

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 #

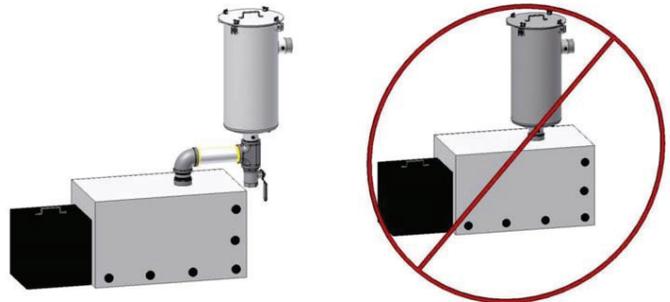
The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being an “HDL” design filter with a “PSG344/2” coalescing element, and 3” MPT connection size.

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 (Open)

EF Series 1/2" - 1 3/4", ISO FLG

Features

- Captures oil fog, mist or aerosol from discharge of oil sealed vacuum pumps
- Steel construction with 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

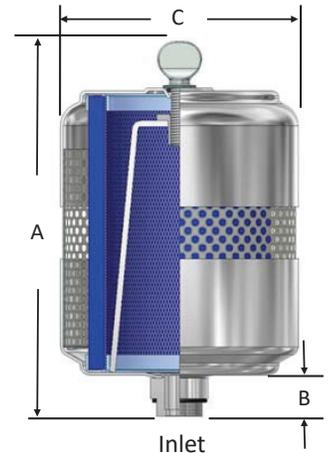
- 0.3 micron media; 99.97% efficiency
- Continuous operating temp: 68°F (20°C) to 180°F (80°C)

Options

- Additional ISO flange connections
- Non-standard connection styles



Connection		Assembly SCFM Rating	Assembly Part Number	Dimensions - inches			Suggested Service ht. inches	Approx. Weight (lbs.)	Replacement Element Part No.
Size	Type			A	B	C			
1/2"	MPT	4.5	EF-FG5-050	4 1/2	7/8	2 1/2	3	0.6	FG5
1/2"	MPT	7	EF-FG7-050	5 1/2	7/8	2 1/2	4	1.8	FG7
3/4"	3/4-20 UNEF	4	EF-FG3-077	3 3/4	1	2 1/2	3	1.2	FG3
3/4"	MPT	4.5	EF-FG5-075	4 3/8	1 1/4	2 1/2	3	0.9	FG5
3/4"	MPT	7	EF-FG7-075	5 3/8	1 1/8	2 1/2	4	1.8	FG7
1"	1-20 UNEF	4.5	EF-FG5-103	4 1/2	7/8	2 1/2	3	0.7	FG5
1"	1-20 UNEF	7	EF-FG7-103	5 1/2	7/8	2 1/2	4	0.8	FG7
1"	1-20 UNEF	16	EF-FG9-103	5 5/8	7/8	5	4	1.8	FG9
1"	1-20 UNEF	24	EF-FG10-103	8	7/8	5	6	7	FG10
1 3/4"	1 3/4-20 UN	24	EF-FG10-177	8 1/8	1 3/4	5	6	3.5	FG10
16 mm	ISO Flange	4.5	EF-FG5-NW16	4	7/8	2 1/2	3	0.6	FG5
25 mm	ISO Flange	4.5	EF-FG5-NW2516	4	7/8	2 1/2	3	1.4	FG5
25 mm	ISO Flange	24	EF-FG10-KF25	9 3/8	2 1/8	5	6	3.5	FG10
40 mm	ISO Flange	44	EF-FG20-KF40	7	2	10 1/4	5	7	FG20



See Oil Mist Discharge Filter Technical Data for sizing guidelines.

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www.solbergmfg.com

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.

Discharge Oil Mist Filters (Internal Drain)

EFDB Series

Features

- Captures oil fog, mist or aerosol 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 with nickel plated finish
- Seamless drawn housings
- Easy thumb screw access for element maintenance
- Oil run off from the filter returns to the pump

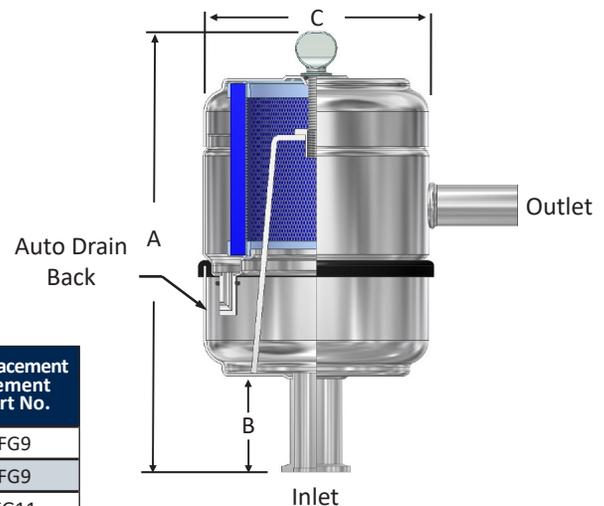


Technical Specifications

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

Options

- Additional ISO flange connections
- Non-standard connection styles



Inlet Size / Type	Assembly SCFM Rating	Assembly Part Number	Dimensions - inches			Approx. Weight (lbs.)	Replacement Element Part No.
			A	B	C		
KF25 ISO Flange	16	EFDB-FG9-KF25	9	2 3/16	5 5/16	2.5	FG9
1-20 UNEF	16	EFDB-FG9-103	7 1/2	7/8	5 1/8	2.3	FG9
1 3/4 - 20 UN	24	EFDB-FG11-177	9 3/4	2	6 1/4	2.5	FG11

See Oil Mist Discharge Filter Technical Data for sizing guidelines.

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