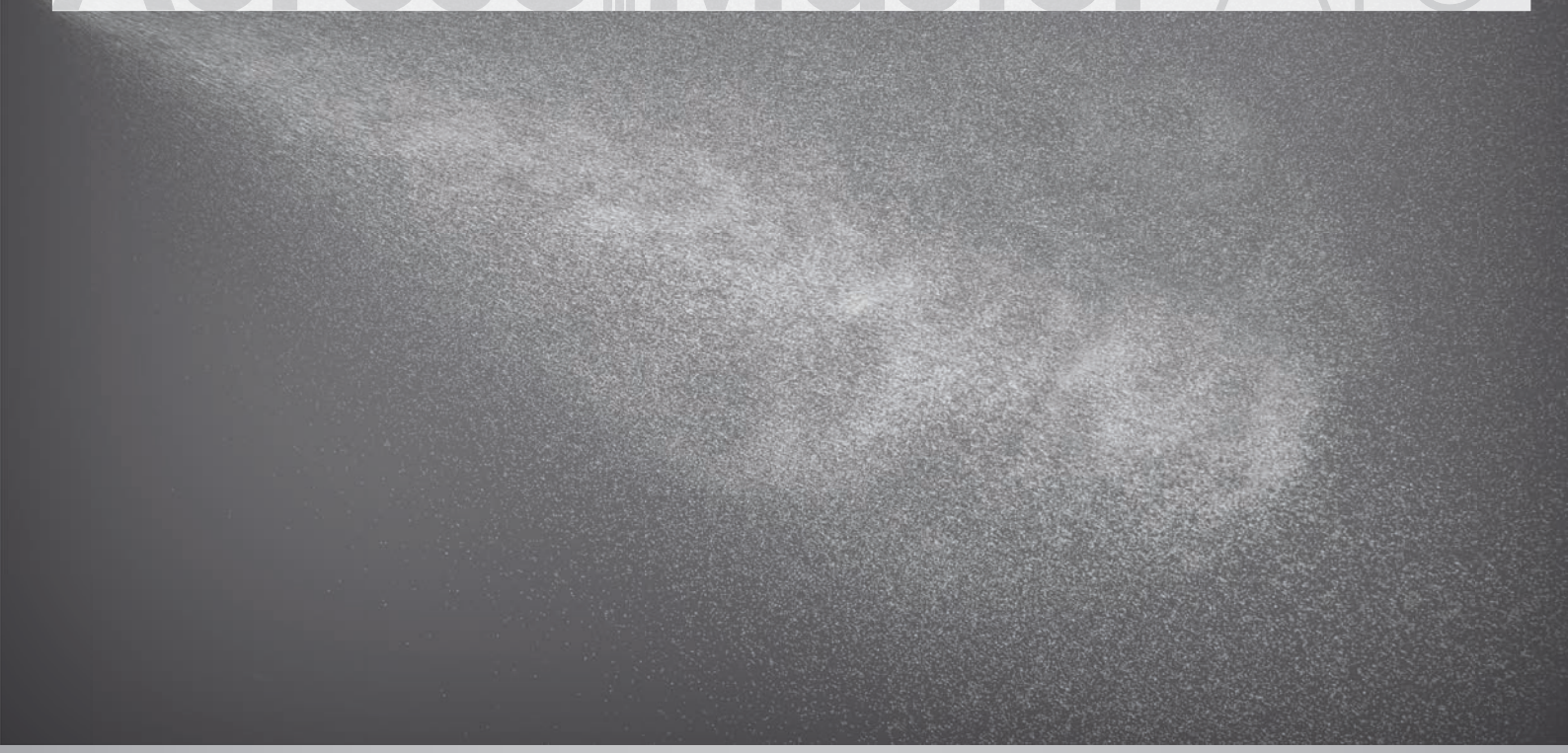
Minimum quantity lubrication system
AerosolMaster™ ATS

KNOLL
.It works

AerosolMaster™ ATS

Issue 08-2023



Properties	Benefits
Percentage of oil and air pressure can be set as required with up to 30 programs	• Defined aerosol quality and constant aerosol flow, also with rotating tools • No pressure fluctuations at the tool • High process reliability • Long tool life, short machining times • Low air and oil consumption • Simple handling
Very fine and homogeneous aerosol	• Low-loss lubrication • High rotational speeds up to 45,000 rpm possible
Almost dry machining	• No adhesions • Low cleaning effort for parts and machines • Protects workers and environment
Intelligent control technology	• Deep-hole boring process with lengths greater than 30 x D • Cooling ducts ‹ 0.2 mm possible • Response times of ‹ 0.1 second are possible
Immediate availability of the aerosol at the blade after spindle start	• No wait times • High process reliability
Long aerosol lines up to 50 m possible	• Flexible installation
Optional machine connection via ProfiBus or ProfiNet	• Quick and variable NC programming • Little adaptation effort • Very user-friendly
KNOLL SmartConnect control unit	• Intuitive operation using an app on a smartphone or tablet • User-friendly • Monitoring of operating data • Analysis of operational data

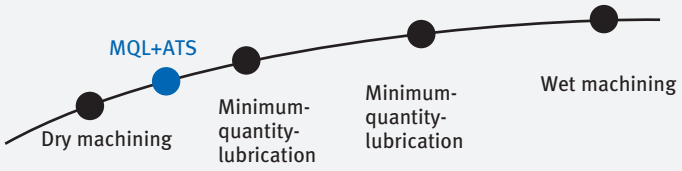
Application

The KNOLL AerosolMaster™ is a minimum quantity lubrication system for almost all production processes with geometrically determined cutting edges, e.g., on machining centers, transfer lines, turning, milling, drilling, and sawing machines. Thanks to the broad product line and unique ATS (aerosol dry lubrication) technology, the system is suitable for

- easy processing with external or internal aerosol feed,
- complex processes, where at least one of the following criteria applies:
  mass production, deep-hole drilling, thread forming, high speeds, many tools, small tools, monolith tools, multispindle machines, transfer lines, automotive, aerospace and medical, more specifically tool/mold design and construction

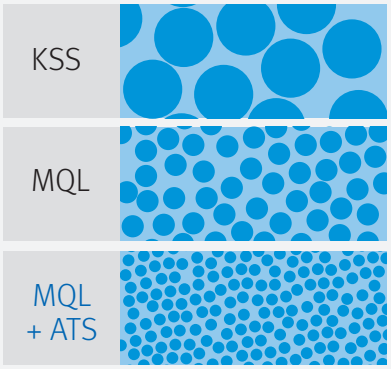
ATS technology: Prevent heat instead of combating it

Lubricating particles with micro dimensions guarantee maximum lubrication with minimum consumption.



Evaluation criteria				
Lubricant quantity	0 ml/h	≤ 50 ml/h	1-2 l/h	› 2 l/h
Chips and workpieces	dry	damp	wet	wet

Comparison of lubricant application



Product overview

	AerosolMaster™ 800 ATS	AerosolMaster™ 4000 ATS
Application	means (all types of processing machines)	demanding (e.g., machining centers)
Programs	3 (manual)	up to 30 (automatic)
Ctrl syst	Machine	own
Filling	automatic	automatic
Refilling unit	yes	yes
Internal cooling ducts	0.5 - 6 mm	‹ 0.2 - 6 mm

Technical specifications

	AerosolMaster™ 800 ATS	AerosolMaster™ 4000 ATS
Dimensions (H x W x D)	600 x 600 x 210 mm	600 x 420 x 230 mm
Space requirements (H x W x D)	750 x 640 x 830 mm	750 x 500 x 230 mm
Weight	38 kg	42 kg
Fill quantity	2.0 L	1.5 L
Power supply	24 VDC	24 VDC
Input pressure	4-10 bar	4-13/16/20 bar
Compressed air quality	ISO 8573-1:2010 [6;4;4]	ISO 8573-1:2010 [6;4;4]
Compressed air connected load	1 Nm³/min at 4 bar	1 Nm³/min at 4 bar
Air consumption	10-1000 Nl/min	10-1300 Nl/min
Oil quantity	0-250 ml/h	0-350 ml/h
Aerosol pressure	0.5-9 bar	0.5-12/15/19 bar

KNOLL
.It works

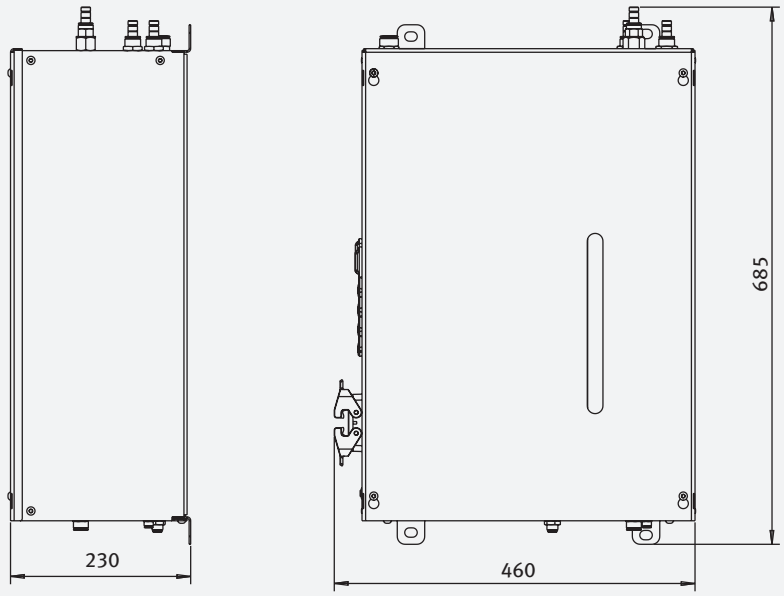
Minimum quantity lubrication system AerosolMaster™ ATS

KNOLL Maschinenbau GmbH
Schwarzachstraße 20
DE-88348 Bad Saulgau
Tel. +49 7581 2008-0
Fax +49 7581 2008-90140
info.itworks@knoll-mb.de
www.knoll-mb.com

AerosolMaster™ATS

Dimensions

AerosolMaster™ 4000 ATS



Options

Refilling units guarantee uninterrupted continuation of the machining process. They aim to improve safety at work and are very user-friendly.

Refilling units	Container volume (l)	Number of AerosolMaster™
ARU 10	10	1
ARU 10 TWIN	10	2

Pressure modules are used if the existing mains pressure is not sufficient for optimal chip removal, e.g., for deep-hole boring. The process-dependent activation/deactivation of the pressure modules ensures optimized air consumption.

Pressure module	Air throughput (l/min)	Output pressure (bar)
PBM 16	100 or 400	10 to 16
PBM 20	Project specific	20

AerosolMaster™ lubricant is designed specially for ATS technology. The oil allows resource-friendly and energy-efficient manufacturing with minimal consumption.

Product	Application	Properties
AM lubricant basic	Soft materials (e.g. aluminum with Si < 1%)	-
AM lubricant c-al	Aluminum, plastic, non-ferrous metal, steel	Cryolub-resistant up to -78 °C
AM lubricant c-st	Heavy-duty cutting and machining, steel, Inconel	Cryolub-resistant up to -78 °C
AM lubricant c-ti	Titanium	Cryolub-resistant up to -78 °C
AM lubricant ht	Universal	High-temperature-resistant