

**PowerCore® Filtration Technology Delivers Improved Filtration Performance**

**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

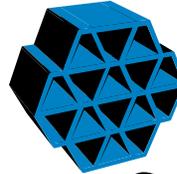
**Design Differentiation**

The design of the U.S. and internationally patented housings, filters and filter media are key to Donaldson PowerCore Filtration Technology (additional patents pending).

Donaldson has been manufacturing air cleaners with PowerCore Filtration Technology since 1999. There are millions of filters installed on various types of equipment throughout the world.

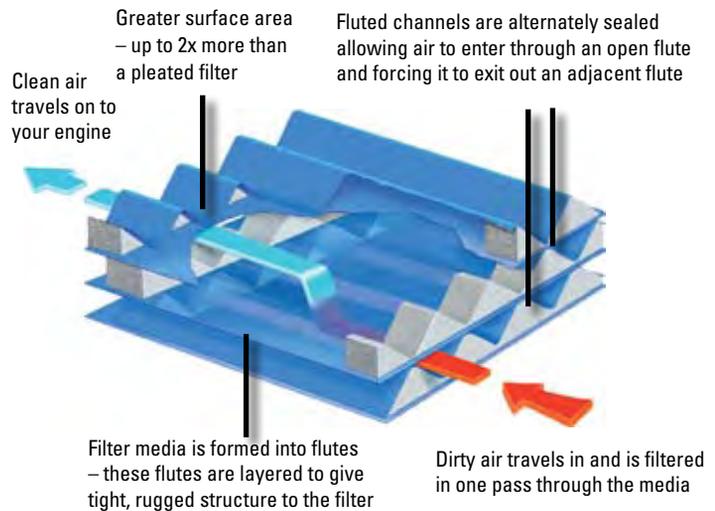
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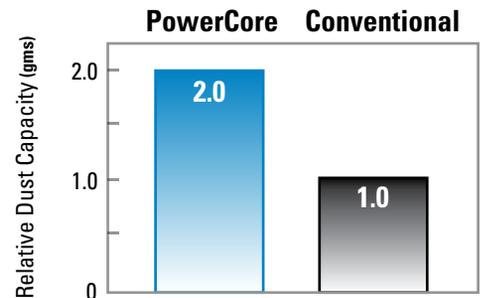
**PowerCore**  
A DONALDSON FILTRATION TECHNOLOGY

**PowerCore Filtration Technology**



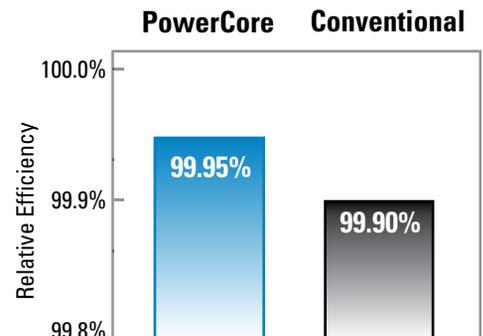
**Dust Holding Capacity**

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



**Overall Efficiency**

*Improved filtration efficiency.*



## Millions of PowerCore® Filters Installed on Original Equipment! Three times more efficient than average conventional pleated paper filters

This new 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.

### When you request PowerCore Filtration Technology, you will gain...

**Equal or better performance in a small package** – the freedom to design unique configurations to fit tight spots and overall design simplicity.

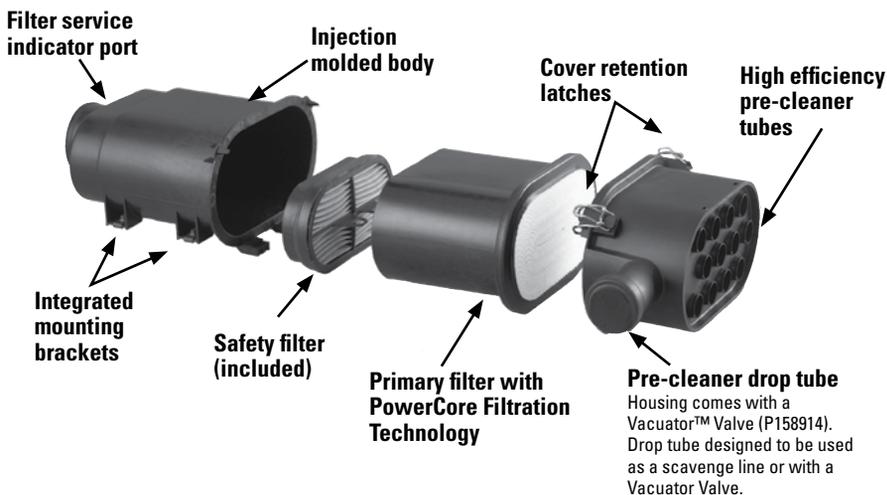
**Donaldson reliability** - backed by nearly a century of innovation and experience. Donaldson supplies air filtration products to almost every vehicle manufacturer.

**Lower shipping and inventory costs** – PowerCore filters are lighter and take up less shelf space.

Donaldson PowerCore® products are protected internationally by patents, trademarks, and design registrations, both issued and pending.

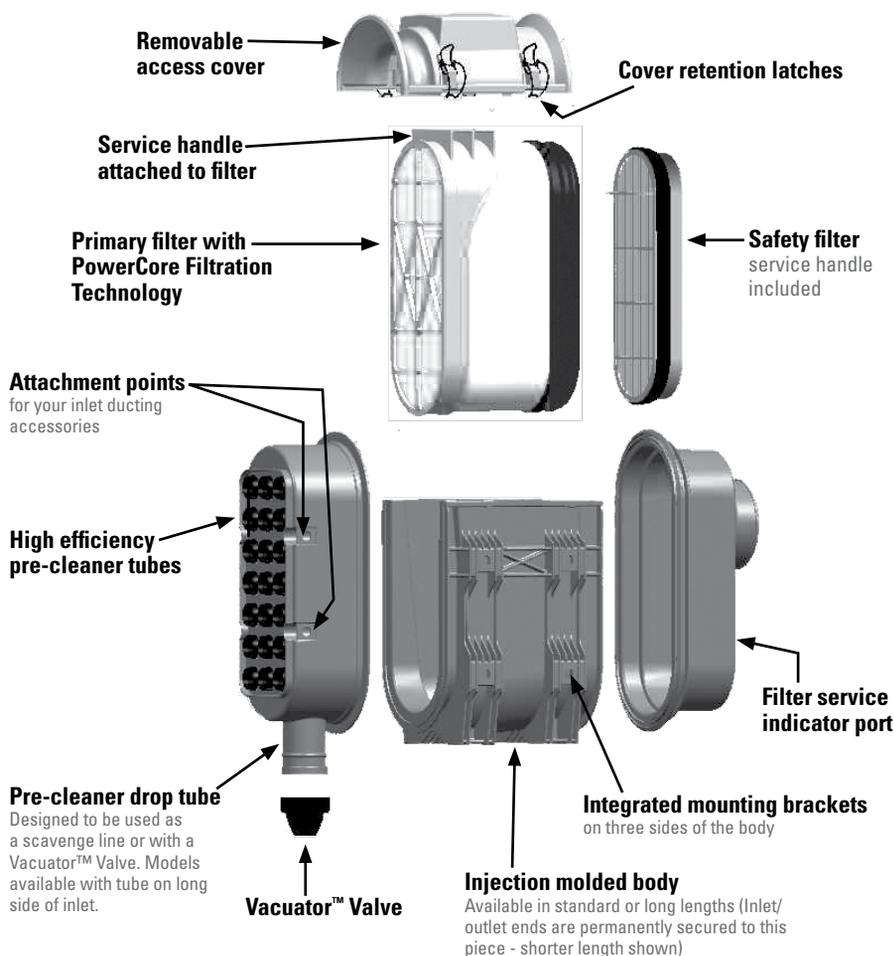
### Service Access on Inlet End - PSD08

*Exploded view is of D080020. For tube on long side of inlet end (opposite clamps), consider D080026.*



### Service Access on Side - PSD08, PSD09, PSD10 and PSD12

*Exploded view is of D090019 model. For tube on long side of inlet end, consider D090020 or D090022.*



## Excellent Performance in Half the Space

### Applications

- Off-road equipment operating in medium to heavy dust conditions with engine airflow ranges up to 915 cfm
- Obround housing shape allows for a narrow or wide mounting orientation. Models have either end or side filter service access
- Sustained temperature tolerance: -40° to 180°F / -40° to 82°C

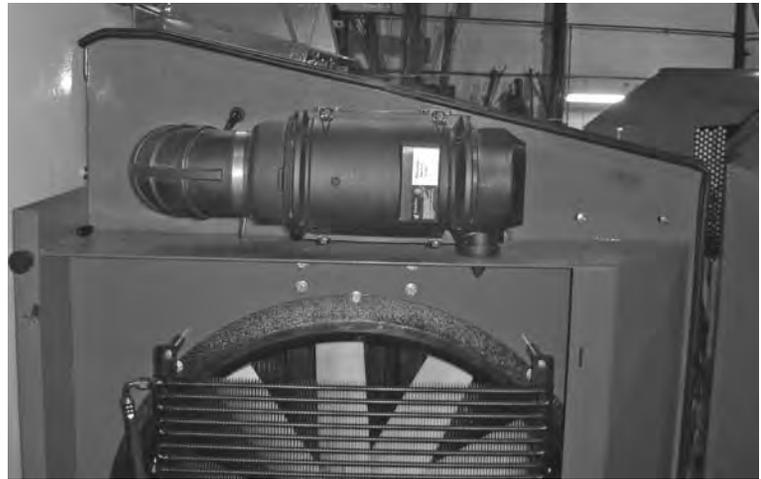
### Features

- More compact at a given performance level than standard pleated filters
- Non-metal filters - both primary 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



The filter on the side service access models can be easily removed with the built-in grab handle.

- Easily serviced with clamp-on cover design
- Can be used with scavenge line or Vacuator™ Valve depending on housing orientation
- Built in mounting brackets eliminate the need to purchase separate mounting bands



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



D080020 - Horizontal



D080056 - Vertical



### Mounting Flexibility

With mounting brackets 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.



D090020 - Horizontal



D090019 - Vertical



D100072 - Horizontal



D100029 - Vertical

Four 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.



## When spec'ing an Air Cleaner . . .

Determine the airflow requirements of your engine, then find the corresponding cfm airflow in the table at right. 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 lowest restriction will provide longest filter service life. When calculating total initial restriction of the entire air intake system, include the restriction caused by ducting, elbows, pre-cleaners, etc.

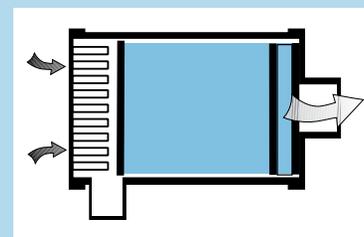
### Initial Airflow Restriction

| 6"                                       | CFM @ "H <sub>2</sub> O |     | Air Cleaner Model |
|--|-------------------------|-----|-------------------|
|  | 8"                      | 10" |                   |
| <b>MODELS WITH SERVICE ACCESS ON END</b> |                         |     |                   |
| 176                                      | 206                     | 232 | D080020           |
| 176                                      | 206                     | 232 | D080026           |
| 180                                      | 216                     | 245 | D080056           |

| <b>MODELS WITH SERVICE ACCESS ON SIDE</b> |     |     |         |
|---|-----|-----|---------|
| 267                                       | 315 | 357 | D090019 |
| 267                                       | 315 | 357 | D090020 |
| 267                                       | 315 | 357 | D090021 |
| 267                                       | 315 | 357 | D090022 |
| 267                                       | 315 | 357 | D090055 |
| 500                                       | 580 | 652 | D100029 |
| 500                                       | 580 | 652 | D100030 |
| 500                                       | 580 | 652 | D100072 |
| 532                                       | 622 | 700 | D100031 |
| 532                                       | 622 | 700 | D100032 |
| 532                                       | 622 | 700 | D100068 |

### Airflow Pattern "D"

Air in the end, out opposite end



| 6"  | CFM @ "H <sub>2</sub> O |     | Air Cleaner Model |
|-----|-------------------------|-----|-------------------|
|     | 8"                      | 10" |                   |
| 700 | 810                     | 915 | D120035           |
| 700 | 810                     | 915 | D120036           |
| 700 | 810                     | 915 | D120037           |
| 700 | 810                     | 915 | D120038           |

## 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:

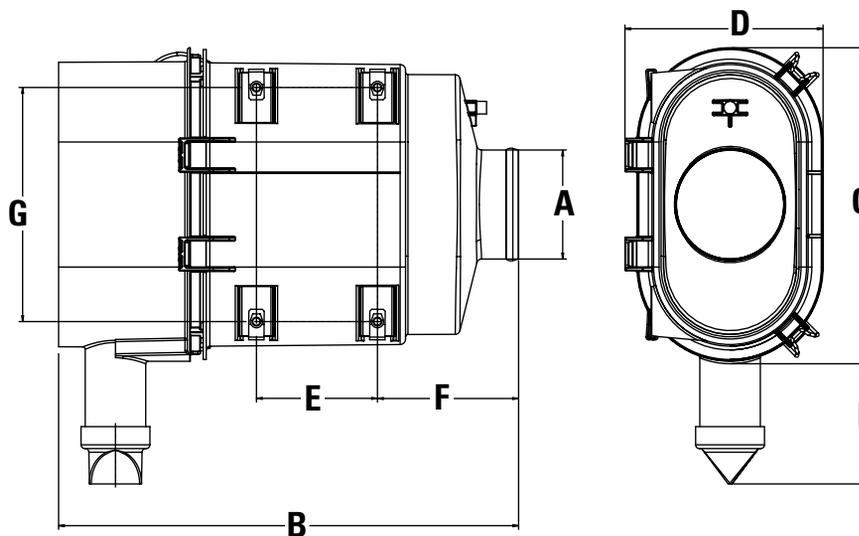
- Higher pre-cleaner efficiency (resulting in longer filter service life)
- Completely self-servicing (no regular maintenance needed on pre-cleaner)
- Drop tube can be located in a variety of orientations (not just straight down as is necessary on non-scavenged systems)

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 Specification Illustrations

### PSD08 Models - Service Access on End (Vertical Model Shown)



Adapters replace the Vacuator Valve on PSD air cleaners to allow for scavenge line. For available, Contact Donaldson for availability.

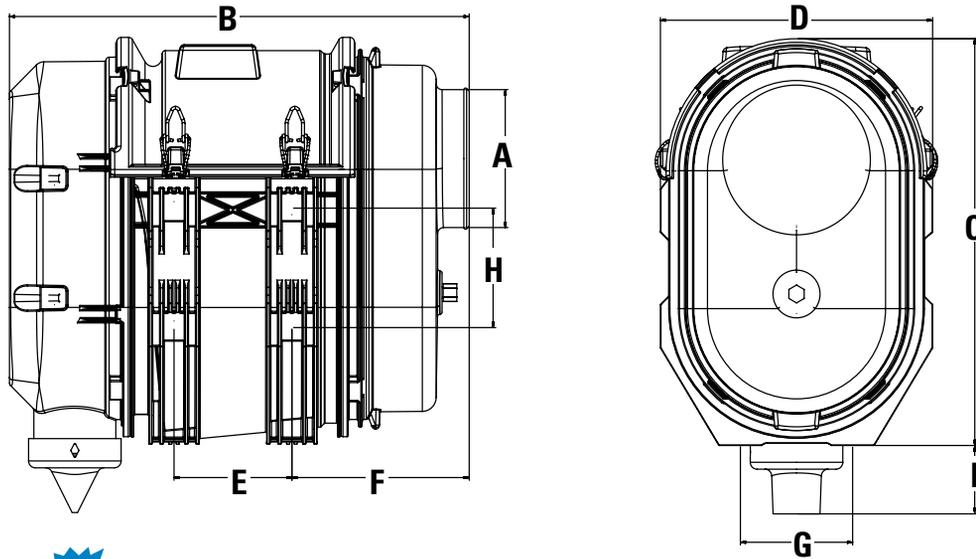


D080020 - Horizontal



D080026 - Vertical

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



**PSD Specifications** (Letters are keyed to drawings)

Orientation: H=Horizontal; V=Vertical

| Part No. / Orientation                    | A  |     | B    |     | C     |     | D     |     | E     |     | F     |     | G    |     | H    |     | I    |    | Weight |     |      |
|---|----|-----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|------|-----|------|-----|------|----|--------|-----|------|
|   | mm | in  | mm   | in  | mm    | in  | mm    | in  | mm    | in  | mm    | in  | mm   | in  | mm   | in  | mm   | in | kg     | lbs |      |
| <b>MODELS WITH SERVICE ACCESS ON END</b>  |    |     |      |     |       |     |       |     |       |     |       |     |      |     |      |     |      |    |        |     |      |
| 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   | 2.2 | 4.8  |
| D080026                                   | V  | 89  | 3.50 | 380 | 14.97 | 256 | 10.07 | 154 | 6.05  | 100 | 3.94  | 117 | 4.59 | 191 | 7.50 | --- | ---  | 98 | 3.87   | 2.2 | 4.8  |
| <b>MODELS WITH SERVICE ACCESS ON SIDE</b> |    |     |      |     |       |     |       |     |       |     |       |     |      |     |      |     |      |    |        |     |      |
| 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 |    |        | 2.2 | 4.9  |
| D090019                                   | V  | 102 | 4.00 | 432 | 17.00 | 363 | 14.31 | 180 | 7.09  | 110 | 4.33  | 173 | 6.83 | 100 | 3.94 | 130 | 5.12 | 67 | 2.62   | 3.7 | 8.1  |
| D090020                                   | 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 | 83 | 3.26   | 3.7 | 8.1  |
| D090021                                   | V  | 102 | 4.00 | 532 | 20.96 | 372 | 14.66 | 180 | 7.09  | 180 | 7.09  | 173 | 6.83 | 100 | 3.94 | 130 | 5.12 | 58 | 2.27   | 4.3 | 9.5  |
| D090022                                   | H  | 102 | 4.00 | 532 | 20.96 | 372 | 14.66 | 180 | 7.09  | 180 | 7.09  | 173 | 6.83 | 100 | 3.94 | 130 | 5.12 | 83 | 3.26   | 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   | 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   | 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   | 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   | 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   | 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   | 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   | 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   | 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   | 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   | 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   | 7.9 | 17.4 |

\* Access cover and outlet tube rotated 180° compared to view shown in the D100072 photo above.

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

**Side Service Access Models**  
PSD08, PSD09, PSD10  
or PSD12 Style

**End Service Access Models**  
PSD08 Style



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



**2 Remove primary filter.** Pull the filter out of housing. For side service access models: 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.

Note: Remove any excess dirt and white out the housing before removing the safety (or secondary) filter.



**3 Remove safety/secondary 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/secondary 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.

**Side Service Access Models**  
PSD08, PSD09, PSD10  
or PSD12 Style

**End Service Access Models**  
PSD08 Style



Safety Filter  
Positioning Tab Location



Plastic Handle

**5 If replacing safety/secondary filter,** use 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.

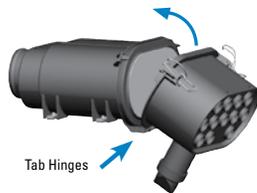
*Note: On side service access models, insert the safety filter tab into the positioning slot before pushing the filter in place.*



**6 Insert the primary filter.**

For end service access (PSD08) models, slide the 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 hits the end of the housing. Rotate the filter toward the outlet section to complete the seal.



Tab Hinges

**7 Replace the service cover.**

For end service access (PSD08) models, insert the hinge tabs into the housing, tilt the service cover into place and secure latches. For side service access models, 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.

## Service Parts

### PSD08

#### D080020 and D080026

|                                 |         |
|---------------------------------|---------|
| Filter, Primary.....            | P608533 |
| Filter, Safety .....            | P600975 |
| Latch.....                      | P776033 |
| Cover (D080026-Vertical) .....  | P601735 |
| Cover (D080020-Horizontal)..... | P602985 |
| Vacuator Valve .....            | P158914 |

#### D080056

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P617631 |
| Filter, Safety .....  | P615493 |
| Latch.....            | P776033 |
| Cover .....           | P615530 |
| Vacuator Valve .....  | P617632 |
| U-clip (4 clips)..... | P784517 |

### PSD09

#### D090019 and D090020

|                       |         |
|-----------------------|---------|
| Filter, Primary ..... | P608665 |
| Filter, Safety .....  | P606121 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P158914 |
| Cover .....           | P609550 |
| U-clip (4 clips)..... | P784517 |

#### D090021 and D090022

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P608675 |
| Filter, Safety .....  | P606121 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P158914 |
| Cover .....           | P609552 |
| U-clip (4 clips)..... | P784517 |

#### D090055

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P608665 |
| Filter, Safety .....  | P606121 |
| Latch.....            | P784506 |
| Vacuator Valve .....  | P112803 |
| Cover .....           | P785651 |
| U-clip (4 clips)..... | P784417 |

### PSD10

#### D100029, D100030 and D100072

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P608666 |
| Filter, Safety .....  | P601560 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P112803 |
| Cover .....           | P784279 |
| U-clip (4 clips)..... | P784517 |

#### D100031, D100032 and D100068

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P608676 |
| Filter, Safety .....  | P601560 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P112803 |
| Cover .....           | P784298 |
| U-clip (4 clips)..... | P784517 |

### PSD12

#### D120035 and D120036

|                       |         |
|-----------------------|---------|
| Filter, Primary.....  | P608667 |
| Filter, Safety .....  | P607557 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P112803 |
| Cover .....           | P608171 |
| U-clip (4 clips)..... | P784517 |

#### D120037 and D120038

|                       |         |
|-----------------------|---------|
| Filter Primary.....   | P608677 |
| Filter, Safety .....  | P607557 |
| Latch.....            | P777366 |
| Vacuator Valve .....  | P112803 |
| Cover .....           | P608180 |
| U-clip (4 clips)..... | P784517 |