

Technical Data

Oil Mist Discharge Filters

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

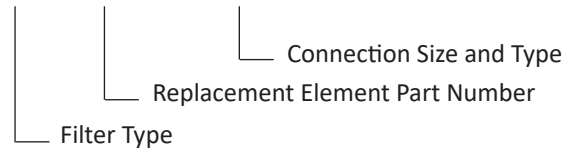
Identification

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

- Assembly Model #
- Replacement Element #

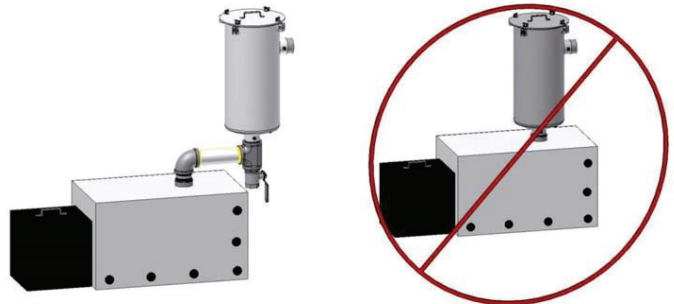
The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being an “HDL” design filter with a “PSG344/2” coalescing element, and 3” MPT connection size.

HDL-PSG344/2-300



Installation & Maintenance

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



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General

Coalescing air/oil separation technology is highly effective at capturing oil mist from the exhaust of an oil sealed/lubricated vacuum pump and keeping surrounding work environments clean and safe. Each pump technology produces its own specific oil discharge characteristics and requires the appropriate housing and element configuration to optimize performance.

Critical factors that influence performance of a coalescing air/oil separator include quality of the oil, equipment type, oil type and viscosity, challenge rate, process gas characteristics, operating temperature, operating vacuum level, and maximum air flow rating of the pump. Because of these variables, it is always best to work with Solberg personnel when selecting and sizing a vacuum pump discharge filter. However, Solberg's standard product lines will perform well in most general duty applications. The following guidelines will help when selecting a standard product.

Filter Selection Guidelines

#1: Protect the pump with adequate inlet filtration. Contaminants such as particulates, water, and solvents can damage the pump internals and significantly reduce the effectiveness of the discharge filter.

#2: Identify the type of vacuum pump oil being used. Solberg's standard coalescing technology works well with most commercially available vacuum pump oils across a broad range of viscosities. Generally, maximum coalescing effectiveness is achieved with temperatures at the inlet of the filter: at or below 160°F (~70°C) for mineral oils, at or below 180°F (~ 82°C) for synthetics. For best results, consult with the factory and provide information on operating temperature and viscosity/grade of oil prior to making any filter selection.

#3: Determine the filter size based on the flow rating of the pump at atmospheric conditions, not the connection size. An undersized coalescing filter will cause increased back pressure and negatively affect pump performance.

#4: To capture oil, the coalescing element must receive the oil challenge in an aerosol form. If the oil is in a vapor state, it will pass through the coalescing media. Generally, the coalescing technology will perform more effectively at lower operating temperatures. In many cases, adding distance between the pump and the filter will help to lower the air stream temperature and improve coalescing effectiveness.

#5: Install in external environments where temperatures will not fall below freezing or exceed 100°F (37°C). Creating distance between the pump and the exhaust filter is desirable, however, avoid installing long pipe runs and horizontal sections where condensed oil can accumulate. When possible, install a drip-leg to gather any excess oil within the piping.

#6: Drain the filter and drip-leg to ensure your vacuum system performs at optimal levels. If the system is not drained regularly, issues such as high back pressure and unsafe working conditions can occur.

Once as much information as possible has been obtained, send the data to Solberg for review, review our data sheets, or visit our website, www.solbergmfg.com.

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SOLBERG

Discharge Oil Mist Filters

HDL Series 1" - 2 1/2"

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

Features

- Captures oil fog, mist or aerosol from exhaust of oil sealed vacuum pumps
- Seamless drawn housings
- O-ring sealed housings
- Corrosive resistant white powder coat carbon steel
- Discharge baffle
- 1/4" NPSC for external drain

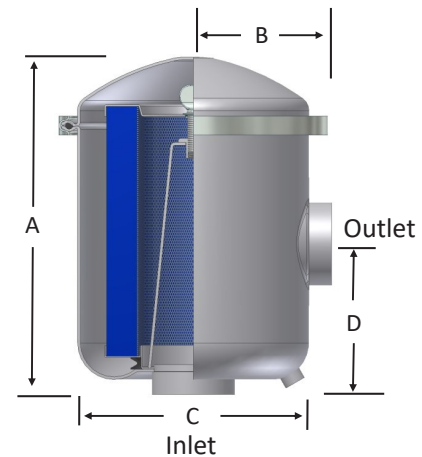
Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 68°F (20°C) up to 180°F (80°C)
- Mounted vertically
- Pressure rating: 5 PSI

Options



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



Inlet/Outlet Size	Assembly Type	SCFM Rating	Housing Config.	Assembly Part Number	Dimensions - inches				Suggested Service Ht. (inches)	Approx. Weight (lbs.)	Replacement Element Part No.	Element SCFM Rating
					A	B	C	D				
1"	NPSC	40	A	HDL-PSG848-100HC	6 3/4	4 1/8	7 3/8	4 1/2	5 1/4	5	PSG848	50
1 1/4"	NPSC	50	A	HDL-PSG848-125HC	6 3/4	4 1/8	7 3/8	4 1/2	5 1/4	5	PSG848	50
1 1/2"	NPSC	50	A	HDL-PSG848-150HC	6 3/4	4 1/8	7 3/8	4 1/2	5 1/4	5	PSG848	50
2"	NPSC	125	B	HDL-PSG850/1-200HC	11 1/4	4 5/8	8 3/8	5	9 1/4	15	PSG850/1	125
2"	NPSC	175	C	HDL-PSG860/1-200HC	17 3/8	4 5/8	8 3/4	5	14 1/2	30	PSG860/1	200
2 1/2"	FPT	250	B	HDL-PSG244/2-250C	15 1/16	8 13/16	13 1/4	8 3/4	10	35	PSG244/2	300

Note: 2 1/2" housing has 1/4" NPSC taps standard on inlet and outlet.

See Oil Mist Discharge Filter Technical Data for sizing guidelines.

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Discharge Oil Mist Filters

HDL Series 3" - 8"

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

Features

- Captures oil fog, mist or aerosol from exhaust of oil sealed vacuum pumps
- O-ring sealed housings
- Corrosive resistant white powder coat carbon steel
- ½" NPT for external drain

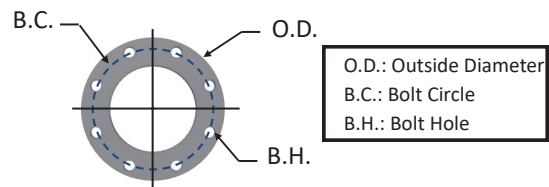
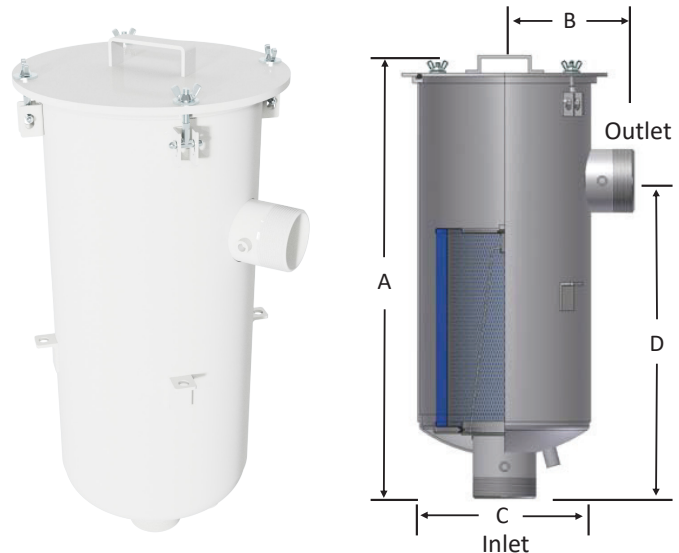
Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 68°F (20°C) up to 180°F (80°C)
- Mounted vertically
- Pressure rating: 14.5 PSI

Options



- Various nonstandard finishes and connection styles
- Lower back pressure media
- Application specific gaskets/seals
- Stainless steel housings
- Nameplate bracket
- Lifting lugs



125/150# Pattern Flange	Dimensions - inches			No. of Holes	Flange Thickness inches
	O.D.	B.C.	B.H.		
8"	13 ½	11 ¾	7/8	8	0.38

MPT Inlet/ Outlet	Assembly SCFM Rating	Assembly Part Number	Dimensions - inches				Suggested Service ht. inches	Approx. Weight lbs.	Replacement Element Part No.	Element SCFM Rating
			A	B	C	D				
3"	300	HDL-PSG344/2-300	31 ¼	9 ⅝	14	22 ½	15	75	PSG344/2	500
4"	500	HDL-PSG344/2-400	31 ¼	9	14	22 ½	15	78	PSG344/2	500
5"	800	HDL-PSG474/2-500	38 ¼	11	18 ½	29 ½	22	160	PSG474/2	1100
6"	1100	HDL-PSG474/2-600	39 ¼	11	18 ½	30 ½	22	160	PSG474/2	1100
8" Flange	1800	HDL-PSG476-800F	38 15/16	14	22 ½	25 ½	22	180	PSG476	1800

See Oil Mist Discharge Filter Technical Data for sizing guidelines.

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