



**Donaldson**  
FILTRATION SOLUTIONS

**POWERCORE® DUST  
COLLECTORS**  
CPC & CPV SERIES



**PowerCore**  
Smaller. Smarter Filters.™



## POWERCORE SMALLER, SMARTER DUST COLLECTORS

PowerCore® dust collection technology from Donaldson outperforms traditional baghouse collectors and does so in less space.

In one extremely small and powerful package, the PowerCore® dust collector handles airflow, high grain loading, challenging particulate and fits into the smallest places. The filter changeout process is remarkably quick, easy and clean compared to traditional filter bags.

Innovative PowerCore® dust collectors combine award-winning PowerCore® filter packs with a new and patented compact oblique pulse cleaning system, delivering high filtration efficiencies not usually found in baghouse filtration.

*Up to*  
**50% smaller**  
*than traditional baghouses*

### **PowerCore®:**

- **Smaller**
- **Smarter**
- **Cleaner**
- **Easier**
- **Cost Effective**



PowerCore® CPC-12 vs Traditional (81) 2400mm filter Baghouse

## OUTPERFORMS TRADITIONAL BAGHOUSES

Today's streamlined and lean manufacturing facilities demand peak performance in the smallest spaces. PowerCore® space-saving dust collectors are available as stand-alone models that can be ducted to many different applications as well as bin vent models used on applications like silos, conveyor transfer points, conveyor discharges, blenders and mixers.

Compared to traditional baghouse collectors with similar airflow capacity, PowerCore® CPC dust collectors (as shown on previous page) are up to 50% shorter. The comparison to traditional bag-style bin vents is even more dramatic. CPV bin vent collectors are almost 70% shorter than older bag-style bin vents and solve the frequent challenge of tight space limitations.

**Smaller** collectors and bin vents fit into the tightest spaces

**Cleaner** PowerCore® filter packs with Ultra-Web® technology provide higher efficiency for cleaner air. Plus, replacing PowerCore® filter packs is a remarkably clean process.

**Easier** clean-side filter access and fewer, lighter filters means faster, easier filter changes without tools or filter cages.

**Smarter** because an optimised airflow management system delivers optimal pulse cleaning while minimising air flow restriction

**Cost effective** innovative PowerCore® filtration technology means reduced freight and installation costs, fewer filter changeouts, lower maintenance costs, and no entry requirements for filter changes.

*Up to*

# 70% smaller

*than traditional bag-style bin vents*

"Before PowerCore, we couldn't fit a collector on top of the bin. Now we keep the collected material directly in the bin, resulting in reduced labor cost and zero lost product."

Mark Dupre, project engineer  
Andersen Corporation, Bayport, MN



PowerCore® CPV-3 vs. Traditional Bin Vent

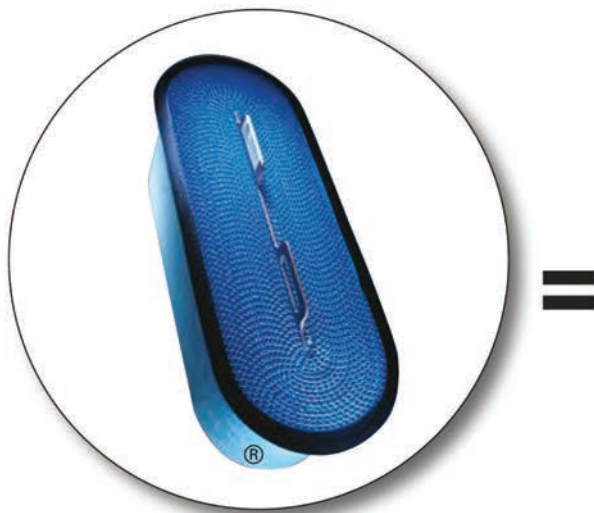
## SMALLER, SMARTER FILTERS POWERCORE® FILTER PACK - NOT A BAG, NOT A CARTRIDGE

An entirely new approach to Dust Collectors.

The PowerCore® filter pack is small, lightweight, and easily handled by one person. Donaldson's PowerCore® technology allows more effective filter area to be packaged in a smaller space: one 178mm x 559mm PowerCore® filter pack contains as much filtration area as six 2400mm long traditional filter bags. The media inside PowerCore® filter packs is our proven Ultra-Web® advanced nanofibre technology.

### PowerCore Filter Pack

- Change out from the clean side of the collector - only 1 person required.
- Self-centering with a handle for easy changes without tools.
- Integrated gasket ensures a good seal with every change.



Just one deep PowerCore® filter pack replaces six 2400mm long filter bags

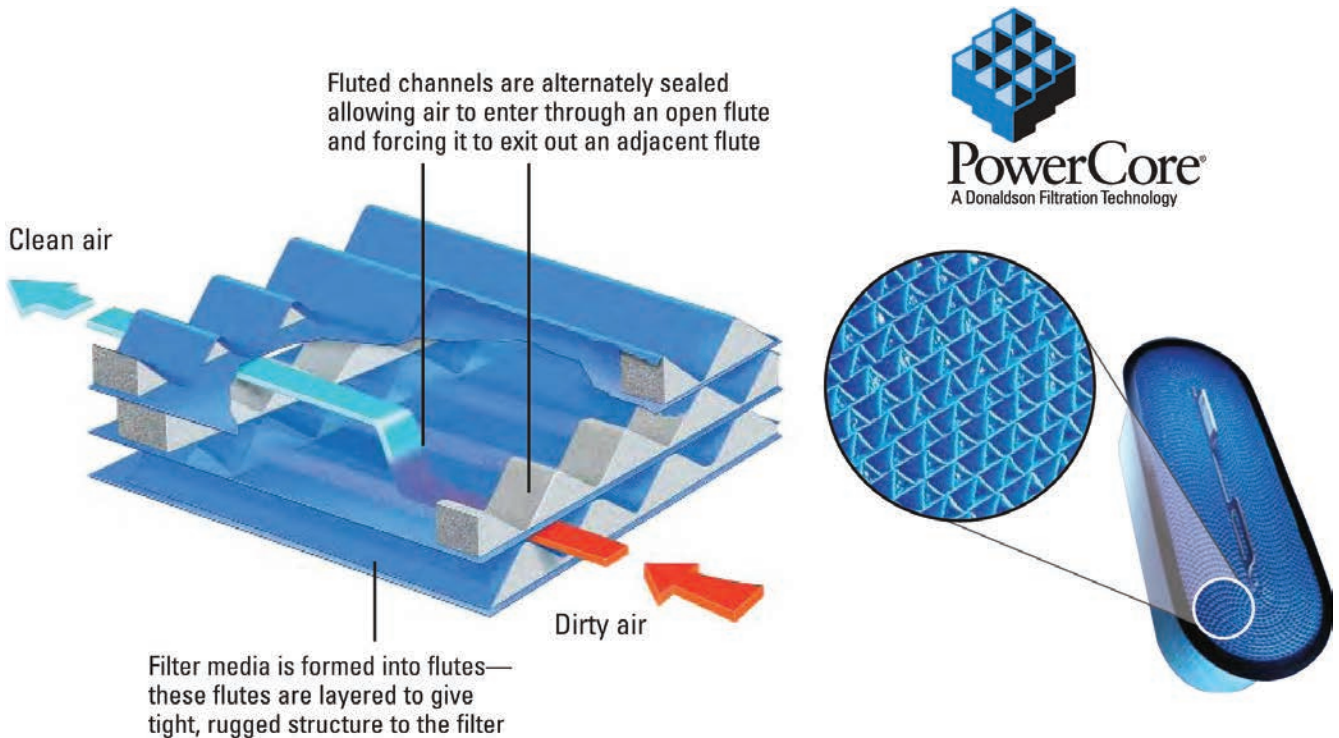
**SMALLER IS SMARTER.**



## INNOVATIVE MEDIA CONFIGURATION TECHNOLOGY LEADING THE WAY WITH POWERCORE®

At the Core is PowerCore®.

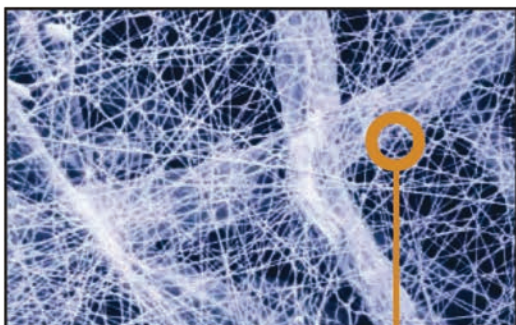
PowerCore® filter packs combine Ultra-Web® nanofibre technology with Donaldson's media configuration expertise, creating a revolutionary filtration technology unlike anything else in the industrial filtration market.



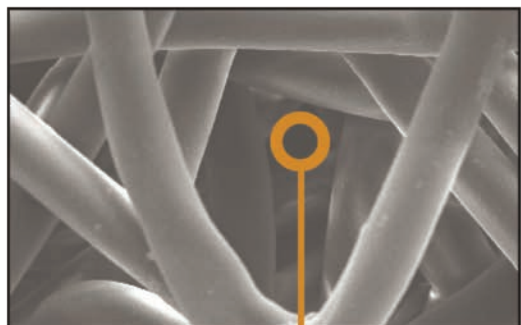
### High Performance Filter Media

In a dramatic departure from a traditional filter bag, the PowerCore® filter pack contains Ultra-Web® media which traps more dust on the surface of the fluted channels as compared to conventional filter bag materials like depth-loading 480gm polyester. Surface loading greatly promotes filter cleaning. Better pulse cleaning lowers operational pressure drop and energy use.

Ultra-Web Nanofiber Technology



450g Polyester

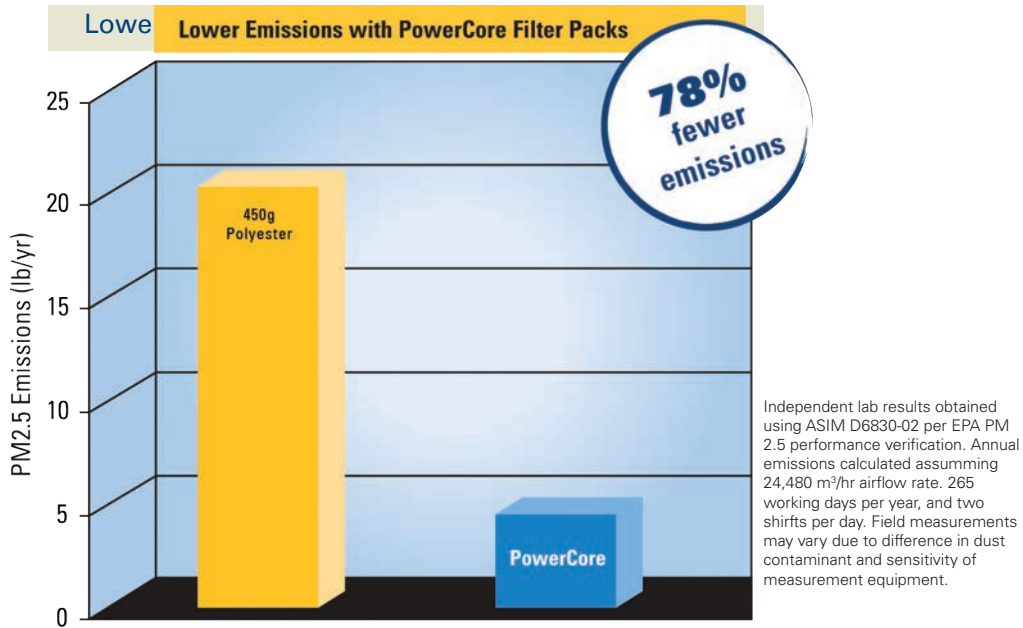


10 Micron  
Particulate  
At 600X

**POWERCORE® FILTER PACKS  
ENGINEERED TO PERFECTION**

Technology that Performs

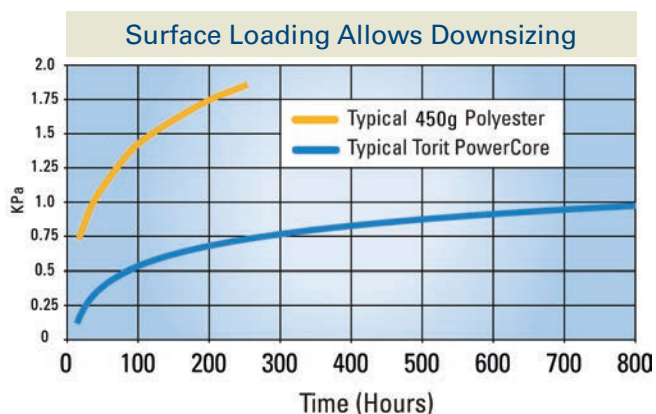
For over 25 years, Donaldson Ultra-Web® technology has delivered high efficiency filters that last. PowerCore® filter packs with Ultra-Web® are engineered to perfection, balancing high efficiencies with long filter life.



Easy on the Budget

The surface loading technology of Ultra-Web® is proven to provide lower operating pressure drop over a longer period of time and energy costs can be dramatically lower. Pressure drop starts high and rises quickly with traditional depth-loading filter bags often resulting in excessive energy use.

For proven technology that delivers savings in energy, maintenance, space and filter changes, the smartest solution is PowerCore®.



“The PowerCore filter packs have worked really well since the collector was installed. Every time I go by the collector, the pressure gauge is hovering at the 25mm mark. Our other baghouse and cartridges never run that low.”

Jay Battenberg, Safety Director  
Anchor Block, Shakopee, MN

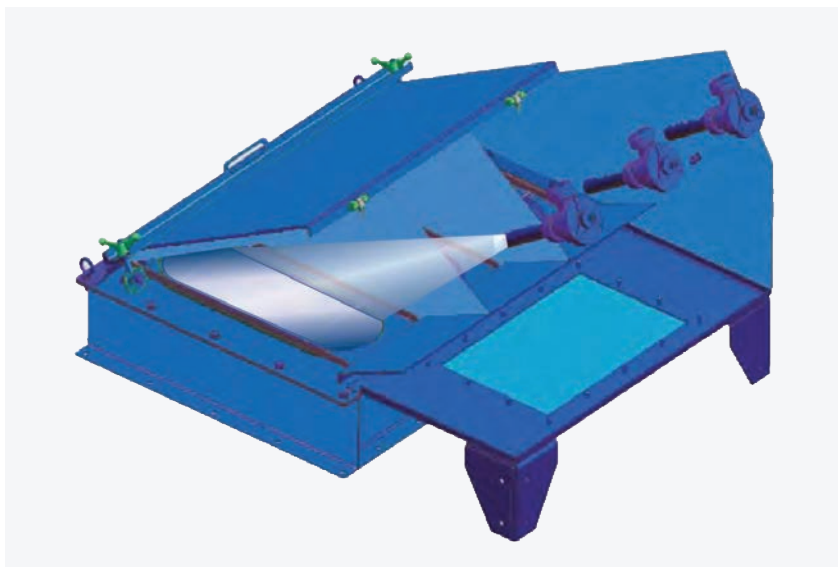
The results from accelerated lab and field tests show that PowerCore can provide lower pressure drop in baghouse applications.

## OPTIMISED AS A SYSTEM SMARTER AIRFLOW MANAGEMENT

### Smarter Filter Cleaning

PowerCore® collectors include a new patented compact oblique pulse cleaning system designed to match the pulse energy to the obround shape of the PowerCore® filter pack. The resulting pulse flow effectively covers the entire media pack. It easily pulses the dust out of the fluted channels, keeping the pressure drop low and prolonging filter life.

Compact Oblique Pulse Cleaning System



### Sophisticated Modeling

The design of the pulse accumulator is result of Donaldson's commitment to technical research and development. FLUENT\* Airflow Modeling software created the shape of the pulse accumulators to optimise the pulse energy without restricting the airflow and wasting energy. The pulse accumulators also serve as a filter retention mechanism, securing the filter pack in place and ensuring optimum gasket compression.

Pulse Accumulator Optimizes Pulse and Seals Filter Pack



Pulse accumulator

\*FLUENT is a registered trademark of Fluent Inc.

**MAKING MAINTENANCE EASIER  
SMALLER, BETTER, SMARTER**

**Significant Operational Savings**

PowerCore® can reduce your cost of dust collection. An application requiring 2400mm filter bags in the past now only needs 178mm tall PowerCore® filter packs. Fewer filters means lower filter changeout costs and faster changeouts. The smaller collector means lower installation costs and less factory floor or bin space consumption.

	NUMBER OF FILTERS IN COLLECTOR	TIME TO REPLACE*	LABOR COST	TIME SAVINGS*	LABOR SAVINGS*
PowerCore Filter Packs	12	24 minutes	\$19	13.1 hours	\$629
Traditional Filter Packs	81	13.5 hours	\$648	-	-

\* Savings are based on one changeout. Calculations assume bags and PowerCore Filter Packs show equal life span; one person replacing one traditional filter bag in 10 minutes; one person changing PowerCore in 2 minutes; labor rates equal \$45/hr.

**Easy Maintenance**

Replacing PowerCore® packs is as easy as 1-2-3. Contrary to many traditional baghouse collectors, PowerCore® filter packs are lightweight and accessed from the clean side of the collector. Easy. Fast. Clean. No tools or cages required.

**PowerCore Filter Pack Replacement - Easy, Fast, Clean!**



Lift up filter access door (Clean side of the system).



Loosen the captive hardware and remove the filter retainer/accumulator.



Lift out the filter pack for easy replacement.

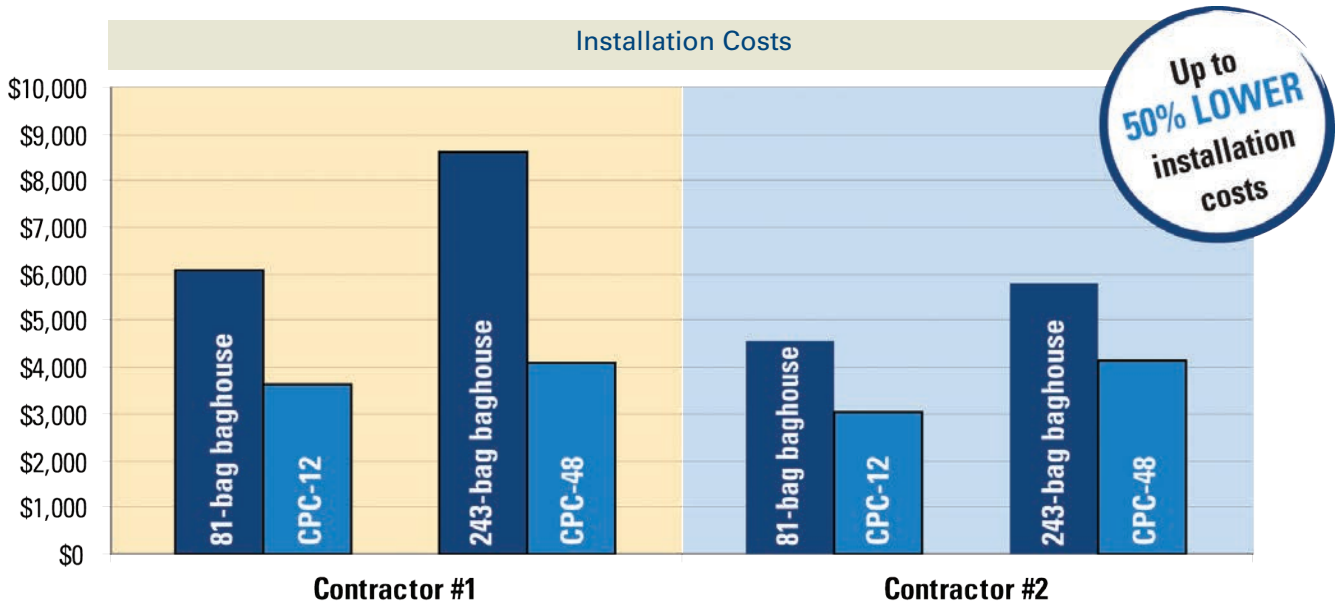


## HOW SMALLER MEANS SMARTER OPERATION SMART RESULTS IN MANY WAYS

- Collectors weigh less so shipping costs are lower.
- There are no filter bags or cages to ship and install separately.
- Easier filter pack changeouts save time and money.
- Airflow design prevents dust bridging between filter packs - less maintenance required.
- Airflow patterns minimise abrasion, preventing leaks and maintenance common with abrasive dust.



A CPV-2 is 70% smaller than a baghouse bin vent making shipping easy and lower cost.



The PowerCore system arrives mostly assembled, so installation is faster and easier. Installation costs are reduced 30-50% due to lighter weight, less crane time, and pre-assembly. The filter packs come pre-installed in the collector, so there are no bags or cages to install separately.

## BRIDGING ELIMINATED EVEN ON DIFFICULT CONTAMINANTS

### In a typical Baghouse Collector...

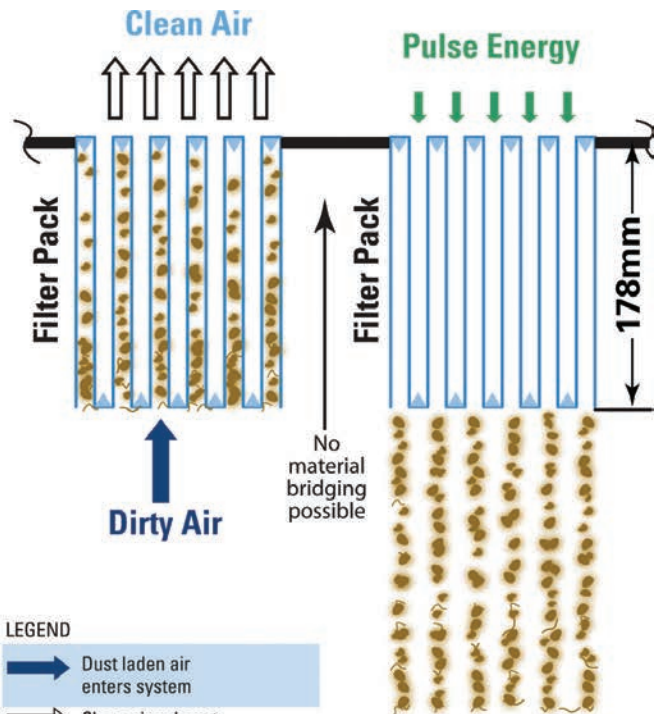
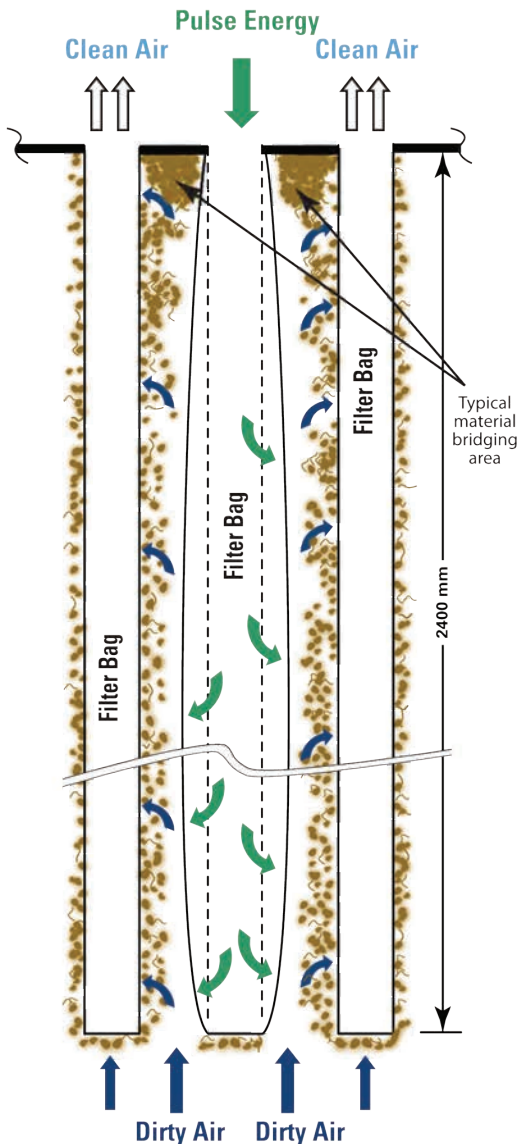
Bridging can start at the top of the filter bags where they aren't cleaned very effectively. It continues to build until the entire collector is packed full of dust. Dust collected on the top of the bag may need to be pulsed multiple times before it leaves the filtration section.

### In a PowerCore® Collector...

Air flows in through the bottom face of the PowerCore® filter packs so that dust doesn't accumulate between them and bridging can't get started. Each flute in the 178mm deep filter pack is effectively and fully cleaned with every pulse.

#### In A Typical Baghouse Collector

Bridging can start at the top of the filter bags, where they aren't cleaned very effectively. It continues to build until the entire collector is packed full of dust. Dust collected on the top of the bag may need to be pulsed multiple times before it leaves the filtration section.



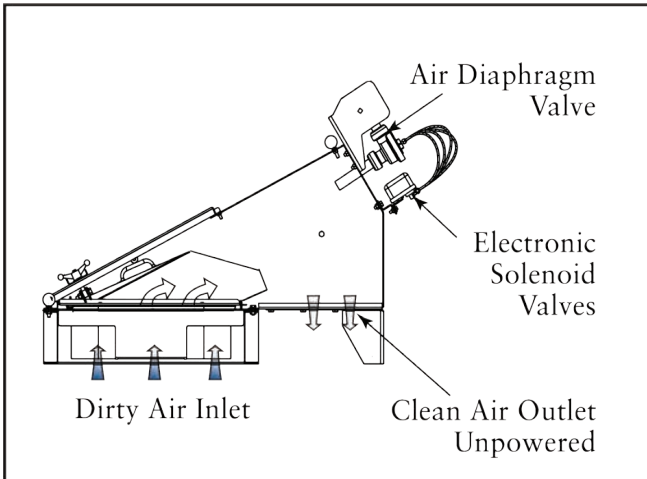
- LEGEND
- Dust laden air enters system
  - Clean air exhaust
  - Dust collects on the filter bag or in the fluted channels of PowerCore
  - Reverse pulse periodically cleans the bags or filter packs



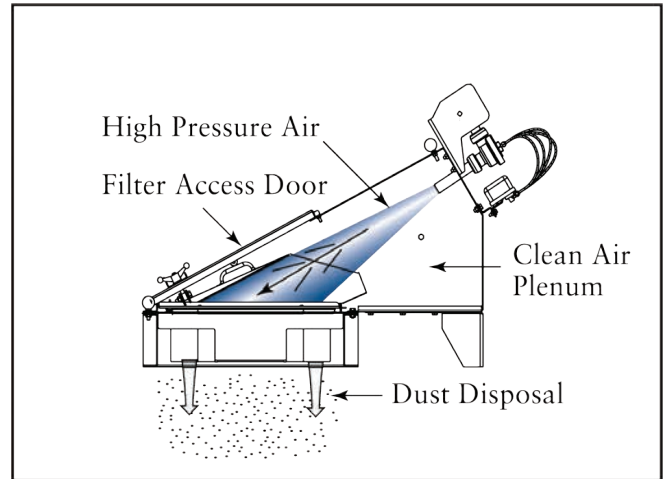
Bridged and packed baghouse.

## HOW IT WORKS

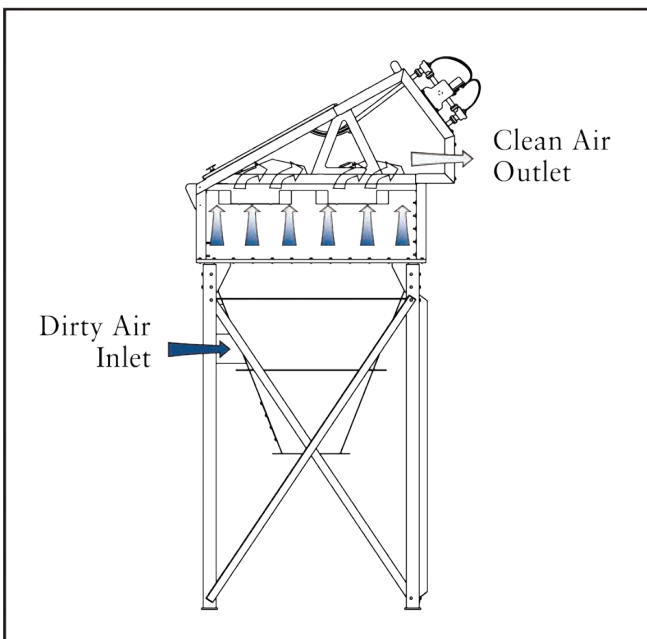
Normal Operation for CPV Models



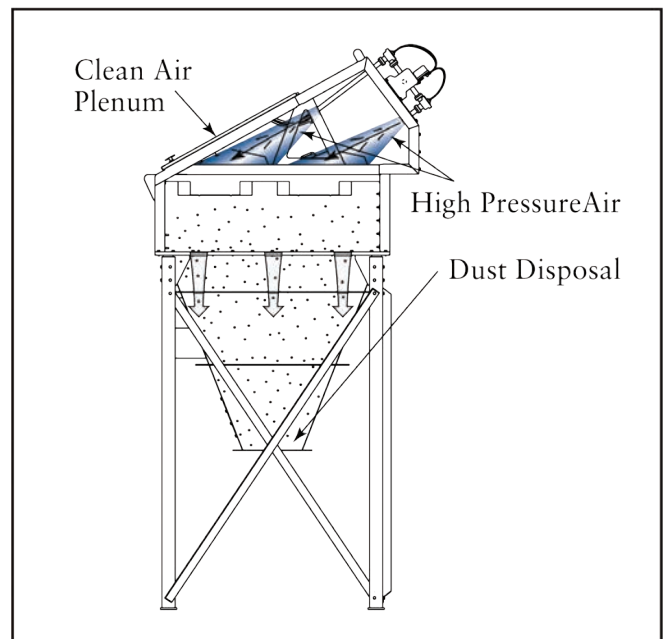
Filter Cleaning Operation for CPV Models



Normal Operation for CPC Models



Filter Cleaning Operation for CPC Models

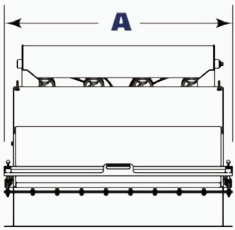


### Operation

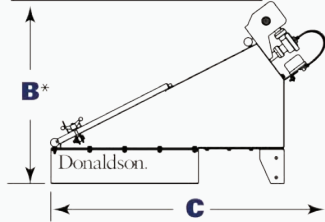
- Dust laden air enters the collector through the dirty air inlet and is directed upward through the filter packs.
- Heavier particulate falls directly into the hopper or bin below.
- Air is filtered through the filter packs and then directed out the clean air outlet.
- When pressure drop exceeds a pre-set point, the compact oblique pulse system sends a pulse of cleaning air back through the filter packs and thoroughly cleans the media flutes.

**DIMENSIONS & SPECIFICATIONS**

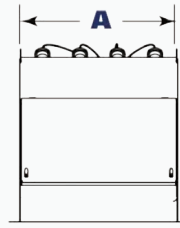
**MODELS CPV-2 through CPV-12**



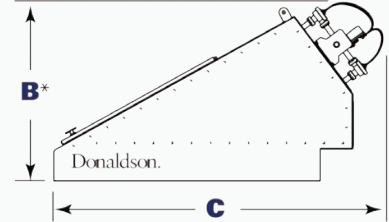
CPV-2, -3, -4  
Front View



CPV-2, -3, -4  
Side View

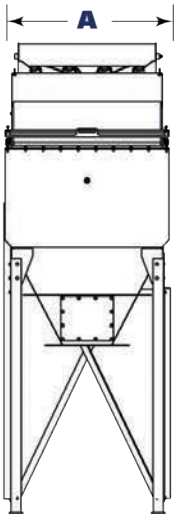


CPV-6, -8, -12  
Front View

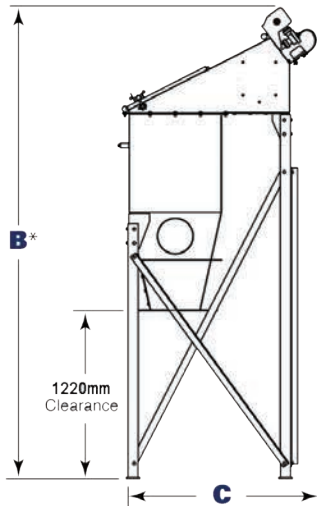


CPV-6, -8, -12  
Side View

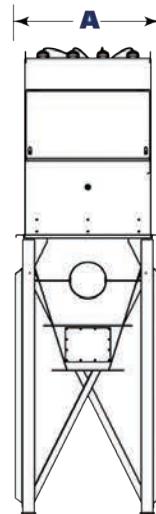
**MODELS CPC-3 through CPC-48**



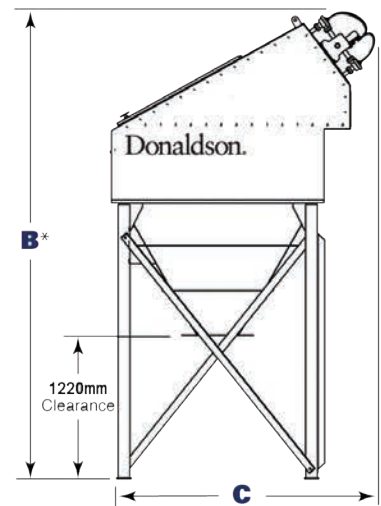
CPC-3, -4  
Front View



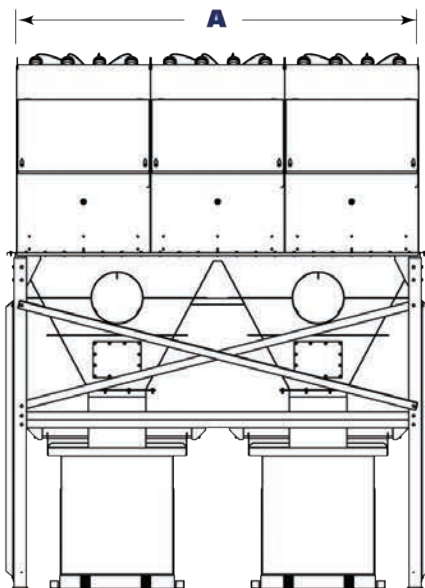
CPC-3, -4  
Side View



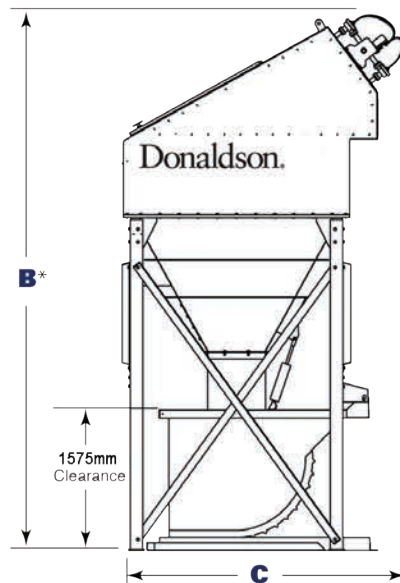
CPC-6, -8, -12, -16  
Front View



CPC-6, -8, -12, -16  
Side View



CPC-24 with optional dumpster hopper\*\*  
Front View



CPC-24 with optional dumpster hopper\*\*  
Side View



**DIMENSIONS & SPECIFICATIONS**

MODEL	NUMBER OF FILTER PACKS	POWERCORE FILTER AREA (MTRS SQ)	NUMBER OF VALVES	SHIPPING WEIGHT (KGS)	DIMENSIONS (MM)		
					A	B	C
CPV- 2	2	11.7	2	145	681	945	1410
CPV- 3	3	17.5	3	181	935	945	1410
CPV- 4	4	23.4	4	227	1189	945	2121
CPV- 6	6	35.1	6	297	818	1171	2121
CPV- 8	8	46.8	8	363	1072	1171	2121
CPV- 12	12	70.2	12	513	1631	1171	2121
CPC- 3	3	17.5	3	408	935	3007	2121
CPC- 4	4	23.4	4	499	1189	3358	2121
CPC- 6	6	35.1	6	590	818	3917	2121
CPC- 8	8	46.8	8	765	1072	3917	2121
CPC- 12	12	70.2	12	953	1631	3917	2121
CPC- 16	16	93.6	16	1323	2139	4298	2121
CPC- 24	24	140.4	24	1760	3206	3866	2121
CPC- 32	32	187.2	32	2409	4272	4298	2121
CPC- 48	48	280.8	48	3520	6406	4298	2121

\* For opening access door, allow a minimum of 64mm above unit for models 2, 3, 4 and a minimum of 521mm for models 6, 8, 12, 16, 24, 32, 48.  
 \*\* CPC-24 through CPC-48 are available with optional pyramid hoppers, trough hoppers or dumpster hoppers.

**OPERATING CONDITIONS**

Seismic Spectral Acceleration	$S_s+1.5$ & $S1=0.6$	Compressed Air Requested (KPa)	620-690
Wind Load Rating (kmph)	145	Operating Temperature	65 Degrees C
Housing Rated (KPa)	-5		



“From the results I’ve seen so far, I don’t expect to replace my filters for a long time. I’m very impressed with PowerCore. It’s a very small foot print for the amount of filter area you get in a unit.”

David Loeffler, Plant Manager  
 Brunk Corporation, Bloomington, MN

SMARTER PERFORMANCE ON MANY TYPES OF DUST



**CPC-8**  
*on wood dust  
in school wood shop*  
6,460 m<sup>3</sup>/Hr



**CPV-3**  
*Powdered milk dust  
in cheese factory*  
2,040 m<sup>3</sup>/Hr



**CPC-12**  
*on wood dust at  
furniture manufacturer*  
11,900 m<sup>3</sup>/Hr



**CPV-12**  
*Conveyor line at concrete  
and asphalt plant*  
8,160 m<sup>3</sup>/Hr

Processing's  
**Breakthrough  
Product of 2008**

...Processing Magazine

Reader's Choice Award  
Powder & Bulk  
Engineering  
2008 Finalist



**CPC-12**  
*Pulverized polyethylene plastic*  
11,900 m<sup>3</sup>/Hr

**STANDARD FEATURES & EQUIPMENT OPTIONS**

**PowerCore® CPC Collectors**

**PowerCore® CPV Collectors**

Standard  
Optional

Standard  
Optional

	Standard	Optional
<b>Collector Design</b>		
Mid Steel Construction	x	
Clean-Side Filter Pack Removal	x	
Tool-Free Filter Removal	x	
Hopper Access Panel	x	
Sprinkler Taps	x	
Mountable Fan Package (CPC-3 through CPC-24)		x
Stainless Steel Construction		x
<b>Filter Packs</b>		
PowerCore™ with Ultra-Web®	x	
PowerCore™ Antistatic		x
<b>Paint System</b>		
Polyester Textured Finish	x	
Hostile Environment Finish		x
Custom Colours, Materials, and Finishes		x
<b>Pyramid Hopper Discharge Options</b>		
Pyramid Hopper		x
Through Hopper (CPC-16 through CPC-48)		x
Dumpster Hopper (CPC-16 through CPC-48)		x
<b>Hopper Discharge</b>		
Slide Gate Pack		x
220 Ltr Drum Covers		x
Transitions for Rotary Valves		x
<b>Support Structure</b>		
1200mm Clearance Beneath Hopper		x
Leg Extensions		x
<b>Electrical Controls, Gauges and Enclosures</b>		
Control Box IP65 with Timer		x
Solenoid Enclosure IP65		x
Magnehelic®* Gauge		x
Delta P Control IP65 with Timer		x
Delta P Plus Control IP65 with Timer		x
Delta P Control (no timer)		x
Solenoid Enclosure IECExSIR 08-0045x		x
Heated Solenoid Pack		x
Heavy Duty Cold Climate Kit		x
Photohelic®* Gauge		x
Custom Control Panels		x
<b>Safety Features</b>		
Explosion Vents		x
Sprinkler Pack		x
Platforms and ladders (CPC-16 through CPC-48)		x

	Standard	Optional
<b>Collector Design</b>		
Mid Steel Construction	x	
Clean-Side Filter Pack Removal	x	
Tool-Free Filter Removal	x	
Mountable Fan Package		x
Outlet Weatherhood		x
Stainless Steel Construction		x
<b>Filter Packs</b>		
PowerCore™ with Ultra-Web®	x	
PowerCore™ Antistatic		x
<b>Paint System</b>		
Polyester Textured Finish	x	
Hostile Environment Finish		x
Custom Colours, Materials, and Finishes		x
<b>Electrical Controls, Gauges and Enclosures</b>		
Control Box IP65 with Timer		x
Solenoid Enclosure IP65		x
Magnehelic®* Gauge		x
Delta P Control IP65 with Timer		x
Delta P Plus Control IP65 with Timer		x
Delta P Control (no timer)		x
Solenoid Enclosure IECExSIR 08.0045x		x
Heated Solenoid Pack		x
Heavy Duty Cold Climate Kit		x
Photohelic®* Gauge		x
Custom Control Panels		x



## Leading Technology

- Over 1,000 engineers and scientists worldwide
- Broad range of innovative collectors and filters
- 100s of filter media formulations

## Experience and Service

- Technical expertise and support
- Ready-to-ship filters and parts within 24 hours
- 1,000,000+ dust, fume and mist collectors installed

## Global Support

- Facilities in 37 countries
- 40 manufacturing plants and 14 distribution centers

Call Donaldson to get cleaner air today:

**1800 345 837**

[www.donaldsonfilters.com.au](http://www.donaldsonfilters.com.au)



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Torit PowerCore Dust Collectors (04/12)

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