Aerosol separator device
ASL 1 - 4

Nominal volume flow up to 3600 m³/h

1. Features

High-performance device for separating cooling lubricants from machine tool exhaust air

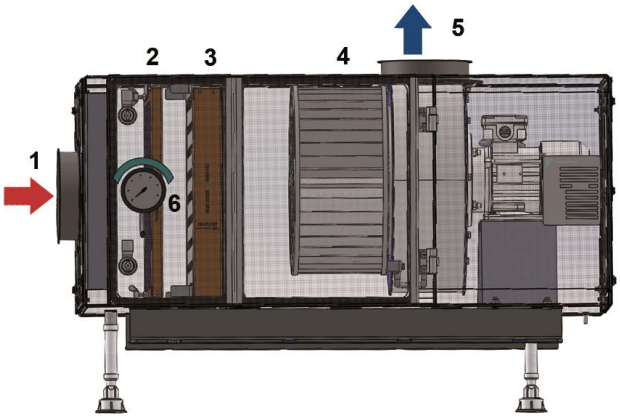
In industrial machining and shaping processes – such as in modern machine tools – cooling lubricants are used under high pressure. This sends more aerosols into the ambient air. To prevent the aerosol concentrations from exceeding the permitted limits, the cooling lubricant mist must be continuously extracted from the machine's work area and cleaned. Filtration Group aerosol separator devices efficiently protect workers, equipment and production facilities from cooling lubricant aerosols and improve their productivity.

Characteristics

- Extraction of damaging aerosols right at the processing machine
- Can be used for aqueous cooling lubricant applications or applications with oil aerosols less than 20 mg/m³
- High energy efficiency
- Modular structure of the individual filter stages
- Optional H13 filter stage
- Modular design for direct installation of main components into the processing machine
- Small space requirements
- Long maintenance interval and service-friendly operation
- Cleanable and reuseable individual filter stages
- Extensive accessories
- Optimal price-performance ratio
- Worldwide distribution and service

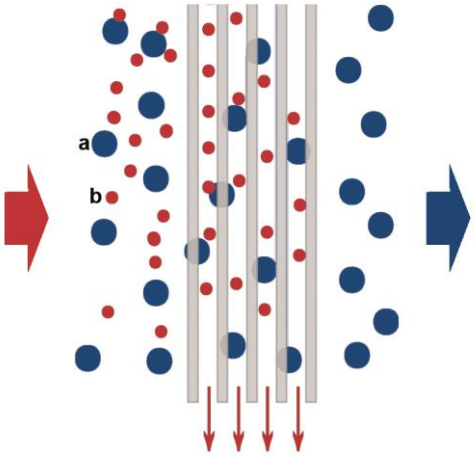
2. Functional principle

The raw air from the area of the machine tools is extracted with a powerful fan (5). The raw air flows through each filter stage. The wire mesh pre-filter stage (1) removes the large dirt particles (chips, coarse dirt) and protects the downstream separation stages from contamination. Additionally, at this stage the large aerosols are separated through turbulence and gravity. The primary separation stage (2) removes the coarse to fine aerosols. The secondary separation stage (3) removes the very fine aerosols. The largest share of fine aerosols can be separated thanks to a local acceleration of the stream via perforated baffle plate and a subsequent slowdown in a multi-layered Miofilter panel. A star pleated fine filter element (4) can be used additionally to remove the remaining very fine aerosols from airstream.
The bottom of the housing collects the separated aerosol, which is sent through a drain hose into the storage tank for cooling lubricant. The transported air quantity depends strongly on the stage of expansion of tthe ASL and can vary during operation in dependency of each filter stage´s contamination.
The gauge (6) measures the adjacent vacuum before the first filter stage and is an indicator for the actually funded volume flow.



1 Wire mesh pre-separator
2 Primary separation stage
3 Secondary separation stage
4 Fine filter
5 Fan
6 Maintenance indicator (analog gauge)

3. Procedural principle



Aerosols going through the separation plates

4. Application area

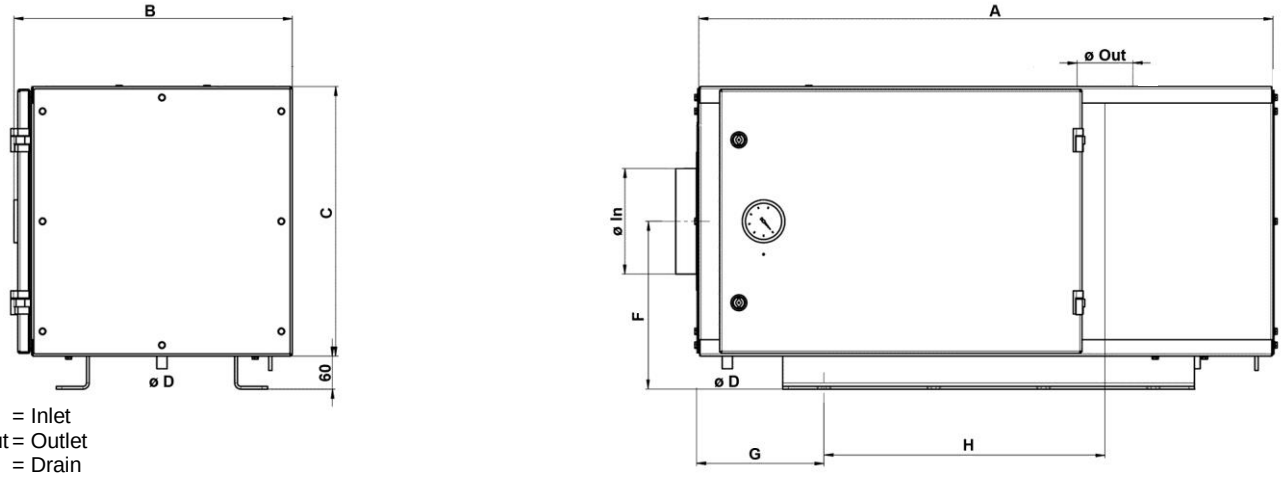
Suitable for:
- water-mixable cooling lubricants for machine tools
- non-water-mixable cooling lubricants (cutting, grinding and drilling oil) at raw gas load less than 20mg/m³

Other special applications on request.

Limits of use:
Set-up in potentially explosive atmospheres (zones 0, 1 and 2) is not permitted!

a Air
b Aerosoles

5. Dimensions



In = Inlet
Out = Outlet
D = Drain

All Dimension except "D" in mm

Type	A ±3	B ±3	C ±3	D	F	G	H	In	Out
ASL 1	920	475	400	$G^3/_8$	260	160	445	DN 150	DN 150
ASL 2	1056	512	490	$G^3/_8$	305	235	512	DN 200	DN 150
ASL 3	1310	625	900	$G^3/_8$	510	355	541	DN 300	DN 300
ASL 4	1510	805	1100	$G^3/_8$	610	455	502	DN 300	DN 300

6. Technical specification

	ASL 1	ASL 2	ASL 3	ASL 4
Operating volumetric flow m³/h:	600	1000	2000	3600
Operating temperature range °C:	+10 up to +50	+10 up to +50	+10 up to +50	+10 up to +50
Motor voltage VAC/50 Hz:	400	400	400	400
Power consumption A:	1.35	1.35	2.5	7.8
Motor power kW:	0.55	0.55	1.1	4
Protection class:	IP 54	IP 54	IP 54	IP 54
Motor speed U/min:	2800	2800	2840	2870
Sound level dB (A):	74	74	73	72
Raw gas connection mm:	DN 150	DN 200	DN 300	DN 300
Clean gas connection mm:	DN 150	DN 150	DN 300	DN 300
Drain hose:	15x2 mm PVC transparent (5.5 m)			
Dimensions LxBxH mm:	920x475x460	1056x512x550	1310x625x960	1510x805x1160
Weight kg:	70	85	150	190

7. Type number key

Type number key with order example ASL 2.2			
Type			
ASL	Aerosol Separator Light		
	Series		
	1	up to 600 m³/h, recommended extraction area up to 2 m³	
	2	up to 1000 m³/h, recommended extraction area up to 4 m³	
	3	up to 2000 m³/h, recommended extraction area up to 8 m³	
	4	up to 3600 m³/h, recommended extraction area up to 16 m³	
		Filter stages	
		1	Pre-separator incl. Miofilter
		2	Pre-separator incl. Miofilter and fine filter
ASL	**2**	**2**	**ASL up to 800 m³/h with pre-separator, Miofilter and fine filter** (example)

8. Order numbers

Part designation	Order number
ASL 11 RAL 7035	72429284
ASL 12 RAL 7035	72416648
ASL 21 RAL 7035	72373051
ASL 22 RAL 7035	72383123
ASL 31 RAL 7035	72406570
ASL 32 RAL 7035	72395791
ASL 41 RAL 7035	72439127
ASL 42 RAL 7035	72437692

9. Spare parts

Part designation	Fig. position in functional principle	Order number			
		ASL 1	ASL 2	ASL 3	ASL 4
Pre-separator	1	72366908	72373140	72352822	72392822
Primary separation stage element	2	72417927	72374686	72388445	72438238
Secondary separation stage element	3	72417939	72374780	72388983	72438243
Fine filter	4	72418905	72382322	2x 72382322	3x 72382322
HEPA filter	5	-			
Fan	6	72416715	72420067	72400859	72438266
Maintenance indicator (analog gauge)	7	72388574			

10. Accessories and options

10.1 Service kits
The filter stages in the ASL unit are clean- and reusable. It is useful to order a service kit with the new device to avoid a standstill of machines during the cleaning and drying of elements.
Service kits
ASL 11 Order-no. 72425205
ASL 12 Order-no. 72425206
ASL 21 Order-no. 72422335
ASL 22 Order-no. 72425124
ASL 31 Order-no. 72422380
ASL 32 Order-no. 72425204
ASL 41 Order-no. 72439391
ASL 42 Order-no. 72439389

☛ **Please also read our cleaning recommendation for fine and Mio-filter.**

10.2 Suspended solids filter (HEPA downstream filter stage)
For very high requested quality of cleaned air in recirculation mode, there is an option to add a Filtration Group filter (HEPA) downstream. HEPA downstream filters (class H13) are standardly available with filter surfaces about 3.5 m², 7 m ², 12 m² or 16 m². Preparing of a HEPA downstream filter stage depends strongly on the application and that´s why they are only available on request.

10.3 Silencer
Suitable silencer including mounting material can be prepared and offered if necessary.

10.4 Height adjustable racks
for installing/mounting the unit besides a tooling machine (on request).

10.5 Piping kits
Optimal piping concepts and kits can be prepared and offered on request.

10.6 Desired finishes
The units are standardly powder coated with RAL7035.
Other RAL colours are available on request.

11. Questionnaire for requests

Checklist for Aerosol separation systems

Filtration Group®
Filtering The World

Customer data

Date

Company

Contact person | Function

Phone number | E-Mail

Adress

Information on the tooling machine

Manufacturer | Model | Year of construction

Type of processing: ◯ Turning ◯ Milling ◯ Grinding ◯ Others

Machine housing: ◯ None ◯ Partial housing ◯ Complete housing ◯ Other

Maschine utilization: ◯ Single-shift ◯ Double-shift ◯ Three-shift

Processed material

Information on the cooling lubricant

Type of cooling lubricant: ◯ Water-miscible (e.g. emulsion) ◯ Non water-miscible (e.g. oil)

Name according to safety data sheet

Minimal qantity lubrication (MQL): ◯ Yes ◯ No

Evacuation system and aerosol separator

If an aerosol separator is already in use:

Manufacturer | Model | Year of construction

Number and position of the evacuation points

Size of the evacuation ports: ◯ DN 100 ◯ DN 150 ◯ DN 200 ◯ Others

Position of the separator: ◯ On top of the machine ◯ Next to the machine

Exhaust air: ◯ Recirculation in the hall ◯ Extraction to the outside

What else may be important:

Filtration Group GmbH
Schleifbachweg 45
D-74613 Öhringen
Phone +49 7941 6466-0
Fax +49 7941 6466-429
fm.de.sales@filtrationgroup.com
www.filtrationgroup.com