

Technical Data

Inlet Vacuum Filters

Applications & Equipment

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

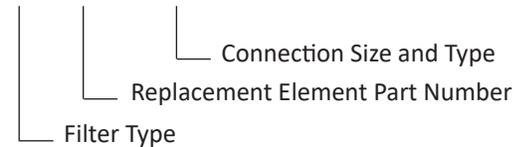
Identification

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 4” flange connection size.

CSL-235P-400F



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.

Vacuum Level	Pressure (mbar)	Pressure (Torr)	Pressure (Pa)
Atmospheric Pressure	1013	760	1.013x10 ⁵
Rough Vacuum	1013 to 33	760 to 25	1x10 ⁺⁵ to 3x10 ⁺³
Medium Vacuum	33 to 1.3x10 ⁻³	25 to 1x10 ⁻³	3x10 ⁺³ to 1x10 ⁻¹
High Vacuum	1.3x10 ⁻³ to 1.3x10 ⁻⁹	1x10 ⁻³ to 1x10 ⁻⁹	1x10 ⁻¹ to 1x10 ⁻⁷

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Choosing the Best Filter for Your Equipment

A. When the connection & airflow is known:

1. Select the appropriate connection style. (i.e.: MPT, Flange, NPSC etc.)

a. Verify assembly SCFM (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 SCFM (flow) rating.)

b. Verify that the flow rating matches connection size; skip to “C. Selecting Elements”.

B. 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; 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 on our website: www.solbergmfg.com.

Element Maintenance

Solberg elements should be replaced once the pressure drop reaches 15-20” H₂O above the initial pressure drop of the installation. Cleaning the 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 15” H₂O.

If the pressure drop exceeds 20” H₂O 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.

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Inline Right Angle Vacuum Filters

CSL Series 3/8" - 4"

Overview

Solberg's CSL Series is designed to protect equipment from contaminants carried over from a variety of industrial processes. Ideal for rough-medium vacuum service, the CSL can be utilized in systems where standard duty flanges and threaded connections are acceptable. Multiple filter element media options offer superior protection and longevity for the vacuum system.

Benefits

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

Features

- Seamless drawn housings
- O-ring seal
- Corrosive resistant black powder coat carbon steel
- Stainless steel torsion clips for durability

Technical Specifications

- Vacuum Rating: medium vacuum service*
- Temp (continuous): min -15°F (-26°C) max 220°F (104°C)
- Filter change out differential: 15-20" H₂O over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

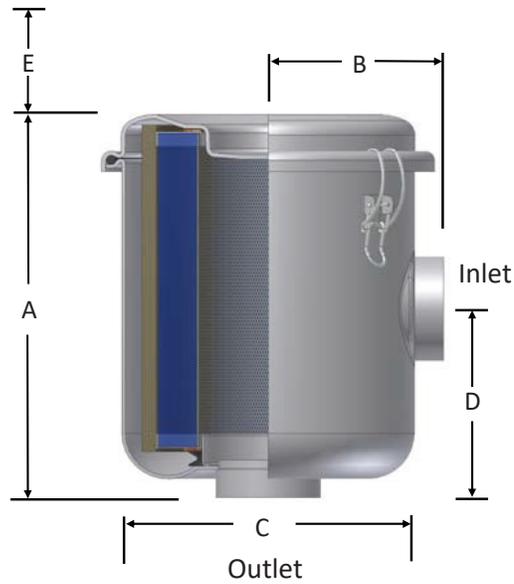
Options



- 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)



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Inlet/Outlet Size	Type	Assembly SCFM Rating	Assembly Part Number		Dimensions - inches				Suggested Service Ht. E	Approx. Weight lbs.	Replacement Element Part No.		Element SCFM Rating
			Polyester	Paper	A	B	C	D			Polyester	Paper	
3/8"	BSPP	18	CSL-825-039HCB	CSL-824-039HCB	3 1/8	2 1/8	3 3/4	1 19/16	3"	0.88	825	824	25
1/2"	NPSC	18	CSL-825-050HCB	CSL-824-050HCB	3 1/2	2 1/4	3 3/4	2	3"	0.88	825	824	25
1/2"	NPSC	20	CSL-843-050HC	CSL-842-050HC	4	3	5 3/4	2 1/2	3"	3	843	842	55
3/4"	NPSC	24	CSL-825-075HCB	CSL-824-075HCB	3 1/2	2 5/16	3 3/4	2	3"	0.88	825	824	25
3/4"	NPSC	25	CSL-843-075HC	CSL-842-075HC	4	3	5 3/4	2 1/2	3"	3	843	842	55
1"	NPSC	35	CSL-843-100HC	CSL-842-100HC	4 1/4	3 3/4	5 3/4	2 5/8	3"	3	843	842	55
1"	NPSC	40	CSL-849-100HC	CSL-848-100HC	6 11/16	4 1/8	7 3/8	4 1/2	5"	5	849	848	115
1 1/4"	NPSC	55	CSL-843-125HC	CSL-842-125HC	4 1/4	3 3/4	5 3/4	2 5/8	3"	3	843	842	55
1 1/4"	NPSC	60	CSL-849-125HC	CSL-848-125HC	6 11/16	4 1/8	7 3/8	4 1/2	5"	5	849	848	115
1 1/2"	NPSC	80	CSL-849-150HC	CSL-848-150HC	6 3/4	4 1/8	7 3/8	4 1/2	5"	5	849	848	115
2"	NPSC	175	CSL-851-200HC	CSL-850-200HC	10 1/4	4 1/2	8 3/4	5	9"	15	851	850	290
2 1/2"	FPT	210	CSL-851-250HC	CSL-850-250HC	10 11/16	5 1/8	8 3/4	5 1/2	9"	15	851	850	290
3"	FPT	300	CSL-239-300C	CSL-238-300C	15 3/4	8 13/16	13 1/4	8 11/16	11"	33	239™	238™	570
3"	MPT	300	CSL-2541-300B	CSL-2540-300B	15 3/4	9	13 1/4	8 7/8	12"	30	2541	2540	800
4"	MPT	520	CSL-2541-400B	CSL-2540-400B	16 1/4	9 1/2	13 1/4	9 1/2	12"	32	2541	2540	800

*See Vacuum Filter Technical Data for Vacuum Service Data.

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All model offerings and design parameters are subject to change without prior notice.
Contact your representative or visit www.solbergmfg.com for the most current information.



SOLBERG

Inline Right Angle Vacuum Filters

CSL Series 3" - 12"

Overview

Solberg's CSL Series is designed to protect equipment from contaminants carried over from a variety of industrial processes. Ideal for rough-medium vacuum service, the CSL can be utilized in systems where standard duty flanges and threaded connections are acceptable. Multiple filter element media options offer superior protection and longevity for the vacuum system.

Benefits

- Reduce piping costs with multiple mounting configurations (mount horizontal or inverted)
- Minimize equipment pressure-drop change with low pressure-drop filter design

Features

- Heavy duty T-bolts for easy maintenance
- Corrosive resistant black powder coat carbon steel
- O-ring stays in place with unique U-channel groove
- Inlet & outlet 1/4" gauge taps
- Lifting lugs
- Brackets for optional support legs
- Nameplate bracket

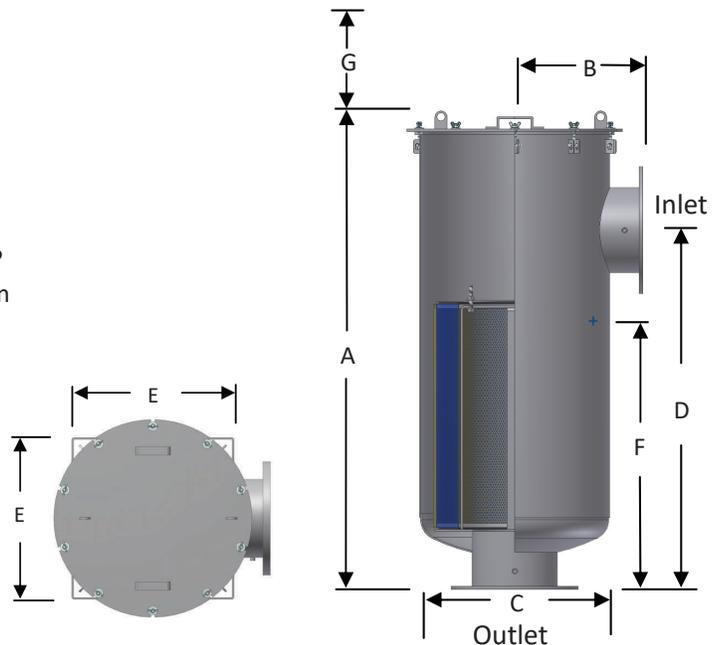
Technical Specifications

- Vacuum Rating: medium vacuum service*
- Filter change out differential: 15-20" H₂O over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options



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



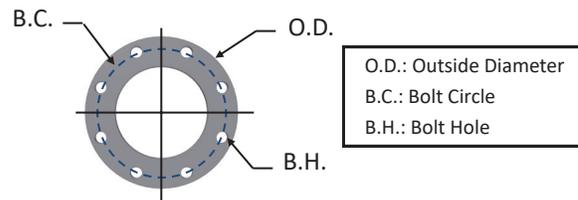
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Flanged Assemblies

Flange Inlet & Outlet	Assembly SCFM Rating	Assembly Part Number		Dimensions - inches				Suggested Service ht. E	Approx. Weight lbs	Replacement Element Part No.		Element SCFM Rating
		Polyester	Paper	A	B	C	D			Polyester	Paper	
4"	520	CSL-235P-400F	CSL-234P-400F	27 ³ / ₈	9	14	18 ¹ / ₂	15"	62	235P™	234P™	570
4"	520	CSL-335P-400F	CSL-334P-400F	27 ³ / ₈	9	14	18 ¹ / ₂	20"	64	335P™	334P™	800
5"	800	CSL-245P-500F	CSL-244P-500F	28 ¹ / ₄	11	18 ¹ / ₂	19 ¹ / ₂	15"	88	245P™	244P™	880
5"	800	CSL-345P-500F	CSL-344P-500F	28 ¹ / ₄	11	18 ¹ / ₂	19 ¹ / ₂	20"	90	345P™	344P™	1100
6"	1100	CSL-275P-600F	CSL-274P-600F	29 ¹ / ₄	12	18 ¹ / ₂	20 ¹ / ₂	15"	110	275P™	274P™	1100
6"	1100	CSL-375P-600F	CSL-374P-600F	29 ¹ / ₄	12	18 ¹ / ₂	20 ¹ / ₂	20"	113	375P™	374P™	1500
8"	1800	CSL-377P-800F	CSL-376P-800F	39 ¹ / ₈	14	22 ¹ / ₂	25 ¹ / ₂	20"	185	377P™	376P™	1825
10"	2900	CSL-685P-1000F	CSL-384P(2)-1000F ⁺	57 ¹ / ₂	16	27	45	33"	380	685P™	384P™(2) ⁺	6600
12"	4950	CSL-485P(2)-1200F ⁺	CSL-484P(2)-1200F ⁺	70 ¹ / ₄	16	27	57	25"	465	485P™(2) ⁺	484P™(2) ⁺	9410

⁺Denotes 2 elements stacked in housing.

125/150# Pattern Flange	Dimensions - inches			No. of Holes	Flange Thickness inches
	O.D.	B.C.	B.H.		
4"	9	7 ¹ / ₂	³ / ₄	8	0.38
5"	10	8 ¹ / ₂	⁷ / ₈	8	0.38
6"	11	9 ¹ / ₂	⁷ / ₈	8	0.38
8"	13 ¹ / ₂	11 ³ / ₄	⁷ / ₈	8	0.38
10"	16	14 ¹ / ₄	1	12	0.38
12"	19	17	1	12	0.50



All flanges are oriented "split center".

MPT Assemblies

MPT Inlet & Outlet	Assembly SCFM Rating	Assembly Part Number		Dimensions - inches				Suggested Service ht. E	Approx. Weight lbs	Replacement Element Part No.		Element SCFM Rating
		Polyester	Paper	A	B	C	D			Polyester	Paper	
3"	300	CSL-235P-300	CSL-234P-300	27 ³ / ₈	9	14	18 ¹ / ₂	10"	47	235P™	234P™	570
3"	300	CSL-335P-300	CSL-334P-300	27 ³ / ₈	9	14	18 ¹ / ₂	15"	50	335P™	334P™	800
4"	520	CSL-235P-400	CSL-234P-400	27 ³ / ₈	9	14	18 ¹ / ₂	10"	52	235P™	234P™	570
4"	520	CSL-335P-400	CSL-334P-400	27 ³ / ₈	9	14	18 ¹ / ₂	15"	55	335P™	334P™	800
5"	800	CSL-245P-500	CSL-244P-500	28 ¹ / ₄	11	18 ¹ / ₂	19 ¹ / ₂	10"	82	245P™	244P™	880
5"	800	CSL-345P-500	CSL-344P-500	28 ¹ / ₄	11	18 ¹ / ₂	19 ¹ / ₂	15"	88	345P™	344P™	1100
6"	1100	CSL-275P-600	CSL-274P-600	29 ¹ / ₄	12	18 ¹ / ₂	20 ¹ / ₂	10"	95	275P™	274P™	1100
6"	1100	CSL-375P-600	CSL-374P-600	29 ¹ / ₄	12	18 ¹ / ₂	20 ¹ / ₂	15"	97	375P™	374P™	1500

*See Vacuum Filter Technical Data for vacuum service data and sizing guidelines.

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