SOLBERG®

Filtration • Separation • Silencing
Oil Mist Eliminators
Replacement Filter Elements
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Standard • Configured • Custom Solutions

CATEU-EN0316

ATEX Available

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Applications & Equipment

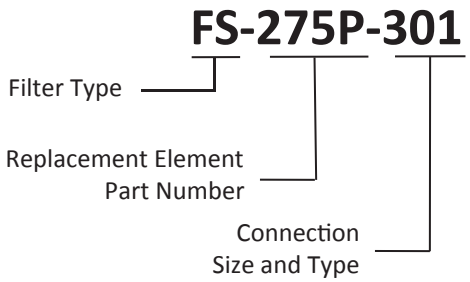
- Industrial & Severe Duty
- Blowers - Side Channel & Roots (P.D.)
- Breathers
- Fuel Cells
- Piston Compressors
- Screw Compressors
- Centrifugal Compressors
- Hydraulic Breathers – fine filtration
- Engines
- Fans
- Vacuum Pumps & Systems
- Construction\Contractor Industry
- Medical
- Pneumatic Conveying
- Waste Water Aeration
- Sparging
- Factory Air
- Vacuum Vent Breathers
- Cement Processing
- Power Plants
- Centralized Air Intakes

Identification

Standard Solberg products should have an identification label/nameplate that gives the following information:

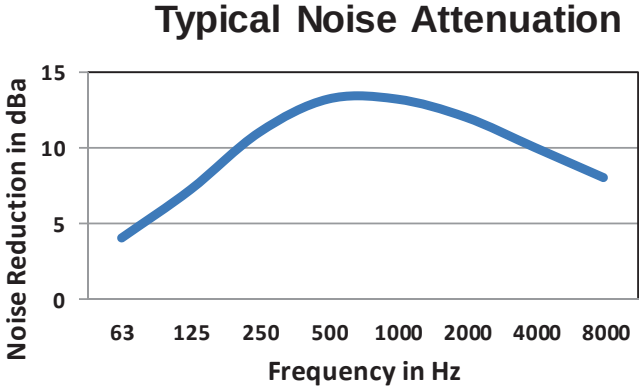
Assembly Model #
Replacement Element #

The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “FS” design filter with a “275” element, “P” prefilter and 3” BSPT connection size.



Typical Noise Attenuation

See chart for typical noise attenuation for filter silencers. It may vary due to the wide range of applications, installations, and machines.



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Choosing the Best Filter for your Equipment

A. Connection & Airflow Known: When the connection & airflow is known:
   1. Select appropriate connection style. (i.e.: BSPT, Flange, BSPP, etc.)
   2. Check assembly m^3/h (flow) rating. Compare with your required airflow. (Note: Assembly flow ratings are based on 6,000 FPM or 30m/sec for a given connection size to achieve low pressure drop performance. When required flow exceeds assembly flow rating, the pressure drop through the outlet connection will increase. In such cases select by element m^3/h (flow) rating.)
   3. When required flow rating matches connection size; skip to "C. Selecting Elements".

B. Unknown Connection: When the connection size is unknown, flexible, or the required flow rating exceeds assembly flow rating:
   1. Match required flow rating with the element flow rating.
   2. Choose related connection size.

C. Selecting Elements: The filter performance is influenced by the actual application duty and the equipment it is installed on. Regular maintenance checks and proper servicing is required.
   Application Duty Descriptions:
   Industrial Duty: Clean workshop or clean outdoor environment - small element sizing is sufficient.
   Severe Duty: Dirty workshop, wastewater – medium to large element is recommended.
   Extreme Duty: Cement, steel making, plastics or dusty material conveying – Largest element sizing is recommended.
   1. Select media required by your application. Options include:
      a. Standard media
         1. Polyester: All purpose; it withstands pulses, moisture, and oily air
         2. Paper: Mostly dry, smooth flow applications
      b. Special Media: For a variety of micron levels and media types, see the "Filter Media Specifications" in the Replacement Element Section or contact Solberg.
   2. Select element size by matching the element with the anticipated duty and upsize accordingly.

Filter Assembly Maintenance

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or through www.solbergmfg.com.

Element Maintenance

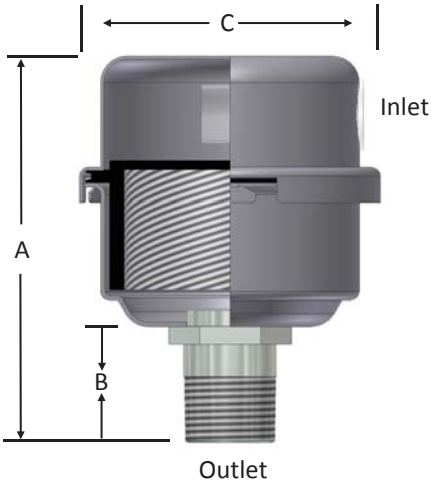
Solberg elements should be replaced once the pressure drop reaches 37-50 mbar above the initial pressure drop of the installation. Cleaning an element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 37 mbar.

If the pressure drop exceeds 50 mbar at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer's recommended maximum pressure drop for their specific equipment.

Miniature Filter Silencers
FS Series 1/4” - 1”



Features

- High grade filter element with integrated gasket seal
- Fully drawn weatherhood
- Tubular silencing design - tube maximizes attenuation and air flow while minimizing pressure drop
- Corrosion resistant carbon steel construction
- Black powder coat finish
- Ability to mount vertically and horizontally

Technical Specifications

- Temp (continuous): min-26°C (-15°F) max104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 25 micron
- Paper: 99%+ removal efficiency standard to 2 micron
- Pressure drop graphs available upon request

Options

- Various media for different environments
- Straight through configuration
- Various nonstandard finishes and connection styles

MPT Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	Dimensions - mm B	Dimensions - mm C	No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
1/4"	7	FS-05-025	FS-04-025	70	17	64	1	0.11	05	04	14
3/8"	14	FS-05-038	FS-04-038	70	17	64	1	0.11	05	04	14
3/8"	14	FS-07-038	FS-06-038	90	18	83	1	0.23	07	06	20
1/2"	14	FS-05-050	FS-04-050	76	22	64	1	0.11	05	04	14
1/2"	20	FS-07-050	FS-06-050	95	95	83	1	0.23	07	06	20
1/2"	20	FS-11-050	FS-10-050	106	22	108	1	0.45	11	10	60
3/4"	20	FS-07-075	FS-06-075	105	32	83	1	0.23	07	06	20
3/4"	43	FS-11-075	FS-10-075	114	32	107	1	0.45	11	10	60
1"	60	FS-11-100	FS-10-100	114	32	107	1	0.45	11	10	60

See Filter Silencer Technical Data section for sizing guidelines.

Note: MPT threaded housings are interchangeable with BSPT up to 1”.

Tidbit: Charlie Solberg Jr. created a patented process to manufacture our Hockey Puck Style Filter Elements that are used in these housings.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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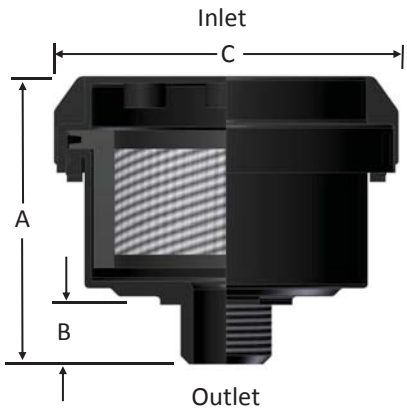
Miniature Plastic Filter Silencers
PS Series 1/8” - 1”



Features

- Easy snap-on design for quick servicing
- Durable glass reinforced nylon housing
- Compact, low profile configuration
- Noise reducing silencing design
- High grade filter element with integrated gasket seal

Benefits

- Longer element life with maximized surface area
- Cost efficient solution
- Low restriction improves equipment performance

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 25 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Various media for different environments

MPT Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper		Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1/8"	5	PS-03-013	PS-02-013		44	11	44	0.02	03	02	5
1/4"	5	PS-03-025	PS-02-025		44	11	44	0.02	03	02	5
1/4"	7	PS-05-025	PS-04-025		54	12	67	0.04	05	04	14
3/8"	10	PS-05-038	PS-04-038		55	10	67	0.04	05	04	14
1/2"	10	PS-05-050	PS-04-050		57	13	67	0.04	05	04	14
1/2"	17	PS-07-050	PS-06-050	*	79	18	83	0.09	07	06	20
1/2"	20	PS-11-050	PS-10-050	*	83	18	106	0.14	11	10	60
3/4"	20	PS-07-075	PS-06-075	*	89	25	83	0.14	07	06	20
3/4"	34	PS-11-075	PS-10-075	*	89	25	105	0.16	11	10	60
1"	60	PS-11-100	PS-10-100	*	89	25	106	0.18	11	10	60

* Contact factory for availability and lead times.

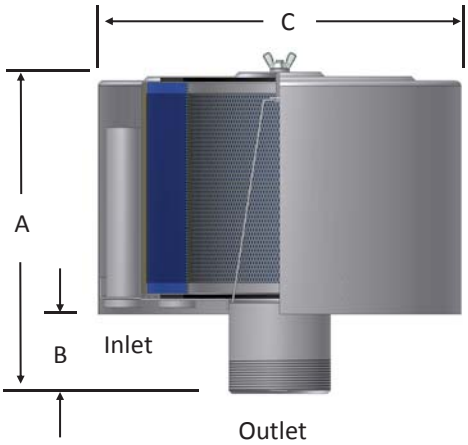
Note: MPT threaded housings are interchangeable with BSPT up to 1”.
See Filter Silencer Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Compact Filter Silencers
FS Series 1/2”-6”Threaded
DN80-DN150 FLG

Features

- Fully drawn weatherhood
- Tubular silencing design - tubes are positioned to maximize attenuation and air flow while minimizing pressure drop
- Corrosion resistant carbon steel construction
- Powder coat finish



Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

ATEX Available

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles
- Side Access Silencer Filters (LQB Series) for space restricted enclosures (select models)

Tidbit: Charlie Solberg Sr. “Senior” designed our first filter silencer in 1966. The FS-15 size filter was created for small air compressors.

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Threaded Outlet Assemblies

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1/2"	MPT	17	FS-15-050	FS-14-050	87	24	155	1	0.8	15	14	60
3/4"	MPT	43	FS-15-075	FS-14-075	96	32	155	2	0.9	15	14	60
1"	MPT	60	FS-15-100	FS-14-100	96	33	155	3	0.9	15	14	60
1"	MPT	60	FS-15-100B	FS-14-100B	0	0	0	3	0.9	15	14	60
1"	MPT	94	FS-19P-100	FS-18P-100	162	33	156	3	1.4	19P	18P	170
1 1/4"	BSPT	119	FS-19P-126	FS-18P-126	171	41	156	5	1.5	19P	18P	170
1 1/2"	BSPT	145	FS-19P-151	FS-18P-151	171	41	156	5	1.6	19P	18P	170
1 1/2"	BSPT	145	FS-19P-151B	FS-18P-151B	171	41	156	5	1.6	19P	18P	170
2"	BSPT	230	FS-31P-201	FS-30P-201	190	60	262	5	3.5	31P	30P	332
2"	BSPT	230	FS-231P-201	FS-230P-201	304	60	260	5	6.3	231P	230P	510
2 1/2"	BSPT	332	FS-31P-251	FS-30P-251	196	67	262	5	3.7	31P	31P	332
2 1/2"	BSPT	332	FS-231P-251	FS-230P-251	314	67	260	9	6.5	231P	230P	510
3"	BSPT	510	FS-231P-301	FS-230P-301	323	80	260	9	6.8	231P	230P	510
3"	BSPT	510	FS(12)-235P-301	FS(12)-234P-301	326	69	311	3	13	235P	234P	970
3"	BSPT	510	FS-275P-301	FS-274P-301	330	80	406	9	15	275P	274P	1870
4"	BSPT	885	FS(12)-235P-401	FS(12)-234P-401	352	95	311	6	14	235P	234P	970
4"	BSPT	885	FS-275P-401	FS-274P-401	353	102	406	9	15	275P	274P	1870
5"	BSPT	1360	FS-245P-501	FS-244P-501	356	105	406	14	15	245P	244P	1500
5"	BSPT	1360	FS-275P-501	FS-274P-501	356	105	406	14	16	275P	274P	1870
6"	BSPT	1870	FS-275P-601	FS-274P-601	394	130	406	18	17	275P	274P	1870

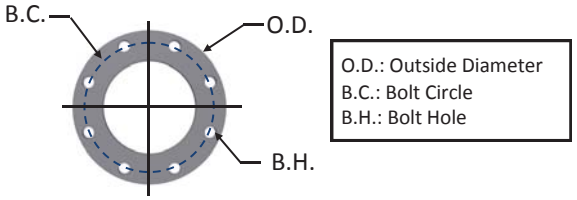
See Filter Silencer Technical Data section for sizing guidelines.
Note: MPT threaded housings are interchangeable with BSPT up to 1”.

Flange Outlet Assemblies

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
DN80	510	FS(12)-235P-DN80	FS(12)-234P-DN80	326	69	311	3	13	235P	234P	970
DN80	510	FS-275P-DN80	FS-274P-DN80	330	76	406	9	15	275P	274P	1870
DN100	885	FS(12)-235P-DN100	FS(12)-234P-DN100	352	95	311	6	14	235P	234P	970
DN100	885	FS-275P-DN100	FS-274P-DN100	354	102	406	9	18	275P	274P	1870
DN125	1360	FS-245P-DN125	FS-244P-DN125	356	105	406	14	17	245P	244P	1500
DN125	1360	FS-275P-DN125	FS-274P-DN125	356	105	406	14	18	275P	274P	1870
DN150	1870	FS-275P-DN150	FS-274P-DN150	381	130	406	18	19	275P	274P	1870

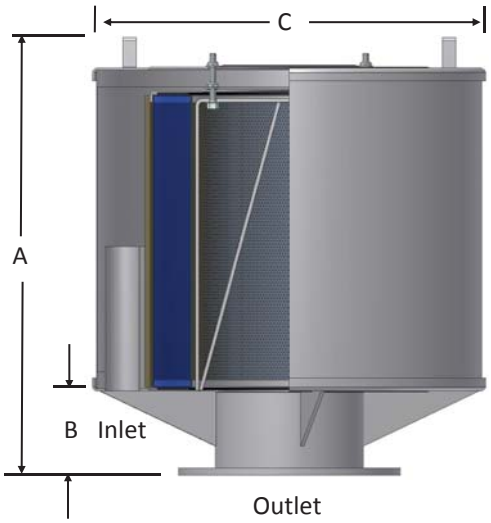
See Filter Silencer Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Flange Thickness
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22



Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Big Boy Filter Silencers
FS Series DN200 – DN300 FLG



Features

- Tubular silencing design - tubes are positioned to maximize attenuation and air flow while minimizing pressure drop
- Corrosion resistant carbon steel construction
- Powder coat finish
- Low pressure drop center bracket & outlet pipe design

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

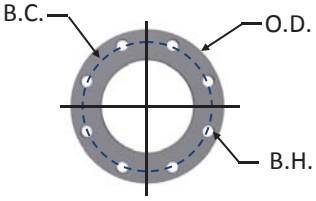
ATEX Available

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles
- Side Access Silencer Filters (LQB Series) for space restricted enclosures (select models)

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number		Dimensions - mm			No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No.		Element m^3/h Rating
		Polyester	Paper	A	B	C			Polyester	Paper	
DN200	3060	FS-377P-DN200	FS-376P-DN200	599	133	556	12	54	377P	376P	3105
DN200	3060	FS-385P-DN200	FS-384P-DN200	610	154	719	12	56	385P	384P	5610
DN250	5610	FS-385P-DN250	FS-384P-DN250	598	152	719	16	59	385P	384P	5610
DN250	5610	FS-485P-DN250	FS-484P-DN250	802	157	719	16	64	485P	484P	8000
DN300	7990	FS-485P-DN300	FS-484P-DN300	799	154	719	24	70	485P	484P	8000
DN300	7990	FS-685P-DN300	FS-384P(2)-DN300	977	154	719	24	79	685P	384P (2)	11220

See Filter Silencer Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm			No. of Holes	Flange Thickness
	O.D.	B.C.	B.H.		
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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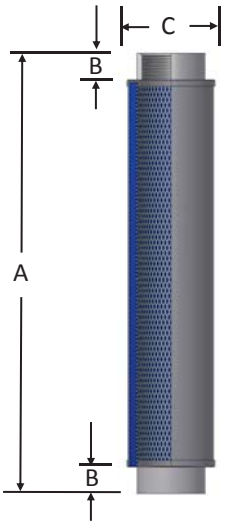
Side Channel Blower Silencers
SLCR/SLCRT Series 1/2”- 4”



Features

- Layered sound absorbent media
- Designed for minimal pressure drop; baffles, internal tubes, and other restrictive devices are unnecessary
- For inlet and discharge inline air service
- Corrosion resistant carbon steel construction
- Powder coat finish: 1/2” to 1-1/2”
- Epoxy coat finish: 2” to 4”

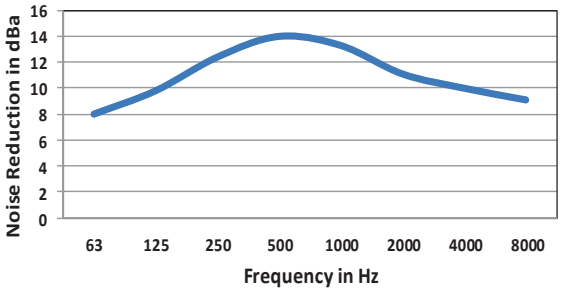
Options

- Flange adapters
- Larger sizes
- Special connections
- Hi-temp models

Technical Specifications

- Max. temperature (continuous): 107°C (225°F)
- Due to the wide range of equipment and environments; please contact factory for typical noise attenuation for your application.

Typical Noise Attenuation



- Noise attenuation may vary due to the wide range of applications and machines

Inlet/ Outlet Size	Inlet/ Outlet Type	Assembly m^3/h Rating	Part Number	Dimensions - mm A	B	C	Approx. Wt. kg
1"	NPSC	71	SLCR100	304	19	66	1.0
1 1/4"	BSPP	94	SLCR126	304	19	66	1.0
1 1/2"	BSPP	264	SLCR151	306	20	66	1.3
2"	BSPP	459	SLCR201	400	19	93	1.8
2 1/2"	BSPP	655	SLCR251	530	31	118	3.6
3"	BSPP	978	SLCR301	657	40	132	4.5
4"	BSPP	978	SLCR401	627	45	254	12
1/2"	MPT	43	SLCRT050	352	43	66	1.0
3/4"	MPT	60	SLCRT075	368	51	79	1.0
1"	MPT	71	SLCRT100	368	51	79	1.0
1 1/4"	BSPT	94	SLCRT126	368	51	66	1.0
1 1/2"	BSPT	264	SLCRT151	356	44	66	1.3
2"	BSPT	459	SLCRT201	470	54	93	1.8
2 1/2"	BSPT	655	SLCRT251	601	67	118	3.6
3"	BSPT	978	SLCRT301	711	67	130	4.5
4"	BSPT	978	SLCRT401	744	102	254	12

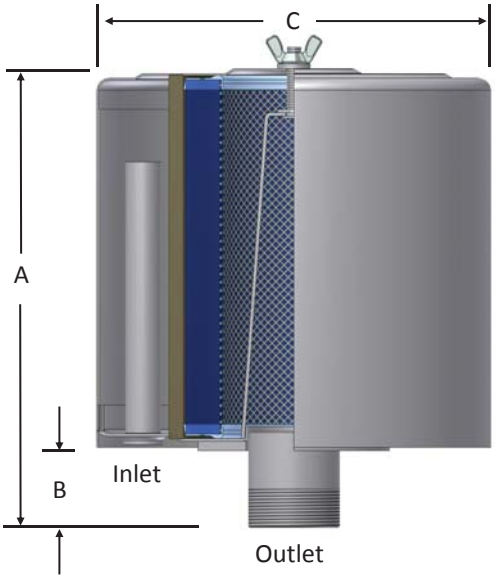
Note: MPT and FPT threaded housings are interchangeable with BSPT and BSPP up to 1”.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Filter Silencers for Blowers
QB Series 2”-6” BSPT
DN80-DN150 FLG

Features

- Multiple silencing features to reduce and deaden sound
  - Tubular Silencing - Tubes placed to maximize attenuation
  - Quiet Band Support –with “Quiet band” technology utilizes sound suppression in the design of the housing
- Low pressure drop housing design
- Corrosion resistant carbon steel construction
- Powder coat finish



Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles
- Side Access Silencer Filters (LQB Series) for space restricted enclosures (select models)

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DN80-DN150 FLG

BSPT Outlet Assemblies

BSPT Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
2"	230	QB-231P-201	QB-230P-201	301	60	260	7	6	231P	230P	510
2 1/2”	332	QB-231P-251	QB-230P-251	307	67	260	9	6	231P	230P	510
3”	510	QB-231P-301	QB-230P-301	320	80	260	9	6	231P	230P	510
3"	510	QB(12)-235P-301	QB(12)-234P-301	326	69	311	3	13	235P	234P	969
3"	510	QB-275P-301	QB-274P-301	330	76	406	9	15	275P	274P	1870
4"	884	QB(12)-235P-401	QB(12)-234P-401	352	95	311	6	14	235P	234P	970
4"	884	QB-275P-401	QB-274P-401	356	102	406	9	15	275P	274P	1870
5"	1360	QB-245P-501	QB-244P-501	356	102	406	14	15	245P	244P	1496
5"	1360	QB-275P-501	QB-274P-501	356	102	406	14	16	275P	274P	1870
6"	1870	QB-275P-601	QB-274P-601	394	133	406	18	17	275P	274P	1870

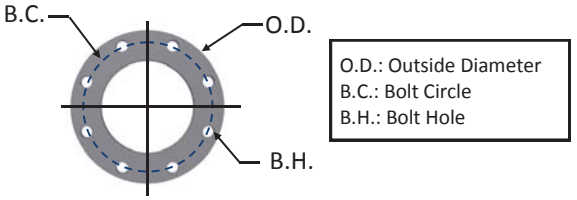
See Filter Silencer Technical Data section for sizing guidelines.

Flange Outlet Assemblies

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
DN80	510	QB(12)-235P-DN80	QB(12)-234P-DN80	326	69	311	3	14	235P	234P	970
DN80	510	QB-275P-DN80	QB-274P-DN80	330	76	406	9	15	275P	274P	1870
DN100	884	QB(12)-235P-DN100	QB(12)-234P-DN100	352	95	311	6	15	235P	234P	970
DN100	884	QB-275P-DN100	QB-274P-DN100	356	102	406	9	18	275P	274P	1870
DN125	1360	QB-245P-DN125	QB-244P-DN125	356	102	406	14	17	245P	244P	1496
DN125	1360	QB-275P-DN125	QB-274P-DN125	356	102	406	14	18	275P	274P	1870
DN150	1870	QB-275P-DN150	QB-274P-DN150	394	133	406	18	19	275P	274P	1870

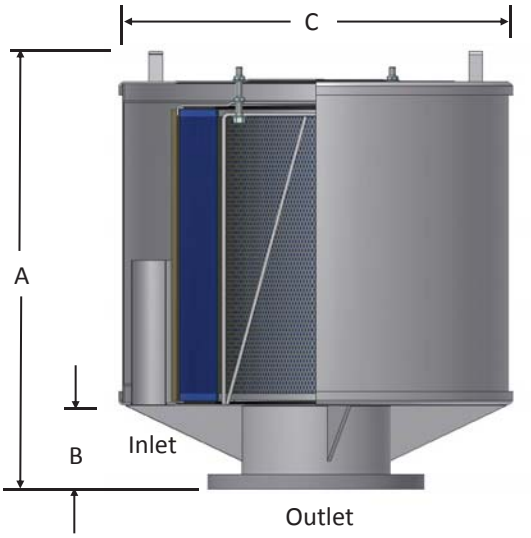
See Filter Silencer Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Flange Thickness
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22



Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Big Boy Filter Silencers for Blowers
QB Series DN200 - DN300 FLG



Features

- Multiple silencing features to reduce and deaden sound
  - Tubular Silencing - Tubes placed to maximize attenuation
  - Quiet Band Support -"Quiet band" technology utilizes sound suppression in the design of the housing
- Low pressure drop housing design
- Corrosion resistant carbon steel construction
- Powder coat finish

Technical Specifications

- Temp (continuous):min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

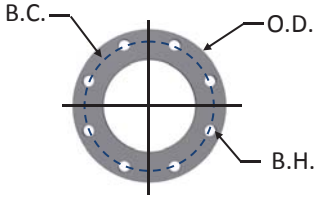
Options

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles
- Side Access Silencer Filters (LQB Series) for space restricted enclosures (select models)

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number		Dimensions - mm			No. of Silencing Tubes	Approx. Weight kg	Replacement Element Part No.		Element m^3/h Rating
		Polyester	Paper	A	B	C			Polyester	Paper	
DN200	3060	QB-377P-DN200	QB-376P-DN200	584	152	572	12	50	377P	376P	3105
DN200	3060	QB-385P-DN200	QB-384P-DN200	584	152	724	12	56	385P	384P	5605
DN250	5610	QB-385P-DN250	QB-384P-DN250	584	152	724	16	59	385P	384P	5610
DN250	5610	QB-485P-DN250	QB-484P-DN250	787	152	724	16	64	485P	484P	8000
DN300	7990	QB-485P-DN300	QB-484P-DN300	787	152	724	24	70	485P	484P	8000
DN300	7990	QB-685P-DN300	QB-384P(2)-DN300	965	152	724	24	79	685P	384P	11220
DN300	7990	QB-485P(2)-DN300	QB-484P(2)-DN300	1346	152	724	24	88	485P	484P	16000

See Filter Silencer Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm			No. of Holes	Flange Thickness
	O.D.	B.C.	B.H.		
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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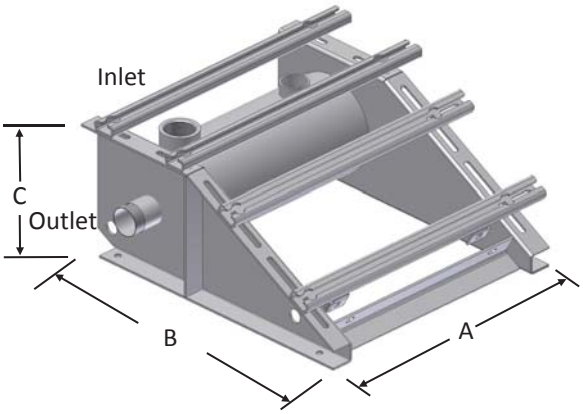
Silencer Frames for Blower Pkgs
BBF Series 2”- 6”



Features

- Reactive style silencing design
- Integrated discharge silencer
- Adjustable motor supports for belt tensioning
- Pre-assembled rails to frame
- Corrosion resistant carbon steel construction
- External black powder coat finish

Benefits

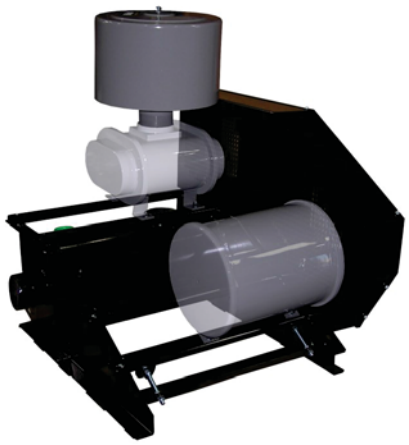
- Compact design for small blower package footprint
- Low profile allows for easier maintenance inspections
- Quick installation time
- Cost Savings (Minimal packaging, freight & storage)
- Sound enclosures are more economical due to compact frame footprint
- Engineering support provided by Solberg for sizing specifications and specific requirements

Technical Specifications

- Pressure Rating: 1 ATM
- Hardware Kit (USA standard nuts, bolts, washers) included
- Ports for: relief valve, pressure & temperature gauges

Options

- Purpose built belt guard
- Flexible boot kit (clamp, flex adapter)
- Flange adapters
- Snubber discharge silencer for vacuum applications
- Contact factory for best Solberg filter for your package



Example of Silencer Base Frame Package

Pipe Stub Inlet	MPT Outlet	Assembly m^3/h Rating	Part Number	Dimensions - mm A	B	C	Relief Valve Port	Sugg. HP Range	Approx. Wt. kg	Belt Guard for BBF Series Part No.	Weight (kg)
2"	2"	230	**BBF-200**	660	762	305	2.5	5-20+	59	DL-200	9
2 1/2"	2 1/2"	332	**BBF-250**	660	762	305	2.5	5-20+	59	DL-200	9
3"	3"	510	**BBF-300**	775	889	386	2"	10-50	81	DL-300	10
4"	4"	884	**BBF-400**	775	889	386	2"	10-50	81	DL-300	10
6"	6" Flg	1870	**BBF-600F**	946	1003	451	3"	20-60	179	DL-600	13

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Lateral Access Filter Silencer
LQB Series

Example of Silencer Base Frame Package w/LQB

Features

- Multiple silencing features to reduce and deaden sound
  - Tubular Silencing - Tubes placed to maximize attenuation
  - Quiet Band Support -"Quiet band" technology utilizes sound suppression in the design of the housing
- Side access door with seal
- Corrosive resistant carbon steel construction
- Powder coat finish
- 1/8" tap hole
- Please contact Solberg for model offerings and availability.

Benefits

- Easy maintenance due to easy accessible element
- Compact housing design ideal for
  - Blower packages with enclosures
  - Space restricted work areas
- Cost savings due to smaller sound enclosure
- Differentiate your package from traditional
- Designed to be used with Solberg's BBF Series Silencer Base Frame

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles
- Pressure drop indicator (See page 3-11)

Examples of LQB Silencer Filter with and without filter element installed. Filter element easily slides out the side port for servicing.

Why Solberg's LQB Series?

LQB Series helps make enclosures feasible and simplifies the maintenance process. Typical filter silencers require service area above the filter housing which increases the height and cost of the enclosure and makes servicing the unit difficult. The LQB Filter Silencer has an easy access side port which simplifies servicing and lowers the cost of your enclosure dramatically.

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Large Airflow Filter Silencers
Sumo Class / Multibarrel

Sumo Class Filter Silencers

Features

- Single barrel filter design allows for large airflows in space restricted work areas
- Tubular Silencing: Tubes positioned to maximize attenuation and air flow while minimizing pressure drop
- Low pressure drop housing construction
- Please contact Solberg for model offerings and availability.

Technical Specifications

- Designed for airflows up to 13600 m^3/h
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Tap holes
- Pressure drop indicator
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles

Multibarrel Filter Silencers

Features

- Designed for large airflow applications
- Cartridge style elements provide:
  Increased reliability-better positive seal than panel filters
  Added efficiency with maximum surface area
- Tubular Silencing: Tubes positioned to maximize attenuation and air flow while minimizing pressure drop
- Multiple configurations allows for a variety of environments
- Durable carbon steel construction with powder coat finish
- Please contact Solberg for model offerings and availability.

Technical Specifications

- Designed for airflows up to 42500 m^3/h
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options (Inquiries Encouraged)

- Multiple manifold configurations
- Pressure drop indicator
- Support stands
- Stainless steel construction
- Epoxy coated finish

Inlet Filter Assemblies

Technical Data	pg. 3-2
Compact Inlet Filters	
F Series:1/2-1”MPT,1-1/4-6”BSPT,17-1870 m^3/h	pg. 3-4
F Series:DN80 - DN150 Flg, 510 - 1870 m^3/h	pg. 3-5
Big Boy Inlet Filters	
F Series: DN200 - DN300 Flg, 3060 - 7990 m^3/h	pg. 3-6
Large Airflow Inlet Filters	
Sumo Class Series, up to 13600 m^3/h	pg. 3-7
Multibarrel Series, up to 42500 m^3/h	pg. 3-7
Exposed Inlet Filters	
FT Series:1/2-1”MPT,1-1/4-6”BSPT,17-1870m^3/h	pg. 3-8
FT Series:DN80 - DN150 Flg, 510 - 7990 m^3/h	pg. 3-9
Extreme Duty Filtration	
SpinMeister™ SM Series	pg. 3-10
Pop Up Style Pressure Drop Gauge	pg. 3-12

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Applications & Equipment

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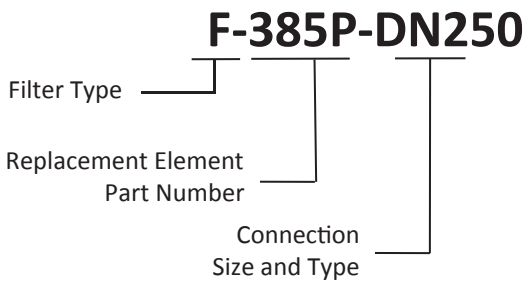
- Breathers
- Fuel Cells
- Piston Compressors
- Screw Compressors
- Centrifugal Compressors
- Hydraulic Breathers – fine filtration
- Engines
- Fans
- Vacuum Pumps & Systems
- Construction\Contractor Industry
- Medical
- Pneumatic Conveying
- Waste Water Aeration
- Sparging
- Factory Air
- Vacuum Vent Breathers
- Cement Processing
- Power Plants
- Centralized Air Intakes

Identification

Standard Solberg assemblies should have an identification label/nameplate that gives the following information:

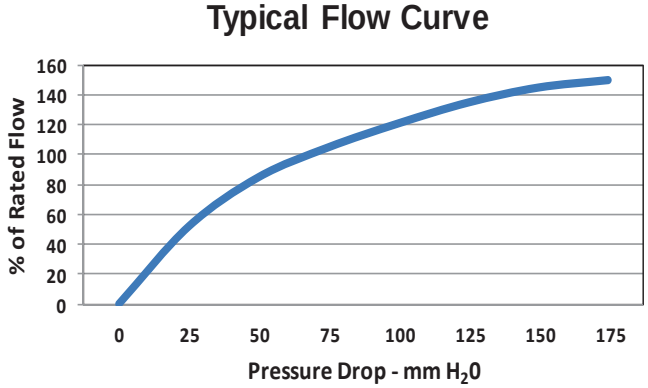
Assembly Model #
Replacement Element #

The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “F” design filter with a “385” element, “P” prefilter and DN250 flange connection size.



Typical Flow Curve

See chart for the typical flow curve for inlet filtration housing comparing percentage of rated flow with typical pressure drop.



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Choosing the Best Filter for your Equipment

A. Connection & Airflow Known: When the connection & airflow is known:
   1. Select appropriate connection style. (i.e.: BSPT, Flange, BSPP, etc.)
   2. Check assembly m^3/h (flow) rating. Compare with your required airflow. (Note: Assembly flow ratings are based on 6,000 FPM or 30m/sec for a given connection size to achieve low pressure drop performance. When required flow exceeds assembly flow rating, the pressure drop through the outlet connection will increase. In such cases select by element m3/h (flow) rating.)
   3. When required flow rating matches connection size; skip to "C. Selecting Elements".

B. Unknown Connection: When the connection size is unknown, flexible, or the required flow rating exceeds assembly flow rating:
   1. Match required flow rating with the element flow rating.
   2. Choose related connection size.

C. Selecting Elements: The filter performance is influenced by the actual application duty and the equipment it is installed on. Regular maintenance checks and proper servicing is required.
   Application Duty Descriptions:
   Industrial Duty: Clean workshop or clean outdoor environment - small element sizing is sufficient.
   Severe Duty: Dirty workshop, wastewater – medium to large element is recommended.
   Extreme Duty: Cement, steel making, plastics or dusty material conveying – Largest element sizing is recommended.
   1. Select media required by your application. Options include:
      a. Standard media
         1. Polyester: All purpose; it withstands pulses, moisture, and oily air
         2. Paper: Mostly dry, smooth flow applications
      b. Special Media: For a variety of micron levels and media types, see the "Filter Media Specifications" in the Replacement Element Section or contact Solberg.
   2. Select element size by matching the element with the anticipated duty and upsize accordingly.

Filter Assembly Maintenance

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or through www.solbergmfg.com.

Element Maintenance

Solberg elements should be replaced, once the pressure drop reaches 37-50 mbar above the initial pressure drop of the installation. Cleaning an element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 37 mbar.

If the pressure drop exceeds 50 mbar at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer's recommended maximum pressure drop for their specific equipment.

Compact Inlet Filters
F Series 1/2”-6” Threaded

DN80-DN150 FLG

Features

- Fully drawn weatherhood
- Low entry velocity air gap between base and cover
- Heavy gauge base with low pressure drop outlet pipe and center bracket design
- Corrosion resistant carbon steel construction
- Powder coat finish

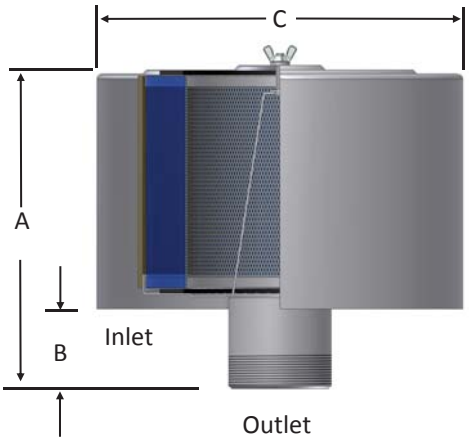
Technical Specifications

- Temp (continuous): min -26°C(-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

ATEX Available

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles



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DN80-DN150 FLG

Threaded Outlet Assemblies

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1/2"	MPT	17	F-15-050	F-14-050	87	23	155	0.68	15	14	60
3/4"	MPT	43	F-15-075	F-14-075	96	31	155	0.77	15	14	60
1"	MPT	60	F-15-100	F-14-100	96	31	155	0.86	15	14	60
1"	MPT	94	F-19P-100	F-18P-100	165	31	155	1.4	19P	18P	170
1 1/4"	BSPT	119	F-19P-126	F-18P-126	178	44	155	1.4	19P	18P	170
1 1/2"	BSPT	145	F-19P-151	F-18P-151	179	44	155	1.4	19P	18P	170
2"	BSPT	230	F-31P-201	F-30P-201	186	57	200	2	31P	30P	332
2"	BSPT	230	F-231P-201	F-230P-201	304	57	260	5	231P	230P	510
2 1/2"	BSPT	332	F-31P-251	F-30P-251	205	76	200	2	31P	30P	332
2 1/2”	BSPT	332	F-231P-251	F-230P-251	318	64	260	6	231P	230P	510
3”	BSPT	510	F-231P-301	F-230P-301	323	76	260	6	231P	230P	510
3"	BSPT	510	F-235P-301	F-234P-301	325	330	260	7	235P	234P	970
3"	BSPT	510	F-275P-301	F-274P-301	338	330	457	11	275P	274P	1870
4"	BSPT	885	F-235P-401	F-234P-401	348	356	260	7	235P	234P	970
4"	BSPT	885	F-275P-401	F-274P-401	359	102	406	12	275P	274P	1870
5"	BSPT	1360	F-245P-501	F-244P-501	351	102	406	10	245P	244P	1500
5"	BSPT	1360	F-275P-501	F-274P-501	356	102	406	12	275P	274P	1870
6"	BSPT	1870	F-275P-601	F-274P-601	384	127	406	13	275P	274P	1870

See Filter Assembly Technical Data section for sizing guidelines.

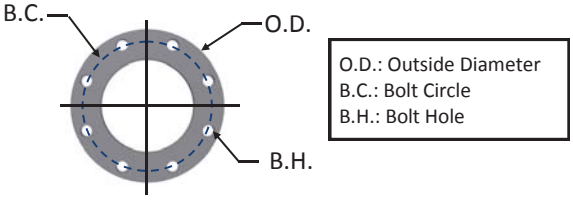
Note: MPT threaded housings are interchangeable with BSPT up to 1”.

Flange Outlet Assemblies

Flange Flange Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
DN80	510	F-275P-DN80	F-274P-DN80	330	76	406	10	275P	274P	1870
DN100	885	F-235P-DN100	F-234P-DN100	348	102	260	9	235P	234P	970
DN100	885	F-275P-DN100	F-274P-DN100	359	102	406	14	275P	274P	1870
DN125	1360	F-245P-DN125	F-244P-DN125	351	102	406	12	245P	244P	1500
DN125	1360	F-275P-DN125	F-274P-DN125	353	102	406	14	275P	274P	1870
DN150	1870	F-275P-DN150	F-274P-DN150	384	127	556	15	275P	274P	1870

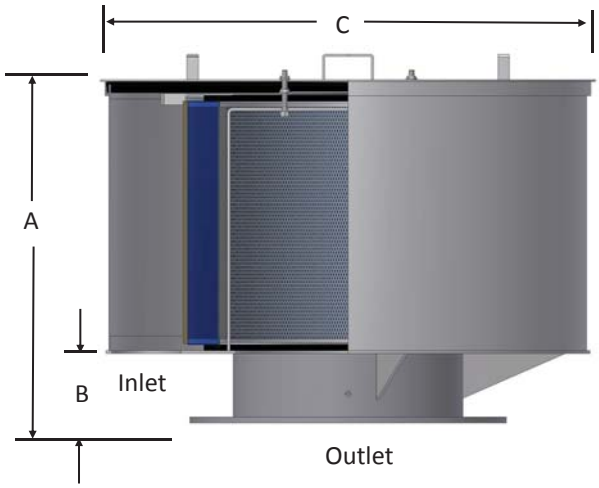
See Filter Assembly Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22



Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Big Boy Inlet Filters
F Series DN200 – DN300 FLG



Features

- Heavy gauge base with low pressure drop outlet pipe and center bracket design
- Low entry velocity air gap between base and cover
- Corrosion resistant carbon steel construction
- Powder coat finish

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

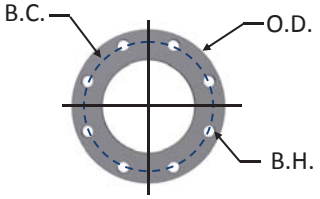
ATEX Available

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
DN200	3060	F-377P-DN200	F-376P-DN200	581	152	556	31	377P	376P	3105
DN200	3060	F-385P-DN200	F-384P-DN200	584	152	719	56	385P	384P	5605
DN250	5610	F-385P-DN250	F-384P-DN250	581	152	719	59	385P	384P	5610
DN250	5610	F-485P-DN250	F-484P-DN250	757	152	719	64	485P	484P	8000
DN300	7990	F-485P-DN300	F-484P-DN300	760	152	719	70	485P	484P	8000
DN300	7990	F-685P-DN300	F-384P(2)-DN300	977	152	719	79	685P	384P(2)	11220

See Filter Assembly Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg. mm
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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Sumo Class Filter Assemblies

Features

- Single barrel filter design allows for large airflows in space restricted work areas
- Low entry velocity air gap between base and cover
- Low pressure drop housing construction
- Please contact Solberg for model offering and availability

Technical Specifications

- Designed for airflows up to 13600 m^3/h
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Tap holes available
- Pressure drop indicator
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles

Multibarrel Filter Assemblies

Features

- Designed for large airflow applications
- Cartridge style elements provide:
  - Increased reliability-better positive seal than panel filters
  - Added efficiency with maximum surface area
- Low entry velocity air gap between base and cover
- Multiple configurations allows for a variety of environments
- Durable carbon steel construction with powder coat finish
- Please contact Solberg for model offering and availability.

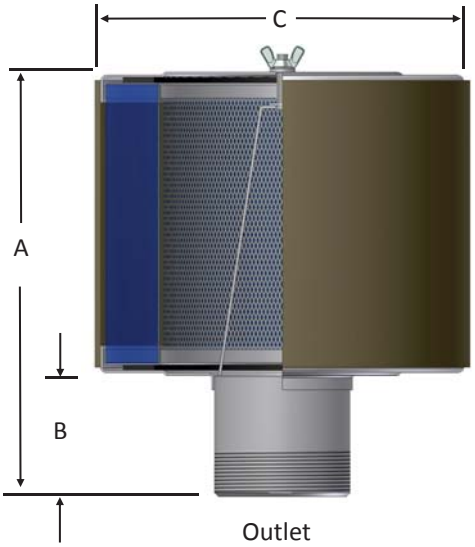
Technical Specifications

- Designed for airflows up to 42500 m^3/h
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

- Multiple manifold configurations
- Pressure drop indicator
- Stainless steel construction
- Various nonstandard finishes and connection styles

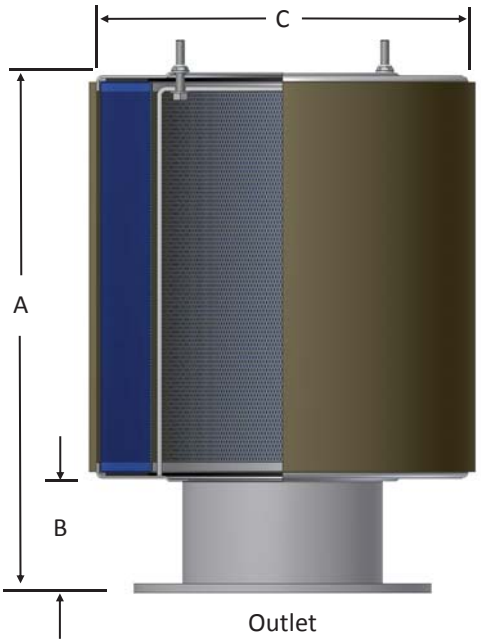
Exposed Inlet Filters
FT Series 1/4”-6” Threaded
DN80-DN300 FLG



Typical Configuration
FT15 to FT275P Housings

Features

- Exposed element for optimal air flow & low restriction
- Heavy gauge base with low pressure drop outlet pipe and center bracket design
- Corrosion resistant carbon steel construction
- Powder coat finish



Typical Configuration
FT377P to FT685P Housings

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Pressure drop graphs available upon request
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options

ATEX Available

- Tap holes available
- Pressure drop indicator (See page 3-12)
- Various media for different environments
- Stainless steel construction
- Various nonstandard finishes and connection styles

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Threaded Outlet Assemblies

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1/2"	MPT	17	FT-15-050	FT-14-050	85	23	117	0.54	15	14	60
3/4"	MPT	43	FT-15-075	FT-14-075	93	32	117	0.59	15	14	60
1"	MPT	60	FT-15-100	FT-14-100	93	32	117	0.63	15	14	60
1"	MPT	94	FT-19P-100	FT-18P-100	157	32	124	0.81	19P	18P	170
1-1/4"	BSPT	119	FT-19P-126	FT-18P-126	169	44	124	0.81	19P	18P	170
1-1/2"	BSPT	145	FT-19P-151	FT-18P-151	169	44	124	0.90	19P	18P	170
2"	BSPT	230	FT-31P-201	FT-30P-201	184	57	165	1.35	31P	30P	332
2"	BSPT	230	FT-231P-201	FT-230P-201	301	57	165	3	231P	230P	332
2-1/2"	BSPT	332	FT-31P-251	FT-30P-251	191	64	165	2	31P	30P	332
2-1/2"	BSPT	332	FT-231P-251	FT-230P-251	308	64	165	3	231P	230P	510
3"	BSPT	510	FT-231P-301	FT-230P-301	320	76	165	4	230P	230P	510
3"	BSPT	510	FT-235P-301	FT-234P-301	325	76	229	6	235P	234P	970
3"	BSPT	510	FT-275P-301	FT-274P-301	330	76	318	10	275P	274P	1870
4"	BSPT	885	FT-235P-401	FT-234P-401	348	102	229	8	235P	234P	970
4"	BSPT	885	FT-275P-401	FT-274P-401	356	102	318	11	275P	274P	1870
5"	BSPT	1360	FT-275P-501	FT-274P-501	356	102	318	11	275P	274P	1870
6"	BSPT	1870	FT-275P-601	FT-274P-601	381	127	318	12	275P	274P	1870

See Filter Assembly Technical Data section for sizing guidelines.

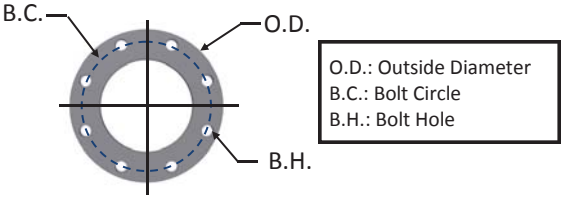
Note: MPT threaded housings are interchangeable with BSPT up to 1”.

Flange Outlet Assemblies

Flange Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
DN80	510	FT-235P-DN80	FT-234P-DN80	330	76	203	6	235P	234P	970
DN80	510	FT-275P-DN80	FT-274P-DN80	330	76	305	10	275P	274P	1870
DN100	885	FT-235P-DN100	FT-234P-DN100	349	102	229	7	235P	234P	970
DN100	885	FT-275P-DN100	FT-274P-DN100	356	102	318	11	275P	274P	1870
DN125	1360	FT-275P-DN125	FT-274P-DN125	356	102	318	13	275P	274P	1870
DN150	1870	FT-275P-DN150	FT-274P-DN150	381	127	318	14	275P	274P	1870
DN200	3060	FT-377P-DN200	FT-376P-DN200	584	152	381	29	377P	376P	3105
DN200	3060	FT-385P-DN200	FT-384P-DN200	584	152	518	32	385P	384P	5605
DN250	5610	FT-385P-DN250	FT-384P-DN250	584	152	518	36	385P	384P	5610
DN250	5610	FT-685P-DN250	FT-384P(2)-DN250	890	152	518	43	685P	384P(2)	11220
DN300	7990	FT-485P-DN300	FT-484P-DN300	712	152	518	41	485P	484P	8000
DN300	7990	FT-685P-DN300	FT-384P(2)-DN300	890	152	518	45	685P	384P(2)	11220

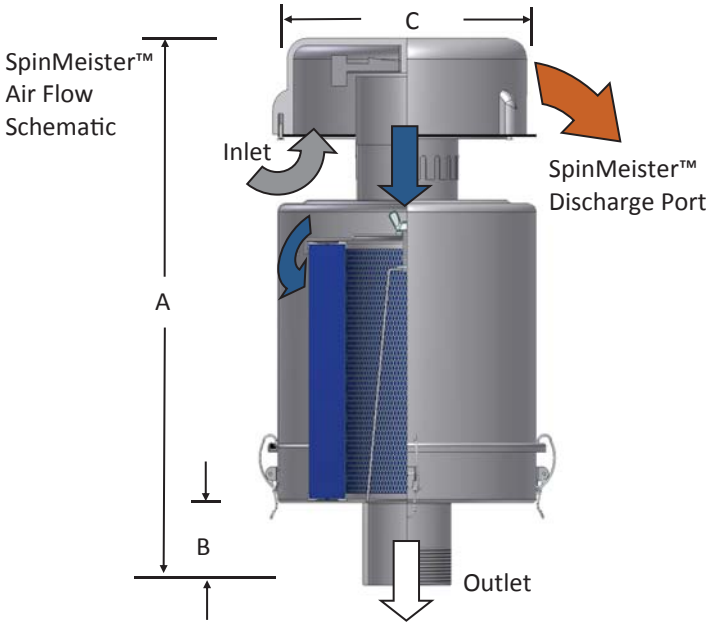
See Filter Assembly Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Extreme Duty Filtration
SM Series SpinMeister™



Operating Principle

Intake air is drawn through the angled louver plates which direct the air to turn the rotors. The centrifugal force separates the contaminants from the airstream, throwing them to the outer perimeter of the cover, expelling them through the discharge port. Cleaner air is drawn into the lower chamber and is filtered by a 99% efficient pleated element.

Benefits

- Extreme duty filtration for high dust environments
- Significantly increases life of filter element
- Cost effective

Features

- SpinMeister™ made of durable molded fiber filled composite material
- All small compact filters with seamless housings
- Corrosion resistant carbon steel housing construction
- Powder coat finish (Filter element housing)

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency to 5 micron
- Paper: 99%+ removal efficiency to 2 micron
- SpinMeister™ Precleaner: 85% efficiency to 15 micron

Options

- Tap holes available
- SpinMeisters™ available in polished aluminum
- Selected housings available in stainless steel
- Modify to meet specific application

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Configuration A

Configuration B

Configuration C

Configuration D

Configuration A

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1/2"	MPT	51	SM1.5-11-050	SM1.5-10-050	170	22	105	0.7	11	10	59
3/4"	MPT	51	SM1.5-11-075	SM1.5-10-075	183	32	105	0.7	11	10	59
1/2"	MPT	59	SM2-11-050	SM2-10-050	187	22	105	0.9	11	10	59
3/4"	MPT	59	SM2-11-075	SM2-10-075	217	32	129	0.9	11	10	59
1"	MPT	59	SM2-11-100	SM2-10-100	216	32	129	0.9	11	10	59

Configuration B

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
1	MPT	169	SM2-19P-100	SM2-18P-100	300	25	175	1.5	19P	18P	170
1-1/2"	BSPT	145	SM2-19P-151	SM2-18P-151	300	51	191	1.7	19P	18P	170
2"	BSPT	170	SM2-19P-201	SM2-18P-201	312	64	191	1.8	19P	18P	170
2-1/2"	BSPT	170	SM2-19P-251	SM2-18P-251	325	76	191	1.8	19P	18P	170

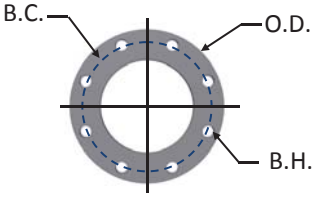
Configuration C

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
3"	BSPT	425	SM3-235P-301	SM3-234P-301	519	102	279	14	235P	234P	968
4"	BSPT	425	SM3-235P-401	SM3-234P-401	544	102	279	14	235P	234P	968
4"	BSPT	680	SM4-235P-401	SM4-234P-401	522	102	279	15	235P	234P	968
DN80	FLG	425	SM3-235P-DN80	SM3-234P-DN80	502	102	279	16	235P	234P	968
DN100	FLG	425	SM3-235P-DN100	SM3-234P-DN100	499	76	279	16	235P	234P	968
DN100	FLG	680	SM4-235P-DN100	SM4-234P-DN100	522	102	279	16	235P	234P	968

Configuration D

Outlet Size	Outlet Type	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
DN150	FLG	1360	SM62-377P-DN150	SM62-376P-DN150	775	127	572	40	377P	376P	3100
DN200	FLG	3060	SM62-377P-DN200	SM62-376P-DN200	1044	152	641	46	377P	376P	3100
DN250	FLG	4590	SM63-385P-DN250	SM63-384P-DN250	1037	152	733	62	385P	384P	5598
DN300	FLG	4590	SM63-485P-DN300	SM63-484P-DN300	1037	152	733	73	485P	484P	7993

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Pop Up Style Pressure Drop Gauge
Inlet Filter Assemblies

Benefits

- Monitors Filter Continuously
- Easy Filter Maintenance
- Filter Element Life Maximized
- Downtime Reduced
- Graduated Restriction Readings

Features & Specifications

Our Pop Up style pressure drop gauge shows the amount of filter element restriction and how much life the element has left. This is a convenient and inexpensive solution to receiving the maximum usage from every element.

The yellow indicator in the filter monitor gauge drops as the dirt accumulates on the filter element. The element is ready for change out or servicing when the yellow indicator reaches the red zone. This allows you to determine the condition of the filter element even after the equipment has been shut down.

The element should be replaced at the maximum noted pressure drop or at the manufacturer's recommended level.

For use on inlet filter silencer and inlet filters. Contact Solberg to add an 1/8" tap hole to the appropriate location on your housing orders. See mounting photo for placements.

Note: The monitor gauge has a 1/8" connection. It is mounted either on the weatherhood or on the outlet pipe depending on the filter assembly.

Filter Gauge shows both mm & inches ratings

Gauge Status:

Normal Clean Filter

Gauge shows how much capacity remains

Gauge shows filter element capacity used. Filter requires service

MPT Outlet	Pressure Drop Rating - mm	Part Number
1/8"	500	VG-020-013

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Inlet Vacuum Filters

Technical Data	pg. 4-2
"L" Style Compact Vacuum Filters	
CSL Series 3/8" - 3" BSPP, 31 - 510 m^3/h	pg. 4-4
ISO Flg CSL Series NW16-K100, 31 - 510 m^3/h	pg. 4-5
"L" Style Large Vacuum Filters	
CSL Series: 3" - 6" BSPT, 510 - 1870 m^3/h	pg. 4-6
CSL Series: DN80 - DN300, 510 - 8415 m^3/h	pg. 4-6
ISO Flg "L" Style Large Vacuum Filters	
CSL Series: K160 - K320, 1870 - 8415 m^3/h	pg. 4-8
"T" Style Compact Vacuum Filters	
CT Series: 1"- 6"BSPP, 68- 1870 m^3/h	pg. 4-9
ST Series: 1" - 4"BSPP, 68 - 884 m^3/h	pg. 4-10
Extreme Duty SpinMeister™ Vacuum Filters	
STSML Series: 2" - 6" BSPP, 68 - 1530 m^3/h	pg. 4-11
Vacuum Filters for Medical Facilities	
HV Series: 2" - 4", 175 - 340 m^3/h	pg. 4-12
See-Through Liquid Separators	
STS Series: 1" - 4", 68- 850 m^3/h	pg. 4-13
Liquid Separator/Vacuum Filters	
LRS Series: 2" - 4", 105 - 1415 m^3/h	pg. 4-14
SRS Series: DN150 - DN250, 2170 - 3060 m^3/h	pg. 4-15
Vapor Condensing Separator Traps	
JRS Series	pg. 4-16
JCT/JST Series (Compact)	pg. 4-17
Natural Gas Filtration: Suction Scrubbers	pg. 4-18
Vacuum Filtration for Solar, Semi-Con, LED, Coating	
RX Series: Reverse Pulse System	pg. 4-19
Pressure Drop Gauges	pg. 4-20
Drain Systems CE	pg. 4-21

Applications & Equipment

- Industrial & Severe Duty
- Vacuum Pumps & Systems: Roots, Rotary Vane, Screw, Piston
- Vacuum Packaging Equipment
- Vacuum Furnace
- Blowers: Side Channel & Roots (P.D.)
- Vacuum Lifters
- Intake Suction Filters
- Food Industry
- Woodworking/Routers
- Ash Handling
- Printing Industry
- Medical/Hospital
- Remote Installations for Piston & Screw Compressors
- Paper Processing
- Waste Water Aeration
- Cement Processing
- Bag House Systems
- Vacuum Vent Breathers
- Chemical Processing
- Factory Automation Equipment
- Leak Detection Systems

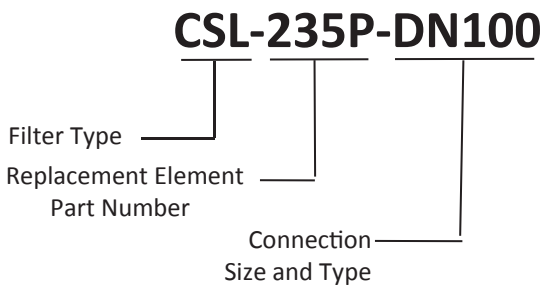
Identification

Standard Solberg assemblies should have an identification label/nameplate that gives the following information:

Assembly Model #

Replacement Element #

The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “CSL” design filter with a “235” element, “P” prefilter and DN100 flange connection size.



Vacuum Service Rating Chart

Threaded vacuum filter connections must be free of defect and properly sealed to achieve deeper vacuum levels. Vacuum service levels are given for reference only and serve as a guideline for product selection. Product certification and alternative designs are available for applications requiring deeper vacuum levels and specific leak rates. Please contact factory for details.

	Pressure (mbar)	Pressure (Torr)	Pressure (Pa)
Atmospheric Pressure	1013	760	$1.013\times10^{+5}$
Coarse Vacuum	1013 to 33	760 to 25	$1\times10^{+5}$ to $3\times10^{+3}$
Medium Vacuum	33 to 1.3×10^{-3}	25 to 1×10^{-3}	$3\times10^{+3}$ to 1×10^{-1}
High Vacuum	1.3×10^{-3} to 1.3×10^{-9}	1×10^{-3} to 1×10^{-9}	1×10^{-1} to 1×10^{-7}

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Choosing the Best Filter for your Equipment

A. Connection & Airflow Known: When the connection & airflow is known:
   1. Select appropriate connection style. (i.e.: BSPT, Flange, BSPP, etc.)
   2. Check assembly m^3/h (flow) rating. Compare with your required airflow. (Note: Assembly flow ratings are based on 6,000 FPM or 30m/sec for a given connection size to achieve low pressure drop performance. When required flow exceeds assembly flow rating, the pressure drop through the outlet connection will increase. In such cases select by element m^3/h (flow) rating.)
   3. When required flow rating matches connection size; skip to "C. Selecting Elements".

B. Unknown Connection: When the connection size is unknown, flexible, or the required flow rating exceeds assembly flow rating:
   1. Match required flow rating with the element flow rating.
   2. Choose related connection size.

C. Selecting Elements: The filter performance is influenced by the actual application duty and the equipment it is installed on. Regular maintenance checks and proper servicing is required.
   Application Duty Descriptions:
   Industrial Duty: Clean workshop or clean outdoor environment - small element sizing is sufficient.
   Severe Duty: Dirty workshop, wastewater – medium to large element is recommended.
   Extreme Duty: Cement, steel making, plastics or dusty material conveying – Largest element sizing is recommended.
   1. Select media required by your application. Options include:
      a. Standard media
         1. Polyester: All purpose; it withstands pulses, moisture, and oily air
         2. Paper: Mostly dry, smooth flow applications
      b. Special Media: For a variety of micron levels and media types, see the "Filter Media Specifications" in the Replacement Element Section.
   2. Select Element size by matching the element with the anticipated duty and upsize accordingly.

Filter Assembly Maintenance

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or through www.solbergmfg.com.

Element Maintenance

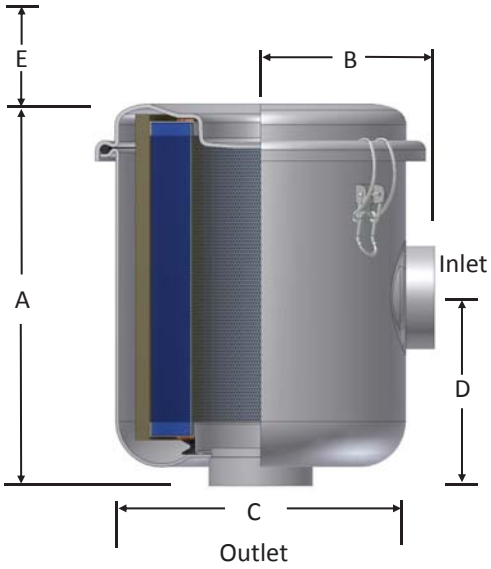
Solberg elements should be replaced, once the pressure drop reaches 37-50 mbar above the initial pressure drop of the installation. Cleaning an element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 37 mbar.

If the pressure drop exceeds 50 mbar at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer's recommended maximum pressure drop for their specific equipment.

”L” Style Compact Vacuum Filters
CSL Series 3/8” - 3”



Features

- Seamless drawn housings
- O-ring seal
- Corrosion resistant carbon steel construction
- Powder coat finish
- Stainless steel torsion clips for durability

Benefits

- Large dirt holding capacity and easy field cleaning, especially when mounted horizontally or inverted
- Low pressure design

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

**See Vacuum Filter Technical Data for Vacuum Service Data.

Options

ATEX Available

- Vacuum gauge
- Higher holding capacity configurations available (select models)
- Material/Finishes: stainless steel, epoxy coating
- Support brackets
- Alternative top-to-canister fastening system for low pressure or pulsating systems
- Stainless steel (select models)

Inlet/ Outlet Size	Inlet/ Outlet Type	Assembly m^3/h Rating	Housing Config.	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	Suggested Service HT. E	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
3/8"	BSPP	31	A	CSL-825-039HCB	CSL-824-039HCB	85	54	95	46	76	0.40	825	824	43
1/2"	NPSC	31	A	CSL-825-050HCB	CSL-824-050HCB	89	57	95	49	76	0.40	825	824	43
1/2"	NPSC	34	B	CSL-843-050HCB	CSL-842-050HCB	103	76	146	64	83	1.4	843	842	94
3/4"	NPSC	41	A	CSL-825-075HCB	CSL-824-075HCB	89	58	95	50	76	0.40	825	824	43
3/4"	NPSC	43	B	CSL-843-075HCB	CSL-842-075HCB	103	76	146	64	83	1.4	843	842	94
1"	BSPP	60	B	CSL-843-101HCB	CSL-842-101HCB	111	83	146	67	83	1.4	843	842	94
1"	BSPP	68	C	CSL-849-101HCB	CSL-848-101HCB	170	105	187	114	133	2.3	849	848	196
1 1/4"	BSPP	94	B	CSL-843-126HCB	CSL-842-126HCB	111	83	146	67	83	1.4	843	842	94
1 1/4"	BSPP	102	C	CSL-849-126HCB	CSL-848-126HCB	170	105	187	114	133	2.3	849	848	196
1 1/2"	BSPP	136	C	CSL-849-151HCB	CSL-848-151HCB	171	105	187	114	133	2.3	849	848	196
2"	BSPP	298	D	CSL-851-201HCB	CSL-850-201HCB	260	114	222	127	235	6.8	851	850	493
2 1/2"	BSPP	357	D	CSL-851-251HCB	CSL-850-251HCB	271	130	222	140	235	6.8	851	850	493
3"	BSPP	510	E	CSL-239-301HCB	CSL-238-301HCB	361	186	337	183	279	15	239	238	969

See Vacuum Filter Technical Data section for sizing guidelines.
Note: NPSC threaded housings are interchangeable with BSPP up to 1”.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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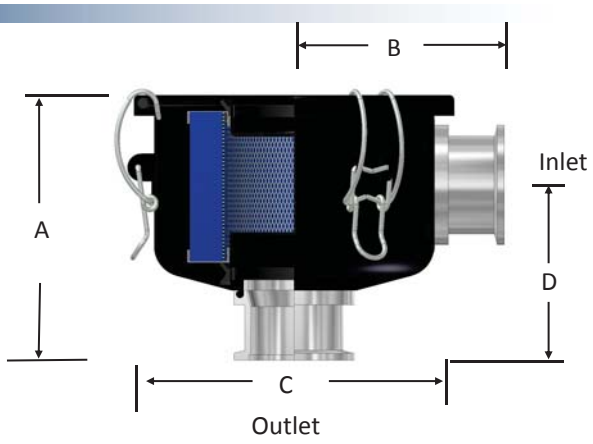
"L" Style Vacuum Filters
ISO CSL Series NW16 - NW40 FLG



Features

- ISO flange connections
  - Stainless steel ISO flange
  - Buna o-ring sealed
- Seamless drawn housings
- Corrosive resistant carbon steel construction
- Powder coat finish (Black models)
- O-ring housing seal
- Stainless steel torsion clips

Series Specific Applications

- Prevent dry scroll tip seal migration
- Polycrystalline silicone ingot production
- Vacuum coating
- Solar cell lamination
- Trap condensable vapors
- Thin-film manufacturing
- Protect against backstreaming

Technical Specifications

- Vacuum Leak Rate: $1x10^{-5}$ mbar l/sec
- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

**See Vacuum Filter Technical Data for Vacuum Service Data.

Options

ATEX Available

- Contact factory for larger sizes
- Viton seals
- Stainless steel (select models)
- Activated Alumina, Activated Zeolite media available for foreline trap and other applications

Inlet Vacuum Filters

SS ISO Flange Black Housing Finish

ISO Flg Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
NW16	39	CSL-825-NW16B	CSL-824-NW16B	99	67	95	58	0.4	825	824	42
NW25	42	CSL-825-NW25B	CSL-824-NW25B	99	67	95	58	0.4	825	824	42
NW25	59	CSL-843-NW25B	CSL-842-NW25B	111	86	146	66	1	843	842	93
NW40	93	CSL-843-NW40B	CSL-842-NW40B	121	96	146	80	1	843	842	93
NW40	136	CSL-849-NW40B	CSL-848-NW40B	183	117	187	127	2	849	848	195
K63	357	CSL-851-K63B	CSL-850-K63B	296	155	222	165	7	851	850	493
K100	510	CSL-239-K100B	CSL-238-K100B	400	222	337	218	10	239	238	969

SS ISO Flange Nickel Housing Finish

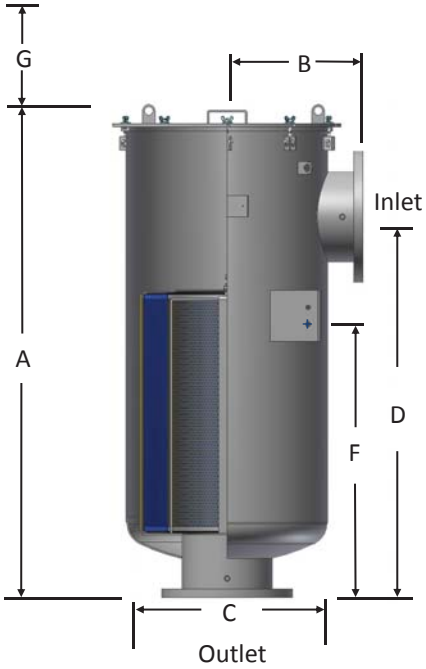
ISO Flg Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
NW16	39	CSL-825-NW16EN	CSL-824-NW16EN	99	67	95	58	0.4	825	824	42
NW25	42	CSL-825-NW25EN	CSL-824-NW25EN	99	67	95	58	0.4	825	824	42
NW25	59	CSL-843-NW25EN	CSL-842-NW25EN	111	86	146	66	1	843	842	93
NW40	93	CSL-843-NW40EN	CSL-842-NW40EN	121	96	146	80	1	843	842	93
NW40	136	CSL-849-NW40EN	CSL-848-NW40EN	183	117	187	127	2	849	848	195
K63	357	CSL-851-K63EN	CSL-850-K63EN	296	155	222	165	7	851	850	493
K100	510	CSL-239-K100EN	CSL-238-K100EN	400	222	337	218	10	239	238	969

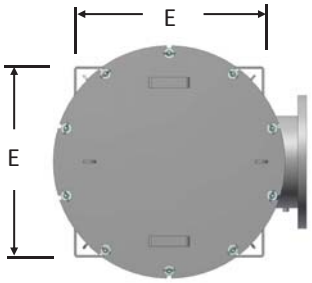
See Vacuum Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

”L” Style Vacuum Filters
CSL Series 3”- 6”BSPT

DN80-DN300 FLG





Features

- Heavy duty T bolts for easy maintenance
- Corrosive resistant carbon steel construction
- Black powder coat finish
- O-ring seal with U-channel groove
- Inlet & outlet 1/4” gauge taps
- Lifting lugs
- Brackets for optional support legs
- Nameplate bracket

Benefits

- Mount horizontally or inverted with “Stay in Place” O-ring u-channel groove
- Low pressure drop construction

Options

ATEX Available

- Straight-through configurations
- Various filter media
- Stainless steel
- Various nonstandard finishes and connection styles
- ISO Flange
- PN6, PN16 flange patterns
- Flange faces free of paint
- Mounting housing bands
- Internal surfaces free of paint

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Hydrostatically tested to 0.5 bar pressure
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

**See Vacuum Filter Technical Data for vacuum service data.

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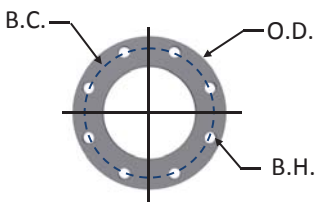
”L” Style Vacuum Filters
CSL Series 3”- 6”BSPT
DN80-DN300 FLG

Flanged Assemblies

Flange Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	E	F	Suggested Service HT. G	Approx. Wt. Kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
DN80	510	CSL-235P-DN80	CSL-234P-DN80	689	229	356	470	299	314	305	28	235P	234P	970
DN80	510	CSL-335P-DN80	CSL-334P-DN80	689	229	356	470	299	314	432	29	335P	334P	1360
DN100	885	CSL-235P-DN100	CSL-234P-DN100	695	229	356	470	303	305	305	28	235P	234P	970
DN100	885	CSL-335P-DN100	CSL-334P-DN100	695	229	356	470	303	305	432	29	335P	334P	1360
DN125	1360	CSL-245P-DN125	CSL-244P-DN125	718	279	470	495	376	346	305	40	245P	244P	1500
DN125	1360	CSL-345P-DN125	CSL-344P-DN125	718	279	470	495	376	346	432	41	345P	344P	1870
DN150	1870	CSL-275P-DN150	CSL-274P-DN150	743	305	470	521	377	400	305	50	275P	274P	1870
DN150	1870	CSL-375P-DN150	CSL-374P-DN150	743	305	470	521	377	400	432	51	375P	374P	2550
DN200	3060	CSL-377P-DN200	CSL-376P-DN200	993	356	572	648	489	437	432	83	377P	376P	3105
DN250	4930	CSL-385P-DN250	CSL-384P-DN250	1130	410	686	864	567	598	432	115	385P	384P	5610
DN300	7990	CSL-485P-DN300	CSL-484P-DN300	1130	410	686	864	567	622	610	125	485P	484P	8000
DN250	4930	CSL-685P-DN250	CSL-384P(2)-DN250*	1461	406	686	1143	567	876	787	171	685P	384P(2)*	11220
DN300	8415	CSL-685P-DN300	CSL-384P(2)-DN300*	1461	406	672	1143	567	876	787	171	685P	384P(2)*	11220
DN300	8415	CSL-485P(2)-DN300*	CSL-484P(2)-DN300*	1784	406	686	1448	558	673	610	209	485P(2)*	484P(2)*	16000

See Vacuum Filter Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN80	200	160	18	8	20
DN100	220	180	18	8	20
DN125	250	210	18	8	22
DN150	285	240	22	8	22
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26



O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

All flanges are orientated “split center”.

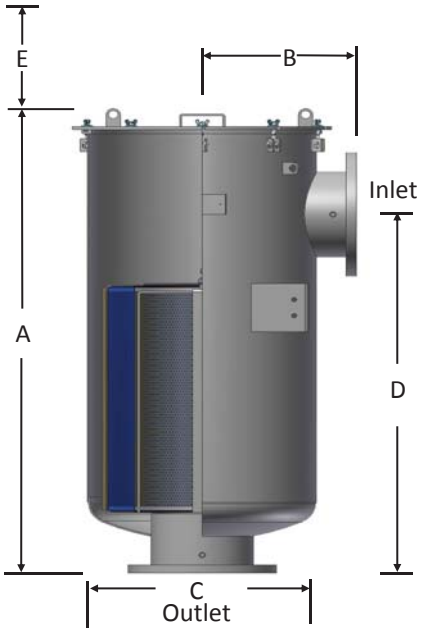
BSPT Assemblies

BSPT Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	E	F	Suggested Service HT. G	Approx. Weight kg	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
3"	510	CSL-235P-301	CSL-234P-301	689	229	356	470	299	314	305	21	235P	234P	970
3"	510	CSL-335P-301	CSL-334P-301	689	229	356	470	299	314	432	23	335P	334P	1360
4"	885	CSL-235P-401	CSL-234P-401	689	229	356	470	303	314	305	23	235P	234P	970
4"	885	CSL-335P-401	CSL-334P-401	689	229	356	470	303	314	432	25	335P	334P	1360
5"	1360	CSL-245P-501	CSL-244P-501	714	279	470	495	376	375	305	37	245P	244P	1500
5"	1360	CSL-345P-501	CSL-344P-501	714	279	470	495	376	375	432	40	345P	344P	1870
6"	1870	CSL-275P-601	CSL-274P-601	740	305	470	521	376	375	305	43	275P	274P	1870
6"	1870	CSL-375P-601	CSL-374P-601	740	305	470	521	376	375	432	44	375P	374P	2550

See Vacuum Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

”L” Style Vacuum Filters
ISO CSL Series K160 - K250 FLG



Features

- Stainless steel ISO flange connections
- High conductance/low pressure drop design
- Heavy duty T bolts for easy maintenance
- Corrosive resistant carbon steel construction
- Black powder coat finish
- O-ring seal with U-channel groove
- Inlet & outlet 1/4” gauge taps
- Lifting lugs
- Brackets for optional support legs
- Nameplate bracket

Series Specific Applications

- Polycrystalline silicone ingot production
- Vacuum coating
- Solar cell lamination
- Vacuum furnaces
- Thin-film manufacturing

Technical Specifications

- Vacuum Leak Rate: $1x10^{-5}$ mbar l/sec
- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -26°C (-15°F)max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

**See Vacuum Filter Technical Data for vacuum service data.

Options

ATEX Available

- Industrial coatings: PTFE, Epoxy, Kynar, plating
- Material: stainless steel
- Various filter media
- ISO F flanges

ISO Flg Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number Polyester	Assembly Part Number Paper	Dimensions - mm A	B	C	D	Suggested Service HT. E	Approx. Weight kg	Replacement Element Part No. Polyester	Paper	Element m^3/h Rating
K160	1870	CSL-275P-K160	CSL-274P-K160	734	305	470	521	305	50	275P	274P	1870
K160	1870	CSL-375P-K160	CSL-374P-K160	734	305	470	521	432	51	375P	374P	2550
K200	3060	CSL-377P-K200	CSL-376P-K200	1017	356	572	648	432	83	377P	376P	3105
K250	4930	CSL-385P-K250	CSL-384P-K250	1214	410	686	864	432	115	385P	384P	5610
K320	7930	CSL-485P-K320	CSL-484P-K320	Contact Solberg for dimensions				610	125	485P	484P	8000
K320	8415	CSL-685P-K320	CSL-384P(2)-K320*					787	171	685P	384P(2)*	11220

See Vacuum Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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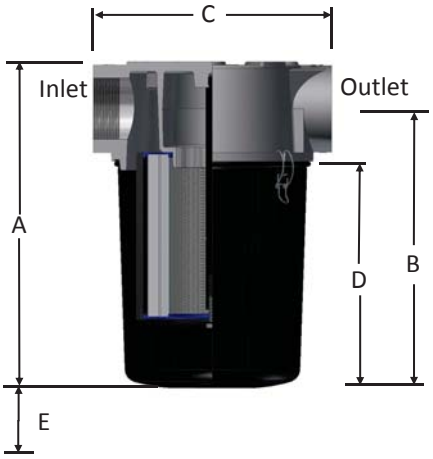
”T” Style Vacuum Filters
CT Series 1” – 6” BSPP



Features

- Compact design for space restrictions; min. service area
- Inlet above element for extended element life & maintenance intervals
- Cast, corrosion resistant aluminum top with machined connections and integrated baffle design
- 4 taps for mounting brackets:
  - 2”, 2-1/2”, 6” connections: M12x1.75 taps
  - 3” to 4” connections: 1/2”-13 taps
- ”T” style design minimizes piping requirements
- Black powder coat carbon steel drop down bucket
- Clip release shell for easy maintenance
- Swing bolts standard on 6” housings
- Drill points for additional taps:
  - 1”, 1-1/4”, 1-1/2”, 3”, 4” (gauge or bracket)
- 1/4” FPT inlet/outlet taps for gauges: 2”, 2-1/2”, & 6”

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -26°C (-15°F)max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

** See Vacuum Filter Technical Data for vacuum service data.

Options

ATEX Available

- Swing bolts for heavy duty environments
- Drain ports
- Extended bucket (select models)
- Various nonstandard finishes
- Reverse pulse configuration

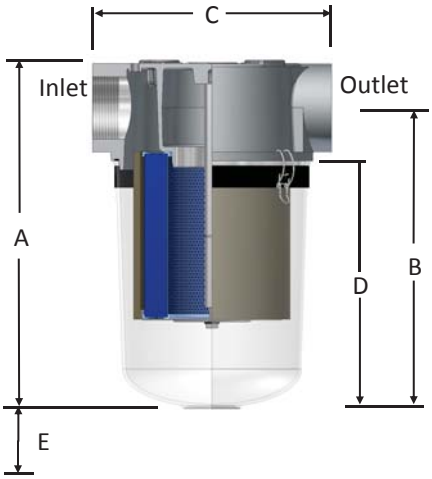
BSPP Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number		Dimensions - mm				Suggested Service HT.	Approx. Weight	Replacement Element Part No.		Element m^3/h
		Polyester	Paper	A	B	C	D	E	kg	Polyester	Paper	Rating
1"	68	CT-897-101C	CT-896-101C	334	297	178	257	228	5.4	897	896	196
1-1/4"	102	CT-897-126C	CT-896-126C	334	297	178	257	228	5.2	897	896	196
1-1/2"	136	CT-897-151C	CT-896-151C	334	297	178	257	228	5.1	897	896	196
2"	298	CT-851-201C	CT-850-201C	325	275	229	229	228	7.2	851	850	495
2-1/2"	357	CT-851-251C	CT-850-251C	325	275	229	229	228	6.8	851	850	495
3"	510	CT-235P-301C	CT-234P-301C	473	404	343	328	228	14	235P	234P	969
4"	884	CT-235P-401C	CT-234P-401C	473	404	343	328	228	12	235P	234P	969
6"	1870	CT-275P-601C	CT-274P-601C	483	363	483	249	254	20	275P	274P	1870

See Vacuum Filter Technical Data section for sizing guidelines.

Note: CT 2” & 2-1/2” models: Element seals on the base of the housing.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

See-Through Vacuum Filters
ST Series 1”–4” BSPP



Features

- Compact design for space restrictions; min. service area
- Inlet above element for extended element life & maintenance intervals
- Cast, corrosion resistant aluminum top with machined connections and integrated baffle design
- 4 taps for mounting brackets:
  - 2” to 2-1/2” connections: M12x1.75 taps
  - 3” to 4” connections: 1/2”-13 taps
- ”T” style design minimizes piping requirements
- Bucket made from shatter resistant polycarbonate
- Clip release shell for easy maintenance
- Swing bolts standard on 6” housings
- Drill points for additional taps:
  - 1”, 1-1/4”, 1-1/2”, 3”, 4” (gauge or bracket)
- 1/4” FPT inlet/outlet taps for gauges: 2”, 2-1/2”

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

** See Vacuum Filter Technical Data for vacuum service data.

Options

- Swing bolts for heavy duty environments
- Drain ports
- Spool piece extender (select models)
- Reverse pulse configuration

BSPP Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number		Dimensions - mm				Suggested Service HT.	Approx. Weight	Replacement Element Part No.		Element m^3/h Rating
		Polyester	Paper	A	B	C	D	E	kg	Polyester	Paper	
1"	68	ST-897-101C	ST-896-101C	340	303	178	264	228	5.0	897	896	196
1-1/4"	102	ST-897-126C	ST-896-126C	340	303	178	264	228	4.7	897	896	196
1-1/2"	136	ST-897-151C	ST-896-151C	340	303	178	264	228	4.6	897	896	196
2"	298	ST-851/1-201C	ST-850/1-201C	413	362	229	315	228	7.2	851/1	850/1	495
2-1/2"	357	ST-851/1-251C	ST-850/1-251C	413	362	229	315	228	6.8	851/1	850/1	495
3"	510	ST-235P-301C	ST-234P-301C	502	432	343	356	228	13	235P	234P	969
4"	884	ST-235P-401C	ST-234P-401C	502	432	343	356	228	11	235P	234P	969

See Vacuum Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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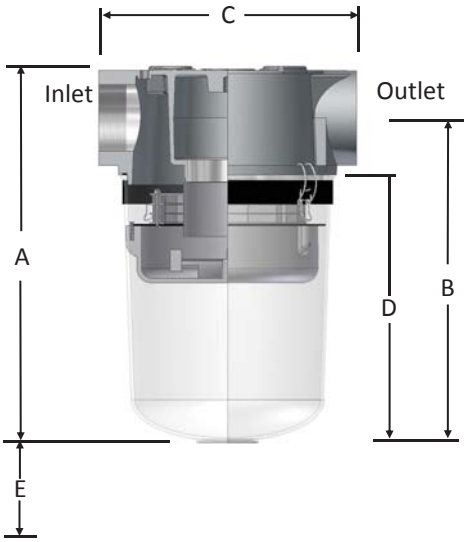
Extreme Duty Filtration
SpinMeister™ ST Series



Operating Principle

- Centrifugal force from intake air causes particulate to separate from air stream, forcing it to the outer cover perimeter and out through the discharge port
- SpinMeister™ Precleaner eliminates large objects from entering air stream
- The air stream then enters the inlet filter and is filtered by a 99+% efficient pleated element

Technical Specifications

- Vacuum Rating: Coarse vacuum service**
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

**See Vacuum Filter Technical Data for Vacuum Service Data.

Features

- Extreme duty filtration for high dust environments
- Excellent removal for short fibers
- Significantly increases life of filter element
- SpinMeister™ Precleaner
  - 85+% efficient up to 15 microns
  - Durable molded fiber filled composite material
  - Pressure drop reduced compared to typ. precleaners
- Bucket made from shatter resistant polycarbonate
- Large dirt holding capacity
- Clip release band for easy maintenance

Options

- SpinMeisters™ available in polished Aluminum
- Larger systems available
- Various media
- Spool piece extender (select models)
- Pressure drop gauge
- Carbon steel bucket versions

BSPP Inlet & Outlet	m^3/h Rating Range w/ SpinMeister	m^3/h Rating with Element	Assembly Part Number SpinMeister	Assembly Part Number Polyester Element	Assembly Part Number Paper Element	Dimensions - mm A	B	C	D	Suggested Service Area E	Replacement Element Part No. Polyester	Replacement Element Part No. Paper	Element m^3/h Rating
2"	68-187	298	ST-SML235-201C	ST-851/1-201C	ST-850/1-201C	413	362	229	315	228	851/1	850/1	495
2-1/2"	68-188	357	ST-SML235-251C	ST-851/1-251C	ST-850/1-251C	413	362	229	315	228	851/1	850/1	495
3"	170-340	510	ST-SML345-301C	ST-235P-301C	ST-234P-301C	502	432	343	356	228	235P	234P	969
3"	340-765	510	ST-SML445-301C	ST-235P-301C	ST-234P-301C	502	432	343	356	228	235P	234P	969
4"	170-340	884	ST-SML345-401C	ST-235P-401C	ST-234P-401C	502	432	343	356	228	235P	234P	969
4"	340-765	884	ST-SML445-401C	ST-235P-401C	ST-234P-401C	502	432	343	356	228	235P	234P	969
6"	765-1530	1870	CTD-SM6-601C**	CT-275P-601C*	CT-274P-601C*	645	546	483	432	254	275P	274P	1870

See Vacuum Filter Technical Data section for sizing guidelines.

* Denotes housings with carbon steel buckets

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Vacuum Filters for Medical Facilities
HV Series 1” – 4” BSPP

Series Specific Application

- Designed specifically for use in laboratory and hospital work area environments
- Vacuum Pumps & Vacuum Systems

Industry Need

Inlet vacuum filters used in medical facilities’ work areas prevents damage to vacuum pumps and protects the work area environment from harmful contaminates. They are designed for the removal of liquids, solids, and sub-micron particles.

These high efficiency inlet vacuum filters are specifically designed for medical vacuum service on atmospheric air applications and can be used on a variety of vacuum pumps in most laboratory and hospital environments.

Features

- H14 UL media
  - 99.97% @ 0.1 micron
  - Low air to media ratio minimizes pressure loss for optimal pump performance
  - High dirt holding capacity
- Vacuum Rating: Medium vacuum service**
- Corrosion resistant cast aluminum head with integrated baffle
- “E.R” pressure drop indicator gauge; this “Easy Read” gauge provides color coordinated pressure drop readings
- See-through bucket made from shatter resistant polycarbonate material
- Brass valve and fittings for contaminated liquid release
- Easy removable & serviceable sterilizable glass flask
- Biohazard label included
- Certification: Contact factory

**See Vacuum Filter Technical Data for Vacuum Service Data.

Options

- Vacuum filter systems
- Support stand and protective shroud
- Carbon steel bucket for severe duty applications
- Oxygen rich systems-contact factory for specialized construction requirements
- Larger configurations, contact factory

BSPP Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number	Approx. Weight kg	Replacement Element Part No.
1"	70	HV-UL896-101C	7	UL896
1-1/4"	70	HV-UL896-126C	6	UL896
1-1/2"	70	HV-UL896-151C	6	UL896
2"	175	HV-UL850/1-201C	9	UL850/1
2-1/2"	175	HV-UL850/1-251C	8	UL850/1
3"	340	HV-UL234/2-301C	15	UL234/2
4"	340	HV-UL234/2-401C	13	UL234/2

Contact factory for dimensions.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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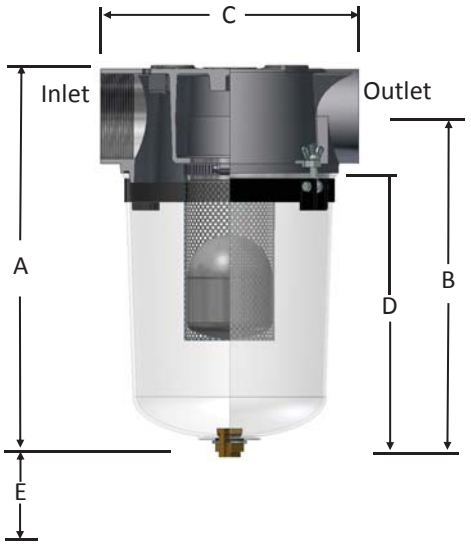
See -Through Liquid Separators
STS Series 1 - 4” BSPP



Operating Principle

- Inlet air with potentially harmful liquid and large particulate enters the housing and is separated by a baffling mechanism and directional air flow changes.
- The larger particles and liquid drops down and collects at the bottom of the separator.
- The float bullet within the separator screen rises with the liquid level until max capacity and limits the flow thereby protecting the pump from damage.

Benefits

- Minimize the likelihood of liquid and debris from damaging vacuum valves and pumps
- Easy visual inspection with see-through housing
- Reduce piping costs with “T” style configuration
- Compact design for space restricted work areas

Features

- Vacuum Rating: Medium vacuum service**
- Bucket made from shatter resistant polycarbonate
- Corrosion resistant cast aluminum head w/knock-out baffle
- Stainless steel float capsule for emergency shut off
- Stainless steel perforated float tube (SS expanded metal float tube on 1” - 1-1/2”)
- Clamp style swing bolts on 3” & 4” standard
- Temperature ratings: max 104°C (220°F)
- 1/4"BSPP drain (1" to 1-1/2"), 1/2" drain (2" to 4")
- Drill points for additional taps:
  - 1”, 1-1/4”, 1-1/2”, 3”, 4” (gauge or bracket)
- 1/4” FPT inlet/outlet taps for gauges: 2”, 2-1/2”

Options

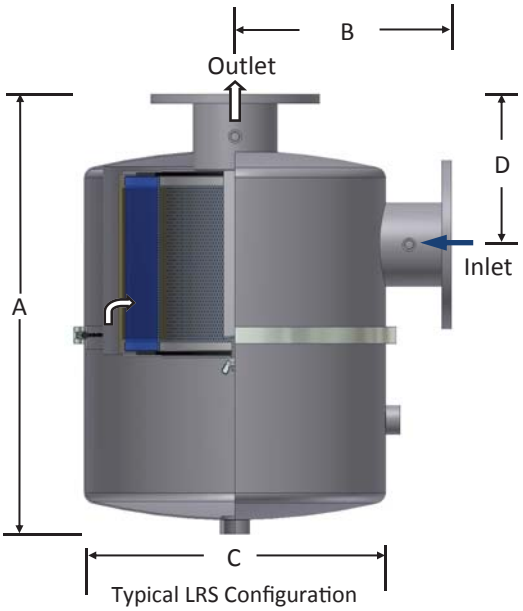
- Float level port/switch
- Cast head protective coatings
- Heavy duty carbon steel buckets available
- Clamp style swing bolts on 1” to 2-1/2”
- Spool piece extender on select models
- Drain systems CE compliant (See page 4-21)
- Pressure drop gauge

** See Vacuum Filter Technical Data for vacuum service data.

BSPP Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number	Dimensions - mm A	B	C	D	Suggested Service HT. E	Holding Capacity (liter)
1"	68	STS-101C	362	325	178	285	228	1.6
1-1/4"	102	STS-126C	362	325	178	285	228	1.6
1-1/2"	136	STS-151C	362	325	178	285	228	1.6
2"	297	STS-201C	438	388	229	342	228	3.7
2-1/2"	356	STS-251C	438	388	229	342	228	3.7
3"	510	STS-301C	522	454	343	378	228	5.7
4"	850	STS-401C	522	454	343	378	228	5.7

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Liquid Separator/Vacuum Filter
LRS Series, SRS Series

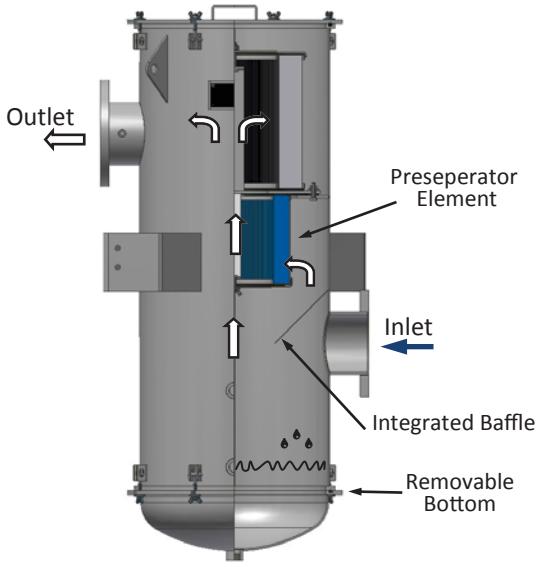


Typical LRS Configuration

Operating Principle

- The inlet air with potentially harmful liquids and particulate enters the highly efficient vacuum filter and is separated by a baffling system.
- The larger particles and liquid drop down to the large capacity lower chamber.
- The lower chamber has significant liquid/slurry holding capacity and has a removable base for easy cleaning.
- The final stage has a replaceable filter element for particulate that is 99+% efficient before it reaches the vacuum pump.

Note: A typical SRS Series design has a preseperator before the filter element for additional liquid/particulate removal.



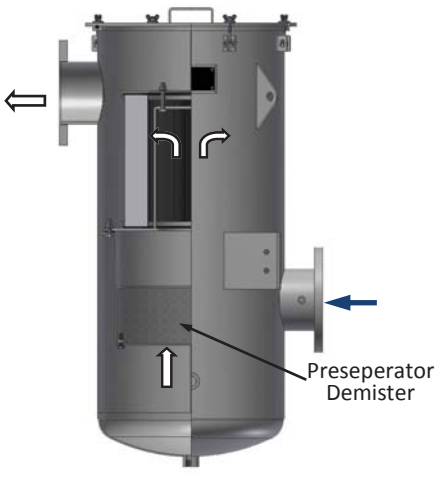
SRS with Preseperator Element

LRS Series Specifications

- Multiple stage filtration:
  - Integrated baffle
  - 99+% efficient polyester particulate filter element
- For aerosol apps, additional knock out pot or separator is unnecessary
- Compact construction design

SRS Series Specifications

- Multiple stage filtration
  - Integrated baffle
  - Preseperator wire mesh element (Stainless steel construction recommended)
  - 99+% efficient polyester particulate filter element
- Additional knock out pot or separator unnecessary
- Significant liquid/slurry holding capacity
- Removable base option for easy access cleaning
- Brackets for support legs & nameplate
- Lifting lugs



SRS with Preseperator Demister Option

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Liquid Separator/Vacuum Filter
LRS Series, SRS Series

Benefits

- Simplified vacuum package: 2 functions in 1 (liquid separator & inlet air filter)
- High efficiency separation & multistage filtration
- Protects pump from harmful liquids that breaks down lubricating/sealing oil
- Lower costs from unnecessary piping
- Significant liquid/slurry holding capacity
- Prevents emulsification of oil in oil lubricated systems
- Reduce footprint with compact design

Features

- Corrosive resistant carbon steel construction
- Blue epoxy coating
- Baffle system
- 1/4" inlet/outlet taps (select models)
- 1" drain port and sight port
- Wide range of operation flows

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron

**See Vacuum Filter Technical Data for vacuum service data.

Options

ATEX Available

- PED, ASME rated vessels
- Stainless steel construction & nonstandard finishes
- Nonstandard filter media
- Extended bucket for additional holding capacity
- Preseperator stainless steel demister
- Stainless steel wire mesh preseperator element: (Stainless steel construction recommended)
- Safety switch port for high liquid warning
- Drain systems CE compliant (See page 4-21)
- Support legs, lifting lugs, vacuum gauges

LRS Series

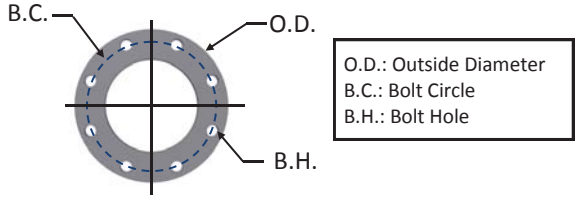
Assembly m^3/h Rating	Inlet / Outlet Size	Inlet / Outlet Type	Assembly Part Number	Dimensions - mm A	B	C	D	Approx. Holding Capacity L	Replacement Element Part No.	Element m^3/h Rating
105	3/4"	NPSC	LRS-19-075HC	451	112	195	84	5.7	19	170
145	1"	BSPP	LRS-19-101HC	455	117	195	89	5.7	19	170
145	1 1/4"	BSPP	LRS-19-126HC	455	117	195	89	5.7	19	170
170	1 1/2"	BSPP	LRS-19-151HC	455	118	195	90	5.7	19	170
230	2"	BSPP	LRS-237-201HC	564	171	305	168	9.5	237	935
335	2 1/2"	BSPP	LRS-237-251HC	618	226	305	222	9.5	237	935
510	3"	BSPP	LRS-237-301HC	618	226	305	222	9.5	237	935
885	DN100	FLG	LRS-275-DN100	594	292	406	203	17	275	1870
1415	DN150	FLG	LRS-275-DN150	1032	305	406	229	17	275	1870

See Vacuum Filter Technical Data section for sizing guidelines.

SRS Series (Contact factory for details. Stainless steel configurations available.)

Assembly m^3/h Rating	Flange Inlet & Outlet	Reference Only Assembly Part Number	Approx Holding Capacity L	Replacement Element Part No.
1869	DN150	SRS-377/274S-DN150	76	377/274S
3058	DN200	SRS-385/376S-DN200	170	385/376S
4162	DN250	SRS-385/384S-DN250	170	385/384S
5606	DN250	SRS-485/384S-DN250	300	485/384S
7475	DN300	SRS-485/384S-DN300	300	485/384S

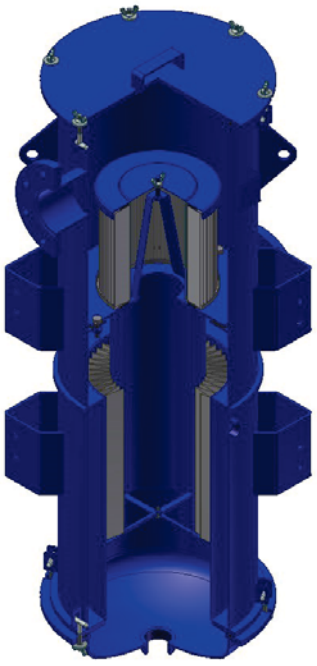
PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN100	220	180	18	8	20
DN150	285	240	22	8	22
DN200	340	295	22	8	24
DN250	395	350	22	12	26
DN300	445	400	22	12	26

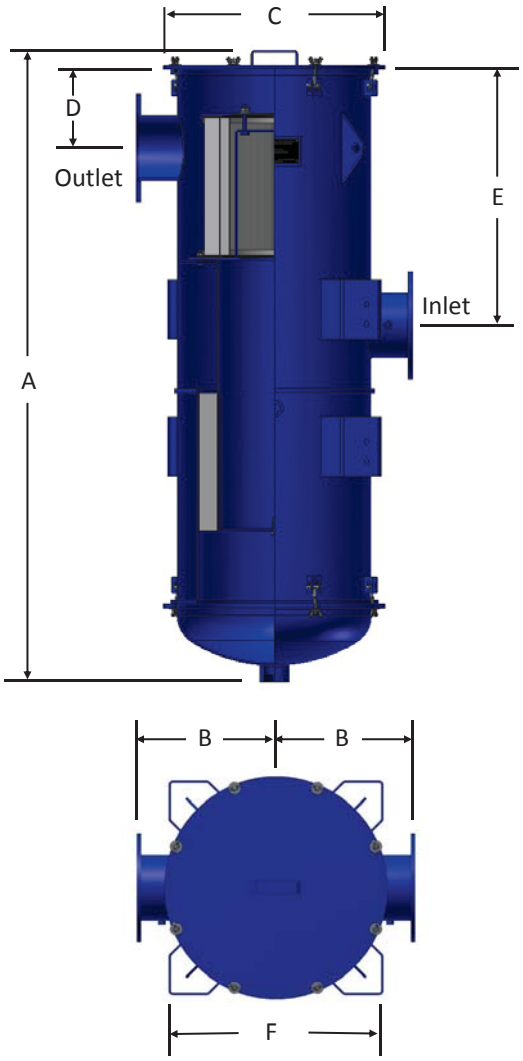


All flanges are orientated "split center".

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Vapor Condensing Separator Trap
JRS Series





Operating Principle

JRS Series vacuum filter systems are designed to protect equipment from harmful vapors and liquids that can break down pump oils and destroy a pump's inner workings. Vapor removal is accomplished through transitioning a substance from a gaseous state to a liquid or solid state and collecting any condensed material that accumulates.

Features

- Removable heat exchanger fin pack for ease of cleaning and long lasting optimum performance
- Coolant jacket system
- Corrosion resistant carbon steel construction
- Coolant inlet and outlet ports
- Removable bottom for full accessibility
- 2" drain port

Options

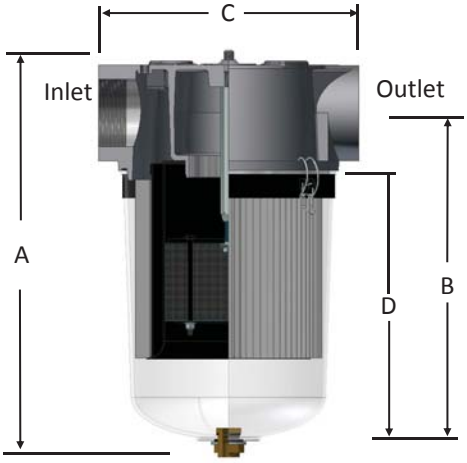
ATEX Available

- PED, ASME rated vessels
- Stainless steel construction
- Drain systems CE compliant (See page 4-21)
- Ports, gauges, leg supports
- Davit arm

Reference Assembly m^3/h	Inlet / Outlet Size	Inlet / Outlet Type	Reference Only Assembly Part Number	Reference Only Dimensions - mm A	B	C	D	E	F	Reference Only Element PN
243	DN50	FLG	JRS-GMAC235-DN50	1280	250	340	150	550	466	GMAC235
374	DN80	FLG	JRS-GMAC245-DN80	1450	300	440	200	625	542	GMAC245
468	DN100	FLG	JRS-GMAC275-DN100	1461	300	470	200	625	542	GMAC275
774	DN125	FLG	JRS-GMAC377-DN125	1622	350	540	200	800	615	GMAC377
1403	DN150	FLG	JRS-GMAC385-DN150	1633	425	572	200	800	688	GMAC385
1998	DN200	FLG	JRS-GMAC485-DN200	2042	425	640	200	1050	688	GMAC485

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Vapor Condensing Separator Trap
Compact JST/JCT Series



Operating Principle

JST & JCT Series vapor condensers are designed to protect equipment from harmful vapors and liquids that can break down pump oils and harms a pump's inner workings. Vapor removal is accomplished through transitioning a substance from a gaseous state to a liquid or solid state and collecting any condensed material that accumulates.

Options

ATEX Available

- ATEX available for JCT versions only
- Additional ports
- Vacuum gauge
- Support frame
- Drain systems CE compliant (See page 4-21)
- Spool piece/Extended bucket (select models/sizes)

Features

- Removable heat exchanger fin pack for ease of cleaning and long lasting optimum performance
- Coolant jacket system
- Stainless steel demister pad
- Compact housing for minimal footprint
- Removable bottom for full accessibility
- Coolant inlet and outlet ports
- JST Series:
  - Durable see-through bucket made from shatter resistant polycarbonate
  - 1/2" drain port
- JCT Series:
  - Corrosive resistant carbon steel bucket
  - 1" drain port
- Contact Solberg for flow rates for your specific application

See-Through Housing

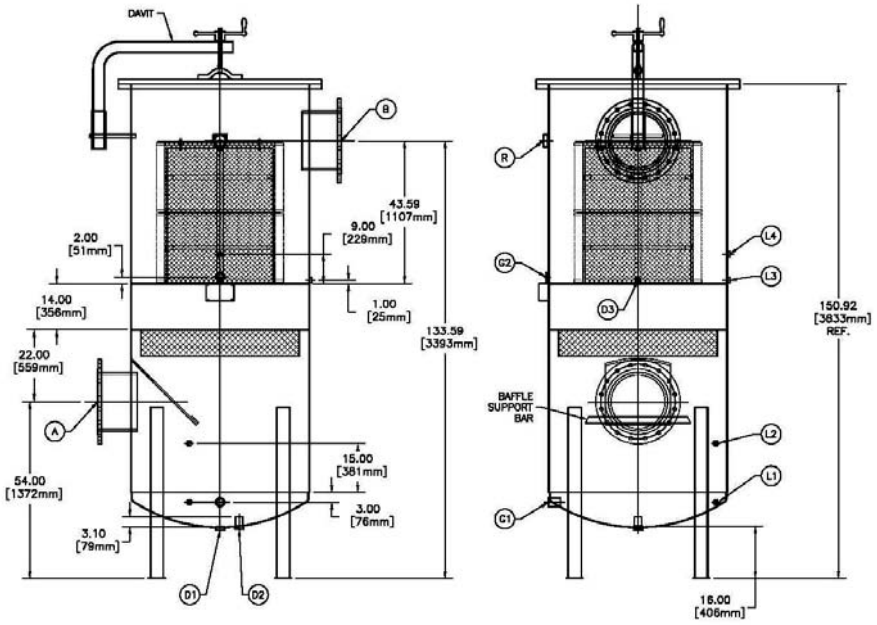
BSPP Inlet & Outlet	Assembly Part Number	Reference Dimensions - mm A	B	C	D
2"	JST-C2048-201C	445	380	229	334
2-1/2"	JST-C2048-251C	445	380	229	334
3"	JST-C2081-301C	537	454	343	378
4"	JST-C2081-401C	537	454	343	378

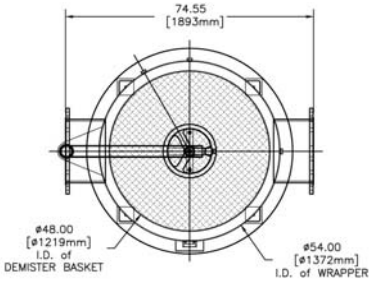
Black Carbon Steel Housing

2"	JCT-C2048-201C	413	364	229	318
2-1/2"	JCT-C2048-251C	413	364	229	318
3"	JCT-C2081-301C	656	571	343	495
4"	JCT-C2081-401C	656	571	343	495
6"	JCT-C3226-601C	757	646	483	532

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Natural Gas Filtration
Suction/Interstage Scrubbers





Note: Drawings are shown with sample configuration and dimensions only.

Series Specific Applications

- Landfill and Bio-Gas recovery
- Fuel for reciprocating engines and gas turbines
- Gas compression
- Compressor packages
  - Rotary Screw
  - Centrifugal
  - Reciprocating
  - Vane

Features

- Protects equipment from condensate, oil, and particulate entrained in the gas stream
- Multi-stage separation
  - 316 SS vane pack and/or demister pad for heavy condensate and oil removal
  - High efficiency 99+% final filter elements
- Corrosion resistant carbon steel construction
- Contact factory for model offering and availability

Options

ATEX Available

- Special standards: PED, ATEX, ASME Vessel code sec. VIII division I
- Stainless steel construction
- Special coatings or finishes
- Replaceable filter elements in various media for particulate removal
- Gauge ports, float switches
- Custom leg supports
- Flush port for vessel cleaning
- Davit arm for vessel lid removal

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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Vacuum Filters for Solar, Semi-Con, LED, Coating

Reverse Pulse Filter: RX Series

Operating Principle

- Reverse pulse technology extends maintenance intervals and improves process productivity by rapidly introducing atmospheric air or inert gas into the system.
- This process purges dust from loaded filters and allows the particles to settle in the bottom chamber for easy disposal.

Series Specific Applications

- Vacuum furnaces for crystal growing, steel, titanium, etc.
- Vacuum coating and lamination
- Wet & dry vacuum pumps & systems
- Compatible with most dopants
- Backstreaming

Features

- Integrated reverse pulse technology unloads and extends filter life; improving maintenance intervals and process run time
- Safeguard pumps from harmful particles (SiO_x, GAN, etc.)
- Prevents particles from contaminating pump oil
- Prevents build up and seizing in dry pumps
- Integrated support stand
- Removable base for easy cleaning access
- Carbon steel or stainless steel housing construction

Benefits

- Extends filter life improving maintenance intervals and process run time
- High conductance design
- Lower costs from unnecessary piping
- Large liquid/slurry holding capacity
- Easy maintenance (removable base)
- Reduced footprint

Technical Specifications

- Vacuum Leak Rate: $1x10^{-5}$ mbar l/sec
- Vacuum Rating: Medium vacuum service**
- Face Velocity @ .10 m/sec (20 ft/min)

**See Vacuum Filter Technical Data for Vacuum Service Data.

Options

- Configured and custom designs
- Nonstandard finishes
- PTFE media: Temp (continuous): 104°C (220°F)
- Dutch Twill media: Temp (continuous): 190°C(375°F)
- ASME, PED rated vessels
- Parallel filtration systems
- Valves for semi or fully automated system operation
- Vacuum Leak Rating: $1x10^{-8}$ mbar l/sec
- Contact factory for model offering and availability

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Pressure Drop Gauges For Vacuum Filters

PN: 2030

Differential Vacuum Gauge

- Indicates pressure drop across the filter assembly or filter element
- Shock and vibration resistant
- To be used on CSL & HDL Series

PN: 555-0048

EZ Read Pressure Drop Gauge

- Gauge Kit includes: gauge, connectors, mounting hardware
- To be used on ST, CT and HV series

PN: VG-030-025

PN: VGB-030-025

Vacuum Gauges

- Monitor amount of restriction across the filter assembly or element, when installed on the inlet and outlet
- Convenient and inexpensive way to assure maximum usage from filter element
- 1/4” connection
- 0-30” Hg (0-760mm Hg)

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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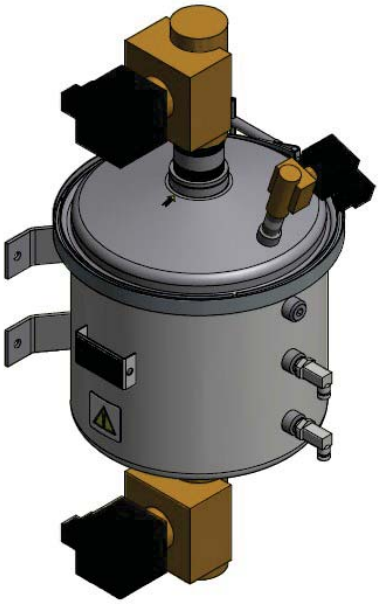
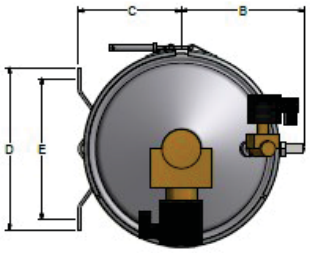
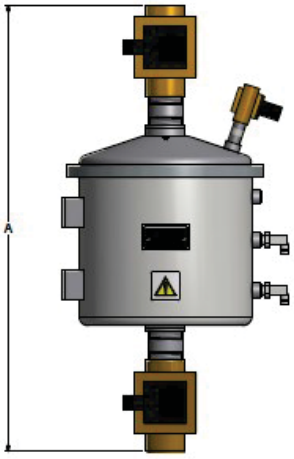
Automatic Drain System
for STS, LRS, SRS, JST, JRS







Operating Principle

The Automatic Drain System allows Solberg Liquid Separator units to be drained without stopping the process and breaking the vacuum. The liquid removed by the liquid separator flows under gravity into the drain pot. When the high level switch triggers, the drain pot is isolated from the liquid separator by the upper solenoid valve. The vacuum break valve then opens along with the bottom drain valve allowing the liquid to drain to atmosphere. Once the lower level switch opens the drain valve and vacuum break close, the upper solenoid valve opens and the process repeats.

Features

- Capacity of 2, 5 and 10 liters available
- Durable carbon steel construction
- Stainless steel coating
- Magnetic float switch in stainless steel with electrical plug connection
- Bracket for 5 and 10 liters drain pot to support the system on a frame or a wall
- 2/2 ways diaphragm valves with solenoid system 230 VAC , brass and NBR-K seat seal

Options

- Stainless steel construction (304,316)
- Stainless steel solenoid valves
- Electrical box according to EN 60204-1
- Filter silencer for bleed valve
- Extra high level switch

Holding Capacity (liter)	BSPP Inlet & Outlet	Assembly Part Number		Dimensions - mm					Weight kg
		Carbon Steel (SS Coating)	304SS	A	B	C	D	E	
2	1/2"	DSE-L002-050HC	DSE-L002-050HCS1	522	146	71	-	-	5.5
5	1"	DSE-L005-101HC	DSE-L005-101HCS1	580	166	122	286	254	10
10	1"	DSE-L010-101HC	DSE-L010-101HCS1	652	217	182	286	254	16.5
10	2"	DSE-L010-201HC	DSE-L010-201HCS1	785	217	182	286	254	26

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Air/Oil Separators

Filter Technical Data	pg. 5-2
Oil Mist Vacuum Discharge Filters	
HDL Series 1” - 2 1/2” BSPP	pg. 5-4
HDL Series 3”BSPT - DN200 Flange	pg. 5-5
EE/SV Series 3/8” - 1” BSPP, ISO Flanges	pg. 5-6
EF Series 1/2” - 1 3/4” , ISO Flanges	pg. 5-7
EFDB Series pg. 5-8 - Drain Back Style	pg. 5-8
Natural Gas: Oil Separators	pg. 5-9
Power Gen	
Vacuum Assisted Oil Mist Eliminators	pg. 5-11
Closed Crankcase Ventilation Systems	pg. 5-12
Static Oil Mist Eliminators	pg. 5-13
Static Vent Oil Mist Eliminators	pg. 5-14

SOLBERG®
Filtration • Separation • Silencing

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General

Recent developments in product design allow for the possible selection of oil mist discharge filters based on the type of equipment being used. It is, for the first time, possible to identify the appropriate grade of aerosol discharge filter because of the extensive research completed by the Solberg R&D department. Please follow the rules below to correctly size your oil mist discharge filter. If further consultation is required, please contact Solberg or your Solberg sales representative in your area.

Filter Selection Guidelines

#1: First of all air/oil separators used in Compressed Air Systems, repeatedly fail in a vacuum pump applications. The first consideration is to determine the type of vacuum pump being used. The particle size distribution and mass of oil aerosol discharging from a vacuum pump is as varied as the number of separator tank designs utilized by the industry. The main pump types are Rotary Vane, Rotary Screw, Rotary Piston, Liquid Ring, and Reciprocating Vacuum Pumps. Each type of pump produces its own specific oil discharge characteristics and requires the appropriate media make-up to effectively capture and drain oil aerosols.

#2: Determine the type of oil being used in the vacuum pump. Trade names, viscosity/grade of oil, and the lubricant base (mineral, synthetic, etc.) are all useful in determining the discharge aerosol characteristics.

#3: Determine how much oil the pump consumes under normal operating conditions. Typical consumption rates are gallons or liters per hour. The amount of oil consumed is typically the amount of oil being discharged.

#4: Pump operating cycles including vacuum range, temperature fluctuations, contaminant gases or vapors, and hours of operation per day/week. Also, determine the maximum pressure drop or filter restriction the system will allow.

#5: Determine the operating temperature at the discharge connection. If it is above +104 ° C, methods of cooling the aerosol should be considered.

#6: Note the horsepower of the pump, the outlet connection, and the air flow.

#7: When an external unit is to be used as the primary or sole air/oil separator in a system, a multi-stage severe duty system may be necessary.

#8: In the case where an existing air/oil separator (internal or external) is already used, it is important to specify the desired goal for a second filter. Is it planned to have a multi-staged system for severe or extreme duty applications, or is there a requirement for exceptionally clean discharge air? If a multiple stage system is needed, try to identify the primary stage unit and the purpose for the second stage.

#9: Consider where to install the filter. Where possible it is best to install in moderate temperature (+2° to +38°C) environments and avoid freezing conditions to ensure the oil drains freely without causing undue back pressure to the vacuum pump.

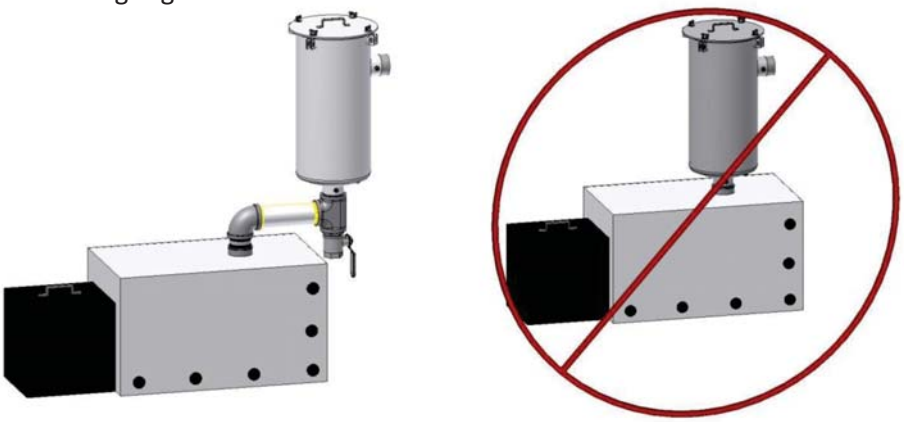
Once as much information as possible is obtained, send the data to Solberg for review and/or review our data sheets in the catalog or on our web page www.solbergmfg.com.

Applications & Equipment

- Vacuum Pumps & Systems
- Vacuum Furnaces & Ovens
- Vacuum Freeze Drying & Outgassing
- Vacuum Metalizing
- Vacuum Drying
- Vacuum Coating
- Custom Vacuum Pumping Systems
- Food Processing & Packaging
- Industrial Vacuum Processes
- Pressure Unloading Vents on Piston Compressors
- Medical Work Areas
- Industrial Aerosol Scrubbing
- Heat Treating Equipment
- Vacuum Hold Down
- Routing Equipment
- Laboratory Industry
- Leak Detectors
- Autoclaving, Sterilization
- Reciprocating Engines
- Crankcase Ventilation Systems

Installation & Maintenance

Mounting orientation is typically top-up vertical so draining can occur. See figure below for proper installation method. Request appropriate maintenance manual from your Solberg representative or through www.solbergmfg.com.



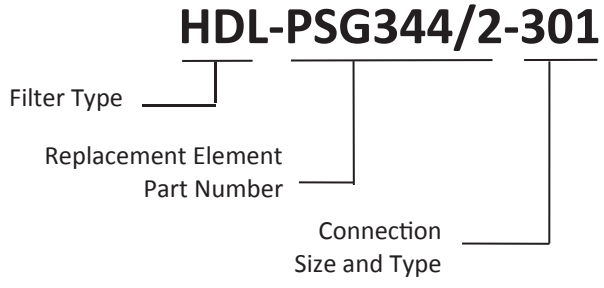
Identification

Standard Solberg assemblies should have an identification label/nameplate that gives the following information:

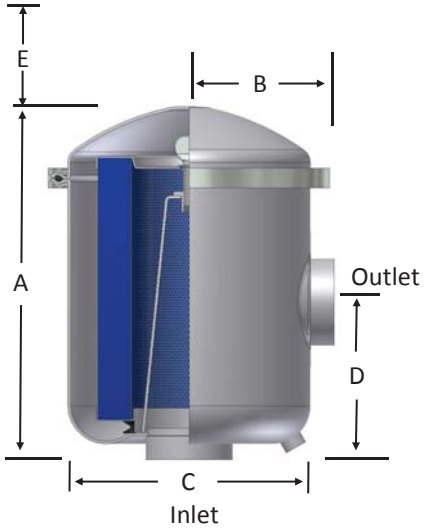
Assembly Model #

Replacement Element #

The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “HDL” design filter with a “PSG344/2” coalescing element, and 3” BSPT connection size.



Oil Mist Discharge Filters
HDL Series 1” - 2 1/2” BSPP



Features

- Captures oil fog, mist or aerosol from exhaust of oil sealed vacuum pumps
- Seamless drawn housings
- O-ring sealed housings
- Corrosive resistant carbon steel construction
- White powder coat finish
- Discharge baffle
- 1/4” drain tap

Benefits

- Easy field maintenance
- Pleated filter element provides increased surface area for low back pressure separation of ultra-fine oil mists
- Waste oil can be recycled

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 20°C (68°F) - 80°C (180°F)
- Mounted vertically
- Pressure rating: 0.35 bar

Options

ATEX Available

- Lower back pressure media
- Application specific gaskets/seals
- Custom connections
- Non-standard finishes
- Stainless steel housings (select models)

BSPP Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number	Housing Config.	Dimensions - mm A	B	C	D	E	Approx. Weight kg	Replacement Element Part No.	Element m^3/h Rating
1"	68	HDL-PSG848-101HC	A	170	105	187	114	133	2	PSG848	85
1 1/4"	85	HDL-PSG848-126HC	A	170	105	187	114	133	2	PSG848	85
1 1/2"	85	HDL-PSG848-151HC	A	171	106	187	115	133	2	PSG848	85
2"	213	HDL-PSG850/1-201HC	B	286	117	223	127	235	7	PSG850/1	213
2"	298	HDL-PSG860/1-201HC	C	442	117	223	127	368	14	PSG860/1	340
2 1/2"	425	HDL-PSG244/2-251HC	B	358	185	337	182	254	16	PSG244/2	510

See Discharge Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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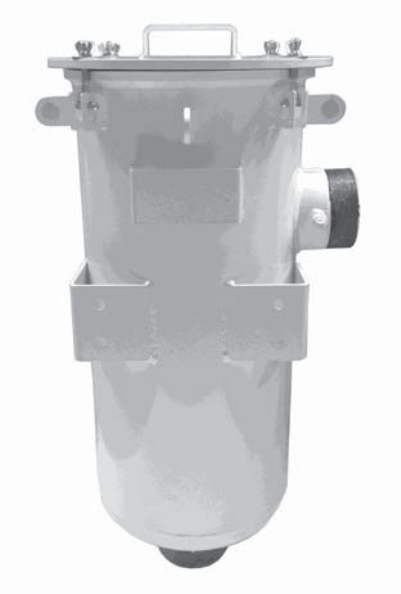
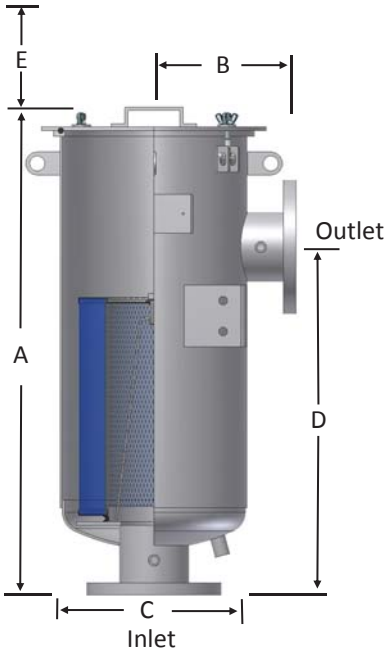
Oil Mist Discharge Filters
HDL Series 3”-6”BSPT,DN200 FLG





Features

- Captures oil fog, mist or aerosol from exhaust of oil sealed vacuum pumps
- O-ring sealed housings
- Corrosive resistant carbon steel construction
- White powder coat finish
- 1/4” drain tap
- Nameplate bracket
- Brackets for optional support legs
- Lifting lugs

Benefits

- Large oil holding capacity and easy field maintenance
- Pleated filter element provides increased surface area for low back pressure separation of ultra-fine oil mists
- Multiple separation stages in single element design
- Waste oil can be recycled

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 20°C (68°F) up to 80°C (180°F)
- Mounted vertically
- Housing pressure rating: 1 bar

Options

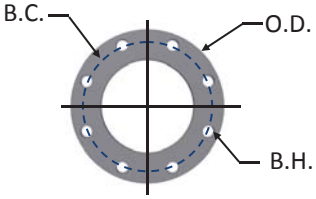
ATEX Available

- Lower back pressure media
- Application specific gaskets/seals
- Various non-standard finishes and connection styles
- Stainless steel housings

Inlet & Outlet	Assembly m^3/h Rating	Assembly Part Number	DIMENSIONS - mm A	B	C	D	E	Approx. Wt. Kg	Replacement Element Part No.	Element m^3/h Rating
3"	510	HDL-PSG344/2-301	794	232	356	572	381	34	PSG344/2	850
4"	850	HDL-PSG344/2-401	794	229	356	572	381	35	PSG344/2	850
5"	1360	HDL-PSG474/2-501	972	279	470	749	559	72	PSG474/2	1870
6"	1870	HDL-PSG474/2-601	997	279	470	775	559	72	PSG474/2	1870
DN200	3060	HDL-PSG476-DN200	989	356	572	648	559	81	PSG476	3060

See Discharge Filter Technical Data section for sizing guidelines.

PN10 Pattern Flange	Dimensions - mm O.D.	B.C.	B.H.	No. of Holes	Thickness Flg mm
DN200	340	295	22	8	24

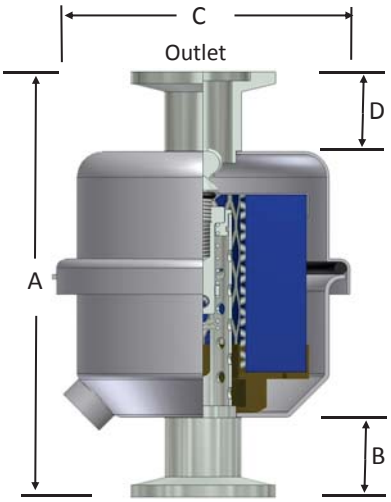


All flanges are orientated “split center”.

O.D.: Outside Diameter
B.C.: Bolt Circle
B.H.: Bolt Hole

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Compact Closed Oil Mist Filters
EE/SV Series Threaded, ISO FLG



EE Series Configuration

Features

- Captures oil fog, mist or aerosol from exhaust of oil sealed vacuum pumps
- Seamless drawn housings
- Corrosive resistant carbon steel construction
- White powder coat finish
- 1/8”oil drain

Benefits

- Compact low profile design
- Easy field maintenance

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)

Options

- Additional ISO flange connections
- Nonstandard finishes available

EE Series Specifications

- Back pressure valve designed to release element at 0.5 bar (7.35 PSI) differential for pump safety

Inlet Type	Outlet Type	Assembly m^3/h Rating	Assembly Part Number	Dimensions - mm A	B	C	D	Replacement Element Part No.	Element m^3/h Rating
3/4"-MPT	1/2"-BSPP	14	EE-GL915-075	116	28	83	13	GL915	14
16mm ISO Flg	16mm ISO Flg	14	EE-GL915-QF16	119	22	83	22	GL915	14
25mm ISO Flg	25mm ISO Flg	14	EE-GL915-QF2516	119	22	83	22	GL915	14
25mm ISO Flg	25mm ISO Flg	34	EE-PSG925-QF25	186	22	133	22	PSG925	34

SV Series Specifications

- Configured without valve

Inlet Type	Outlet Type	Assembly m^3/h Rating	Assembly Part Number	Dimensions - mm A	B	C	D	Replacement Element Part No.	Element m^3/h Rating
3/8" BSPT	5/8" Tube	7	SV-GL910-039	89	18	64	18	GL910	7
1/2" MPT	5/8" Tube	7	SV-GL910-050	115	22	64	13	GL910	7
3/8" BSPT	3/8" MPT	14	SV-GL915-039	119	18	83	18	GL915	14
3/4" BSPT	1/2" FPT	14	SV-GL915-075	115	26	83	14	GL915	14
16mm ISO Flg	16mm ISO Flg	14	SV-GL915-QF16	119	22	83	22	GL915	14
25mm ISO Flg	25mm ISO Flg	14	SV-GL915-QF2516	119	22	83	22	GL915	14

Note: QF2516 Designation: Unit has an ISO NW25 flange with a 16mm tube (neck).

See Oil Mist Discharge Filter Technical Data section for sizing guidelines.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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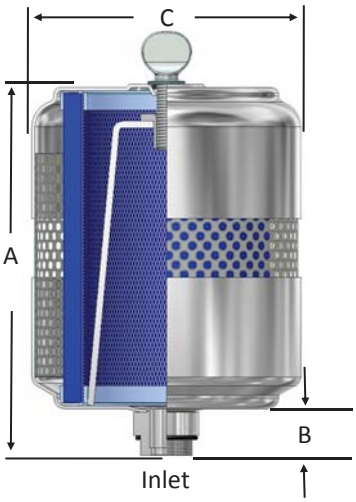
Compact Closded Oil Mist Filters
EF Series 1/2”-1 3/4”NPT,ISO FLG



Features

- Captures oil fog, mist or aerosol from discharge of oil sealed vacuum pumps
- Steel construction
- Nickel plated finish
- Seamless drawn housings
- Easy thumb screw access for element maintenance
- Oil run off from the filter returns to the pump

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)

Options

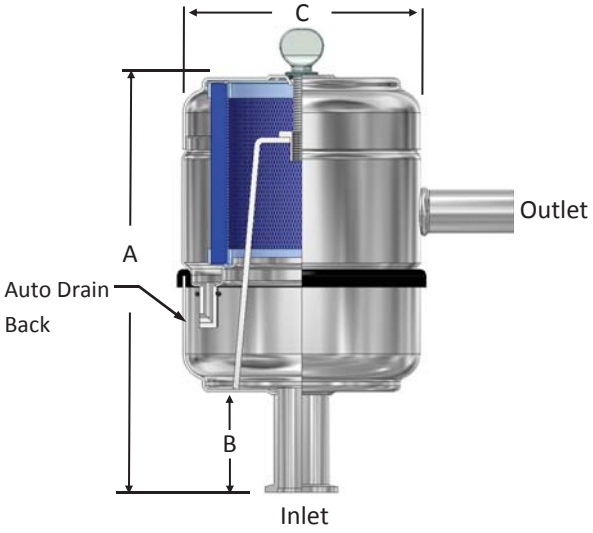
- Additional ISO flange connections
- Nonstandard connection styles

Connection		Assembly	Assembly	DIMENSIONS - mm			Replacement	Approx.
Size	Type	m^3/h Rating	Part Number	A	B	C	Element Part No.	Wt. Kg
1/2"	MPT	8	EF-FG5-050	102	23	64	FG5	0.3
1/2"	MPT	12	EF-FG7-050	127	23	64	FG7	0.8
3/4"	3/4-20 UNEF	7	EF-FG3-077	83	25	64	FG3	0.5
3/4"	MPT	8	EF-FG5-075	110	31	64	FG5	0.4
3/4"	MPT	12	EF-FG7-075	135	31	64	FG7	0.8
1"	1-20 UNEF	8	EF-FG5-103	100	21	64	FG5	0.3
1"	1-20 UNEF	12	EF-FG7-103	125	21	64	FG7	0.4
1"	1-20 UNEF	27	EF-FG9-103	130	23	129	FG9	0.8
1"	1-20 UNEF	41	EF-FG10-103	179	23	129	FG10	3.2
1 3/4"	1 3/4-20 UN	41	EF-FG10-177	208	52	129	FG10	1.6
16mm	ISO Flange	8	EF-FG5-NW16	101	22	64	FG5	0.3
25mm	ISO Flange	8	EF-FG5-NW2516	101	22	64	FG5	0.6
25mm	ISO Flange	41	EF-FG10-KF25	211	54	129	FG10	1.6
40 mm	ISO Flange	75	EF-FG20-KF40	191	54	260	FG20	3.2

See Oil Mist Discharge Filter Technical Data section for sizing guidelines.

Note: Model offerings and design parameters may change without notice. See www.solbergmfg.com for most current offering.

Oil Mist Filters with Drain Back
EFDB Series



Features

- Captures oil fog, mist or aersol from exhaust of oil sealed vacuum pumps
- Auto drain back design to recycle oil mist:
  - Internal drain returns oil back into pump
  - Prevents oil blow back with auto sealing
  - Enclosed housing allows clean environment
- Steel construction
- Nickel plated finish
- Seamless drawn housings
- Easy thumb screw access for element maintenance
- Oil run off from the filter returns to the pump

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 20°C (68°F) - 80°C (180°F)

Connection Size & Type	Assembly m^3/h Rating	Assembly Part Number	Dimensions - mm A	B	C	Approx. Wt. Kg	Replacement Element
KF25 ISO Flange	27	**EFDB-FG9-KF25**	229	55	136	1.1	FG9
1-20 UNEF	27	**EFDB-FG9-103**	191	22	130	1	FG9
1 3/4-20 UN	41	**EFDB-FG11-177**	247	51	159	1.1	FG11

See Oil Mist Discharge Filter Technical Data section for sizing instructions.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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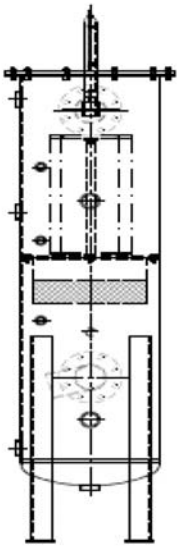
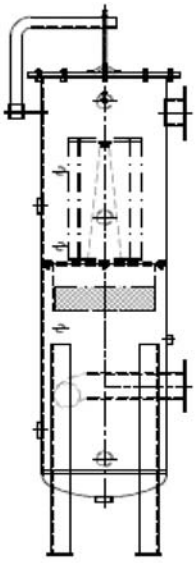
Natural Gas Filtration
Oil Separators





Note: Drawings are for reference purposes only.

Reference purposes only.

Series Specific Applications

- Landfill and Bio-Gas recovery
- Fuel gas purity for
  - Reciprocating Engines
  - Gen-Sets
  - Turbines
- Gas compression
- Oil sealed screw compressor discharge
- Gas pipeline boosting

Features

- Protects equipment from condensate, oil, and particulate entrained in the gas stream
- Multi-stage separation
  - 316 SS vane pack and/or demister pad for heavy condensate and oil removal
  - 99.97% efficient at 0.3 micron separator for oil mist
- Corrosive resistent carbon steel construction
- Contact factory for model offering and availability

Options

ATEX Available

- Special standards: PED, CRN, ASME Vessel code sec. VIII division I
- Stainless steel construction
- Special coatings or finishes
- Replaceable filter elements in various efficiencies for particulate removal
- Gauge ports, float switches
- Custom leg supports
- Flush port for vessel cleaning
- Davit arm for vessel lid removal

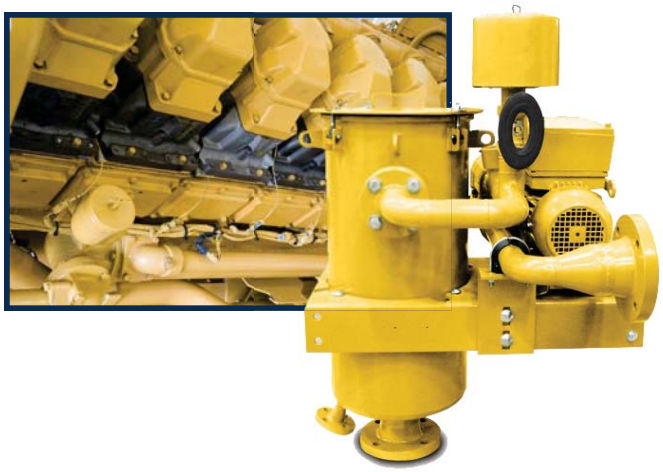
Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Vacuum Assisted Oil Mist Eliminators

Reciprocating Engines & Turbines

Our Vacuum Assisted Oil Mist Eliminators are designed for field upgrades and new reciprocating engines and turbine installations around the world. Our high efficiency filtration systems eliminate vented oil mist emissions while controlling engine pressure in crankcases and turbine lube oil reservoirs. We offer vapor extractor and static options based on application requirements.

Series Specific Applications



Reciprocating Engines: Stationary

- Crankcase ventilation systems ensure environmental compliance and protect surrounding workplace from harmful oil mist emissions
- Open and closed system designs
- Prevents engine intake system contamination and seal leakage
- Improves engine performance
- Controls crankcase pressure
- Applications: landfill gas to energy, standby power, prime power, and mechanical drive

Gas & Steam Turbines

- Retrofits and upgrades to replace outdated and inefficient vapor extractors for lube oil systems
- Typical systems include: high efficiency coalescing element, vacuum / pressure controls, and integrated bypass device to simply maintenance and reduce operating costs
- Applications: peaking, nuclear, and base load power plants

Reciprocating Engines: Marine

- Crankcase ventilation systems ensure safety and reliability
- Unique piping configuration for easy installation, self regulation and seal leak prevention
- Captures vented oil mist emissions and reduces breathing and slipping hazards
- Applications: passenger ships, workboats, military vessels

CE

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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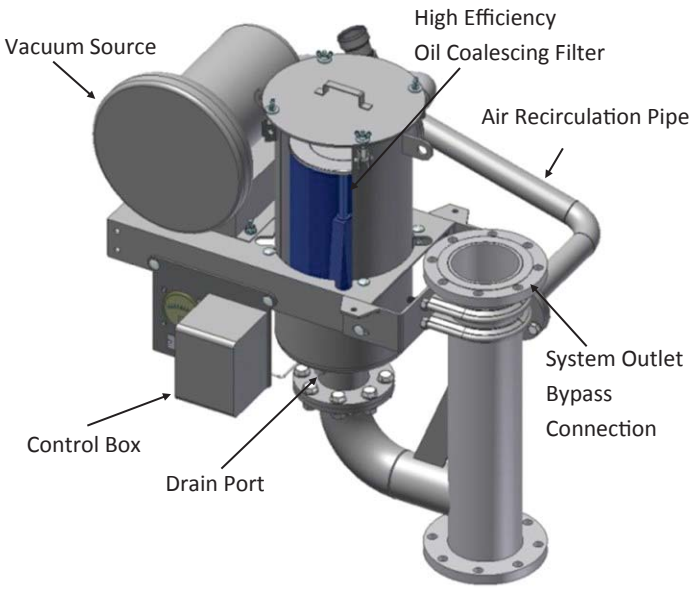
Vacuum Assisted Oil Mist Eliminators

1 - 2550 m^3/h

Features

- Eliminates visible oil mist emissions
- High efficiency and long lasting replaceable coalescing elements
- Rugged carbon steel construction
- Industrial grade powder coat finish
- Drain ports for oil recovery
- Control valves for precise pressure regulation
- Large assortment of motor options (Explosion proof, ATEX, etc.)
- Integrated vacuum relief for motor protection
- Contact factory for specific flow ratings and sizes.



Recirculation System Configuration Example

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Flow range: 1-2550 m^3/h (1-1,500 ft^3/m) std, higher flows are available on request
- Pressure Rating: 1 bar full vacuum (most models)

Environmental Compliance

Based on the 2013 U.S. RICE NESHAP* ruling, stationary engines over 300HP should have been equipped with a crankcase ventilation system. The objective was to reduce the harmful crankcase emissions emitted into the environment.

Solberg is committed to partnering with plant operators around the world to update their equipment and lessen their environmental impact.

* *Reciprocating Internal Combustion Engines*
National Emissions Standards for Hazardous Air Pollutants

Options

- Redundant equipment to ensure continuous operation
- Full automation: PLC and DCS compatible
- Stainless steel construction for harsh environments
- Custom coating and colors
- ASME Section VIII or PED pressure certifications
- Explosive environ. options: ATEX, Class I Div. 1, etc.
- Motor listings: UL, CE, IEC, CSA, IEEE, KOSHA, etc.
- Motor accessories: Heaters, starters, switches, VFD, etc.
- Skid mounted units for ease of transport & installation
- Service and maintenance platforms
- GOST certification

Capture Vented Crankcase Emissions

CCV Series

Solberg designs and manufactures high efficiency Closed Crankcase Ventilation Systems to capture oil mist and particulate emissions (blow-by) from the crankcases of a reciprocating engine.

Solberg's closed systems protect an engine's turbocharger, intercoolers and exhaust catalysts from oil mist and particulate contamination. The results are optimized engine performance and a reduction in costly repairs and maintenance.

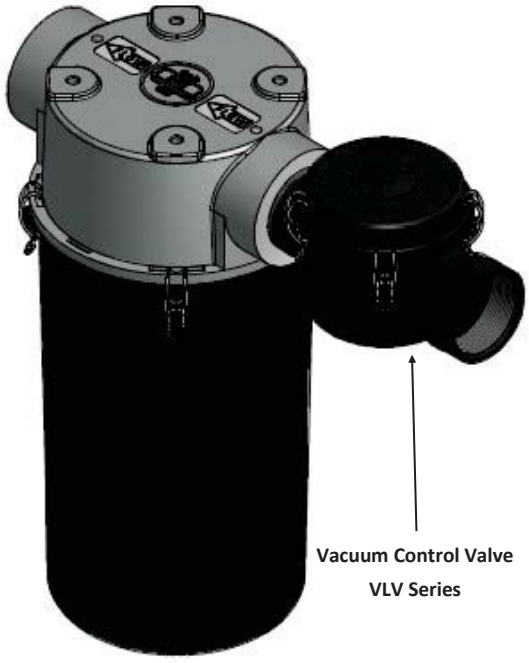
Closed Crankcase Ventilation System
Guascor Engine Installation

Solutions Designed For

- Caterpillar
- Jenbacher
- Waukesha
- MTU
- Guascor
- Wartsila
- Cummins
- Fairbanks Morse

Typical Applications

- Electric Power Generation
- Marine Power Generation
- Marine Propulsion
- Gas Compression



Solberg Closed Crankcase Ventilation System With Integrated Vacuum Control Valve

CLV Package

Benefits & Purpose

- Captures the hazardous oil mist and particulate emissions "blow-by" vented from the crankcase.
- Achieves 99.97% efficiency for 0.3 micron oil mist and particulate
- Protects the turbocharger, intercoolers and exhaust catalysts from contamination and damage.
- Prevents potential health hazards from entering the surrounding environment and workplace
- Maintains required crankcase vacuum via integrated self-regulating valve
- Recovers expensive lube oil lost during the venting process, which allows for efficient operation and lower maintenance costs

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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Series Specific Applications

- Vents for Oil Reservoirs, Crankcases, Bearings, Coupling Guards
- Compressor, Turbine, Gearbox, Engine Applications

CVH Series

Features

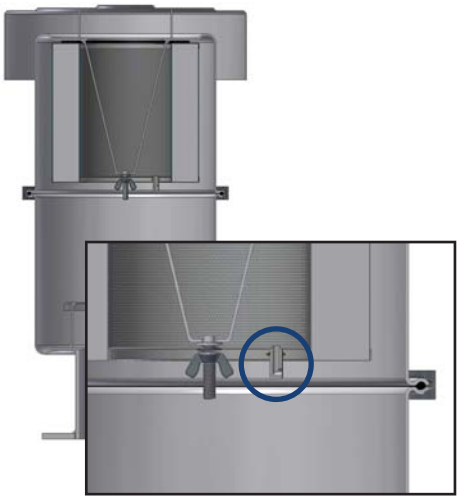
- Eliminates visible vented oil mist emissions
- High efficiency fiberglass filter elements: 99,97% removal efficiency for 0.3 µm oil mist
- Corrosive resistant carbon steel construction
- Powder coat finish
- Low back pressure filter element design: Pleated and wrapped fiberglass options
- Extensive flow range
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)
- Contact factory for specific flows and sizes.

CV Series

Options

- Stainless steel construction
- Special coatings and finishes
- Internal drain-back mechanism
- Alternative filtration media (wire mesh demister, vane separator)
- Multiple configurations
- Vacuum assisted oil mist eliminators (See page 5-10 to 5-11)

Gearbox Application

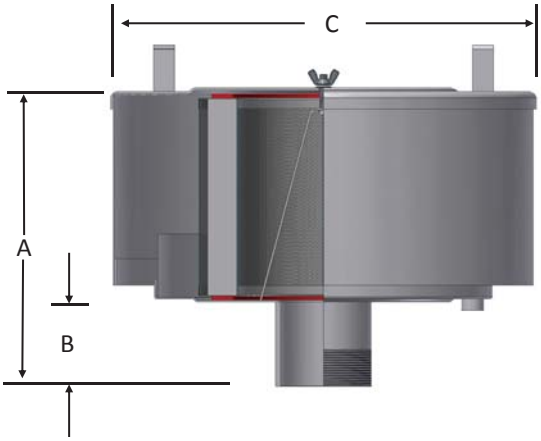


Static Vent Oil Mist Eliminators w/Internal Drain-Back Mechanism

Drawings and photos for reference purposes only

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Static Oil Mist Eliminators
CVB Series



Features

- Eliminates visible vented oil mist emissions
- Carbon steel construction with powder coat finish
- Low back pressure wrapped filter element design
- External drain-back

Series Specific Applications

- Air/Oil Separation Vents for oil reservoirs, crankcases, bearings, coupling guards
- Compressors, turbines, gearboxes, engines

Technical Specifications

- 0.3 micron media; 99.97% efficiency;
- Typically 5 PPM or less (Consult factory for challenge)
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)

Options

- Stainless steel construction and resistance coatings
- Alternative filtration media (Wire mesh demister)
- Pleated coalescing elements
- Vacuum assisted style available
- Extensive flow range available upon request

Outlet Size	Outlet Type	Assembly Part Number	Dimensions - mm A	B	C	Approx. Wt. kg	Replacement Element Part No.
1"	MPT	CVB-WP848-100	191	51	156	1.4	WP848
1 1/4"	BSPT	CVB-WP848-126	191	51	156	1.4	WP848
1 1/2"	BSPT	CVB-WP848-151	189	51	156	1.4	WP848
2"	BSPT	CVB-WP850-201	304	64	260	2.5	WP850
2 1/2"	BSPT	CVB-WP850-251	302	64	260	2.5	WP850
3"	BSPT	CVB-WP274-301	375	76	508	6.8	WP274
4"	BSPT	CVB-WP274-401	409	102	508	6.8	WP274
DN100	FLG	CVB-WP274-DN100	400	102	508	9	WP274
DN125	FLG	CVB-WP374-DN125	508	102	508	17	WP374
DN150	FLG	CVB-WP374-DN150	550	127	508	18	WP374

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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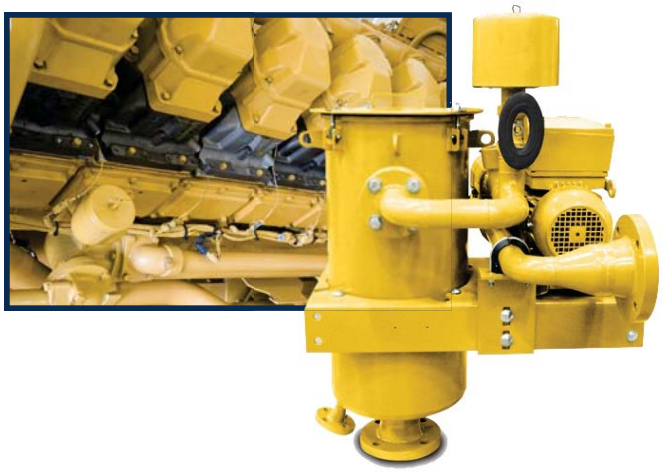
Vacuum Assisted Oil Mist Eliminators

Reciprocating Engines & Turbines

Our Vacuum Assisted Oil Mist Eliminators are designed for field upgrades and new reciprocating engines and turbine installations around the world. Our high efficiency filtration systems eliminate vented oil mist emissions while controlling engine pressure in crankcases and turbine lube oil reservoirs. We offer vapor extractor and static options based on application requirements.

Series Specific Applications



Reciprocating Engines: Stationary

- Crankcase ventilation systems ensure environmental compliance and protect surrounding workplace from harmful oil mist emissions
- Open and closed system designs
- Prevents engine intake system contamination and seal leakage
- Improves engine performance
- Controls crankcase pressure
- Applications: landfill gas to energy, standby power, prime power, and mechanical drive

Gas & Steam Turbines

- Retrofits and upgrades to replace outdated and inefficient vapor extractors for lube oil systems
- Typical systems include: high efficiency coalescing element, vacuum / pressure controls, and integrated bypass device to simply maintenance and reduce operating costs
- Applications: peaking, nuclear, and base load power plants

Reciprocating Engines: Marine

- Crankcase ventilation systems ensure safety and reliability
- Unique piping configuration for easy installation, self regulation and seal leak prevention
- Captures vented oil mist emissions and reduces breathing and slipping hazards
- Applications: passenger ships, workboats, military vessels

CE

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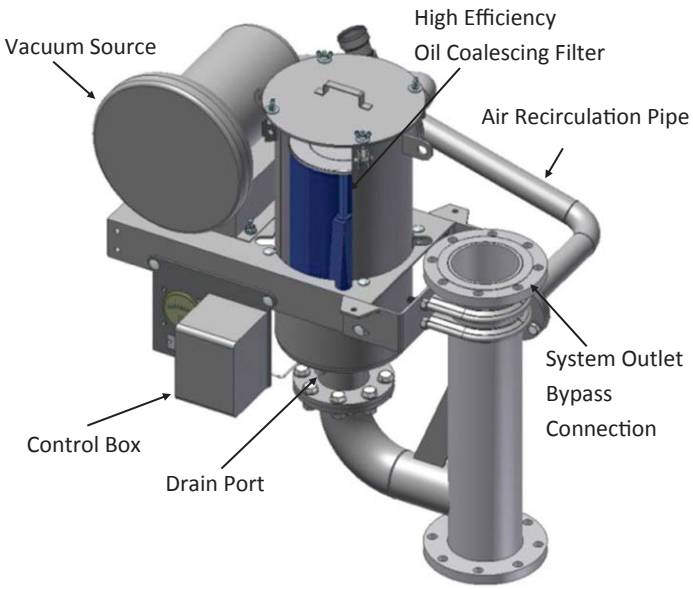
Vacuum Assisted Oil Mist Eliminators

1 - 2550 m^3/h

Features

- Eliminates visible oil mist emissions
- High efficiency and long lasting replaceable coalescing elements
- Rugged carbon steel construction
- Industrial grade powder coat finish
- Drain ports for oil recovery
- Control valves for precise pressure regulation
- Large assortment of motor options (Explosion proof, ATEX, etc.)
- Integrated vacuum relief for motor protection
- Contact factory for specific flow ratings and sizes.



Recirculation System Configuration Example

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Flow range: 1-2550 m^3/h (1-1,500 ft^3/m) std, higher flows are available on request
- Pressure Rating: 1 bar full vacuum (most models)

Environmental Compliance

Based on the 2013 U.S. RICE NESHAP* ruling, stationary engines over 300HP should have been equipped with a crankcase ventilation system. The objective was to reduce the harmful crankcase emissions emitted into the environment.

Solberg is committed to partnering with plant operators around the world to update their equipment and lessen their environmental impact.

* *Reciprocating Internal Combustion Engines*
National Emissions Standards for Hazardous Air Pollutants

Options

- Redundant equipment to ensure continuous operation
- Full automation: PLC and DCS compatible
- Stainless steel construction for harsh environments
- Custom coating and colors
- ASME Section VIII or PED pressure certifications
- Explosive environ. options: ATEX, Class I Div. 1, etc.
- Motor listings: UL, CE, IEC, CSA, IEEE, KOSHA, etc.
- Motor accessories: Heaters, starters, switches, VFD, etc.
- Skid mounted units for ease of transport & installation
- Service and maintenance platforms
- GOST certification

Capture Vented Crankcase Emissions

CCV Series

Solberg designs and manufactures high efficiency Closed Crankcase Ventilation Systems to capture oil mist and particulate emissions (blow-by) from the crankcases of a reciprocating engine.

Solberg's closed systems protect an engine's turbocharger, intercoolers and exhaust catalysts from oil mist and particulate contamination. The results are optimized engine performance and a reduction in costly repairs and maintenance.

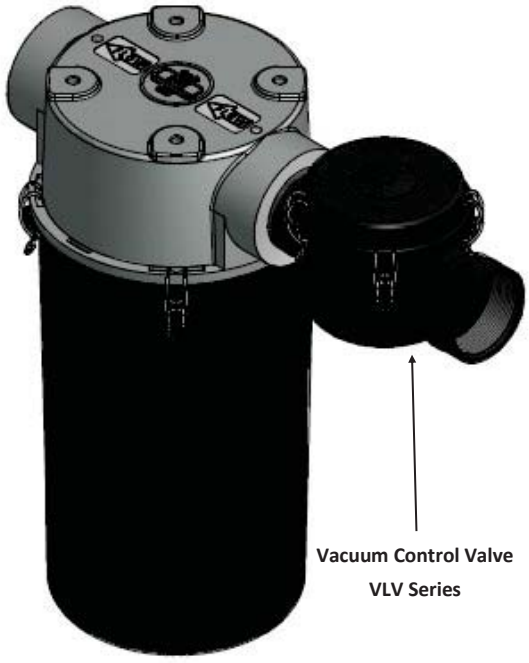
Closed Crankcase Ventilation System
Guascor Engine Installation

Solutions Designed For

- Caterpillar
- Jenbacher
- Waukesha
- MTU
- Guascor
- Wartsila
- Cummins
- Fairbanks Morse

Typical Applications

- Electric Power Generation
- Marine Power Generation
- Marine Propulsion
- Gas Compression



Solberg Closed Crankcase Ventilation System With Integrated Vacuum Control Valve

CLV Package

Benefits & Purpose

- Captures the hazardous oil mist and particulate emissions "blow-by" vented from the crankcase.
- Achieves 99.97% efficiency for 0.3 micron oil mist and particulate
- Protects the turbocharger, intercoolers and exhaust catalysts from contamination and damage.
- Prevents potential health hazards from entering the surrounding environment and workplace
- Maintains required crankcase vacuum via integrated self-regulating valve
- Recovers expensive lube oil lost during the venting process, which allows for efficient operation and lower maintenance costs

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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Series Specific Applications

- Vents for Oil Reservoirs, Crankcases, Bearings, Coupling Guards
- Compressor, Turbine, Gearbox, Engine Applications

CVH Series

Features

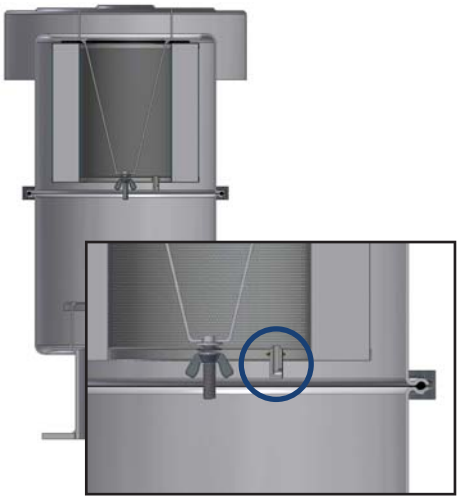
- Eliminates visible vented oil mist emissions
- High efficiency fiberglass filter elements: 99,97% removal efficiency for 0.3 µm oil mist
- Corrosive resistant carbon steel construction
- Powder coat finish
- Low back pressure filter element design: Pleated and wrapped fiberglass options
- Extensive flow range
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)
- Contact factory for specific flows and sizes.

CV Series

Options

- Stainless steel construction
- Special coatings and finishes
- Internal drain-back mechanism
- Alternative filtration media (wire mesh demister, vane separator)
- Multiple configurations
- Vacuum assisted oil mist eliminators (See page 5-10 to 5-11)

Gearbox Application

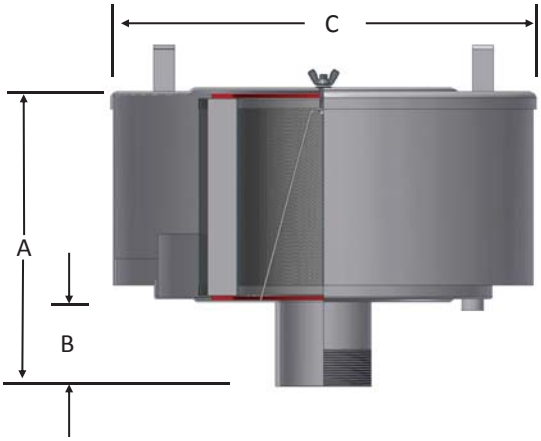


Static Vent Oil Mist Eliminators w/Internal Drain-Back Mechanism

Drawings and photos for reference purposes only

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Static Oil Mist Eliminators
CVB Series



Features

- Eliminates visible vented oil mist emissions
- Carbon steel construction with powder coat finish
- Low back pressure wrapped filter element design
- External drain-back

Series Specific Applications

- Air/Oil Separation Vents for oil reservoirs, crankcases, bearings, coupling guards
- Compressors, turbines, gearboxes, engines

Technical Specifications

- 0.3 micron media; 99.97% efficiency;
- Typically 5 PPM or less (Consult factory for challenge)
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)

Options

- Stainless steel construction and resistance coatings
- Alternative filtration media (Wire mesh demister)
- Pleated coalescing elements
- Vacuum assisted style available
- Extensive flow range available upon request

Outlet Size	Outlet Type	Assembly Part Number	Dimensions - mm A	B	C	Approx. Wt. kg	Replacement Element Part No.
1"	MPT	CVB-WP848-100	191	51	156	1.4	WP848
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2"	BSPT	CVB-WP850-201	304	64	260	2.5	WP850
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3"	BSPT	CVB-WP274-301	375	76	508	6.8	WP274
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DN100	FLG	CVB-WP274-DN100	400	102	508	9	WP274
DN125	FLG	CVB-WP374-DN125	508	102	508	17	WP374
DN150	FLG	CVB-WP374-DN150	550	127	508	18	WP374

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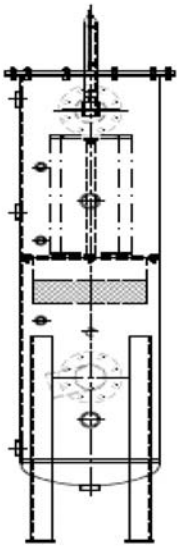
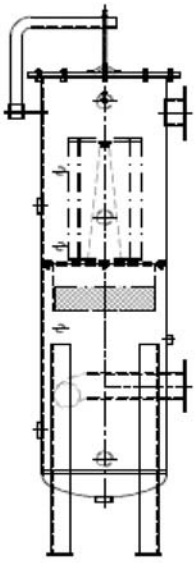
Natural Gas Filtration
Oil Separators





Note: Drawings are for reference purposes only.

Reference purposes only.

Series Specific Applications

- Landfill and Bio-Gas recovery
- Fuel gas purity for
  - Reciprocating Engines
  - Gen-Sets
  - Turbines
- Gas compression
- Oil sealed screw compressor discharge
- Gas pipeline boosting

Features

- Protects equipment from condensate, oil, and particulate entrained in the gas stream
- Multi-stage separation
  - 316 SS vane pack and/or demister pad for heavy condensate and oil removal
  - 99.97% efficient at 0.3 micron separator for oil mist
- Corrosive resistent carbon steel construction
- Contact factory for model offering and availability

Options

ATEX Available

- Special standards: PED, CRN, ASME Vessel code sec. VIII division I
- Stainless steel construction
- Special coatings or finishes
- Replaceable filter elements in various efficiencies for particulate removal
- Gauge ports, float switches
- Custom leg supports
- Flush port for vessel cleaning
- Davit arm for vessel lid removal

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Replacement Filter Elements

Technical Data	pg. 6-2
Filter Media Specifications	pg. 6-4
Polyester/Paper Elements	
60-11200 m^3/h Flow Range	pg. 6-6
Small Vacuum Pump Elements (800 Series)	
10 - 640 m^3/h Flow Range	pg. 6-8
Special Sized Elements	pg. 6-8
Elements for Blowers	pg. 6-10
Hockey Puck Filter Elements	
5 - 425 m^3/h Flow Range	pg. 6-12
Slip Fit Elements	pg. 6-13
Oil Mist Coalescing Elements	
7 - 3060 m^3/h Flow Range	pg. 6-14
SpinMeister™ Precleaners	pg. 6-15
Element Reference Chart	pg. 6-16

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Filtration • Separation • Silencing

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Technical Data
Filter Elements

Filter Element Efficiency

When choosing a filter media type., an accurate and useful filter efficiency rating must have two components: Efficiency and Micron Filtration Rating.
The micron rating of a media means very little if the efficiency percentage is unknown. For example, a 1 micron media rated at 60% efficiency may offer less filtration than a 5 micron media rated at 99% efficiency. Always make sure you have both when you compare different media types for your application.

Element Maintenance

Solberg elements should be replaced once the pressure drop reaches 37-50 mbar above the initial pressure drop of the installation. Cleaning an element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

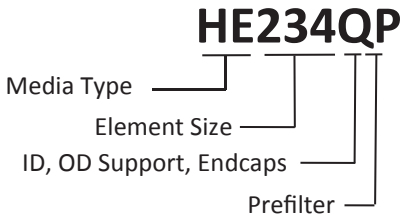
Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 37 mbar.

If the pressure drop exceeds 50 mbar at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer's recommended maximum pressure drop for their specific equipment.

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or through www.solbergmfg.com.

Identification

The element part number designates media type and depending on the element: support material, gasket type, potting adhesive and if it comes with an element prefilter wrap. For example, the following part number HE234QP, identifies the filter element as having a HEPA media "HE", with dimensions of a 234 element, "Q" designates stainless steel ID, OD & endcaps, and "P" means it has a prefilter wrap. See partial list below for other filter media designations.



Filter Media Nomenclature *(contact Solberg for other media types and stainless steel.)*

Polyester Std.: 5 µm, i.e. 38**5**
Paper Std.: 2 µm, i.e. 38**4**
Z Media: 1 µm Polyester, i.e. 15**Z**
HE Media: HEPA, i.e. **HE**10
UL Media: ULPA, i.e. **UL**234
DT Media: Dutch Twill, i.e. **DT**375
MX Media: Nomex, i.e. 377**MX**
TF Media: PTFE, i.e. **TF**345
TG Media: Hi-Temp PTFE, i.e. **TG**235
PSG Media: Coalescing, i.e. **PSG**244
AC Media: Activated Carbon, i.e. **AC**18
GM Media: Electrostatic AC, i.e. **GM**35
AA Media: Actvtd Alumina, i.e. **AA**850
ACG Media: AC Granulate, i.e. **ACG**30
RY Media: PPS, i.e. **RY**485
Y Media: Polypropylene, i.e. 849**Y**
ZE Media: Zeolite, i.e. **ZE**848
S Media: Wire Mesh, i.e. 274**S**
N Media: 4 µm Polyester, i.e. 231**N**
U Media: 25 µm Polyester, i.e. 685**U**
W Media: 100 µm Polyester, i.e. 15**W**

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Standard Polyester / Paper Elements

Polyester Element Features

- Identified typically by “odd number” nomenclature: i.e. 19, 235P
- Pleated industrial needle felt polyester media
- Reinforced with epoxy coated steel wire on both sides of the media
- Washable with lukewarm water and mild detergent; replacing element though is recommended for best performance
- Dust loading capacity is increased 40-50% with prefilter “P” designation at end of element part number i.e.: 235P

Technical Specifications

- 5 Micron, 99+% efficiency
- Media classification: EU8, F8
- Temperature min: -26°C (-15°F), max: 104°C (220°F)

Advantages

- Less maintenance: Washable
- More durable
- Moisture resistant
- Handles hot air and oil mist from unload cycle of reciprocating/piston compressor

Paper Element Features

- Identified typically by “even number” nomenclature: i.e. 18, 234P
- Heavy duty industrial strength paper surrounded by heavy gauge galvanized expanded metal
- Lightly blow out media to clean; replacing element though is recommended for best performance
- Dust loading capacity is increased 40-50% with prefilter “P” designation at end of element part number i.e.: 234P

Technical Specifications

- 2 Micron, 99+% efficiency
- Media classification: EU9, F9
- Temperature min: -26°C (-15°F),max:104°C (220°F)

Advantages

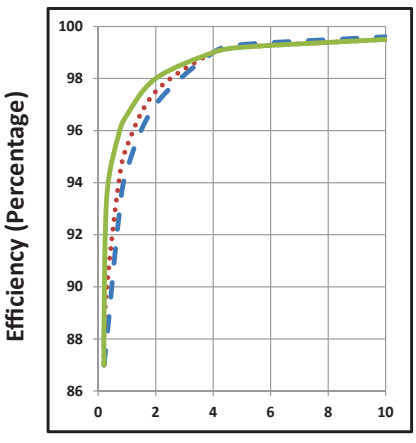
- Optimal surface area available
- Higher efficiency than many alternative media
- Cost Effective

Particle Size vs. Filter Efficiency
Polyester Media at Indicated Face Velocity:

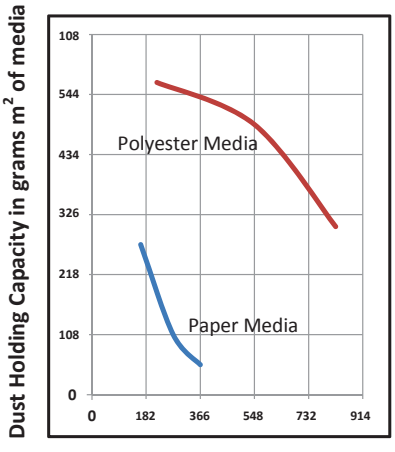
275 m^3hr/m^2 media
550 m^3hr/m^2 media
825 m^3hr/m^2 media

Particle Size vs. Filter Efficiency
Paper Media at Indicated Face Velocity:

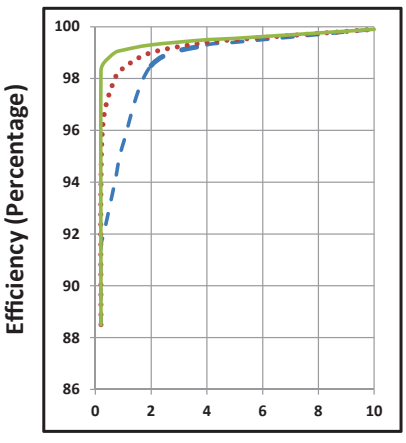
185 m^3hr/m^2 media
275 m^3hr/m^2 media
365 m^3hr/m^2 media



Polyester Media Efficiency Chart



Face Velocity vs. Dust Holding Capacity



Paper Media Efficiency Chart

Note: Efficiency charts are based on SAE Fine Dust Test.

Filter Media Specifications

Standard Media

5 µm Polyester
- 5 Micron, 99+% efficiency
- ID: “odd nbr.”: i.e. 1**9**, 23**5**P
- Media classification: F8
- Pleated industrial needle felt polyester media
- Plastisol potting
- Temperature min: -26°C (-15°F), max: 104°C (220°F)
- Reinforced epoxy coated steel wire on ID and OD

2 µm Paper
- 2 Micron, 99+% efficiency
- ID: “even nbr.”: i.e. 1**8**, 23**4**P
- Media classification: F9
- Heavy duty industrial strength paper
- Plastisol potting
- Heavy gauge galvanized expanded metal
- Temperature min: -26°C (-15°F), max: 104°C (220°F)

High Efficiency

1 µm Polyester - Z Media
- 1 Micron, 99+% efficiency
- ID: “odd nbr.” & “Z” suffix: i.e. 1**9Z**, 23**5Z**P
- Media classification: F9
- Epoxy coated steel wire on both sides of media
- Temp min: -26°C (-15°F), max: 104°C (220°F)
- Washable - lukewarm water & mild detergent

4 µm Polyester - N Media
- 4 Micron, 99+% efficiency
- ID: “odd nbr.” & “N” suffix: i.e. 1**5N**, 37**7N**P
- Media classification: F9
- Temp min: -26°C (-15°F), max: 104°C (220°F)

H13 - HE Media
- 0.3 Micron, 99,97% efficiency
- ID: “HE” prefix & “even nbr.”: i.e. **HE**23**0**, **HE**33**4**P
- Heavy duty industrial strength glass surrounded by heavy gauge galvanized expanded metal
- Maximum oversizing required to minimize pressure drop
- Plastisol potting standard
- Temp min: -26°C (-15°F), max: 104°C (220°F)
- Options: silicone potting , Viton gaskets - Temp max: 190°C (375°F)

H14 - UL Media
- 0.1 Micron, 99,995% efficiency
- ID: “UL” prefix & “even nbr.”: i.e. **UL**23**4**
- Plastisol potting
- Temp min: -26°C (-15°F), max: 104°C (220°F)
- Options: silicone potting , Viton gaskets - Temp max: 190°C (375°F)

Dutch Twill Weave - DT Media
- ID: “DT” prefix & “odd nbr.”: i.e. **DT**24**5**
- Media classification: F9
- Stainless steel woven wire cloth
- Viton gaskets & epoxy potting
- Temp min: -26°C (-15°F), max: 190°C (375°F)

Chemical/Food/Pharmaceutical

Stainless Steel Wire Mesh- S2Media
- Stainless steel pleated wire mesh
- ID: “even nbr.” & “S2” suffix: i.e. 1**4S2**
- Stainless steel expanded metal
- Chemical resistant and high temperature resistant
- Available with silicone endcaps

Polypropylene (PP) - Y Media
- 5 Micron, 99+% efficiency
- ID: “odd nbr.” & “Y” suffix: i.e. 3**1N**, 34**5Y**P
- Media classification: F8
- Epoxy coated steel wire on ID and OD

PTFE - TG Media, 0.3 micron, 99,5% efficiency
- ID: “TG” prefix & “odd nbr.”: i.e. **TG**37**5**
- Media classification: E12
- High temperature, chemical, & moisture resistant
- Options: Viton gaskets, epoxy potting
- Temp (intermittent): Up to 250°C (482°F)

PTFE - TF Media, 0.3 micron, 99,5% efficiency
- ID: “TF” prefix & “odd nbr.”: i.e. **TF**27**5**
- Media classification: E12
- Chemical & moisture resistant
- Minimal pressure drop
- Temp (intermittent): 104°C (220°F)
- Options: Viton gaskets, epoxy potting

PPS - RY Media
- Broad chemical resistant media, high temp
- ID: “RY” prefix & “odd nbr.”: i.e. **RY**48**5**
- Media classification: F8
- Temp min: -26°C (-15°F), max: 104°C (220°F)
- Options: Viton gaskets, epoxy potting

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Filter Media Specifications

Coarse Efficiency

25 µm Polyester - U Media
- 25 Micron, 99+% efficiency
- ID: “odd nbr.” & “U” suffix: i.e. 1**9U**, 68**5U**P
- Media classification: F7
- Temp min: -26°C (-15°F), max: 104°C (220°F)

100 µm Polyester - W Media
- 100 Micron, 99+% efficiency
- ID: “odd nbr.” & “W” suffix: i.e. 1**5W**, 38**5W**P
- Media classification: M6
- Temp min: -26°C (-15°F), max: 104°C (220°F)

Wire Mesh - S Media
- Epoxy coated pleated wire mesh
- ID: “even nbr.” & “S” suffix: i.e. 27**4S**, 34**4S**P
- Expanded metal
- Temp min: -26°C (-15°F), max: 104°C (220°F)

Stainless Steel - S2Media
- Stainless steel pleated wire mesh
- ID: “even nbr.” & “S” suffix: i.e. 23**4S2**
- Chemical resistant and high temperature resistant
- Stainless steel expanded metal
- Temp min: -26°C (-15°F), max: 104°C (220°F)
- Options: silicone or epoxy potting , Viton gaskets

Note 1: Elements rated for higher temperatures can be achieved with optional gasket material and potting compounds.

Note 2: Media classifications are best estimates based on EN 779:2012.

Contact Factory for Alternate Media

High Temperature

Nomex - MX Media
- 5 Micron, 99+% efficiency
  - ID: “odd nbr.” & “MX” suffix: i.e. 37**7MX**
  - Media classification: F8
- Silicone potting
- Temperature min: -26°C (-15°F), max: 196°C (385°F)
- Reinforced epoxy coated steel wire on ID and OD

Nomex with Stainless Steel Support- MXD Media
- 5 Micron, 99+% efficiency
  - ID: “odd nbr.” & “MX” suffix: i.e. 37**7MXD**
  - Media classification: F8
- Silicone potting
- Reinforced stainless steel wire mesh on ID and OD
- Temperature min: -26°C (-15°F), max: 196°C (385°F)

Chemical Adsorption

Activated Carbon - AC Media
- 10 Micron, 99+% efficiency
- ID: “AC” prefix & “even nbr.”: i.e. **AC18**
- Removes gas or vapor odors, contaminants, & particulate
- Pleated media
- Reinforced with epoxy coated steel wire on both sides of cloth

Activated Carbon Granulate- ACG Media
- ID: “ACG” prefix & “even nbr.”: i.e. **ACG230**
- Removes gaseous or vapor odors
- Granulates are enclosed within a polyester wrap and expanded metal on the I.D. and O.D.

Activated Alumina- AA Media
- ID: “AA” prefix & “even nbr.”: i.e. **AA850**
- Desiccant used in the adsorption of water & oil vapour & the prevention of backstreaming in pumps
- Adsorbs up to 40% of media’s weight

Electrostatic Activated Carbon– GM Media
- 3 Micron, 70% efficiency
- ID: “GM” prefix & “odd nbr.”: i.e. **GM35**
- Superior odor removal
- Chemically inert
- Electrostatic fibers attract & hold particles

Coalescing Media

PSG Media, FG Media, GL Media
- 0.3 Micron, 99,97% efficiency
- ID: “PSG” prefix & “even nbr.”: i.e. **PSG**344
- ID: “FG” prefix: i.e. **FG**9
- ID: “GL” prefix: i.e. **GL**915
- Heavy duty industrial glass media, reinforced with epoxy coated steel wire & expanded metal
- Continuous operating temp: 20°C (68°F) to 80°C (180°F)
- Environmentally friendly sealing material
- High D.O.P. efficiency - low oil carryover
- Multiple media configurations, contact factory

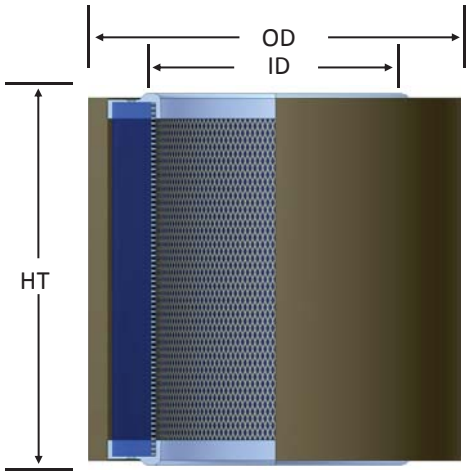
Replacement Elements
60 - 11200 m^3/h Flow Range

Small Elements
with Molded Endcaps

Compact & Large Elements
with Metal Endcaps

Features

- Pleated media for high dirt holding capacity
- Polyester: Reinforced with epoxy coated steel wire on both sides of cloth, expanded metal I.D.
- Paper: Heavy duty industrial strength paper surrounded by heavy gauge galvanized expanded metal
- 40 - 50% increased dust loading capacity with prefilter (part number suffix P)



Technical Specifications

- Polyester: 99+% removal efficiency to 5 micron
- Paper: 99+% removal efficiency to 2 micron
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P

Polyester Media Benefits/Specs

- Less maintenance due to longer durability
- Moisture resistant
- Handles hot air and oil mist from unload cycle of reciprocating/piston compressor
- Washable with lukewarm water and mild detergent (Replacing element is recommended)

Paper Media Benefits/Specs

- Cost effective
- Gently blow out media (Element replacement recommended)

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Replacement Elements—up to 510 m³/h flow

Element Part Number		Element m³/h	Surface Area m²		Dimensions - mm			STD Endcap
Polyester	Paper	Rating	Polyester	Paper	ID	OD	HT	Features
15P	14P	60	0.05	0.10	76	111	59	M
19P	18P	170	0.14	0.28	76	111	121	M
31P	30P	335	0.21	0.58	92	146	121	M
35P	34P	470	0.37	1.02	121	200	122	M
231P	230P	510	0.42	1.1	92	146	241	M

Note: Also available in wire mesh. Example part number for wire mesh: 230S

See Element Technical Data section for maintenance guidelines

Replacement Elements—up to 11220 m³/h flow

Element Part Number		Element m³/h	Surface Area m²		Dimensions - mm			STD Endcap
Polyester	Paper	Rating	Polyester	Paper	ID	OD	HT	Features
235P	234P	970	0.8	2.1	121	200	244	M
335P	334P	1360	1.1	3.2	121	200	368	M
237	236	935	0.8	2.1	119	197	216	GBN
239P	238P	970	1.1	4.8	124	235	254	GBN
245P	244P	1500	1.3	3.3	152	248	244	GN | M
345P	344P	1870	2.1	5.3	152	248	368	GN
275P	274P	1870	1.8	4.2	203	298	244	GN
375P	374P	2550	2.6	6.3	203	298	368	GN
377P	376P	3105	4.6	12	229	371	368	GN
385P	384P	5610	4.6	13	356	498	368	GN
485P	484P	8000	7.0	19	356	498	546	GN
685P	--	11220	9.3	--	356	498	724	GN

Note: Most are available in wire mesh. Example part number for wire mesh: 274S

See Element Technical Data section for maintenance guidelines

Endcap Information

M = Molded plastisol

B = Closed one end with bolt hole, open on other end

G = **G**alvanized metal endcaps

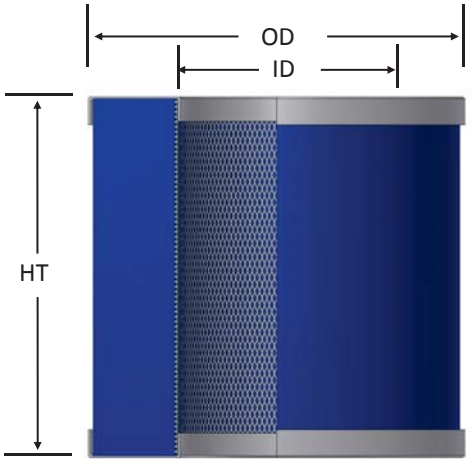
N = Neoprene blended gasket on open endcaps

Additional Media Options

Contact factory and/or see page 6-2 to 6-5

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Small Vacuum Pump Elements
10 - 640 m^3/h Flow Range



Features

- Pleated media for high dirt holding capacity
- Polyester: Reinforced with epoxy coated steel wire on both sides of cloth, expanded metal I.D.
- Paper: Heavy duty industrial strength paper surrounded by heavy gauge galvanized expanded metal
- 40 - 50% increased dust loading capacity with prefilter (part number suffix P)

Technical Specifications

- Polyester: 99+% removal efficiency to 5 micron
- Paper: 99+% removal efficiency to 2 micron
- Temp (continuous):min -26°C (-15°F)max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP

Polyester Media Benefits/Specs

- Less maintenance due to longer durability
- Moisture resistant
- Handles hot air and oil mist from unload cycle of reciprocating/piston compressor
- Washable with lukewarm water and mild detergent (Replacing element is recommended)

Paper Media Benefits/Specs

- Cost effective
- Gently blow out media (Replacing element is recommended)

Additional Media Options

Contact factory and/or see page 6-2 to 6-5

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Small Vacuum Pump Elements
10 - 640 m³/h Flow Range

Paper Replacement Elements—800 Series

Solberg Part Number	Mann Ref Number	m³/h Rating	Surface Area m²	Dimensions - mm ID	OD	HT	STD Endcap Features
800	C31	10	0.013	10	29	30	GB
802	C31/1	10	0.020	10	29	38	GB
804	C32	20	0.033	10	29	62	GB
806	C42/1	15	0.031	13	38	38	GB
808	C42/2	10	0.017	13	38	29	GB
810	C43	25	0.051	13	38	62	GB
812	C44	15	0.031	13	38	38	GC
814	C64/1	25	0.051	17	59	40	GB
816	C64/3	25	0.051	17	59	40	GC
818	C66	35	0.083	17	59	62	GB
820	C66/1	35	0.071	17	59	52	GB
824	C75	43	0.085	38	64	68	GC
826	C75/2	43	0.085	38	64	71	GCF
828	C76/2	25	0.045	38	64	44	GC
830	C79/1	45	0.085	25	64	73	GB
832	C79/2	43	0.085	38	64	71	GCF
834	C713	70	0.14	38	64	114	GBHF
836	C718	85	0.17	38	64	167	GBHF
838	C912	55	0.11	60	84	70	GCF
840	C1049	140	0.33	44	92	143	G
842	C1112	95	0.16	60	98	70	G
844	C1112/2	95	0.17	60	98	70	GCF
846	C1132	110	0.25	60	98	100	G
848	C1337	200	0.46	65	127	121	G
850	C15124/1	495	1.3	89	149	222	GR
850/1	N/A	495	1.3	89	149	222	GBR
852	C711/1	45	0.090	38	68	70	GC
854	C411	50	0.10	13	38	135	GB
856	C26240	640	1.6	195	254	195	G
858	C1574	190	0.12	89	149	124	G
862	C21138/1	550	1.3	144	213	164	M
868	N/A	45	0.093	60	94	75	M
870	C69/1	55	0.11	29	49	143	GB
872	C75/2	45	0.086	38	64	71	GBF
874	N/A	-	-	152	216	89	GCE
878	N/A	200	0.46	65	127	121	GB
896	N/A	136	0.49	60	101	214	GB

Polyester Replacement Elements—800 Series

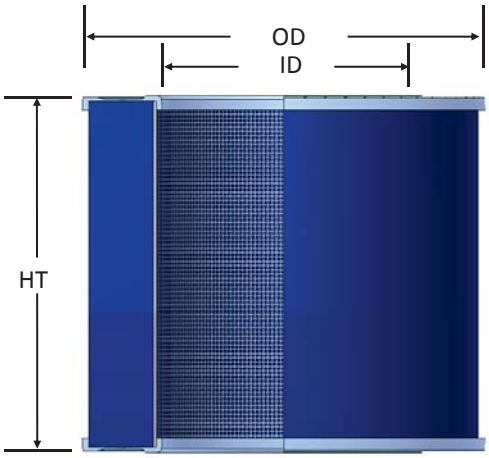
Solberg Part Number	Mann Ref Number	m³/h Rating	Dimensions - mm ID	OD	HT	STD Endcap Features
821	C66/1	35	17	59	52	GB
825	C75	43	38	64	68	GC
827	C75/2	43	38	64	71	GCF
841	C1049	140	44	92	143	G
843	C1112	95	60	98	70	G
845	C1112/2	95	60	98	70	GCF
847	C1132	110	60	98	100	G
849	C1337	200	65	127	121	G
851	C15124/1	495	89	149	222	GR
851/1	N/A	495	89	149	222	GBR
857	C26240	640	195	254	195	G
859	C1574	190	89	149	124	G
863	C21138/1	550	144	213	164	M
879	N/A	200	65	127	121	GB
897	N/A	136	60	101	214	GB

Endcap Information

B = Closed one end w/bolt hole
C = Closed one end
E = EPDM gaskets
F = Felt gaskets on open endcaps
G = Galvanized metal endcaps
H = Felt gasket on bolt hole
M = Molded plastisol
N = Neoprene blended gasket on open endcaps
R = Mixed rubber/cork gasket on open endcaps

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Filter Elements
Blower Elements/Special Sizes



Features

- Pleated media for high dirt holding capacity
- Polyester: Reinforced with epoxy coated steel wire on both sides of cloth, expanded metal I.D.
- Paper: Heavy duty industrial strength paper surrounded by heavy gauge galvanized expanded metal
- 40 - 50% increased dust loading capacity with prefilter (part number suffix P, select models)

Technical Specifications

- Temp (continuous):min -26°C (-15°F)max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99+% removal efficiency standard to 5 micron
- Paper: 99+% removal efficiency standard to 2 micron

Polyester Media Benefits/Specs

- Less maintenance due to longer durability
- Moisture resistant
- Handles hot air and oil mist from unload cycle of reciprocating/piston compressor
- Washable with lukewarm water and mild detergent (Replacing element is recommended)

Paper Media Benefits/Specs

- Cost effective
- Gently blow out media (Replacing element is recommended)

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Common Filter Elements for the Blower Industry

Solberg Part Number Polyester	Universal Ref. Number	Solberg Part Number Paper	Universal Ref. Number	Dimensions - mm ID	OD	HT	STD Endcap Features
32-01	81-1202	**32-00**	81-0470	102	148	51	M
32-03	81-1203	**32-02**	81-0471	108	152	64	M
32-05	81-1204	**32-04**	81-0472	184	248	102	M
32-07	81-1205	**32-06**	81-1063	184	248	152	M
32-09	81-1206	**32-08**	81-0474	251	292	178	M
32-11	81-1207	**32-10**	81-0475	295	349	224	M
32-13	81-1209	**32-12**	81-1163	330	432	254	M
32-15	81-1210	**32-14**	81-1164	483	584	356	M

Solberg Part Number Polyester	Stoddard Ref. Number	Solberg Part Number Paper	Stoddard Ref. Number	Dimensions - mm ID	OD	HT	STD Endcap Features
32-17	F8-151	**32-16**	F8-108	121	175	106	M
32-19	F8-135	**32-18**	F8-109	181	259	130	M
32-21	F8-134	**32-20**	F8-110	241	319	124	M
32-23	F8-139	**32-22**	F8-111	241	319	254	M
32-25	F8-148	**32-24**	F8-137	381	502	356	M

Note: Contact factory for availability . Also available in wire mesh.

Endcap Information

G = Galvanized metal endcaps

M = Molded plastisol

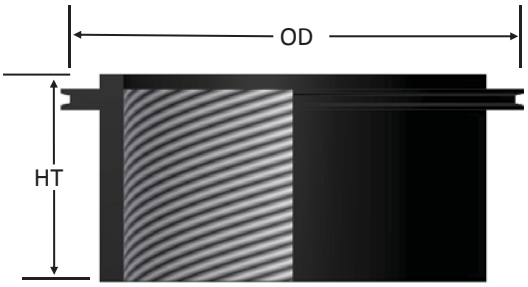
N = Neoprene blended gasket on open endcaps

Special Sized Filter Elements

Element Part Number Polyester	Paper	Rated Flow m^3/h	Surface Area m^2 Polyester	Paper	Dimensions - mm ID	OD	HT	STD Endcap Features
09	**08**	30	0.023	0.042	29	57	57	M
21NP	**-**	140	0.16	-	60	108	121	M
25	**24**	180	0.19	0.44	92	149	102	M
-	**80P**	300	-	0.66	105	200	76	M
-	**84P**	435	-	0.96	105	200	102	M
45P	**44P**	735	0.64	1.6	152	248	121	GN | M
-	**144P**	955	-	1.9	152	248	148	GN
75P	**74P**	955	-	1.95	203	298	127	GN | M
371P	**370P**	3060	-	6.7	254	349	368	GN
391	**390**	9350	9.3	25.5	565	708	368	GN
491	**490**	13600	13.5	32.5	565	708	546	GN
575P	**-**	4250	7.8		203	298	622	GN
-	**100**	85	-	0.21	32	98	70	M
-	**101**	205	-	0.53	114	168	130	M
-	**102**	145	-	0.31	144	197	76	M
-	**104**	255	-	0.66	130	184	137	M
-	**108**	105	-	0.28	92	146	70	M
-	**109**	290	-	0.63	143	197	102	M
-	**126**	170	-	0.2	121	165	54	GN
-	**127**	60	-	0.09	76	111	54	M

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Hockey Puck Elements
5 - 425 m^3/h Flow Range



Features

- Patented high grade filter element
- Element construction of injection molded thermoplastic
- Integrated gasket seal
  - Positive seal between housing hemispheres
  - New seal with each element
  - Minimizes parts
- Optimal surface area per given size
- Pleated media for high dirt holding capacity

Technical Specifications

- Temp (continuous):min -26°C (-15°F)max 104°C (220°F)
- Filter change out differential:37-50 mbar over initial ΔP
- Polyester: 99+% removal efficiency std. to 25 micron
- Paper: 99+% removal efficiency std. to 2 micron

Options

- Contact factory

Polyester Media Benefits/Specs

- Less maintenance due to longer durability
- Moisture resistant
- Handles hot air and oil mist from unload cycle of reciprocating/piston compressor
- Washable with lukewarm water and mild detergent (Replacing element is recommended)

Paper Media Benefits/Specs

- Heavy duty industrial strength paper
- Cost effective
- Gently blow out media (Replacing element is recommended)

Element Part Number		Element m^3/h	Surface	Dimensions - mm	
Polyester	Paper	Rating	Area m^2	OD	HT
03	02	5	0.009	38	25
05	04	14	0.019	57	25
07	06	20	0.054	76	35
11	10	60	0.10	102	35
17*	16	425	0.74	191	83

* = Minimum order quantity applies

See Element Technical Data section for maintenance guidelines

Tidbit: Charlie Solberg Jr. created a patented process to manufacture our Hockey Puck Style Filter Elements.

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

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Custom Configurations
For Hockey Puck Style Elements

- Contact Solberg for custom configurations that fit your equipment or application
- High grade filter element
- Multiple molding material options
- Integrated gasket seal
- Tooling and production minimums may apply

Sample Configurations

Applications

- Small engines
- Industrial equipment
- Vacuum cleaners
- DIY equipment
- Contact Solberg about your unique application

Disposable Filter Elements

AKG Series "Slip Fit" Elements

Features

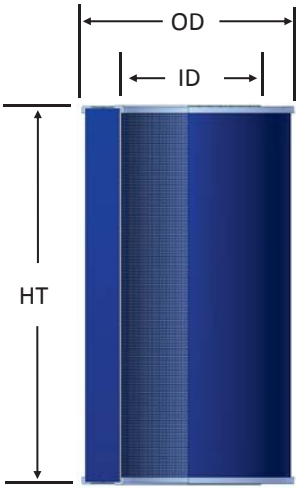
- Molded plastisol slip-fit connection
- Less maintenance with disposable element
- Pleated media for high dirt holding capacity

Technical Specifications

- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Oil Mist Coalescing Elements/ Air Separator Elements



Features

- Reinforced with epoxy coated steel wire
- Metal support on both sides of media

Technical Specifications

- 0.3 micron media; 99,97% efficiency
- Continuous operating temp: 20°C (68°F) - 80°C (180°F)

Benefits

- High efficiency at low pressure drop
- Increased surface area in a given volume allows for low velocity separation of ultra-fine oil mists
- Low oil carryover

Feature Identification

M = Molded plastisol endcap
B = Endcaps have closed one end with **b**olt hole, open on other end
G = **G**alvanized metal endcaps
C = **C**losed one end, open on other end
D = Element with molded open end, metal closed
W = Wrapped coalescing media
P = Pleated coalescing media

Element Part Number	Element m^3/h Rating	Dimensions - mm ID	OD	HT	Features
FG3	7	32	57	54	MW
FG5	8	32	57	76	MW
FG7	12	32	57	102	MW
FG9	27	76	102	102	MW
FG10	41	76	102	152	MW
FG11	51	98	127	108	MW
FG20	75	203	229	121	MW
GL910	7	13	46	36	DW
GL915	17	19	59	60	DW
PSG925	35	38	76	124	GBP
PSG848	85	65	127	121	GP
PSG850/1	215	89	149	222	GBP
PSG145	300	65	127	362	GP
PSG860/1	340	89	149	356	GBP
PSG244/2	510	152	248	244	GBP
PSG344/2	850	152	248	359	GBP
PSG374/2	1360	203	298	359	GBP
PSG474/2	1870	203	298	546	GBP
PSG476	3060	229	371	546	GP

Note: Model offerings and design parameters may change without notice. See www.solbergmfg.com for most current offering.

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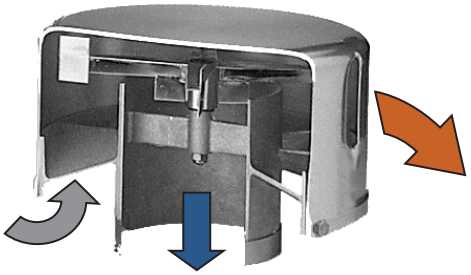
Operating Principle

Intake air is drawn through the angled louver plates which direct to turn the rotor. The centrifugal force separates the particulate contaminants from the airstream, throwing them to the outer perimeter of the cover, expelling them through the discharge port. Clean air then enters into your equipment.



SpinMeister™ Airflow Schematic

General Specifications

- Temp (continuous): min –51°C (-60°F) max 121°C (250°F)
- 85%+ removal efficiency standard to 15 microns
- Heavy duty vibration resistant stainless steel clamp

Molded SpinMeisters™

- Molded fiber filled composite housing
- Plastic rotors
- May be used with Solberg Inlet SpinMeister™ Filter Assemblies

Part Number	m^3/h Flow Rating Range	Slip Fit Outlet	Dimensions - mm HT	Slip Fit I.D.	Cover O.D.
SM-1.5	5-60	1.5"	57	38	89
SM-2	35-185	2"	76	51	121
SM-3	125-425	3"	114	76	178
SM-4	425-675	4"	137	102	238
SM-6	750-1500	6"	184	152	305

Aluminum SpinMeisters™

- Polished aluminum housing
- Stainless steel rotors
- May be used with Solberg Inlet SpinMeister™ Filter Assemblies

Part Number	m^3/h Flow Rating Range	Slip Fit Outlet	Dimensions - mm HT	Slip Fit I.D.	Cover O.D.
SMA-2	34-187	2"	80	51	121
SMA-3	238-510	3"	121	76	210
SMA-4	238-595	4"	121	76	210
SMA-6	680-1445	6"	182	152	311
SMA-9	1530-3400	9"	207	229	435

SpinMeisters™ for Vacuum

- Low pressure drop design
- Molded fiber filled composite housing
- Stainless steel rotors
- May be used with Solberg Vacuum Filter Series

Part Number	m^3/h Flow Rating Range	Slip Fit Outlet	Dimensions - mm HT	Slip Fit I.D.	Cover O.D.
SML235	68-187	3.5"	99	89	187
SML345	170-340	4.5"	178	114	260
SML445	340-765	4.5"	191	114	260

Note: Model offerings and design parameters may change without notice. See www.solbergmfg.com for most current offering.

Element Reference Chart
Standard Polyester / Paper

Solberg Part Number	Dimensions - mm OD	ID	HT	Media Type	m^3/h Rating	Endcap Features	Reference Number	Reference Number	Catalog Page
800	29	10	30	Paper	5	GB	C31		6-9
802	29	10	38	Paper	9	GB	C31/1		6-9
804	29	10	62	Paper	15	GB	C32		6-9
808	38	13	29	Paper	7	GB	C42/2		6-9
806	38	13	38	Paper	14	GB	C42/1		6-9
812	38	13	38	Paper	14	GC	C44		6-9
810	38	13	62	Paper	22	GB	C43		6-9
854	38	13	135	Paper	46	GB	C411		6-9
03	38	---	25	Polyester	5	M			6-12
02	38	---	25	Paper	5	M			6-12
870	49	29	143	Paper	51	GB	C69/1		6-9
09	57	29	57	Polyester	51	M			6-11
08	57	29	57	Paper	51	GN			6-11
05	57	---	25	Polyester	14	M			6-12
04	57	---	25	Paper	14	M			6-12
814	59	17	40	Paper	22	GB	C64/1		6-9
816	59	17	40	Paper	22	GC	C64/3		6-9
821	59	17	51	Polyester	31	GB	C66/1		6-9
820	59	17	52	Paper	31	GB	C66/1		6-9
818	59	17	62	Paper	34	GB	C66		6-9
830	64	25	73	Paper	41	GB	C79/1		6-9
828	64	38	44	Paper	20	GC	C76/2		6-9
825	64	38	68	Polyester	43	GC	C75		6-9
824	64	38	68	Paper	43	GC	C75		6-9
832	64	38	71	Paper	43	GCF	C79/2		6-9
826	64	38	71	Paper	43	GCF	C75/2		6-9
872	64	38	71	Paper	41	GBF	C75/2		6-9
827	64	38	71	Polyester	43	GCF	C75/2		6-9
834	64	38	114	Paper	68	GBHF	C713		6-9
836	64	38	167	Paper	82	GBHF	C718		6-9
852	68	38	70	Paper	41	GC	C711/1		6-9
07	76	---	35	Polyester	20	M			6-12
06	76	---	35	Paper	20	M			6-12
838	84	60	70	Paper	51	GCF	C912		6-9
841	92	44	143	Polyester	136	G	C1049		6-9
840	92	44	143	Paper	136	G	C1049		6-9
868	94	60	75	Paper	43	M			6-9
100	98	32	70	Paper	145	M			6-11
843	98	60	70	Polyester	94	G	C1112		6-9
842	98	60	70	Paper	94	G	C1112		6-9
845	98	60	70	Polyester	94	GCF	C1112/2		6-9
844	98	60	70	Paper	94	GCF	C1112/2		6-9
847	98	60	100	Polyester	105	G	C1132		6-9
846	98	60	100	Paper	105	G	C1132		6-9
897	102	60	214	Polyester	136	GB			6-9
896	102	60	214	Paper	136	GB			6-9
11	102	---	35	Polyester	60	M			6-12
10	102	---	35	Paper	60	M			6-12
15P	111	76	59	Polyester	60	M			6-7
14P	111	76	59	Paper	60	M			6-7
19P	111	76	121	Polyester	170	M			6-7
18P	111	76	121	Paper	170	M			6-7
127	111	76	54	Paper	102	M			6-11
849	127	65	121	Polyester	196	G	C1337		6-9
848	127	65	121	Paper	196	G	C1337		6-9
879	127	65	121	Polyester	196	GB			6-9
878	127	65	121	Paper	196	GB			6-9
108	146	92	70	Paper	179	M			6-11
31P	146	92	121	Polyester	332	M			6-7
30P	146	92	121	Paper	332	M			6-7
231P	146	92	241	Polyester	510	M			6-7
230P	146	92	241	Paper	510	M			6-7
32-01	148	102	51	Polyester	---	M	81-1202		6-11
32-00	148	102	51	Paper	---	M	81-0470		6-11
859	149	89	124	Polyester	187	G	C1574		6-9
858	149	89	124	Paper	187	G	C1574		6-9
851	149	89	222	Polyester	493	GR	C15124/1		6-9
851/1	149	89	222	Polyester	493	GBR			6-9
850	149	89	222	Paper	493	GR	C15124/1		6-9
850/1	149	89	222	Paper	493	GBR			6-9
25	149	92	102	Polyester	306	M			6-11
24	149	92	102	Paper	306	M			6-11
32-03	152	108	64	Polyester	---	M	81-1203	F642	6-11
32-02	152	108	64	Paper	---	M	81-0471	P642	6-11

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Element Reference Chart
Standard Polyester / Paper

Solberg Part Number	Dimensions - mm OD	ID	HT	Media Type	m^3/h Rating	Endcap Features	Reference Number	Reference Number	Catalog Page
101	168	114	130	Paper	349	M			6-11
32-17	175	121	106	Polyester	---	M	F8-151		6-11
32-16	175	121	106	Paper	---	M	F8-108		6-11
104	184	130	137	Paper	434	M			6-11
109	197	143	102	Paper	493	M			6-11
102	197	144	76	Paper	247	M			6-11
237	197	119	216	Polyester	935	GBN			6-7
236	197	119	216	Paper	935	GBN			6-7
80P	200	105	76	Paper	510	M			6-11
84P	200	105	102	Paper	740	M			6-11
35P	200	121	122	Polyester	468	M			6-7
34P	200	121	122	Paper	468	M			6-7
235P	200	121	244	Polyester	969	M			6-7
234P	200	121	244	Paper	969	M			6-7
335P	200	121	368	Polyester	1360	M			6-7
334P	200	121	368	Paper	1360	M			6-7
17	203	---	83	Polyester	425	M			6-12
16	203	---	83	Paper	425	M			6-12
863	213	144	164	Polyester	547	M	C21138/1		6-9
862	213	144	164	Paper	550	M	C21138/1		6-9
874	216	152	89	Paper	306	GCE			6-9
239P	235	124	254	Polyester	969	GBN			6-7
238P	235	124	254	Paper	969	GBN			6-7
45P	248	152	121	Polyester	1250	M			6-11
44P	248	152	121	Paper	1250	M			6-11
144P	248	152	148	Paper	1624	GN			6-11
245P	248	152	244	Polyester	1496	GN			6-7
244P	248	152	244	Paper	1496	M			6-7
345P	248	152	368	Polyester	1870	GN			6-7
344P	248	152	368	Paper	1870	GN			6-7
32-05	248	184	102	Polyester	---	M	81-1204	F974	6-11
32-04	248	184	102	Paper	---	M	81-0472	P974	6-11
32-07	248	184	152	Polyester	---	M	81-1205	F976	6-11
32-06	248	184	152	Paper	---	M	81-1063	P976	6-11
857	254	195	195	Polyester	638	G	C26240		6-9
856	254	195	195	Paper	638	G	C26240		6-9
32-19	259	181	130	Polyester	---	M	F8-135		6-11
32-18	259	181	130	Paper	---	M	F8-109		6-11
32-09	292	251	178	Polyester	---	M	81-1206	F1197	6-11
32-08	292	251	178	Paper	---	M	81-0474	P1197	6-11
75P	298	203	127	Polyester	1624	GN			6-11
74P	298	203	127	Paper	1624	M			6-11
275P	298	203	244	Polyester	1870	GN			6-7
274P	298	203	244	Paper	1870	GN			6-7
375P	298	203	368	Polyester	2550	GN			6-7
374P	298	203	368	Paper	2550	GN			6-7
575P	298	203	622	Polyester	7225	GN			6-11
32-21	319	241	124	Polyester	---	M	F8-134		6-11
32-20	319	241	124	Paper	---	M	F8-110		6-11
32-23	319	241	254	Polyester	---	M	F8-139		6-11
32-22	319	241	254	Paper	---	M	F8-111		6-11
32-11	349	295	223	Polyester	---	M	81-1207	F13118	6-11
32-10	349	295	223	Paper	---	M	81-04575	P13118	6-11
371P	349	254	368	Polyester	5202	GN			6-11
370P	349	254	368	Paper	5202	GN			6-11
377P	371	229	368	Polyester	3103	GN			6-7
376P	371	229	368	Paper	3103	GN			6-7
32-13	432	330	254	Polyester	---	M	81-1209	F171310	6-11
32-12	432	330	254	Paper	---	M	81-1163	P171310	6-11
385P	498	356	368	Polyester	5610	GN			6-7
384P	498	356	368	Paper	5610	GN			6-7
485P	498	356	546	Polyester	7999	GN			6-7
484P	498	356	546	Paper	7999	GN			6-7
685P	498	356	724	Polyester	11220	GN			6-7
32-25	502	381	356	Polyester	---	M	F8-148		6-11
32-24	502	381	356	Paper	---	M	F8-137		6-11
32-15	584	483	356	Polyester	---	M	81-1210	F231914	6-11
32-14	584	483	356	Paper	---	M	81-1164	P231914	6-11
391	708	565	368	Polyester	9350	GN			6-11
390	708	565	368	Paper	9350	GN			6-11
491	708	565	546	Polyester	13600	GN			6-11
490	708	565	546	Paper	13600	GN			6-11

Note: Model offerings & design parameters may change without notice. Contact Solberg for CAD drawings or see www.solbergmfg.com.

Useful Vacuum Formulas

1. SCFM to ACFM: ..... SCFM x ($P_1 \div P_2$) = ACFM
2. ACFM to SCFM: ..... ACFM x ($P_2 \div P_1$) = SCFM
3. SCFM to ACFM (w/temp)..... SCFM x ($P_1 \div P_2$) x ($T_2 \div T_1$) = ACFM
4. ACFM to ACFM: ..... ACFM x ($P_1 \div P_2$) = ACFM (adjusted)
5. Closed System: ..... $S = 2.3 \times (V \div T) \times \log(P_1 \div P_2)$ [solve for Capacity]
   $T = 2.3 \times (V \div S) \times \log(P_1 \div P_2)$ [solve for Time]
6. Receiver Size (V2): ..... $V_2 = V_1 \times (P_1 - P_3) \div (P_3 - P_2)$
7. Leak Rate Capacity: ..... $S = V \times (P_2 - P_1) \div t) \times (1 \div P_1)$
8. Lbs./Hour to ACFM: ..... $S = (Lbs. \div 60) \times (385 \div MW) \times (760 \div P_2) \times ((460 + T) \div 528)$
9. Surface Area of a Pipe: ..... 3.1416 x r x r (radius should be in feet)
10. Face Velocity: ..... F.V. (in ft./min) = S/ACFM ÷ Sq. Feet of Media
11. Velocity (Pipe): ..... Velocity (in ft/min) = ACFM ÷ # of FT^2 (Pipe I.D.)
12. Deg. F to Deg. Rankine: ..... Deg. F + 460 = Deg. R
13. Deg. Rankine to Deg. F: ..... Deg. R- 460 = Deg. F
14. Deg. Rankine to Deg. K: ..... Deg. R x 0.556 = Deg. K
15. Deg. Kelvin to Deg. R: ..... Deg. K x 1.8 = Deg. R
16. Deg. C to Deg. Kelvin: ..... Deg. C + 273.15 = Deg. K
17. Deg. F to Deg. C: ..... (Deg. F – 32) x 5 ÷ 9 = Deg. C
18. Deg. C to Deg. F: ..... (Deg. C x 9 ÷ 5) + 32 = Deg. F

Legend

ACFM = Actual CFM
C = Centigrade
F = Fahrenheit
K = Kelvin
MW = Molecular Weight
P_1 = Initial Pressure
P_2 = Target Pressure
P_3 = Avg. Pressure
R= Rankine
r = radius
S= Capacity in ACFM
SCFM = Standard CFM
t = Time
T_1 = Initial Temp.
T_2 = Target Temp.
V= Volume in Cubic Feet
V_2 = Receiver Volume

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Useful Conversions

From	Multiply By:	To Get:	From	Multiply By:	To Get:	From	Multiply By:	To Get:	From	Multiply By:	To Get:
ATM's	1.013	Bar	C.Meters/hr.	16,667	cc's/Minute	Kgs/Sq. Cent.	980.7	Millibar	Millibar	0.0009869	ATM's
ATM's	76	cm Hg	C.Meters/hr.	277.8	cc's/Second	Kgs/Sq. Cent.	10,000	mm H_2O	Millibar	0.001	Bar
ATM's	33.9	Feet H_2O	C.Meters/hr.	0.589	CFM	Kgs/Sq. Cent.	98,069	Pascals	Millibar	0.075	cm's Hg
ATM's	29.92	"HgA	C.Meters/hr.	0.01667	C.Meters/min.	Kgs/Sq. Cent.	2048.2	lbs/sq. foot	Millibar	0.03346	Ft H_2O
ATM's	406.8	"H_2O	C.Meters/hr.	0.000278	C.Meters/sec.	Kgs/Sq. Cent.	14.22	lbs/sq. inch	Millibar	0.02953	"HgA
ATM's	1.0332	Kgs/sq. cm	C.Meters/hr.	4.403	Gallons/Minute	Kgs/Sq. Cent.	735.6	Torr (mm Hg)	Millibar	0.4015	"H_2O
ATM's	10,332	Kgs/sq. Meter	C.Meters/hr.	16.667	Liters/Minute	Kgs/Sq. Meter	0.007356	cm's Hg	Millibar	0.00102	Kgs/sq. cm
ATM's	101.325	Kilopascals	C.Meters/hr.	0.2778	Liters/Second	Kgs/Sq. Meter	0.003281	Feet H_2O	Millibar	10.2	Kgs/sq. Meter
ATM's	760,000	Microns	C.Meters/min.	1,000,000	cc's/Minute	Kgs/Sq. Meter	0.002896	"HgA	Millibar	0.1	Kilopascals
ATM's	1013	Millibar	C.Meters/min.	16,667	cc's/Second	Kgs/Sq. Meter	0.03937	"H_2O	Millibar	750	Microns
ATM's	10,332	mm H_2O	C.Meters/min.	35.31	CFM	Kgs/Sq. Meter	0.0001	Kgs/sq. cm	Millibar	10.2	mm H_2O
ATM's	101,325	Pascals	C.Meters/min.	60	C.Meters/hr.	Kgs/Sq. Meter	73.56	Microns	Millibar	100	Pascals
ATM's	2,116.2	lbs/sq. foot	C.Meters/min.	0.01667	C.Meters/sec.	Kgs/Sq. Meter	0.09804	Millibar	Millibar	2.089	lbs/sq. foot
ATM's	14.7	lbs/sq. inch	C.Meters/min.	264.17	Gallons/Minute	Kgs/Sq. Meter	1	mm H_2O	Millibar	0.0145	lbs/sq. inch
ATM's	760	Torr (mm Hg)	C.Meters/min.	1,000	Liters/Minute	Kgs/Sq. Meter	9.807	Pascals	Millibar	0.7501	Torr (mm Hg)
Bar	0.9869	ATM's	C.Meters/min.	60,000	Liters/Second	Kgs/Sq. Meter	0.2048	lbs/sq. foot	Millimeters	0.1	Centimeters
Bar	75	cm's Hg	Gallons	3,785.4	Cub. Cm's	Kgs/Sq. Meter	0.001422	lbs/sq. inch	Millimeters	0.003281	Feet
Bar	33.46	Feet H_2O	Gallons	0.1337	Cubic Feet	Kgs/Sq. Meter	0.07356	Torr (mm Hg)	Millimeters	0.03937	Inches
Bar	29.528	"HgA	Gallons	231	Cubic Inches	Kilopascals	0.009869	ATM's	Millimeters	0.001	Meters
Bar	401.48	"H_2O	Gallons	0.003785	Cubic Meters	Kilopascals	0.01	Bar	Millimeters	1,000	Microns
Bar	1.02	Kgs/sq. cm	Gallons	0.004951	Cubic Yards	Kilopascals	0.75	cm's Hg	Millimeters	0.001094	Yards
Bar	10,196.9	Kgs/sq. Meter	Gallons	3.79	Liters	Kilopascals	0.335	Feet H_2O	Pascals	0.000009869	ATM's
Bar	100	Kilopascals	Gallons	128	Ounces (fluid)	Kilopascals	0.2953	"HgA	Pascals	0.00001	Bar
Bar	750,000	Microns	Gallons	8	Pints	Kilopascals	4.015	"H_2O	Pascals	0.0007501	cm's Hg
Bar	1,000	Millibar	Gallons	4	Quarts	Kilopascals	0.0102	Kgs/sq. cm	Pascals	0.0003346	Feet H_2O
Bar	10,196.9	mm H_2O	Gallons/Minute	3,785.4	cc's/Minute	Kilopascals	101.97	Kgs/sq. Meter	Pascals	0.0002953	"HgA
Bar	100,000	Pascals	Gallons/Minute	63.1	cc's/Second	Kilopascals	7,500.6	Microns	Pascals	0.004015	"H_2O
Bar	2,088.5	lbs/sq. foot	Gallons/Minute	0.1337	CFM	Kilopascals	10	Millibar	Pascals	0.0000102	Kgs/sq. cm
Bar	14.5	lbs/sq. inch	Gallons/Minute	0.2271	C.Meters/hr.	Kilopascals	101.97	mm H_2O	Pascals	0.102	Kgs/sq. Meter
Bar	750	Torr (mm Hg)	Gallons/Minute	0.00379	C.Meters/min.	Kilopascals	1,000	Pascals	Pascals	0.001	Kilopascals
cc's/Minute	0.01667	cc's/Second	Gallons/Minute	3.785	Liters/Minute	Kilopascals	20.89	lbs/sq. foot	Pascals	7.5	Microns
cc's/Minute	0.00003531	CFM	Gallons/Minute	0.0631	Liters/Second	Kilopascals	0.14504	lbs/sq. inch	Pascals	0.01	Millibar
cc's/Minute	0.000006	C.Meters/hr.	"HgA	0.03342	ATM's	Kilopascals	7.5	Torr (mm Hg)	Pascals	0.102	mm H_2O
cc's/Minute	0.000001	C.meters/min.	"HgA	0.03387	Bar	Liters	1,000	Cub. Cm's	Pascals	1	Newtons/M^2
cc's/Minute	0.000264	Gallons/Minute	"HgA	2.54	cm's Hg	Liters	0.03531	Cubic Feet	Pascals	0.0209	lbs/sq ft
cc's/Minute	0.001	Liters/Minute	"HgA	1.133	Feet H_2O	Liters	61.02	Cubic Inches	Pascals	0.000145	lbs/sq. inch
cc's/Minute	0.00001667	Liters/Second	"HgA	13.6	"H_2O	Liters	0.001	Cubic Meters	Pascals	0.007501	Torr (mm Hg)
Cub. Cm's	0.00003531	Cubic Feet	"HgA	0.0345	Kgs/sq. cm	Liters	0.001308	Cubic Yards	lbs/sq. inch	0.06805	ATM's
Cub. Cm's	0.06102	Cubic Inches	"HgA	345.32	Kgs/sq. Meter	Liters	0.2642	Gallons	lbs/sq. inch	0.06895	Bar
Cub. Cm's	0.000001	Cubic Meters	"HgA	3.387	Kilopascals	Liters	33.81	Ounces (fluid)	lbs/sq. inch	5.171	cm's Hg
Cub. Cm's	0.0002642	Gallons	"HgA	25,400	Microns	Liters	2.11	Pints	lbs/sq. inch	2.31	Feet H_2O
Cub. Cm's	0.001	Liters	"HgA	33.87	Millibar	Liters	1.057	Quarts	lbs/sq. inch	2.036	"HgA
Cub. Cm's	0.033814	Ounces (fluid)	"HgA	345.32	mm H_2O	Liters/Minute	1,000	cc's/Minute	lbs/sq. inch	27.68	"H_2O
Cub. Cm's	0.002113	Pints	"HgA	3,386.5	Pascals	Liters/Minute	16.67	cc's/Second	lbs/sq. inch	0.07031	Kgs/sq. cm
Cub. Cm's	0.001057	Quarts	"HgA	70.73	lbs/sq. foot	Liters/Minute	0.03531	CFM	lbs/sq. inch	703.1	Kgs/sq. Meter
Cubic Feet	28,316.9	Cub. Cm's	"HgA	0.4912	lbs/sq. inch	Liters/Minute	0.06	C.Meters/hr.	lbs/sq. inch	6.895	Kilopascals
Cubic Feet	1,728	Cubic Inches	"HgA	25.4	Torr (mm Hg)	Liters/Minute	0.001	C.Meters/min.	lbs/sq. inch	51,715.1	Microns
Cubic Feet	0.02832	Cubic Meters	"H_2O	0.002458	ATM's	Liters/Minute	0.2642	Gallons/Minute	lbs/sq. inch	68.95	Millibar
Cubic Feet	0.03704	Cubic Yards	"H_2O	0.002491	Bar	Liters/Minute	0.01667	Liters/Second	lbs/sq. inch	703.1	mm H_2O
Cubic Feet	7.48	Gallons	"H_2O	0.01868	cm's Hg	Liters/Second	60,000	cc's/Minute	lbs/sq. inch	6,894.8	Pascals
Cubic Feet	28.32	Liters	"H_2O	0.0833	Feet H_2O	Liters/Second	1,000	cc's/Second	lbs/sq. inch	144	lbs/sq. foot
Cubic Feet	957.51	Ounces (fluid)	"H_2O	0.07355	"HgA	Liters/Second	2.119	CFM	lbs/sq. inch	51.71	Torr (mm Hg)
Cubic Feet	59.84	Pints	"H_2O	0.00254	Kgs/sq. cm	Liters/Second	3.6	C.Meters/hr.	Torr (mm Hg)	0.001316	ATM's
Cubic Feet	29.92	Quarts	"H_2O	25.4	Kgs/sq. Meter	Liters/Second	0.06	C.Meters/min.	Torr (mm Hg)	0.001333	Bar
CFM	28,317	cc's/Minute	"H_2O	0.2491	Kilopascals	Liters/Second	0.001	C.Meters/sec.	Torr (mm Hg)	0.1	cm's Hg
CFM	471.95	cc's/Second	"H_2O	1,868.2	Microns	Liters/Second	15.85	Gallons/Minute	Torr (mm Hg)	0.04461	Feet H_2O
CFM	1.699	C.Meters/hr.	"H_2O	2.491	Millibar	Liters/Second	60	Liters/Minute	Torr (mm Hg)	0.03937	"HgA
CFM	0.02832	C.meters/min.	"H_2O	25.4	mm H_2O	Microns	0.000001316	ATM's	Torr (mm Hg)	0.05353	"H_2O
CFM	0.000472	C.Meters/sec.	"H_2O	249.08	Pascals	Microns	0.000001333	Bar	Torr (mm Hg)	0.001359	Kgs/sq. cm
CFM	7.48	Gallons/Minute	"H_2O	5.202	lbs/sq. foot	Microns	0.0001	cm's Hg	Torr (mm Hg)	13.6	Kgs/sq. Meter
CFM	28.32	Liters/Minute	"H_2O	0.03613	lbs/sq. inch	Microns	0.00004461	Feet H_2O	Torr (mm Hg)	0.1333	Kilopascals
CFM	0.472	Liters/Second	"H_2O	1.868	Torr (mm Hg)	Microns	0.00003937	"HgA	Torr (mm Hg)	1,000	Microns
Cubic Meters	1,000,000	Cub. Cm's	Kgs/Sq. Cent.	0.9679	ATM's	Microns	0.0005353	"H_2O	Torr (mm Hg)	1.333	Millibar
Cubic Meters	35.31	Cubic Feet	Kgs/Sq. Cent.	0.9807	Bar	Microns	0.01359	Kgs/sq. Meter	Torr (mm Hg)	1	mmHg
Cubic Meters	61,023.7	Cubic Inches	Kgs/Sq. Cent.	73.56	cm's Hg	Microns	0.0001333	Kilopascals	Torr (mm Hg)	13.6	mmH_2O
Cubic Meters	1.308	Cubic Yards	Kgs/Sq. Cent.	32.81	Feet H_2O	Microns	0.001333	Millibar	Torr (mm Hg)	133.32	Pascals
Cubic Meters	264.17	Gallons	Kgs/Sq. Cent.	28.96	"HgA	Microns	0.01359	mm H_2O	Torr (mm Hg)	2.784	lbs/sq. foot
Cubic Meters	1,000	Liters	Kgs/Sq. Cent.	393.7	"H_2O	Microns	0.13333	Pascals	Torr (mm Hg)	0.01934	lbs/sq. inch
Cubic Meters	33,814	Ounces (fluid)	Kgs/Sq. Cent.	10,000	Kgs/sq. Meter	Microns	0.002784	lbs/sq. foot	Centigrade	°C + 273.15	Kelvin
Cubic Meters	2,113.38	Pints	Kgs/Sq. Cent.	98.07	Kilopascals	Microns	0.00001934	lbs/sq. inch	Fahrenheit	°F + 460	Rankine
Cubic Meters	1,056.7	Quarts	Kgs/Sq. Cent.	735,579	Microns	Microns	0.001	Torr (mm Hg)	Rankine	0.555	Kelvin