

# MAHLE

*Industrial Filtration*

## Oil Mist Separator Unit

**LGA 600 F/FU**

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

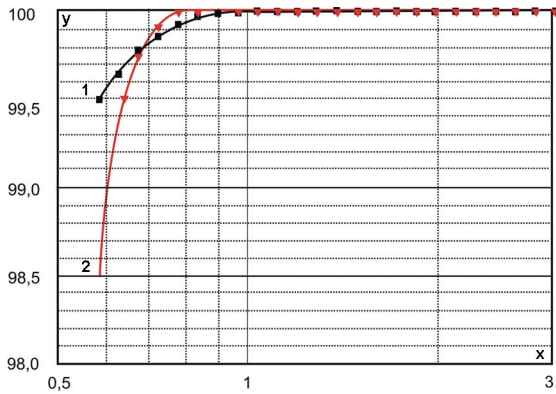
### 1. Features

**High performance oil mist separator unit for separation of coolant from tooling machine exhaust air**

- Compact design
- High oil mist load capacity
- Excellent retention rates
- Quality filters, easy to service
- Equipped with high-efficient coalescer elements
- Optimized service life
- Modular design for direct installation of main components into tooling machines
- Worldwide distribution



## 2. Fractional collection efficiency



x = Particle size in  $\mu\text{m}$

y = Fractional retention rate in %

Aerosol: Wiolan SH 10

Raw gas concentration:  $50 \text{ mg/m}^3$

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. Coolant emulsions on request.

### Operating limits

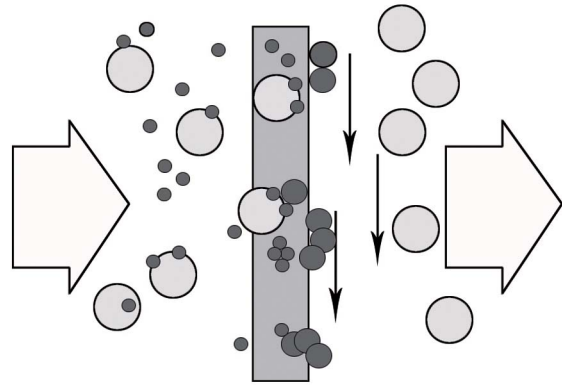
If oil is used as cooling lubricant for machining processes, air usually has to be sucked away from the working area to prevent the atomized oil from dispersing. The concentrations that often occur in the cooling lubricant jet or in the machine room could result in ignition in case of tool breakage, 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 600 F                    | 70353616     |
| LGA 600 FU                   | 70329105     |
| LGA 600 F (special voltage)  | 70359300     |
| LGA 600 FU (special voltage) | On request   |

## 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

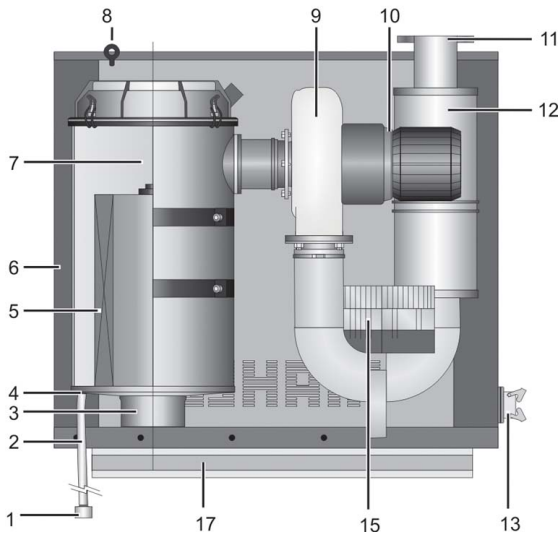
### LGA 600 F

The LGA 600 F is driven by a frequency controlled motor. The motor runs at the maximum permissible speed. At initial operation the volume flow achieves approx.  $1300 \text{ m}^3/\text{h}$  at low differential pressure. This flow rate is reduced to around  $600 \text{ m}^3/\text{h}$  within one or two days, depending on the raw gas concentration.

### LGA 600 FU

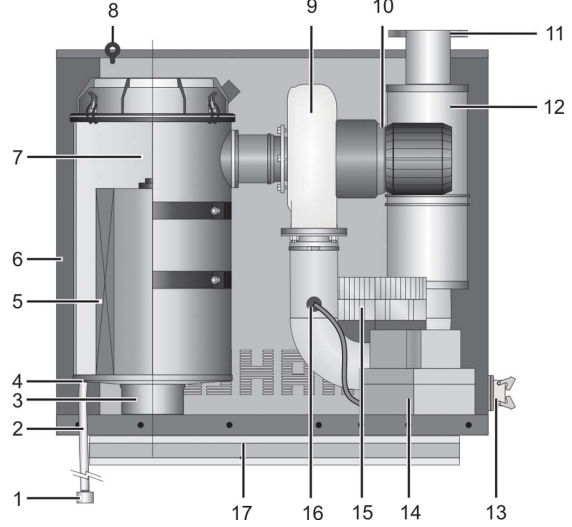
The LGA 600 FU is driven by a frequency controlled motor. A volumetric flowrate sensor supplies the actual value required to obtain a constant volume flow of  $600 \text{ m}^3/\text{h}$ . If this value falls below the setpoint, an electrical signal is output at approximately  $450 \text{ m}^3/\text{h}$ . These signals can be evaluated to enable suitable maintenance action to be taken.

## 7. Modules/main components



LGA 600 F

- 1 Membrane valve
- 2 Oil hose
- 3 Air inlet nozzle
- 4 Oil drain nozzle
- 5 Coalescer element
- 6 Housing
- 7 Filter housing
- 8 Eyebolt for transport
- 9 Fan



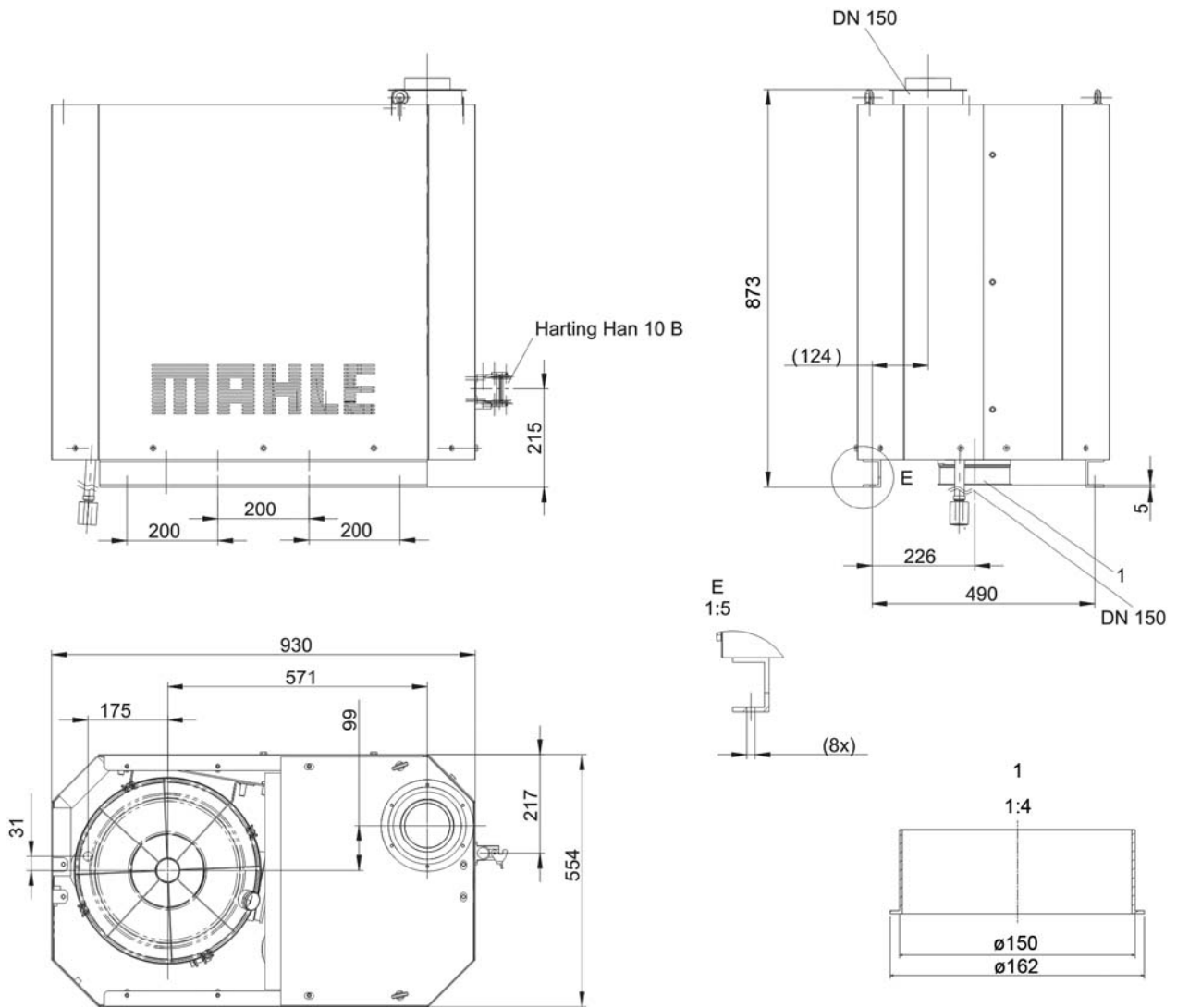
LGA 600 FU

- 10 Electric motor
- 11 Air outlet nozzle
- 12 Silencer
- 13 Connection port
- 14 Control unit
- 15 Frequency converter
- 16 Volumetric flowrate sensor
- 17 Mounting base plate

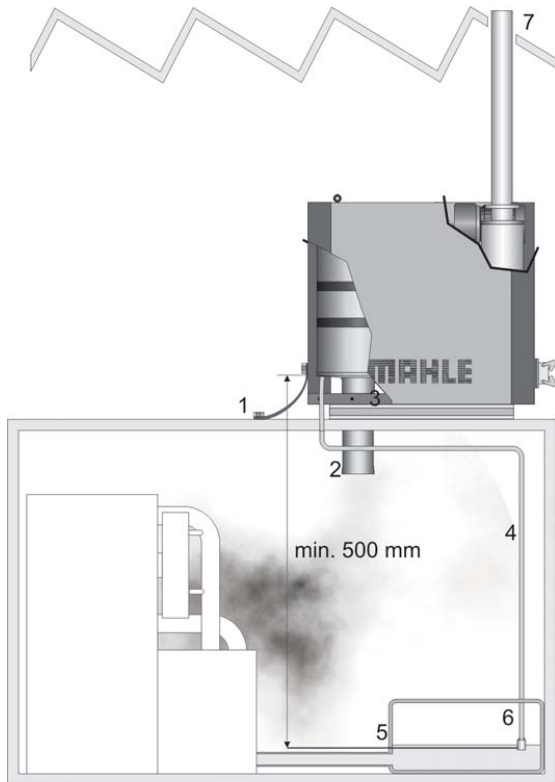
## 8. Technical data

|                     | LGA 600 F/FU, 400 V/50-60 Hz (standard) | LGA 600 F/FU, 200 V/50-60 Hz (special) |
|---------------------|---|--|
| Volume flow         | 600 m³/h                                | 600 m³/h                               |
| Temperature range   | + 10 °C to + 60 °C                      | + 10 °C to + 60 °C                     |
| Nozzles             | 150 mmm (2x Jacob)                      | 150 mmm (2x Jacob)                     |
| Oil hose            | PVC transparent 15x2 mm (3 m)           | PVC transparent 15x2 mm (3 m)          |
| Filter              | 1 coalescer element                     | 1 coalescer element                    |
| Filter surface      | 4.6 m²                                  | 4.6 m²                                 |
| Dimensions (LxWxH)  | 930x555x780 mm                          | 930x555x780 mm                         |
| Weight              | 140 kg                                  | 140 kg                                 |
| Supply voltage      | 3 AC 400 V/N/PE, 50-60 Hz               | 3 AC 200 V/N/PE, 50-60 Hz              |
| Current consumption | 6.9/4.0 A                               | 7.8/4.6 A                              |
| Protection class    | IP 54                                   | IP 54                                  |
| Backup fuse         | 16 A                                    | 16 A                                   |
| Connection port     | Harting 10 B                            | Harting 10 B                           |
| Motor output        | 2.2 kW                                  | 2.2 kW                                 |
| Motor speed         | 6140 U/min                              | 6140 U/min                             |
| Sound level         | 72 dB (A)                               | 72 dB (A)                              |

## 9. Dimensions



## 10. Installation



- 1 Equipotential bonding
- 2 Suction pipe
- 3 Air inlet nozzle
- 4 Oil hose
- 5 Oil storage reservoir
- 6 Membrane valve
- 7 Exhaust air

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

## 11. Spare parts and accessories

| Order numbers for spare parts and accessories |              |
|---|--------------|
| Designation                                   | Order number |
| Coalescer element                             | 79354390     |
| Membrane valve                                | 78769697     |
| Harting plug connector                        | 70344112     |
| Harting easy hood<br>(19 30 010 1540)         | 70360184     |
| Harting bush insert<br>(09 33 010 2716)       | 70345233     |
| Jacob hose nozzles                            | 70346551     |
| Jacob clamp ring                              | 79389081     |
| Jacob NBR flanged sealing ring                | 76141121     |
| Jacob 90° pipe bend                           | 70365712     |



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