

PRODUCT DESCRIPTION

AEROSOL MASTER® 1000

**ROTHER**  
  
TECHNOLOGIE

## APPLICATION






AEROSOL MASTER® 1000 for lubrication of tools in the chip removal industry. Suitable for machining centres, transfer units, turning lathes, milling machines and drilling machines.

### Internal Application (inner lubricant supply):

Aerosol feed from the aerosol unit to the tool via tubing, mono-rotary lead, spindle and tool holder. The tool must have at least one interior cooling channel (see picture 1).

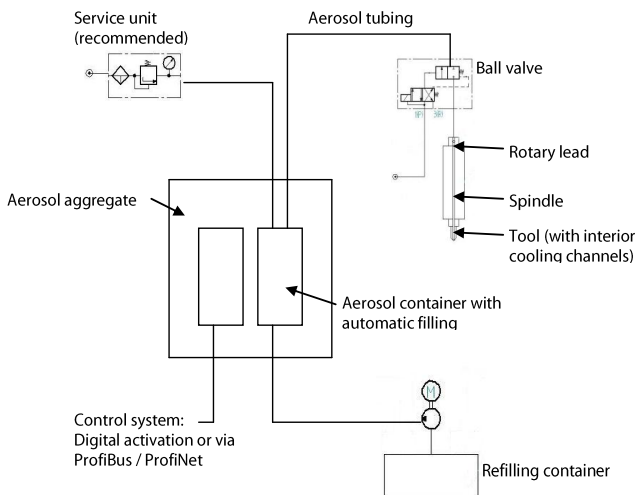
### External Application (outer lubricant supply):

Aerosol feed leading from the aerosol unit via tubing through the cooling lubricant channel of the machine tool to a spray nozzle (see picture 2).

-  Low maintenance
-  Easy handling
-  Easy adaption
-  Continuous aerosol activation
-  No pressure variations at the tool

## CONTROL SYSTEM

The aerosol-aggregate has its own intelligent control system. Activation is effected digitally by means of a switch, an initiator or the like.



Picture 1: Internal application

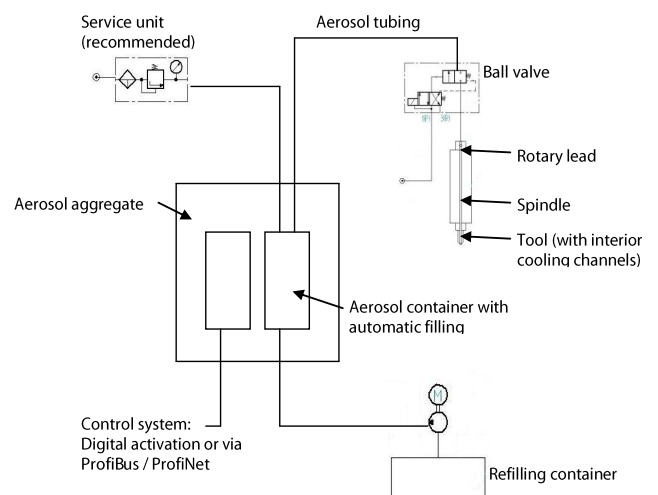
## MODE OF OPERATION

An oil-aerosol is generated outside of the machine tool. For this purpose compressed air is fed to the aerosol-aggregate. Aerosol is generated in a container with a certain supply of a lubricant medium. The container level is monitored by an integrated control system. When using a non-pressurized system refilling is effected manually. No machining process is possible during refilling.

Single-channel systems are very much dependent on the pressure difference above the nozzle and from the rate of feed. The lower the pressure difference the smaller the quantity of aerosol generated. The higher the rate of feed the higher the applicable oil quantity. This quantity, in turn, is influenced to a great extent by the diameter of the cooling channel and the air supply. Aerosol production and air feed are decoupled as far as possible with the AEROSOL MASTER® 1000. Pressure difference is controlled by a pressure regulator which enables continuous aerosol production and constant aerosol flow. This ensures there are no pressure variations at the tool.

## ADJUSTMENT

Adjustment of both aerosol pressure and of oil quantity can be effected manually via a pressure regulator.



Picture 2: External application

## CONDITIONS

In order to achieve a short reaction time, a ball valve is fitted within the aerosol tubing directly in front of the rotary lead or, if possible, near the chip removal. This means the aerosol is ready for use again immediately after a tool change.

Furthermore the machine tool must be equipped with an appropriate suction system as (due to process) there is no guarantee that all lubricant particles are really „consumed“.

### Guidelines of assembly:

The aerosol tubing must ensure a continuous supply of the lubricant where the chips are removed. The following points regarding the assembly of single-channel aerosol tubings must therefore be considered to guarantee an optimum supply and to avoid separation within the tubing:

- Tubings should not have any significant abnormalities in the cross-section nor any obstacles, otherwise the lubricant could partially condense. If cross-section modifications are inevitable, connecting passages should be as smooth as possible (ideal: passage angle  $< 15^\circ$ ).
- Tubings should be straight with no sharp bends as otherwise there is the risk of condensation of the aerosol. If bends in the tubing are unavoidable, they should have a maximum possible radius. All interfaces with the aerosol components should be smooth with no protruding edges.
- Rotary leads and spindles with integrated check valves are to be avoided at all costs. There is no guarantee that these will open completely due to the low operating pressure of the aerosol system (sufficient lubrication is not provided).
- Feeding in spindles should be in axial direction where possible as with radial feeding the lubricant can be „centrifuged“ especially at very high revolution rates (separation of the aerosol).

### Note:

Only rotary leads may be applied which are designed for dry running. The low lubricant quantities used for aerosol lubrication are not sufficient for adequate lubrication!



Abb. 3: AEROSOL MASTER® 1000

## TECHNICAL DATA

### AEROSOL MASTER® 1000

Dimension (HxWxD)	600mm x 600mm x 210mm
Space (HxWxD)	750mm x 640mm x 830mm
Weight	approx. 40 kg
Capacity	approx. 2,3 l
Use amount	approx. 1,7 l
Power supply	230 VAC 1~
Power consumption	0,5 A
Inlet pressure	6 bar – 10 bar
Pressure air quality class	5 ISO 8573-1
Pneumatic Power Consumption	1 Nm <sup>3</sup> /min bei 6 bar
Air consumption *	10 NI/min – 1000 NI/min
Oil quantity **	0 ml/h – 250 ml/h
Level monitoring	4 - Punkt, 24 VDC
Aerosol container pressure	max. 10 bar
Aerosol pressure	0,5 bar – 9 bar

\* Depending on the internal cooling channel diameter and inlet pressure

\*\* Depending on the internal cooling channel diameter, inlet pressure and lubricant

### BALL VALVE

Weight	approx. 2,2 kg
Medium pressure PN	max. 63 bar
Control pressure	5 bar – 8 bar
Voltage	24 VDC

# ROTHER

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