PowerCore®
A Donaldson Filtration Technology

PowerCore® air cleaners deliver . . .

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

This air cleaner family offers high-efficiency filtration in a single, compact unit that delivers superior performance using our PowerCore® Filtration Technology.

PSD Family
Designed for medium to heavy dust conditions, the PSD air cleaner has a built in inertial particle separator that can remove up to 96% of incoming contaminant. PSD air cleaners are also adaptable to a scavenged air system.

PCD Family
The PCD air cleaner family is better suited for light dust conditions since it does not have a built-in pre-cleaner like the PSD. It can, however, be connected to an external pre-cleaner.

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Section Index

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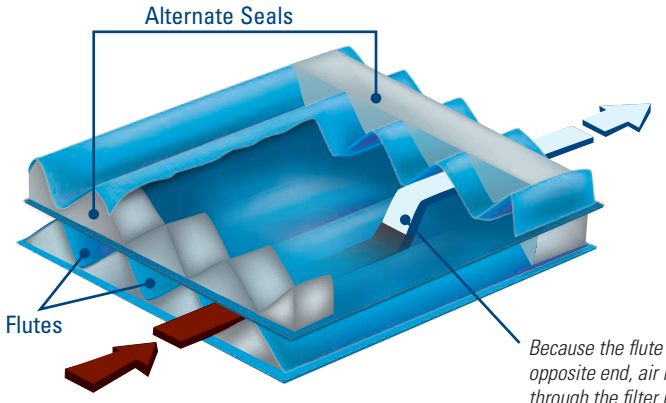
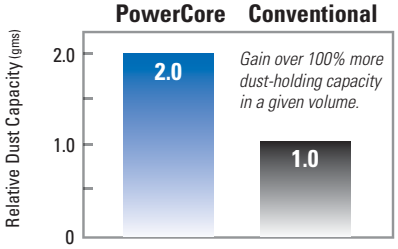
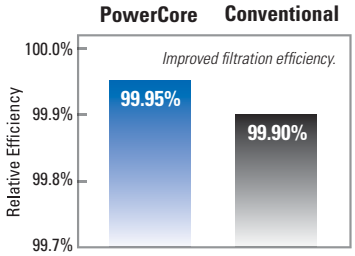
PowerCore® Straight-Through Airflow Schematic



Dust Holding Capacity



Overall Efficiency



Millions of PowerCore® Filters Installed on Original Equipment

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

This non-metal air cleaner (except for cover clamps) is ideal for equipment operating in medium to heavy dust environments.

Applications

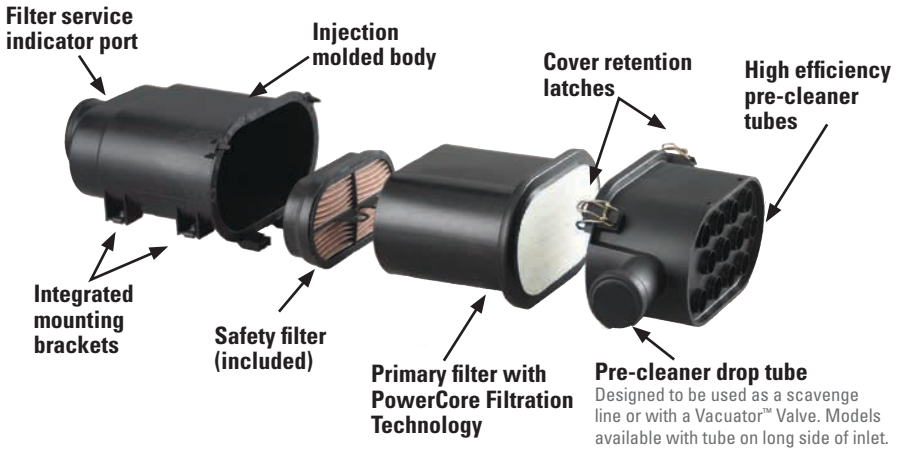
- Off-road equipment operating in medium to heavy dust conditions with engine airflow ranges up to 1490 cfm
- Scavenged system components — exhaust ejectors and check valves — now available. See page 37–38 for more details.
- Obround housing shape allows for a narrow or wide mounting orientation.
- Models have either end or side filter service access
- Sustained temperature tolerance: -40 °F to 180 °F / -40 °C to 82 °C

Features

- More compact at a given performance level than standard pleated filters
- Non-metal filters
- Improved engine protection: no media movement, expansion, contraction or bunching
- Improved contaminant encapsulation: dust and dirt stay contained in filter during service
- High efficiency integrated pre-cleaner improves filter life
- Improved handling and maintenance: lighter and smaller, changing filters is a snap
- Easily serviced; no tools required to remove or replace cover
- Can be used with scavenge line or Vacuator™ Valve
- Built-in mounting brackets eliminate the need to purchase separate mounting bands

Service Access on Inlet End — PSD08

Exploded view of D080020



Service Access on Side — PSD08, PSD09, PSD10, PSD12 and PSD14

Exploded view of D090073

Air in the End, Out the Opposite End

When Selecting an Air Cleaner . . .

Determine the airflow requirements of your engine, then find the corresponding cfm airflow in the table below. The restriction numbers (shown in inches of water) indicate the approximate initial restriction of each model air cleaner at that cfm. If there are two air cleaner models that fit your parameters, choosing the one with the lower restriction will provide longer filter service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, and pre-cleaners. See pages 257-258 for ducting restriction estimates.

PSD Air Cleaners and Scavenge Air Systems

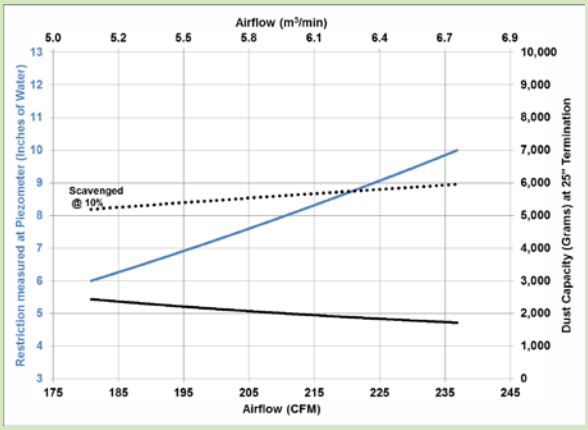
PSD air cleaners are designed to operate with or without aspiration, otherwise known as scavenging. PSD performance charts include scavenged performance data. It is recommended to use a scavenge system for horizontally mounted PSD12 and PSD14 applications. For more information on scavenging, refer to page 37.

Initial Airflow Restriction (non-scavenged)

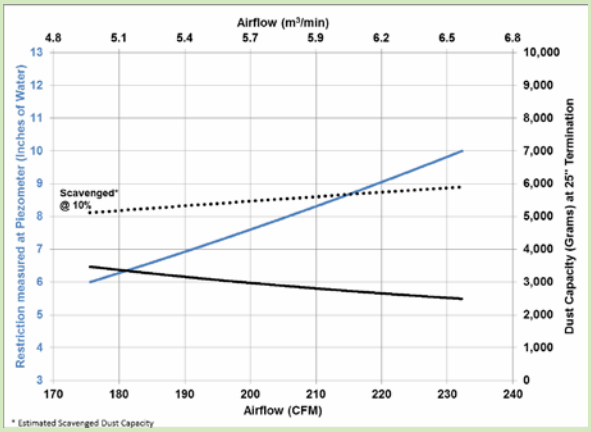
CFM @ "H_2O 6"	8"	10"	Air Cleaner Model
MODELS WITH SERVICE ACCESS ON END			
176	206	232	D080026
181	211	237	D080020
MODELS WITH SERVICE ACCESS ON SIDE			
190	223	252	D080056
284	332	374	D090121
291	339	382	D090073
291	338	380	D090101
311	359	401	D090055
311	359	401	D090120
460	539	609	D100029
512	597	672	D100030
512	597	672	D100072
534	622	700	D100031
539	629	708	D100032
539	629	708	D100068
629	737	832	D120037
648	755	849	D120035
682	795	895	D120038
687	800	899	D120036
951	1111	1252	D140111
955	1110	1246	D140110

PSD Air Cleaner Performance Curves*

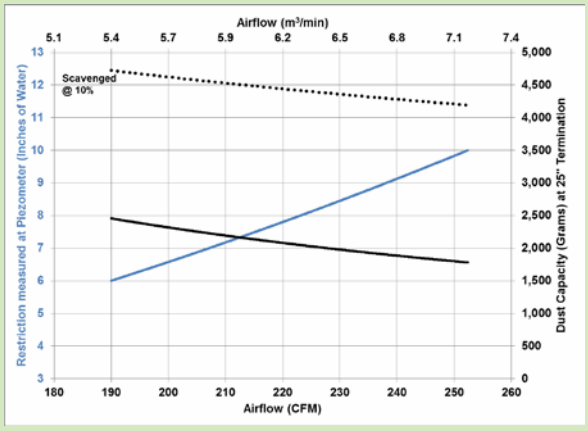
D080020



D080026



D080056



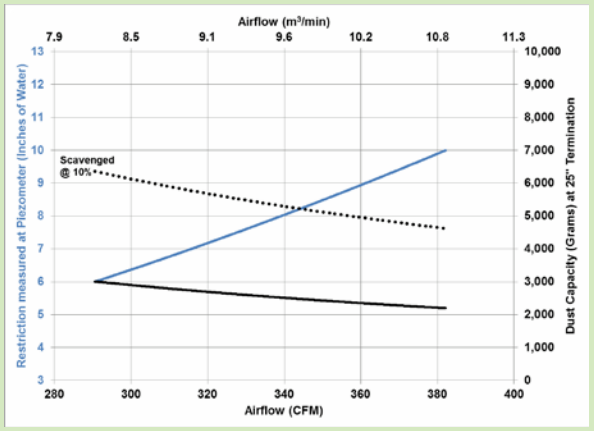
*Results generated using laboratory testing pursuant to ISO5011. Actual performance during use may vary depending on multiple factors, including specific product configuration, external conditions and application.

PowerCore® PSD Air Cleaners

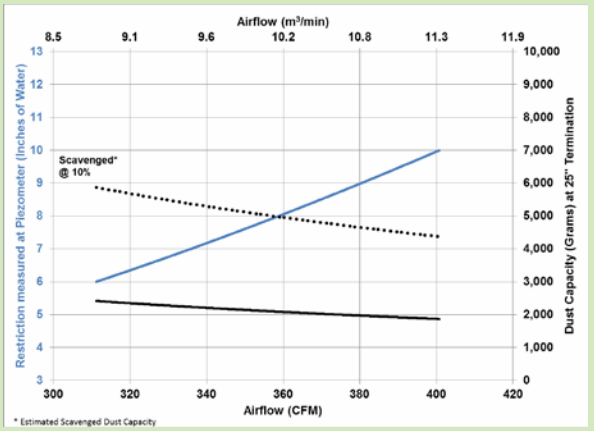
Donaldson FILTRATION SOLUTIONS

continued — PSD Air Cleaner Performance Curves

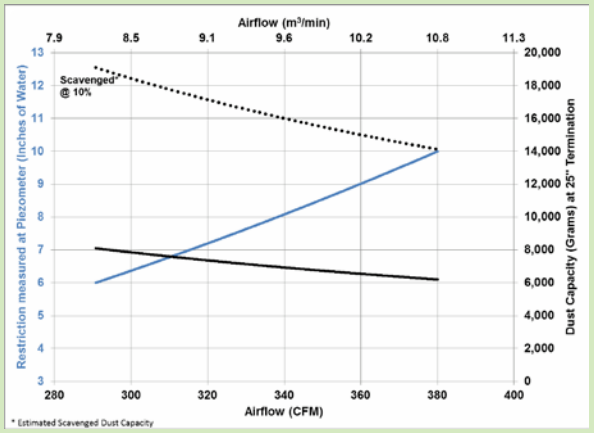
D090073



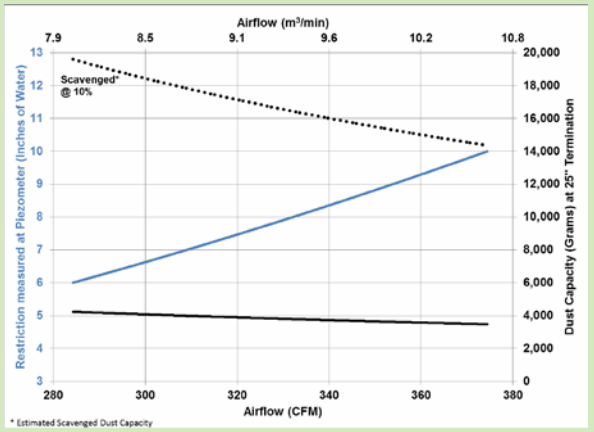
D090055, D090120



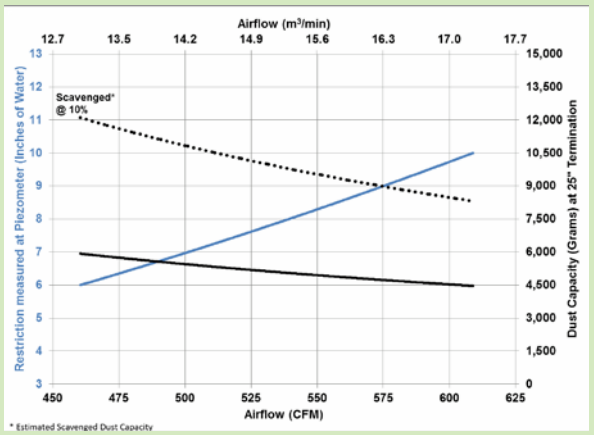
D090101



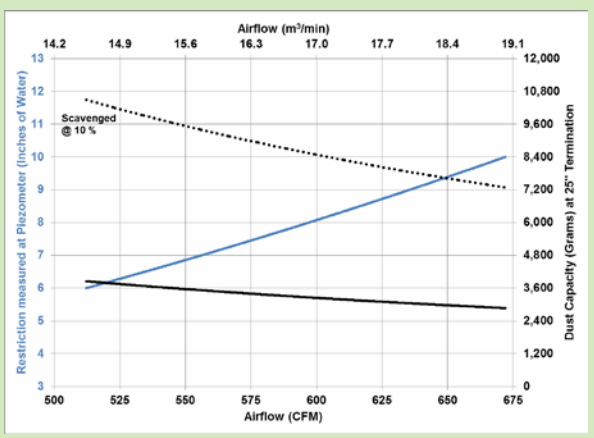
D090121



D100029

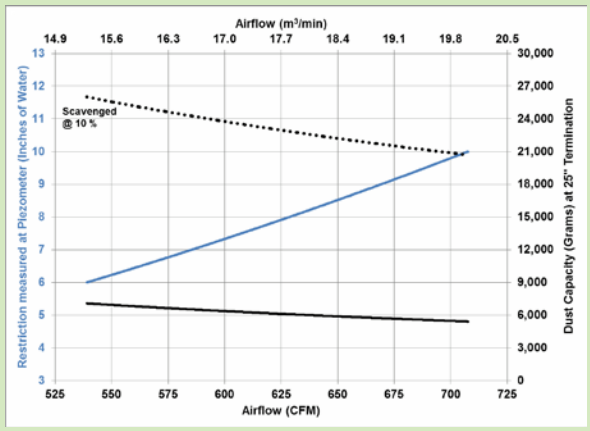


D100030, D100072

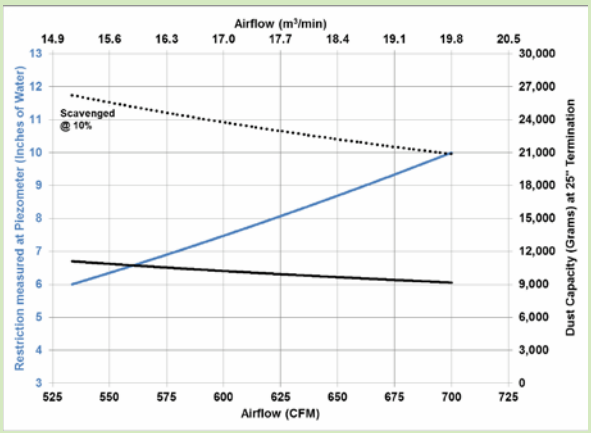


continued — PSD Air Cleaner Performance Curves

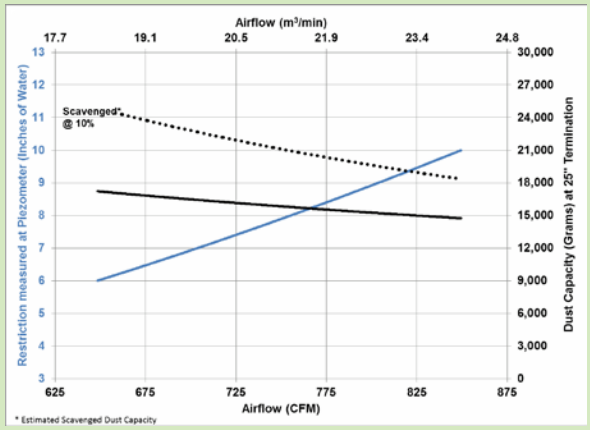
D100032, D100068



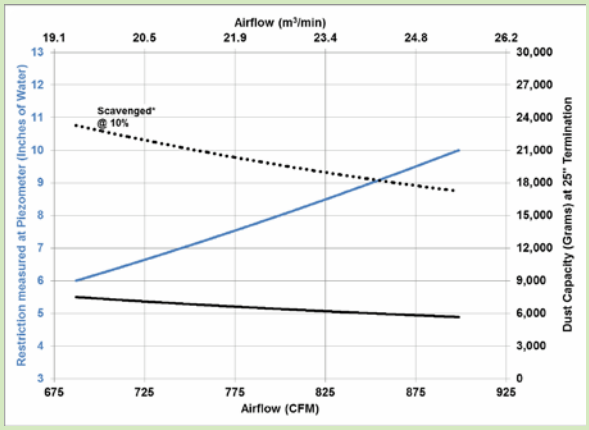
D100031



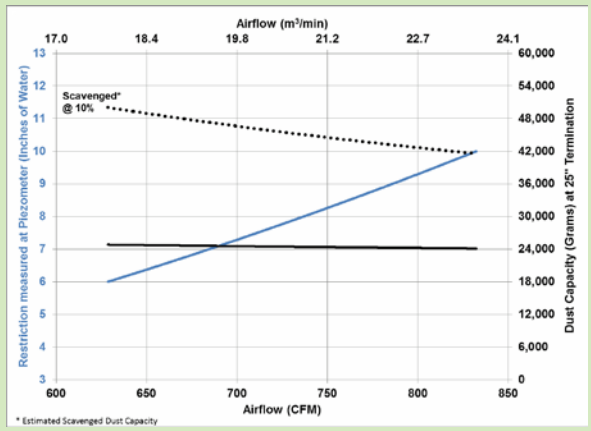
D120035



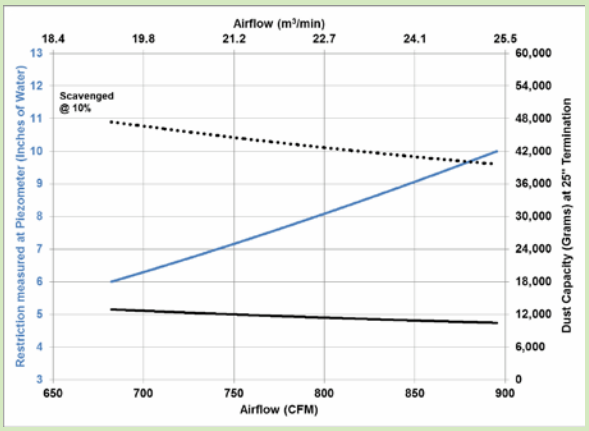
D120036



D120037



D120038

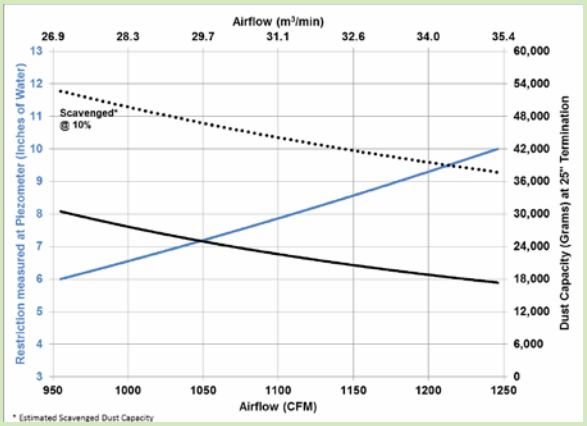


PowerCore® PSD Air Cleaners

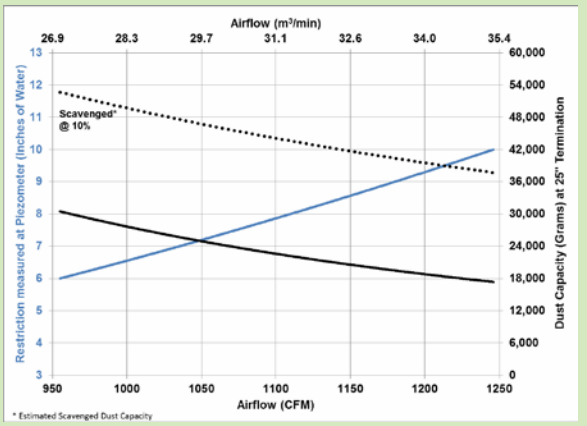
Donaldson FILTRATION SOLUTIONS

continued — PSD Air Cleaner Performance Curves

D140110

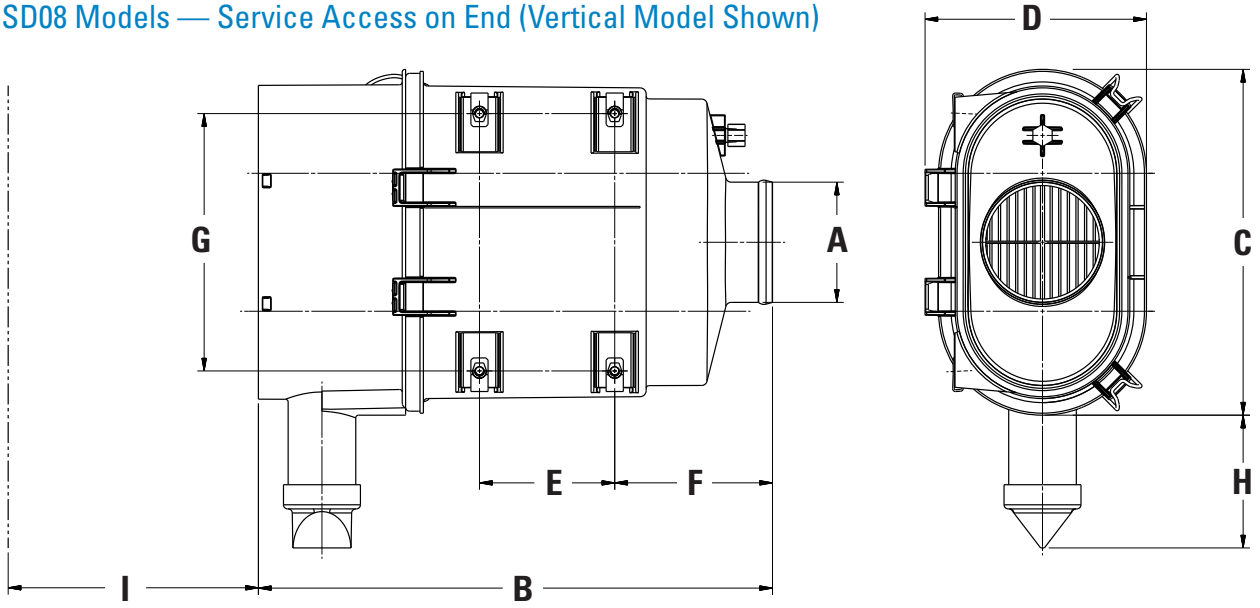


D140111



PSD Specification Illustrations

PSD08 Models — Service Access on End (Vertical Model Shown)



Note: a minimum service clearance of 50mm (2.00") is required for wire latches.

D080020 — Horizontal

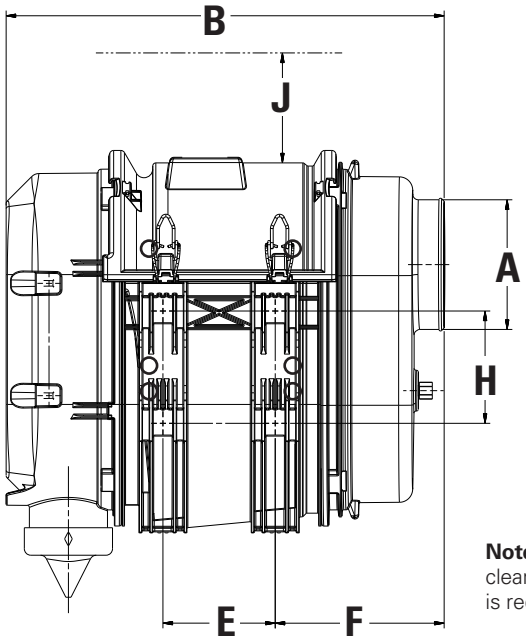
D080026 — Vertical

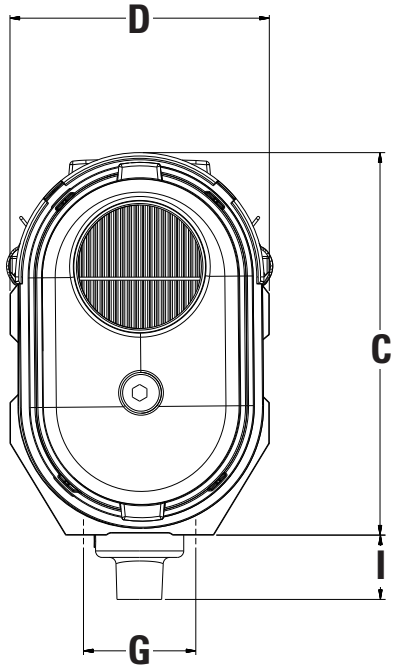
PSD Specifications (Letters are keyed to drawings)

Orientation: H=Horizontal; V=Vertical

Part No. / Orientation	A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	G mm/in	H mm/in	Service Clearance (I) mm/in	Weight kg/lbs
MODELS WITH SERVICE ACCESS ON END										
D080020 H	89/3.50	380/14.97	256/10.07	154/6.05	100/3.94	117/4.59	191/7.50	98/3.87	80/3.2	4.8/10.5
D080026 V	102/4.00	553/21.77	365/14.37	180/7.09	180/7.09	183/7.21	100/3.94	130/5.12	80/3.2	4.8/10.5

PSD08, PSD09, PSD10, PSD12 — Service Access on Side (Vertical Model Shown)





Note: a minimum service clearance of 50mm (2.00") is required for wire latches.

D080056 — Vertical

D090120 — Horizontal

D100029 — Vertical

PSD Specifications (Letters are keyed to drawings)

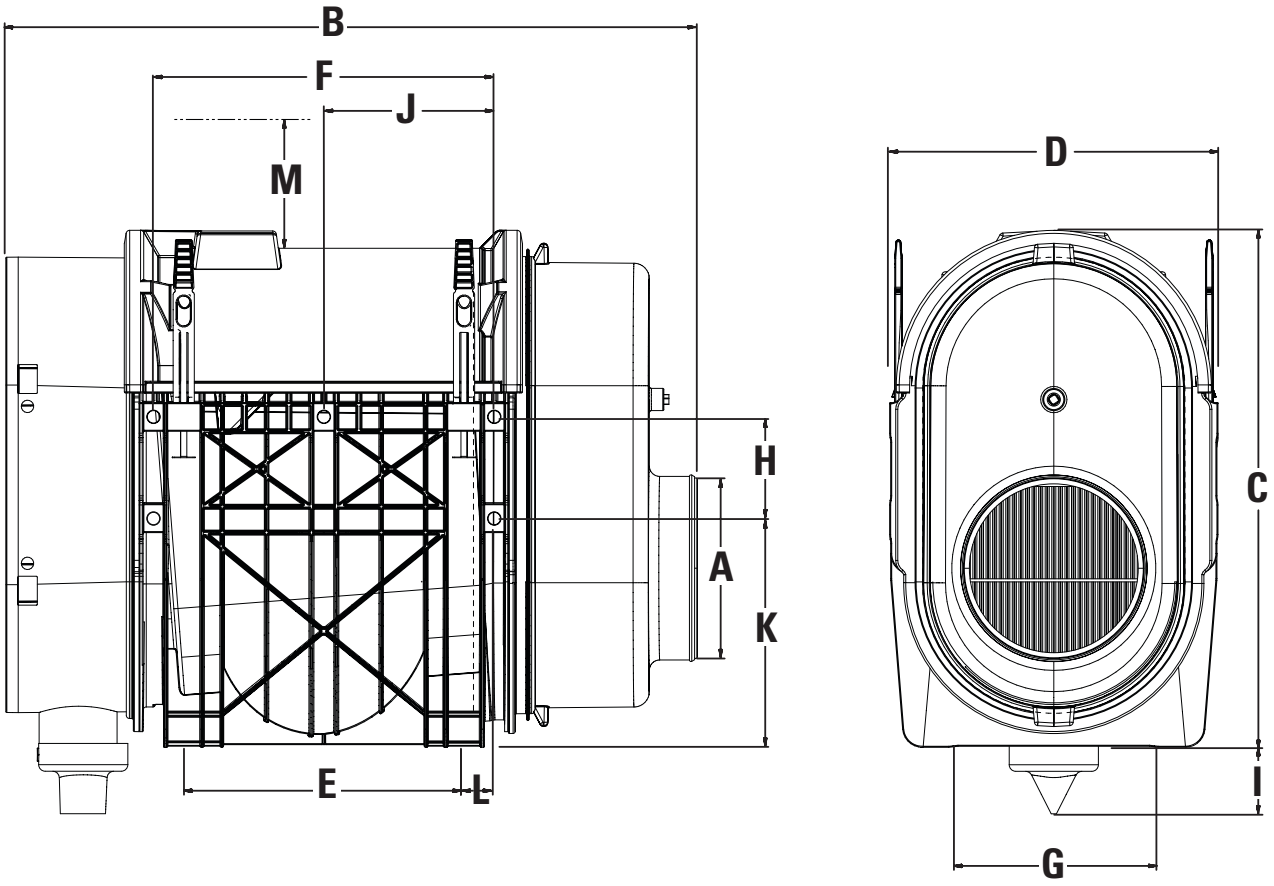
Orientation: H=Horizontal; V=Vertical

Part No. / Orientation	A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	G mm/in	H mm/in	I mm/in	Service Clearance (J) mm/in	Weight kg/lbs
MODELS WITH SERVICE ACCESS ON SIDE											
D080056 V	89/3.50	370/14.55	247/9.70	180/7.09	69/2.72	142/5.60	118/4.65	75/2.95	51.9/2.04	240/9.5	2.2/4.9
D090073 V	102/4.00	433/17.05	362/14.25	180/7.09	110/4.33	174/6.85	100/3.94	130/5.12	72/2.85	356/14.0	3.7/8.1
D090101 V	102/4.00	533/20.98	363/14.29	180/7.09	180/.09	183/7.21	100/3.94	130/5.12	70/2.75	356/14.0	4.3/9.5
D090120 H*	102/4.00	433/17.05	360/14.17	180/7.09	110/4.33	174/6.85	110/4.32	130/5.12	60/2.36	356/14.0	3.7/8.1
D090121 H	102/4.00	533/20.98	363/14.29	180/7.09	180/7.09	183/7.21	110/4.32	130/5.12	60/2.36	356/14.0	4.3/9.5
D090055 H*	102/4.00	432/17.00	363/14.31	180/7.09	110/4.33	173/6.83	100/3.94	130/5.12	68/2.68	330/13.0	5.0/11.0
D100029 V	127/5.00	429/16.90	374/14.74	254/10.01	110/4.33	165/6.50	110/4.33	110/4.33	63/2.48	356/14.0	5.3/11.7
D100030 H**	127/5.00	429/16.90	374/14.74	254/10.01	110/4.33	165/6.50	110/4.33	110/4.33	70/2.76	356/14.0	5.3/11.7
D100031 V	152/6.00	529/20.84	384/15.12	254/10.01	210/8.27	165/6.50	110/4.33	110/4.33	54/2.12	356/14.0	6.1/13.4
D100032 H***	152/6.00	529/20.84	384/15.12	254/10.01	210/8.27	165/6.50	110/4.33	110/4.33	70/2.76	356/14.0	6.1/13.4
D100068 H***	152/6.00	529/20.84	384/15.12	254/10.01	210/8.27	165/6.50	110/4.33	110/4.33	70/2.76	356/14.0	6.1/13.4
D100072 H**	127/5.00	429/16.90	374/14.74	254/10.01	110/4.33	165/6.50	110/4.33	110/4.33	70/2.76	356/14.0	5.3/11.7
D120035 V	152/6.00	496/19.53	430/16.93	306/12.04	168/6.62	160/6.30	154/6.08	110/4.33	68/2.68	405/16.0	7.0/15.5
D120036 H	152/6.00	496/19.53	430/16.93	306/12.04	168/6.62	160/6.30	154/6.08	110/4.33	68/2.68	405/16.0	7.0/15.5
D120037 V	152/6.00	596/23.46	441/17.36	306/12.04	268/10.56	160/6.30	154/6.08	110/4.33	68/2.68	405/16.0	7.9/17.4
D120038 H	152/6.00	596/23.46	441/17.36	306/12.04	268/10.56	160/6.30	154/6.08	110/4.33	68/2.68	405/16.0	7.9/17.4

* D090120 access cover is positioned 180° compared to the access cover location on the D090055.
** D100030 access cover and outlet tube are positioned 180° compared to access cover and outlet tube locations on the D100072.
*** D100032 access cover and outlet tube are positioned 180° compared to access cover and outlet tube locations on the D100068.

PowerCore® PSD Air Cleaners

PSD14 — Service Access on Side (Vertical Model Shown)



The PSD14 air cleaner MUST be mounted with nine U-clips — four on the side opposite the access cover and all five U-Clips on ONE of the two sides.

D140110 — Vertical

PSD14 Specifications (Letters are keyed to drawings)

Orientation: H=Horizontal; V=Vertical

Part No. / Orientation	A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	F mm/in	G mm/in	H mm/in	I mm/in	J mm/in	K mm/in	L mm/in	Service Clearance (M) mm/in	Weight kg/lbs
MODELS WITH SERVICE ACCESS ON SIDE														
D140110 V	178/7.00	670/26.37	501/19.71	318/12.52	272/10.68	330/13.0	230/9.00	98/3.87	65/2.53	165/6.5	222/8.75	29/1.2	460/18.1	11.4/25.0
D140111 H	178/7.00	670/26.37	501/19.71	318/12.52	272/10.68	330/13.0	230/9.00	98/3.87	66/2.60	165/6.5	222/8.75	29/1.2	460/18.1	11.4/25.0

Scavenge System Components

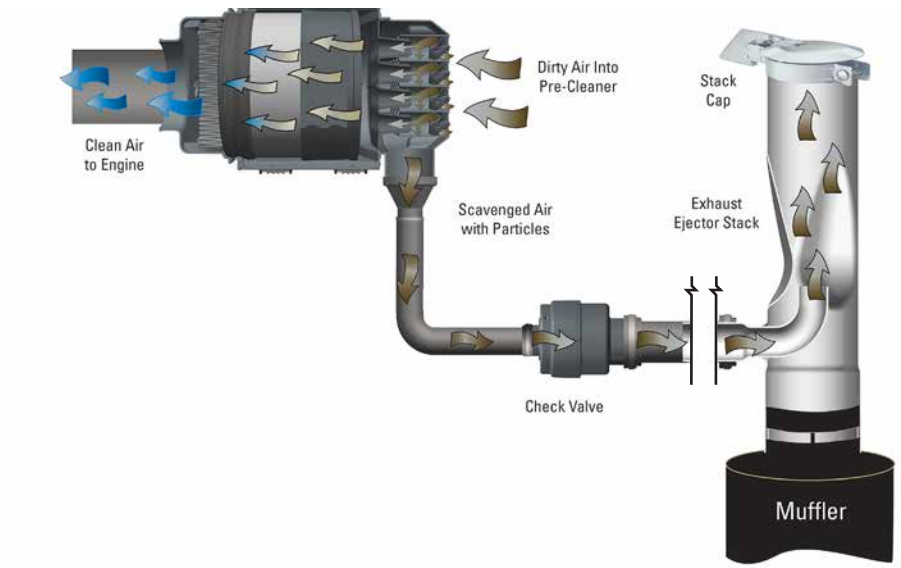
Scavenging, also known as aspirating, is accomplished by introducing a secondary airflow to the drop tube on the air cleaner — generally through the use of an ejector or ejector muffler (see illustration on right). This flow pulls the separated contaminant from the pre-cleaner and inserts it into the 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)

Exhaust ejectors, adapters (below), and check valves (next page) complement the PSD air cleaner product offering.

Illustration of Scavenge Connection with PSD10 Horizontal Model



Exhaust Ejectors

All exhaust ejectors are constructed of heavy-gauge, aluminized steel and painted with high-temperature black paint. Select the appropriate ejector by the intake airflow or exhaust flow (CFM) of your engine. These same parts and more information on ejectors can be found in the accessories section of this product guide.

Engine Intake CFM		Exhaust CFM @ 900 °F		Standard Ejectors			Expanded I.D. Ejectors			Length		Scavenge Tube O.D.	
				Inlet Dia.*		Part	Inlet Dia.*		Part				
Low	High	Low	High	inches	mm	Number	inches	mm	Number	inches	mm	inches	mm
220	365	554	919	3.02	77.0	H002612	3.16	80.3	H002762	12.00	304.8	1.25	32
315	450	793	1133	4.02	102.0	H002613	4.17	105.9	H002763	18.00	457.2	1.25	32
425	600	1070	1511	4.02	102.0	H002614	4.17	105.9	H002764	18.00	457.2	1.50	38
500	740	1259	1864	5.03	127.8	H002615	5.17	131.0	H002765	22.00	558.8	1.50	38
660	950	1662	2393	5.03	127.8	H002616	5.17	131.0	H002766	22.00	558.8	1.75	44
800	1150	2015	2896	6.04	153.4	H002617	6.19	157.0	H002767	24.00	609.6	2.00	51
950	1350	2393	3400	6.04	153.4	H002618	6.19	157.0	H002768	24.00	609.6	2.00	51
1100	1500	2770	3778	6.04	153.4	H002619	6.19	157.0	H002769	24.00	609.6	2.00	51

Scavenge Adapters

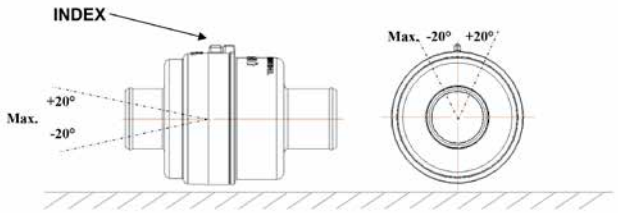
Straight Adapter

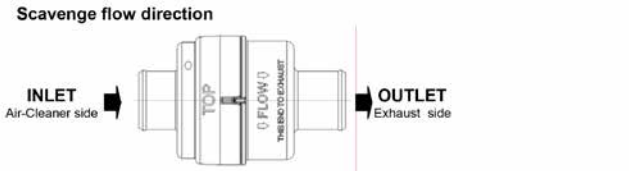
90° Adapter

Part Number	Adapter Type	Outlet Dia.		Diameter		Height	
		inches	mm	inches	mm	inches	mm
P783746	3" TO 1.50" STRAIGHT	1.50	38	3.00	78	2.68	68
P783747	3" TO 1.25" STRAIGHT	1.25	32	3.00	78	2.68	68
P783748	3" TO 2.00" STRAIGHT	2.00	50	3.00	78	2.68	68
P784019	3" TO 1.25" 90 DEGREE	1.25	32	3.00	78	2.68	68
P617276	3" TO 2.00" 90 DEGREE	2.00	50	3.00	78	2.20	56

Check Valve Operation and Orientation

- Prevents back flow of exhaust gas into pre-cleaner
- For proper installation, it is important that the index is installed upward and horizontal with no more than a 20° variation. See below.
- Install inline check valve as close as possible to the air cleaner
- Temperature resistance of 200 °C / 400 °F





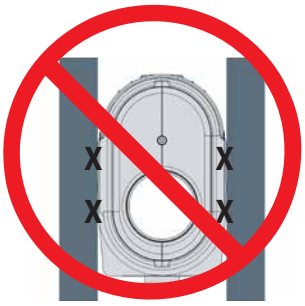
Part Number	Inlet Dia. inches	Inlet Dia. mm	Outlet Dia. inches	Outlet Dia. mm	Length inches	Length mm	Body Dia. inches	Body Dia. mm
P786337	1.25	32	1.25	32	4.45	113	2.80	71
P786340	1.50	38	1.50	38	4.45	113	2.80	71
P786343	2.00	50	2.00	50	4.45	113	2.80	71

Mounting Flexibility

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

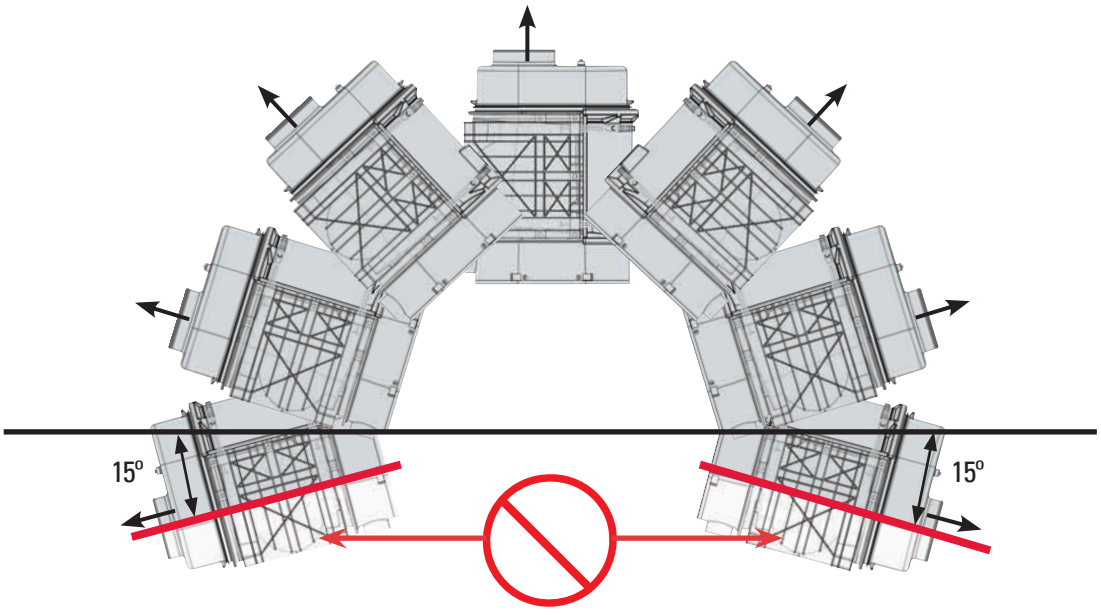
U-clips are shipped with each air cleaner. Affix these to the mounting location (all in the same direction) and slide the housing into place. See dimensional illustration for u-clip mounting hole pattern on pages 35 and 36.

The PSD air cleaner needs to be mounted to equipment on at least one mounting location (base, or either of two sides). It can also be mounted at two points, using the base and one side. It should not be mounted using the two side mounting locations — as this will cause pressure/flexing, and could result in leaks. (See illustration, on right. Xs represent u-clips mounted on both sides adjacent to the access cover.) The u-clips accept M8 threaded fasteners. Maximum torque is 18 N•m.



The PSD14 air cleaner MUST be mounted with nine U-clips — four on the side opposite the access cover and all five U-Clips on ONE of the two sides.

Mounting Orientation Guidelines

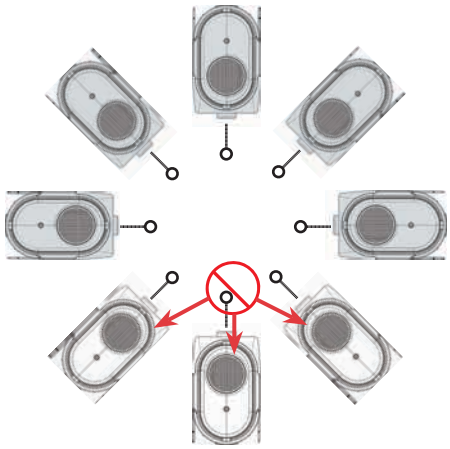


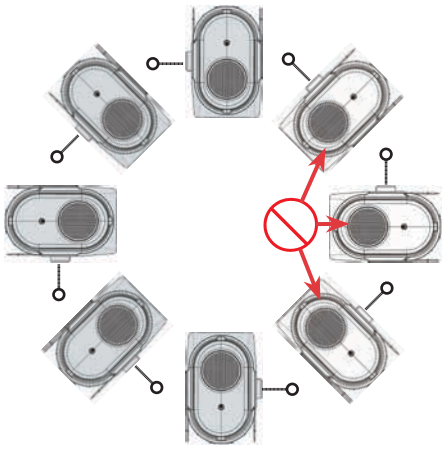
Outlet Position Side View

CAUTION: Outlet Tube Mounting Position

The outlet tube angled 15° below the horizontal axis could allow dust or foreign objects to fall into the air duct or engine during servicing.

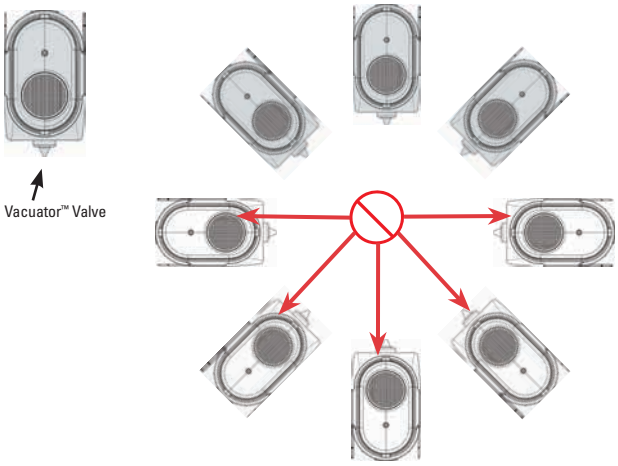
Scavenged System Mounting (shaded air cleaners indicate proper mounting positions; | indicates scavenge line direction)



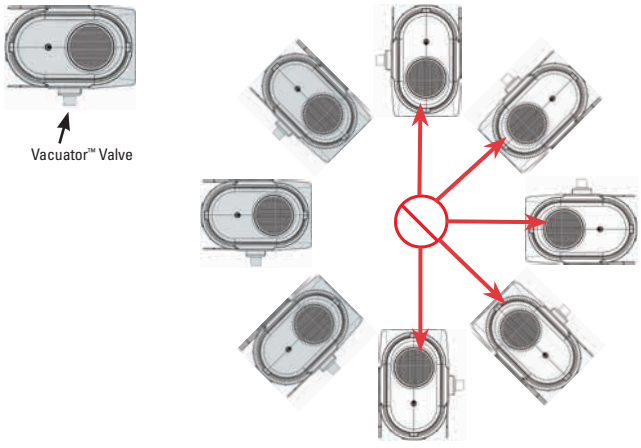


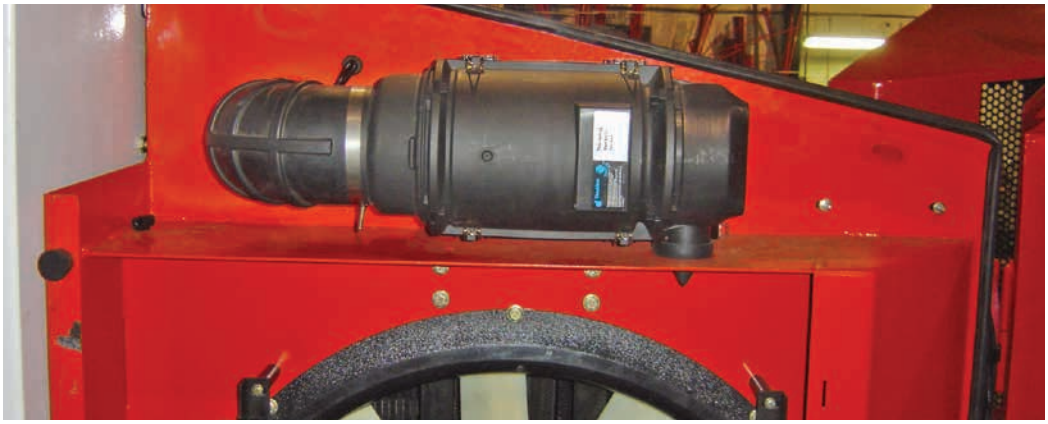
Non-Scavenged System Mounting with Vacuator™ Valve (shaded air cleaners indicate proper mounting positions)

Vertical PSD enlarged to show Vacuator™ Valve detail.



Horizontal PSD enlarged to show Vacuator™ Valve detail.





A PSD10 mounted horizontally was the equipment manufacturer's choice on this diesel-powered (285 HP @ 2,000 RPM) feller buncher.

PowerCore® PSD Air Cleaners

Donaldson FILTRATION SOLUTIONS

This servicing information is provided as a best practices guide. It is not intended to replace or supersede the service instructions supplied by your engine or vehicle manufacturer. Note: Your air cleaner service cover may be in a different position than shown.

1 Check the Restriction

Replace the filter only when the restriction level has reached the maximum recommended by the engine or equipment manufacturer or on a regular scheduled service.

2 Check Vacuator™ Valve & Pre-Cleaner Tubes

Shut off the engine. Inspect the Vacuator™ Valve (or scavenge line) for damage. If damaged, replace. If plugged or full of contaminant, check the pre-cleaner tubes, which should be free of contaminant. If plugged or excess contaminant is visible, the pre-cleaner tubes will need to be cleaned.

To clean the pre-cleaner tubes, remove the housing service cover and Vacuator Valve and leave the filter installed (to avoid dust from entering the air induction outlet). Use a low-volume of compressed air to gently blow out the separator tubes. The compressed air can be pushed through both sides of the tubes AND from the drop tube where the Vacuator Valve attaches.

If compressed air is not available or the use of compressed air was not effective due to dried contaminant within the housing, remove the air cleaner from the machine, cover the air intake pipe to prevent contaminant. Remove the primary and secondary filters and Vacuator Valve. Use a low pressure water (e.g., garden hose) to clean the tubes and inside of housing. Direct the flow of water through the separator tubes from both ends and repeat as needed to clean out the housing. Spray out the Vacuator Valve port, alternating between it and the separator tubes. Make sure that all internal housing surfaces are dry prior to reinstalling the filters, Vacuator Valve, and unit on the machine.

NEVER use a pressure sprayer to clean out the air cleaner housing while it is installed on the machine. Avoid using excessive pressure when spraying out the separator tubes as damage can occur.

3 Remove the Primary Filter

For end service pull the filter out of the housing.

For side service push down on the service handle to tilt the filter to a 5° angle. This will loosen the seal. Then, pull up on the service handle to remove the filter from the housing.

4 Visually Inspect the Safety Filter

Remove any excess dirt and wipe out the housing with a damp cloth before servicing the safety filter. Visually inspect the safety filter but do not remove it unless it is damaged or due for change-out. Verify that the safety filter is properly seated in the housing. The safety filter should be replaced every three primary filter changes.

The safety filter should be replaced every three primary filter changes.

5 Remove Safety Filter if Indicated or if Excessively Contaminated

To remove the safety filter, use the plastic handle on the face of the safety filter. Pull the filter toward the center of the housing and remove it. Ensure that the outlet tube sealing area is clean and undamaged. If the safety filter is removed and the new filter is not to be installed immediately, be sure to cover the seal tube with a cloth so that dirt is not admitted. After removing the safety filter, wipe the air cleaner housing interior and seal surfaces with a clean, damp cloth.

6 Inspect the New Filters

Visually check for cuts, tears or indentations on the sealing surfaces and the media pack before installation. If any damage is visible, do not install.

7 Replace the Safety Filter

If replacing the safety filter, use the plastic handle. Slide the filter at an angle into the outlet side and push it in place until the filter seats firmly and evenly within the housing.

On side-service access models, insert the safety filter tab into the positioning slot before pushing the filter into place.

8 Insert the Primary Filter

For end service access models, slide the primary filter into the housing until the gasket seats against the housing. For side service access models, slide the filter down at approximately a 5° angle until it makes contact with the end of the housing. Rotate the filter toward the outlet section to complete the seal.

9 Replace the Service Cover

For end service access models with hinge tabs, insert the hinge tabs into the housing, tilt the service cover into place and secure latches. For end service models without hinge tabs, put the service cover into place and secure the latches. For side-service access models, place the service cover in position and fasten the metal or rubber (PSD14) latches. If the cover doesn't seat, remove and re-check the filter position and access cover orientation.

10 Inspect the Entire Air Cleaner System

Make sure that inlet and outlet connections are in good condition. Torque to and do not exceed 40 in•lb. Replace rubber connectors if necessary and reset the service indicator.

Service Parts & Accessories

D080020, D080026	PSD
Cover (D080020)	P602985 ...3
Cover (D080026)	P601735 ...3
Elbow, 45°	P109331
Elbow, 90°	P114318
Filter, primary	P608533 ...3
Filter, safety	P600975 ...3
Hump hose	P114319
Informer™ indicator 25" H_2O	X002277
Latch	P776033 ...3
Outlet band clamp	P148342
Vacuator™ Valve	P158914 ...3

D080056	PSD
Cover	P615530 ...3
Elbow, 45°	P109331
Elbow, 90°	P114318
Filter, primary	P617631 ...3
Filter, safety	P615493 ...3
Hump hose	P114319
Informer™ indicator 25" H_2O	X002277
Latch	P776033 ...3
Outlet band clamp	P148342
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P617632 ...3

D090055, D090073	PSD
Cover	P785651 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608665 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D090101	PSD
Cover	P786989 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608675 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D090120	PSD
Cover	P785651 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608665 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D090121	PSD
Cover	P786989 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608675 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D100029, D100030, D100072	PSD
Cover	P784279 ...3
Cover, with watertight seal	P619481
Elbow, 45°	P109021
Elbow, 90°	P107844
Elbow, 90° reducing	P143895
Filter, primary	P608666 ...3
Filter, safety	P601560 ...3
Hump hose	P105610
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148345
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D100031, D100032, D100068	PSD
Cover	P784298 ...3
Cover, with watertight seal	P619482
Elbow, 45°	P105547
Elbow, 90°	P105535
Filter, primary	P608676 ...3
Filter, safety	P601560 ...3
Hump hose	P105612
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148347
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D120035, D120036	PSD
Cover	P608171 ...3
Elbow, 45°	P105547
Elbow, 90°	P105535
Filter, primary	P608667 ...3
Filter, safety	P607557 ...3
Hump hose	P105612
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148347
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D120037, D120038	PSD
Cover	P608180 ...3
Elbow, 45°	P105547
Elbow, 90°	P105535
Filter, primary	P608677 ...3
Filter, safety	P607557 ...3
Hump hose	P105612
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148347
U-clip (4 clips)	P784517 ...3
Vacuator™ Valve	P112803 ...3

D140110, D140111	PSD
Cover, with watertight seal	P623026 ...3
Elbow, 45°	P105548
Elbow, 90°	P105536
Elbow, 90° reducing	P215307
Filter, primary	P621983 ...3
Filter, safety	P621984 ...3
Hump hose	P105613
Informer™ indicator 25" H_2O	X002277
Latch	P629526 ...3
Outlet band clamp	P148348
U-clip (9 clips)	P622745 ...3
Vacuator™ Valve	P112803 ...3
Gasket	P623192

NOTES:

3 = Shipped with air cleaner initially

Air Filtration
for Tier IV Engines

PowerCore®
A Donaldson Filtration Technology

Quality
you expect

Performance
you need

Support
you won't find anywhere else

Donaldson Delivers

PSD AIR CLEANERS FOR CUMMINS ENGINE APPLICATIONS

Engine Model	Horsepower Range		Engine Size (L)	(CID)	Speed (RPM)	Est. Nom. Airflow CFM	Donaldson Air Cleaner
Agriculture, Construction/Industrial Equipment							
B3.3	74	85	3.3	201	2600	242	PSD08
B3.3	60	65	3.3	201	2600	136	PSD08
Agriculture, Construction/Industrial Equipment, Oil and Gas							
QSB3.3	75	110	3.3	201	2200	237	PSD08
QSB4.5 (Tier 4 Final)	121	173	4.5	275	2200	398	PSD09
QSB6.7 (Tier 4 Final)	146	310	6.7	409	2200	713	PSD10
QSC	205	305	8.3	506	2100	569	PSD10
QSF 2.8 (Tier 4 Final)	49	74	2.8	171	1600	170	PSD08
QSF 3.8 (Tier 4 Final)	74	130	3.8	232	2500	299	PSD09
QSL	250	365	8.9	543	2000	581	PSD10
QSL9 (Tier 4 Final)	250	400	9	549	2200	920	PSD14
QSM	290	400	10.8	659	2000	705	PSD10
QSX11.9	300	500	11.9	726	2200	855	PSD12
QSG12 (Tier 4 Final)	335	513	12	732	1900	1180	PSD14
QSX15 (Tier 4 Final)	450	675	15	912	2100	1553	PSD12 x 2
Construction/Industrial Equipment, Oil and Gas, Mining							
QSK19	506	700	19	1159	2000	1241	PSD14
QSK19	506	700	19	1159	2000	1610	PSD14
QSK50 (Tier 4 Final)	1487	2000	50	3661	1800	4600	PSD14 x 4
QSK60 (Tier 4 Final)	1875	2850	60	3066	1800	6555	PSD14 x 5
Heavy-duty Truck, RV, Emergency Vehicle							
ISX11.9	370	500	11.9	726	2100	816	PSD12
ISX15	455	600	15	915	2100	1029	PSD14
Medium-duty Truck, Bus, Emergency Vehicle							
ISB6.7	260	360	6.7	409	2600	569	PSD10
ISC8.3	270	380	8.3	506	2200	596	PSD10
ISL9	345	450	9	549	2200	647	PSD10
On-highway, European, Euro II							
ISMe	345	440	10.8	659	1900	670	PSD10
ISLe	350		8.9	543	2100	610	PSD10
ISBe — 6 Cylinder	275	285	6.7	409	2500	547	PSD10
On-highway, European, Euro III							
ISMe	335	420	10.8	659	1900	670	PSD10
ISLe	209	260	8.9	543	2100	610	PSD10
ISBe - 4 Cylinder	138	185	4.5	275	2500	367	PSD09
ISBe- 6 Cylinder	285	275	6.7	409	2500	547	PSD10
On-highway, European, Euro IV							
ISMe	350	445	10.8	659	1900	670	PSD10
ISLe	280	400	8.9	543	2100	610	PSD10
ISBe - 4 Cylinder	140	207	4.5	275	2500	367	PSD09
ISBe - 6 Cylinder	205	300	6.7	409	2500	547	PSD10
On-highway, European, Euro V							
ISMe	350	445	10.8	659	1900	670	PSD10
ISLe	280	400	8.9	543	2100	610	PSD10

Severe Duty Air Induction System Retrofit Kit

1999* – 2003 Ford F250-550 or Excursion with 7.3L Power Stroke® Diesel Engine

Application

1999* – 2003 Ford F250-550 or Excursion with 7.3L Power Stroke® Diesel Engine

Features

This retrofit air induction system kit is ideal for truck owners who operate their vehicle in dirty and dusty conditions and want longer filter service life and improved engine protection.

- Three times or more efficient compared to average Axial pleated or reusable wire mesh filters
- Straight-through airflow delivers powerful performance
- Improved engine protection — no media movement, expansion, contraction or bunching
- Improved contaminant encapsulation — during service the dust and dirt stay contained in the filter
- Installs in 30 – 45 minutes

Kit X007953 includes the air cleaner assembly, filter, duct, battery tray and blanket, fasteners, and installation instructions.

Order Information

Item	Donaldson Part No.	Ford Part No.	Motorcraft Part No.
Air Induction Retrofit Kit	X007953	2U2Z-9K635-AA	FA-1759
Air Filter	P606122	2U2Z-9601-BA	FA-1757

Other Filters for this Ford Vehicle available from Donaldson

Item	Donaldson Part No.	Ford Part No.	Motorcraft Part No.
Fuel Spin-on	P553375	E8TZ-9N184-A	FD-3375, FD-829
Fuel Cartridge	P550437	F81Z-9N184-AA	FD-4596
Lube Spin-on	P550371 P550784	F4TZ-6731-A E3TZ-6731-A	FL-1995 FL-784, FL-784FP

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Complete retrofit installation instructions are included with the X007953 kit (document no. P609001).

* Built after January 1, 1999

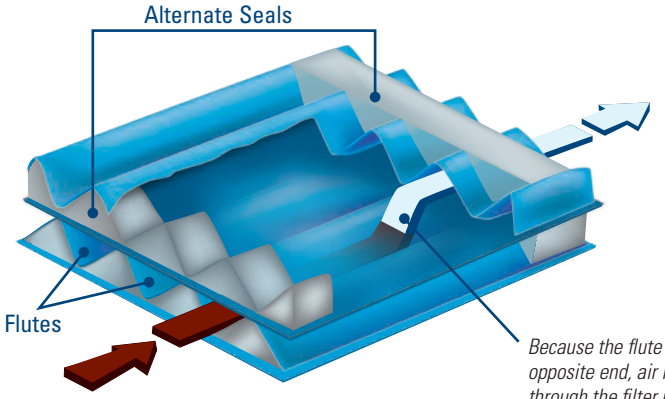
PowerCore®
A Donaldson Filtration Technology

PowerCore® air cleaners deliver . . .

- System design flexibility
- Metal-free, lightweight materials
- Rugged construction
- Straight-through airflow technology invented by Donaldson
- RadialSeal™ advanced sealing technology
- 3x more efficient than the average Axial pleated filter
- Ideal for light dust environments
- Connect the PCD to an external pre-cleaner for medium to heavy dust environments. (See page 177 for external pre-cleaner options.)

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

PowerCore® Straight-Through Airflow Schematic

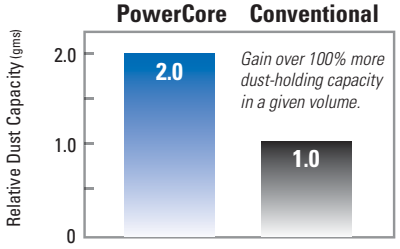


Clean Air
The filtered air exits the filter through a flute that is open on the clean air side of the filter.

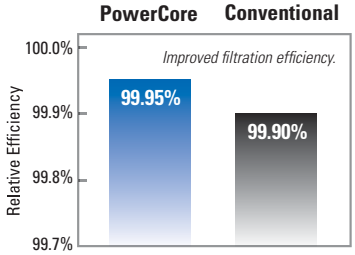
Because the flute is sealed on the opposite end, air is forced to pass through the filter media into an adjacent flute.

Dirty Air
Dirty air enters an open flute on the dirty air side of the filter.

Dust Holding Capacity



Overall Efficiency



PCD PowerCore Air Cleaner is Ideal for Light Dust Environments

PowerCore
A Donaldson Filtration Technology

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

This non-metal air cleaner (except for cover clamps) is ideal for equipment operating in light dust environments.

PCD09, PCD10

Exploded view of D090108

Applications

- Light dust conditions with engine airflow ranges up to 974 cfm.
- Obround housing shape allows for a narrow or wide mounting orientation.
- Models have side filter service access
- Sustained temperature tolerance: -40 °F to 180 °F / -40 °C to 82 °C

Features

- More compact at a given performance level than standard pleated filters
- Non-metal filters
- Improved engine protection: no media movement, expansion, contraction or bunching
- Improved contaminant encapsulation: dust and dirt stay contained in filter during service
- Improved handling and maintenance: lighter and smaller
- Easily serviced; no tools required to remove or replace cover, changing filters is a snap
- Built in mounting brackets eliminate the need to purchase separate mounting bands
- Available with either inline inlet/outlet or offset inlet/outlet. See images on next page.

Easy Service. *The filter can be easily removed with the built-in grab handle.*

Excellent Performance in Half the Space

Inlet/outlet orientation

D090108 Offset Inlet/Outlet

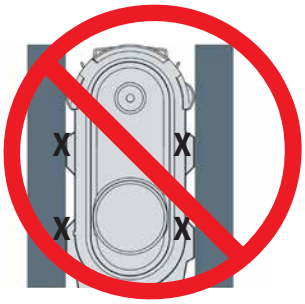
D090109 Inline Inlet/Outlet

Mounting Flexibility

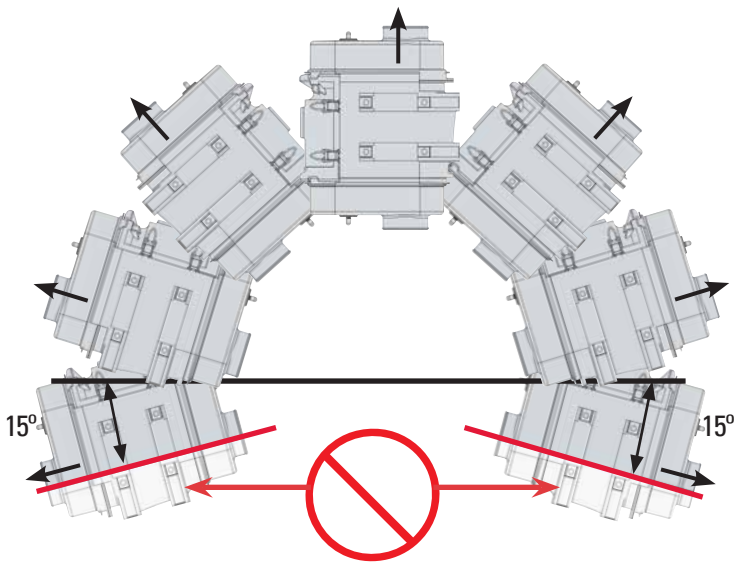
With mounting locations on three sides of the housing, the PCD series offers a great deal of flexibility for a wide variety of installations.

U-clips are shipped with each air cleaner. Affix these to the mounting location (all in the same direction) and slide the housing into place. See dimensional illustration for u-clip mounting hole pattern on page 50.

The PCD air cleaner needs to be mounted to equipment on at least one mounting location (base, or either of two sides). It can also be mounted at two points, using the base and one side. It should not be mounted using the two side mounting locations — as this will cause pressure/flexing, and could result in leaks. (See illustration, on right. Xs represent u-clips mounted on both sides adjacent to the access cover.) The u-clips accept M8 threaded fasteners. Maximum torque is 18 N•m.

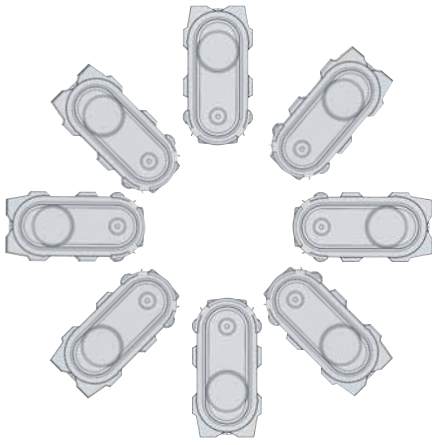


Mounting Orientation Guidelines



Outlet Position Side View

CAUTION: Outlet Tube Mounting Position
The outlet tube angled 15° below the horizontal axis could allow dust or foreign objects to fall into the air duct or engine during servicing.



Outlet Position Front View
Any Orientation is Acceptable

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

When Selecting an Air Cleaner . . .

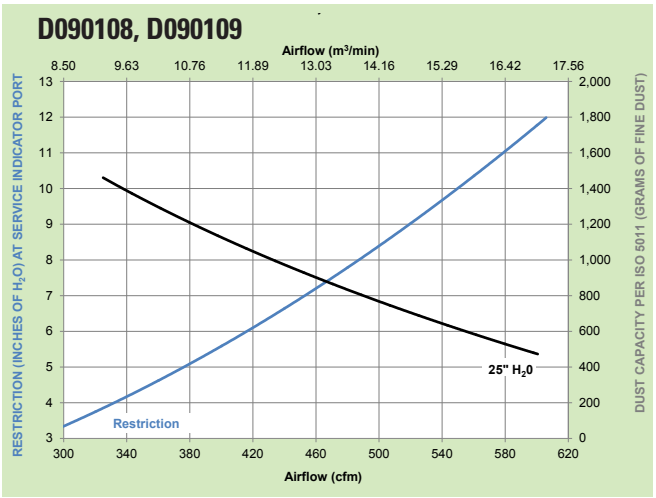
Determine the airflow requirements of your engine, then find the corresponding cfm airflow in the table below. The restriction numbers (shown in inches of water) indicate the approximate initial restriction of each model air cleaner at that cfm. If there are two air cleaner models that fit your parameters, choosing the one with the lower restriction will provide longer filter service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, and pre-cleaners. See pages 257-258 for ducting restriction estimates.

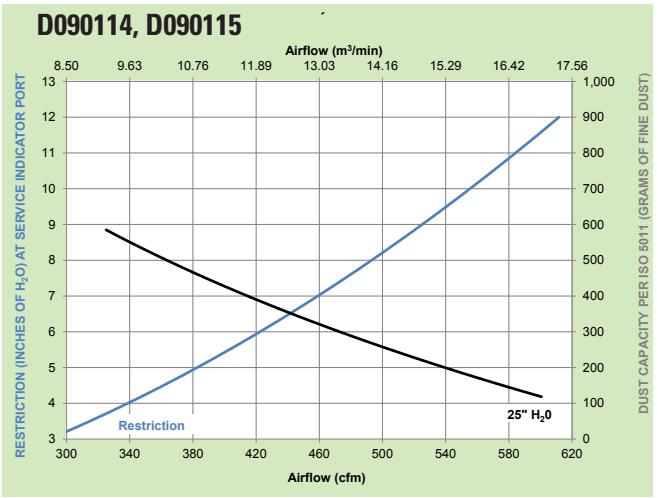
PCD Offset Inlet/Outlet Options

Initial Airflow Restriction

CFM @ "H_2O 6"	8"	10"	Air Cleaner Model
416	487	550	D090108
416	487	550	D090109
422	493	555	D090114
422	493	555	D090115
725	848	956	D100142
725	848	956	D100143
746	867	974	D100145
746	867	974	D100146

PCD Air Cleaner Performance Curves*

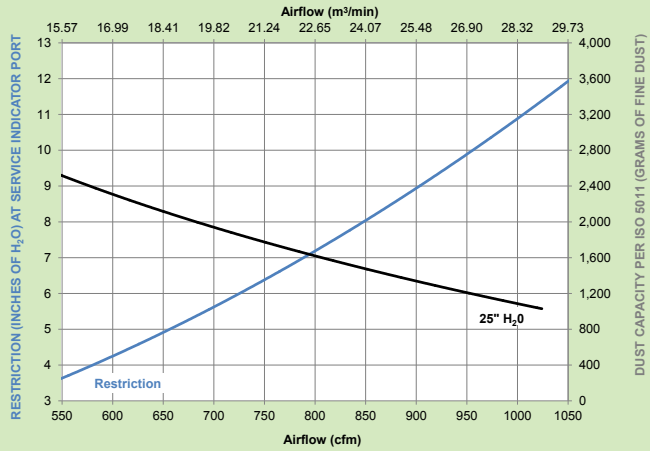




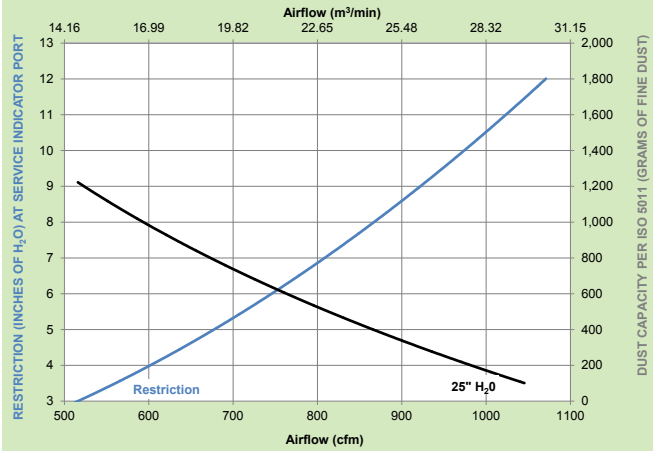
*Results generated using laboratory testing pursuant to ISO5011. Actual performance during use may vary depending on multiple factors, including specific product configuration, external conditions and application.

continued — PCD Air Cleaner Performance Curves

D100142 D100143



D100145 D100146



Service Parts & Accessories

D090114, D090115	PCD
Cover	P785651 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608665 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3

D090108, D090109	PCD
Cover	P786989 ...3
Elbow, 45°	P105545
Elbow, 90°	P105533
Elbow, 90° reducing	P121482
Filter, primary	P608675 ...3
Filter, safety	P606121 ...3
Hump hose	P105609
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148343
U-clip (4 clips)	P784517 ...3

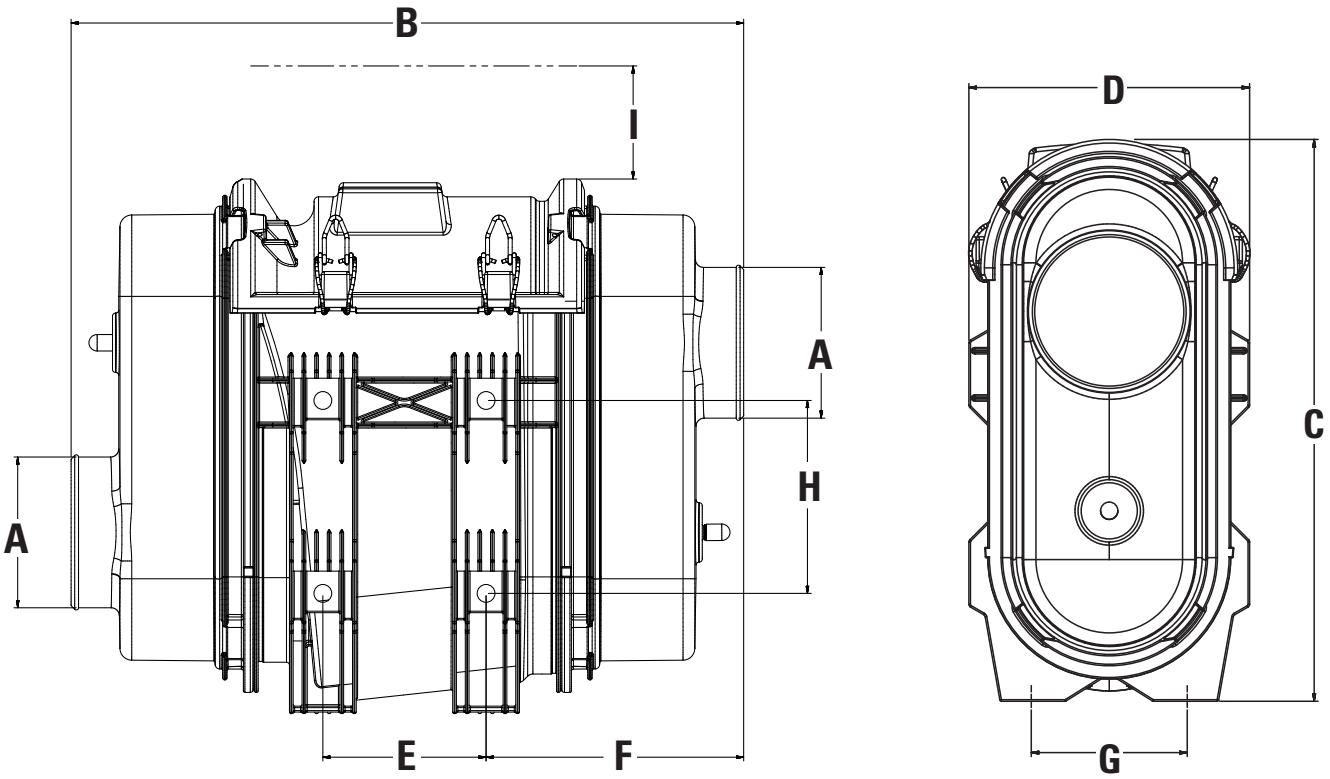
D100145, D100146	PCD
Cover	P784279 ...3
Cover, with watertight seal	P619481
Elbow, 45°	P109021
Elbow, 90°	P107844
Elbow, 90° reducing	P143895
Filter, primary	P608666 ...3
Filter, safety	P601560 ...3
Hump hose	P105610
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148345
U-clip (4 clips)	P784517 ...3

D100142, D100143	PCD
Cover	P784298 ...3
Cover, with watertight seal	P619482
Elbow, 45°	P109021
Elbow, 90°	P107844
Filter, primary	P608676 ...3
Filter, safety	P601560 ...3
Hump hose	P105610
Informer™ indicator 25" H_2O	X002277
Latch	P777366 ...3
Outlet band clamp	P148345
U-clip (4 clips)	P784517 ...3

NOTES:
3 = Shipped with air cleaner initially

PowerCore® PCD Air Cleaners

PCD09, PCD10



Note: a minimum service clearance of 50mm (2.00") is required for wire latches.

PCD09

PCD10

PCD09, PCD10 Specifications (Letters are keyed to drawings)

Inlet Orientation: I=Inline; O=Off-set

Part No. / Orientation	A		B		C		D		E		F		G		H		Service Clearance (I)		Weight	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
D090108 O	102	4.00	553	21.77	365	14.37	180	7.09	180	7.09	183	7.21	100	3.94	130	5.12	356	14.0	4.8	10.5
D090109 I	102	4.00	553	21.77	365	14.37	180	7.09	180	7.09	183	7.21	100	3.94	130	5.12	356	14.0	4.8	10.5
D090114 O	102	4.00	453	17.85	360	14.18	180	7.09	110	4.33	173	6.83	100	3.94	130	5.12	330	13.0	4.1	9.1
D090115 I	102	4.00	453	17.85	360	14.18	180	7.09	110	4.33	173	7.21	100	3.94	130	5.12	330	13.0	4.1	9.1
D100142 O	127	5.00	536	21.10	384	15.12	254	10.01	210	8.27	165	6.50	110	4.33	110	4.33	356	14.0	5.9	13.0
D100143 I	127	5.00	536	21.10	384	15.12	254	10.01	210	8.27	165	6.50	110	4.33	110	4.33	356	14.0	5.9	13.0
D100145 O	127	5.00	436	17.17	375	14.75	254	10.01	110	4.33	165	6.50	110	4.33	110	4.33	356	14.0	5.2	11.4
D100146 I	127	5.00	436	17.17	375	14.75	254	10.01	110	4.33	165	6.50	110	4.33	110	4.33	356	14.0	5.2	11.4

This servicing information is provided as a best practices guide. It is not intended to replace or supersede the service instructions supplied by your engine or vehicle manufacturer. Note: Your air cleaner service cover may be in a different position than shown.

1 Check the Restriction

Replace the filter only when the restriction level has reached the maximum recommended by the engine or equipment manufacturer or on a regular scheduled service.

2 Remove the Primary Filter

Push down on the service handle to tilt the filter to a 5° angle. This will loosen the seal. Then, pull up on the service handle to remove the filter from the housing.

3 Visually Inspect the Safety Filter

Remove any excess dirt and wipe out the housing with a damp cloth before servicing the safety filter. Visually inspect the safety filter but do not remove it unless it is damaged or due for change-out. Verify that the safety filter is properly seated in the housing. The safety filter should be replaced every three primary filter changes.

NEVER use a pressure sprayer to clean out the air cleaner housing while it is installed on the machine.

4 Remove Safety Filter if Indicated or if Excessively Contaminated

To remove the safety filter, use the plastic handle on the face of the safety filter. Pull the filter toward the center of the housing and remove it. Ensure that the outlet tube sealing area is clean and undamaged. If the safety filter is removed and the new filter is not to be installed immediately, be sure to cover the seal tube with a cloth so that dirt is not admitted. After removing the safety filter, wipe the air cleaner housing interior and seal surfaces with a clean, damp cloth.

5 Inspect the New Filters

Visually check for cuts, tears or indentations on the sealing surfaces and the media pack before installation. If any damage is visible, do not install.

The safety filter should be replaced every three primary filter changes.

Continued on next page