



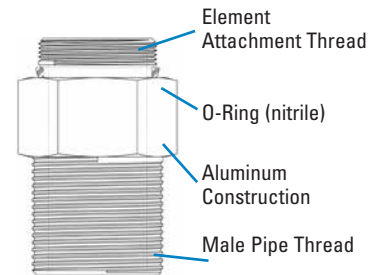
## Breathers

Breathers are available in a variety of styles, materials and sizes. Breathers provide clean airflow into reservoirs and other storage containers where there is an exchange of air during changing fluid levels. In high moisture sites or applications with large changes in machine environments, breather caps with pressure relief and vacuum breakers limit air exchange and provide a positive suction head at the pump inlet.



### Threaded Adapters for Creating Tank Breathers

Part No.	LHA Part No.	Male Pipe Thread	Element Attachment Thread	Length (in/mm)	Material
P173544	GBF-15	3/4" NPT	1"-12 UN	2.50/64	Aluminum
P173545	GBF-50/60	1-1/4" NPT	1-1/2"-16 UN	3.00/76	Aluminum
P562627	GBF-10	3/4" NPT	1-1/8"-16 UN	1.65/42	Steel
P562628	ABGBA	Bayonet Fitting	1-1/8"-16 UN	1.36/35	Technopolymer
P570353	NA	Bayonet Fitting	1-1/2"-16 UN	2.74/70	Technopolymer



### Direct Replacements for Schroeder Breathers

A replacement for Schroeder part ABF-3/10 is available as a breather+adapter set. For other Schroeder replacements and as an alternative on the ABF-3/10, you may purchase adapters and spin-on filters as separate items.

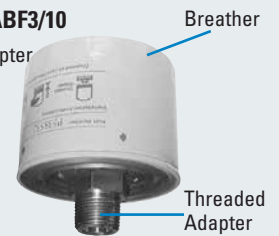
Schroeder Part No.	Donaldson Spin-On Breather + Adapter Set	Adapter	Spin-On Breather
ABF-3/10	P564425	P562627	P564424
ABF-3/10-F	NA	P562628	P564424
MBF-3-M-P20	NA	P173545	P550386
MBF-10-M-P20	NA	P173545	P550388

#### Replacement for Schroeder ABF3/10

P564425 Spin-On Breather & Adapter  
P564424 Spin-On Breather only

#### Specifications:

Diameter: 3.69" / 93.7mm  
Height: 3.6" / 91mm  
Threads on adaptor: 3/4"-14 NPT



### Spin-On Breather Filters

Part No.	Use with Adapter	Micron Rating	Length (in/mm)	Diameter (in/mm)	Flow (scfm/gpm/lpm)
P564424	P562627 or P562628	10 micron nom.	3.6/91	3.7/94	15/112/421
P556005	P562627 or P562628	10 micron nom.	5.4/137	3.7/94	23/172/647
P551551	P173544	10 micron nom.	5.4/137	3.7/94	23/172/647
P560693	P173544	10 micron abs.	5.4/137	3.7/94	23/172/647
P564357	P173544	5 micron abs.	7.9/200	3.7/94	28/216/812
P179089	P173544	10 micron abs.	7.9/200	3.7/94	28/216/812
P550386	P173545	3 micron nom.	6.7/170	5.0/127	35/262/985
P550250	P173545	3 micron nom.	10.7/272	5.0/127	42/314/1181
P167162	P173545	5 micron abs.	6.7/170	5.0/127	59/440/1654
P165762	P173545	5 micron abs.	10.7/272	5.0/127	64/479/1801
P550388	P173545	10 micron nom.	6.7/170	5.0/127	59/440/1654
P550251	P173545	10 micron nom.	10.7/272	5.0/127	64/479/1801
P165875	P173545	10 micron abs.	6.7/170	5.0/127	59/440/1654
P165876	P173545	10 micron abs.	10.7/272	5.0/127	64/479/1801



### T.R.A.P.™ Breather

#### Flow Rates to:

45 cfm / 1270 lpm

#### Particulate Removal to:

3 µm

#### Moisture Removal:

Reversible Adsorption

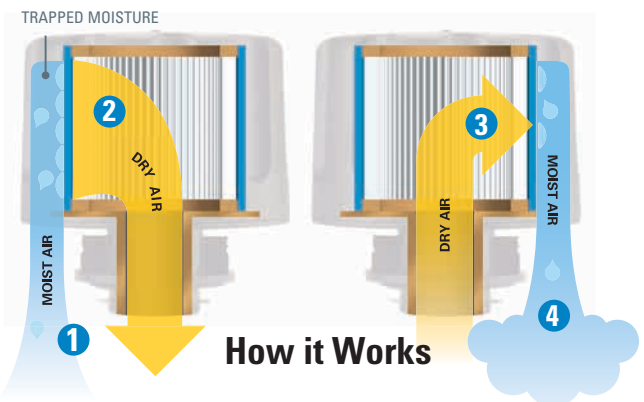


### Features

Donaldson breathers with Thermally Reactive Advanced Protection (T.R.A.P.™) provide fast-acting protection for hydraulic reservoirs against airborne moisture and particulate contamination. Donaldson T.R.A.P. technology strip moisture vapor from intake air and expel the moisture back to the atmosphere. Moisture is prevented from entering and is actually “pumped” out with each flow cycle. T.R.A.P. media regenerates its water-holding capacity, which leads to longer service life – 3 to 4 times the life of conventional desiccant breathers.

- **Electronic Indicator**  
Actuated by pressure differential, flashes red to indicate changeout is needed. Indicator setting, 1 psid/6.9 kPa. Indicator power source: 3V lithium battery CR2032.
- **Mechanical Indicator Kits**  
Install kit between reservoir and T.R.A.P. breather. Lock-up style indicator with manual reset. Highly visible, bright red band shows when restriction limit is reached. Indicator setting, 20" H2O/5.0 kPa.
- **Oil Splash and Mist Containment**  
Keeps oil inside reservoir.
- **Easy To Install**  
Lightweight—simply hand tighten.
- **Rugged Design**  
Effective to -40°F (-40°C). Robust housing protects media. Because it withstands high vibration, T.R.A.P. is suitable for both stationary and mobile applications.

<b>Operating Temperatures</b>
<ul style="list-style-type: none"> <li>• -40°F to 200°F / -40°C to 93°C</li> <li>• Intermittent operation to 250°F / 121°C</li> </ul>
<b>Particulate Removal Efficiency</b>
<ul style="list-style-type: none"> <li>• 3 µm at 97%</li> </ul>
<b>Connection Sizes</b>
<ul style="list-style-type: none"> <li>• 1" and 3/4" NPT, 3/4" BSP Bayonet</li> <li>• 1/4" and 3/8" NPT, 9/16"-18UN</li> </ul>
<b>Flow Rates</b>
<ul style="list-style-type: none"> <li>• 45 cfm / 1274 lpm</li> <li>• 25 cfm / 708 lpm</li> <li>• 3 cfm / 85 lpm</li> </ul>
<b>Indicator Setpoint</b>
<ul style="list-style-type: none"> <li>• 1 psid / 6.9 kPa</li> </ul>



#### INTAKE CYCLE (INHALATION)

- 1 The circuit “breathes in” air containing moisture vapor.
- 2 The T.R.A.P. breather strips moisture and particulate from the incoming air, allowing only clean, dry air to enter the circuit.

#### OUTFLOW CYCLE (EXHALATION)

- 3 During the “exhalation” cycle, the T.R.A.P. breather allows unrestricted airflow outward.
- 4 The outflow of dry air picks up the moisture collected by the T.R.A.P. breather during intake, and “blows it back out” – fully regenerating the breather’s water-holding capacity.



## Self-Regenerating T.R.A.P. Breather Choices

- Refer to the FIK section for additional T.R.A.P. breather options specific to those assembly models only.

### T.R.A.P. Breather Sizing

Trap Model	Hydraulic System (gal/l)	In-plant Lube (gal/l)	Outside (gal/l)
Standard	100/375	500/1875	250/938
Metal	40/150	200/750	100/375
Mini	4/15	20/75	10/38


**Standard**

Part No.	Connection	Maximum Flow (cfm/lpm)	Indicator	Moisture Removal
<b>Standard ABS Plastic Breathers with Oil/Splash Containment</b>				
P566151*	1" NPT	45/1274	opt mechanical	Yes indicator kit
P564669	1" NPT	45/1274	electronic**	Yes
P566156	Bayonet	45/1274	none	Yes
P565616	Bayonet	45/1274	electronic**	Yes
<b>Medium Epoxy Coated Steel Breathers with Oil/Splash Containment</b>				
P565857*	3/4" NPT	25/708	opt mechanical	Yes indicator kit
P565858	Bayonet	25/708	none	Yes
P566037	3/4" BSP	25/708	none	Yes
P575077	Bayonet with Lock Tab	25/708	none	Yes


**Medium Metal**

**Mini**

\*\*LED indicators not rated for fuel.

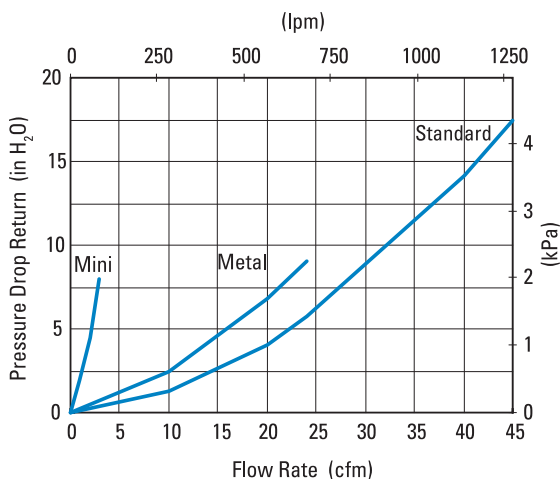
Part No.	Connection	Maximum Flow (cfm/lpm)	Indicator	Moisture Removal
<b>Mini Nylon Breathers with Oil/Splash Containment</b>				
P566174	9/16"-18 UNF	3/85	none	Yes
P567390	3/8" NPT	3/85	none	Yes
P567392	1/4" NPT	3/85	none	Yes

Part No.	Connection	Maximum Flow (cfm/lpm)	Indicator	Moisture Removal
<b>Mini Particulate Only Breathers with Oil Splash Containment</b>				
P567932	3/8" NPT	3/85	none	No
P567933	1/4" NPT	3/85	none	No

Part No.	Connection	Indicator
*Mechanical Indicator Kit - For use with P566151 & P565857 (*requires customer-supplied 3/4"x1" NPT reducer bushing)		
P566168	1" NPT coupling	20" H2O/5 kPa trip point

Part No.	Description	Connection
<b>Bayonet Style Filler Basket - For use with bayonet style T.R.A.P. Breathers</b>		
P566321	3" Stainless steel basket	6-bolt 2.81/71.4 circle
P575080	6" Stainless steel basket with Lock Tab	6-bolt 2.81/71.4 circle
P563874	4" Nylon Basket	6-bolt 2.81/71.4 circle
P563453	6" Stainless steel basket	6-bolt 2.81/71.4 circle

### T.R.A.P. Performance Data



#### Activation Instructions for

#### T.R.A.P. Breathers with Electronic Indicator

The T.R.A.P. breather has a service indicator that will indicate when it is time to replace the T.R.A.P. This indicator should be activated before the T.R.A.P. is put into service. Before the T.R.A.P. is activated, it is in a sleep mode to conserve the battery. The T.R.A.P. can remain in a sleep mode for over 6 months without detriment to the battery. While in sleep mode, the LED light will not flash until it is activated.

#### Activation

- Remove the T.R.A.P. from the box and turn it upside down - with the neck and thread up.
- Using a forefinger, insert into the neck of the T.R.A.P. and press on the plastic screen until the LED light begins to flash. The light will flash three times with a shortflash followed by a long flash and then another short flash.
- Release pressure from the switch immediately after the light begins flashing.

The T.R.A.P. is now activated.

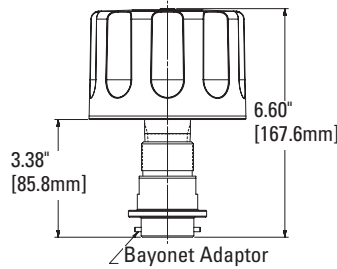
#### Replacement

Replace T.R.A.P. with a new one when the light begins to blink.

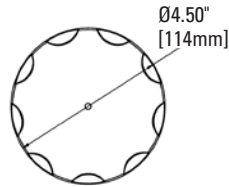


# T.R.A.P.™ Breather Specifications

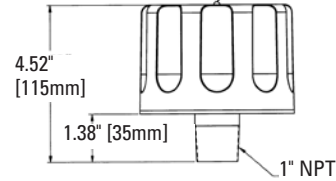
**Standard** **P565616** (electronic indicator) Bayonet connection  
**P566156** (no indicator version) Bayonet connection  
*Bayonet connection*



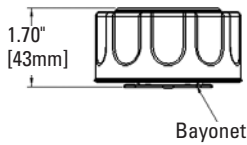
Top View



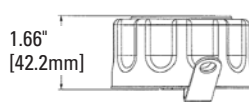
**P564669** (optional mechanical) 1" NPT connection  
**P566151** (no indicator version) 1" NPT connection



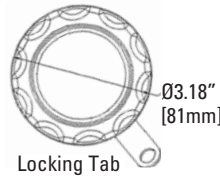
**Metal** **P565858** Bayonet connection  
**P575077** Bayonet connection with Lock Tab



Bayonet

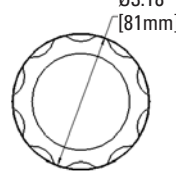


Top View



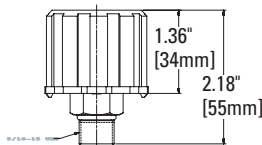
**P565857** (3/4" NPT connection, optional mechanical indicator)

**P566037** (3/4" BSP connection)

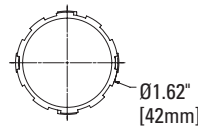


3/4" NPT or 3/4" BSP

**Mini** **P566174** 9/16-18 UNF  
**P567390** 3/8" NPT  
**P567392** 1/4" NPT



Top View

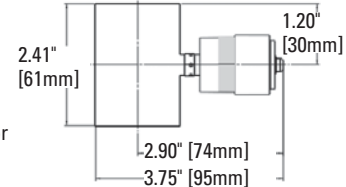
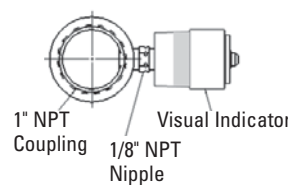


## Mechanical Indicator Kit

**P566168**

Suitable for use with **P566151** and **P565857**\*  
\*Requires additional 3/4" x 1" reducer bushing (supplied by customer)

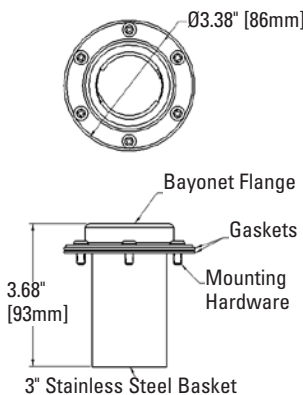
Top View



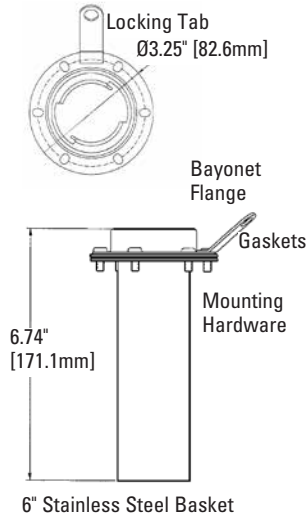
## Bayonet Style Filler Basket/Flange Kits

Use with any bayonet style T.R.A.P. Breather

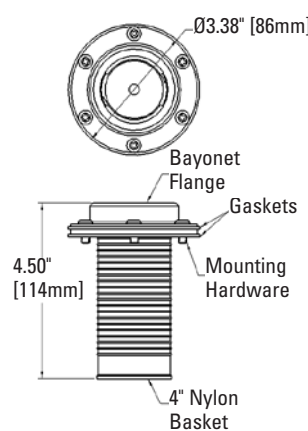
**P566321**



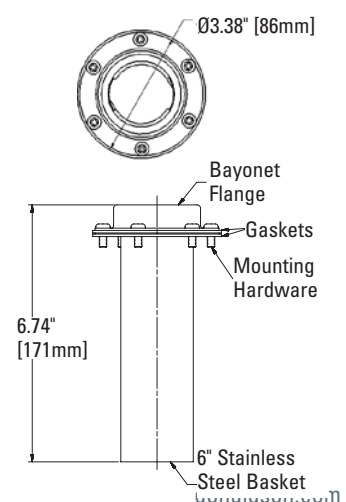
**P575080**



**P563874**



**P563453**





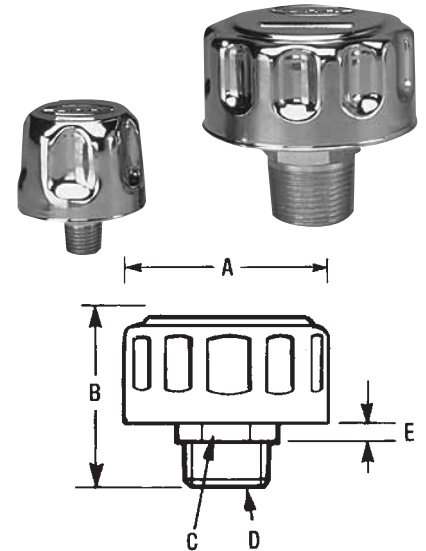
## ABS, MBS Series

### Specifications

- Chrome plated, epoxy coated or zinc plated steel cap
- Airflow to 30 cfm / 850 lpm
- Compatible with petroleum based fluids
- Temperature to 212°F / 100°C
- 1/2", 3/4" and 1" NPT on ABS
- 1/4" and 3/8" NPT on MBS

### Options

- 3, 10 and 40 micron (ABS), 10 and 40 micron (MBS)
- Zinc and epoxy coated weather-proof cap versions



Part No.	Reference	Micron Rating	Airflow Capacity (cfm/lpm)	Dimensions (in/mm)					Finish
				A	B	C	D	E	
P562510	MBS-10-N04	10 µm	10/283	1.85/47	2.0/51	.75/19	1/4" NPT	.2/5	Chrome Plated
P562511	MBS-10-N06	10 µm	10/283	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Chrome Plated
P562512	MBS-40-N04	40 µm	10/283	1.85/47	2.0/51	.75/19	1/4" NPT	.2/5	Chrome Plated
P562514	MBS-40-N06	40 µm	10/283	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Chrome Plated
P562516	MBS-Z-10-N06	10 µm	10/283	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Zinc Plated
P562517	ABS-03-N12	3 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562518	ABS-10-B12	10 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" BSP	.5/13	Chrome Plated
P562519	ABS-10-N08	10 µm	30/850	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Chrome Plated
P562520	ABS-10-N12	10 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562521	ABS-10-N16	10 µm	30/850	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Chrome Plated
P562522	ABS-40-N08	40 µm	30/850	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Chrome Plated
P562523	ABS-40-N12	40 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562524	ABS-40-N16	40 µm	30/850	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Chrome Plated
P562525	ABS-W-03-N12	3 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562526	ABS-W-10-N08	10 µm	30/850	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Epoxy Coated Black
P562527	ABS-W-10-N12	10 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562528	ABS-W-10-N16	10 µm	30/850	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Epoxy Coated Black
P563901	ABS-W-40-B12	40 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" BSP	.5/13	Epoxy Coated Black
P562529	ABS-W-40-N12	40 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562530	ABS-W-40-N16	40 µm	30/850	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Epoxy Coated Black
P562531	ABS-Z-10-N16	10 µm	30/850	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Zinc Plated
P562532	ABS-Z-40-N08	40 µm	30/850	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Zinc Plated
P562533	ABS-Z-40-N12	40 µm	30/850	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Zinc Plated



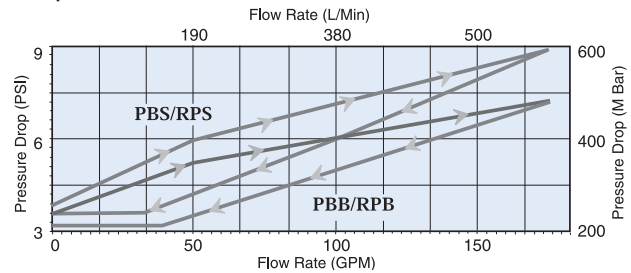
# PBS Series Pressure Filler Breather Cap - Screw In Style

## Specifications

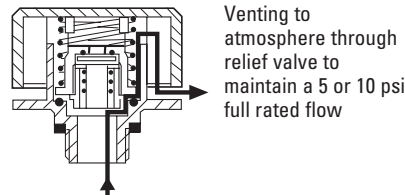
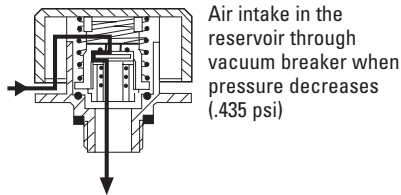
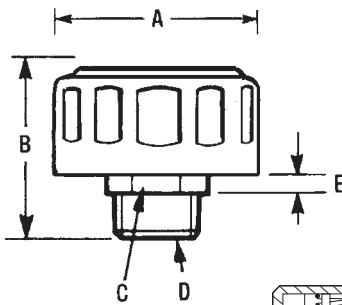
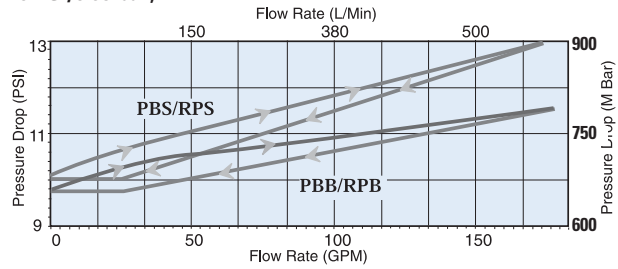
- Chrome plated or epoxy coated steel cap
- Air intake valve opens at 0.435 psi/3 kPa
- Compatible with petroleum based fluids
- Temperature range:  
-22°F to +240°F / -30°C to 115°C
- Nitrile gaskets standard
- 10 and 40 micron available
- Relief valve settings at 5 psi / 0.34 bar or 10 psi / 0.69 bar full rate flow



5 PSI/0.34 bar



10 PSI/0.69 bar



Part No.	Description	Micron Rating	Airflow Capacity (cfm/lpm)	Relief Valve Setting (psi/bar)	Dimensions (in/mm)					Finish
					A	B	C	D	E	
P563362	PBS-10-10-N12	10 µm	30/850	10/0.69	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563363	PBS-10-10-N16	10 µm	30/850	10/0.69	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563365	PBS-10-5-N12	10 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563366	PBS-10-5-N16	10 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563367	PBS-40-10-N12	40 µm	30/850	10/0.69	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563368	PBS-40-5-N12	40 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563369	PBS-40-5-N16	40 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563370	PBS-W-10-5-N12	10 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black
P563371	PBS-W-40-10-N12	40 µm	30/850	10/0.69	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black
P563372	PBS-W-40-5-N12	40 µm	30/850	5/0.34	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black



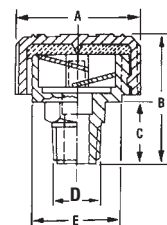
## Filler Breather Caps

### Specifications

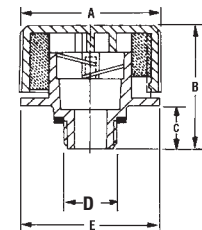
- High impact-resistant technopolymer construction
- Cap diameters 1.22" / 31mm, 1.65" / 42mm, 2.24" / 57mm and 2.75" / 70mm
- Compatible with petroleum and water based fluids
- Temperature range -22°F to +240°F / -30°C to +115°C
- Displacements to 250 gpm / 9461 lpm without baffle
- Displacements to 144 gpm / 547 lpm with anti-splash baffle



CPS / DPS / LPS



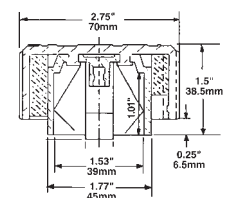
BPS / RPS



Part No.	Description	Micron Rating	Airflow Capacity (cfm/lpm)	Relief Valve Setting (psi/bar)	Dimensions (in/mm)				
					A	B	C	D	E
P562494	DPS-40-N04	40 µm	4.9/139	n/a	1.65/42	2.05/52	.71/18	1/4" NPT	1.2/30
P562495	DPS-40-N04-A	40 µm	2.1/59	n/a	1.65/42	2.05/52	.71/18	1/4" NPT	1.2/30
P563614	DPS-40-N06	40 µm	11.7/331	n/a	1.65/42	2.05/52	.71/18	3/8" NPT	1.2/30
P562497	DPS-40-N06-A	40 µm	5/142	n/a	1.65/42	2.05/52	.71/18	3/8" NPT	1.2/30
P562501	DPS-40-N08	40 µm	11.7/331	n/a	1.65/42	2.05/52	.71/18	1/2" NPT	1.2/30
P562502	DPS-40-N12	40 µm	12.5/354	n/a	1.65/42	2.05/52	.71/18	3/4" NPT	1.2/30
P562503	DPS-40-N12-A	40 µm	5.4/153	n/a	1.65/42	2.05/52	.71/18	3/4" NPT	1.2/30
P562483	CPS-40-N12	40 µm	27/765	n/a	2.24/57	1.85/47	.87/22	3/4" NPT	1.53/39
P562484	CPS-40-N12-A	40 µm	13.5/382	n/a	2.24/57	1.85/47	.87/22	3/4" NPT	1.53/39
P562480	BPS-10-N12-A	10 µm	19.3/547	n/a	2.75/70	2.48/63	.83/21	3/4" NPT	2.68/68
P562481	BPS-40-N12	40 µm	33.4/946	n/a	2.75/70	2.48/63	.83/21	3/4" NPT	2.68/68
P562482	BPS-40-N12-A	40 µm	19.3/547	n/a	2.75/70	2.48/63	.83/21	3/4" NPT	2.68/68
P562492	RPS-40-5-N12	40 µm	30/850	5/0.34	2.75/70	2.48/63	.83/21	3/4" NPT	2.68/68

\* -A = anti-splash

Part No.	Description	Micron Rating	Airflow Capacity (cfm/lpm)	Dimensions (in/mm)				Comment
				A	B	C	D	
P562476	ABO-10	10 µm	30/850	2.75/70	1.5/39	.25/7	1.77/45	Fits over 1.50" OD tube
P562477	ABO-40	40 µm	30/850	2.75/70	1.5/39	.25/7	1.77/45	Fits over 1.50" OD tube

**ABO**




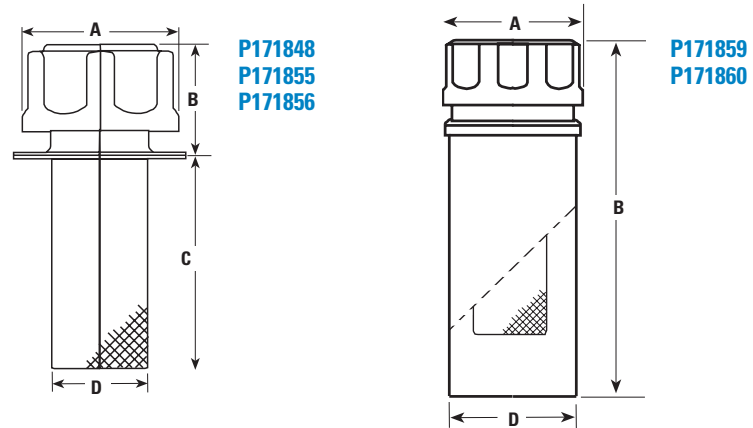
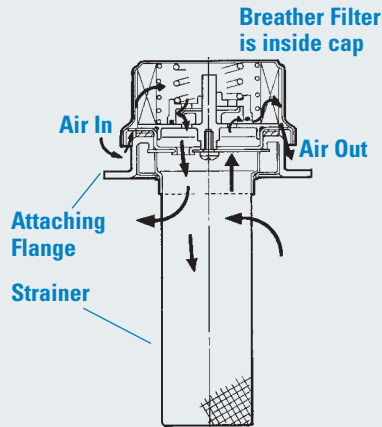
### Filler Breather Assemblies

#### Features

- Removable 500 µm mesh strainer. (Except model P171848, which has a non-removable strainer.)
- 10 µm air breather/filter.
- Models P171855 & P171848 include drilled flanges with attaching screws.

#### How it Works

As fluid levels rise and fall inside the reservoir, air flows in and out through the strainer and breather as shown below. The breather filter inside the cap removes contaminants as small as 10 µm from the air to keep airborne contaminant from entering the fluid. The strainer removes large particles from fluid as it is added to the reservoir.



#### Filler Breather Specifications

Part No.	FLANGE SPECIFICATIONS				Flow (gpm/lpm)	FILLER BREATHER SPECIFICATIONS			
	Outer Dia. (in/mm)	No. of Holes	Hole Dia. (in/mm)	Bolt Circle		A	B	C	D
P171848	2.01/51	3	.22/5.5	1.61/41	70/270	1.81/45	1.38/35	2.48/63	1.1/28
P171855	3.31/84	6	.22/5.5	2.88/73	124/470	2.76/70	1.81/46	3.94/100	1.5/38
P171856	3.31/84	n/a	n/a		124/470	2.76/70	1.81/46	3.94/100	1.15/38
P171859		n/a - weldable			124/470	2.76/70	7.09/180	2.50/64	
P171860 *		n/a - weldable			124/470	2.76/70	7.09/180	2.50/64	

\* For pressurized reservoirs at 5.8 psi/0.4 bar relief pressure.

#### Filler Cap Only (Replacement)

- P173292 --- fits P171855, P171856, P171859
- P173364 for pressurized reservoir --- fits P171860

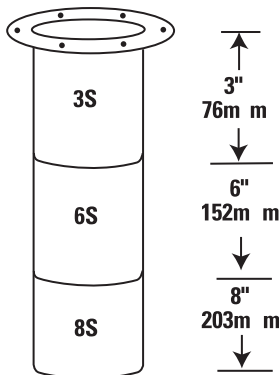
## ABB Series Filler Breathers - Bayonet Style

### Specifications

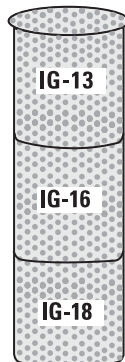
- Chrome plated, epoxy coated or zinc plated steel caps
- Airflow to 30 cfm / 850 lpm
- Compatible with petroleum based fluids
- 30 mesh technopolymer basket
- Self tapping screws for flange mount
- Cork gaskets
- 3, 10, or 40 micron



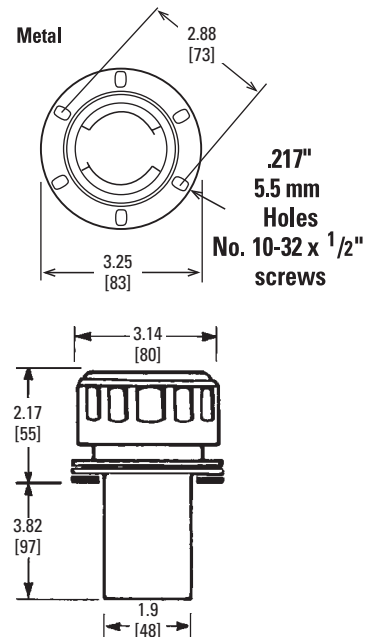
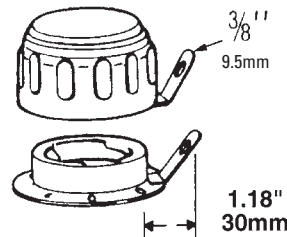
#### 30 MESH STAINLESS STEEL BASKETS



#### INNER GUARDS



#### LOCKING TABS (AB ONLY)



Part No.	Reference	Features	Micron Rating	Finish
P562610	ABB-W-03-8S-IG	8" Stainless basket, inner guard	3 µm	Epoxy coated, black
P562611	ABB-W-10-3S	3" Stainless basket	10 µm	Epoxy coated, black
P562612	ABB-W-10-3S-LT	3" Stainless basket, lock tab	10 µm	Epoxy coated, black
P562614	ABB-W-10-N	Nylon basket	10 µm	Epoxy coated, black
P562616	ABB-W-10-N-R	Nylon basket, nitrile gasket	10 µm	Epoxy coated, black
P562618	ABB-W-40-3S	3" Stainless basket	40 µm	Epoxy coated, black
P562619	ABB-W-40-6S	6" Stainless basket	40 µm	Epoxy coated, black
P562620	ABB-W-40-N	Nylon basket	40 µm	Epoxy coated, black
P562623	ABB-Z-40-3S	3" Stainless basket	40 µm	Zinc plated
P562624	ABB-Z-40-3S-LT	3" Stainless basket, lock tab	40 µm	Zinc plated
P562625	ABB-Z-40-N	Nylon basket	40 µm	Zinc plated
P562626	ABB-Z-40-N-R	Nylon basket, nitrile gasket	40 µm	Zinc plated