

The image shows a large industrial machine, a Buhler MicroMedia+ mill, in a factory setting. The machine is white with a large hopper at the top and a collection container at the bottom. It is surrounded by various pipes, valves, and electrical conduits. The background is a clean, industrial environment with a white wall and some overhead piping. The machine is the central focus, with its complex internal components partially visible through a transparent section. The overall tone is professional and technical.

BUHLER

MicroMedia+.
**Quality meets
efficiency.**

Innovations for a **better world.**

BUHLER

High-performance bead mill MicroMedia+.

Powerful true-grinding and dispersing.



Liquid packaging inks



Inkjet inks



High-performance coatings

MicroMedia+ allows an extremely wide parameter range regarding power density, flow rate and bead sizes. In combination with the available material portfolio, the technology fits to almost any application in the wet grinding and dispersing industry.

Liquid packaging inks

MicroMedia+ is setting industry standards in the production of liquid packaging inks. Thanks to the high flow capability, a narrow particle size distribution can be achieved with minimum energy consumption. This leads to an improved color strength, transparency and gloss.

Inkjet inks

The use of small beads in the field of inkjet inks requires an optimal bead separation to maintain high recirculation flow

rates. All of the components in the MicroMedia+ are finely tuned making handling of the micro beads effortless.

High-performance coatings

The wide parameter range of the MicroMedia+ allows an ideal adaption to the specific grinding requirements of different coatings. Additionally, our highly sophisticated automation solutions result in high process reliability and traceability.

Benefits

- Maximum energy efficiency due to small beads and highest power density
- Real centrifugal separation for highest flow capability
- Wide range of process chamber materials tailored to your needs
- Highly sophisticated automation solution (IoT ready)

Overview of the machine series.

The appropriate solution for any requirement.



MicroMedia L

With an active process chamber volume of 0.07 liter and a 2.2kW* main drive, the MicroMedia L is the ideal solution for laboratory and pilot projects, as well as small batches. The pivoting drive unit and grinding chamber make cleaning and maintenance user-friendly and easy.

* drive platform PML 2 – installed power not equivalent with power to be introduced into MicroMedia L



MicroMedia X1

With an active process chamber volume of 1.4 liter and a 5.5kW main drive, the MicroMedia X1 is ideal for small to medium-size production batches. Due to excellent scalability, the MicroMedia X1 is also perfect for scale-up trials for bigger MicroMedia+ bead mills.

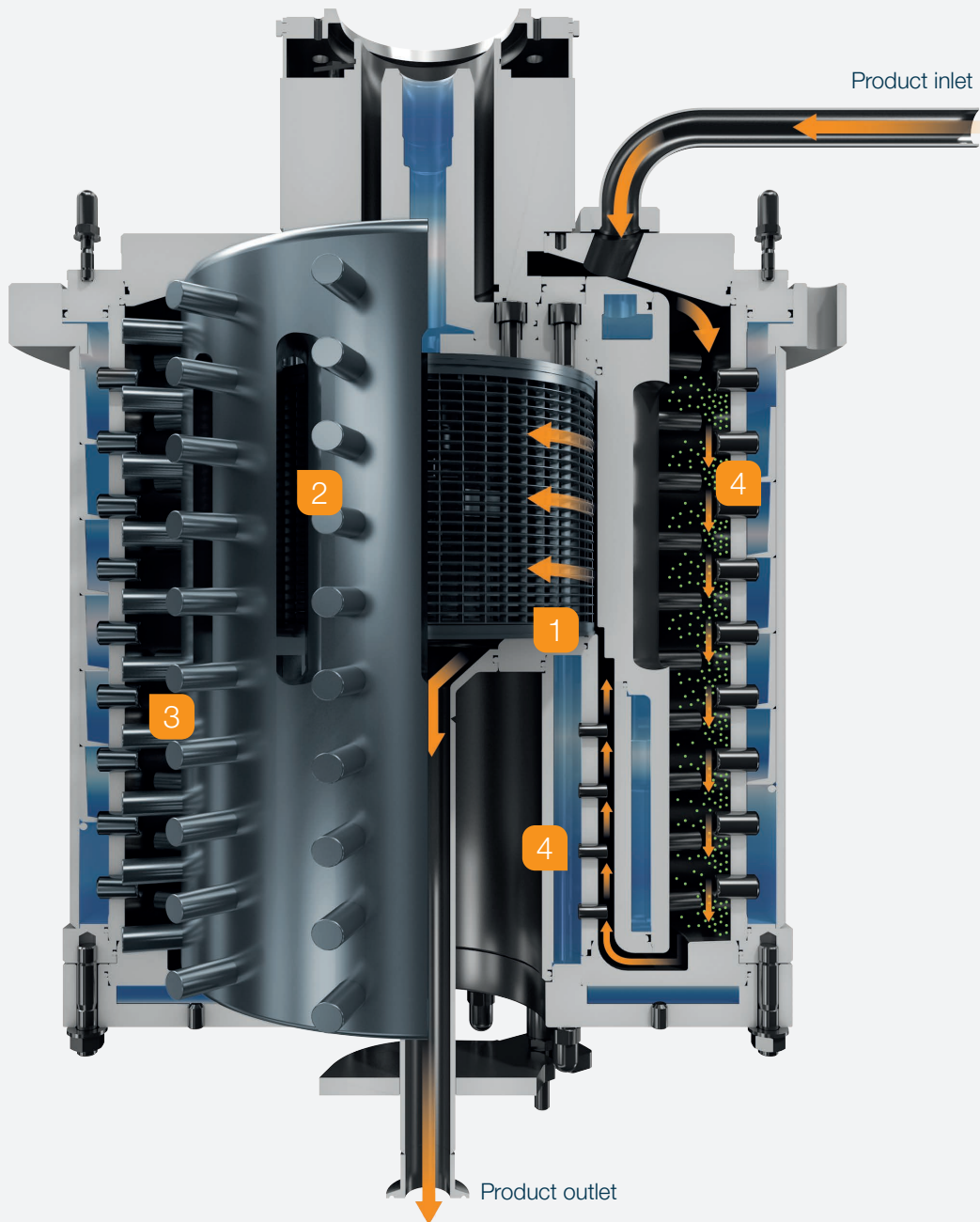


MicroMedia+ X2, X3 and X4

With an active process chamber volume of 7.6, 15.6 or 30.6 liter and a 22-90kW main drive, the MicroMedia+ X2, X3 and X4 bead mills are tailored for medium to large-size production batches. The wide range of available process chamber materials makes the bead mills very versatile in application.

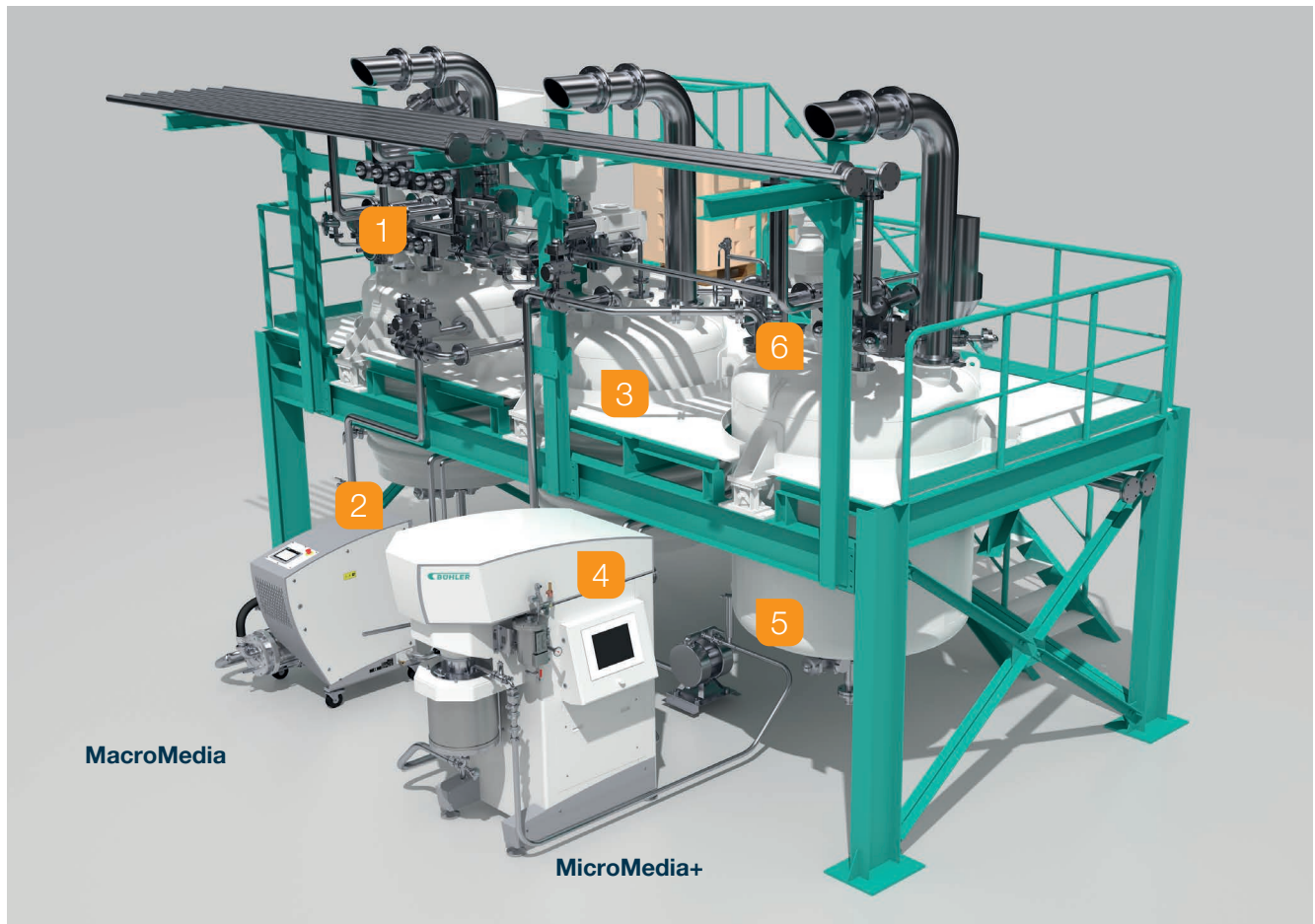
Functional principle of MicroMedia+.

Patented technology for better product quality.



- | | |
|---|--|
| 1 Screen (maximized size for highest flow capability) | 3 Pin/counter pin (efficient activation of grinding beads) |
| 2 Slots (real centrifugal bead separation) | 4 Cooling |

Compact design saves space/maximizes efficiency.
Cutting-edge processing solutions.



- | | |
|---|--|
| 1 Dosing of solid and liquid materials in the mixing tanks | 4 Circulation between MicroMedia+ and the recirculation tank |
| 2 Circulation between MacroMedia and the mixing tank | 5 Transfer from the recirculation tank to the let-down tank via MicroMedia+ |
| 3 Transfer from the mixing tank to the recirculation tank via MacroMedia | 6 Addition of liquid components and transfer to the next production step |

Process and plant engineering by Bühler

- | | |
|---|---|
| – Maximum availability, reliability and cost efficiency | – Installation and commissioning worldwide |
| – Supply of complete solutions | – Full support throughout the entire lifecycle of a plant |

Examples from industrial practice.

Optimizations thanks to MicroMedia+.



Liquid packaging inks: Increased productivity

Significantly increased productivity by changing the bead mill type.

Previous process

- Fine grinding using the SuperFlow bead mill with a bead size of 0.8 mm and a gap size of 0.35 mm.
- Specific energy consumption for production: 350 kWh/t for a fineness of $<5\ \mu\text{m}$

Benefits of production with smaller beads in the MicroMedia+

- Fine grinding using MicroMedia+ with a bead size of 0.3 mm
- Specific energy consumption is reduced to 200 kWh/t while plant capacity is increased by 75 % with no change in the quality level



Inkjet inks: Increased efficiency

Smaller beads reduce the energy consumption by 40 % for digital textile inks.

Previous process

- Fine grinding using MicroMedia+ with a bead size of 0.3 mm
- Specific energy consumption: 2500 kWh/t

Benefits of optimized production

- Reduction of bead size to 0.1 mm while maintaining recirculation flow rates
- Specific energy consumption is reduced by 40 % to 1500 kWh/t



High-performance coatings: Increased product quality

Setting up a completely new production concept for automotive coatings.

Previous process

- Two pass operation on SuperFlow
- Production capacity of 120 kg/h

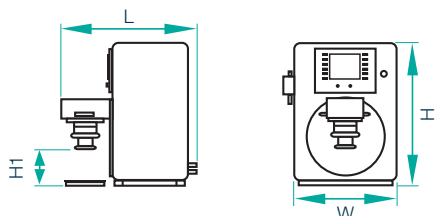
Benefits of production with integrated MicroMedia+

- Switch to recirculation operation using MicroMedia+
- Maximized recirculation flow rate up to 2500 kg/h resulting in a more narrow particle size distribution
- Increase of production capacity to 150 kg/h

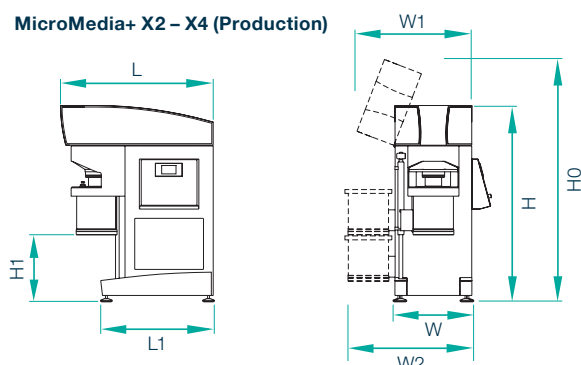
Technical data MicroMedia+.

Laboratory and production mills.

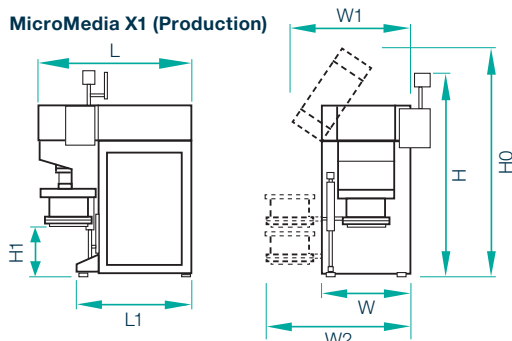
MicroMedia L (Laboratory)



MicroMedia+ X2 – X4 (Production)



MicroMedia X1 (Production)



MicroMedia+ ¹⁾

Drive [kW]

Active volume of process chamber [l]

Bead separation centrifugally with
following protective screen

Applicable diameter of beads [µm]

Flow rate [l/h] up to depending on viscosity, material and
diameter of beads and pump, e.g.

Cooling outer stator
bottom of stator
inner stator
rotor (DraisResist™)

Material rotor DraisResist™
Polyamid
Ceramic SSiC

Material stator Ceramic ZrO₂
DraisResist™

Ceramic SSiC
Ceramic ZrO₂

Lifting device for grinding vessel hydraulic hand pump
hydraulic foot pump

Dimensions [mm]

Weight [kg]

	L	X1	X2	X3	X4
Drive [kW]	2.2*	5.5	22 or 30	45 or 55	90 or 110
Active volume of process chamber [l]	0.07 (70 cm³)	1.4	7.6	15.6	30.6
Bead separation	●	●	●	●	●
Applicable diameter of beads [µm]	20–300	20-800	20-800	20-800	20-800
Flow rate [l/h] up to	10	400	3000	4000	8000
Cooling	●	●	●	●	●
outer stator	●	●	●	●	●
bottom of stator	–	–	●	●	●
inner stator	–	●	●	●	●
rotor (DraisResist™)	–	–	●	●	●
Material rotor	●	●	●	●	●
DraisResist™	●	●	●	●	●
Polyamid	–	●	●	●	●
Ceramic SSiC	●	●	●	–	–
Ceramic ZrO ₂	●	–	–	–	–
Material stator	●	●	●	●	●
DraisResist™	●	●	●	●	●
Ceramic SSiC	●	●	●	●	●
Ceramic ZrO ₂	●	–	–	–	–
Lifting device for grinding vessel	–	●	–	–	–
hydraulic hand pump	–	●	–	–	–
hydraulic foot pump	–	–	●	●	●
Dimensions [mm]					
H	862	920	2123	2123	2997
H0	–	1240	2611	2611	3558
H1	206	270	680	680	1108
L	756	825	1643	1643	2250
L1	–	620	1200	1200	1567
W	617	480	857	857	1050
W1	–	650	1123	1123	1460
W2	–	750	1420	1420	1720
Weight [kg]	150	270	1640	1850	3420

● = Standard, – = not available, All data are approximate. Technical alterations reserved.

* = drive platform PML 2 – installed power not equivalent with power to be introduced into MicroMedia L;

¹⁾ internationally patented, e. g. EP 1 943 022 B1 (2010), EP 1 992 412 B1 (2010)

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