

DYNO[®]-MILL ECM-AP

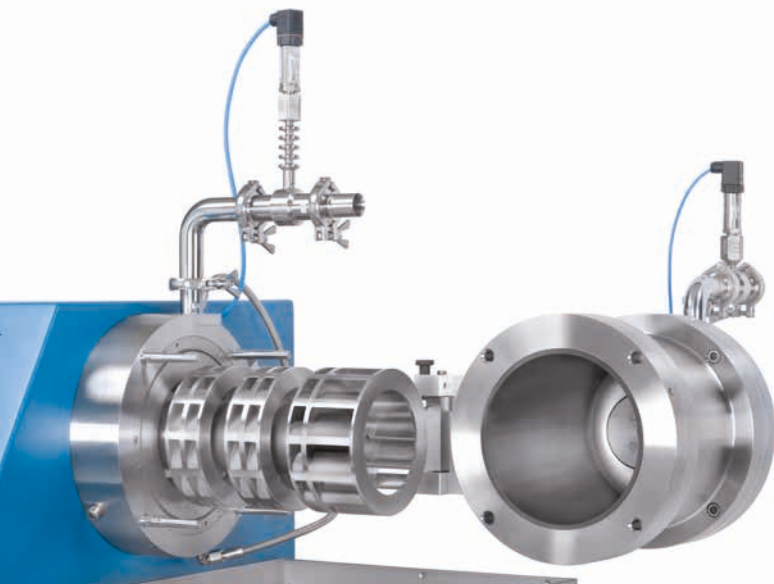
High-efficiency agitator bead mills

Proven performance in the wet dispersion and wet grinding down to the nanometer range



Your expert partner for finest dispersion and wet milling down to nano size particles

For decades, WAB has been a leading specialist in the field of grinding and dispersion with thousands of the world famous **DYNO®-MILL** products installed worldwide. The many products that are required to be milled demand contact material of the highest quality. With its extensive program of mills and experience gained over decades, WAB delivers the right solutions for all machines and products to ensure that you produce the finest quality products in a repeatable process.



DYNO®-MILL ECM-AP 10

DYNO®-MILL ECM-AP

Evolution in the design of high-efficiency agitator bead mills

- New separation system of the WAB DYNO®-MILL ECM-AP Series
- New design of the grinding chamber allows higher throughputs and production capacities, especially for highly viscous products
- Increase of the wear resistance of contact parts
- Ability to use beads with a size of 0.1 mm

Properties of the Process

- Designed for running in single/multi-pass or circulation, with a constant efficiency in both processes for the achievement of narrow particle size distributions
- The patented DYNO®-ACCELERATOR produce a powerful, hydraulic movement of the beads which guarantee a high and constant energy input
- The mill has a low energy uptake due to its efficient energy input
- Ability to handle low to highly viscous products
- Ideal cooling properties allow the processing of temperature sensitive products
- Gentle processing as a result of hydraulic movement of the beads



Handling

- Easy operation of the mill thanks to the well designed control concept
- Small volumes of the grinding chamber enable fast product changes at low costs
- Simple cleaning with small amounts of cleaning agents
- Change of the separation system of production size mills without the need to open the grinding chamber
- Increased lifetime of the screen
- Registration of the process parameters and guarantee of the reproducibility with the optional WAB VIEW process control

Technology

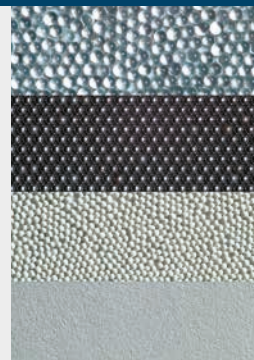
- Most modern three dimensional design process
- Use of valuable high quality materials
- Manufacturing process and quality control that are state of the art

Milling in the Nanometre Range Advanced Performance of the DYNO®-MILL ECM-AP

Due to the new improved WAB separation system, bead sizes down to 0.1 mm can be used.

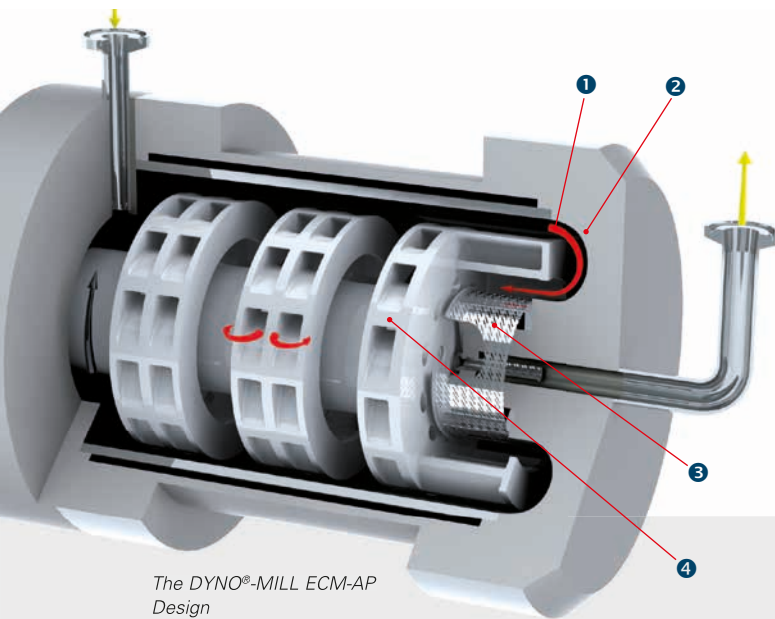
The application of the DYNO®-MILL ECM-AP improves milling times and reduces production costs when suspensions with particle size distributions in the nanometre range are needed.

The range of mills covers a wide spectrum. To date grinding chamber volumes between 0.5 to 60 litres are available to satisfy most production capacity needs.



The new DYNO[®]-MILL ECM-AP Series

Advanced Performance Milling and Grinding Technology



The DYNO[®]-MILL ECM-AP
Design

Higher Throughputs and Production Capacities

The new generation of mills was consistently designed for an increase of the throughput. The increase of the possible throughput leads to more flexibility in the choice of process parameters.

In the circulation process, high throughputs usually have a positive influence on the production capacity. Experiments in our laboratory have already shown that much higher throughputs can be realized with the new DYNO[®]-MILL ECM-AP series. Besides an increase in the production capacity, a higher number of circulations can also lead to a narrower particle size distribution.

Better Ability to run Highly Viscous Products

The combination of an optimized circulation of the beads and a much higher cross-sectional area for flow through the screen, results in a great improvement in the ability to process highly viscous products.

Here the directed axial flow of the beads over the screen surface removes coarse particles from the surface of the screen, allowing a better flow through the screen. The free flow through the screen is not reduced, because this self-cleaning effect prevents blockages. An increase in the pressure, which can take place with highly viscous products, is therefore avoided.



New Separation System of the DYNO[®]-MILL ECM-AP

The new separation system of the DYNO[®]-MILL ECM-AP shows a unique forced circulation of the beads (1).

The circulation of the beads is caused by the newly developed invert wall (2), which directs the beads into an axial flow over the screen (3). Afterwards, the DYNO[®]-DSE-ACCELERATOR (4) directly conveys the beads back to the invert wall.

Together with several other improvements, this new separation system delivers numerous advantages for our customers!

Additional Optimizations of the Grinding Chamber

Further modifications in the entire grinding chamber have been designed, in order to make sure that the innovations mentioned above complement each other:

- Optimized geometry for the flow in the product inlet
- Newly developed central degassing unit which improves the processing of foaming products
- New conception of all mechanical machine parts, according to the highest standards

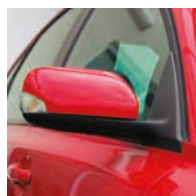
The Advantages of the DYNO[®]-MILL ECM-AP at a Glance

- Much higher throughputs
- Better ability to process highly viscous products
- Longer lifetime of the screen
- Improved ability to handle foaming products
- Ability to grind in the nanometre range
- Simple handling of the machine during the production and the maintenance
- Possibility for fast product changes at low costs
- Optimal suitability for the pass mode and the circulation mode



The Highest Performance for your Products

The Best in its Class



- Paints and varnishes
- Printing inks
- Coatings
- Pigments and dyes
- Automobile coatings
- Food industry
- Filling
- Agrochemicals
- Paper industry
- Life sciences
- Biotechnology

Services offered by WAB

WAB AG has its own test facility in a thoroughly modern building including all the latest analytical testing equipment, with various mills in different sizes, ranging from laboratory up to full production scale. The partnership with our customers is one of the main aspects for WAB. Therefore, we offer our customers the possibilities to do experiments in this facility with their own products. With the results, one can check whether the machine fulfils the requirements before making any decisions. At WAB, you would not only purchase a mill, but you would also get professional advice concerning the mill and your product together with a full after sales service.

The DYNO®-MILL ECM-AP Series



Type	ECM-AP 05	ECM-AP 2	ECM-AP 10	ECM-AP 20	ECM-AP 60
Grinding Chamber Volume (l)	0.5	1.9	9	21	62
Mill Drive (kW)	4.0	11	30 - 37	44 - 58	100 - 132
Cooling Water Throughput (l/h)	250 - 400	1000 - 1500	1500 - 2000	1800 - 2500	3000 - 4000
Weight (kg)	120 - 140	600 - 700	1200 - 1300	2000 - 2300	4100 - 4300
Dimensions L x W x H (mm)	825 x 625 x 725	1290 x 850 x 1650	1520 x 1000 x 1920	1990 x 1310 x 2150	2330 x 1340 x 2220

Subject to changes in design. The data shown are indicative values and are dependent on the machine execution and on the products to be processed.

WAB-GROUP

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