

Aerosol Separator Device

LGA 601 FU/FUW

Nominal volume flow 600 m³/h

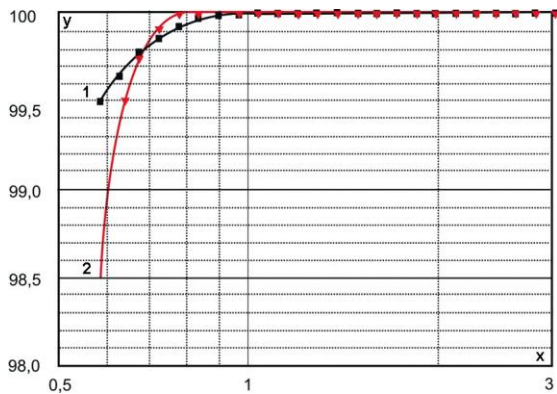
1. Features

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/m³
- 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^3

Volume flow: $600 \text{ m}^3/\text{h}$

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

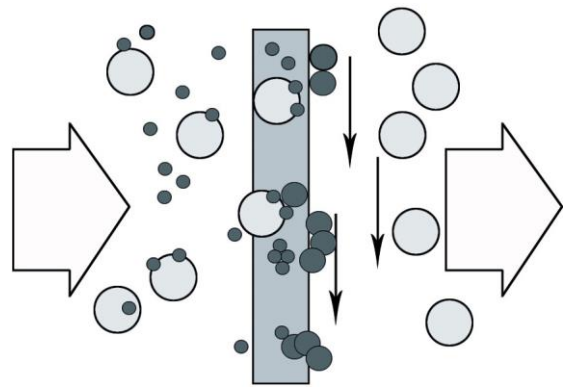
If oil is used as cooling lubricant for machining processes, air usually has to be sucked away from the working area to prevent the atomized oil from dispersing. The concentrations that often occur in the cooling lubricant jet or in the machine room could result in ignition in case of tool breakage, 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.

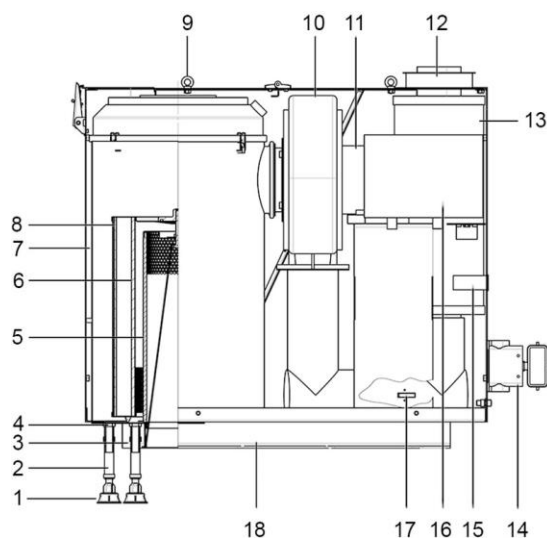
5. Product information

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 $600 \text{ m}^3/\text{h}$. If this value falls below the setpoint, an electrical signal is output at approximately $450 \text{ m}^3/\text{h}$. These signals can be evaluated to enable suitable maintenance action to be taken.

7. Modules/main components

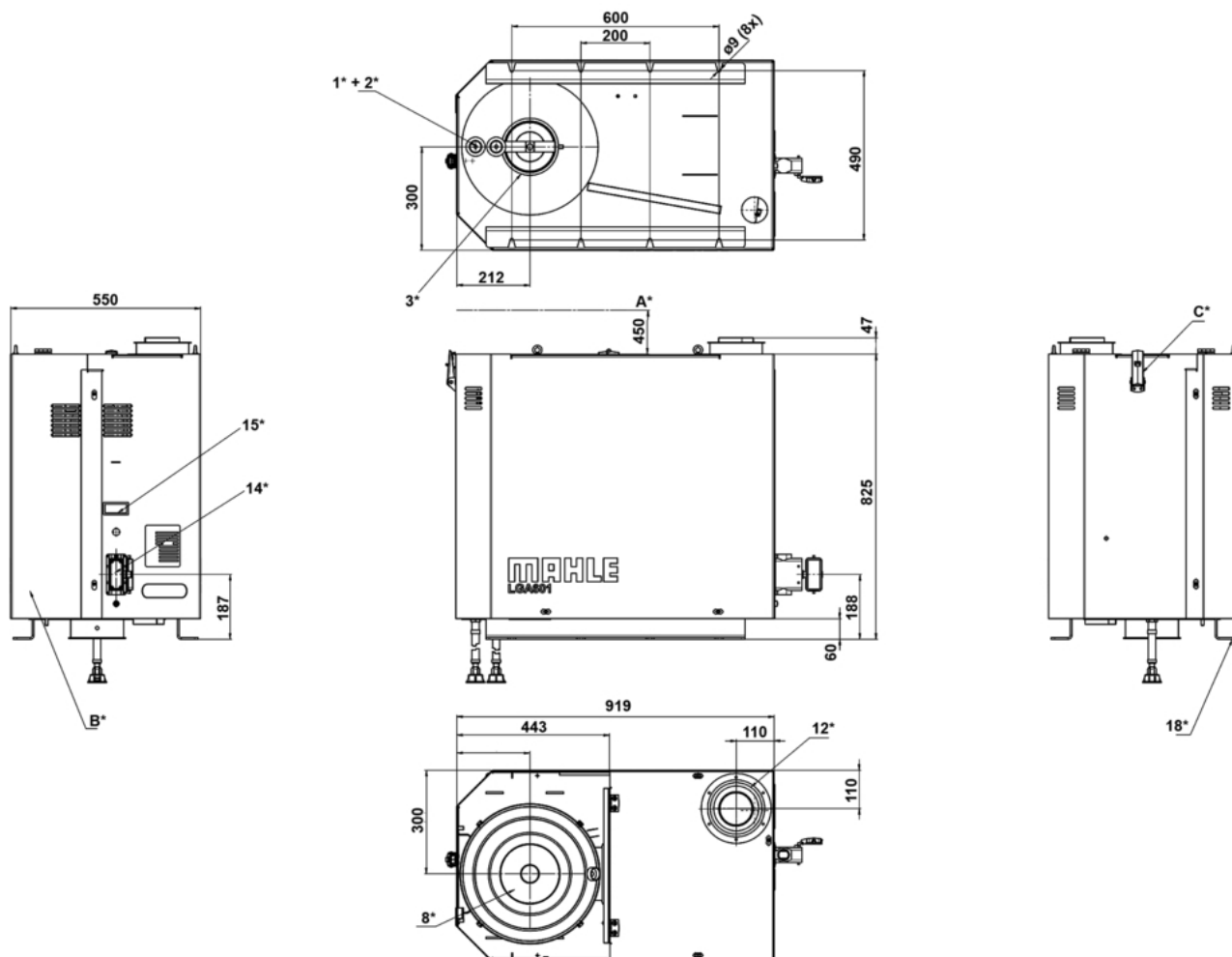


- 1 Membrane valve (FU 1x/FUW 2x)
- 2 Oil hose (FU 1x/FUW 2x)
- 3 Air inlet nozzle
- 4 Oil drain nozzle (FU 1x/FUW 2x)
- 5 Pre-separation element (only FUW)
- 6 Coalescer element
- 7 Housing
- 8 Filter housing
- 9 Eyebolt for transport
- 10 Fan with FU
- 11 Electric motor
- 12 Air outlet nozzle/Mounting 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 m³/h
Temperature range	+ 10 °C to + 60 °C
Air nozzles (2x Jacob)	150 mm
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 m²
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)

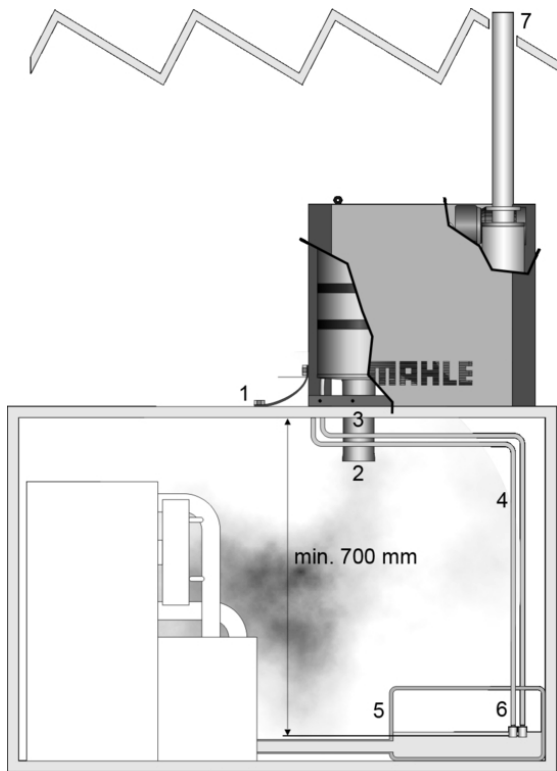
9. Dimensions



- 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!

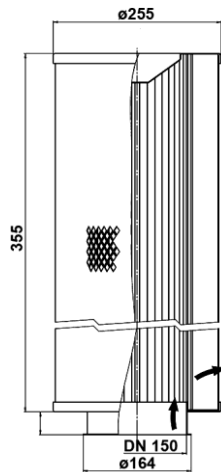
11. Spare parts

Order numbers for spare parts		
Designation	Order number	
Pre-separation element(only LGA 601 FUW)	70517413	
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

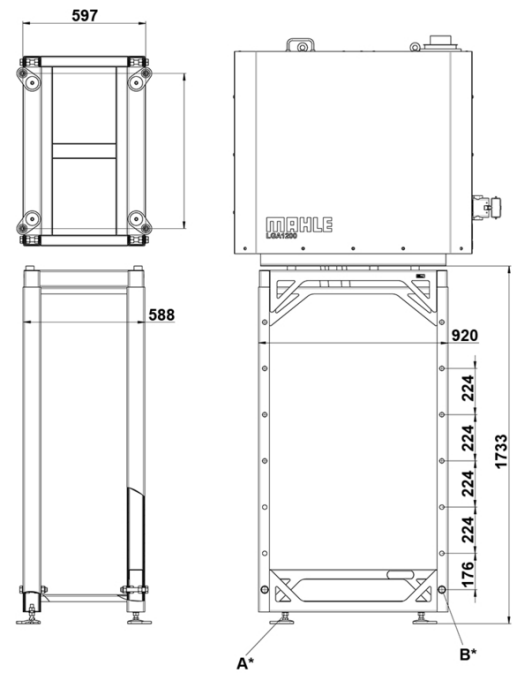
12.1 HEPA filter

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 m². 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

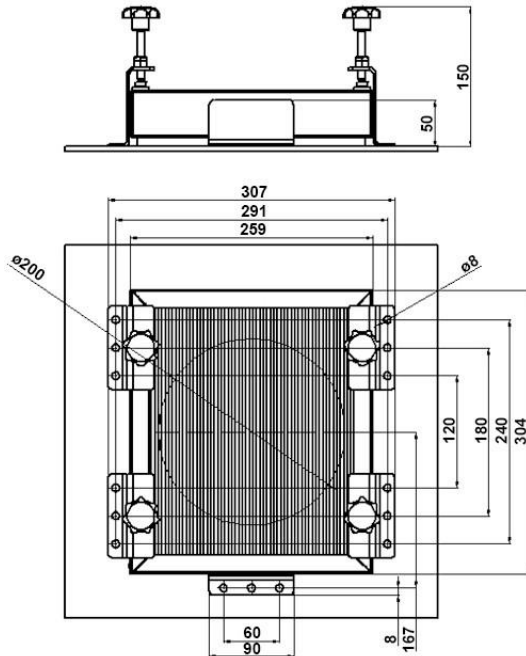
B* height adjustable grid

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.

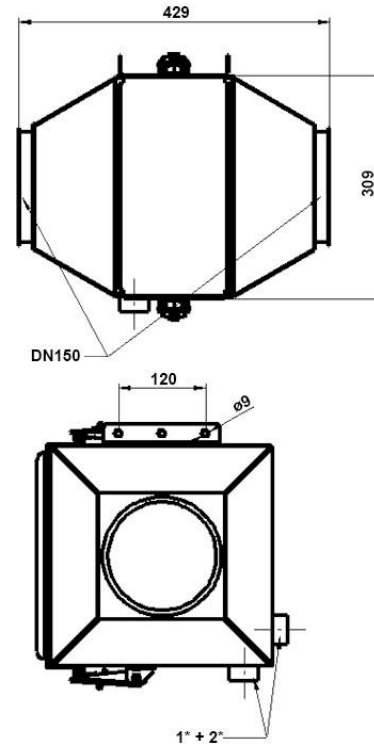
12.3.1 Installation in the tooling machine

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 m³/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/m³
Piping planning and assembly desired? ☐ yes ☐ no

Required fields!

4. Additions/Miscellaneous

Place/Date: _____ Signature: _____

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