

Liquid Separator / Vacuum Filter

LRS Series 3/4" - 6"

Overview

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

Benefits

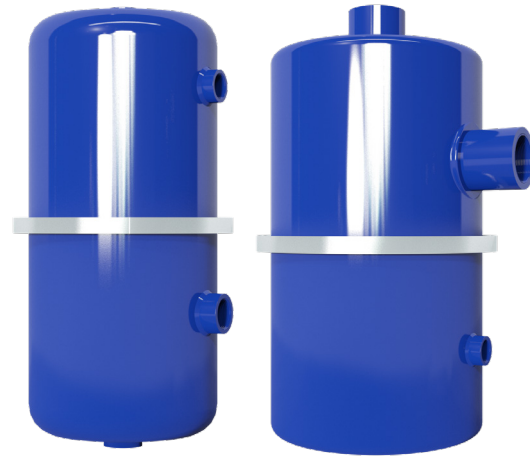
- Simplified vacuum package: 2 functions in 1 (liquid separator & inlet air filter)
- Multistage filtration & separation
- Protects pump from harmful liquids that break down lubricating/sealing oil
- Lower cost than individual separator and filter
- Significant liquid/slurry holding capacity
- Prevents emulsification of oil in oil lubricated systems
- Reduce footprint with compact design

Features

- Corrosive resistant blue powder coat carbon steel
- Integrated baffle
- Expansion chamber
- 1/4" NPSC inlet/outlet taps (select models)
- 1" NPSC drain and sight port

Technical Specifications

- Vacuum Rating: medium vacuum service*
- Filter change out differential: 15-20" H₂O over initial Δ P
- Polyester: 99%+ particulate removal efficiency to 5 micron



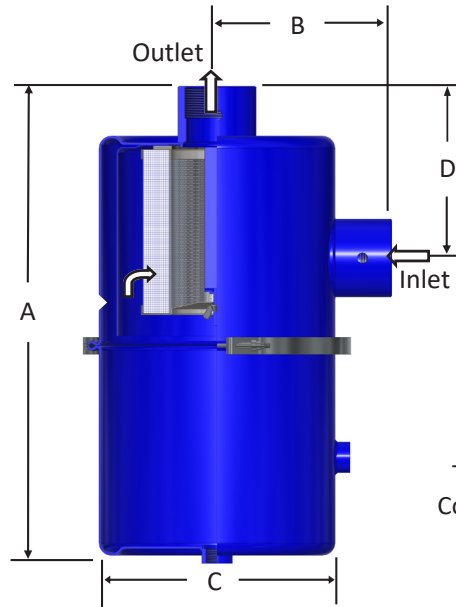
Threaded Outlet Assembly



Flange Outlet Assembly

Rev: LRS-US1903K

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Typical LRS Configuration

Assembly SCFM Rating	Inlet/Outlet		Assembly Part Number	Dimensions - inches				Suggested Service ht. inches	Approx. Holding Cap. gallons	Replacement Element Part No.	Element SCFM Rating
	Size	Type		A	B	C	D				
60	3/4"	NPSC	LRS-19-075HC	17 3/4	4 7/16	7 1/16	3 5/16	5	1 1/2	19	100
85	1"	NPSC	LRS-19-100HC	18	4 5/8	7 1/16	3 1/2	5	1 1/2	19	100
85	1 1/4"	NPSC	LRS-19-125HC	18	4 5/8	7 1/16	3 1/2	5	1 1/2	19	100
100	1 1/2"	NPSC	LRS-19-150HC	18	4 5/8	7 1/16	3 1/2	5	1 1/2	19	100
135	2"	NPSC	LRS-237-200HC	22 3/16	6 3/4	12	6 5/8	9	2 1/2	237	550
195	2 1/2"	FPT	LRS-237-250C	24 5/16	8 7/8	12	8 3/4	9	2 1/2	237	550
300	3"	FPT	LRS-237-300C	24 5/16	8 7/8	12	8 3/4	9	2 1/2	237	550
520	4"	FLG	LRS-275-400F	23 3/8	11 1/2	16	8	10	4 1/2	275	1100
830	6"	FLG	LRS-275-600F	40 5/8	12	16	9	10	10 1/2	275	1100

Options ATEX Available

- ASME rated vessels
- Stainless steel construction & nonstandard finishes
- Nonstandard filter media
- Extended bucket for additional holding capacity
- Preseparator stainless steel demister
- Vacuum gauges
- Drain packages
- Support legs
- For larger flows, ask about our Knockout Separator Series

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



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

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
- 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

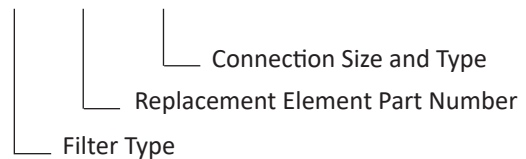
Identification

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 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
Coarse 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

Rev: IVTD-US1904K

Inlet Vacuum Filters

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.)
2. check 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.)

3. when required 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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