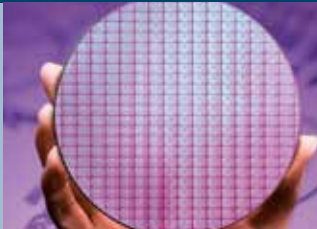


# DYNO<sup>®</sup>-MILL NPM

Nano Performance Mill

The new dimension  
in wet ultrafine grinding  
and dispersion



# WAB – the expert in wet ultrafine grinding and dispersion

For decades WAB has been the unchallenged specialist in dispersion and grinding technology with its world-famous DYNO®-MILL. The exacting requirements for the final product also place extreme demands on the quality and wear resistance of the mills.

The new **Nano Performance Mill**, the DYNO®-MILL NPM, is used for continuous dispersion and wet grinding of low viscous to viscous products in the micron and nanometer ranges. The unique grinding bead separation system permits the use of ultrafine grinding beads from 0.05 – 0.2 mm, and the patented DYNO® Accelerators ensure stable processing even at maximum throughput rates.



*Ultrafine wet grinding and dispersion  
for the most demanding requirements*

## **Features of the DYNO®-MILL NPM – Nano Performance Mill**

- Patented DYNO® Accelerators ensure powerful hydraulic movement of the grinding beads and guarantee high and uniform energy input for low viscous to viscous products
- Unique, dynamic separation system for optimum, stable process control using the finest grinding beads from 0.05 to 0.2 mm
- Ideal for continuous and discontinuous operation with constant efficiency and achievement of the narrowest possible particle size ranges
- Guaranteed long service life and nonmetallic grinding with the use of high-quality ceramic components (SiC, ZrO<sub>2</sub>)
- Low power consumption (kWh/kg product) thanks to efficient energy input
- Low process volume and ideal cooling properties permit processing of heat-sensitive products
- Gentle hydrodynamic processing
- Easy operation, recording of operating data and guaranteed reproducibility with the modern WAB-VIEW process control system
- Extremely simple cleaning with small quantities of fluids and ease of handling with low operation and maintenance costs thanks to the smooth design of the grinding chamber.
- with the unique, patented grinding principle, the DYNO®-Accelerator, best product quality with the most sharply defined ranges of fine grain particles in the range <100 nm to be obtained

# Nothing but the best | for your products and performance



### Top quality comes from the use of high-grade materials

Maximum quality requirements, metal-free grinding/dispersion, high wear resistance and long service life mean that only the best materials are used in the DYNOMILL NPM. High-strength yttria/zirconia ceramic materials and silicon carbide are used for wear parts which come in contact with the product.

### Ease of handling with low operating and maintenance costs

The DYNOMILL NPM is well engineered and can be

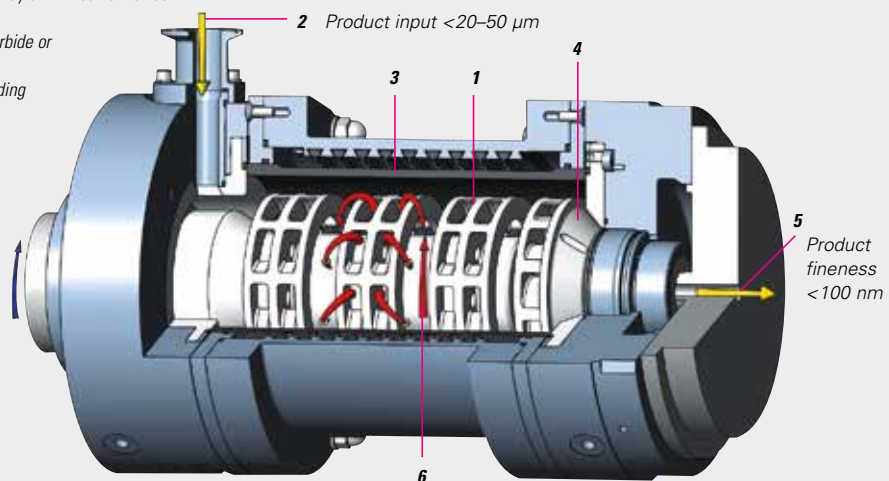
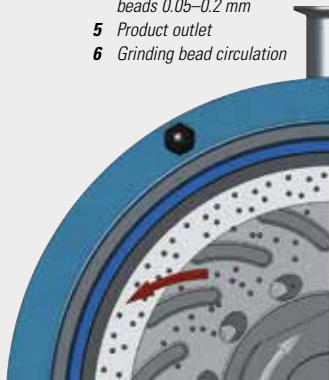
perfectly adapted to accommodate all user requirements. Operation, cleaning and opening for service are extremely simple. The components have smooth surfaces and are designed for easy access, enabling cleaning with the smallest possible quantities of solvents/fluids.

### WAB VIEW: modern process control guarantees reproducibility

In addition to clear, simple operation of the mill, the WAB VIEW control guarantees that all process parameters can be monitored. The PLC control is modular and extendible (data acquisition, process control via product temperature or power input, communications via modem, connection to PC or process control system).

#### Mode of operation

- 1 DYNOMILL Accelerators in hardened chrome alloy or in zirconium oxide
- 2 Product inlet/ grinding bead inlet
- 3 Coolable grinding container with silicon carbide or zirconium oxide grinding cylinder
- 4 Dynamic separation system for use of grinding beads 0.05–0.2 mm
- 5 Product outlet
- 6 Grinding bead circulation



#### TECHNICAL DATA

TYPE	GRINDING CHAMBER VOLUME	CAPACITY RANGE	MILL DRIVE	SEPARATOR DRIVE	GRINDING BEADS	COOLING WATER CONSUMPTION	WEIGHT	DIMENSIONS L/W/H
	l	l/h	kW	kW	∅ mm	l/h	kg	mm
<b>NPM Pilot</b>	<b>2.0</b>	<b>10–100</b>	<b>11.0</b>	<b>2.0</b>	<b>0.05–0.2</b>	<b>≤1,000</b>	<b>900</b>	<b>1,400x700x1,700</b>

# New products and applications |

## thanks to the latest grinding technology



The ultramodern grinding technology of the DYN0®-MILL NPM sets new standards in many branches of industry. The following is a small selection.

- |                |   |                                    |                               |
|----------------|---|------------------------------------|-------------------------------|
| ■ Pharmacology | Dissolution of active ingredients, cancer therapy | ■ Paints and printing inks         | Transparency and gloss        |
| ■ Cosmetics    | Absorption (UV protection)                        | ■ Microelectronics, semiconductors | Conductivity, barrier effects |
| ■ Surfaces     | Extreme hardness, self-cleaning                   | ■ Microbiology                     | Microbiocide function         |
| ■ Coatings     | Nonstick properties, corrosion protection         | ■ Ceramics                         | Surface activity              |
| ■ Pigments     | Color intensity, brilliance                       | ■ Batteries, catalysts             | Capacity                      |
| ■ Ink jet ink  | Lowest filter pressure                            |                                    |                               |

### Test the performance of the future

You can experience the future live in our pilot plant: test the DYN0®-MILL NPM and let yourself be surprised by its amazing capacity. We will be pleased to arrange an appointment for you as well as to support you with process engineering advice and services.

### WAB global: our service and sales network

With over 40 sales and service locations, our global network is ready to serve our customers with competent advice and support, always guaranteeing fast response and hence the shortest possible outage times. In addition to the extensive stores at our headquarters, our subsidiaries in Germany and France as well as most sales and service locations maintain extensive spares.



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