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 reusable 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 the 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.

3. Procedural principle

![Diagram showing the flow of aerosols through the separation plates.]

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!
Extraction of toxic or hazardous substances is not permitted!

- a Air
- b Aerosoles
5. Dimensions

![Diagram of an aerosol separator device]

In = Inlet
Out = Outlet
D = Drain

All dimensions except "D" in mm

<table>
<thead>
<tr>
<th>Type</th>
<th>A ±3</th>
<th>B ±3</th>
<th>C ±3</th>
<th>D</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>In</th>
<th>Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL 1</td>
<td>860</td>
<td>475</td>
<td>400</td>
<td>G(\frac{3}{8})</td>
<td>260</td>
<td>160</td>
<td>445</td>
<td>DN 150</td>
<td>DN 150</td>
</tr>
<tr>
<td>ASL 2</td>
<td>1056</td>
<td>512</td>
<td>490</td>
<td>G(\frac{3}{8})</td>
<td>305</td>
<td>235</td>
<td>512</td>
<td>DN 200</td>
<td>DN 150</td>
</tr>
<tr>
<td>ASL 3</td>
<td>1310</td>
<td>625</td>
<td>900</td>
<td>G(\frac{3}{8})</td>
<td>510</td>
<td>355</td>
<td>541</td>
<td>DN 300</td>
<td>DN 300</td>
</tr>
<tr>
<td>ASL 4</td>
<td>1510</td>
<td>805</td>
<td>1100</td>
<td>G(\frac{3}{8})</td>
<td>610</td>
<td>455</td>
<td>502</td>
<td>DN 300</td>
<td>DN 300</td>
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</tbody>
</table>

6. Technical specification

<table>
<thead>
<tr>
<th></th>
<th>ASL 1</th>
<th>ASL 2</th>
<th>ASL 3</th>
<th>ASL 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating volumetric flow m³/h:</td>
<td>500</td>
<td>1000</td>
<td>2000</td>
<td>3600</td>
</tr>
<tr>
<td>Operating temperature range °C:</td>
<td>+10 bis +50</td>
<td>+10 bis +50</td>
<td>+10 bis +50</td>
<td>+10 bis +50</td>
</tr>
<tr>
<td>Motor voltage VAC/50 Hz:</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Power consumption A:</td>
<td>1</td>
<td>1.35</td>
<td>2.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Motor power kW:</td>
<td>0.37</td>
<td>0.55</td>
<td>1.1</td>
<td>3</td>
</tr>
<tr>
<td>Protection class:</td>
<td>IP 54</td>
<td>IP 54</td>
<td>IP 54</td>
<td>IP 54</td>
</tr>
<tr>
<td>Motor speed U/min:</td>
<td>2800</td>
<td>2800</td>
<td>2840</td>
<td>2880</td>
</tr>
<tr>
<td>Sound level dB (A):</td>
<td>74</td>
<td>74</td>
<td>73</td>
<td>72</td>
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<tr>
<td>Raw gas connection mm:</td>
<td>DN 150</td>
<td>DN 200</td>
<td>DN 300</td>
<td>DN 300</td>
</tr>
<tr>
<td>Clean gas connection mm:</td>
<td>DN 150</td>
<td>DN 150</td>
<td>DN 300</td>
<td>DN 300</td>
</tr>
<tr>
<td>Drain hose:</td>
<td>15x2 mm PVC transparent (5.5 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions LxWxH mm:</td>
<td>860x475x400</td>
<td>1056x512x550</td>
<td>1310x625x960</td>
<td>1510x805x1160</td>
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<tr>
<td>Weight kg:</td>
<td>70</td>
<td>85</td>
<td>150</td>
<td>190</td>
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7. Type number key

<table>
<thead>
<tr>
<th>Type</th>
<th>Aerosol Separator Light</th>
</tr>
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<tbody>
<tr>
<td>ASL</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>up to 500 m³/h, recommended extraction area up to 2 m³</td>
</tr>
<tr>
<td>2</td>
<td>up to 1000 m³/h, recommended extraction area up to 4 m³</td>
</tr>
<tr>
<td>3</td>
<td>up to 2000 m³/h, recommended extraction area up to 8 m³</td>
</tr>
<tr>
<td>4</td>
<td>up to 3600 m³/h, recommended extraction area up to 16 m³</td>
</tr>
</tbody>
</table>

Filterstufen

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-separator incl. Mio-filter</td>
</tr>
<tr>
<td>2</td>
<td>Pre-separator incl. Mio-filter and fine filter</td>
</tr>
</tbody>
</table>

ASL 2

ASL bis 900 m³/h mit Vorabscheider, Miofilter und Feinfilter (Auswahlbeispiel)

8. Order numbers

<table>
<thead>
<tr>
<th>Part designation</th>
<th>Order number</th>
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<tbody>
<tr>
<td>ASL 11 RAL 7035</td>
<td>72429284</td>
</tr>
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<td>ASL 12 RAL 7035</td>
<td>72416648</td>
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<tr>
<td>ASL 21 RAL 7035</td>
<td>72373051</td>
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<td>ASL 22 RAL 7035</td>
<td>72383123</td>
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<td>ASL 31 RAL 7035</td>
<td>72406570</td>
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<td>ASL 32 RAL 7035</td>
<td>72395791</td>
</tr>
<tr>
<td>ASL 41 RAL 7035</td>
<td>72439127</td>
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<td>ASL 42 RAL 7035</td>
<td>72437692</td>
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</tbody>
</table>

9. Spare parts

<table>
<thead>
<tr>
<th>Part designation</th>
<th>Fig. position in functional principle</th>
<th>ASL 1 Order number</th>
<th>ASL 2 Order number</th>
<th>ASL 3 Order number</th>
<th>ASL 4 Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-separator</td>
<td>1</td>
<td>72366908</td>
<td>72373140</td>
<td>72392822</td>
<td>72392822</td>
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<tr>
<td>Primary separation stage element</td>
<td>2</td>
<td>72417927</td>
<td>72374686</td>
<td>72388445</td>
<td>72438238</td>
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<tr>
<td>Secondary separation stage element</td>
<td>3</td>
<td>72417939</td>
<td>72374780</td>
<td>72388983</td>
<td>72438243</td>
</tr>
<tr>
<td>Fine filter</td>
<td>4</td>
<td>72418905</td>
<td>72382322</td>
<td>2 x 72382322</td>
<td>3 x 72382322</td>
</tr>
<tr>
<td>HEPA filter</td>
<td>not shown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan</td>
<td>5</td>
<td>72454474</td>
<td>72420067</td>
<td>72459040</td>
<td>72458466</td>
</tr>
<tr>
<td>Maintenance indicator (analog gauge)</td>
<td>6</td>
<td>72368574</td>
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<td></td>
<td></td>
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<tr>
<td>Service kits</td>
<td>not shown</td>
<td></td>
<td></td>
<td></td>
<td>see 10.1 Service kits</td>
</tr>
</tbody>
</table>

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

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 m², 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.

 Please also read our cleaning recommendation for fine and Mio-filter.
11. Questionnaire for requests

Checklist for ASL/LGA series
Aerosol separation

1. Customer data

Company:  
Post code:  
Town:  
Phone number:  
Project-no.:  
Contact person:  
Customer-no.:  
Street:  
E-Mail:  

2. Information on the tooling machine

General Information:
Type of processing:
Turning
Milling
Grinding
Others:

Manufact:
Model:
Year:

Machine housing:
Complete housing
Partial housing

Workspace (room to be collected): width x height x depth m

Type of processing:
Turning
Milling
Grinding
Others:

Machine utilization:
Single-shift
Double-shift
Three-shift

Material of the workpiece:

Machine setting:
Cutting speed: m/min
Feed speed: mm/min

Fully automatic workpiece loading
Manual workpiece loading

Dwell time before manual workpiece loading s

3. Information on the cooling lubricant

Type:
water-miscible
non water-miscible

Name according to safety data sheet:

Minimal quantity lubrication:
pressure bar
volume flow l/min

Nebulization:
strong
medium
weak
(Workpiece not visible)
(Workpiece still visible)
(Workpiece clearly visible)

4. Evacuation system and aerosol separation

Aerosol separator is already in use?
yes
no

Manufact:
Model:

Number of the evacuation points:

Position of the evacuation points:

Size of the evacuation ports:
DN100
DN150
DN200
Others:

Position of the separator:
on top of the machine
next to the machine

Max. Distance from the suction point: m

Exhaust air:
recirculation in the hall
extraction to the outside

Limit value for oil mist concentration: mg/m³

Piping planning and assembly desired?
yes
no

Required fields!

4. Additions/Miscellaneous

Place/Date:  
Signature:  
