Oil Mist Separator Unit
LGA 1201 FU/FUW

Nominal volume flow 1200 m³/h

1. Features

Powerful device for the separation of Cooling lubricants from machine tool exhaust air

Characteristics

- Excellent separation performance 99.9 % with 0.5 µm aerosols
- Suitable for high raw gas loading concentrations up to 3000 mg/m³
- Equipped with highly efficient coalescer elements
- Pre-separation system to optimize service life
- Can be retrofitted with a HEPA filter stage to increase efficiency
- Minimal maintenance and energy saving system
- Service-friendly handling
- Minimal need for space
- Extensive accessories
- Worldwide distribution and service
2. Fractional collection efficiency

\[ x = \text{Particle size in } \mu\text{m} \]
\[ y = \text{Fraction separation efficiency in } \% \]

Aerosol: Wiolan SH 10
Raw gas concentration: 50 mg/m³
Volume flow: 1200 m³/h

1 = Filter cartridge as delivered
2 = Filter cartridge after 100 operating hours

3. Operating principle

Oil aerosols are sucked away from the machining space of machine tools. The oil-laden air flows outward through the coalescer element from the inside. The oil attaches itself to the fibre media as it passes through the filter. Minute oil droplets "coalesce" to form larger drops. These larger droplets migrate downwards on the coalescer element due to gravity. The oil accumulates at the bottom of the housing and is returned to the cooling lubricant storage reservoir via the oil drain hose and the membrane valve. The vacuum in the filter housing causes external air to be sealed off by the membrane valve. The valve opens automatically when the oil in the drain hose reaches a height of at least 500 mm. The cleaned airflow is sucked away by means of a high-pressure fan and blown out at the top through a silencer.

4. Application

Suitable for non-water-miscible cooling lubricants (cutting, grinding, drilling oil), oil aerosol from machine tools, as well as for water-miscible cooling lubricants.

Operating use

When machining with oil as the cooling lubricant, air must usually be extracted from the work part to prevent the atomized oil from spreading. Concentrations can occur in the cooling lubricant jet itself or in the machine room, which can, for example, ignite if the tool breaks. When working with flammable coolants or flammable materials, suitable fire and explosion protection devices must therefore be used to ensure safe operation in compliance with the legal regulations.

Installation in an explosive atmosphere (zone 0, 1 and 2) is not permitted!

5. Product information

**LGA 1201 FU and FUW**

The LGA 1201 is a filtering separator with an oil separating element and optional pre-separation (with the FUW variant). It is driven by a frequency controlled motor. A flow sensor supplies the actual value to achieve a constant volume flow of 1200 m³/h. If the value falls below the set point, approx. 900 m³/h an electrical signal. With appropriate evaluation, maintenance measures can be initiated.

6. Order numbers

<table>
<thead>
<tr>
<th>Type</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGA 1201 FU RAL 7035*</td>
<td>on request</td>
</tr>
<tr>
<td>LGA 1201 FUW RAL 7035*</td>
<td>70591732</td>
</tr>
</tbody>
</table>

* other colors on request
7. Modules/main components

1. Diaphragm valve (FU 1x/F UW 2x)
2. Oil return hose (FU 1x/F UW 2x)
3. Raw gas connection piece
4. Filter housing
5. Housing
6. Oil separator
7. Pre-separation element (only FUW)
8. Fan
9. Eye bolt for transportation
10. Silencer
11. Frequency converter
12. Differential pressure transmitter
13. Volume flow display
14. Electrical feed
15. Mounting bar

8. Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume flow</td>
<td>1200 m³/h</td>
</tr>
<tr>
<td>Temperature range</td>
<td>+10 °C to +60 °C</td>
</tr>
<tr>
<td>Air connection piece (2x Jacob)</td>
<td>150 mm clean gas/200 mm raw gas</td>
</tr>
<tr>
<td>Oil return hose</td>
<td>PVC transparent 15x2 mm (5.5 m) - (FUW 2x)</td>
</tr>
<tr>
<td>Filter</td>
<td>2 oil separator and 1 pre-separator (only FUW)</td>
</tr>
<tr>
<td>Filter part</td>
<td>7.5 m²</td>
</tr>
<tr>
<td>Dimensions (LxWxH)</td>
<td>1124x604x1089 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>240</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>3 400 VAC / PE, 50-60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>9.7 A.</td>
</tr>
<tr>
<td>Degree of protection of electrical components</td>
<td>IP54</td>
</tr>
<tr>
<td>Back-up insurance</td>
<td>16 A</td>
</tr>
<tr>
<td>feed</td>
<td>Harting 16B</td>
</tr>
<tr>
<td>Engine power</td>
<td>4 kW</td>
</tr>
<tr>
<td>Engine speed</td>
<td>5920 rpm</td>
</tr>
<tr>
<td>Sound level</td>
<td>72 dB (A)</td>
</tr>
</tbody>
</table>
9. Dimensions

A* Minimum clearance for filter element change
B* Side cover removable
C* Snap lock lid
1* Membrane valve
2* Oil hose
3* DN 200 raw gas connection
8* Element housing
12* Clean gas connection nozzle DN 150
14* Electrical supply Harting HAN 16B
15* Volume flow display
18* Mounting bar
10. Installation

11. Spare parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-separator element (LGA 1201 FUW only)</td>
<td>70518319</td>
</tr>
<tr>
<td>Oil separator</td>
<td>70373631</td>
</tr>
<tr>
<td>Oil separator element HE</td>
<td>70551837</td>
</tr>
<tr>
<td>Silencer</td>
<td>70386730</td>
</tr>
<tr>
<td>Hold-down</td>
<td>72465751</td>
</tr>
<tr>
<td>Valve housing/plate</td>
<td>70521660</td>
</tr>
<tr>
<td>Oil return hose 10 m</td>
<td>72440443</td>
</tr>
<tr>
<td>Differential pressure transmitter</td>
<td>72404747</td>
</tr>
<tr>
<td>Process display PAD-73S</td>
<td>72444129</td>
</tr>
<tr>
<td>Fan with frequency controlled motor</td>
<td>72357099</td>
</tr>
</tbody>
</table>

Note the minimum clearance of 600 mm is required for element removal!
12. Accessories and options

12.1 HEPA filter

A HEPA post-filter can also be used to meet the highest air purity requirements. Due to the excellent separation performance of the LGA device, the HEPA secondary filters can achieve very long service lives. HEPA post-filters (class H13) with a filter part of 7 m² are available as standard. Order number 72381953

12.2 Frame

For the installation/assembly of the LGA device next to a manufacturing machine, Order number 70539323

A* Height-adjustable plate foot
B* Grid height adjustment
12.3 Pre-separation using an impact separator (MIO filter plates)

To protect the pre-filter and main filter installed in the device from contamination such as entrained metal particles, dust particles and macro emulsions.

12.3.1 Internal pre-separation

The MIO filter plate (order number 70569965) can be installed inside the manufacturing machine with the mounting kit (order number 70571759) directly in front of the suction opening of the LGA 1201.

12.3.2 External pre-separation

The MIO filter plate (order number 70569965) can be installed outside the manufacturing machine in a sheet metal housing (order number 70579167) directly in front of the LGA 1201.

MiO filter plates are cleanable coarse filters that can reach filter class G4 (EN 779) depending on the inflow speed.

12.4 Manual control device for frequency inverters

For optimal adjustment of the volume flow (1000 to 1300 m³ / h) to the operating conditions (installation only by a qualified electrician or service employee). This can significantly increase energy efficiency.

Order number 72415282

1* Membrane valve
2* Oil hose
13. Check list for aerosol separators

**Checklist for ASL/LGA series**

**Aerosol separation**

### 1. Customer data

<table>
<thead>
<tr>
<th>Company:</th>
<th>Contact person:</th>
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<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Post code:</th>
<th>Customer-no.:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Town:</th>
<th>Street:</th>
<th>Phone number:</th>
<th>E-Mail:</th>
</tr>
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### 2. Information on the tooling machine

**General Information:**

<table>
<thead>
<tr>
<th>Manufact.:</th>
<th>Model:</th>
<th>Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Type of processing:**

- [ ] Turning
- [ ] Milling
- [ ] Grinding
- [ ] Others: __________

**Machine housing:**

- [ ] Complete housing
- [ ] Partial housing

**Workspace (room to be collected):**

- [ ] width x height x depth m

**Machine utilization:**

- [ ] Single-shift
- [ ] Double-shift
- [ ] Three-shift

**Material of the workpiece:**

**Machine setting:**

- [ ] Cutting speed: ______ m/min
- [ ] Feed speed: ______ mm/min
- [ ] Dwell time before manual workpiece loading: ______ s

- [ ] Fully automatic workpiece loading
- [ ] Manual workpiece loading

### 3. Information on the cooling lubricant

**Type:**

- [ ] water-miscible
- [ ] non water-miscible

**Name according to safety data sheet:**

- [ ] yes
- [ ] no

**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

**If yes:**

<table>
<thead>
<tr>
<th>Manufact.:</th>
<th>Model:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

**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

### 4. Additions/Miscellaneous

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<tr>
<th>Place/Date:</th>
<th>Signature:</th>
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