

## Aerosol Separator Device LGA 601 FU/FUW

Nominal volume flow 600 m<sup>3</sup>/h

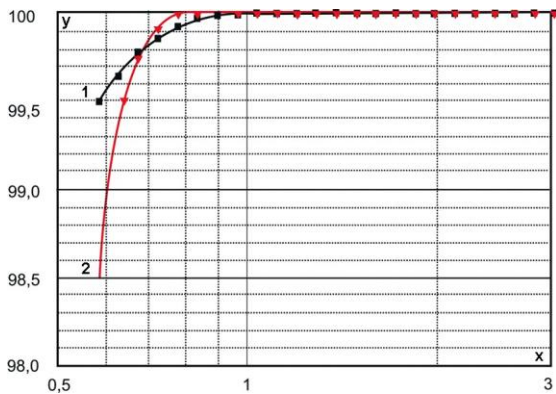
### 1. Features

**High performance aerosol separator device for separation of coolant from tooling machine exhaust air**

- Excellent retention rates 100 % at 1 µm aerosols
- Suitable for high raw gas loads up to 3000 mg/m<sup>3</sup>
- Equipped with high-efficient coalescer elements
- High dirt holding and optimized service life
- Pre-separation system for optimized service life
- HEPA filter stage available for more efficiency
- Low maintenance and energy system
- Modular design for direct installation of main components onto tooling machines
- Quality filters, easy to service
- Low space requirements
- Worldwide distribution and service
- Numerous accessories



## 2. Fractional collection efficiency



x = Particle size in µm

y = Fractional retention rate in %

Aerosol: Wiolan SH 10

Raw gas concentration: 50 mg/m<sup>3</sup>

Volume flow: 600 m<sup>3</sup>/h

1 = Filter cartridge as delivered

2 = Filter cartridge after 100 operating hours

## 4. Application

Suitable for non-water-miscible cooling lubricants (cutting oil, grinding oil, drilling oil) and oil aerosol exhausted by machine tools and also for water-miscible cooling lubricants.

### Operating limits

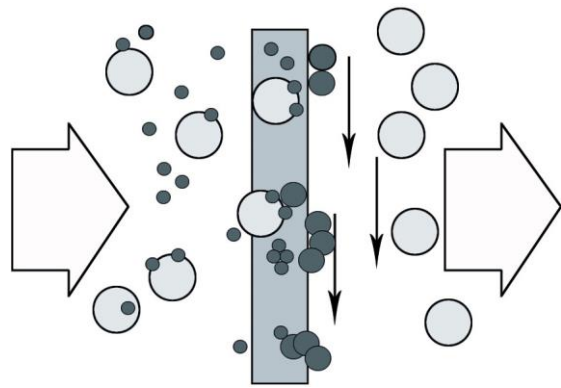
If oil is used as cooling lubricant for machining processes, air usually has to be sucked away from the working area to prevent the atomized oil from dispersing. The concentrations that often occur in the cooling lubricant jet or in the machine room could result in ignition in case of tool breakage, for example. If the machining process involves flammable cooling lubricants or flammable materials, safe operation must be ensured by providing suitable fire and explosion protection devices in conformance with statutory regulations.

**Installation in potentially explosive atmosphere (Zones 0, 1 and 2) is not permitted!**

## 6. Order numbers

Type	Order number
LGA 601 FUW RAL 7035	72374902
LGA 601 FU RAL 7035	72410327

## 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.

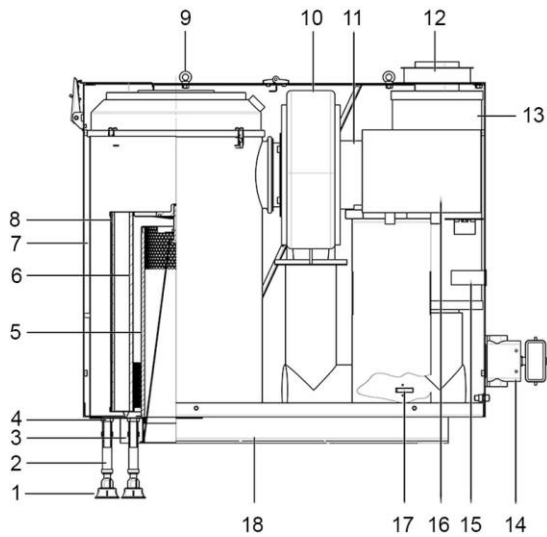
## 5. Product information

### LGA 601 FU and FUW

The LGA 601 is a filtering separator with optional pre-separation (when FUW design).

It is driven by a frequency controlled motor. A volumetric flowrate sensor supplies the actual value required to obtain a constant volume flow of 600 m<sup>3</sup>/h. If this value falls below the setpoint, an electrical signal is output at approximately 450 m<sup>3</sup>/h. These signals can be evaluated to enable suitable maintenance action to be taken.

## 7. Modules/main components

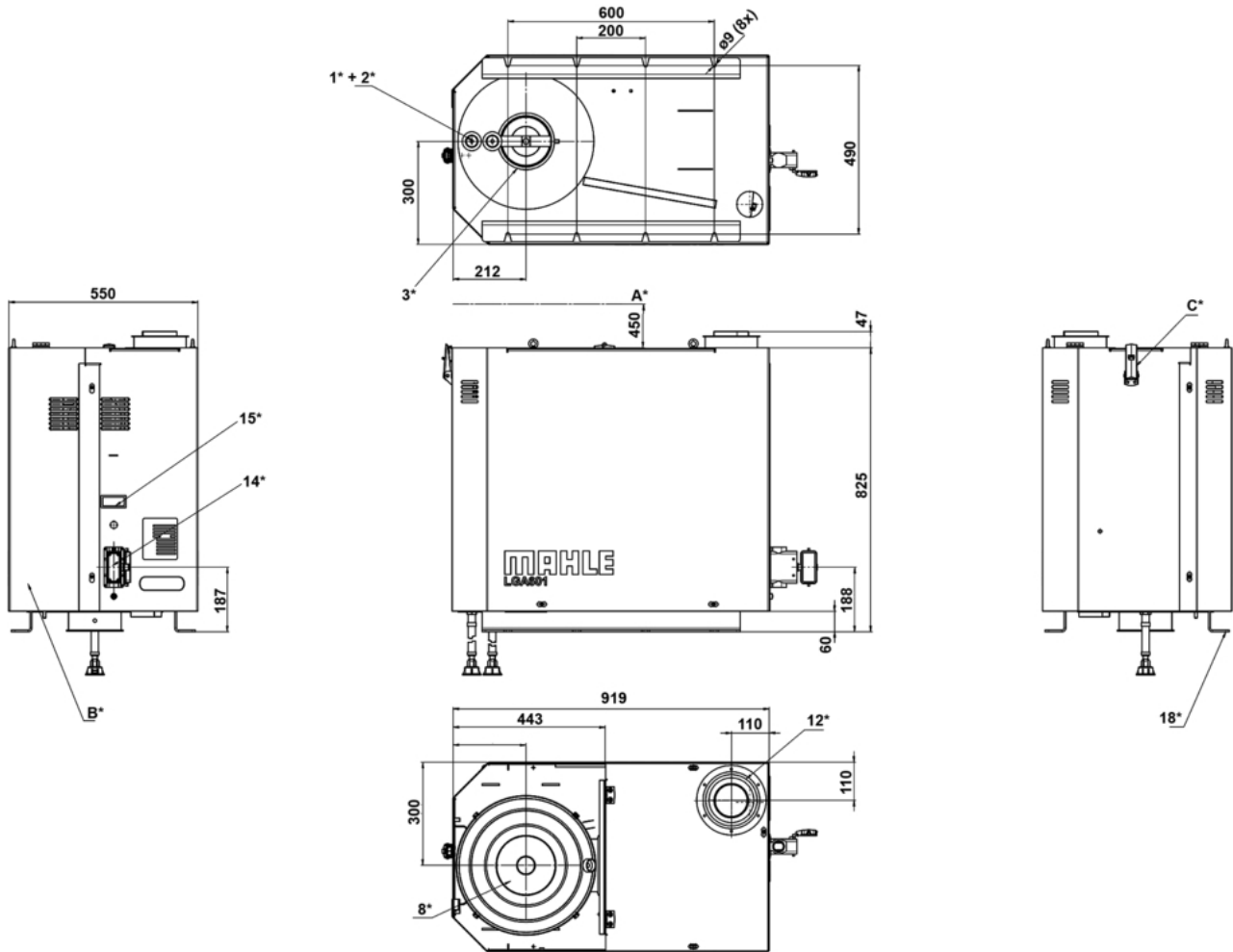


- 1 Membrane valve (FU 1x/FUW 2x)
- 2 Oil hose (FU 1x/FUW 2x)
- 3 Air inlet nozzle
- 4 Oil drain nozzle (FU 1x/FUW 2x)
- 5 Pre-separation element (only FUW)
- 6 Coalescer element
- 7 Housing
- 8 Filter housing
- 9 Eyebolt for transport
- 10 Fan with FU
- 11 Electric motor
- 12 Air outlet nozzle/Mounting fixture for HEPA filter
- 13 Silencer
- 14 Connection port
- 15 Volume flow display
- 16 Frequency converter
- 17 Volumetric flowrate sensor
- 18 Mounting base plate

## 8. Technical data

Volume flow	600 m <sup>3</sup> /h
Temperature range	+ 10 °C to + 60 °C
Air nozzles (2x Jacob)	150 mmm
Oil hose (2x)	PVC transparent 15x2 mm (5,5 m) - (FUW 2x)
Filter	1 coalescer element and 1 pre-separation element (only FUW)
Filter surface	4.8 m <sup>2</sup>
Dimensions (LxWxH)	919x550x825 mm
Weight	140 kg
Supply voltage	3 AC 400 V/PE, 50-60 Hz
Current consumption	3.3 A
Protection class electrical devices	IP54
Backup fuse	10 A
Connection port	Harting 10B
Motor output	1.5 kW
Motor speed	5920 U/min
Sound level	69 dB (A)

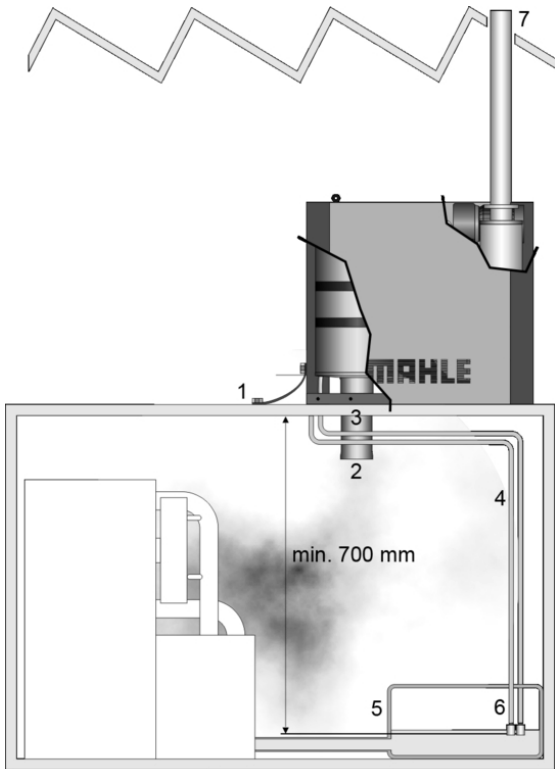
## 9. Dimensions



- A\* Min. clearance required for filter element change
- B\* Removable side panel
- C\* Snap closure filter housing
- 1\* Membrane valve
- 2\* Oil hose
- 3\* Raw gas inlet connection DN 150

- 8\* Filter housing
- 12\* Clean gas outlet connection DN 150
- 14\* Connection port
- 15\* Volume flow display
- 18\* Mounting base plate

## 10. Installation



- 1 Equipotential bonding
- 2 Suction pipe
- 3 Raw air inlet nozzle
- 4 Oil hose (FUW 2x)
- 5 Oil storage reservoir
- 6 Membrane valve (FUW 2x)
- 7 Exhaust air pipe

**Note the minimum clearance of 480 mm is required for element removal!**

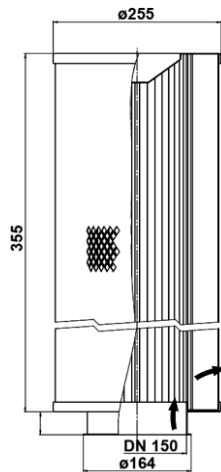
## 11. Spare parts

Order numbers for spare parts	
Designation	Order number
Pre-separation element(only LGA 601 FUW)	70515630
Coalescer element	79354390
Silencer	76326227
Oil hose	76326268
Membrane valve	78769697
Fixing nut for Coalescer element	76302996
Differential pressure transmitter	72404747
Volume flow display	70593410
Fixing nut for pre-separation element (only LGA 601 FUW)	76302996
Fan with frequency-controlled motor	72374884

## 12. Accessories and options

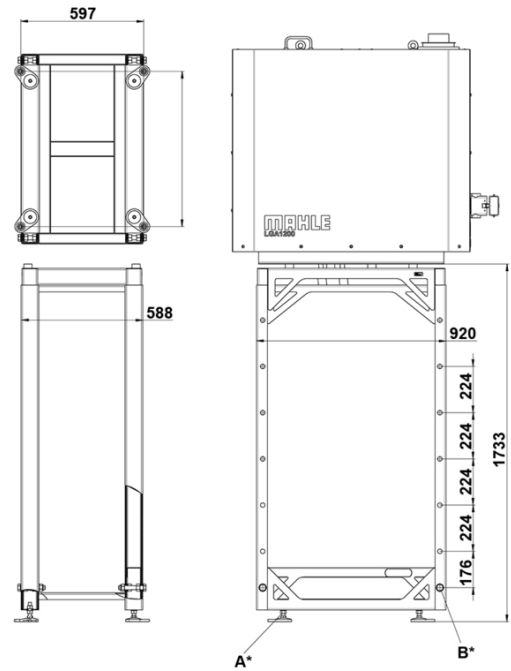
### 12.1 HEPA filter

For very high requested quality of cleaned air in recirculation mode, there is an option to add a HEPA filter downstream. Thanks to the outstanding separating performance of the LGA device, HEPA filter can reach a very long service life. HEPA downstream filters (class H13) are standardly available with filter surfaces about 3.5 m<sup>2</sup>. Order number 72381952



### 12.2 Rack

For installation or mounting of the LGA-Gerätes beside a tooling machine. Order number 70539323



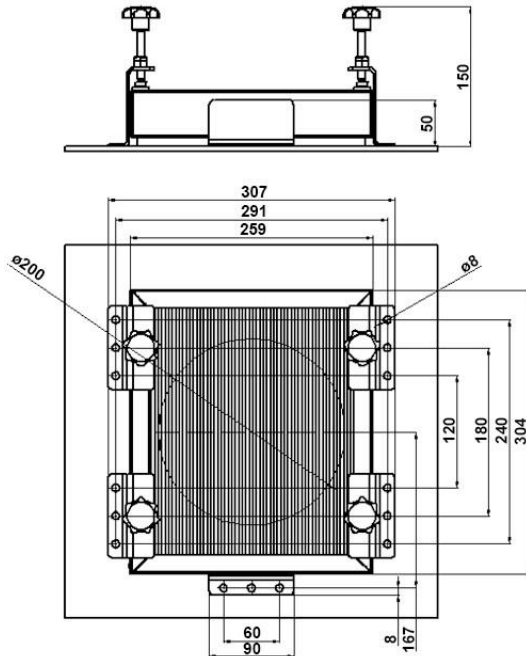
A\* plate height adjustable  
B\* height adjustable grid

### 12.3 External preseparation with an impact separator (MIO filter plate)

Protects the prefilter and main filter installed in the unit from impurities such as entrained metal parts, dust particles or macro emulsions. MIO filter plates are cleanable coarse filters which can achieve class G4 (EN 779) depending on the inflow velocity.

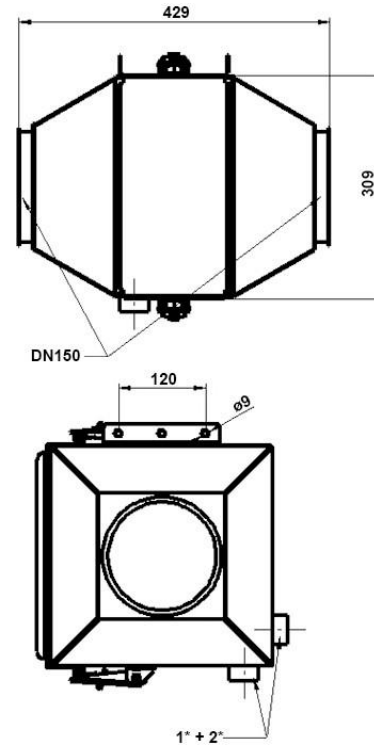
#### 12.3.1 Installation in the tooling machine

The MIO filter plate (order number 70569965) can be installed into the tooling machine directly in front of the raw air inlet nozzle of the LGA 601 using the fixing set (order number 70571759).



#### 12.3.2 Installation outside the tooling machine

The MIO filter plate (order number 70569965) can be installed outside the tooling machine in the sheet metal housing (order number 70579167) in front of the oil aerosol separator device.



- 1\* Membrane valve
- 2\* Oil hose

### 12.4 Tubing package

DN150 tubing package with a total length of approx. 5 meters includes two 90° bends, tube sections and clamps incl. seals. Order number 70549566

### 12.5 Keypad for frequency converter and display

Allows the volume flow (350 to 700 m<sup>3</sup>/h) to be optimally adapted to the operating conditions (must be installed by a qualified electrician or customer service). Energy efficiency is significantly improved as a result. Order number 72415282

### 13. Check list for aerosol separators

## 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: Manufact.: \_\_\_\_\_ Model: \_\_\_\_\_ Year: \_\_\_\_\_  
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  
 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:  yes  no  
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: 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/m<sup>3</sup>  
Piping planning and assembly desired?  yes  no

Required fields!

### 4. Additions/Miscellaneous

Place/Date: \_\_\_\_\_ Signature: \_\_\_\_\_