



INTELLIGENT TECHNOLOGY FOR LUBRICATION

INTERNAL LUBRICATION FOR MACHINING TASKS

How to turn fluid into mist. The principle of the HPM Breeze process.

Extremely fine particle resolutions of the fluid used generate a touch of concentrated lubricating power which will set new standards in machining with the HPM Breeze process.

The three diagrams at the right show with the results of the laser spectrometer measurement just how micro-fine the fluid is split in the HPM Breeze process. The particles are measured in μm . For orientation purposes: $1 \mu\text{m}$ is equivalent to a thousandth of a millimeter. A human hair is seventy times thicker.

The fluid is generated with a high, stable consistency in the HPM Breeze systems and, thanks to the micro-fine aerosol structure, is transported to the point of action virtually loss-free. This causes the fluid to act like mist which, as in nature, moves with a high density through even the finest of openings.

So the HPM Breeze process is no secret. It is the intelligent interpretation of physical laws and their implementation in progressive device technology. Who could have achieved this milestone in lubrication technology, if not us? After all, for many decades we have repeatedly proven to be the pioneers in minimum-quantity technology. Of course!

We'll be happy to advise you.

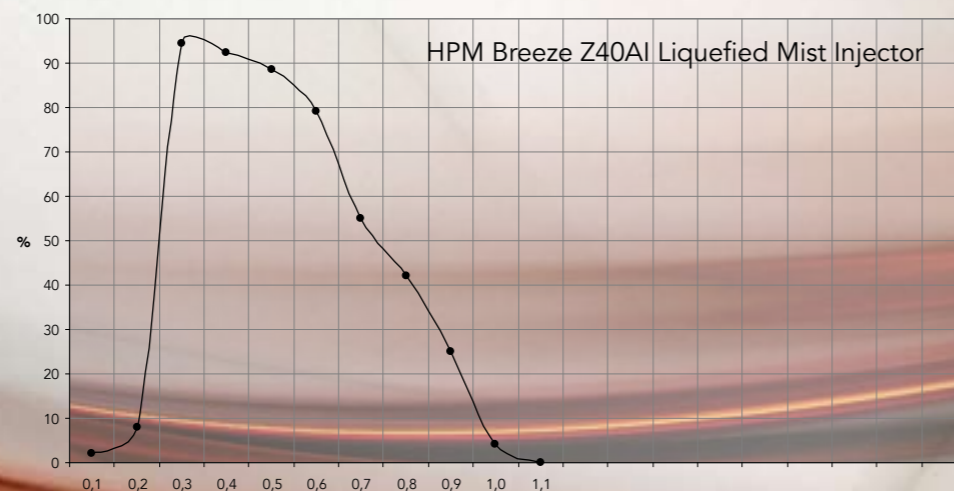
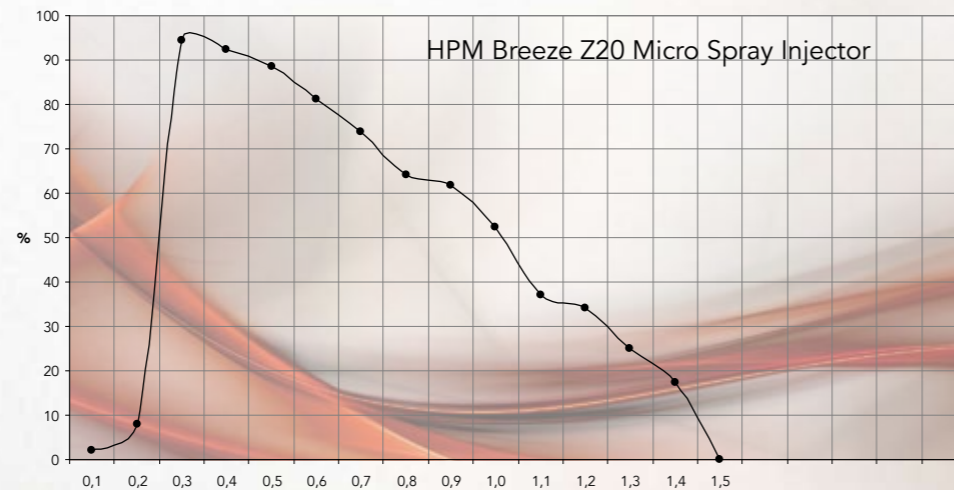
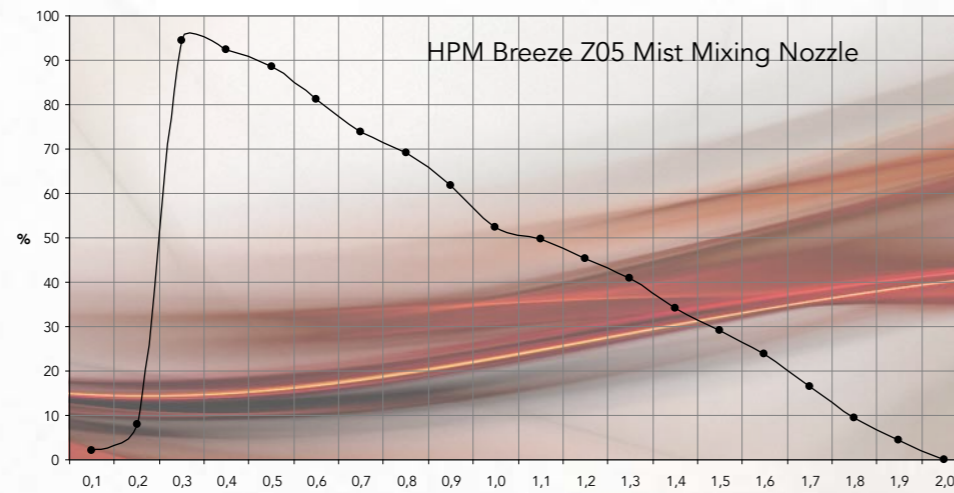


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HPM Breeze Z05 Mist Mixing Nozzle
HPM Breeze Z20 Micro Spray Injector
HPM Breeze Z40AI Liquefied Mist Injector



The HPM Breeze process is used to lubricate and cool machining processes with extremely small quantities of cooling lubricant. An air-fluid mixture that prevents the development of frictional heat with optimal lubrication is employed for this purpose. The remaining heat is dissipated with the swarf.

All HPM Breeze units are used for lubricating tools in machining production processes. They can be used for both the original equipment and for the retrofitting or conversion of machine tools. The complete encapsulation of the processing machine with a suitable extraction system is recommended.

Thanks to the possibility of internal lubrication, the systems can lubricate tools with cooling duct diameters up to 0.2 mm (Z40AI) with fluid mist (aerosol). In this case the lubricant is routed directly through the tool spindle and the tool to the tool cutting edge. If no internal lubricant feed is present in the machine tool, the HPM Breeze technology can also be used for the external lubricant supply. Please contact us. We'll be happy to advise you.

	Z05 Mist Mixing Nozzle	Z20 Micro Spray Injector	Z40AI Liquefied Mist Injector
Applications	Simplest processing machines (e.g. radial drill, manual turning or manual milling machine. Tool diameter >= 5 mm	Can be used in virtually all production processes (turning, milling, drilling, reaming, threading, etc. Tool diameter >= 3 mm	Can be used in virtually all production processes (machining centers and turning centers with quick tool change). Tool diameter >= 2 mm
Purpose	Internal lubrication with coolant adapter, external lubrication via mist pressure nozzles, internal coolant supply tools with at least 0.3 mm ² cross-sectional area	Internal lubrication with coolant adapter, external lubrication via mist pressure nozzles, internal lubrication with internal coolant supply. Internal coolant supply tools with at least 0.15 mm ² cross-sectional area	Internal lubrication with coolant adapter, external lubrication via mist pressure nozzles, internal lubrication with internal coolant supply. Internal coolant supply tools with at least 0.05 mm ² cross-sectional area
Function	Uniform aerosol generation using controlled compressed air. No cycling on aerosol output. Switching on/off via 3/2-way valve	Uniform aerosol generation using controlled compressed air (proportional technology). Transport via aerosol gate, selection of 6 HPM Breeze programs via M commands.	Uniform aerosol generation using controlled compressed air (proportional technology). Transport via aerosol gate, selection of 30 HPM Breeze programs via M commands.

HPM Breeze Z05 Mist Mixing Nozzle

For the simplest processing machines (e.g. radial drills, manual turning and manual milling machines)

HPM Breeze Z20 Micro Spray Injector

Suitable for use in virtually all production processes: turning, milling, drilling, reaming, threading, etc.



Illustration shows optional accessories



Illustration shows optional accessories



A touch of concentrated lubrication power for:

- more quality
- improved tool life
- higher feed rate
- more environmental protection



The HPM Breeze Z40AI can be used in virtually all production processes (machining centers and turning centers equipped for quick tool changes).



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Z40AI
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