

Air Cleaners

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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

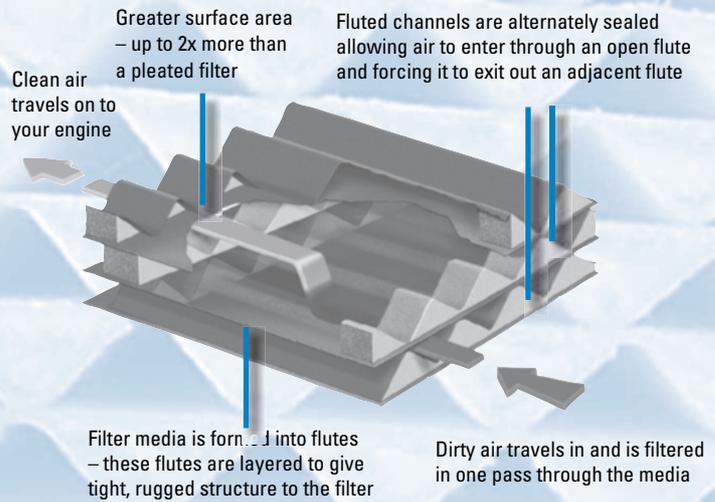
Dust and dirt won't dislodge during servicing

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).

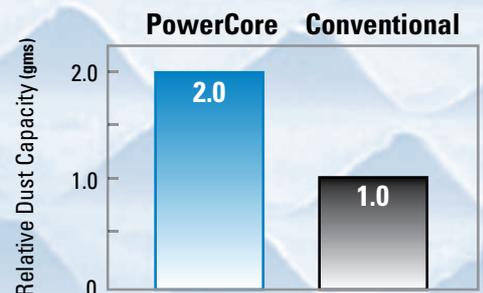
Donaldson has been manufacturing air cleaners with PowerCore Filtration Technology since 1999. There are millions of filters installed on various types of equipment throughout the world.

PowerCore Filtration Technology



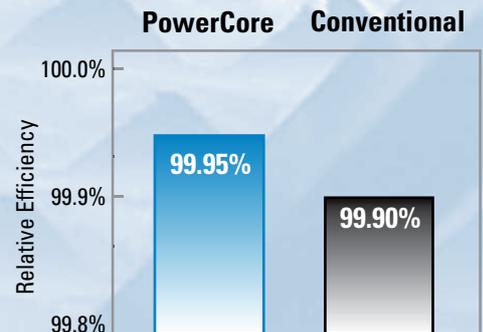
Dust Holding Capacity

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 medium- and heavy-duty equipment operating in light to medium 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.

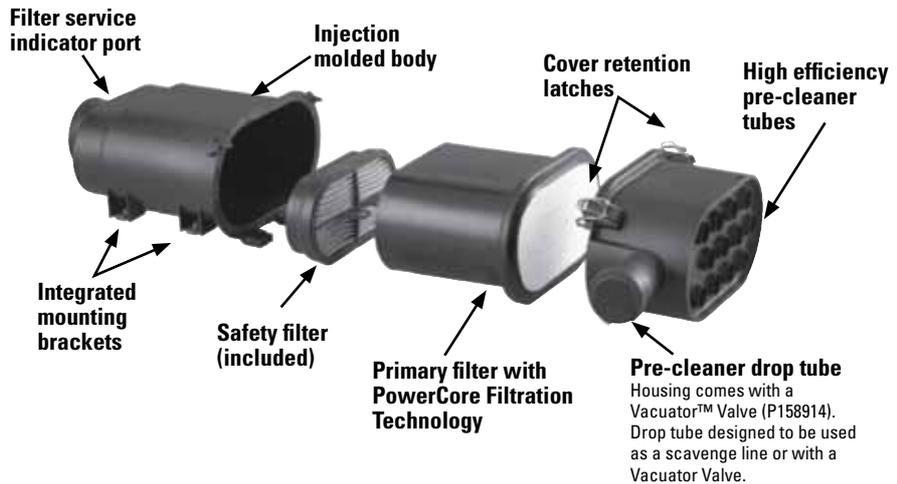
Donaldson reliability - backed by nearly a century of innovation and experience. Donaldson supplies air filtration products to almost every vehicle manufacturer.

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.

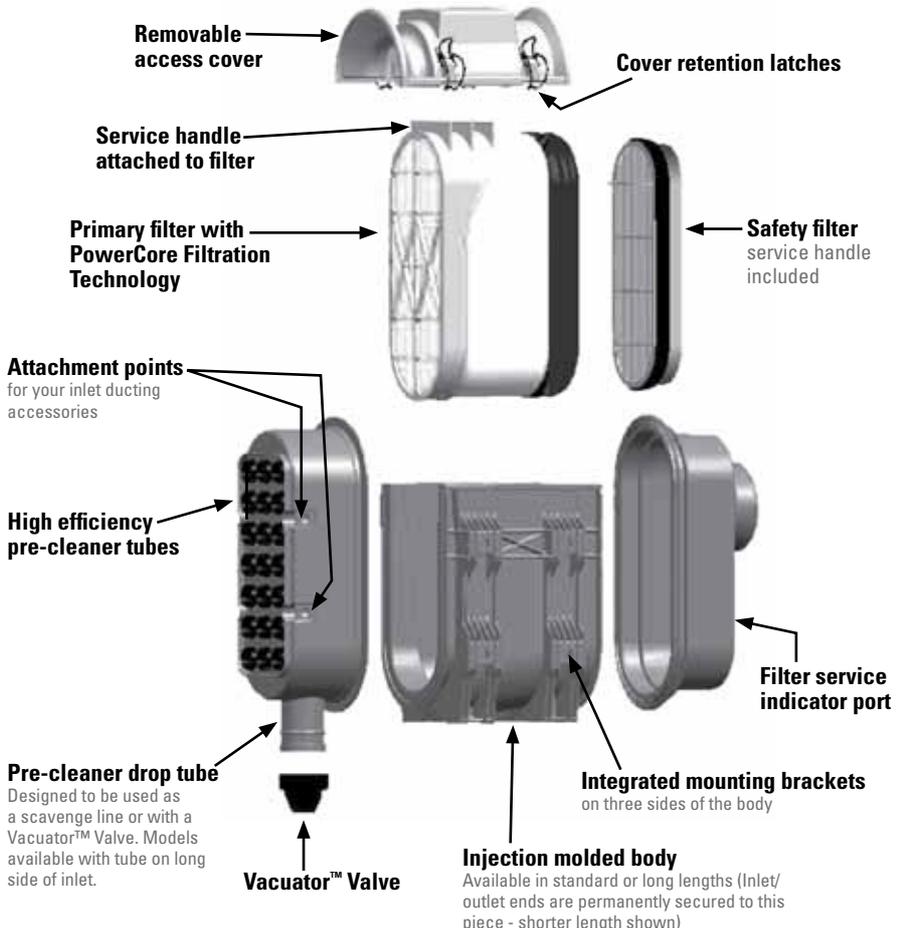
Service Access on Inlet End - PSD08

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



Service Access on Side - 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 700 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

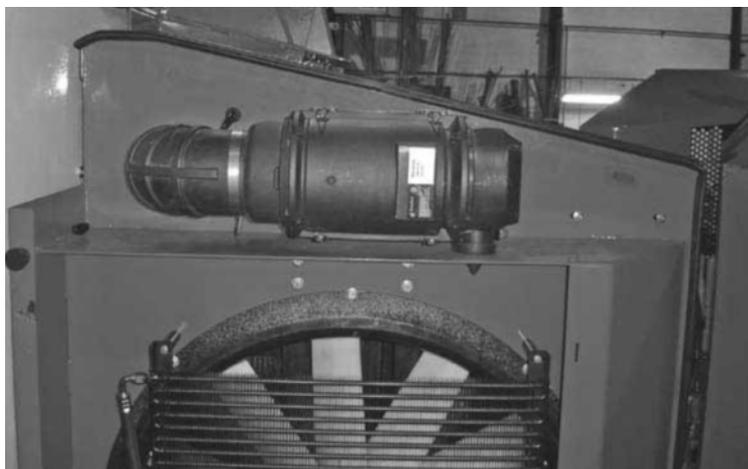
Features

- 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 PSD09, PSD10, and PSD12 filter 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



D080026 - Vertical

Mounting Flexibility

The PSD08 air cleaner is available with two separate drop tube in orientations and built-in mounting brackets on the longer side 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.



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 specifying an Air Cleaner . . .

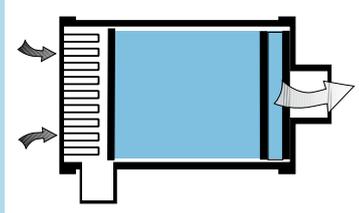
Determine the airflow requirements of your engine, then find the corresponding cfm airflow in the table at right. The restriction numbers (shown in inches of water) indicate the approximate initial restriction of each model air cleaner at that cfm. If there are two air cleaner models that fit your parameters, 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

CFM @ "H ₂ O			Air Cleaner Model
6"	8"	10"	
MODELS WITH SERVICE ACCESS ON END			
176	206	232	D080020
176	206	232	D080026
MODELS WITH SERVICE ACCESS ON SIDE			
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



CFM @ "H ₂ O			Air Cleaner Model
6"	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:

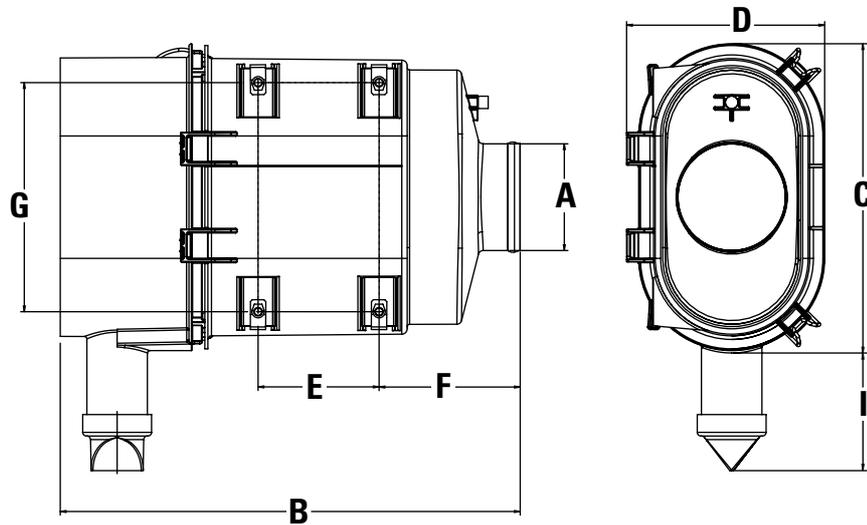
- Higher pre-cleaner efficiency (resulting in longer filter service life)
- Completely self-servicing (no regular maintenance needed on pre-cleaner)
- Drop tube can be located in a variety of orientations (not just straight down as is necessary on non-scavenged systems)

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)

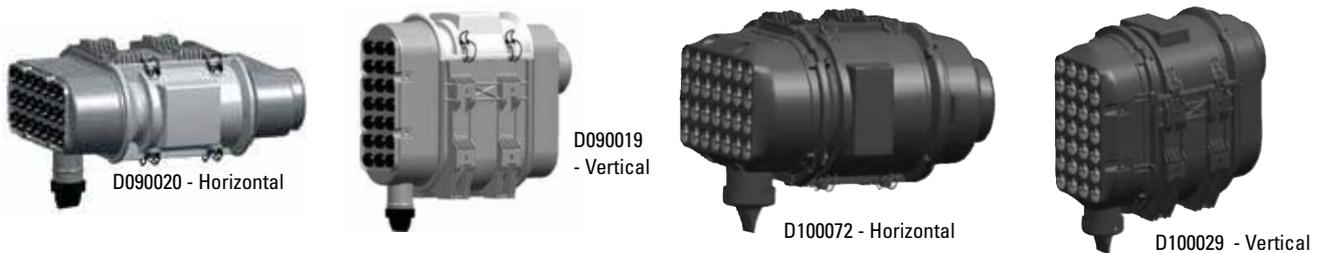
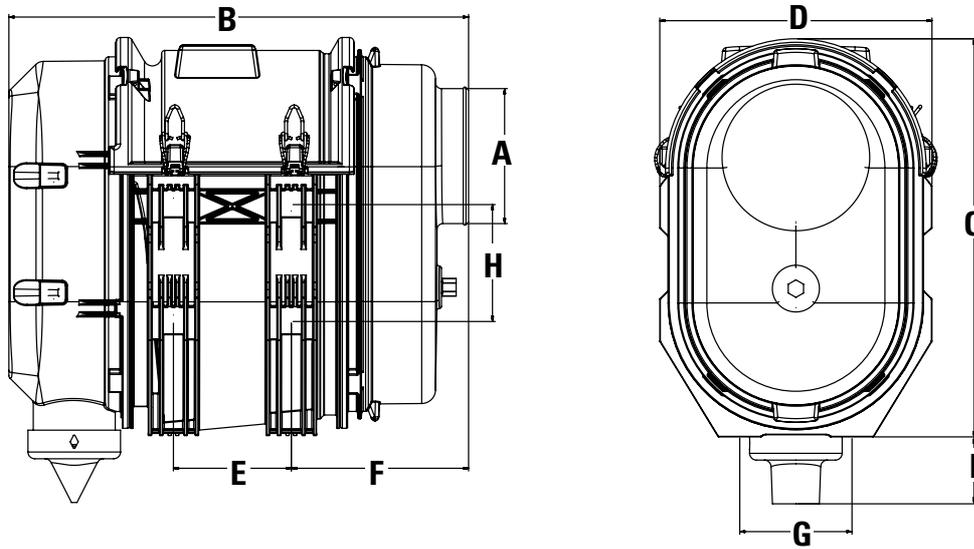


D080020 - Horizontal



D080026 - Vertical

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	
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	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
MODELS WITH SERVICE ACCESS ON SIDE																					
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.

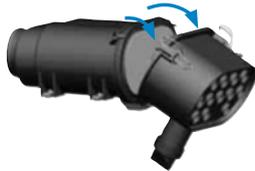
PSD Air Cleaner Service Instructions



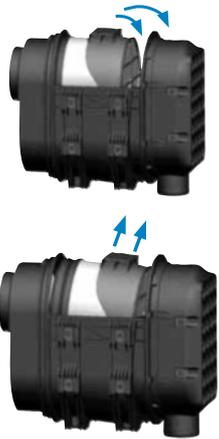
Note: Your air cleaner service cover may be in a different position than shown.

PSD09, PSD10
or PSD12 Style

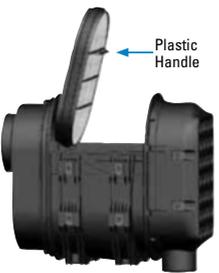
PSD08 Style



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 and PSD12 Style

PSD08 Style



Safety Filter Positioning Tab Location



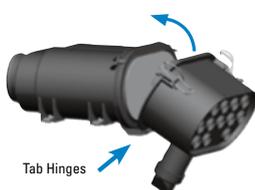
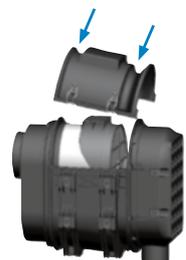
Plastic Handle

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.



Tab Hinges

7 Replace the service cover. On PSD08, insert the hinge tabs into the housing, tilt the service cover into place and secure latches. For the PSD09, PSD10 and PSD12, placed 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
Vacuator Valve	P158914

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