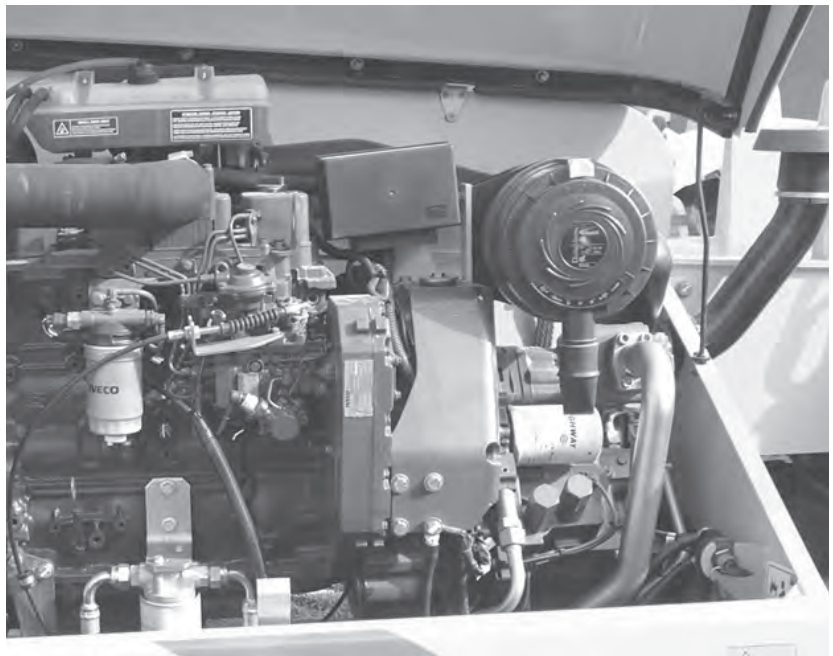
They are used on medium-duty applications line generator sets, agricultural tractors, bulldozers, drilling equipment, marine engines, trucks, loaders, backhoe, lifttruck, construction and industrial equipment. The FPG series offers improved reliability and durability with reduced weight and costs.

Ever since the introduction of the Donaldson RadialSeal™ product line in 1989 with the launch of the FPG Air Cleaner, Donaldson has developed many versions of this products and has continued to invest time and money in the further development of this RadialSeal filter concept, with the Alexin™ product line as one of the result.

The Donaldson Alexin brandname identifies Donaldson products using the proven, reliable Donaldson RadialSeal Technology for the filter elements combined with the ease of use of a Twist and Lock cover, that provides a convenient cover locking system with a design that saves space.



Despite its compact size, the FPG Air Cleaner offers complete engine air protection – removing 99.99+% of the dust and dirt particulate that enters the engine airstream.



## Small, Durable and Corrosion-Free The World's Easiest to Service Air Cleaner

### Applications

- Provides up to 14 m<sup>3</sup>/min airflow per air cleaner - double throughput by using two units
- Installation can be horizontal, vertical, or even at an angle (as long as Vacuator™ Valve points down)
- 6", 8", 9", & 10" diameter sizes
- Temperature tolerance: to 83°C sustained

(Do not install next to turbocharger, muffler, exhaust pipes, or other high-temp component.)

### Air Cleaner Features

- Easy to service! No tools needed! Usually done in 5 minutes or less!
- Durable plastic housing - corrosion-free and lightweight
- Two-stage air filtration! Built-in, tangential pre-cleaner ahead of primary filter removes up to 85% of incoming dust
- Choose 90° or straight outlet to fit your application
- Easy to fasten latches (no bolts!) retain dust cup/cover
- 45° Vacuator™ Valve orientation permits either vertical or horizontal air cleaner mounting (the dust cup can be incrementally rotated to suit specific application)
- Safety filter protects engine during in-field filter changeouts
- Already tapped to accept filter service indicator (see the Accessories section for indicator options)
- Indicator thread size = 1/8-27NPT (MALE)

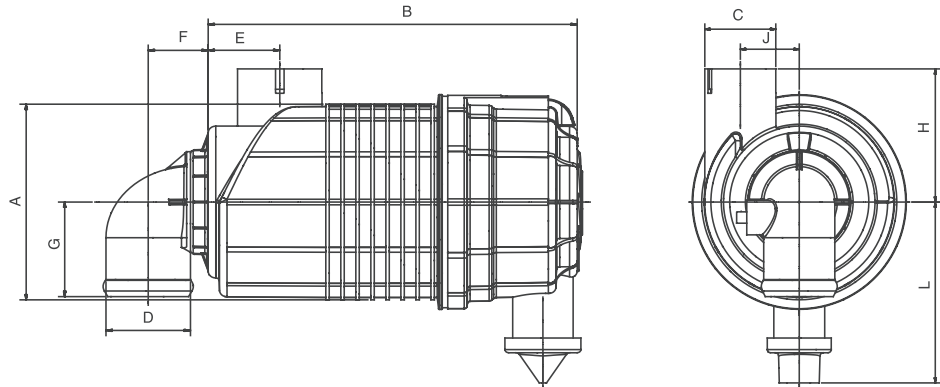


### Filter Features

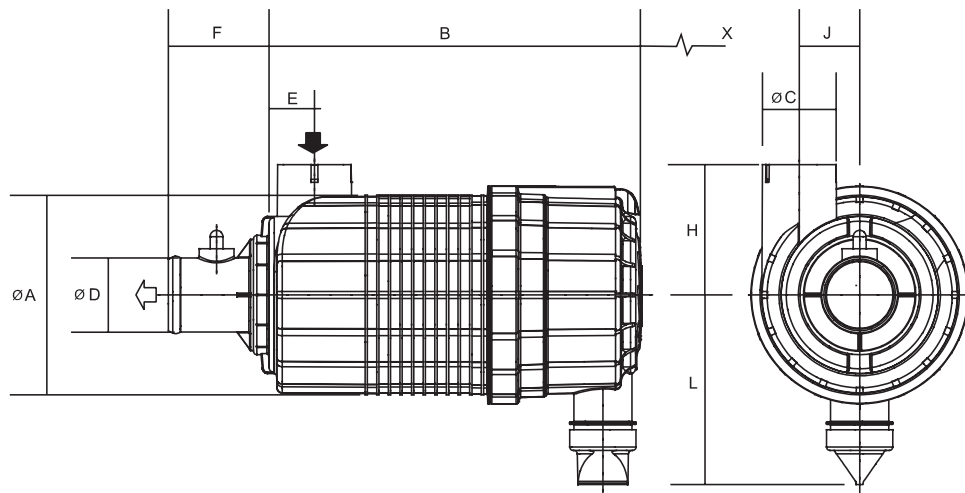
- Exclusive Radial Seal Sealing Technology means reliability and easy service - the filter is self-centering and self-aligning!
- One piece, molded urethane endcaps encase the filter media and liners - reducing components, adding reliability and lowering cost
- Cover is unlocked with a yellow "finger", twisted to the left and removed from the filter housing. It's that simple! To fit the cover housing, just reverse the sequence. Only one mounting band is needed per body size.

## FPG Alexin™ Specifications

90° elbow outlet



Straight outlet



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)										
		A	B	C	D	E	F	G	H	J	L	X°
G065497 <sup>**</sup> *	1,5 - 4	172	326	63,5	63,5	43,5	40,8	78	112	52	163	300
G065498 "	1,5 - 4	172	326	63,5	63,5	43,5	40,8	78	112	52	163	300
G065499 •*	1,5 - 4	172	326	63,5	63,5	43,5	82,2	-	112	52	163	300
G065500 •	1,5 - 4	172	326	63,5	63,5	43,5	82,2	-	112	52	163	300
G082580 <sup>**</sup> *	4 - 7,5	213	369	95	89	53,4	53,5	105	138	57	183	355
G082581 "	4 - 8	213	369	95	89	53,4	53,5	105	138	57	183	355
G082582 •*	4 - 7,5	213	369	95	89	53,4	83	-	138	57	183	355
G082583 •	4 - 8	213	369	95	89	53,4	83	-	138	57	183	355
G090219 <sup>**</sup> *	5 - 10	242	409	114	89	61,5	53,5	105	170	60	260	370
G090220 "	5 - 10	242	409	114	89	61,5	53,5	105	170	60	260	370
G090225 •*	5 - 10	242	409	114	101,5	61,5	87	-	170	60	260	370
G090226 •	5 - 10	242	409	114	101,5	61,5	87	-	170	60	260	370
G100317 <sup>**</sup> *	8 - 11	268	432	114	101,5	70,5	60,2	120	185	72	269	390
G100318 "	8 - 12	268	432	114	101,5	70,5	60,2	120	185	72	269	390
G100319 •*	8 - 11	268	432	114	101,5	70,5	87,5	-	185	72	269	390
G100320 •	8 - 12	268	432	114	101,5	70,5	87,5	-	185	72	269	390

<sup>\*\*</sup> 90° elbow outlet  
• Straight outlet

\* Includes safety element  
X° Free space needed to remove main element



## FPG Alexin™ Service Parts

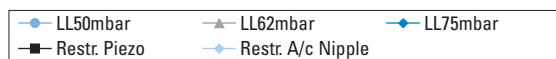
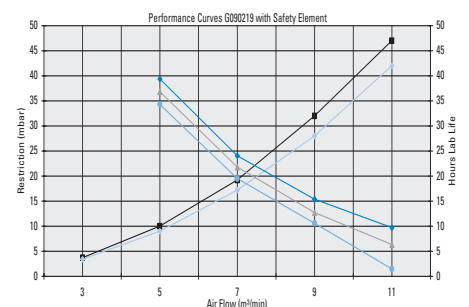
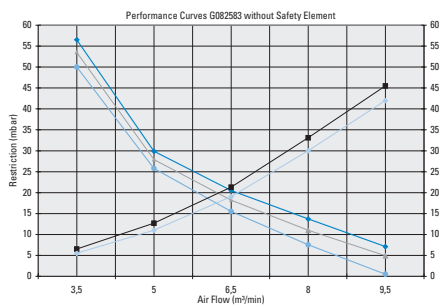
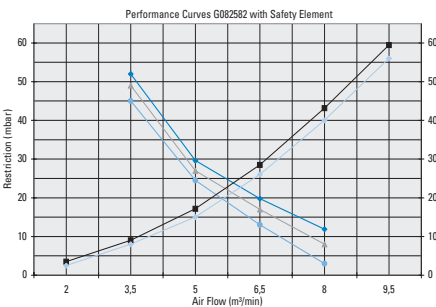
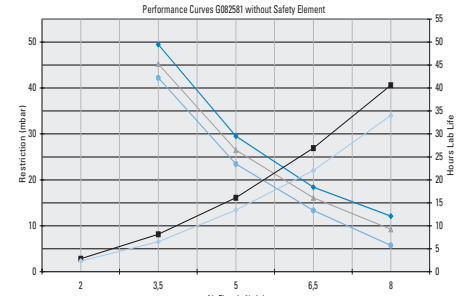
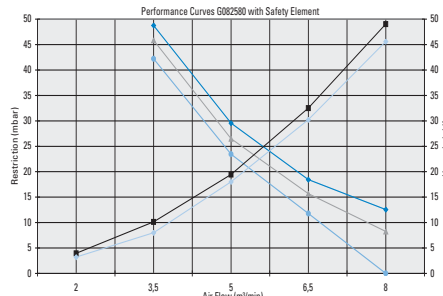
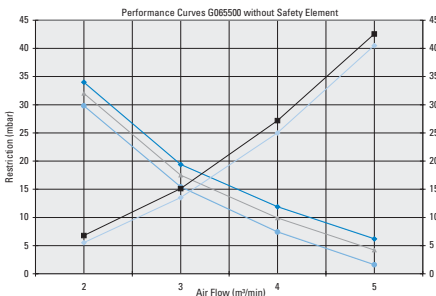
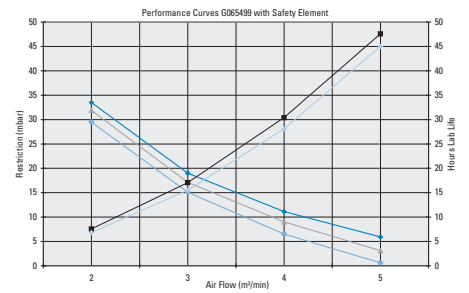
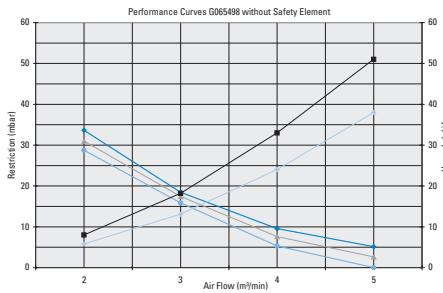
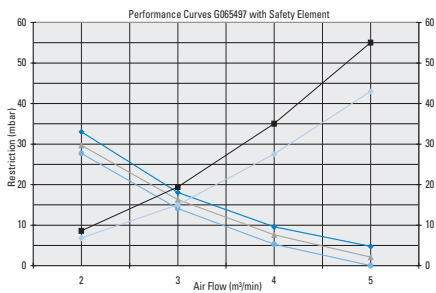
Service Parts						
Air Cleaner Model No.	Main Element	Safety Element	Access Cover Assy	Vacuator™ valve	Raincap	Plastic Mounting Band**
G065497	P822768	P822769	P780401	P522958	H001378	P778810
G065498	P822768	-	P780401	P522958	H001378	P778810
G065499	P822768	P822769	P780401	P522958	H001378	P778810
G065500	P822768	-	P780401	P522958	H001378	P778810
G082580	P828889	P829333	P780403	P158914	H770010	P777732
G082581	P828889	-	P780403	P158914	H770010	P777732
G082582	P828889	P829333	P780403	P158914	H770010	P777732
G082583	P828889	-	P780403	P158914	H770010	P777732
G090219	P780522	P780523	P780524	P776008	H770012	P780532
G090220	P780522	-	P780524	P776008	H770012	P780532
G090225	P780522	P780523	P780524	P776008	H770012	P780532
G090226	P780522	-	P780524	P776008	H770012	P780532
G100317	P781039	P777639	P780578	P776008	H770012	P780594
G100318	P781039	-	P780578	P776008	H770012	P780594
G100319	P781039	P777639	P780578	P776008	H770012	P780594
G100320	P781039	-	P780578	P776008	H770012	P780594

\*\* Only one mounting band needed per air cleaner      \* Spare Part only

## When specifying an Air Cleaner...

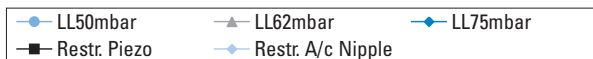
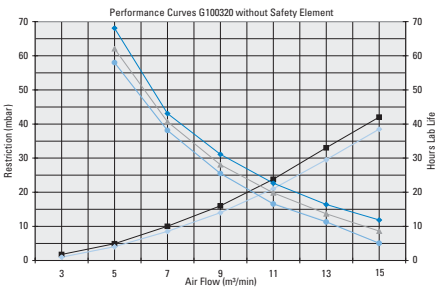
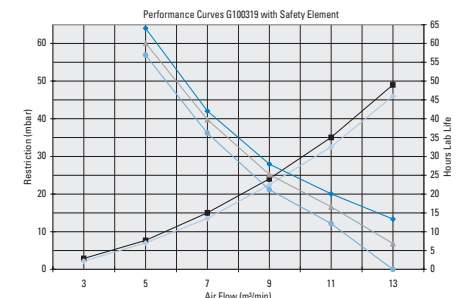
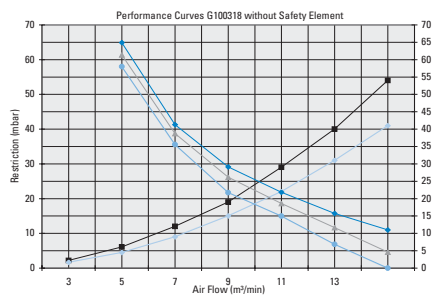
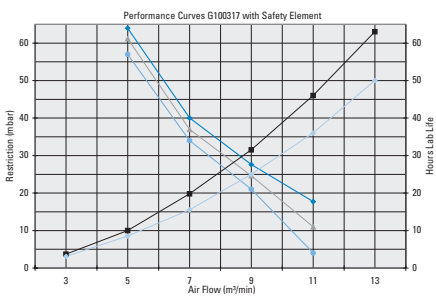
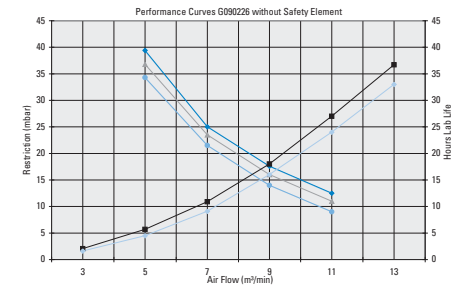
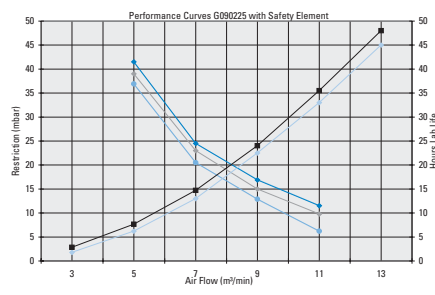
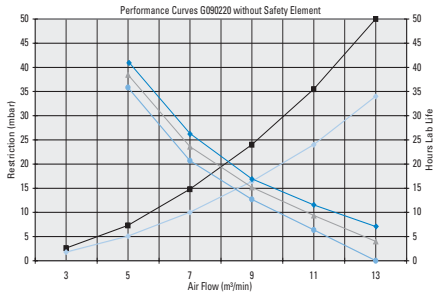
Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## FPG Alexin™ Performance Curves



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## FPG Alexin™ Performance Curves



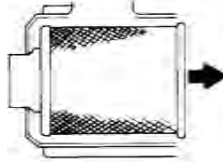
All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## 1 Remove the Filter

Unfasten or unlatch the service cover for the FPG models. For the FPG Alexin models, the cover is unlocked with a yellow "finger", twisted to the left and removed from the filter housing. Because the filter fits tightly over the outlet tube to create the critical seal, there will be some initial resistance, similar to breaking the seal on a jar. Gently move the end of the filter back and forth to break the seal then rotate while pulling straight out. Avoid knocking the filter against the housing.



Rotate the filter while pulling straight out.



If your air cleaner has a safety filter, replace it every third primary filter change. Remove the safety filter as you would the primary filter. Make sure you cover the air cleaner outlet tube to avoid any unfiltered contaminant dropping into the engine.

## 2 Clean Both Surfaces of the Outlet Tube and Check the Vacuator™ Valve

Use a clean cloth to wipe the filter sealing surface and the inside of the outlet tube. Contaminant on the sealing surface could hinder an effective seal and cause leakage. Make sure that all contaminant is removed before the new filter is inserted. Dirt accidentally transferred to the inside of the outlet tube will reach the engine and cause wear. Engine manufacturers say that it takes only a few grams of dirt to "dust" an engine! Be careful not to damage the sealing area on the tube.



Outer edge of the outlet tube

Wipe both sides of the outlet tube clean.



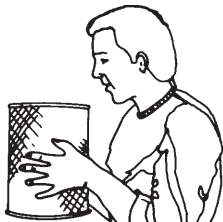
Inner edge of the outlet tube

**If your air cleaner is equipped with a Vacuator Valve** Visually check and physically squeeze to make sure the valve is flexible and not inverted, damaged or plugged.



## 3 Inspect the Old Filter for Leak Clues

Visually inspect the old filter for any signs of leaks. A streak of dust on the clean side of the filter is a telltale sign. Remove any cause of leaks before installing new filter.



## 4 Inspect the New Filter for Damage

Inspect the new filter carefully, paying attention to the inside of the open end, which is the sealing area. NEVER install a damaged filter. A new Donaldson radial seal filter may have a dry lubricant on the seal to aid installation.



## 5 Insert the New Radial Seal Filter Properly

If you're servicing the safety filter, this should be seated into position before installing the primary filter.

Insert the new filter carefully. Seat the filter by hand, making certain it is completely into the air cleaner housing before securing the cover in place.



The critical sealing area will stretch slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the flexible center. Avoid pushing on the center of the urethane end cap. No cover pressure is required to hold the seal. NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.

If the service cover hits the filter before it is fully in place, remove the cover and push the filter (by hand) further into the air cleaner and try again. The cover should go on with no extra force.

Once the filter is in place, secure the service cover for the FPG models. For the FPG Alexin models, the cover is locked with a yellow "finger", twisted to the right.

**Caution**

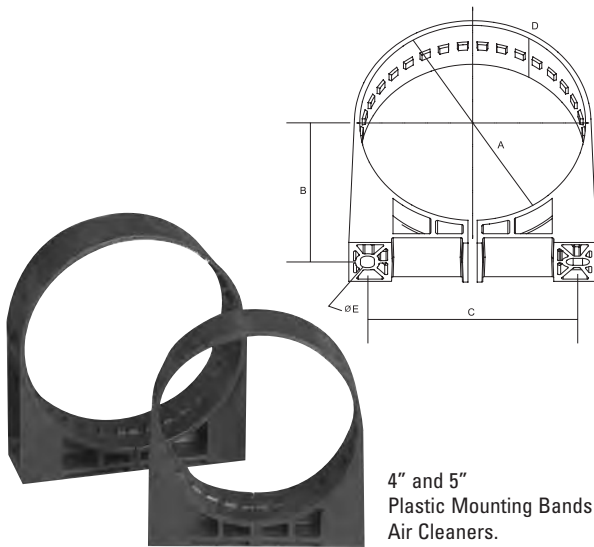
**NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.**

## 6 Check Connectors for Tight Fit

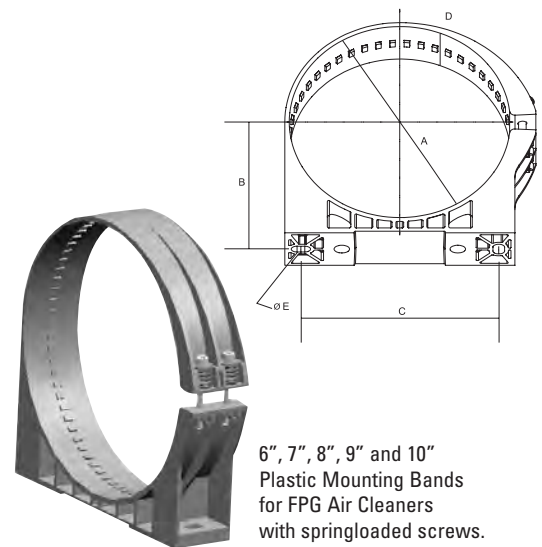
Make sure that all mounting bands, clamps, bolts, and connections in the entire air cleaner system are tight. Check for holes in piping and repair if needed. Any leaks in your intake piping will send dust directly to the engine!

## Designed Exclusively for the FPG + FPG Alexin™ Air Cleaners

- Band has tabs on the inside circumference which fit exactly into notches on the FPG housing to hold the housing in position.
- Tight fit between body and mounting band enhances components durability.
- The springs compensate for dimensional changes due to temperature fluctuations, maintaining a tight fit.
- Critical functions, i.e. Twist and Lock mechanism, remain unaffected.
- Fool proof installation: bolts are tightened to predetermined height.  
The band is under tension at all times. More user friendly as the base is no longer split.
- Donaldson polymer bands are completely non corrosive, lightweight, easy to install and economical.



4" and 5"  
Plastic Mounting Bands for FPG  
Air Cleaners.



6", 7", 8", 9" and 10"  
Plastic Mounting Bands  
for FPG Air Cleaners  
with springloaded screws.

Part Number	Diameter	Dimensions (mm)				
		A	B	C	D	E
4" and 5" Mounting Bands for FPG Air Cleaners						
P777151	4"	122	79	116	40	9
P777730	5"	146	90	136	50,5	9
6", 7", 8", 9" and 10" Mounting Bands for FPG Air Cleaners with Springloaded Screws						
P778810	6"	171,5	99,5	153,5	50,5	9
P778901*	6"	171,5	99,5	90	50,5	9
P781831*	6"	171,5	99,5	93	50,5	9
P777731	7"	182	104,5	163	50,5	9
P777732	8"	211,5	119,5	190	50,5	9
P780580*	8"	211,5	119,5	110	50,5	9
P780378**	8"	212	119,5	110	85	9
P780532	9"	241	136	143	50,5	9
P780594	10"	268	149,5	143	80	11
* With insert M8	** Double 8" Mounting Band needed					

## Mounted Underhood Two-Stage Filtration for Large Construction & Mining Machines

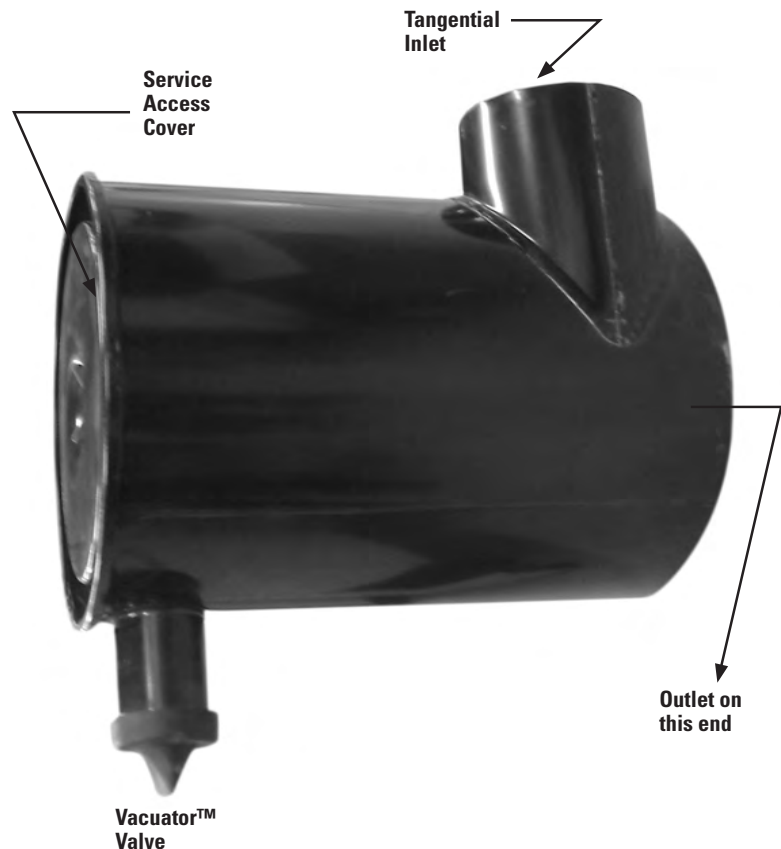
The FTG Cycloflow™ Air Cleaner is a two-stage air cleaner with built-in Pre-Cleaner and Axial Seal Sealing Technology. The air cleaner is mounted underhood with the service cover on the outside and an optional inlet hood on top.

### Applications

- Allows 32-59 m<sup>3</sup>/min. airflow throughput per air cleaner
- Horizontal installation
- Designed for large industrial and construction machines: crawler tractors, crane loaders, excavators and air compressors with large engines operating in severe dust environments
- Sustained temperature tolerance: to 82°C

### Air Cleaner Features

- Unique, flared inlet allows maximum airflow with low restriction
- 21" body diameters
- Two-stage air cleaning deals with very dusty environment:
  - (1) Built-in louver spins air to separate up to 85% of incoming dust before it reaches the filter
  - (2) Primary filter removes up to 99.99% of the remaining dust
- Built-in Vacuator™ Valve collects and releases pre-cleaned dust
- Safety filter on all models protects engine inlet during filter changeout
- Housing is metal and coated with a corrosion and chemical resistant polymer paint
- Indicator thread size = 1/8-27NPT (MALE)



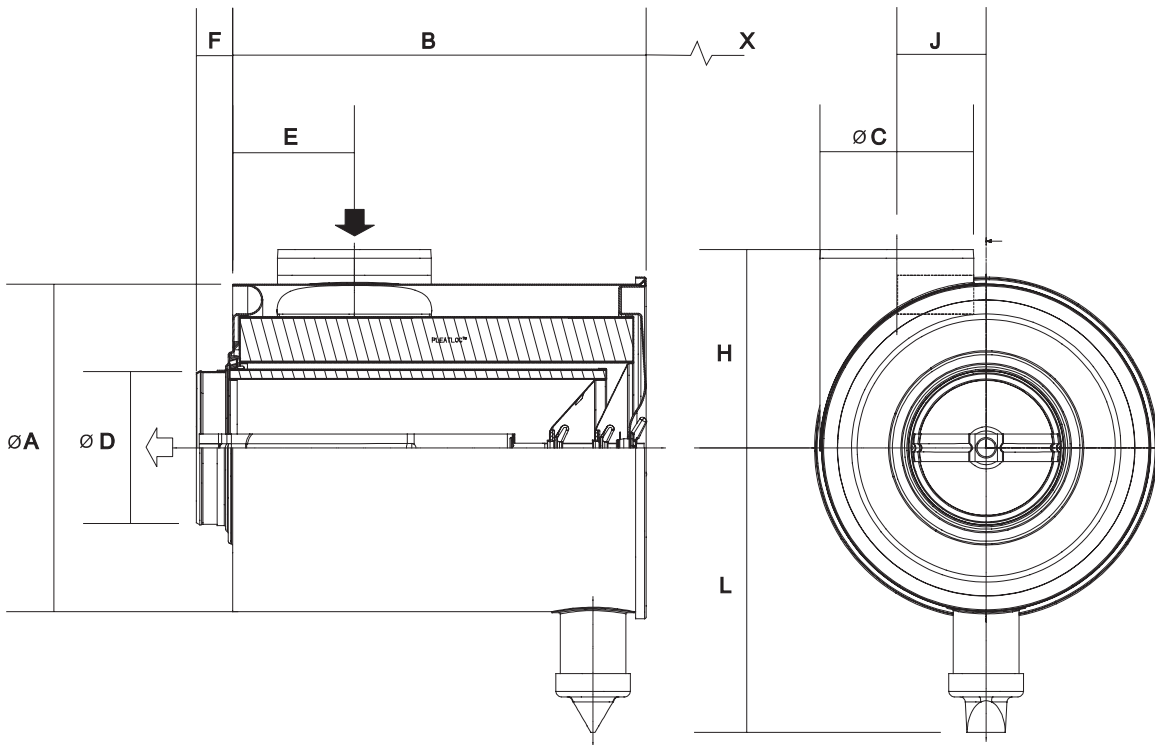
### Filter Features

Replacement filter choices include an extended service, high efficiency filter for restriction maintenance, and a standard life filter for scheduled maintenance

### Accessories

- Each FTG is tapped to accept a filter service indicator
- Order mounting bands, hoods, and other accessories separately

**FTG Cycloflow™ Specifications - Service Parts**



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)									
		A	B	C	D	E	F	H	J	L	X°
G210007**	32 - 59	546	613	254	254	150	90	330	146	442	613
G210010*	32 - 59	546	613	254	254	150	90	330	146	442	613

" Inlet on opposite side      \* Includes safety element  
X° Free space needed to remove main element

Air Cleaner Model No.	Main Element	Safety Element	Service Parts					Mounting band*
			Vacuator™ valve	Wing Nut	Gasket Washer	Raincap		
G210007	P182040	P117781	P105220	P116175	P105740	H770082	H770068	
G210010	P182040	P117781	P105220	P116175	P105740	H770082	H770068	

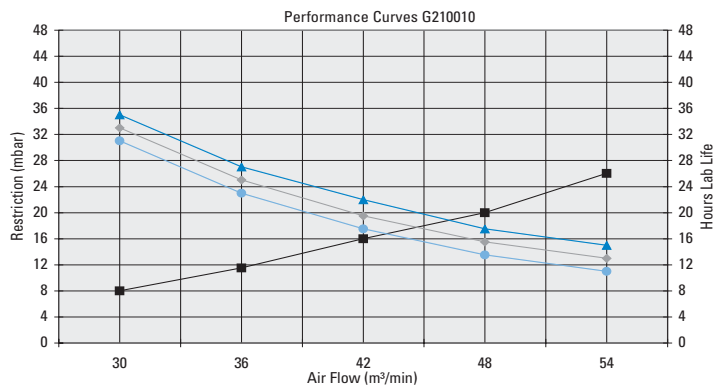
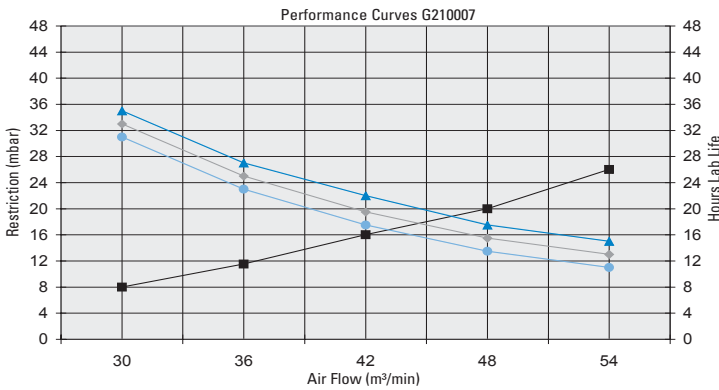
\* Two mounting bands needed per Air Cleaner

Medium Dust Conditions

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## FTG Cycloflow™ Performance Curves



Restr. A/c Piezo  
  LL50mbar  
  LL62mbar  
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>



## 1 Remove the old filter gently

"Baby" that dirty filter, until you get it clear of the housing. Accidentally bumping it while still inside means dropped dirt and dust that will contaminate the clean side of your filter housing, before the new filter element has a chance to do its job.



## 2 Always clean the inside of the housing carefully

Dirt left in the air cleaner housing spells death for your engine. Use a clean, damp cloth to wipe every surface clean. Check it visually to make sure it's clean before putting in a new filter.



## 3 Always clean the gasket sealing surfaces

An improper gasket seal is one of the most common causes of engine contamination. Make sure that all hardened dirt ridges are completely removed, both on the bottom and top of the air cleaner housing.



## 4 Check for uneven dirt patterns

Your old filter has valuable clues to dust leakage or gasket sealing problems. A pattern on the filter clean side is a sign that the old filter was not firmly sealed or that a dust leak exists. Identify the cause of that leak and rectify it before installing a new filter.



## 5 Press your fresh gasket to see that it springs back

Make sure your new filter is made with a highly compressible gasket that springs back (promptly) when finger pressure is released. A high quality gasket is one of the most important parts of the filter.



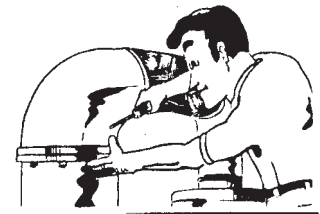
## 6 Make sure the gasket seats evenly

If you don't feel the gasket seating evenly for a perfect seal, you don't have protection. Re-check to see if the sealing surface in the housing is clean, and ensure that the filter is the correct model. It may be the wrong size for the housing.



## 7 Ensure air-tight fit on all connections and ducts

Check that all clamps and flange joints are tight, as well as the air cleaner mounting bolts. Seal any leaks immediately - leaks mean dirt is directly entering your engine.



## Superior Protection for Larger Engines RadialSeal Sealing Technology Means Reliable Filtration and Quicker Service

The FRG2 Air Cleaners is a two-stage hybrid air cleaner with RadialSeal™ Sealing Technology. Ideal for medium- to heavy duty applications like construction equipment, agricultural machinery, mining equipment and off-highway vehicles. The FRG2 Air Cleaner is the Next Generation FRG Air Cleaner Product featuring Donaldson's Unique Design Concept.

For more details on this UDC Feature, see page 7.

**Built with  
Donaldson  
Technology.**



**UNIQUE  
DESIGN  
CONCEPT**

### Applications FRG2

- Horizontal mount required
- Provides variety of airflow volumes to engine: from 6.5 to 51 m<sup>3</sup>/min.
- Temperature tolerance: to 83°C continuous / 105°C intermittent
- Body diameters of 10", 11", 13", 15" and 18"

### Features FRG2

- Two stage filter system: the first stage removes up to 85% of incoming dust
- Vacuator™ Valve automatically releases the pre-cleaned dust
- Proven RadialSeal™ Technology
- Tapped for restriction indicator as standard
- Durable, long-lasting finish. Comprised of two materials: injection molded, high strength polymer service cover and a metal body (the service cover is accessed by latches)
- Indicator thread size = 1/8-27NPT (MALE)

- Mounting the unit directly to the engine is not recommended; excessive engine vibration can cause premature air cleaner structural failure
- Cost effective / Compact and light
- Flexible installation
- Durable, high-tech and easy to service design

### Accessories

Donaldson intake accessories for your FRG2 Air Cleaner can help overcome or prevent various problems. For instance:

- Mounting bands for FRG2s must be ordered separately
- If the installed air cleaner will be exposed to rain, snow or debris, an **inlet cap** can prevent moisture ingestion.
- A **service indicator** measures the airflow restriction across the filter, thereby showing how much useful life the filter has left, and when to replace the filter cartridge (see Accessories section of this catalogue).

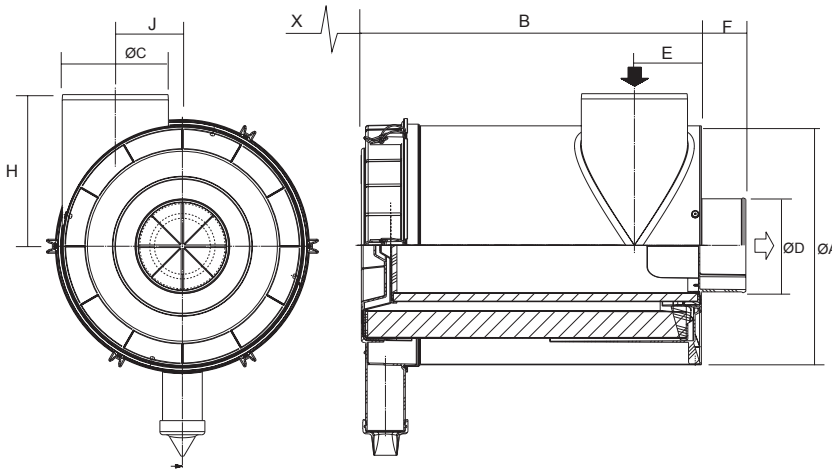
## FRG2 Specifications

**UNIQUE  
DESIGN  
CONCEPT**



### FRG2      FRG Air Cleaners

G100420	G100281
G100428	G100284
G110381	G110211
G110382	G110269
G130236	G130120
G130232	G130061
G130234	G130088
G130233	G130087
G130235	G130113
G150255	G150092
G150259	G150112
G150256	G150097
G180087	G180033
G180074	G180035
G180073	G180031
G180075	G180038



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)										
		A	B	C	D	E	F	H	J	L	X°	Z°°
G100420 *	7 - 14	259	430	114	101	90	52	205	68	270	373	107
G100428	7 - 16	259	430	114	101	90	52	205	68	270	373	107
G110381 " *	8 - 16	279	480	127	114	108	67	191	77	275	373	107
G110382 *	8 - 16	279	480	127	114	108	67	191	77	275	373	107
G130236 *	10 - 18	330	425	152	127	132	58	216	90	301	365	93
G130232 *	13 - 24	330	530	152	127	132	58	216	90	301	470	93
G130234 " *	13 - 24	330	530	152	127	132	58	216	90	301	470	93
G130233	13 - 25	330	530	152	127	132	58	216	90	301	470	93
G130235 "	13 - 25	330	530	152	127	132	58	216	90	301	470	93
G150255 *	16 - 32	381	530	178	152	140	70	242	103	336	480	93
G150259 " *	16 - 32	381	530	178	152	118	70	242	103	336	480	93
G150256	16 - 33	381	530	178	152	140	70	242	103	336	480	93
G180087 *	20 - 39	457	510	203	178	128	85	290	128	402	460	130
G180074 *	22 - 39	457	650	203	178	128	85	290	128	402	600	130
G180073 *	25 - 42	457	650	203	203	128	85	290	128	402	600	130
G180075 " *	25 - 42	457	650	203	203	128	85	290	128	402	600	130

" Inlet on opposite side      \* Includes safety element      X° Free space needed to remove main element  
Z°° Free space needed to remove cover

Medium Dust Conditions

## FRG2 Service Parts

Service Parts						
Air Cleaner Model No.	Main Element	Kit Number •	Access Cover Assy*	Vacuator™ Valve	Rain Cap	Mounting band**
G100420	P785589	X770689	P784944	P776008	H770012	P004076
G100428	P785589	-	P784944	P776008	H770012	P004076
G110381	P785396	X770690	P784923	P158914	H770013	P004079
G110382	P785396	X770690	P784923	P158914	H770013	P004079
G130232	P785390	X770691	P784892	P776008	H770090	P013722
G130233	P785390	-	P784892	P776008	H770090	P013722
G130234	P785390	X770691	P784892	P776008	H770090	P013722
G130235	P785390	-	P784892	P775569	H770090	P013722
G130236	P785398	X770692	P784892	P776008	H770090	P013722
G150255	P785590	X770693	P785551	P776008	H770089	P016845
G150256	P785590	-	P785551	P776008	H770089	P016845
G150259	P785590	X770693	P785551	P776008	H770089	P016845
G180073	P785394	X770688	P784792	P105220	H001053	H770037
G180074	P785394	X770688	P784792	P105220	H001053	H770037
G180075	P785394	X770688	P784792	P105220	H001053	H770037
G180087 "	P786197	X770683	P784792	P105220	H001053	H770037

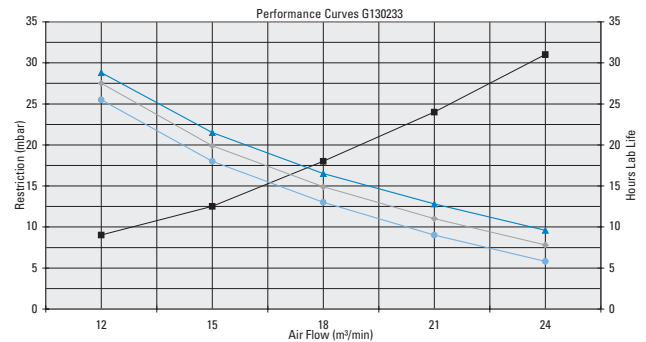
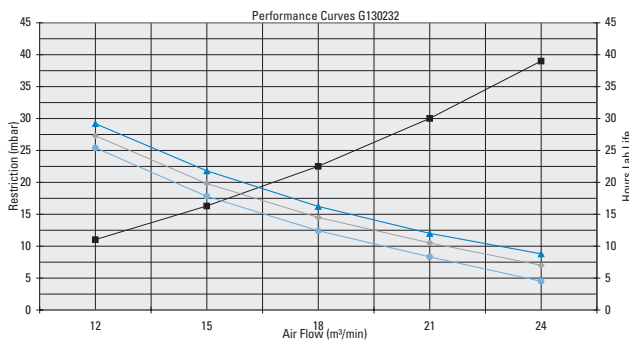
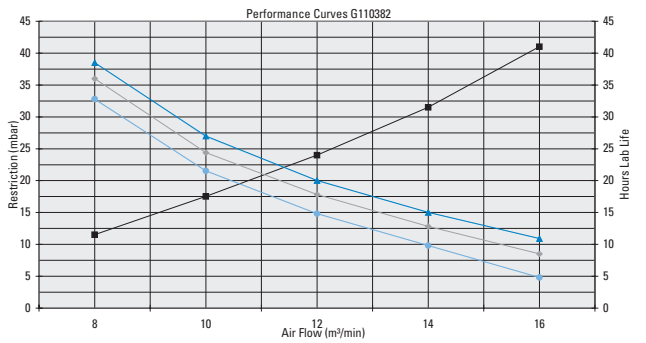
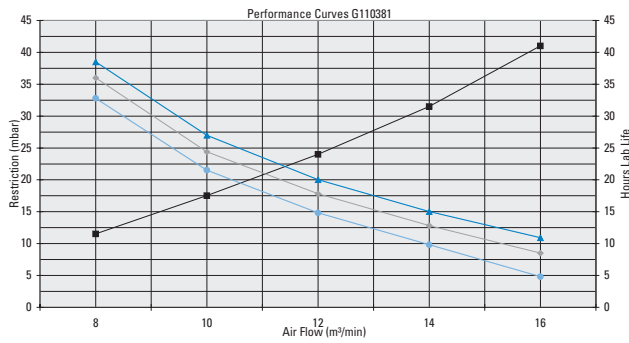
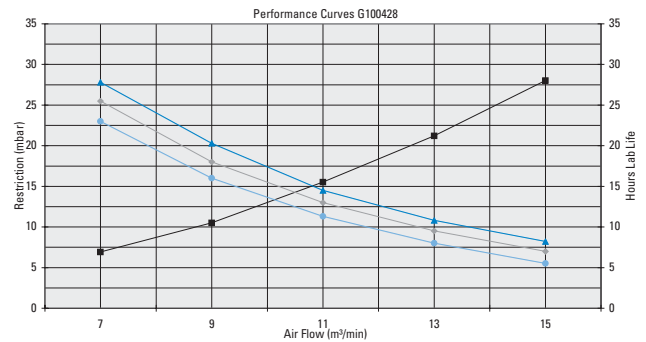
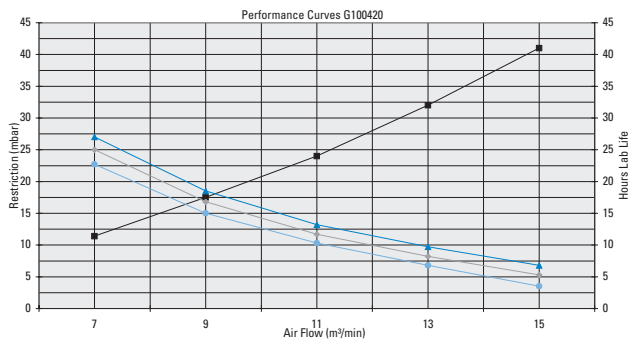
\* Spare Part only    \*\* Two mounting band needed per Air Cleaner  
 " No restriction indicator tapping point  
 • Safety element can only be bought as a kit meaning together with the main element

Medium Dust Conditions

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

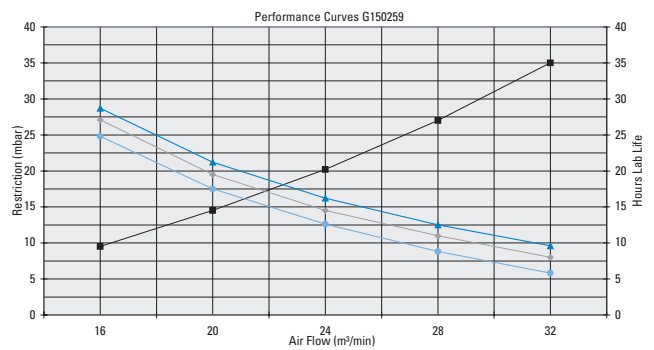
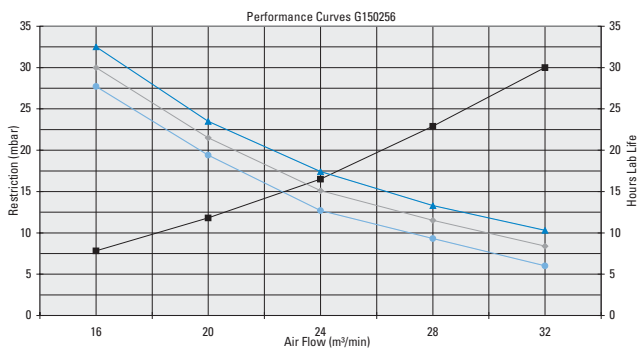
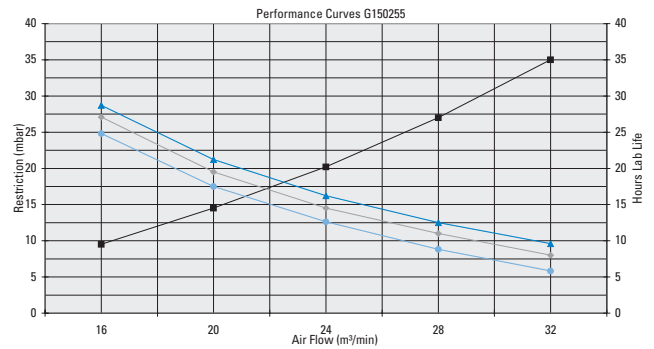
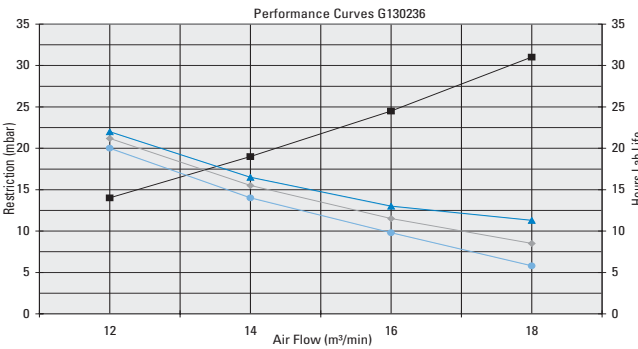
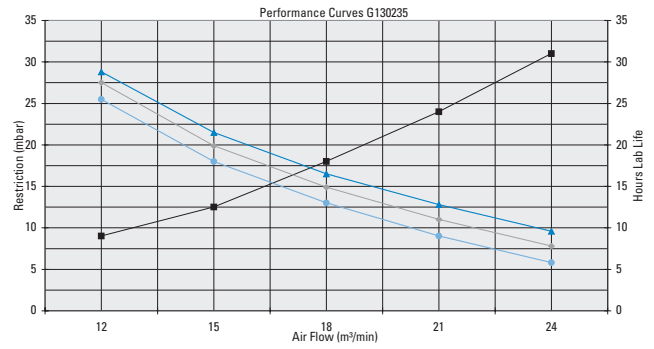
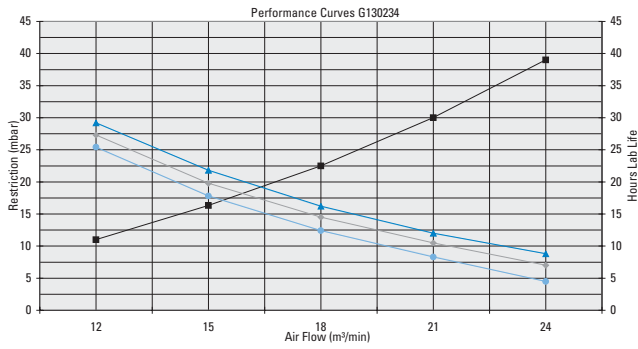
## FRG2 Performance Curves



Restr. A/c Piezo
  LL50mbar
  LL62mbar
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## FRG2 Performance Curves

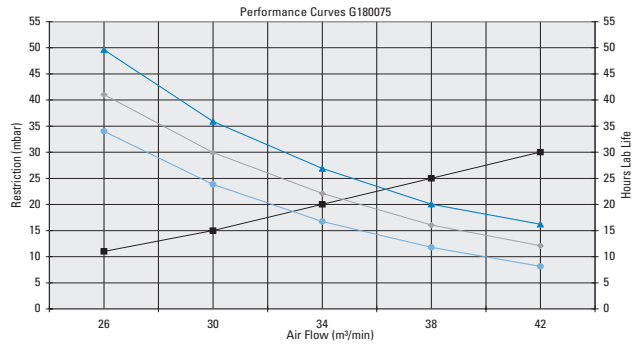
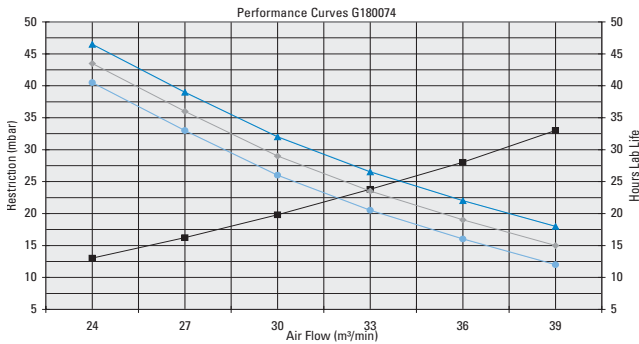
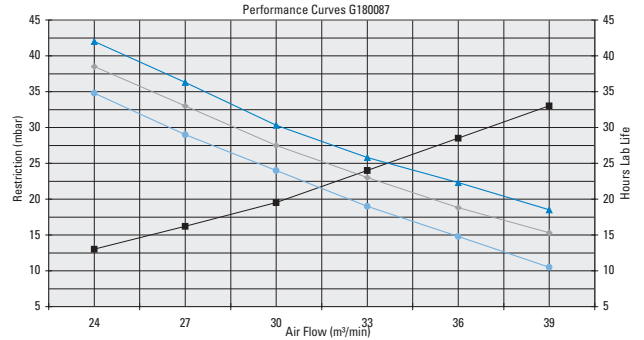
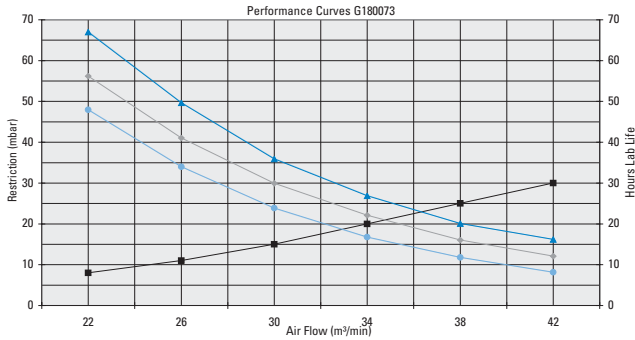


Restr. A/c Piezo
  LL50mbar
  LL62mbar
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

Medium Dust Conditions

## FRG2 Performance Curves



Restr. A/c Piezo
  LL50mbar
  LL62mbar
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## 1 Remove the Filter

Unfasten or unlatch the service cover.



Rotate the filter while pulling straight out.

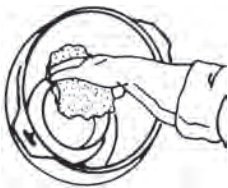
Because the filter fits tightly over the outlet tube to create the critical seal, there will be some initial resistance, similar to breaking the seal on a jar. Gently move the end of the filter back and forth to break the seal then rotate while pulling straight out. Avoid knocking the filter against the housing.



If your air cleaner has a safety filter, replace it every third primary filter change. Remove the safety filter as you would the primary filter. Make sure you cover the air cleaner outlet tube to avoid any unfiltered contaminant dropping into the engine.

## 2 Clean Both Surfaces of the Outlet Tube and Check the Vacuator™ Valve

Use a clean cloth to wipe the filter sealing surface and the inside of the outlet tube. Contaminant on the sealing surface could hinder an effective seal and cause leakage. Make sure that all contaminant is removed before the new filter is inserted. Dirt accidentally transferred to the inside of the outlet tube will reach the engine and cause wear. Engine manufacturers say that it takes only a few grams of dirt to “dust” an engine! Be careful not to damage the sealing area on the tube.



Outer edge of the outlet tube

Wipe both sides of the outlet tube clean.



Inner edge of the outlet tube

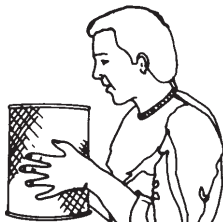
### If your air cleaner is equipped with a Vacuator Valve

Visually check and physically squeeze to make sure the valve is flexible and not inverted, damaged or plugged.



## 3 Inspect the Old Filter for Leak Clues

Visually inspect the old filter for any signs of leaks. A streak of dust on the clean side of the filter is a telltale sign. Remove any cause of leaks before installing new filter.



## 4 Inspect the New Filter for Damage

Inspect the new filter carefully, paying attention to the inside of the open end, which is the sealing area.

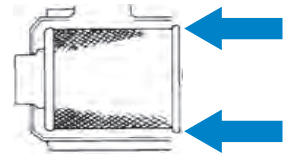
NEVER install a damaged filter. A new Donaldson radial seal filter may have a dry lubricant on the seal to aid installation.



## 5 Insert the New Radial Seal Filter Properly

If you're servicing the safety filter, this should be seated into position before installing the primary filter.

Insert the new filter carefully. Seat the filter by hand, making certain it is completely into the air cleaner housing before securing the cover in place.



The critical sealing area will stretch slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the flexible center. Avoid pushing on the center of the urethane end cap. No cover pressure is required to hold the seal. NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.

If the service cover hits the filter before it is fully in place, remove the cover and push the filter (by hand) further into the air cleaner and try again. The cover should go on with no extra force.

Once the filter is in place, secure the service cover.



**Caution**  
NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.



## 6 Check Connectors for Tight Fit

Make sure that all mounting bands, clamps, bolts, and connections in the entire air cleaner system are tight. Check for holes in piping and repair if needed. Any leaks in your intake piping will send dust directly to the engine!



# Air Cleaners used in Heavy Dust Conditions

... Donaldson offers a full line of air cleaners for a wide variety of applications and operating environments.

## Section Index

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**UNIQUE  
DESIGN  
CONCEPT**

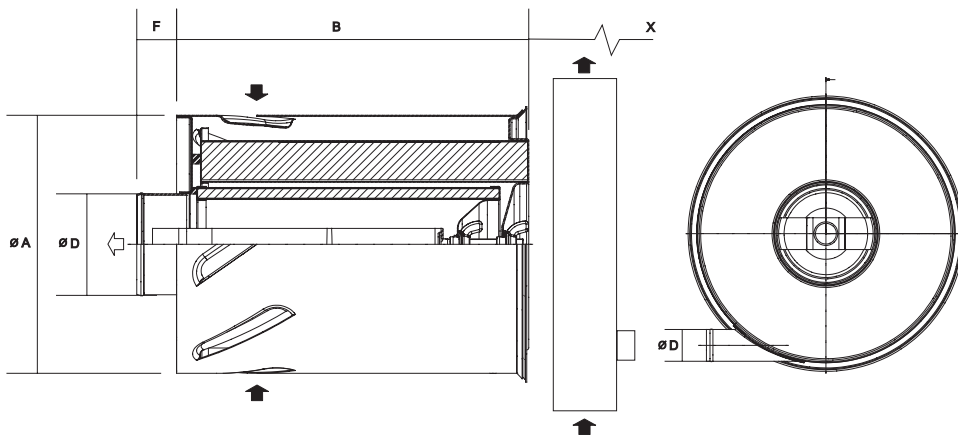
## Two-Stage Louvered Body Air Cleaner



The FLB - Louvered Body Air Cleaner is a two-stage air cleaner with scavenge exhaust system and Axial Seal Sealing Technology. Body diameters in 6", 8", 10" and 12". Handles airflows of 3-17 m<sup>3</sup>/min. Sustained temperature tolerance: to 82°C.

Designed especially for combines and other heavy-duty construction and agricultural equipment operating in severe dust, fibers, lint and shaft environments. To be used with an exhaust ejector. For all available Donaldson Exhaust Ejectors, see page 124-125.

## FLB Specifications - Service Parts



Air Cleaner Model No	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)					
		A	B	D	F	G	X°
B065018	3 - 5	167	360	76	28	32	345
B080022	4,5 - 7	203	423	89	54	32	415
B100067	7 - 12	259	430	101	50	32	425
B120260	12 - 17	300	424	127	80	32	415

X° Free space needed to remove main element

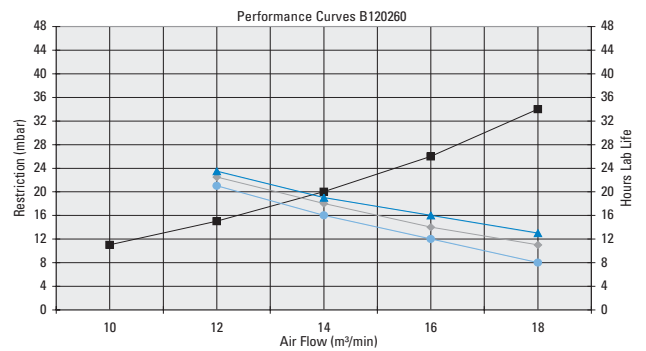
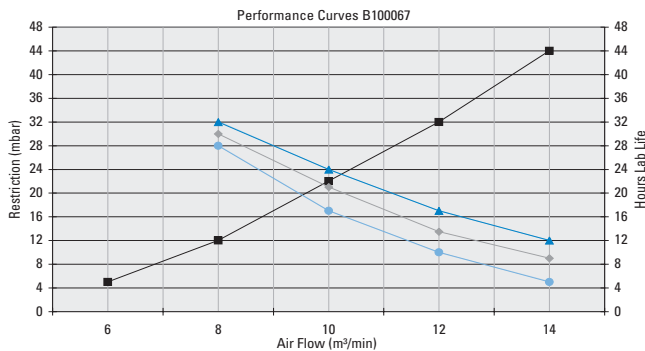
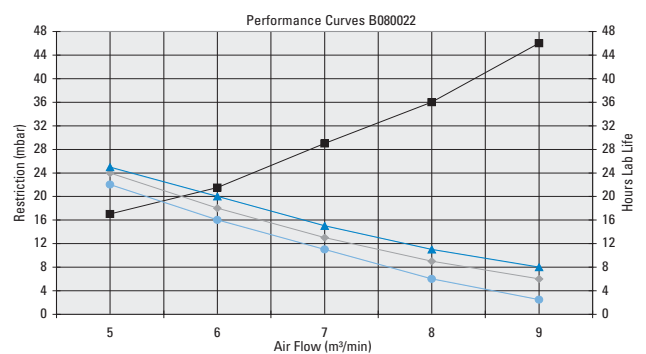
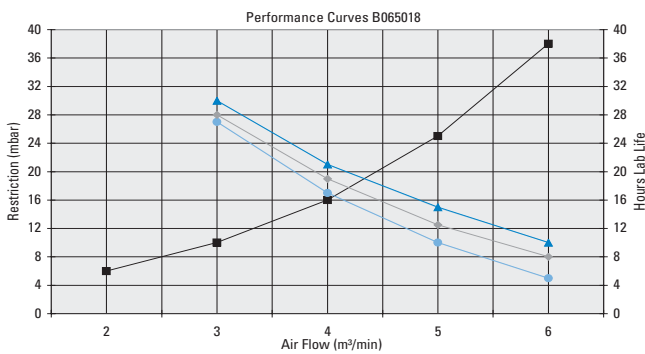
Air Cleaner Model No.	Service Parts			
	Main Element	Safety Element	Mounting Band*	Filter Wing Nut
B065018	P772565	P770207	P007191	P138403
B080022	P772556	P119410	P004307	P138403
B100067	P772530	P133138	P004076	P138403
B120260	P772520	P770678	H000349	P134803

\* Two mounting bands needed per Air Cleaner

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## FLB Performance Curves



Restr. A/c Piezo  
  LL50mbar  
  LL62mbar  
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## 1 Remove the old filter gently

"Baby" that dirty filter, until you get it clear of the housing. Accidentally bumping it while still inside means dropped dirt and dust that will contaminate the clean side of your filter housing, before the new filter element has a chance to do its job.



## 2 Always clean the inside of the housing carefully

Dirt left in the air cleaner housing spells death for your engine. Use a clean, damp cloth to wipe every surface clean. Check it visually to make sure it's clean before putting in a new filter.



## 3 Always clean the gasket sealing surfaces

An improper gasket seal is one of the most common causes of engine contamination. Make sure that all hardened dirt ridges are completely removed, both on the bottom and top of the air cleaner housing.



## 4 Check for uneven dirt patterns

Your old filter has valuable clues to dust leakage or gasket sealing problems. A pattern on the filter clean side is a sign that the old filter was not firmly sealed or that a dust leak exists. Identify the cause of that leak and rectify it before installing a new filter.



## 5 Press your fresh gasket to see that it springs back

Make sure your new filter is made with a highly compressible gasket that springs back (promptly) when finger pressure is released. A high quality gasket is one of the most important parts of the filter.



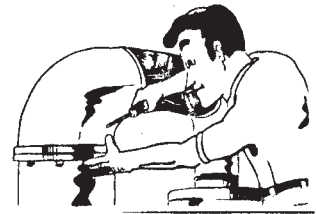
## 6 Make sure the gasket seats evenly

If you don't feel the gasket seating evenly for a perfect seal, you don't have protection. Re-check to see if the sealing surface in the housing is clean, and ensure that the filter is the correct model. It may be the wrong size for the housing.



## 7 Ensure air-tight fit on all connections and ducts

Check that all clamps and flange joints are tight, as well as the air cleaner mounting bolts. Seal any leaks immediately - leaks mean dirt is directly entering your engine.



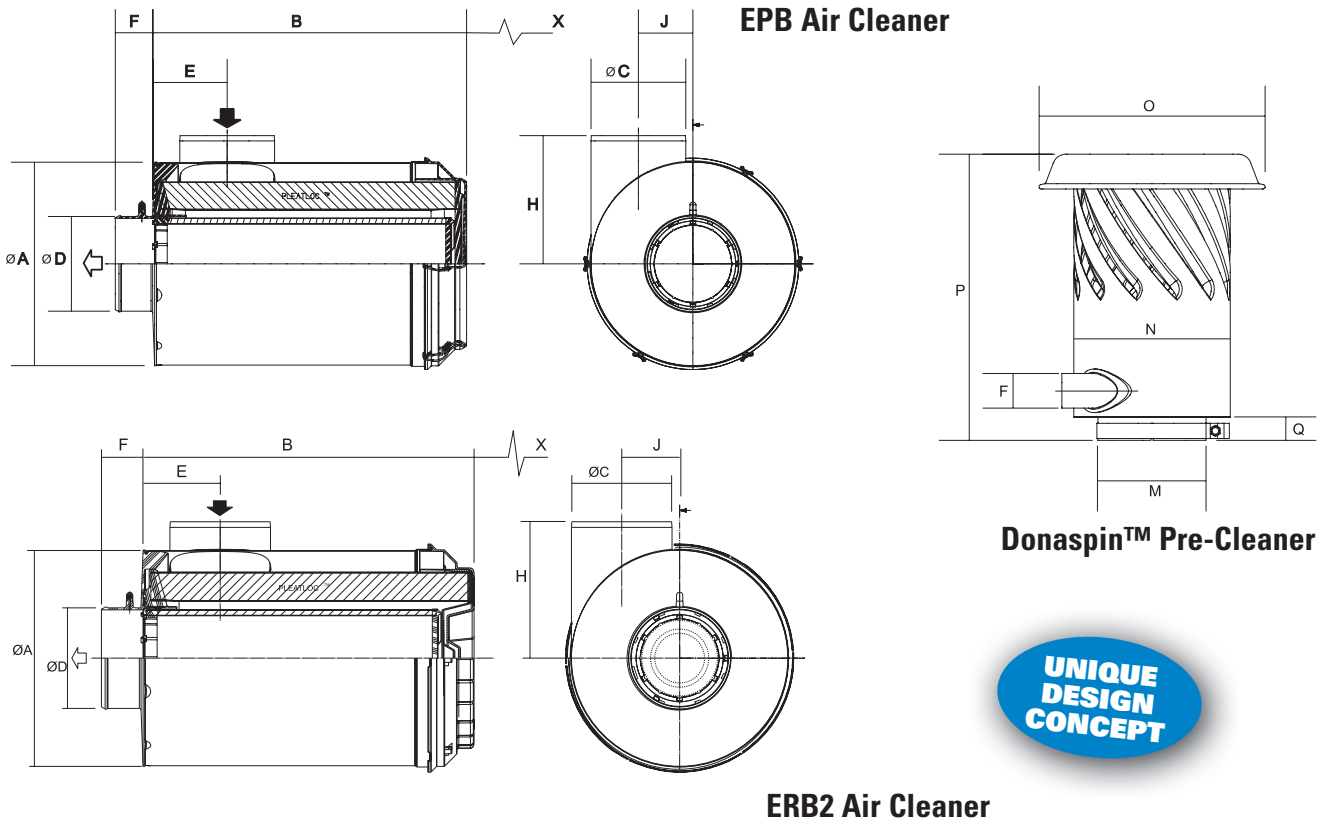
## Specifications



See page 130 for the Donaspin™ Pre-Cleaners



See page 44-45 for EPB-ERB2 Service Parts.



Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)										Pre-Cleaner	M	N	O	P	Q
			A	B	C	D	E	F	H	J	X°							
EPB	B070005	2 - 5	182	334	76	76	45	27	115	145	340	H001212	77	203	305	316	55	
EPB	B080067	4 - 7	210	355	95	89	54	31,5	130	146	355	H001307	95	203	305	304	42	
ERB2	B100126	7 - 12	259	430	114	102	143	52	205	0	400	H001215	114	203	305	290	28	

X ° Free space needed to remove main element  
For all available Donaldson Exhaust Ejectors, see page 124-125

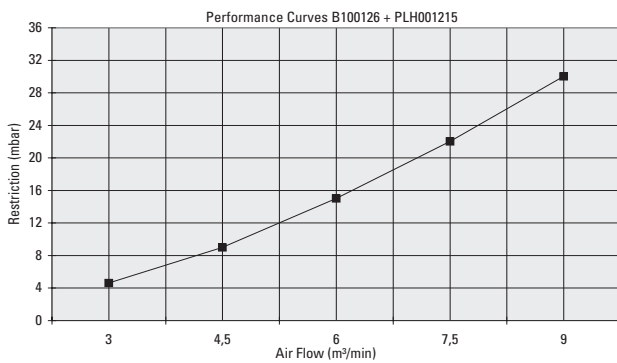
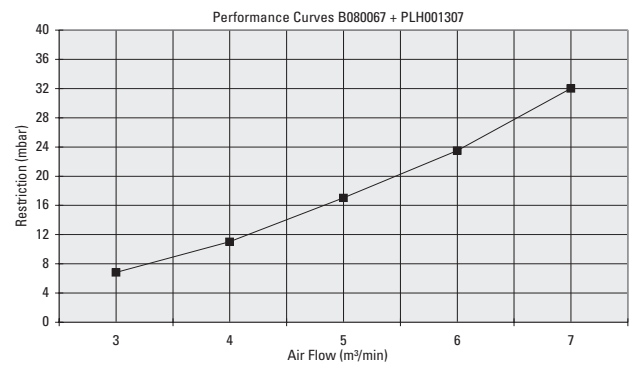
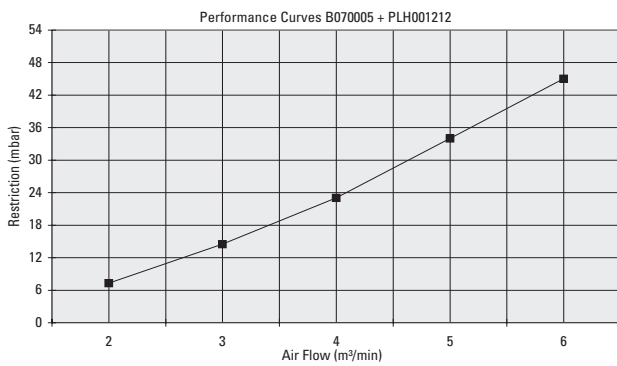
# EPB - ERB2 Air Cleaner with Donaspin™ Pre-Cleaner



## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding  $m^3/min.$  airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that  $m^3/min.$  If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## Restriction Curves



—■— Restr. A/c Piezo

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of  $1g/m^3$

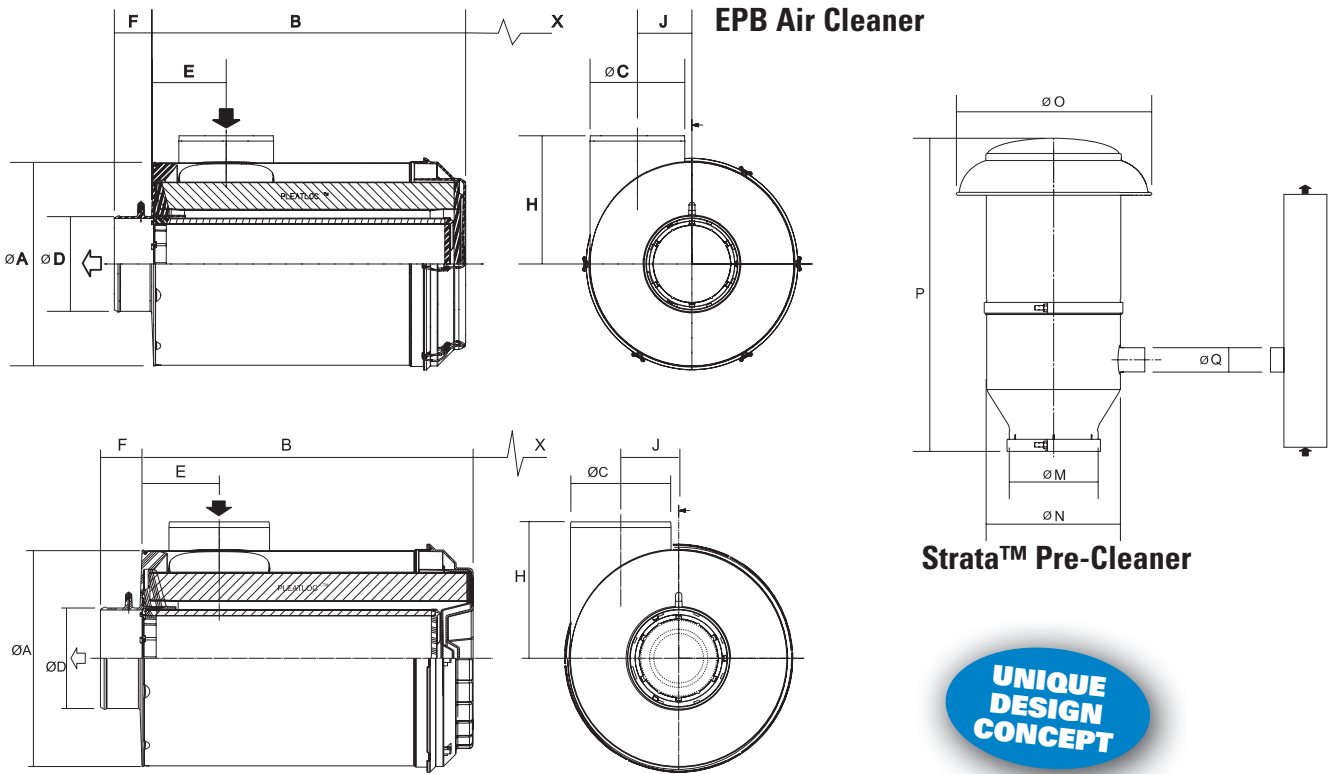
## Specifications



For more details on the Strata™ Pre-Cleaner, contact your Donaldson representative.



See page 44-45 for EPB-ERB2 Service Parts.



**ERB2 Air Cleaner**

Style	Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)										Pre-Cleaner	M	N	O	P	Q
			A	B	C	D	E	F	H	J	X°							
EPB	B070005	2 - 4	182	334	76	76	45	27	115	145	340	H000975	78	167	281	441	25	
EPB	B080067	4 - 7	210	355	95	89	54	31,5	130	146	355	H000896	97	167	281	447	25	
ERB2	B100126	7 - 12	259	430	114	102	143	52	205	0	400	H001510	116	167	281	441	25	
ERB2	B130013	15 - 26	330	530	178	152	180	58	215	0	360	H001148	179	279	406	465	38	
ERB2	B150025	18 - 32	381	590	178	178	136	70	241	102	540	H001148	179	279	406	465	38	

X° Free space needed to remove main element  
 For all available Donaldson Exhaust Ejectors, see page 124-125

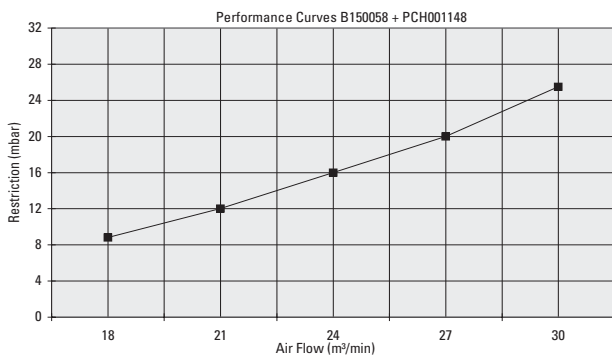
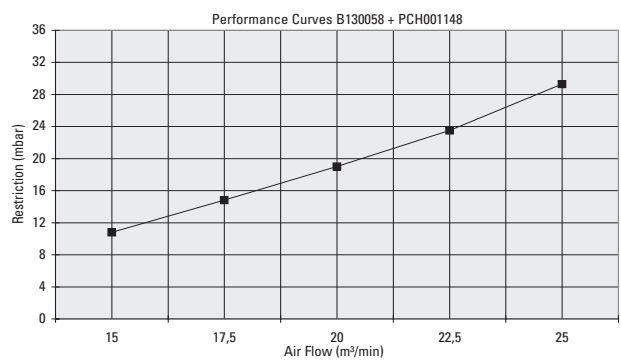
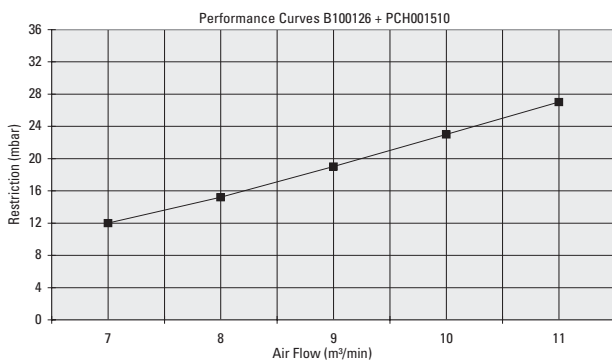
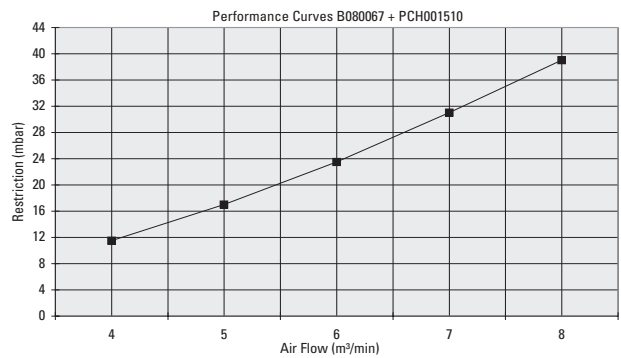
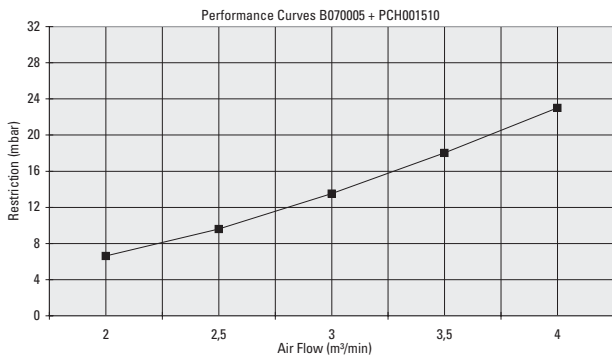
# EPB - ERB2 Air Cleaner with Strata™ Pre-Cleaner



## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## Restriction Curves

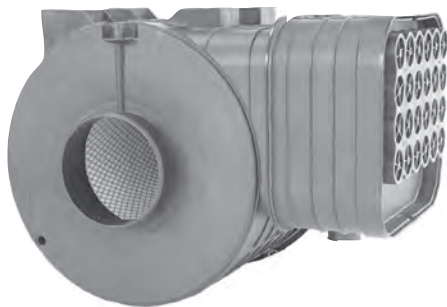


—■— Restr. A/c Piezo

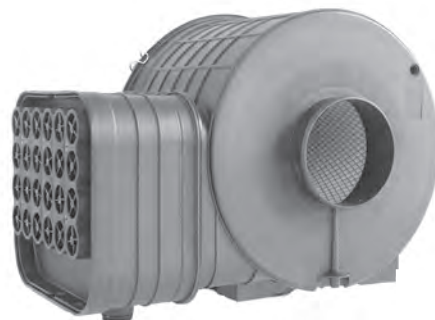
All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>



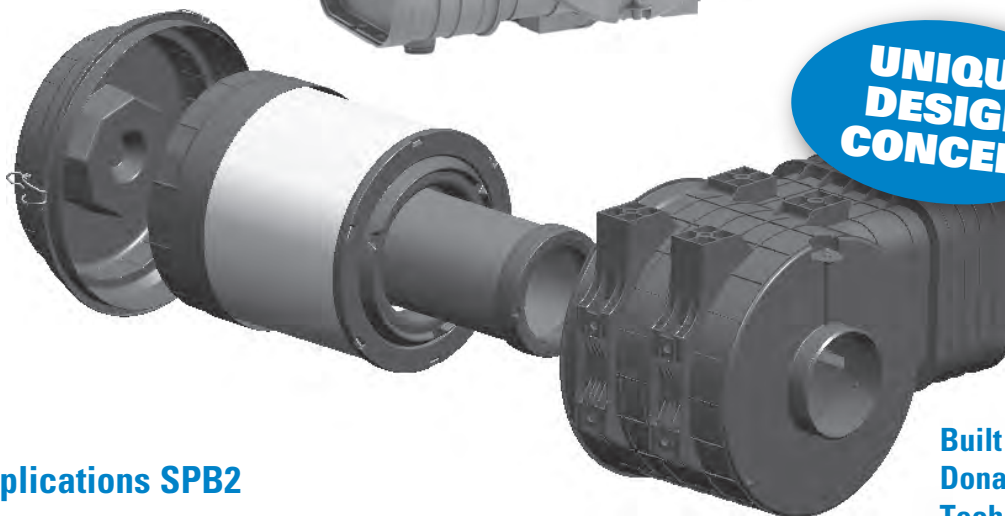
## Two-Stage RadialSeal™ Air Cleaners which offer improved reliability and durability, reduced weight and costs and better serviceability



The SPB2 Air Cleaner is a two-stage full plastic air cleaner with built-in high efficiency Pre-Cleaner and RadialSeal™ Sealing Technology. They are suitable for agricultural and construction equipment operating in severe dust environments. To be used with an exhaust ejector. For all available Donaldson Exhaust Ejectors, see page 124-125.



The SPB2 Air Cleaner Products are featuring the Donaldson's Unique Design Concept. For more details on this UDC Feature, see page 7.



**UNIQUE  
DESIGN  
CONCEPT**

**Built with  
Donaldson  
Technology.**

### Applications SPB2

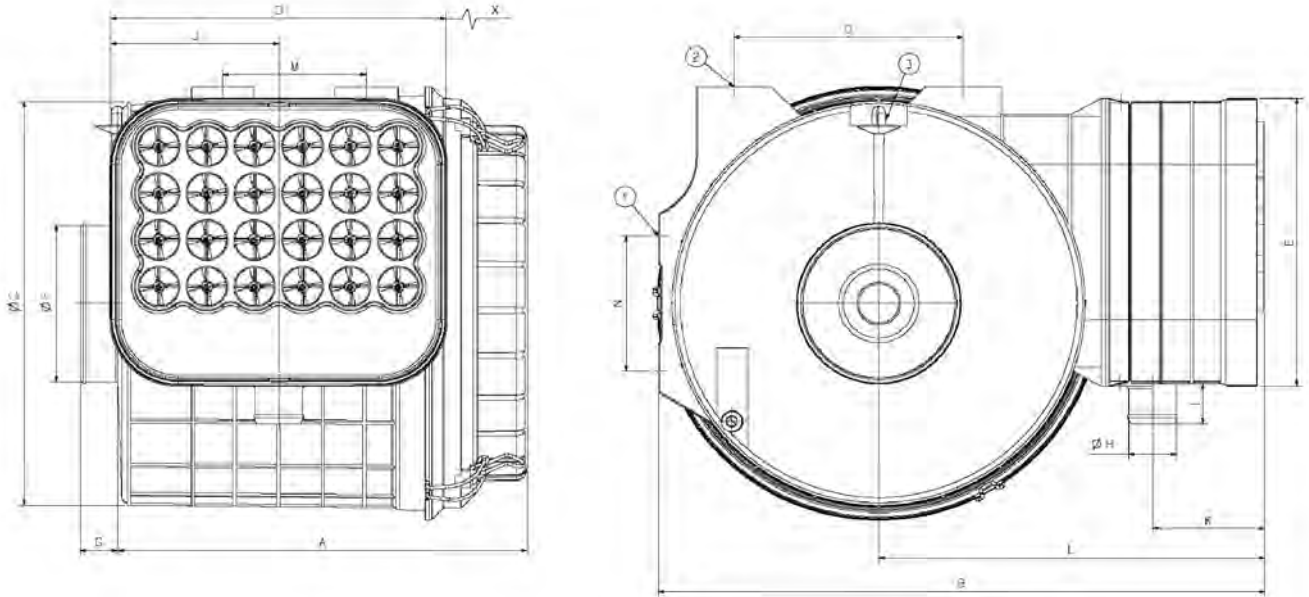
- Can be mounted vertically or horizontally
- Provides variety of airflow volumes to engine: from 6 to 22 m<sup>3</sup>/min.
- Temperature tolerance: to 83°C continuous / 105°C intermittent

### Features SPB2

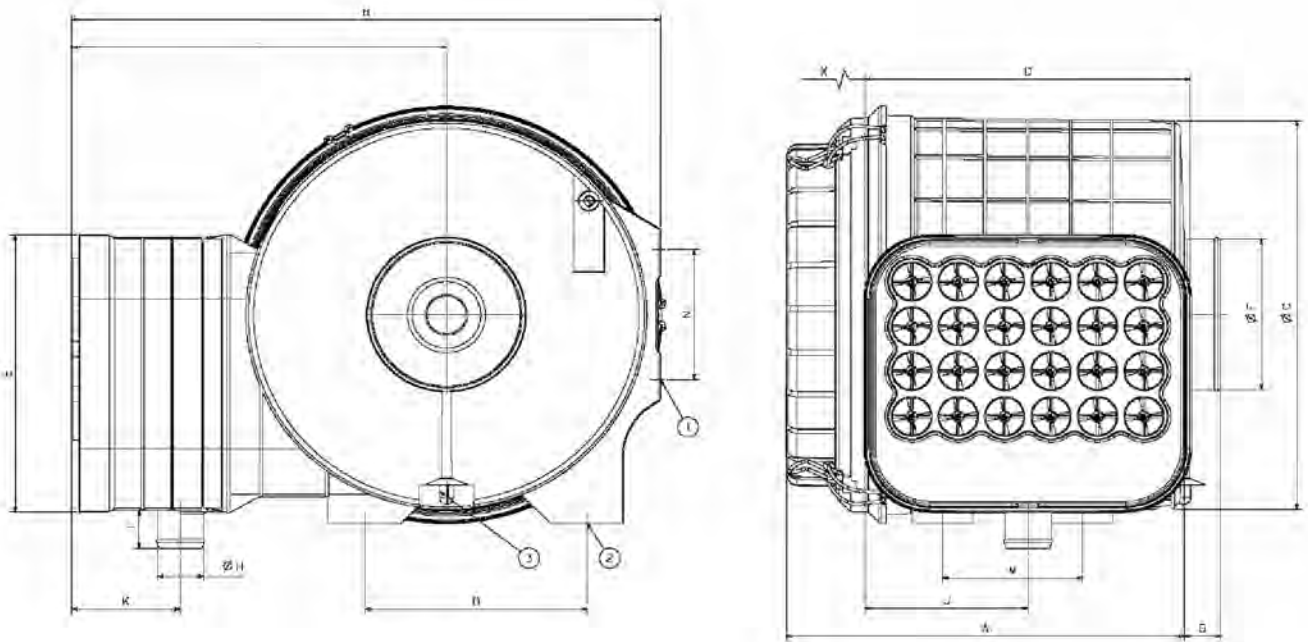
- Body diameter of 13"
- Cost effective / Compact and light weight
- Flexible installation
- Reliable, durable, high-tech and easy to service design
- Proven RadialSeal™ Technology
- Tapped for restriction indicator as standard
- Built-in Strata™ Pre-Cleaner with efficiency of 90 - 93%
- Always to be used with a scavenge system (minimum with 10% scavenge)
- ISO Coarse Dust / ISO 5011 Certificate
- Indicator thread size = 1/8-27NPT (MALE)

## SPB2 Specifications

### B130048



### B130060



- 1) 4 Clips M8 optional – Reference P784517: Plastic bag with 4 U-Clips
- 2) Insert M8
- 3) 1/8 27 NPT

## SPB2 Specifications - Service Parts

B130048 + B130060 Dimensions (mm)																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	X	Z
325	481	328	266	234	127	30	38	33	133	89	306	114	110	182	75	280

X Free space needed to remove main element  
 Z Free space needed to remove cover      Airflow = 6-22 m<sup>3</sup>/min.

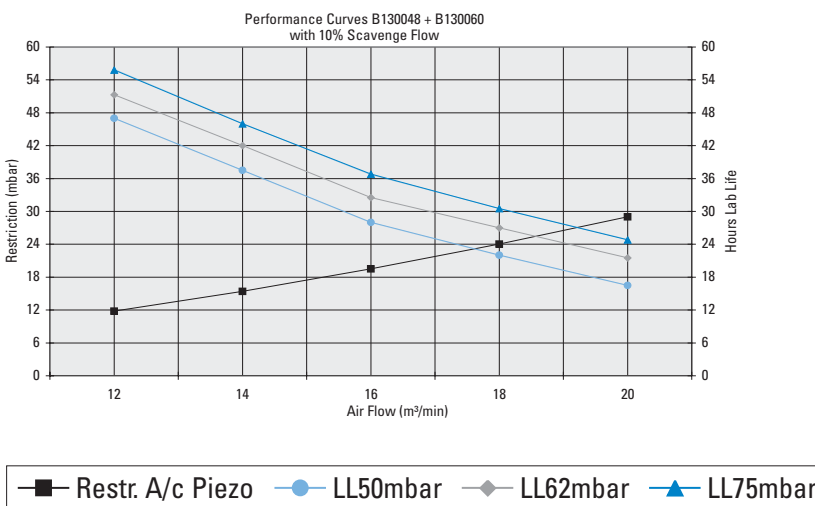
Service Parts				
Air Cleaner Model No.	Main Element	Kit Number •	Access Cover Assy*	Mounting band**
B130048 "	P783543	X770684	P783693	Integrated
B130060 "	P783543	X770684	P783693	Integrated

\* Spare Part only      \*\* Two mounting bands needed per air cleaner      " Inlet 180° rotated  
 • Safety Element can only be bought as a kit meaning together with the main element  
 For all available Exhaust Ejectors, see page 124-125

### When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## SPB2 Performance Curves



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

Heavy Dust Conditions

## Two-Stage RadialSeal™ Air Cleaners which offer improved reliability and durability, reduced weight and costs and better serviceability.

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The SRB Air Cleaner is a two-stage hybrid air cleaner with built-in high efficiency Pre-Cleaner and RadialSeal™ Sealing Technology.

They are suitable for agricultural and construction equipment operating in severe dust environments.

To be used with an exhaust ejector. For all available Donaldson Exhaust Ejectors, see page 124.125.

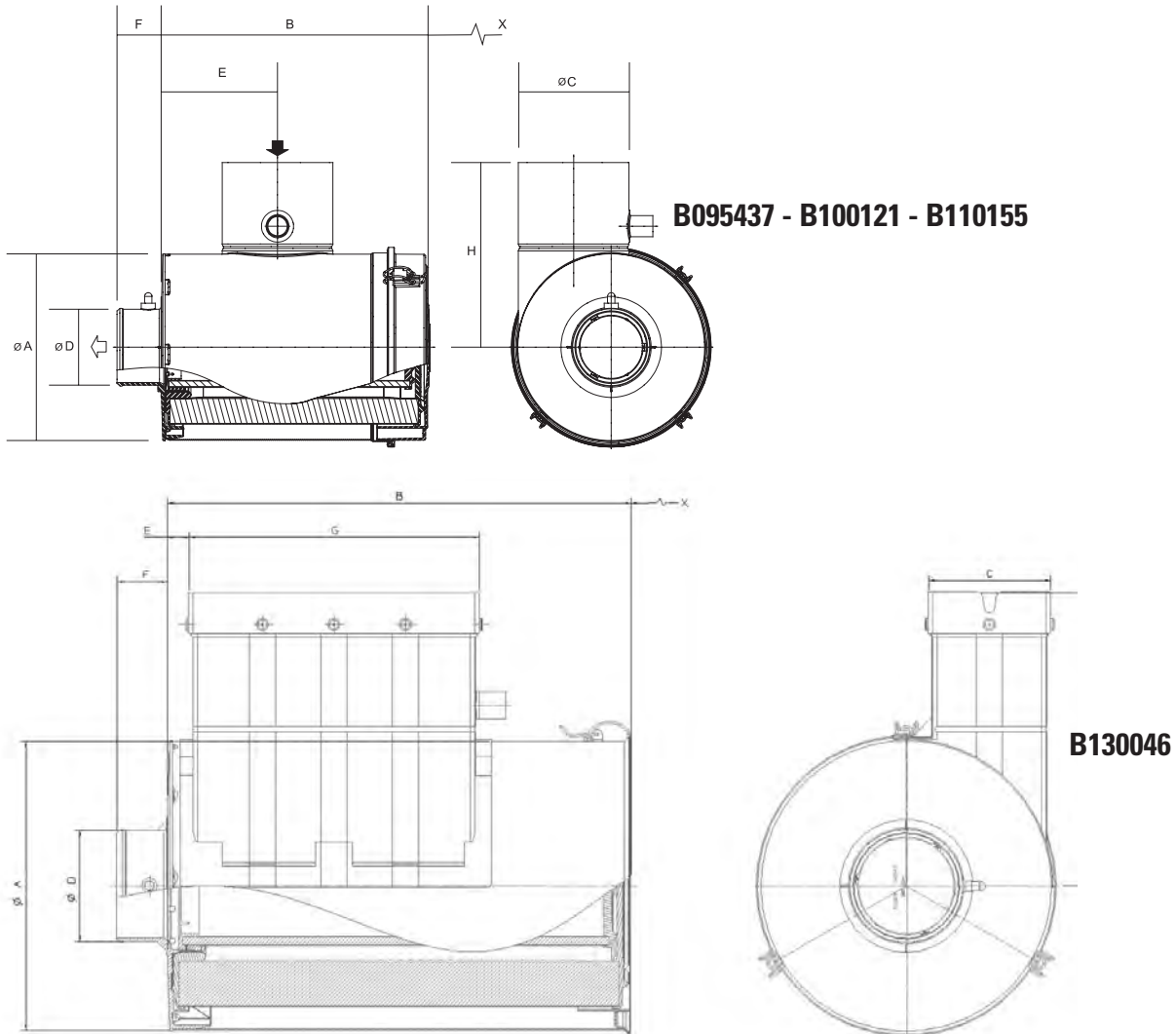
### Applications SRB

- Can be mounted vertically or horizontally
- Provides variety of airflow volumes to engine: from 4 to 18 m<sup>3</sup>/min.
- Temperature tolerance: to 83°C continuous / 105°C intermittent.

### Features SRB

- Body diameter of 9", 10", 11" and 13".
- Cost effective / Compact and light weight
- Flexible installation
- Reliable, durable, high-tech and easy to service design
- Proven RadialSeal™ Technology
- Tapped for restriction indicator as standard
- Built-in Strata™ Pre-Cleaner with efficiency of 90 - 93%
- Always to be used with a scavenge system (minimum with 10% scavenge)
- ISO Coarse Dust / ISO5011 Certificate
- Indicator thread size = 1/8-27NPT (MALE)

## SRB Specifications - Service Parts



Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.	Dimensions (mm)									
		A	B	C	D	E	F	G	H	X°	Z°°
B095437"	4 - 8	229	400	166	102	203	61	-	268	75	380
B100121	8 - 12	259	430	166	102	179	52	-	268	75	380
B110155	11 - 15	279	480	166	114	175	67	-	278	75	380
B130046	13 - 18	330	530	140	127	25	58	332	335	60	530

X° Free space needed to remove main element      Z°° Free space needed to remove cover      "90° elbow

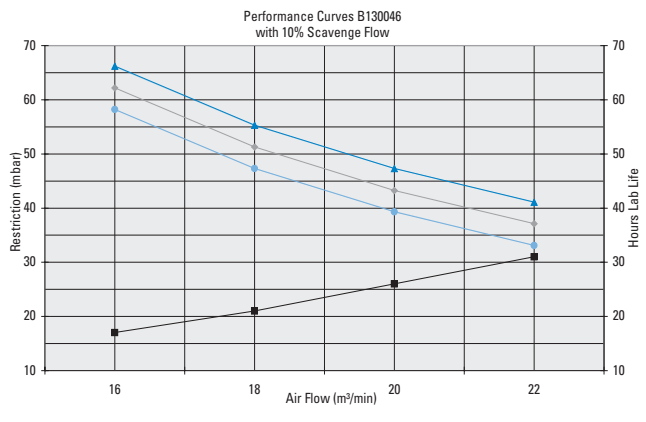
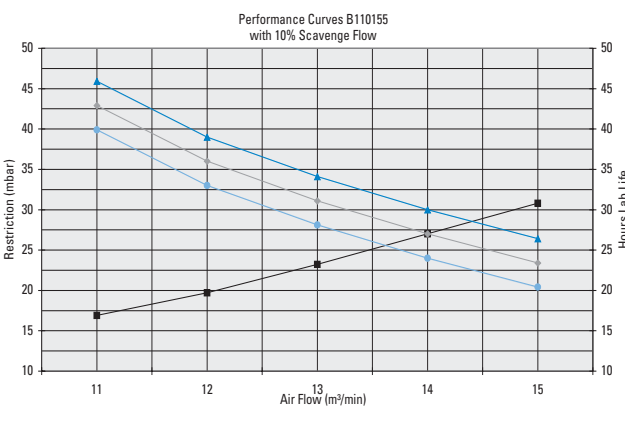
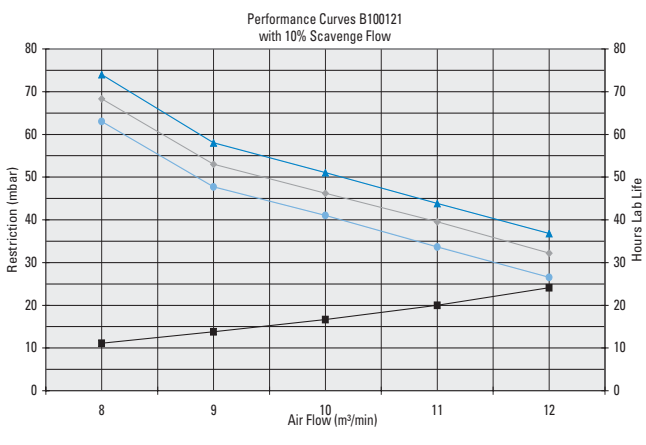
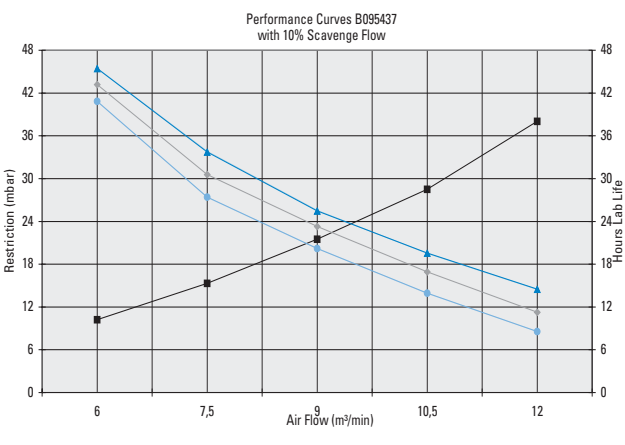
Air Cleaner Model No.	Main Element	Safety Element	Access Cover Assy*	Mounting band**
B095437	P780522	P780523	P782176	P004073
B100121	P771039	P777639	P777998	P004076
B110155	P778905	P778906	P783014	P004079
B130046	P777279	P777414	P781124	P013722

\* Spare Part only      \*\* Two mounting bands needed per Air Cleaner

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in kPa at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## SRB Performance Curves



All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## 1 Remove the Filter

Unfasten or unlatch the service cover.



Rotate the filter while pulling straight out.

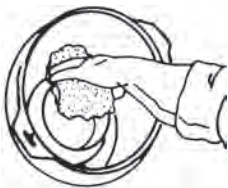
Because the filter fits tightly over the outlet tube to create the critical seal, there will be some initial resistance, similar to breaking the seal on a jar. Gently move the end of the filter back and forth to break the seal then rotate while pulling straight out. Avoid knocking the filter against the housing.



If your air cleaner has a safety filter, replace it every third primary filter change. Remove the safety filter as you would the primary filter. Make sure you cover the air cleaner outlet tube to avoid any unfiltered contaminant dropping into the engine.

## 2 Clean Both Surfaces of the Outlet Tube and Check the Vacuator™ Valve

Use a clean cloth to wipe the filter sealing surface and the inside of the outlet tube. Contaminant on the sealing surface could hinder an effective seal and cause leakage. Make sure that all contaminant is removed before the new filter is inserted. Dirt accidentally transferred to the inside of the outlet tube will reach the engine and cause wear. Engine manufacturers say that it takes only a few grams of dirt to "dust" an engine! Be careful not to damage the sealing area on the tube.



Outer edge of the outlet tube

Wipe both sides of the outlet tube clean.



Inner edge of the outlet tube

### If your air cleaner is equipped with a Vacuator Valve

Visually check and physically squeeze to make sure the valve is flexible and not inverted, damaged or plugged.



## 3 Inspect the Old Filter for Leak Clues

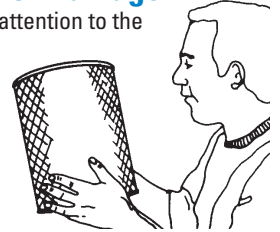
Visually inspect the old filter for any signs of leaks. A streak of dust on the clean side of the filter is a telltale sign. Remove any cause of leaks before installing new filter.



## 4 Inspect the New Filter for Damage

Inspect the new filter carefully, paying attention to the inside of the open end, which is the sealing area.

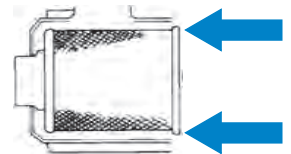
NEVER install a damaged filter. A new Donaldson radial seal filter may have a dry lubricant on the seal to aid installation.



## 5 Insert the New Radial Seal Filter Properly

If you're servicing the safety filter, this should be seated into position before installing the primary filter.

Insert the new filter carefully. Seat the filter by hand, making certain it is completely into the air cleaner housing before securing the cover in place.



The critical sealing area will stretch slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the flexible center. Avoid pushing on the center of the urethane end cap. No cover pressure is required to hold the seal. NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.

If the service cover hits the filter before it is fully in place, remove the cover and push the filter (by hand) further into the air cleaner and try again. The cover should go on with no extra force.

Once the filter is in place, secure the service cover.

### **Caution**

NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.



## 6 Check Connectors for Tight Fit

Make sure that all mounting bands, clamps, bolts, and connections in the entire air cleaner system are tight. Check for holes in piping and repair if needed. Any leaks in your intake piping will send dust directly to the engine!

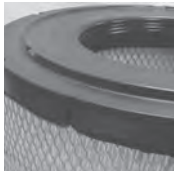
## Designed for the Worst Dust Conditions New Choice for Construction and Off-Highway Applications

The SSG Air Cleaner offers design improvements and therefore replaces our older SRG Air Cleaner models.

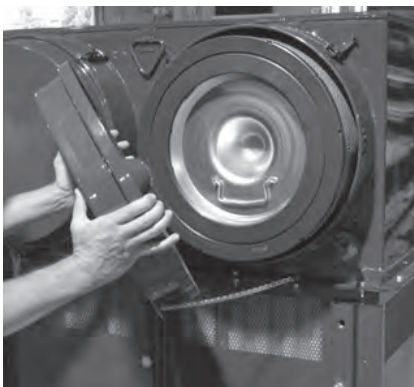
SRG Model	SSG Model
G200008	G200087
G200013	G200086
G290000	G290057
G290023	G290052
G290012	G290053

### Design Improvements

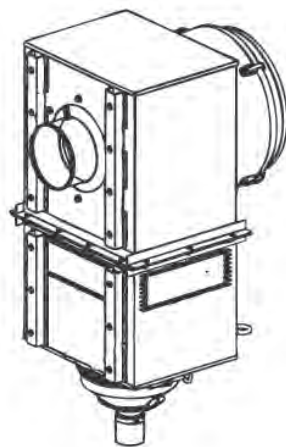
- The SSG Air Cleaner has filters that use RadialSeal™ Sealing Technology, compared to axial seal style filters. This single design improvement eliminates the need to replace filter and cover gaskets - less service time and fewer parts to inventory.



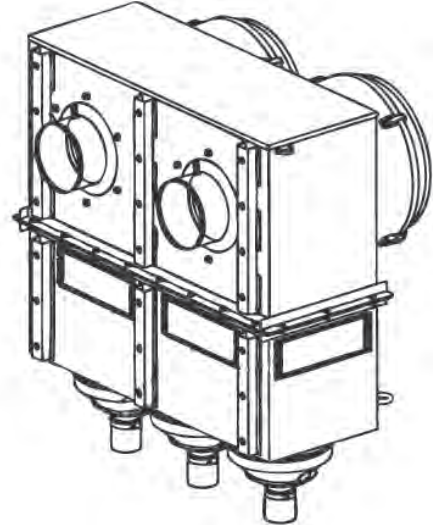
- The access cover for filter service now has quick release cover latches and a chain that connects the air cleaner service cover to the housing!



The large, massive mining vehicle in the picture above is an ideal match for the Donaldson SSG Air Cleaner.



Mounting (back) side view of an SSG 20 model



Mounting (back) side view of an SSG 29 model

Covered by issued and pending patents, both U.S. and Internationally



## Versatile SSG Provides Airflow to 135 m<sup>3</sup>/min. With Improved Design Features Compared to our Older SRG Model

### Applications

- Allows 48 to 68 m<sup>3</sup>/min. airflow throughput for the SSG 20 model and 73 to 135 m<sup>3</sup>/min. airflow throughput for the SSG 29 models
- Horizontal installation
- Off-road, heavy or extreme dust conditions
- Ideal for scrapers, earth movers, graders

### Air Cleaner Features

- Single and dual outlet models - two high-flow models available
- Inlet has perforated holes on three sides; rain shrouds available if required
- Filters have urethane end caps with radial seal sealing technology
- Built-in pre-cleaning tubes separate up to 97% of the in-coming dust
- Latch-style cover with attached safety chain for faster and simpler filter service
- Constructed of heavy-gauge steel with a primed, ready-to-paint finish
- Same overall package size as older Donaldson SRG axial seal style housings
- Drop down tube accessory available simplifies routine air cleaner inspections
- Indicator thread size = 1/8-27NPT (MALE)

### Filter Features

- Replacement main filter choices: Standard life filters (for scheduled maintenance) and Donaldson Endurance™ extended service high efficiency filters. Air cleaners ship with the standard filters.
- Grab handles on the main filter to help remove the loaded filter during service
- Safety filter on all models



The large, massive mining vehicle in the picture above is an ideal match for the Donaldson SSG Air Cleaner.

### Powerful Two-Stage Filtration

The first stage of this powerful air cleaner consists of hundreds of Donaclone™ pre-cleaner tubes (over 130 tubes in the SSG 20 and over 25 tubes in the SSG 29 models). Each tube spins the incoming air to create a centrifugal force that separates up to 97% of the dust and dirt in the airstream (see image on right). Donaclone™ tubes have no moving parts – so there is nothing to break down or maintain. They function properly whenever the engine is running.

The pre-cleaned dust is automatically ejected from the dust cup with a Vacuator™ Valve located below in the lower housing body, below the Donaclone tubes.

The second stage of filtration is the primary filter. A safety filter, which fits inside the primary filter, is standard on all models for protection during primary filter changeout.

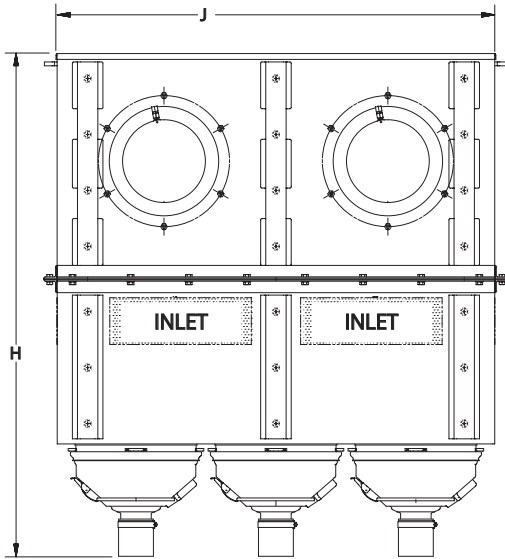


Side view of three Donaclone pre-cleaning tubes.

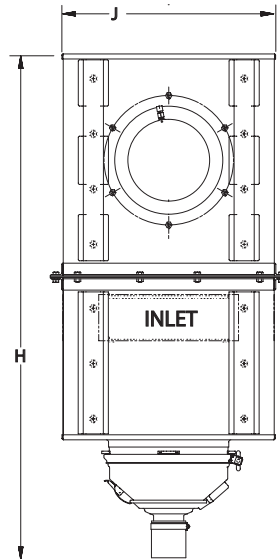
## SSG Specifications

Heavy Dust Conditions

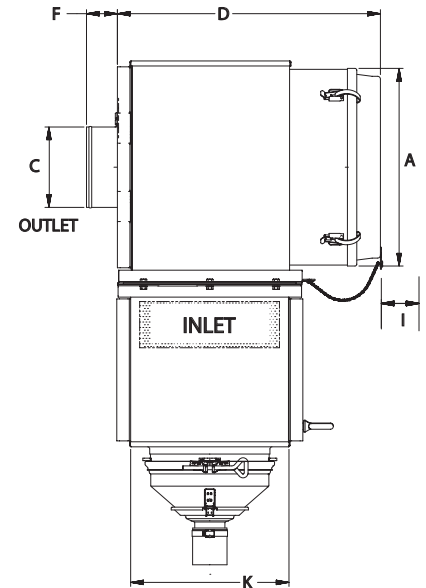
Front View Dual Outlet



Front View Single Outlet



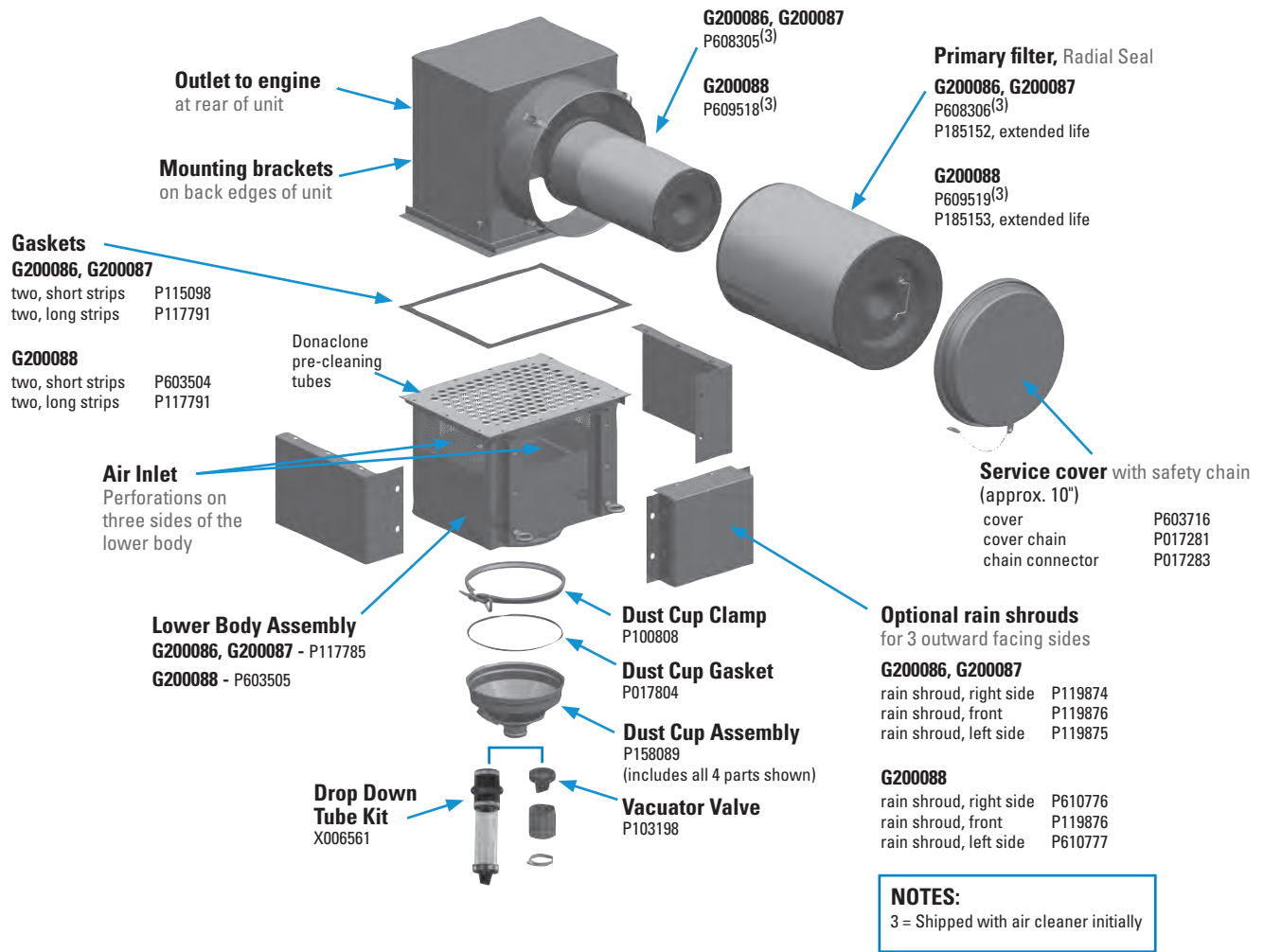
Side View Dual and Single



Air Cleaner Model No.	Airflow m <sup>3</sup> /min.	Range Dimensions (mm)							
		A	C	D	F	H	I	J	K
<b>Single Outlet Models</b>									
G200087	48 - 56	500	203	665	76	1274	559	533	400
G200086	50 - 58	500	254	665	76	1274	559	533	400
G200088*	59 - 68	500	254	798	76	1274	686	533	597
<b>Dual Outlet Models</b>									
G290057	73 - 85	500	203	665	76	1255	559	1092	400
G290052	95 - 108	500	203	665	76	1255	559	1092	400
G290053	102 - 116	500	254	665	76	1255	559	1092	400
G290055*	119 - 135	500	254	798	76	1255	686	1092	597

\* Sized to accommodate higher airflow

## Single Outlet Model - SSG 20 Service Parts



### Drop Down Tube Extension

**How it works:** When installed on the dust cups on the lower assembly, the rubber connector vibrates during normal vehicle operation and gravity expels the pre-cleaned dust.

- Improves dust evacuation from the air cleaner
- Clear tube allows for visual inspection of dust collection
- Reduces air cleaner inspection time
- Ships fully assembled
- Proper conversion requires drop down tube for every dust cup

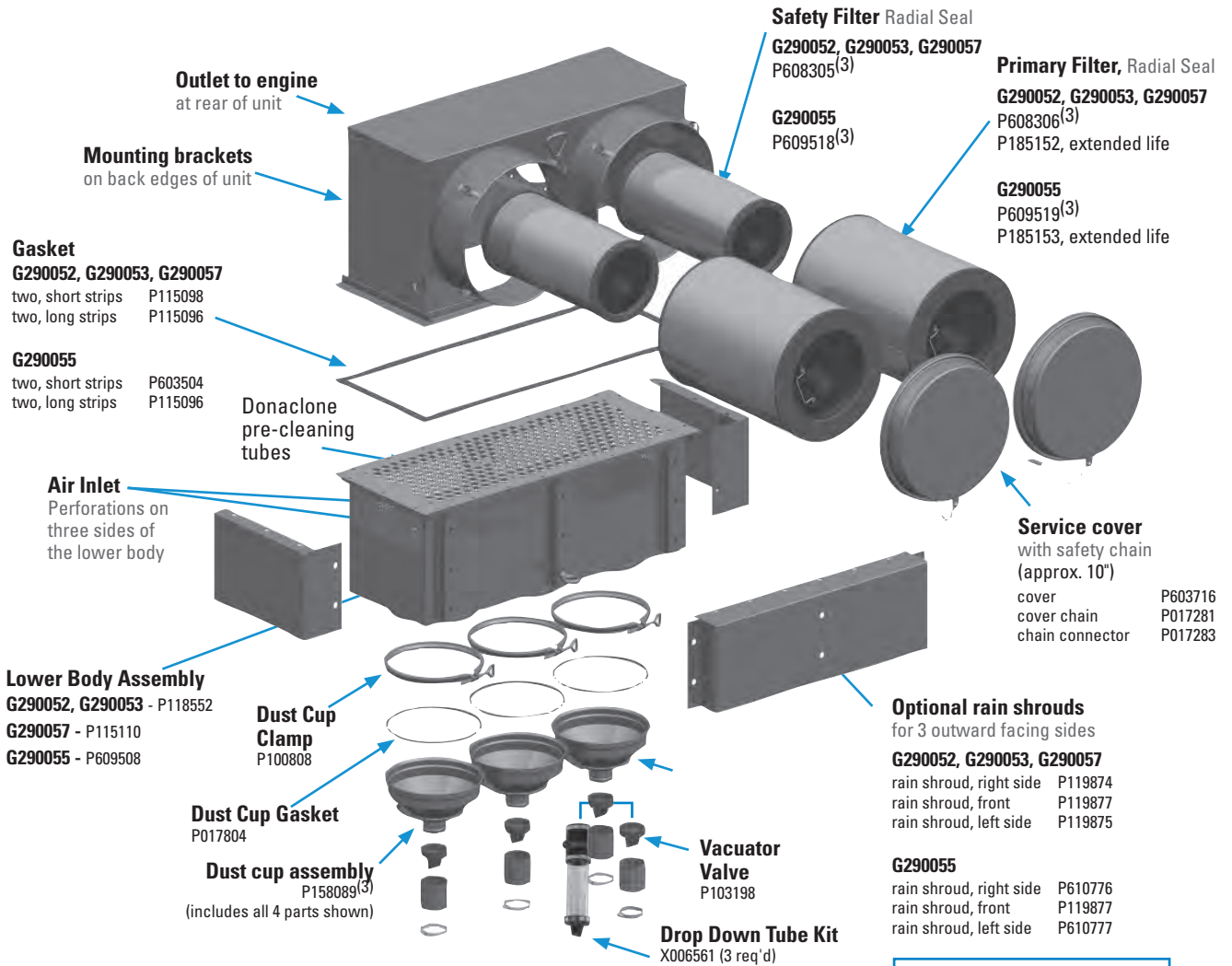
For more information features and dimensions, see the Accessories Section.



Part No. X006561

## Dual Outlet Model - SSG 29 Service Parts

Heavy Dust Conditions



**NOTES:**  
3 = Shipped with air cleaner initially

### Drop Down Tube Extension

**How it works:** When installed on the dust cups on the lower assembly, the rubber connector vibrates during normal vehicle operation and gravity expels the pre-cleaned dust.

- Improves dust evacuation from the air cleaner
- Clear tube allows for visual inspection of dust collection
- Reduces air cleaner inspection time
- Ships fully assembled
- Proper conversion requires drop down tube for every dust cup

For more information features and dimensions, see the Accessories Section.

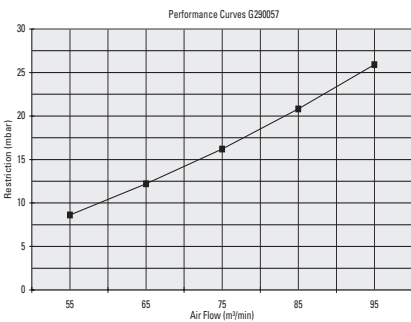
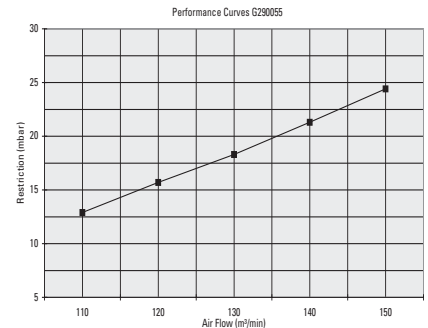
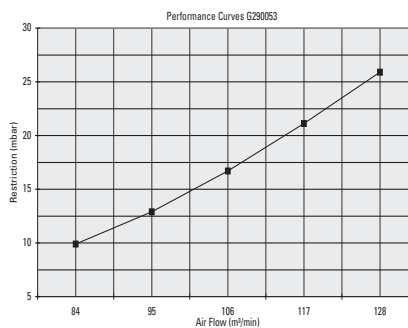
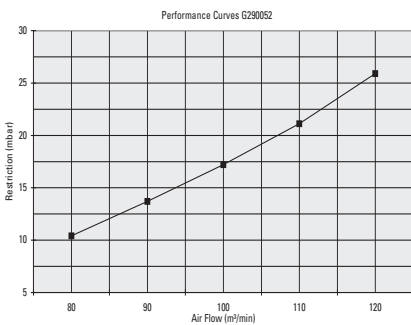
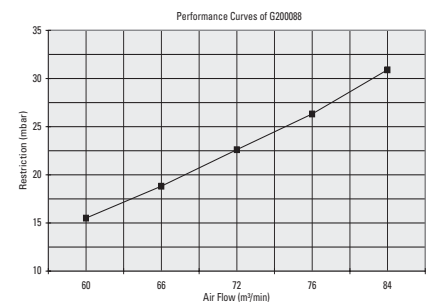
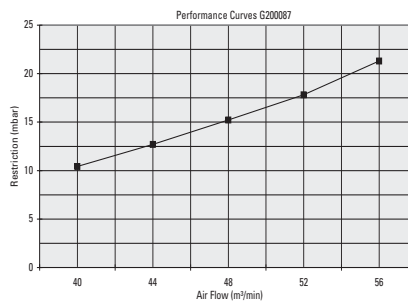
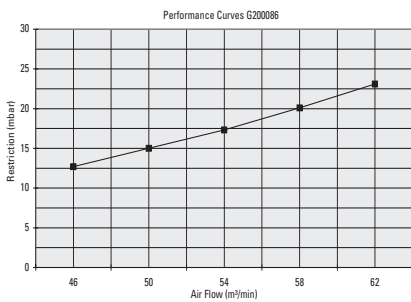


Part No. X006561

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. If there are two air cleaner models that fit your parameters, choosing the one with the lowest restriction will provide the longest service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

## SSG Performance Curves



—■— Restr. A/c Piezo

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

## 1 Measure Restriction

Measure the restriction of the air cleaner with a Donaldson filter service indicator, service gauge, or a water manometer via the restriction tap provided on the air cleaner or the transfer pipe. Replace the filter only when the restriction level has reached the maximum recommended by the engine or equipment manufacturer.



## 2 Check Vacuator™ Valve

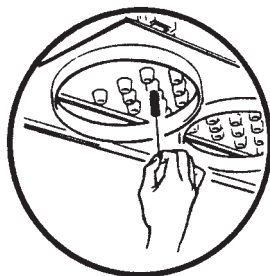
On dust cups with Vacuator Valve, dust cup service is minimal; just check the Vacuator Valve to see that it is not inverted, damaged or plugged. If it is damaged, replace it immediately.



## 3 Check Tubes for Plugging

When the dust cup is removed, check the tubes. Generally, Donaclone tubes are self-cleaning and need no service. Under rare circumstances, however, plugging can occur. Visual inspection is adequate. If the tubes carry light dust, remove it with a stiff brush.

Cleaning Note: Never clean Donaclone tubes with compressed air unless both the primary and safety filters are installed in the air cleaner. Do not steam-clean Donaclone tubes.



## 4 Change the Filter

When restriction indicates that filter service is required, unfasten or unlatch the service cover. Because the filter fits tightly over the outlet tube to create the critical seal, there will be some initial resistance, similar to breaking the seal on a jar. Grasp the filter service handle and pull the filter out, gently moving the filter back and forth to break the seal.



Avoid knocking the filter against the housing during removal. If the new filter is not to be installed immediately, be sure to cover the seal tube with a cloth or the housing cover so that dirt is not ingested.

## 5 Inspect the New Filter before Installing

Inspect the new filter carefully, paying attention to the inside of the open end, which is the sealing area. NEVER install a damaged filter. A new Donaldson radial seal filter may have a dry lubricant on the seal to aid installation.

## 6 Insert New Radial Seal Filter Properly

If you are servicing the safety filter, this should be seated into position before installing the primary filter.

Insert the new filter carefully by hand, making certain it is completely seated into the air cleaner housing before securing the cover in place.



The critical sealing area will compress slightly, adjust itself and distribute the sealing pressure evenly. To complete a tight seal, apply pressure by hand at the outer rim of the filter, not the flexible center. (Avoid pushing on the center of the end cap.) No cover pressure is required to hold the seal. NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing or cover fasteners and will void the warranty.

If the service cover contacts the filter before it is fully in place, remove the cover and push the filter (by hand) further into the air cleaner and try again. The cover should go on with no extra force.

Once the filter is in place, secure the service cover.



**NEVER use the service cover to push the filter into place! Using the cover to push the filter in could cause damage to the housing, cover fasteners and will void the warranty.**

## STG Donaclone: Field Proven and Reliable Heavy-Duty Workhorse for Construction & Off-Highway Applications

That Donaldson's STG Donaclone™ is arguably the most commonly used air cleaner, on the widest variety of heavy-duty equipment in the world, is a testament to its reliability and durability. With its two-stage air cleaning, heavy-duty construction, and variety of configurations, the STG works well in many heavy-duty applications like scrapers, crawlers, dumpers and haul trucks.

### Powerful Two-Stage Filtration

The first stage of this powerful air cleaner consists of a cluster of Donaclone™ tubes. They spin the incoming air to create a centrifugal force that separates up to 95% of the dust and dirt in the airstream. Donaclone™ tubes have no moving parts – so there is nothing to break down or maintain. They function properly whenever the engine is running.

This pre-cleaned dust is collected in a dust cup on the bottom of the air cleaner housing.

The second stage of filtration is the primary filter, a cylindrical-shaped unit of specially-developed pleated filter media, designed to trap and stop dust particles, both large and small. The result is air to your engine that is up to 99.9% contaminant free!



This STG Donaclone, mounted on a large mining machine, is protecting the engine from harmful dirt in this severely dusty environment.

A safety filter, which fits inside the primary filter, is standard on all models for protection during primary filter changeout. Physical orientation does not affect the proper functioning of either cleaning stage!

The STG operates well mounted horizontally or vertically. (Note that if mounting horizontally, the Vacuator™ Valve option on the dust cup is necessary.)

**Mounting:** Sturdy mounting brackets are attached to the top section of the STG; you will also need to order one separate mounting band for the lower body.

If you're replacing a worn out air cleaner, be sure to check ductwork, clamps, and other intake system parts that may also need replacing.

STG air cleaners feature a corrosion-resistant, chemical-resistant polymer coating. This black coating isn't paint, rather it's a pigmented polyester that provides a long-lived, hard protective finish.

## Versatile STG Provides Airflow to 50 m<sup>3</sup>/min. Choose Peripheral or Tubular Inlet, Horizontal or Vertical Mount

### Applications

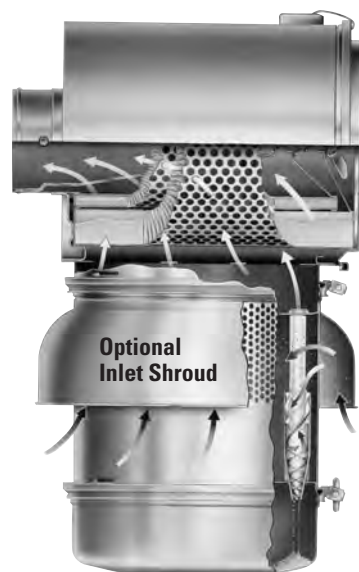
- Allows 11 to 50 m<sup>3</sup>/min. airflow throughput per air cleaner
- Horizontal or vertical installation
- Off-road, high dust conditions

### Air Cleaner Features

- Very reliable!  
Only one critical filter seal!
- Airflow throughput can be doubled by using two air cleaners
- Two body styles (peripheral inlet and tubular inlet) to accommodate location and ducting
- Optional inlet shroud available for peripheral style
- When the air cleaner is mounted directly on the engine and there is clearance around it for airflow, choose the peripheral inlet style (see photo on right)
- When the air cleaner is mounted above the cab or somewhere far from the engine to get above the dust cloud, choose the tubular inlet style, which will accept ducting into the inlet
- Built-in Donaclone pre-cleaning tubes separate up to 95% of incoming dust to dust cup before it reaches the filter, resulting in more thorough cleaning and fewer filter changes!
- Choose the dust cup best suited to your maintenance practices: (1) the quick-release style for easy, manual emptying, or (2) a dust cup with a Donaldson Vacuator Valve that expels the dust automatically
- All models include a fitting for a filter service indicator

### Filter Features

- Replacement main filter choices: Standard life filters (for scheduled maintenance) and Donaldson Endurance extended service high efficiency filters
- Safety filter on all models



### How the Two-Stage STG Donaclone Works

Air is drawn in through the perforations in the lower part of the unit and forced down through a bank of Donaclone tubes.

The Donaclone tubes spin the air so that centrifugal force causes the heavier dust particles to separate from the airstream.

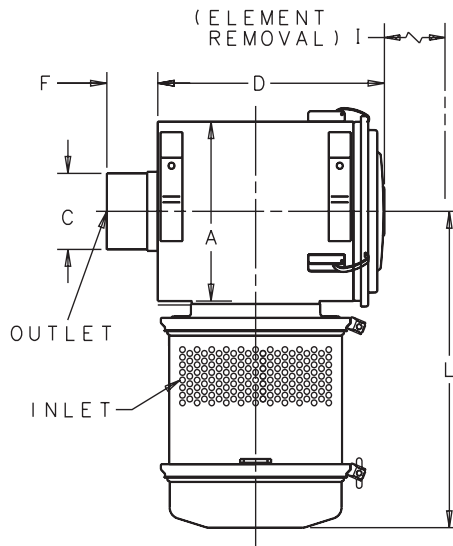
While these particles fall into the dust cup at the bottom, the partially cleaned air is directed upward, into the primary filter in the upper portion of the unit.

The specially-developed pleated media in the primary filter stops up to 99.9% of the remaining dust, allowing clean air to pass to the engine.

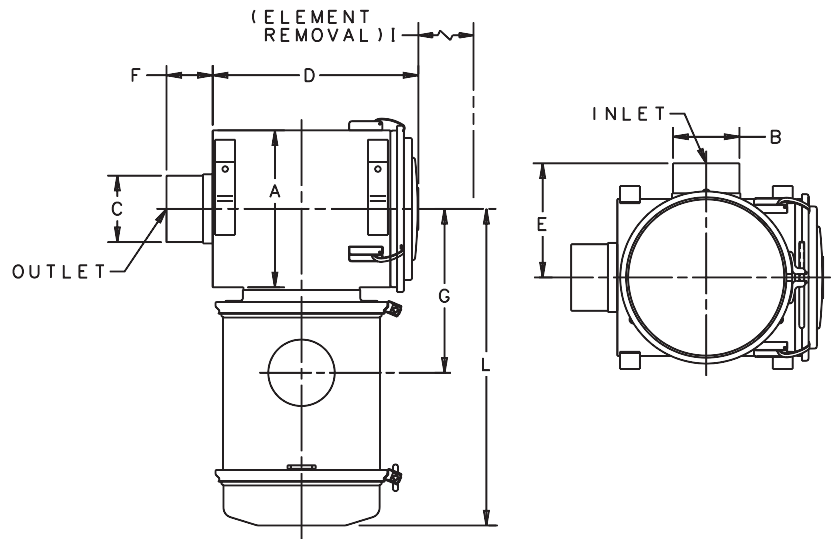


## STG Specifications

### With Peripheral Inlet



### With Tubular Inlet



Heavy Dust Conditions

Air Cleaner Model No.	Airflow Range m <sup>3</sup> /min.			Dimensions (mm)								
	150 mm H <sub>2</sub> O	200 mm H <sub>2</sub> O	255 mm H <sub>2</sub> O	A	B	C	D	E	F	G	I	L
	STG with Peripheral Inlet											
G140076	20	24	27	356	-	152	441	-	99	393	387	614
G160077	29	33	37	406	-	178	500	-	99	439	432	664
G161006	38,5	44,5	50	406	-	203	662	-	89	439	594	684
STG with Tubular Inlet												
G120332	11	13	15	300	127	127	392	200	100	293	335	560
G140445	17	19	22	356	152	152	441	254	99	334	387	614
G160445	26	30	34	406	178	178	498	279	98	376	438	668
G161020*	32	37	41,5	406	152	203	662	255	89	257	594	668

\* G161020 has two inlets, each 152 mm in diameter.  
 Note: All STG models are tapped to accept a filter service indicator.

## STG Donaclone™ with Peripheral Inlet - Service Parts

### G140076

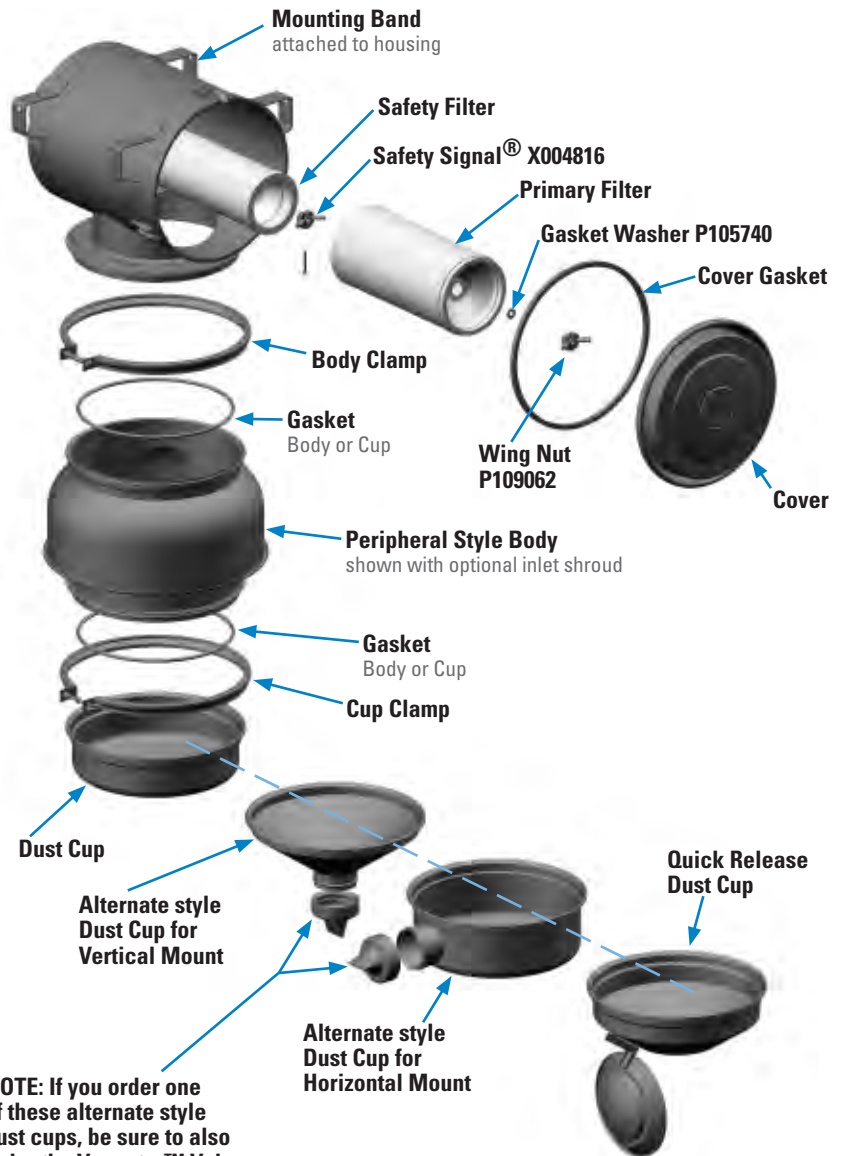
body, lower.....	P102256
clamp, cup.....	P100866
cover latch assembly.....	P017617
dust cup.....	P100860
filter, primary - SM.....	P181041
filter, primary - ES & HE.....	P185041
filter, primary.....	P182041
filter, safety.....	P119370
gasket, body or cup.....	P017335
gasket, cover.....	P016972
gasket kit.....	X003538
gasket washer.....	P105740
inlet shroud (optional).....	P102870
mounting band.....	H000350
safety signal indicator.....	X004816
spring clip & pin.....	X005555
wing nut.....	P109062

### G160077

body, lower.....	P115023
clamp, body.....	P100780
clamp, cup.....	P100789
cover.....	P109153
cover latch assembly.....	P017617
dust cup.....	P100794
dust cup, quick release.....	P107377
dust cup, vac valve, horz.....	P103530
dust cup, vac valve, vert.....	P104973
filter, primary - SM.....	P181039
filter, primary - ES & HE.....	P185039
filter, primary.....	P182039
filter, safety.....	P114931
gasket, body or cup.....	P017336
gasket, cover.....	P017367
gasket kit.....	X003539
gasket washer.....	P105740
inlet shroud (optional).....	P101759
mounting band.....	H000351
safety signal indicator.....	X004816
spring clip & pin.....	X005555
wing nut.....	P109062

### G161006

clamp, body.....	P100780
clamp, cup.....	P100789
dust cup.....	P100794
dust cup, quick release.....	P107377
dust cup, vac valve, horz.....	P103530
dust cup, vac valve, vert.....	P104973
filter, primary - SM.....	P181042
filter, primary - ES & HE.....	P185042
filter, primary.....	P182042
filter, safety.....	P128408
gasket, body or cup.....	P017336
gasket, cover.....	P017367
gasket kit.....	X003539
gasket washer.....	P105740
inlet shroud (optional).....	P101759
mounting band.....	H000351
safety signal indicator.....	X004816
wing nut.....	P109062



**NOTE:** If you order one of these alternate style dust cups, be sure to also order the Vacuator™ Valve P112803

**NOTES:**

- 2 = Two required for proper installation
- 3 = Shipped with air cleaner initially
- 9 = Gasket Kit includes all gaskets listed

ES = Extended Service  
HE = High Efficiency  
SM = Scheduled Maintenance

**Spring Clip & Pin Repair Kit X005555**

Use it to repair the P017617 latch assembly



## STG Donaclone™ with Tubular Inlet - Service Parts

### G120332

body, lower.....	P110875
dust cup, quick release .....	P107375
filter, primary - SM .....	P181044
filter, primary - ES & HE.....	P185044
filter, primary.....	P182044 ....3
filter, safety .....	P119371
gasket, body or cup .....	P017804
gasket, cover.....	P017365
gasket washer.....	P105740
mounting band.....	H000349 ....2
safety signal indicator.....	X004816
spring clip & pin .....	X005555
wing nut .....	

### G140445

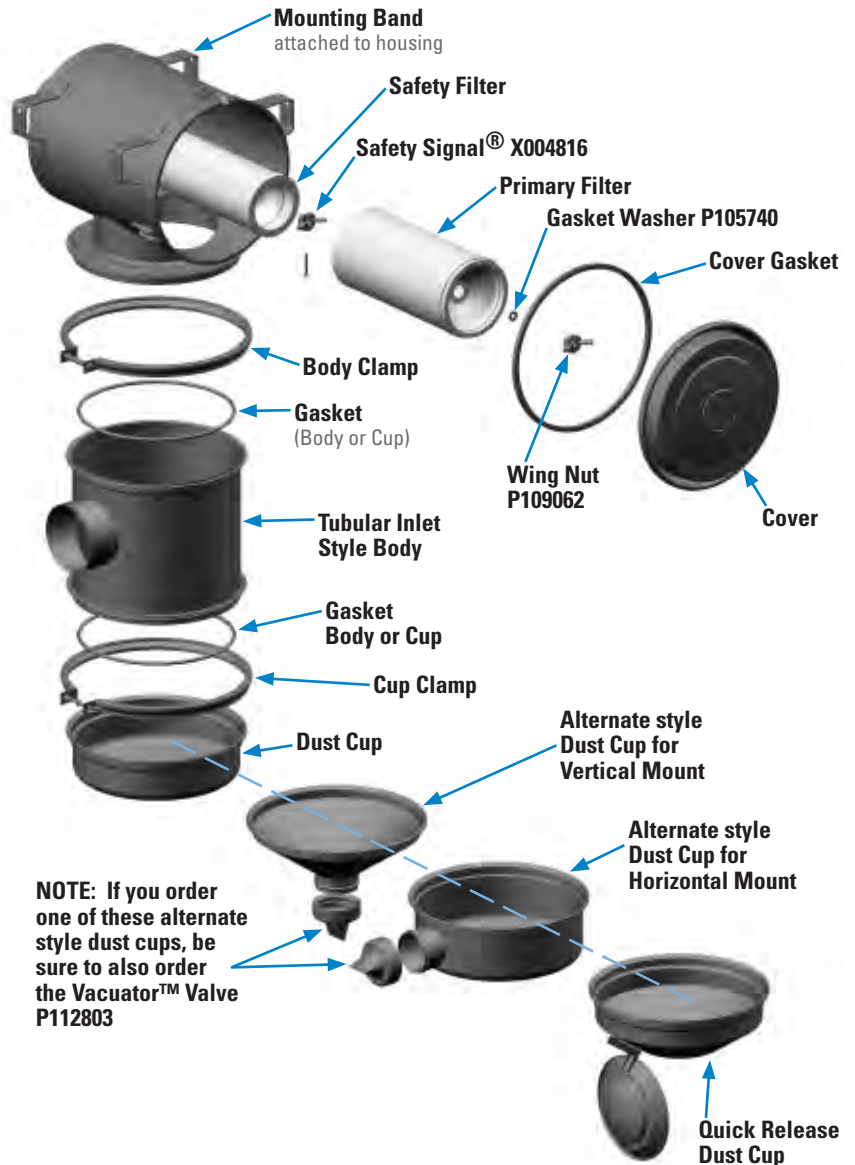
air inlet hood.....	H000606
lower body.....	P114100
cover latch assembly .....	P017617
dust cup.....	P100860 ....3
dust cup, quick release .....	P107377
dust cup, vac valve, horz .....	P103746
dust cup, vac valve, vert .....	P105016
filter, primary - SM .....	P181041
filter, primary - ES & HE.....	P185041
filter, primary.....	P182041 ....3
filter, safety .....	P119370
gasket, body or cup .....	P017335
gasket, cover .....	P016972
gasket kit .....	X003538 ....9
gasket washer.....	P105740
mounting band.....	H000350 ....2
safety signal indicator.....	X004816
spring clip & pin .....	X005555
wing nut.....	P109062

### G160445

cover .....	P109153
cover latch assembly .....	P017617
dust cup.....	P100794 ....3
dust cup, quick release .....	P107377
dust cup, vac valve, horz .....	P103530
dust cup, vac valve, vert .....	P104973
filter, primary - SM .....	P181039
filter, primary - ES & HE.....	P185039
filter, primary.....	P182039 ....3
filter, safety .....	P114931
gasket, body or cup .....	P017336
gasket, cover .....	P017367
gasket kit .....	X003539 ....9
gasket washer.....	P105740
mounting band.....	H000351 ....2
safety signal indicator.....	X004816
spring clip & pin .....	X005555
wing nut.....	P109062

### G161020

dust cup.....	P100794 ....3
dust cup, quick release .....	P107377
dust cup, vac valve, horz .....	P103530
dust cup, vac valve, vert .....	P104973
filter, primary - SM .....	P181042
filter, primary - ES & HE.....	P185042
filter, primary.....	P182042 ....3
filter, safety .....	P128408
gasket, body or cup .....	P017336
gasket, cover .....	P017367
gasket kit .....	X003539 ....9
gasket washer.....	P105740
mounting band.....	H000351 ....2
safety signal indicator.....	X004816
wing nut.....	P109062



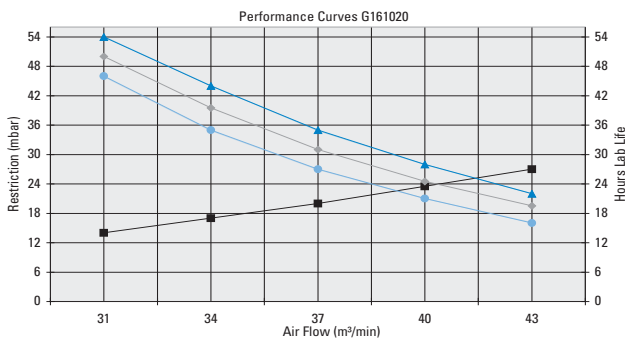
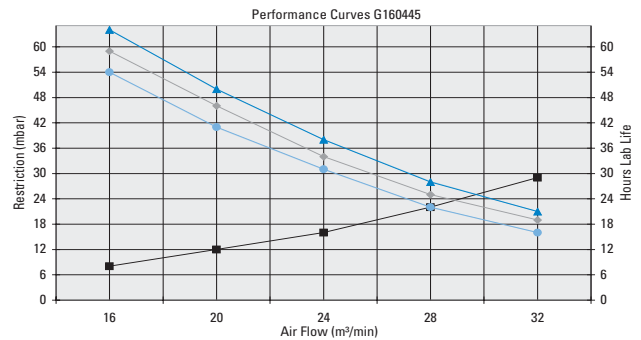
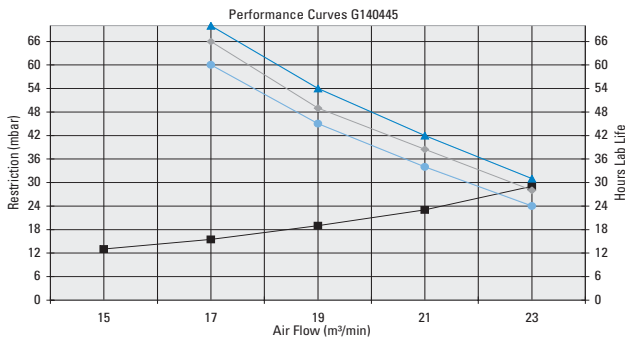
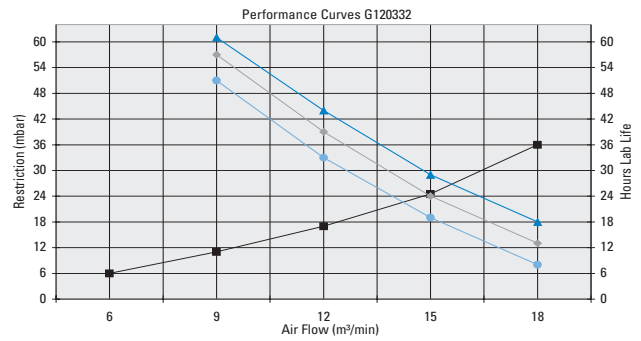
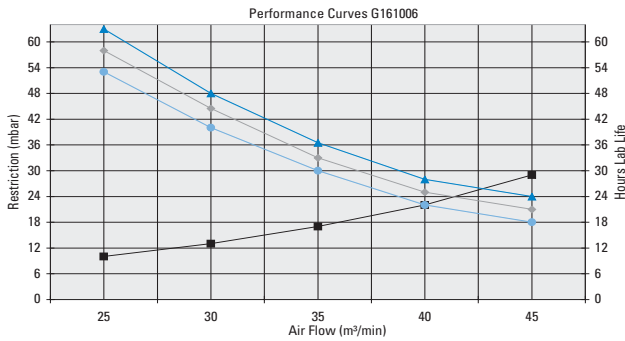
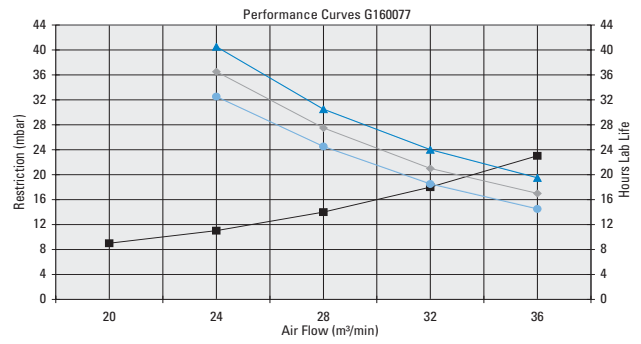
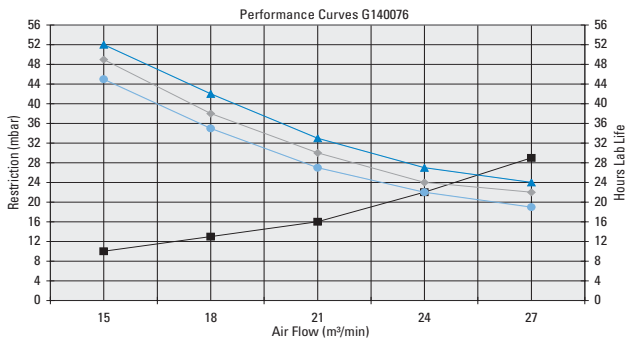
**NOTES:**  
 2 = Two required for proper installation  
 3 = Shipped with air cleaner initially  
 9 = Gasket Kit includes all gaskets listed

ES = Extended Service  
 HE = High Efficiency  
 SM = Scheduled Maintenance

## When specifying an Air Cleaner...

Determine the Airflow Requirements of your engine, then find the corresponding m<sup>3</sup>/min. airflow in the charts below. The restriction numbers - shown in mbar at the left side of the chart - indicate the approximate initial restriction of each model air cleaner at that m<sup>3</sup>/min. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc. The estimated lab life hours are indicated at the right side of the chart.

## STG Performance Curves



Restr. A/c Piezo  
  LL50mbar  
  LL62mbar  
  LL75mbar

All performance curves are according ISO 5011 standards - Restriction measured at Piezo  
 All tests are done with ISO Coarse at Dust Concentration of 1g/m<sup>3</sup>

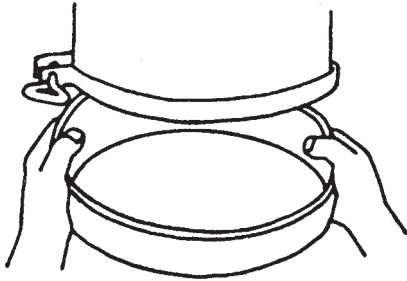
## 1 Measure Restriction

Measure the restriction of the air cleaner with a Donaldson filter service indicator, service gauge, or a water manometer via the restriction tap provided on the air cleaner or the transfer pipe. Replace the filter only when the restriction level has reached the maximum recommended by the engine or equipment manufacturer.



## 2 Empty the Dust Cup

The dust cup should be dumped when 2/3 full. (Frequency of dust cup service varies with dust severity.) When reinstalling dust cup, be sure it



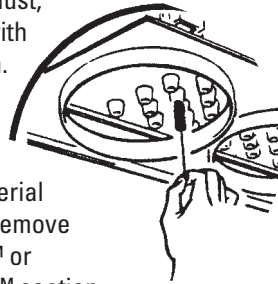
seals 360° around the air cleaner body. On dust cups with Vacuator™ Valve, dust cup service is minimal; just check the Vacuator™ Valve to see that it is not inverted, damaged or plugged. If it is damaged, replace it immediately.



Vacuator™ Valve

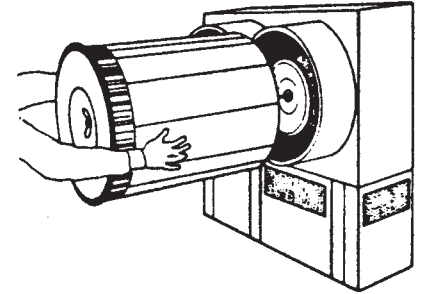
## 3 Check Tubes for Plugging

When the dust cup is removed, check the tubes. Generally, Donaclone™ and Strata™ tubes are self-cleaning and need no service. Under special circumstances, however, plugging can begin. Visual inspection is adequate. If the tubes carry light dust, remove it with a stiff brush. If heavy plugging with fibrous material is evident, remove the Strata™ or Donaclone™ section and clean it with compressed air or water no hotter than 72°C.



**Cleaning Note:** Never clean Donaclone™ tubes with compressed air unless both the primary and safety filters are installed in the air cleaner.

Do not steam-clean Donaclone™ or Strata™ tubes.



## 4 Change the Filter

When restriction indicates that filter service is required, loosen the wing nut and remove the primary filter. If the new filter is not to be installed immediately, be sure to cover the inlet with a cloth or the housing cover so that dirt is not ingested.

Before installing the new filter, inspect it for shipping damage and gasket integrity. If there is damage, DO NOT install it!

If the wing nut is held in place on the used filter with a C clip, remove it and reinstall on the new filter. Carefully install the new filter and the wing nut. Reset the filter service indicator to green.

## 5 Check System

Inspect and tighten all air cleaner system connections. If there are holes or damage, replace immediately. Inspect all gaskets for worn spots or damage. Annual replacement of air cleaner gaskets is recommended.

# On-Line Product Info is More Current

*Than Printed Materials!*

**While we know printed product information will not disappear anytime soon, more and more people are choosing to use our on-line literature informational tools as a product resource. Not only is it the most current information and it's available 24/7!**

<http://www.emea.donaldson.com/en/engine/support/datalibrary/index.html>

The screenshot shows the Donaldson website's product literature section. The header includes the Donaldson logo and navigation links like 'Home', 'Engine & Vehicle', and 'Product Literature'. A search bar is present with the text 'Enter Search Term'. The main content area is titled 'Product Literature' and contains a paragraph explaining that product literature is available online and can be downloaded or ordered as hardcopies. Below this, there are several categorized lists of links, each preceded by a PDF icon. The categories include: General (Toolbox Update Instructions, Engine Systems & Technologies, Working Together for a Cleaner World, Tecnología & Sistemas de Motor); Warranty (Donaldson Engine AM Warranty in English, Italian, Russian, Spanish, Portuguese, French, and Dutch); Air Filtration (US Engine Air Cleaner Catalogue, Topspin™ Pre-Cleaner, Engine Air Filtration, Crankcase Ventilation - Spiracle, PowerCore® G2 Filtration Technology (OE use)); Endurance™ Extended Service Filters (Cross Reference, Air Filters); and Liquid Filtration (Liquid Filtration, Fuel Filter Water Separators, Syntec Media Technology for Fuel Filters). A sidebar on the left contains navigation links such as 'Product Overview', 'Air Filtration', 'Lube/Fuel/Coolant Filtration', 'Hydraulics Filtration', 'Extended Service', 'Where To Buy', 'Contact Us', 'Product Literature', 'Customer Support', 'Frequently Asked Questions', 'News', and 'Events'. A small advertisement on the right side of the page promotes the catalog with the text 'Search our Catalog With nearly 8,000 products, we've got you covered!' and a 'SEARCH OUR CATALOG' button.

# Donaldson Air Intake Accessories

... help you solve problems and maintain your system

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When you need to, use...

**Mount or install an air cleaner:**

- Mounting Bands

Solve air intake water problems:

- In-line Moisture Skimmer
- In-line Moisture Separator
- Stack Top Moisture Eliminator

Pre-clean or protect air inlet from debris:

- Rain Caps
- TopSpin™ Pre-Cleaner
- Full-View Pre-Cleaner
- Donaspin™ Pre-Cleaner
- In-line separator

Know when to service a filter:

- Restriction Indicators

Aspirate (or scavenge) an intake system:

- Donaspin™ Pre-Cleaner
- Exhaust Ejectors
- Ejector Check Valve

Improve dust evacuation from Vacuator™  
Valves:

- Drop Down Tube Extension

Connect intake components:

- Rubber Elbows and Connectors
- Clamps
- Rubber and Silicone Hump/Reducers
- Charge Air Connectors

## Worm-Drive Hose Clamps

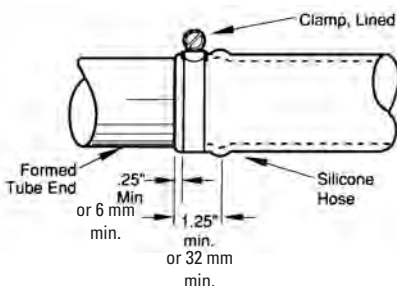
- Versatile clamps for wide size range of hose connections.
- Made of strong, durable, noncorrosive stainless steel.
- Inside of clamp is lined so that hose doesn't bulge through clamp holes.
- Narrow band enables easy installation in confined areas.



Lined Hose Clamps	
Part Number	Size mm
P532919	14-21
P532920	17-24
P532921	21-27
P532923	21-38
P532924	21-44
P532922	29-32
P115200	40-62
P115201	52-76
P143422	71-95
P115202	84-108
P115203	109-133

### Recommended application up to 4.6 Nm torque

Donaldson lined hose clamps seal silicone and other soft hoses without damage. The inner liner extends under the perforations to protect the hose and prevents extrusions through the worm-gear perforations.



Initial torque on lined hose clamp should be 4.6 Nm. If retorquing is required, limit to 2.3 Nm.



Constant Torque Clamps	
Part Number	Size mm
P532925	57-79
P532926	70-92
P532927	83-105
P532928	95-117
P532929	108-130

### Recommended application up to 10.4 Nm torque

Donaldson Constant Torque lined clamps are the best choice for systems where clamps cannot be retightened and have difficult access. Perfect for applications requiring higher torque, large diameters, temperature extremes, or where expansions and contractions within the system are common. This clamp is a good choice for critical coolant and charge-air connections.



High Torque Clamps	
Part Number	Size mm
P788708	83-105
P115204	108-130
P115205	133-156
P115206	159-181
P115207	184-206
P115208	210-232
P115209	260-286

### Recommended application up to 17.3 Nm torque

This extra heavy-duty clamp ensures total protection against leakage.....eliminates the need for double clamping.

## T-Bolt Clamps



T-Bolt Clamps		
Part Number	Nominal I.D.	Size mm
P148337	51	57-64
P148338	57	63-70
P148339	64	71-78
P148340	70	78-85
P148341	76	84-91
P148342	89	98-104
P148343	102	109-116
P148344	114	122-129
P148345	127	135-142
P148346	140	151-158
P148347	152	162-169
P148348	178	187-198
P148349	203	216-226
P148350	254	267-277



## SealClamps™

### Preformed & Flat Styles

Used to seal muffler inlets, outlets, elbow joints, flex pipes, and other system connections. Also minimizes noise and exhaust gas leaks.

SealClamps are easy to install! There's no need to weld or disconnect your exhaust system.

When installed, the wide band conforms to the shape of straight or flex pipe, and seals without distorting the pipe.

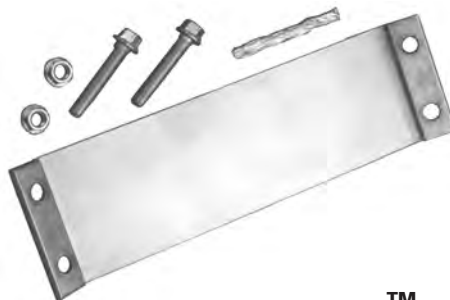
- For overlapping I.D. to O.D. slotted joints and flex tube.
- Nuts and bolts fit both 9/16" and 14mm wrenches.
- Reduces noise and exhaust leaks.
- Installs easily – no disconnecting or welding necessary.
- Available in aluminized and stainless steels.
- Stainless models have improved corrosion resistance and high temperature strength compared to aluminized.

- Full 360° preformed
- No flex pipe pinching
- Available in stainless and aluminized



**Stepped Preformed SealClamp™**

Stepped Preformed SealClamps		
Stainless	Aluminized	Pipe mm
X007829	X007832	64
X007830	X007833	76
X007831	X007834	89
X007784	X007824	102
X007785	X007805	127



**Flat Band SealClamp™**

Flat Band SealClamps		
Stainless	Aluminized	Pipe mm
X004536		51
X004537		57
X004476		64
X004538		70
X004478	X005921	76
X004480	X006204	89
X004482	X006203	102
X004962		114
X004484	X006202	127
X004539		152



**Preformed SealClamp™**

Preformed SealClamps	
Stainless	Pipe mm
X005265	64
X005921	76
X005164	89
X007057	152

# Drop Down Tube Extension (Dust Dumpa)

## Replacement to Your Existing Dust Cup Assembly

### Application

- Donaldson SSG Air Cleaners
- Donaldson PowerCore PSD Air Cleaners (10" and 12" models)

### How It Works

When installed on the dust cups on the lower assembly, the rubber connector vibrates during normal vehicle operation and gravity expels the pre-cleaned dust.

### Features

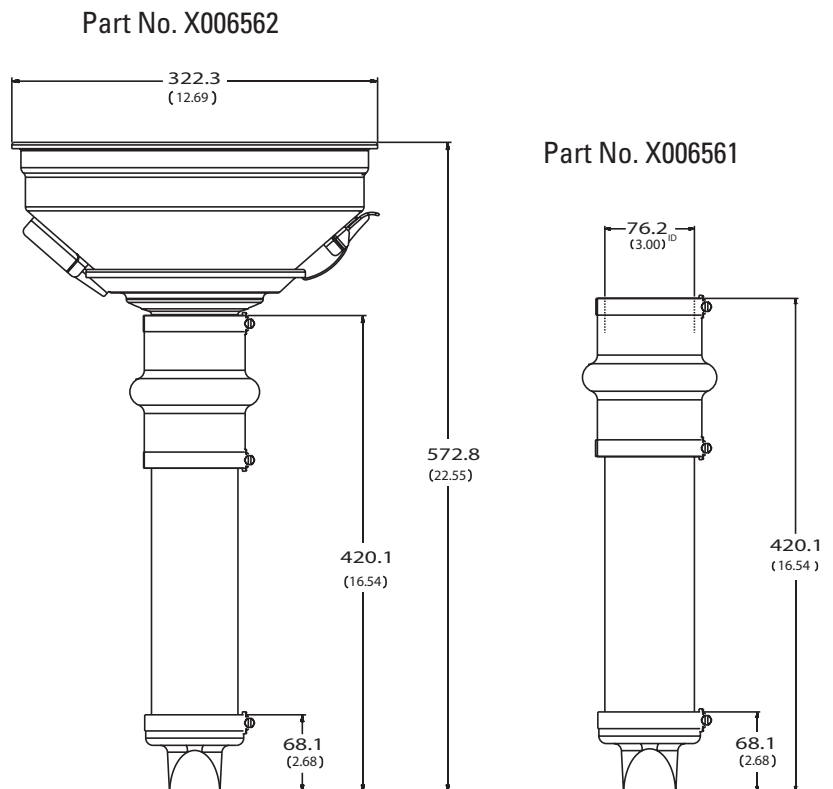
- Improves dust evacuation from the air cleaner
- Clear tube allows for visual inspection of dust collection
- Improves safety of the air cleaner inspection process by eliminating the need for ladders or elevated platforms for daily inspections
- Allows operators to perform walk around inspections
- Keeps operators and maintenance personnel away from the nuisance dust normally encountered during air cleaner servicing operations.
- Improves vehicle up time by minimizing pre/post –shift air cleaner inspections, thus facilitating increased air cleaner service intervals.
- Reduces air cleaner inspection time
- Ships fully assembled
- Proper conversion requires drop down tube for every dust cup



Part No.  
X006562  
(includes  
dust cup  
seal)



Part No.  
X006561



# Drop Down Tube Extension (Dust Dumpa)

## Available for SSG Air Cleaners

### Existing S Series Air Cleaner Dust Cup Styles

Quick Release Dust Cup



Dust Cup - Original



Dust Cup - Newer Design



For Conversion Order  
Kit X006562



For Conversion Order  
Kit X006561



For Conversion Order  
Kit X006561



## Available for PowerCore® Air Cleaners (PSD08 - 09 - 10 & 12)

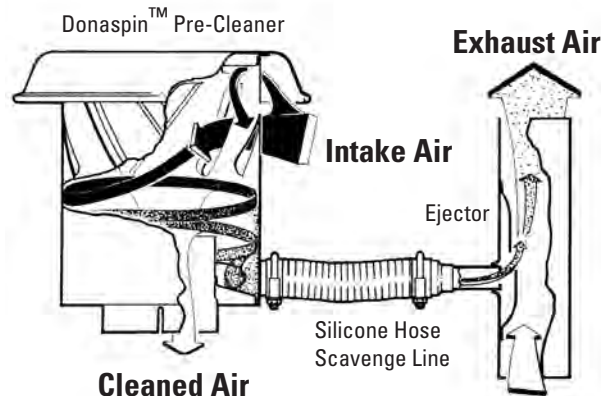


Also works on all other Air Cleaners with 76 mm drop tube

A Donaldson exhaust ejector removes dirt and debris from the air intake pre-cleaner through a scavenge hose that is routed out through the exhaust flow of your equipment.

It mounts as a stack at the end of exhaust system; stack caps or extension tubes may be added. There are three styles available – expanded, standard, compact – depending on the space and design of your equipment. Ejectors require no service and have no moving parts. A Donaldson T-Bolt Clamp, as show on page 120, is recommended for installation.

All ejectors are constructed of heavy-gauge, aluminised steel. Select the appropriate ejector by the intake airflow (m<sup>3</sup>/min.) of your engine.



The Donaspin™ pre-cleaner uses a spinning motion of the airstream to force dirt and debris to the outside wall of the pre-cleaner body. The dirt and debris are forced to the bottom of the pre-cleaner and expelled by the secondary airflow developed by the ejector.



### Expanded I.D. End Style

- Simplifies installation - requires less parts to install
- No need for separate connector!
- Fits over most standard muffler outlet tubes
- Adds only 1000 - 2000 Pa to exhaust backpressure

### Standard Style

- Can be used with any pre-cleaner style
- Adds only 1000 - 2000 Pa to exhaust backpressure

### Compact Style

- Used primarily on agricultural equipment
- Adds 2500 - 3800 Pa to exhaust backpressure

## Expanded Inlet End Style Ejectors

Part Number	Intake m <sup>3</sup> /min.	Inlet ID mm	Scavenge Tube ID mm	Length mm	Exhaust m <sup>3</sup> /min.		3-ply silicone scavenge hose*	Lined Hose clamp
					min	max		
H002129	14 - 20	131	38	749	36	51	P171378	P115200
H002132	29,5 - 42	157	51	826	74	105	P171381	P115200

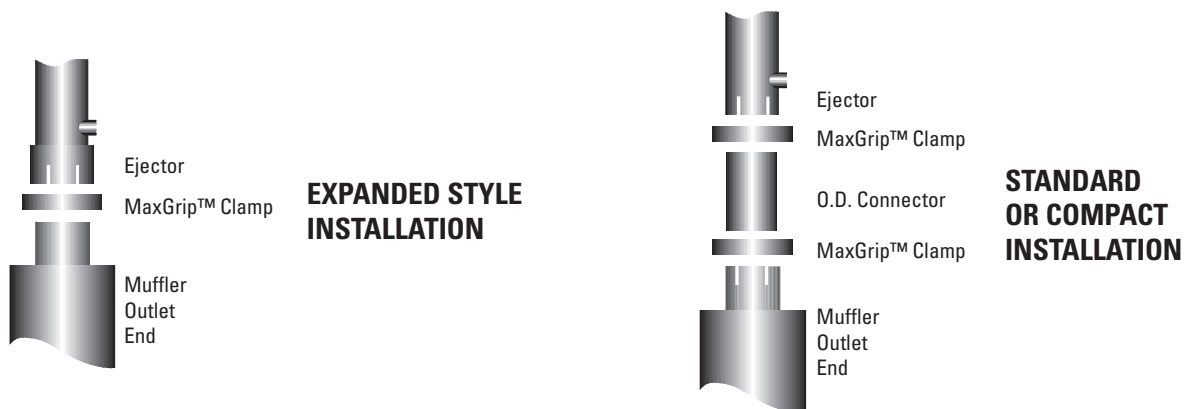
## Standard Style Ejectors

Part Number	Intake m <sup>3</sup> /min.	Inlet ID mm	Scavenge Tube ID mm	Length mm	Exhaust m <sup>3</sup> /min.		3-ply silicone scavenge hose*	Lined Hose clamp
					min	max		
H001032	7 - 10	77	38	445	18	25	P171378	P115200
H001033	9 - 12,5	102	38	610	22	31	P171378	P115200
H001034	11 - 15	102	38	610	27,5	39	P171378	P115200
H001035	14 - 20	128	38	749	36	51	P171378	P115200
H001039	36 - 51,5	153	51	826	92	130	P171381	P115200

## Compact Style Ejectors

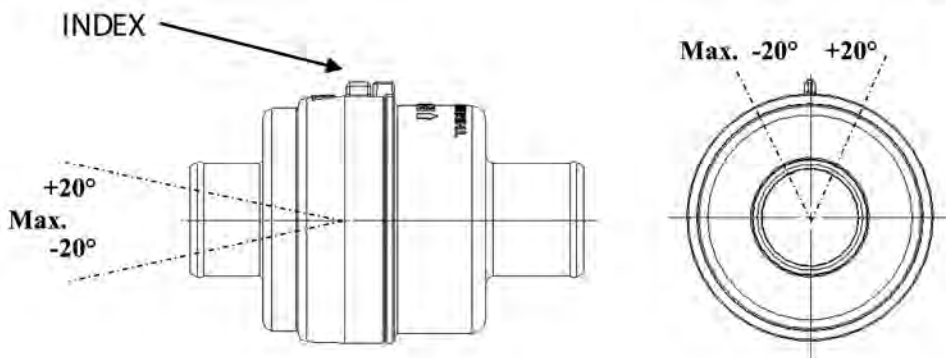
Part Number	Intake m <sup>3</sup> /min.	Inlet ID mm	Scavenge Tube ID mm	Length mm	Exhaust m <sup>3</sup> /min.		3-ply silicone scavenge hose*	Lined Hose clamp
					min	max		
H001282*	1 - 2	51	32	178	3	4	P171376	P532924
H001277*	2,5 - 3,5	57,5	32	202	6	9	P171376	P532924
H001283*	3 - 4,5	64	32	226	8	11	P171376	P532924
H001278*	5 - 6	70	32	248	12	15	P171376	P532924
H001280*	6 - 9,5	89	32	318	16	24	P171376	P532924
H001279*	8,5 - 11	77	32	274	21,5	28	P171376	P532924
H001281*	10,5 - 14	102	32	365	26,5	34	P171376	P532924
H001284*	13 - 17	102	32	365	32	42,5	P171376	P532924

\* Do not use in fibrous environment, e.g. Combine Harvestors

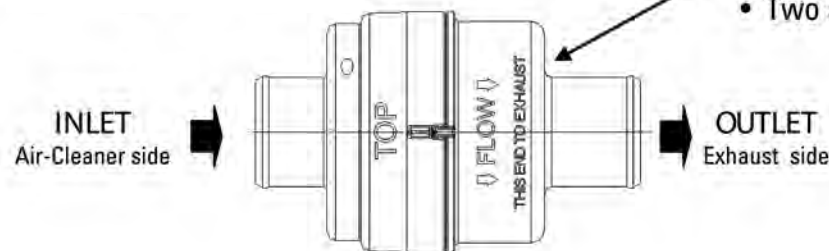


## Installation Instructions

- For proper function of the Valve the INDEX needs to be installed upwards
- Install inline check valve as close as possible to the air cleaner
- Temperature resistance of 200°C
- Different connection diameters: 32 - 38 - 50 mm



### Scavenge Flow Direction



- Hose towards Exhaust system need to be fixed on this side
- Two arrows indicate airflow direction

Check Valve Assy	Inlet Diameter	Outlet Diameter
P786337	32	32
P786339	50	32
P786338	38	32
P786341	32	38
P786342	50	38
P786340	38	38
P786345	32	50
P786343	50	50
P786344	38	50

## Two-stage Cleaning for Unexpected Dust/Moisture Conditions

When your truck is being used in heavier-than-anticipated dust or moisture conditions, you may not have to replace the entire air cleaner. The problem may be solved by adding a Donaldson In-Line Separator.

Installing this unit on your one-stage system creates a two-stage air filtration system. This enables an over-highway vehicle, which usually sees only light-dust, to be easily and economically adapted to off-road conditions, where medium- to heavy-dust is encountered.

### Applications

Vertical model:

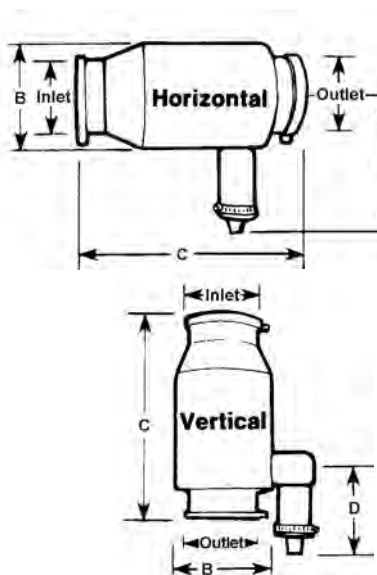
On/off road, mounted on inlet tubing or cowl mounted directly to air cleaner  
 - Compatible with engine airflows of 14 to 43 m<sup>3</sup>/min.

Horizontal model:

On/off road, typically mounted under hood  
 - Compatible with engine airflows of 3 to 40 m<sup>3</sup>/min.

### Features

- 80% water removal efficiency
- 70% dust removal efficiency



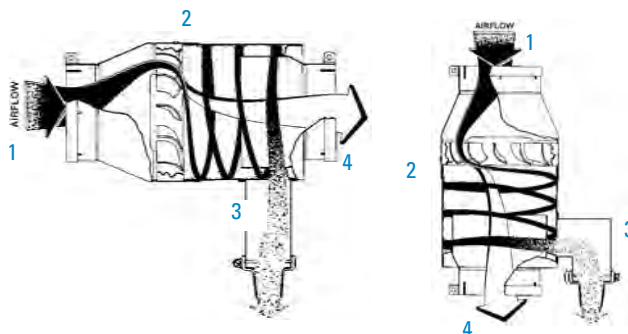
Horizontal model, for airflow of 3 to 40 m<sup>3</sup>/min.  
 Mounts underhood.

Vertical model, for airflow of 14 to 43 m<sup>3</sup>/min.  
 Mounts on stack top.



### How It Works

- 1 When moisture - and/or dust-filled air - enters at one end, the built-in, stationary vanes cause the air to spin.
- 2 This spin creates centrifugal force, which pushes all moisture and dust to the outside wall where it separates from the air.
- 3 Moisture and dust are thrown into the Vacuator Valve tubing, then automatically released by the Vacuator Valve.
- 4 Clean air (acceptable for maximum filter life and engine performance) passes to the air cleaner.



Part Number	Airflow Range	Inlet mm	Diameter Outlet mm	Length (B) mm	(C) mm	(D) mm
<b>Horizontal Style</b>						
H001474 (1)	3 - 11	102 OD (2)	102 OD	140	292	182
H000875	14 - 28	152 ID (3)	152 ID	217	438	294
H001906	20 - 40	178 ID	178 ID	244	432	305
<b>Vertical Style</b>						
H000878	14 - 31	152 ID	152 ID	217	438	198
H000886	21 - 31	178 ID	178 ID	217	438	198
H001220	26 - 43	203 OD	203 OD	244	432	116

(1) Lightweight aluminium construction    (2) OD = Outer Diameter    (3) ID = Inner Diameter

## Horizontal, In Line Moisture Skimmer Removes Water

### Applications

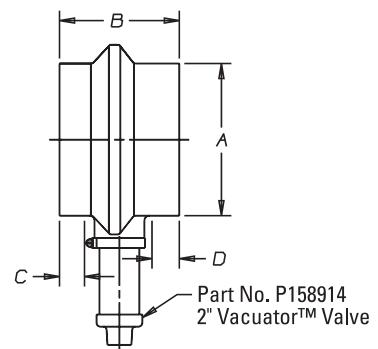
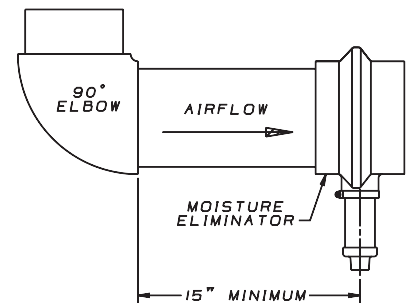
- Allows 17 to 34 m<sup>3</sup>/min. airflow.
- Horizontal mount in engine air intake ducting.

### Features

- Removes over 80% of water before it can reach and damage the filter.
- No service needed!
- Made of durable rubber.
- Collected water is automatically released by Vacuator™ Valve.
- Adds little or no restriction to airflow.
- Common inlet sizes fit most installations.



### Mounting Position

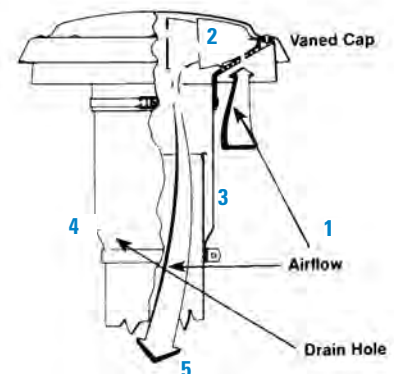


Part Number	Flow m <sup>3</sup> /min	Inner Dia. (A) mm	Length (B) mm	Tube (C) mm	Stops (D) mm
X005822	17-28	152	152	32	35
X005900	23	178	152	32	35
X005901*	23	178	152	32	35

\* Angled Spout

## Stack-Top Moisture Eliminator Prevents Water Provers

- For cabover trucks, on/off road, mounted on top of 7" (178mm) O.D. intake stack.
- For airflow range of 17 to 34 m<sup>3</sup>/min.
- Over 80% water removal efficiency.
- Includes clamp for installation.



### How They Work

- (1) Moisture-filled air enters the moisture eliminator cap.
- (2) Built-in, stationary vanes cause the air to spin.
- (3) Moisture is forced to the outside wall, where it separates from the air and collects.
- (4) Water drains out through the drain hole.
- (5) As a result, drier air (acceptable for maximum filter life and engine performance) passes to the air cleaner.

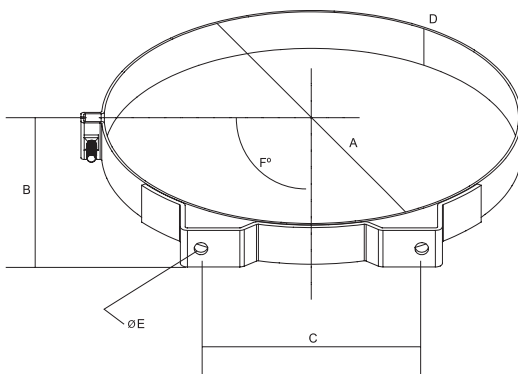


## Many sizes Designed to Fit all Donaldson Air Cleaners

- Durable, corrosion resistant, steel construction.
- Fully engineered and tested to resist the adverse effects of vibration.
- Mounting band feet are designed to ensure maximum torque pressure, continuously.
- Gauge of steel increases as diameter of mounting band increases.
- Bright stainless models available.
- Bolt and nut included with mounting band.
- Used on all Axial Seal Air Cleaners and FRG Radial Seal Air Cleaners.



Most of our Air Cleaners with metal housings require two mounting bands.



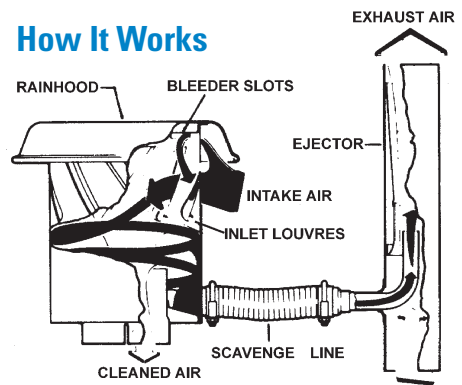
Part Number	Dimensions (mm)					
	A	B	C	D	E	F
P004055	111	68	82,5	19	9,0	90
P002348	134	81	82	22	9,0	90
P002351	153	91	83	26	9,0	90
P007191	165	99	95	22	11 X 16	90
P004906	178	105	111	22	10 X 13	90
E500206	203	114	108	25	12 X 17	90
P004307	203	114	108	25	9	90
P004073	229	130	114	32	12	90
P004076	259	146	127	32	12	90
H770025*	259	146	127	32	12	90
P004079	279	156	127	32	11	90
H000349	300	175	152	38	11	90
P013722	330	184	152	38	10	90
H770065	330	206	203	38	12	90
H770059	345	191,5	142	38	10	90
H000350	356	206	203	38	12	90
P016845	381	203	203	38	12	90
H000351	407	231	254	38	12	90
H770037	457	234	400	50	14	105
H770068	546	279	490	48	14	105

\* With cage nut

## Extends Filter Life in Extremely Heavy Dust Conditions

The Donaspin Pre-Cleaner extends the life your air filter by removing up to 90% of the dirt and contaminant before it reaches the filter and ejecting it automatically via the exhaust. (See page 124-125 for Exhaust Ejectors.)

Donaspin is designed especially for equipment operating in very heavy dust/debris environments such as garbage trucks, agricultural vehicles and mining equipment.



### Application

- For engine airflows of 9-22 m<sup>3</sup>/min.
- Recommended mounting: on top of the air inlet stack

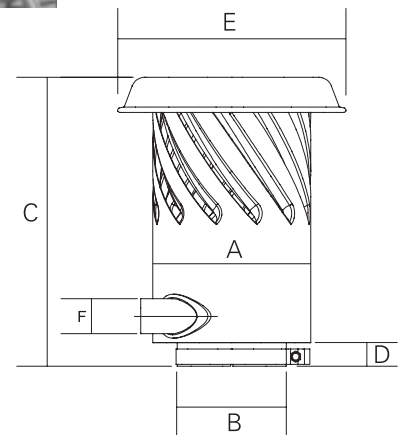
### Features

- Built-in louvers spin air to separate up to 90% of incoming dirt and debris from the air intake system
- Works as part of a scavenged flow system to continuously expel pre-cleaned contaminants through the exhaust flow
- Durable, corrosion-resistant steel construction
- High efficiency with low restriction
- No maintenance! Self-cleaning! No moving parts!
- Mounting clamp is included



The Donaspin installed on this combine removes most of the incoming dirt, then directs the contaminant out of the system with the exhaust gases.

To create a scavenged flow system, combine the Donaspin with a Donaldson exhaust ejector and ejector check valve.



Part Number	Rated Airflow (m <sup>3</sup> /min) @ 12,5 mbar added	Dimensions					
		A mm	B (ID) mm	C mm	D mm	E mm	F mm
H001212	9	203	76	304	55	305	32
H001307	11	203	96	292	42	305	32
H001215	13	203	115	284	28	305	32
H001308	15	203	128	283	33	305	32
H001375	22	229	154	373	34	330	32

## Extends Filter Life on Agricultural & Construction Equipment

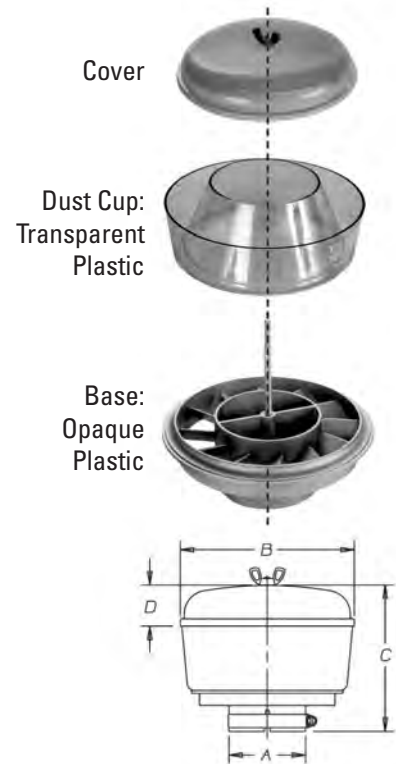
Donaldson has a new Pre-Cleaner called TopSpin™. Before you consider replacing your Full-View Pre-Cleaner with another one, check out the TopSpin models on page 132 and 133.



Full-View Pre-Cleaners	TopSpin™ Pre-Cleaners
H000820	H002425
H000821	H002426
H000822	H002394
H000823	H002427
H001250	H002435
H001251	H002436
H001249	H002437
H001823	H002434
H002043	H002433
H002044	H002432
H002045	H002431
H002223	H002438
H002224	H002439

### Features

- Recommended mounting: on top of the engine intake stack.
- Centrifugal force in bowl separates up to 75% of incoming dust before it enters the engine air intake system.
- Low maintenance!
- Durable, lightweight, noncorrosive construction.
- Full-View plastic bowl lets operator easily see when service is needed.
- One-bolt cover retention for service when dirt reaches the level of the arrow, remove top nut and plastic body then empty – no tools required.
- Mounting clamp included.



Full-View PreCleaner	Replacement Parts			Max Airflow (m <sup>3</sup> /min.)	Inlet OD			
	Cover	Bowl	Clamp		A mm	B mm	C mm	D mm
H002041	P020116	P020115	P532924	2	35	142	142,5	44
H002042	P020116	P020115	P115200	2	44	142	142,5	44
H002040	P020116	P020115	P115200	2,5	51	142	142,5	44
H001250	P020648	P020227	P115201	4	57	186	157	44
H001251	P020648	P020227	P115201	4	64	186	157	44
H001249	P020648	P020227	P143422	5	77	186	157	44
H000820	P016548	P016330	P143422	9	77	270	190	47
H000821	P016548	P016330	P115202	9	96	270	188	47
H000822	P016548	P016330	P115202	9,5	102	270	189	47
H000823	P016548	P016330	P115203	10	115	270	188	47
H002043	P020345	P020344	P115203	21	127	306	195	51
H002223	P104691	P158324	-	37	152	412	258	70
H002224	P104691	P158324	-	42,5	178	412	258	70

## Extends Filter Life in Extremely Heavy Dust Conditions

Donaldson TopSpin™ will extend primary air filter life, boost system efficiency and extend engine life! We recently upgraded the cover material of the TopSpin Pre-Cleaner to **increase impact resistance**. Before it was a see-through unit, now it is **black**.

### Features

#### Separates up to 85% of incoming contaminant per ISO 5011/SAE J726

- Greatly extends air filter life
- Reduces air filter usage
- Lowers cost per operating hour
- Automatically ejects mixed debris
- Separates more than 99% of 20 micron and above particles

#### Operates at a lower RPM

- Less noise
- Longer bearing life
- Lower restriction

#### Self-cleaning/self-scavenging

- No maintenance to clean bowl
- No exhaust ejector required

#### Easy installation

- Quick installation
- One clamp to tighten
- No wires or power requirements

#### Dual mounted bearings

- More robust design
- Extends bearing life

#### Lighter Weight

- Lighter than competitive pre-cleaners
- Lighter than Donaldson full-view pre-cleaner

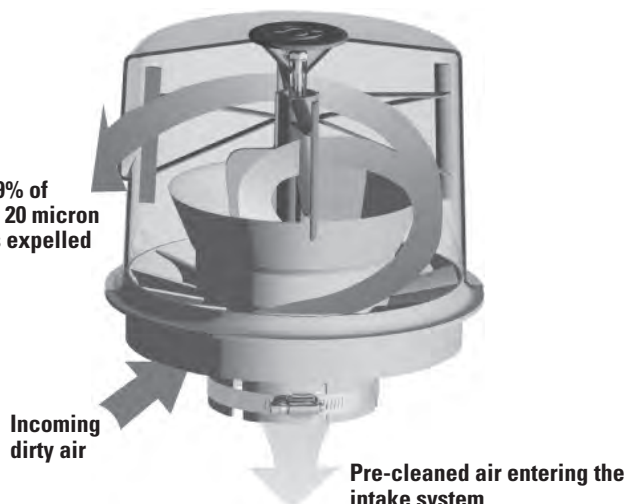
### Application

- Engine airflows of 2-43 m<sup>3</sup>/min.
- Primarily used in medium to heavy dust environments
- Great for off-road vehicles and equipment from crawler tractors to farm tractors to skid steer loaders
- Recommended mounting: on top of the air cleaner inlet stack



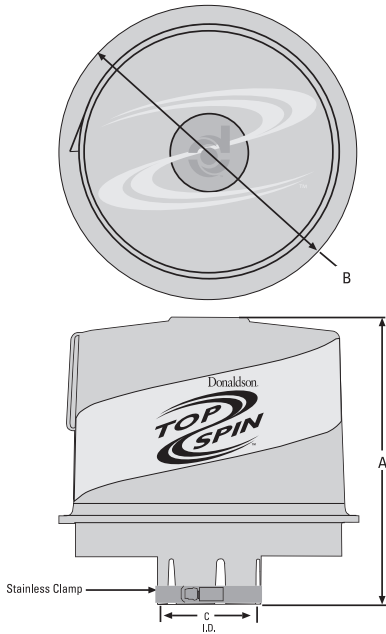
Donaldson TopSpin mounted on a grader. The aerodynamically designed TopSpin™ is made of a lightweight, durable, non-corroding material which makes it tolerant to all weather and operating conditions.

More than 99% of contaminant 20 micron and larger is expelled



- Can be mounted horizontally or vertically
- Installation instructions, stainless clamp / warranty are included
- Operating temperature range: to 82°C

## TopSpin™ Specifications

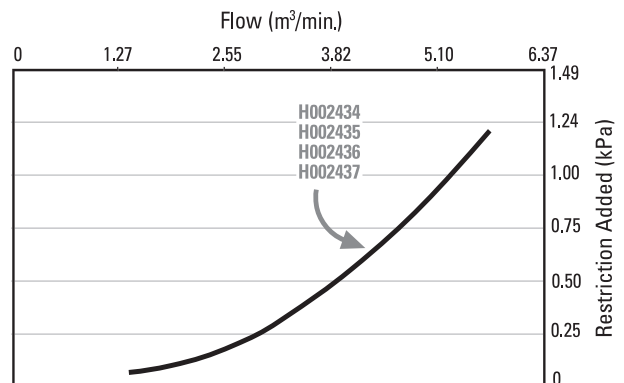
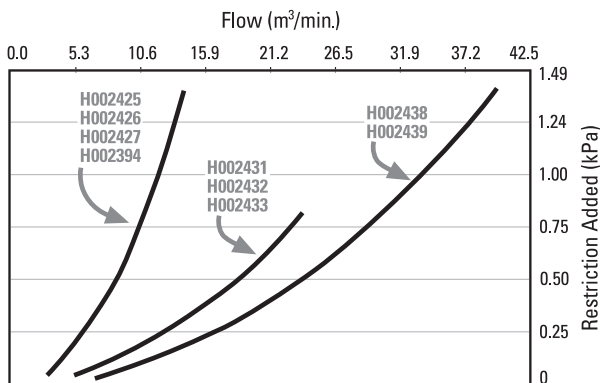


Part Number	Outlet I.D. (C) mm	Overall Height (A) mm	Body Dia. (B) mm	Operating Flow Range m <sup>3</sup> /min.
H002434	51,5	146	162	2,5 - 6
H002435	58	146	162	2,5 - 6
H002436	64	146	162	2,5 - 6
H002437	77	146	162	2,5 - 6
H002425	78	238	242	6 - 13
H002426	97	238	242	6 - 13
H002394	103	238	242	6 - 13
H002431	103	287	288	13 - 21
H002427	116	238	242	6 - 13
H002432	116	287	288	13 - 21
H002433	128	287	288	13 - 21
H002438	153	345	397	21 - 42,5
H002439	179	345	397	21 - 42,5

Cross References from Full View to TopSpin™ Pre-Cleaner can be found on page 131.

## TopSpin™ Performance Curves

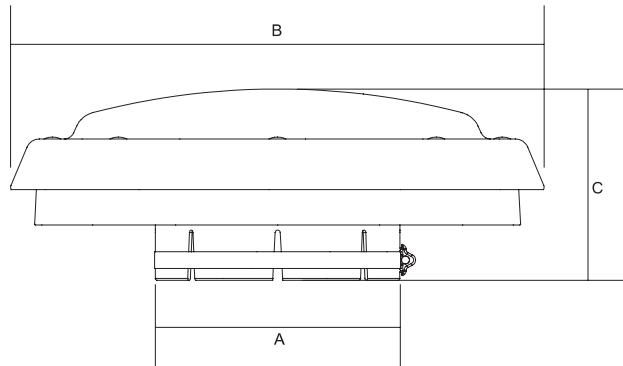
Multiple tests conducted per ISO 5011/SAE J726 and average results are shown in charts below.



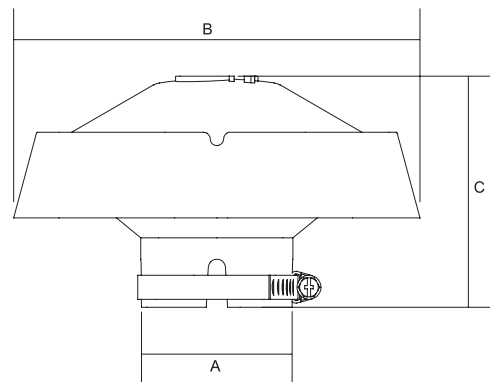
## Rain Caps Protect Against Large Debris Ingestion

- Protects engine air intake from rain, snow, birds, and other large contaminants.
- Mounts on stack or directly to air cleaner for on-road and off-road equipment.
- Two styles in a wide variety of sizes.
- Installs easily with one clamp which is included.

**Style A**



**Style B**



Style	Part Number	Dimensions (mm)		
		A	B	C
A	H770066	45	110	56
B	H001377	52	152	86
B	H001378	64	152	86
B	H001379	77	152	86
B	H770010	96	266	132
B	H770081	97	200	140
B	H770011	102	266	130
B	H770012	115	266	126
B	H770013	128	266	123
B	H770090	154	405	144
B	H770089	179	405	144
A	H001053	207	405	157
A	H770082	254	406	189

## Filter Service Indicators Maximize Filter Life Mounting Options: On air cleaner outlet tube, on intake duct or remote

Replacing filters based on restriction readings can reduce your maintenance costs significantly. Visual inspection of air filters is not adequate and should not dictate service life. Filters that appear very dirty may still contain a great amount of service life.

Over-servicing and excessive handling of the filter can result in serious consequences: filter damage, improper installation, intake contamination from ambient dust, and/or increased service cost, time and material. In contrast, filter service based on restriction readings can enable you to obtain: the longest life possible from the filter, and the best engine protection.

### Restriction Readings, Where & When

Restriction readings are normally taken at the air cleaner on the clean side of the air filter. If the air cleaner does not have a restriction tap, readings can be taken anywhere in the system between the air cleaner and the engine. To measure restriction of a naturally aspirated diesel engine, the reading is taken at full-governed RPM with no load.

Two methods are used to measure the restriction of turbo-charged engines. The **first method** is to take the reading with the truck on a dynamometer under full load. This result is actual restriction.

A locking step gauge is the **second method**. This popular method will give actual, on-the-road peak readings.

### Maximum Restriction Limits for Engines

Maximum allowable restriction limits are set by the engine manufacturers. If your maximum limit is unknown, contact your engine manufacturer for the maximum limits.

Maximum levels are measured at high idle with no load for naturally aspirated and super-charged diesel engines. Turbo-charged diesel, gasoline and carbureted engines are measured at full load with a wide open throttle.

### Choose Restriction Measurement Tools that Best Fit Your Applications

Donaldson offers a variety of restriction measuring devices that help you get maximum filter utilization. All measure restriction in inches of water vacuum. All are resistant to vibration, breakage, weather, corrosion, dust and dirt to assure reliable filter restriction readings.

### Types of Indicators

**Continuous Reading** devices show how much life is left in the filter:

- The Informer™ Mechanical Indicators

**Go/No-Go** restriction readings on heavy-duty vehicles:

- ServiSignal™
- Electrical Indicator
- Electrical Indicator with AMP Connector



Filter service indicators are very effective when mounted on the outlet tube of the air cleaner, as is The Informer™ above. This gives the operator constant & accurate visibility of filter life.

Mechanical Indicators				
Part Number	Restriction Limits			Fitting
	mbar	Pa	mm H2o	
<b>ServiSignal™ Mini Indicators</b>				
X002250	37	3700	380	1/8"-27 NPT
X002251	50	5000	508	1/8"-27 NPT
X002252	62	6200	635	1/8"-27 NPT
X002254	75	7500	762	1/8"-27 NPT
<b>Informer™ Indicators</b>				
X002278	50	5000	508	1/8"-27 NPT
X002277	62	6200	635	1/8"-27 NPT
X002275	75	7500	762	1/8"-27 NPT

## ServiSignal™ Mini Indicator

Small enough to fit just about anywhere (only 42 mm high), the Donaldson ServiSignal™ shows a highly visible, bright red flag in the full-view window when restriction limit is reached. Resets manually via top button after air cleaner service. Kit includes 1/8" NPT threaded brass fitting for mounting on the air cleaner. For remote mount, also order P105168 flange. Hoses are not included.



## The Informer™ for Graduated, Continuous Readings

The Informer, when mounted on the air cleaner or the dashboard, provides a continuous reading whether the engine is running or is shut down. Reset button is on top. Kit includes full installation instructions and a P100089 safety filter fitting. For remote mounting, order a P105168 flange and a P105622 90° elbow.



Electrical Indicators				
Part Number	Restriction Limits			Fitting
	mbar	Pa	mm H2o	
<b>Electrical Indicators</b>				
X770037	37	3700	380	1/8"-27 NPT
X770050	50	5000	508	1/8"-27 NPT
X770052	50	5000	508	M10 X 1
X770061	62	6200	635	M10 X 1
X770062	62	6200	635	1/8"-27 NPT
X770075	75	7500	762	1/8"-27 NPT
<b>Electrical Indicators with AMP connectors</b>				
X770225	64	6400	627	M10 X 1
X770301	54	5400	530	M10 X 1
X770316	54	5400	530	1/8"-27 NPT
X770317	64	6400	627	1/8"-27 NPT
X770526	75	7500	762	1/8"-27 NPT

## Electrical Indicators Connects to Light, Buzzer, or Computer

- Designed for a variety of on- and off-highway applications.
- Should be screwed on the air cleaner nipple by hand.
- Operating temperatures of -10°C to +100°C.
- When restriction level reaches the maximum recommended limit, an electrical signal activates a light, a buzzer, or a computer.
- The indicator automatically resets itself after the filter is serviced.
- 12-24 Volts.
- Maximum load: 6 watts (light or buzzer).
- Contacts have no polarity.
- Switch contacts are normally in the open position.
- If inductive load can occur, appropriate protection must be provided.
- Quick connectors and light, buzzer, or computer must be purchased separately.





Flexible rubber adapters and elbows have smooth radii and inside surfaces to minimize flow resistance within the air intake system. These rubber products are heavy duty.

## Specifications

- EPDM rubber construction for improved heat resistance and low temperature flexibility (to 100°C).
  - Non corrosive construction resists tears, punctures, and vacuum collapse under severe conditions.
  - Ideal for light-, medium- and heavy-duty applications.
  - Elbows ribbed or compounded for extra strength and durability.
- Rubber adapters help to absorb vibrations and reduce intake noise level.



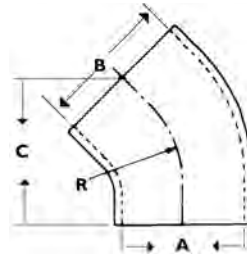
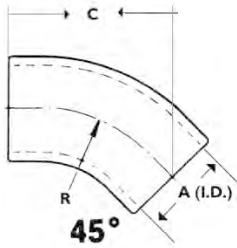
## 90° Elbows & Elbow Reducers



90° Elbows				
Part Number	Dimension (mm)			Outer Dia mm
	A	B	R	
P781509	45	80	51	51
P105529	50	89	51	61
P105530	57	95	57	67
P105531	63	102	64	76
P105532	76	127	83	89
P114318	89	140	102	102
P105533	102	146	105	114
P113733	114	140	89	127
P107844	127	156	115	140
P105534	140	165	121	153
P105535	152	171	127	165
P105536	178	192	141	194
P112605	203	216	165	223
P114314	254	267	216	273

90° Elbow Reducers					
Part Number	Dimension (mm)				Outer Dia mm
	A	B	C	R	
P781510	40	45	80	45	46 - 51
P778565	76	60	65	70	71 - 87
P775228	76	70	113	60	82 - 88
P123462	76	89	89	57	89 - 102
P121482	127	102	146	95	114 - 140
P143895	152	127	178	108	140 - 165
P159820	178	127	178	108	140 - 190
P128990	178	140	146	111	156 - 194
P117724	152	140	170	127	152 - 165

## 45° Elbows & Elbow Reducers



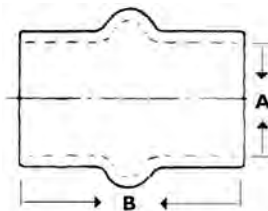
45° Elbows				
Part Number	Dimension (mm)			Outer Dia mm
	A	C	R	
P105541	50	102	51	61
P105542	56	105	57	67
P105543	64	110	64	74
P105544	76	140	95	89
P109331	89	127	89	102
P105545	102	140	108	114
P114316	114	129	89	127
P109021	127	143	115	140
P105546	140	159	121	153
P105547	153	165	127	165
P105548	178	203	141	194
P112606	203	203	165	222
P114313	254	241	216	273

45° Elbow Reducers					
Part Number	Dimension (mm)				Outer Dia mm
	A	B	C	R	
P133338	152	140	164	124	153 - 165
P133339	153	178	184	135	168 - 194



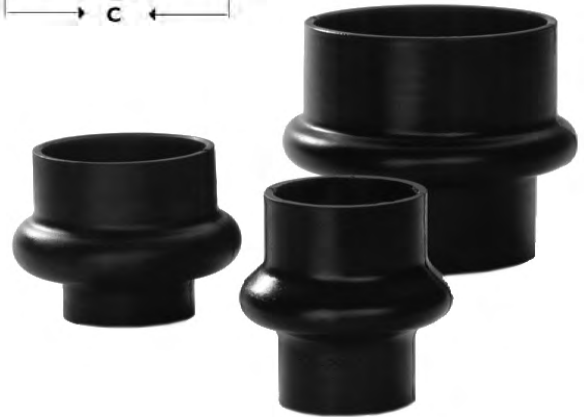
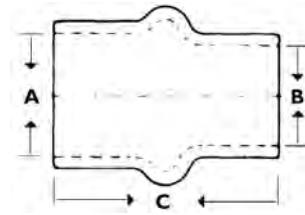
## Straight Humps

Part Number	Dimension (mm)		Outer Dia mm
	A	B	
P781511	45	50	51
P105608	76	135	89
P114319	89	134	102
P105609	102	134	115
P114317	114	153	127
P105610	127	153	140
P105611	140	153	153
P105612	153	178	165
P105613	178	178	191
P112608	203	127	216
P111414	254	153	267



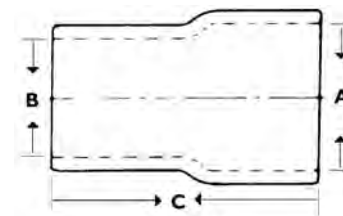
## Hump Reducers

Part Number	Dimension (mm)			Outer Dia mm
	A	B	C	
P102820	76	64	114	75 - 89
P520883	76	70	89	83 - 89
P520882	89	70	102	80 - 99
P101290	89	76	127	89 - 102
P520884	102	70	102	80 - 111
P101291	102	76	134	89 - 114
P101292	102	89	134	102 - 114
P101293	127	102	153	114 - 140
P101891	140	102	153	114 - 153
P103516	140	127	153	140 - 153
P112611	153	127	153	140 - 165
P101294	153	140	153	153 - 165
P126530	178	140	178	153 - 191
P112610	178	153	153	165 - 191
P136494	178	127	178	140 - 191
P129660	203	140	178	152 - 216
P114315	203	153	153	165 - 216
P112609	203	178	153	191 - 216
P112607	254	203	153	216 - 267



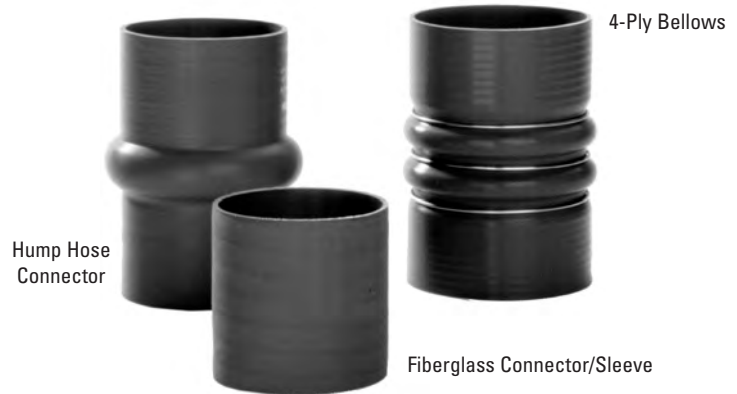
## Reducers

Part Number	Dimension (mm)			Outer Dia mm
	A	B	C	
P114411	38	26	64	36 - 49
P114412	38	32	64	42 - 49
P104087	51	38	64	49 - 61
P102948	51	45	64	55 - 61
P104088	57	51	64	61 - 68
P104089	64	51	64	62 - 75
P104090	64	58	64	68 - 74

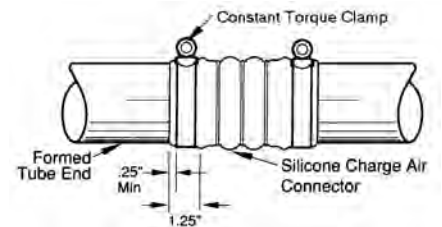
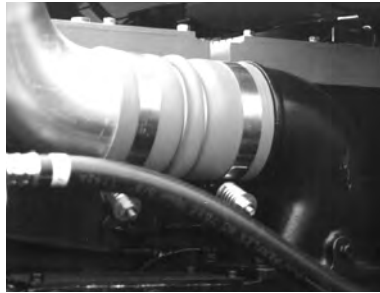


## Isolate Intake Piping Vibration

Our three styles of charge air connectors are designed to ease connections in air intake system piping: they compensate for slight misalignment and isolate vibration between hose connections. The silicone elastomer material resists chemicals, steam, ozone, coolants and aging conditions normally found in any engine operating environment.



All three charge air connectors are for installation on the pressure side with maximum operating temperatures up to 260°C. They are orange in color to be easily identifiable as tolerant of high temperatures.



Use the illustration as a guide for installing your Silicone Charge Air Connector.

Accessories

Connectors/Sleeves			
Part Number	Inner Dia mm	Outer Dia mm	Length mm
P532946	32	38	914
P532947	38	44	914
P532948	51	57	914
P532949	57	63	914
P532950	64	69	914
P532951	76	82	914
P532952	86	92	89
P532953	86	92	152
P532954	86	92	914
P532956	89	95	89
P532957	89	95	114
P532958	89	95	914
P532959	102	107	914

Hump Hose Connectors			
Part Number	Inner Dia mm	Outer Dia mm	Length mm
P532960	63,5	72	140
P532961	70	78	108
P532962	76	85	111

4-Ply Bellows				
Part Number	Inner Dia mm	Outer Dia mm	Length mm	No of rings
P535572	89	95	152	3
P532943	102	107	152	0
P535571	102	107	152	2
P532944	102	107	152	3
P532945	102	107	191	3
P535573	102	107	203	3

## Replace Damaged or Missing Vacuator™ Valves Immediately!

The Vacuator™ Valve, standard on the majority of Donaldson air cleaners, is an important part of the functionality of the air cleaner. It is an integral part of the pre-cleaning stage on two-stage air cleaners.

The dust cup, where pre-cleaned dust is collected, is normally under a slight vacuum when the engine is running. The normal engine pulsing of the vacuum causes the Vacuator™ Valve to open and close. This action automatically expels any collected dust and water. The Vacuator Valve also unloads when the engine is stopped.



The Donaldson Vacuator Valve is made in a variety of sizes and shapes to fit various applications. The Donaldson part number is molded into each part for easy identification.

### Application Notes

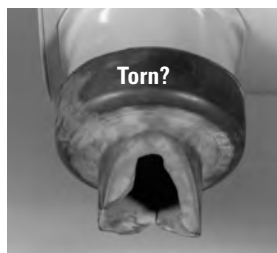
- For proper operation, the Vacuator™ Valve should be located at the lowest point on the air cleaner or dust cup pointing down.
- Never paint the Vacuator Valve. Solvents and chemicals will shorten the usable life.
- If the Vacuator Valve is torn, shredded or turned inside out, its durometer may be too soft for the application. Choose a model with a harder durometer (higher number). Conversely, if the Vacuator Valve doesn't empty itself properly, the durometer may be too hard. Choose one with a softer durometer (lower number.)

Part Number	Diameter	Durometer
P103198	76	40
P105220	76	60
P106593	76	60
P112803	76	40
P149099	25	60
P158914	51	50
P522958	51	60
P525956	25	60
P775569 *	51	60
P776008	51	60

\* 45° Vacuator Valve

## For the longest filter service life, replace damaged or missing Vacuator™ Valves immediately!

If your valve is cracked, torn, remains open or is missing, dust particles that are normally expelled can deposit themselves onto the filter and will shorten air filter service life. Replace it!



# On-Line Product Info

is **More Current**

*Than Printed Materials!*

**While we know printed product information will not disappear anytime soon, more and more people are choosing to use our on-line literature informational tools as a product resource. Not only is it the most current information and it's available 24/7!**

<http://www.emea.donaldson.com/en/engine/support/datalibrary/index.html>

The screenshot displays the Donaldson Europe Cross References website. The header includes the Donaldson logo and navigation links for Part Search, Cross References, Product Catalog, How to Buy, Our Brands, and Contact Us. The main content area is titled "Product Literature" and features a search bar on the right. The left sidebar contains a "Product Overview" menu with categories like Air Filtration, Lube/Fuel/Coolant Filtration, Hydraulics Filtration, Extended Service, Where To Buy, Contact Us, Product Literature, Customer Support, News, and Events. The main content area lists various product literature items, including General, Warranty, Air Filtration, Endurance™ Extended Service Filters, and Liquid Filtration, each with a PDF icon and a brief description.

**Product Literature**

Donaldson product literature is available on-line! Check out the list below and download your selections. You can order hardcopies of literature via e-mail to [AMBD@donaldson.com](mailto:AMBD@donaldson.com) or by calling to Donaldson Europe +32.16.38.37.87.

**General**

- PDF Toolbox Update Instructions
- PDF Engine Systems & Technologies
- PDF Working Together for a Cleaner World
- PDF Tecnología & Sistemas de Motor

**Warranty**

- PDF Donaldson Engine AM Warranty English
- PDF Donaldson Engine AM Warranty Italian
- PDF Donaldson Engine AM Warranty Russian
- PDF Donaldson Engine AM Warranty Spanish
- PDF Donaldson Engine AM Warranty Portuguese
- PDF Donaldson Engine AM Warranty French
- PDF Donaldson Engine AM Warranty Dutch

**Air Filtration**

- PDF US Engine Air Cleaner Catalogue
- PDF Toppin™ Pre-Cleaner
- PDF Engine Air Filtration
- PDF Crankcase Ventilation - Spiracle
- PDF PowerCore® G2 Filtration Technology (OE use)

**Endurance™ Extended Service Filters**

- PDF Endurance™ Cross Reference
- PDF Endurance™ Air Filters

**Liquid Filtration**

- PDF Liquid Filtration
- PDF Fuel Filter/Water Separators
- PDF Svtex Media Technology for Fuel Filters

# Proper Air Cleaner Service is Essential

Proper air cleaner servicing results in maximum engine protection against the ravages of dust.

Proper servicing can also save you time and money by maximizing filter life and air cleaning efficiency.

Two of the most common problems are:

## Over Servicing

New filters increase in dust cleaning efficiency as dust builds up on the media. Don't be fooled by filter appearance! A used filter should look dirty. By using proper filter measurement tools, you will use the full life of the filter at maximum efficiency.

## Improper Servicing

Your engine is vulnerable to abrasive dust contaminants during the servicing process. The most common cause of engine damage is improper servicing procedures.

**By following the steps listed in this section, you can avoid unnecessary risk to the engine.**

## Section Index

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**Check out at the end of each Air Cleaner Section the Service Instructions.**

## Donaldson recommends to service Air Filters by monitoring the airflow restriction levels in the air intake system

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Some vehicle owners and maintenance supervisors, concerned with lowering their operating costs, clean and reuse their heavy-duty air filter.

### Factors to consider before you decide whether cleaning or washing of air filters is appropriate for your vehicle or fleet:

- Heavy-duty air filter manufacturers do not recommend any type of cleaning process be used on their products. Donaldson, like other heavy-duty air filter manufacturers, does not warrant the air filter once it has been cleaned.
- Damaged filters should not be cleaned or reused. If the filter is damaged in service, investigate the source of damage and make corrections to avoid future damage.
- Never attempt to clean a safety element. Replace it after three main element services.
- Rather than cleaning or reusing filters, consider upgrading to an extended service filter and service the filter by restriction indicators. Donaldson recommends, when the specified maximum service limits are reached, to follow the proper service procedures and replace the used filter with a new Donaldson filter. Dispose of the used filter in a responsible manner.



### Filter dirt holding capacity is reduced 20-40% with each cleaning.

There is a risk of dirt reaching the clean side of the filter while cleaning, plus possible filter damage from high pressure water or compressed air, makes cleaning or washing a gamble. Add the cost of cleaning to the danger of filter damage when determining the risk versus the value of filter cleaning process.

Reuse of cleaned heavy duty filters increases the likelihood of improper air cleaner servicing because of the shortened service life. Each time the air intake system is serviced, it is exposed to the possibility of contamination.



## What is a Hole and What is a False Alarm?

Donaldson receives filters for inspection each year that customers believe have developed holes. Upon inspection and testing in our labs, most of these suspect filters prove to have no holes or leaks. Most often these filters have areas with low dust buildup where light comes through the media when inspected with a light inside the filter, but in fact the filter functions perfectly.

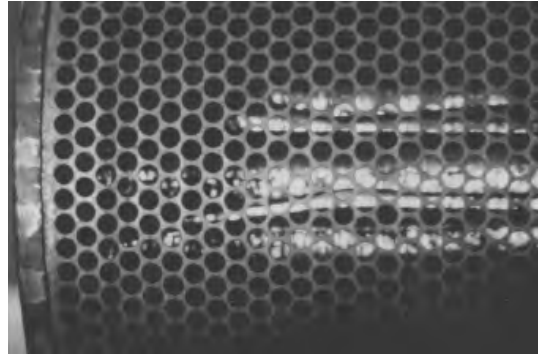
### How do you tell the difference between a hole and low dust build-up?

The problem is that normal dust buildup shuts out light completely, while low dust buildup permits light to shine through the media. The contrast is significant and therefore looks like a crack or hole in the media. The contrast between a leak and low dust buildup is not as pronounced, which accounts for mis-identifications.

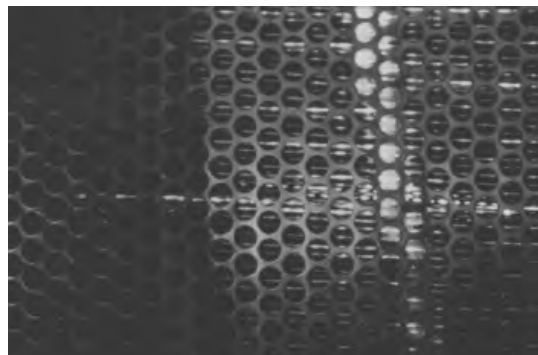
The deceiving low dust areas appear most often at the fold or at the adhesive beading present on some filters.

The secret to identifying a hole in the filter is to realize that when a hole is present you actually see the bright lamp filament shining through the hole, while low dust buildup is merely a bright area where the media is folded and not covered with dust.

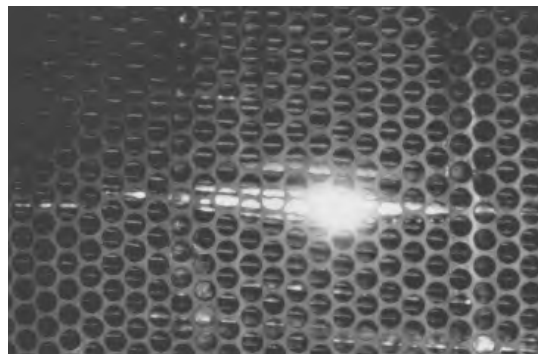
Another basic sign of a hole is dust on the liner or endcap of the clean air side of the filter. If there is no sign of dust on the clean-side liner of the filter you can be quite sure that there is no leak in the filter.



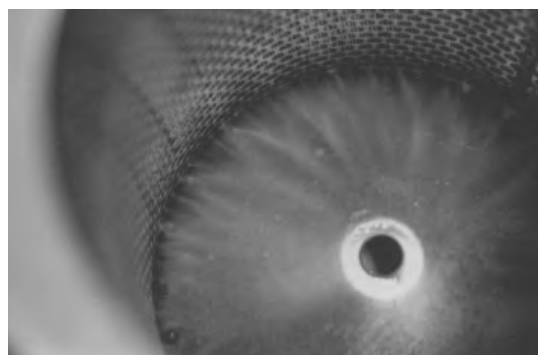
On this photo, it is apparent that the filter has low dust buildup on the pleats or folds, but is functioning efficiently - no holes, no leaks.



Here, light is coming through the adhesive beaded area as well as at the folds. Again no holes, no leaks.



As you look at the photo on the left, you can see it shows a hole in the media. The other light areas are not holes, but rather more low dust areas on the adhesive beading, which is used for pleat spacing.



In this last example, there are obvious dust trails on the liner or endcap of the clean air side of the filter. A dust trail usually indicates a leak.

## 1 Don't Remove Filter for Inspection

Such a check will always do more harm than good. Ridges of dirt on the gasket sealing surface can drop on the clean filter side when the gasket is released. Stick with the regular maintenance schedule, or, if you service by restriction, believe the gauge or restriction indicator. Get a new indicator if you don't trust your current one.



## 2 Never Rap a Filter to Clean It

Rapping hard enough to knock off dust damages the filter and destroys your engine protection. Deeply embedded dirt is never released by tapping. It is always safer to keep operating until you can change to a new filter.



## 3 Never Judge the Filters Life by looking at it. Measure the Airflow Restriction

A dirty-looking filter may still have plenty of life left, while carbon contamination may not be visible to the eye. You can't see the dirt that's embedded deep within the filter paper. Your best bet for lowest filter maintenance costs and best engine protection is to follow a restriction indicator. It's a smart, low-cost investment.



## 4 Never Leave an Air Cleaner open longer than necessary

Your open air cleaner is a direct entry to the engine! Keep it protected during filter changes. Contaminants smaller than we can see will cause damage to a diesel engine. If the housing is not going to be reassembled immediately, cover the opening. The only way to be sure nothing got in, is to make sure nothing can get in!



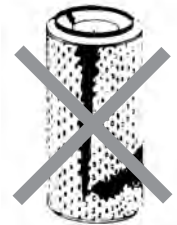
## 5 Don't Ignore a Worn or Damaged Gasket in the Housing

If your air cleaner has a cover gasket, replace it with a new one. Always check to be sure that no piece of the old gasket remains in the housing and that the gasket is not worn. If your filter model calls for a new gasket with each use, never reuse the old one.



## 6 Don't Use a Damaged or Bunched Filter

Never install a dented or punctured filter because it cannot protect properly against contamination. A dent can make a firm seal impossible or can indicate damaged media. A filter with bunched pleats saps engine power and fuel euros.



## 7 Replace Missing or Damaged Parts

Check to ensure that there is no damage to the air cleaner housing that could cause a leak. Replace any missing or damaged Vacuator Valves and air cleaner fasteners. Never attempt to repair a damaged filter.



## 8 Never Substitute an Incorrect Filter Model Number

Filters may look almost identical, but even a fraction of a mm difference in size can prevent a good seal or affect airflow. Selecting a filter by size may give you the wrong media area and grade and therefore affect service life and filter efficiency.



Style	Air Cleaner Model No.	Main Element	Safety Element	Cover Assembly	Vacuator™ Valve	Gasket	Wing Nut Assy	Mounting Band	Rain Cap	Status
EBA	A092029	P129472		P141787		P120597		P004073		Production
EBA	A092040	P140822				P120597		P004073		Cancelled
EBA	A110029	P772512								Cancelled
EBA	A130071	P182007						P013722		Cancelled
FVA	A140003	P181000		P118808		P017335	P018464	H000350	H770013	Cancelled
FVA	A140033	P181000		P118807	P103198	P017335	P018464	H000350	H770013	Cancelled
FVA	A140206	P181000		P118807	P103198	P017335	P018464	H000350	H770013	Cancelled
FVA	A140208	P181000								Cancelled
FGA	A144800	P016688								Cancelled
FGA	A144900	P016688		P016996						Cancelled
FGA	A161500	P782261		P782268						Production
FKB	B045008	P604457	P603729	P606497	P158914					Production
FKB	B055006	P609218	P602427	P609219	P158914					Production
FKB	B065045	P609221	P608599	P608592	P158914					Production
ELB	B065011	P772552						P007191	H001379	Production
ELB	B065012	P772552	P770181					P007191	H001379	Production
FLB	B065018	P772565	P770207				P138403	P007191		Production
EPB	B070005	P772579	P775300	P778758				P777731	H001379	Production
ELB	B080009	P772529						P004307	H770010	Production
ELB	B080010	P772529	P119410					P004307	H770010	Production
ELB	B080017	P774517	P771363							Cancelled
ERB	B080018	P770829	P770735				P101870			Cancelled
ERB	B080019	P770828	P127787				P101870	E500206	H770010	Cancelled
FLB	B080022	P772556	P119410				P138403	P004307		Production
ELB	B080024	P774517	P771363				P101870		H001379	Production
ELB	B080031	P772529						E500206	H770011	Cancelled
ELB	B080033	P772529	P119410				P101870	P004307		Cancelled
ELB	B080039	P776146	P776147				P181070	E500206	H770010	Cancelled
ELB	B080040	P774517	P771363				P101870		H770010	Production
FLB	B080046	P778702	P775457				P138403	E500206		Production
EPB	B080067	P772580	P775302	P775305				P777732	H770010	Production
XRB	B080080	P611190	P611189	P605731	P158914					Production
ERB	B090010	P182092	P119778	P134945			P101870	P004073	H770012	Cancelled
ERB	B090019	P182092		P134945			P101870	P004073	H770012	Cancelled
ERB	B090023	P182092	P119778	P134945		P137368	P101870	P004073	H770012	Cancelled
ELB	B090047	P777230	P777247				P101870	P004073	H770011	Cancelled
SRB	B095437	P780522	P780523	P782176				P004073		Production
ERB	B100035	P182090	P119375	P128443		P128707	P101870	P004076	H770012	Production
ERB	B100037	P182090	P119375							Cancelled
ERB	B100041	P117439	P123828	P128443			P101870	P004076	H770012	Cancelled
ERB	B100044	P182090	P119375	P128443		P128707	P101870	P004076	H770012	Production
ERB	B100046	P182090	P119375							Cancelled
ELB	B100057	P772522	P133138				P138403	P004076	H770012	Production
FLB	B100067	P772530	P133138				P138403	P004076		Production
ELB	B100068	P772522						P004076	H770012	Production
ELB	B100071	P772522	P133138				P138403	P004076	H770012	Production
ELB	B100072	P772527	P123828				P775455	P004076	H770013	Production
ELB	B100075	P774538	P775005				P138403	P004076	H770012	Production
ELB	B100078	P774547	P775035				P138403	P004076	H770012	Cancelled
ERB	B100120	P778214	P777639	P777998				P004076	H770012	Cancelled
SRB	B100121	P778214	P777639	P777998				P004076		Production
ERB2	B100126	P785388	P770685	P784954				P004076	H770012	Production
XRB	B100127	P611539	P611540	P609942	P158914					Production
ERB	B110154	P778905	P778906	P783014				P004079	H770013	Cancelled
SRB	B110155	P778905	P778906	P783014				P004079		Production
ERB	B120153	P182091	P130772				P130501	H000349	H770013	Cancelled
ERB	B120190	P182091	P130772				P130501	H000349	H770013	Cancelled
ERB	B120246	P182091								Cancelled
FLB	B120260	P772520	P770678				P138403	H000349		Production
ELB	B120265	P772524	P770678				P138403	H000349	H770013	Production
ELB	B120268	P772524						H000349	H770013	Production
ELB	B120290	P772524	P770678				P138403	H000349	H770013	Production
STB	B120319	P772524	P770678				P138403	H000349		Production
ERB	B120395	P536315	P529286	P529798						Cancelled
XRB	B120470	P608116	P608391	P608117	P158914					Production
ERB	B130010	P777279		P777300				P013722	H770089	Cancelled
ERB	B130013	P777279	P777414	P777300				P013722	H770089	Cancelled
ERB	B130028	P781768		P781784	P533226			P013722	H770089	Production
SRB	B130046	P777409	P777414	P781124				P013722		Production
SPB2	B130048	P783543	X770684	P783693				Integrated		Production
ERB2	B130057	P785610		P783693				P013722	H770089	Production
ERB2	B130058	P785610	X770686	P783693				P013722	H770089	Production
SPB2	B130060	P783543	X770684	P783693				Integrated		Production
ERB	B140139	P182002	P119373	P770605		P017335	P775455	H000350	H000606	Production
EGB	B140159	P772523		P776172		P017335		H000350	H000606	Production
EGB	B140167	P772523	P119373	P776172		P017335	P775455	H000350	H000606	Production
EGB	B140175	P772521		P776172		P017335		H000350	H000606	Production
EGB	B140176	P772521	P119373	P776172		P017335	P775455	H000350	H000606	Production
EGB	B140317	P775026	P776102	P782130		P017335	P770920	H000350	H770089	Production
ERB	B150025	P777871	P777875	P777861				P016845	H770089	Cancelled

# Service Parts by Air Cleaner Model



Style	Air Cleaner Model No.	Main Element	Safety Element	Cover Assembly	Vacuator™ Valve	U-Clip Mounting (x4)	Wing Nut Assy	Mounting Band	Rain Cap	Status
ERB	B150028	P777871		P777861				P016845	H770089	Cancelled
ERB	B150030	P777871		P777920	P158914			P016845	H770089	Production
ERB2	B150058	P785426	X770687	P784869				P016845	H770089	Production
ERB2	B150059	P785426		P784869				P016845	H770089	Production
ETB	B180002	P182042	P128408	P780042			P109062	H770037	H001053	Production
ERB	B180011	P781098		P783186				H770037	H770082	Cancelled
ERB	B180012	P781098	P781102	P783186				H770037	H770082	Cancelled
ERB2	B180016	P785394		P785546				H770037	H770082	Production
ERB2	B180017	P785394	X770688	P785546				H770037	H770082	Production
PSD	D080020	P608533	P600975	P602985	P158914					Production
PSD	D080026	P608533	P600975	P601735	P158914					Production
PSD	D080069	P608533	P600975	P785236	P112803	P786050				Production
PSD	D080070	P608533	P600975	P785237	P112803	P786050				Production
PSD	D090019	P608665	P606121	P609550	P158914					Production
PSD	D090020	P608665	P606121	P609550	P158914					Production
PSD	D090021	P608675	P606121	P609552	P158914					Production
PSD	D090022	P608675	P606121	P609552	P158914					Production
PSD	D090073	P608665	P606121	P785651	P112803	P784517				Production
PSD	D090074	P608665	P606121	P785651	P112803	P784517				Production
PSD	D090086	P608665	P606121	P785651	P112803	P784517				Production
PSD	D090087	P608665	P606121	P785651	P112803	P784517				Production
PSD	D090088	P787281	P606121	P785978	P112803	P784517				Production
PSD	D090089	P787281	P606121	P785978	P112803	P784517				Production
PSD	D090090	P608675	P606121	P786989	P112803	P784517				Production
PSD	D090091	P608675	P606121	P786989	P112803	P784517				Production
PSD	D090098	P787281	P606121	P785978	P112803	P784517				Production
PSD	D090099	P787281	P606121	P785978	P112803	P784517				Production
PSD	D090100	P608675	P606121	P786989	P112803	P784517				Production
PSD	D090101	P608675	P606121	P786989	P112803	P784517				Production
PSD	D100029	P608666	P601560	Upon Request	P112803	P784517				Production
PSD	D100030	P608666	P601560	Upon Request	P112803	P784517				Production
PSD	D100031	P608676	P601560	Upon Request	P112803	P784517				Production
PSD	D100032	P608676	P601560	Upon Request	P112803	P784517				Production
PSD	D100121	P608676	P601560	Upon Request	P112803	P784517				Production
PSD	D100122	P608676	P601560	Upon Request	P112803	P784517				Production
PSD	D100123	P608666	P601560	Upon Request	P112803	P784517				Production
PSD	D100124	P608666	P601560	Upon Request	P112803	P784517				Production
PSD	D120035	P608667	P607557	Upon Request	P112803	P784517				Production
PSD	D120036	P608667	P607557	Upon Request	P112803	P784517				Production
PSD	D120037	P608677	P607557	Upon Request	P112803	P784517				Production
PSD	D120038	P608677	P607557	Upon Request	P112803	P784517				Production
HFD	D770065	P772506	P139293	L012244			P126054			Production
HFD	D770098	P772506	P139293				P126054			Cancelled
HFD	D770099	P772506	P139293				P126054			Cancelled
HFD	D770100	P770035								Cancelled
HFD	D770105	P770991								Cancelled
HFD	D770106	P772506	P139293							Cancelled
HFD	D770108	P182041	P119370							Cancelled
HFD	D770109	P772506	P139293							Cancelled
HFD	D770112	P772506	P139293							Cancelled
HFD	D770117	P772506	P139293	L016193			P126054			Production
HFD	D770121	P772506	P139293							Cancelled
FWA	G042503	P102745		P102755			P102783	P004055	H770066	Production
FPG	G042546	P822686		P777153	P522958			P777151	H770066	Production
FPG	G042575	P822686	P535396	P777153	P522958			P777151	H770066	Production
FHG	G050003	P182050		P129355			P101870	P002348	H001377	Production
FHG	G052567	P108736	P118745							Cancelled
FHG	G052568	P108736	P120949	E500171	P522958		P101870	P002348		Production
FHG	G052595	P182050		P129355			P101870	P002904	H001377	Production
FHG	G052596	P182050	P120949	P129355			P101870	P002904	H001377	Production
FHG	G052667	P182050	P120949	P129355			P181070	P002904	H001377	Cancelled
FPG	G057502	P772578	P775298	P775308	P522958			P777730	H771377	Production
FPG	G057504	P772578		P775308	P522958			P777730	H001377	Production
FPG	G057505	P775631		P775308	P522958			P777730	H001377	Production
FWA	G065008	P181052		P102805			P101870	P007191	H001378	Production
FWA	G065055	P101222								Cancelled
FHG	G065100	P119135	P114500	P111857	P522958		P101870	P007191	H001379	Cancelled
FHG	G065101	P119135	P114500	P102805			P101870	P002940	H001379	Production
FWA	G065110	P182052		P102805			P101870	P002940	H001378	Cancelled
FHG	G065124	P119135		P102805			P101870	P002940	H001379	Cancelled
FHG	G065188	P119135	P114500	P103836	P105220		P101870	P002940	H001379	Cancelled
FHG	G065207	P130760	P126984	P111857	P522958		P101870	P002940	H001379	Cancelled
FHG	G065211	P130760		P111857	P522958		P101870	P002940	H001379	Cancelled
FHG	G065221	P774510	P770049	P111857	P522958		P181070	P002940		Cancelled
FKG	G065222	P137293	P137285							Cancelled
FKG	G065223	P137293								Cancelled
FHG	G065228	P100760		P111857	P522958		P181070	P002940		Cancelled
FKG	G065229	P137293								Cancelled
FHG	G065251	P774510	P770049							Cancelled
FLB	G065259	P772549	P770181		P522958		P138403	P002940	H001379	Production
FLB	G065260	P772549			P522958					Production
FHG	G065310	P130760	P126984	P111857	P522958		P101870	P002940	H001379	Cancelled

Service Parts

Style	Air Cleaner Model No.	Main Element	Safety Element	Cover Assembly	Vacuator™ Valve	Gasket	Wing Nut Assy	Mounting Band	Rain Cap	Status
FLB	G065311	P772549	P770181							Cancelled
FHG	G065322	P130760	P126984	P111857	P522958		P101870	P002940	H001379	Cancelled
FLB	G065337	P771250	P771270		P522958		P130501			Production
FLB	G065346	P771549			P522958			P002940		Production
FKG	G065350	P771459	P771460		P522958		P138403	P002940		Production
FTG	G065357	P775140	P121643				P138403			Cancelled
FVA	G065390	P182052		P102805			P101870	P002940		Cancelled
FVA	G065401	P132978		P527908	P522958		P101870			Cancelled
FLB	G065425	P776675	P776676		P522958		P138403	P002940	H001379	Cancelled
FPG	G065497	P822768	P822769	P780401	P522958			P778810	H001378	Production
FPG	G065498	P822768		P780401	P522958			P778810	H001378	Production
FPG	G065499	P822768	P822769	P780401	P522958			P778810	H001378	Production
FPG	G065500	P822768		P780401	P522958			P778810	H001378	Production
FPG	G065539	P532410		P780466	P522958			P778810	H001378	Production
FPG	G070006	P772579	P775300	P775311	P522958			P777731	H001379	Production
FPG	G070009	P772579		P775311	P522958			P777731	H771379	Production
FPG	G070015	P776156		P775311	P522958			P777731	H771379	Cancelled
FPG	G070059	P772579	P775300	P778758	P522958			P777731	H001379	Production
FPG	G070060	P772579		P778758	P522958			P777731	H001379	Production
FPG	G070135	P783498	P775300	P778758	P522958			P777731	H001379	Production
FVA	G080026	P182054			P112803			P004307	H001379	Cancelled
FVA	G080119	P182054								Cancelled
FHG	G080195	P182059		P103113			P101870	P003951	H770010	Cancelled
FHG	G080200	P182059	P119410	P103113			P101870	P003951	H770010	Production
FHG	G080227	P182059	P119410							Cancelled
FHG	G080307	P182059	P119410							Cancelled
FHG	G080308	P182059	P119410							Cancelled
FHG	G080322	P772564	P127787	P119711	P158914		P101870	P004307		Cancelled
FHG	G080364	P774572	P775284	P103840	P112803		P101870	P004307		Cancelled
FHG	G080365	P774572	P775284	P103113			P101870	P004307	H770010	Cancelled
FLB	G080377	P772550	P119410		P158914		P101870	P004307	H770010	Production
FHG	G080394	P182059	P119410							Cancelled
FHG	G080395	P772564	P127787		P158914		P101870	P004307		Cancelled
FLB	G080430	P772550			P158914			P004307	H770010	Production
FLB	G080433	P772553	P127787							Cancelled
FHG	G080440	P182059								Cancelled
FLB	G080442	P772554								Production
FHG	G080458	P772564	P127787							Cancelled
FLB	G080459	P772550								Cancelled
FHG	G080463	P182059	P119410	P103837	P112803		P101870	P004307	H770010	Cancelled
FVA	G080466	P181054								Cancelled
FVA	G080467	P181054		P781341						Cancelled
FHG	G080513	P182059	P119410	P103840	P112803		P101870	P004307		Cancelled
FLB	G080516	P772550			P158914			P004307		Production
FLB	G080536	P772550	P119410		P158914		P101870	P004307	H770010	Production
FLB	G080538	P776677	P776678		P158914		P101870	P004307	H770010	Cancelled
FPG	G082503	P772580	P775302	P775305	P775569			P777732	H770010	Production
FPG	G082505	P772580		P775305	P775569			P777732	H770010	Production
FPG	G082508	P772580	P775302	P775305	P522958			P777732	H770010	Production
FPG	G082511	P772580		P775305	P522958			P777732	H770010	Cancelled
FPG	G082580	P828889	P829333	P780403	P158914			P780580	H770010	Production
FPG	G082581	P828889		P780403	P158914			P780580	H770010	Production
FPG	G082582	P828889	P829333	P780403	P158914			P780580	H770010	Production
FPG	G082583	P828889		P780403	P158914			P780580	H770010	Production
FPG	G082671	P828889		P782865	P775569			P777732	H770010	Production
FPG	G082677	P828889		P782865	P775569			P777732	H770010	Production
FHG	G090022	P182063	P119778		P112667		P101870	P102025	H770012	Production
FHG	G090024	P182063			P112667		P101870	P102025	H770012	Production
FHG	G090031	P182063	P119778							Cancelled
FHG	G090046	P182063	P119778	P128968			P101870	P004073		Cancelled
EKG	G090148	P138428			P149099	P137368		P004073	H770090	Cancelled
FHG	G090185	P774569	P775283		P112667		P101870	P004073	H770012	Cancelled
FHG	G090190	P182063	P119778	P775725	P112803		P101870	P004073		Cancelled
FHG	G090203	P182063	P119778	P112667			P101870	P004073		Cancelled
FPG	G090219	P780522	P780523	P780524	P776008			P780532	H770012	Production
FPG	G090220	P780522		P780524	P776008			P780532	H770012	Production
FPG	G090225	P780522	P780523	P780524	P776008			P780532	H770012	Production
FPG	G090226	P780522		P780524	P776008			P780532	H770012	Production
FVA	G100003	P182045		P103519		P101401		P004076	H770011	Cancelled
FVA	G100004	P182045		P103827	P103198	P101401		P004076	H770011	Production
FHG	G100028	P182064		P103519		E500589	P101870	P106071	H770012	Cancelled
FHG	G100029	P182064	P119375	P103519		E500589	P101870	P106071	H770012	Cancelled
FHG	G100035	P182064		P103827	P105220	E500589	P101870	P004076	H770012	Cancelled
FHG	G100036	P182064	P119375	P103827	P103198	P101401	P111852	P004076	H770012	Cancelled
STB	G100129	P182090	P119375	P128443		E500589	P101870	P002940		Cancelled
FHG	G100143	P772545	P133138	P133141	P103198	P128707	P101870	P004076	H770012	Cancelled
STB	G100154	P182090	P119375	P128443		E500589	P101870	P002940		Cancelled
STB	G100180	P182090	P119375							Cancelled
FVA	G100184	P772503		P103827	P105220	E500589	P101870	P004076	H770012	Cancelled
FHG	G100185	P182064	P133138	P103519		E500589	P101870	P004076	H770012	Cancelled
FLB	G100220	P772555	P133138		P103198		P138403	P004076	H770012	Production
FLB	G100221	P772555			P103198			P004076	H770012	Production

# Service Parts by Air Cleaner Model



Service Parts

Style	Air Cleaner Model No.	Main Element	Safety Element	Cover Assembly	Vacuator™ Valve	Gasket	Wing Nut Assy	Mounting Band	Rain Cap	Status
FLB	G100254	P776301	P133138		P103198		P138403	P004076	H770012	Cancelled
FLB	G100257	P772555	P133138		P103198		P138403	P004076	H770012	Production
FLB	G100258	P776679	P776680		P103198		P138403	P004076	H770012	Cancelled
FRG	G100271	P777389	P777388	P777455	P776008			P004076	H770012	Cancelled
FPG	G100274	P777588		P777589	P158914			INTEGRATED	P776343	Production
FPG	G100275	P777592		P777593	P158914			INTEGRATED	P776343	Production
FPG	G100280	P777588	P777779	P776182	P158914			INTEGRATED	P776343	Production
FRG	G100281	P777638	P777639	P777455	P776008			P004076	H770012	Cancelled
FRG	G100284	P777638		P777455	P776008			P004076	H770012	Cancelled
FPG	G100285	P777592	P778776	P777593	P158914			INTEGRATED	P776343	Cancelled
FLB	G100315	P772555	P133138		P103198		P138403	P004076	H770012	Cancelled
FPG	G100317	P781039	P777639	P780578	P776008			P780594	H770012	Production
FPG	G100318	P781039		P780578	P776008			P780594	H770012	Production
FPG	G100319	P781039	P777639	P780578	P776008			P780594	H770012	Production
FPG	G100320	P781039		P780578	P776008			P780594	H770012	Production
FLB	G100362	P780067	P780068							Production
FPG	G100378	P781039	P777639	P780578	P775569			P780594	H770012	Production
FRG2	G100420	P785589	X770689	P784944	P776008			P004076	H770012	Production
FRG2	G100428	P785589		P784944	P776008			P004076	H770012	Production
FRG	G110211	P778905	P778906	P778366	P158914			P004079	H770013	Cancelled
FRG	G110269	P778905	P778906	P778366	P158914	P782257		P004079	H770013	Cancelled
FRG2	G110381	P785396	X770690	P784923	P158914			P004079	H770013	Production
FRG2	G110382	P785396	X770690	P784923	P158914			P004079	H770013	Production
FRG	G118329	P821938	P821963	P821825	P806891	P830922		P004079		Cancelled
FHG	G120012	P182034		P106589		P017804	P111852	H000349	H770013	Production
FHG	G120014	P182034	P119374	P106589		P017804	P111852	H000349	H770013	Production
FHG	G120036	P182034	P119374	P109296	P103198	P017804	P111852	H000349	H770013	Cancelled
FHG	G120037	P182034		P109296	P105220	P017804	P111852	H000349	H770013	Cancelled
FHG	G120269	P182034	P119374	P106589		P017804	P111852	P100808	H770013	Production
FWA	G120305	P772504								Cancelled
FLB	G120309	P772531	P770678		P105220		P138403	H000349	H770013	Production
FLB	G120310	P772531			P105220			H000349	H770013	Production
STG	G120332	- See page 115								Production
FLB	G120359	P772531	P770678							Production
FLB	G120368	P772531	P770678		P105220		P138403	H000349	H770013	Cancelled
STB	G120369	P182044	P119371	P109194		P017804	X004816			Cancelled
FLB	G120386	P781301	P781302		P105220		P138403	H000349	H770013	Production
FRG	G130061	P777409	P777414	P777408	P776008			P013722	H770090	Cancelled
FRG	G130087	P777409		P777408	P776008			P013722	H770090	Cancelled
FRG	G130088	P777409	P777414	P777408	P776008			P013722	H770090	Cancelled
FRG	G130113	P777409		P777408	P775569			P013722	H770090	Cancelled
FRG	G130120	P780331	P780332	P777408	P776008			P013722	H770090	Cancelled
FRG	G130164	P781822	P781826	P777408	P776008			P013722	H770090	Production
FRG2	G130232	P785390	X770691	P784892	P776008			P013722	H770090	Production
FRG2	G130233	P785390		P784892	P776008			P013722	H770090	Production
FRG2	G130234	P785390	X770691	P784892	P776008			P013722	H770090	Production
FRG2	G130235	P785390		P784892	P775569			P013722	H770090	Production
FRG2	G130236	P785398	X770692	P784892	P776008			P013722	H770090	Production
ERG	G132034	P777579		P776947	P158914					Cancelled
ERG	G132036	P532503	P532504	P780533		P778220		P013722	H770013	Cancelled
FTG	G138217	P777776	P777777	P777709	P806891		P126054	P013722		Cancelled
FHG	G140022	P182046	P119373	P106773		P017335	P775455	P100866	H770090	Production
FHG	G140023	P182046		P106773		P017335	P111852	P100866	H770090	Cancelled
FHG	G140054	P182046	P119373	P109297	P105220	P017335	P775455	P100866	H770090	Production
FHG	G140055	P182046		P109297	P103198	P017335	P111852	H000350	H770090	Cancelled
STB	G140059	P182041	P119370	P109084		P017335	X004816			Production
STG	G140076	- See page 114								Production
FWA	G140181	P117331								Cancelled
FHG	G140393	P182046								Cancelled
EBA	G140420	P772523		P770597						Cancelled
FHG	G140435	P182046								Cancelled
FHG	G140436	P182046	P119373	P118784		P017335	P775455	H000350	H770090	Cancelled
FHG	G140442	P182046	P119373							Cancelled
STG	G140445	- See page 115								Production
EBA	G140494	P772523	P119373	P775240		P017335	P775455	H000350	H770090	Cancelled
EBA	G140496	P772523	P119373	P775240		P017335	P775455	H000350	H770090	Production
FTG	G140570	P182046		P771385	P105220	P017335	P111852			Cancelled
FTG	G150029	P772536	P771073	P771178	P103198		P111852	P016845	H770089	Production
FTG	G150032	P774537		P771178	P103198	P771179	P111852	P016845	H770089	Production
FTG	G150033	P772567		P771178	P103198	P771179	P111852	P016845	H770089	Production
FTG	G150034	P772567		P771178	P103198	P771179	P111852	P016845	H770089	Cancelled
FTG	G150035	P772536	P771073	P771178	P103198		P111852	P016845	H770089	Production
FTG	G150037	P772536		P771178	P103198		P111852	P016845	H770089	Production
FTG	G150043	P772581	P775339	P771178	P103198	P771179	P111852	P016845	H770089	Production
FTG	G150076	P772567		P771178	P103198	P771179	P111852	P016845		Cancelled
FRG	G150092	P777868	P777869	P777920	P776008			P016845	H770089	Cancelled
FTG	G150096	P772567	P777938	P771178	P103198	P771179	P111852	P016845	H770089	Cancelled
FRG	G150097	P777868		P777920	P776008			P016845	H770089	Cancelled
SSG	G150104	P777871	P777875	P777861	P112803	P017336				Production
FRG	G150111	P777868	P777869	P777920	P776008			P016845	H770089	Production

Style	Air Cleaner Model No.	Main Element	Safety Element	Cover Assembly	Vacuator™ Valve	Gasket	Wing Nut Assy	Mounting Band	Rain Cap	Status
FRG	G150112	P777868	P777869	P777920	P776008			P016845	H770089	Cancelled
FRG	G150117	P778764	P778765							Cancelled
FTG	G150165	P772536		P771178	P103198	P771179	P111852	P016845	H770089	Cancelled
FRG	G150168	P781187	P777875	P777861				P016845	H770089	Cancelled
FRG	G150169	P781187	P777875	P777861				P016845	H770089	Cancelled
FRG	G150207	P781909		P777920	P776008			P016845	H770089	Cancelled
FRG	G150215	P778674	P777875	P777920	P158914			P016845	H770089	Cancelled
FRG2	G150255	P785590	X770693	P785551	P776008			P016845	H770089	Production
FRG2	G150256	P785590		P785551	P776008			P016845	H770089	Production
FRG2	G150259	P785590	X770693	P785551	P776008			P016845	H770089	Production
FHG	G160048	P182002	P119372	P106639		P017336	P111852	P100789	H770089	Production
FHG	G160057	P182002		P106621		P017336	P111852	H000351	H770089	Cancelled
STG	G160077 - See page 114									Production
FHG	G160078	P182002	P119372	P106952	P103198	P017336	P111852	H000351	H770089	Cancelled
STG	G160445 - See page 115									Production
FHG	G160609	P182002		P106621		P017336	P111852	H000351	H770089	Cancelled
STG	G161006 - See page 114									Production
STG	G161020 - See page 115									Production
FTG	G180011	P182042	P128408	P775715	P105220		P116175	H770037	H001053	Production
FTG	G180013	P182042		P775715	P105220		P116175	H770037	H001053	Cancelled
FTG	G180014	P182042	P128408	P775715	P105220	P105740	P116175	H770037	H001053	Cancelled
FTG	G180015	P182042		P105220	P105220	P105740	P116175	H770037	H001053	Cancelled
FTG	G180019	P182042	P128408	P775715	P105220	P105740	P116175	H770037		Cancelled
FRG	G180026	P531988	P531995		P112803					Cancelled
FRG	G180031	P781098	P781102	P783185	P105220			H770037	H001053	Cancelled
FRG	G180033	P781398	P781399	P783185	P105220			H770037	H001053	Cancelled
FRG	G180035	P781098	P781102	P783185	P105220			H770037	H001053	Cancelled
FRG	G180038	P781098	P781102	P781084	P105220			H770037	H001053	Cancelled
FRG2	G180073	P785394	X770688	P784792	P105220			H770037	H001053	Production
FRG2	G180074	P785394	X770688	P784792	P105220			H770037	H001053	Production
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SRG	G200013									Replaced by SSG200086
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SSG	G200087	P608306	P608305	P603716	P103198					Production
SSG	G200088	P609519	P609518	P603716	P103198					Production
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FTG	G210010	P182040	P117781		P105220		P116175	H770068	H770082	Production
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SRG	G290012									Replaced by SSG290053
SRG	G290023									Replaced by SSG290052
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SSG	G290053	P608306	P608305	P603716	P103198					Production
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