

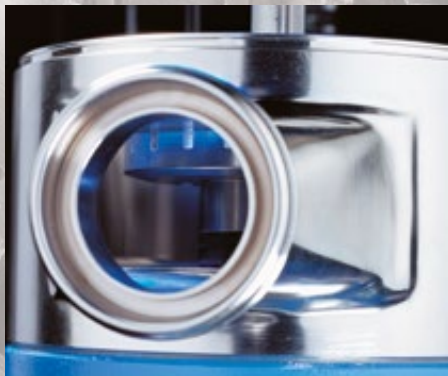
Inline dispersing & solid-liquid mixing

/// The details make all the difference!

A first-class belt drive together with a specific bearing provide an efficient and flexible drive system. A constant circumferential speed and the same design for all sizes guarantee maximum scalability for your processes. Cartridge mechanical seals provide high reliability and easy service.

IKA only uses first-class materials for exceptional mechanical strength and corrosion resistance. We have worked closely with our customers and research institutions to optimize the generators for improved dispersing and efficiency. Our generators (rotor/stator) are also available in many materials other than stainless steel for abrasive and corrosive applications. Our standard inline dispersing machines are already designed with resistant surfaces and have an optimized design for exceptionally easy cleaning.

IKA mixers can be cleaned or steamed in place. The 2000 Series has so many advantages, there are too many to list here.



Colloid Mill MK 2000

/// Wet grinding, deagglomeration and production of viscous emulsions

The colloid mill MK 2000 is used especially for wet milling, deagglomeration and the production of viscous emulsions. Its high circumferential speed and the extremely small shear gap generate very high shear forces. The rotor and stator are multi-stage and the individual stages vary in angle and slot geometry to achieve optimal processing of the product.

The stator can be infinitely adjusted to obtain the desired grinding gap setting.

Depending on the size of the machine, adjustment is via two manual levers on the housing or a hand crank. Optionally, the colloid mill can also be designed with a fixed, preset grinding gap. The colloid mill offers advantages in terms of energy efficiency, especially for higher-viscosity products with near-Newtonian viscosity behavior.

Example applications

- > Emulsions
- > Colloidal solutions
- > Micro-suspensions
- > Metal-oxide suspensions
- > Microencapsulation
- > Coating masses
- > Mustard
- > Ointments



Sizes MK 2000	Motor power [kW]	Flow rate* max. [l/h]	Motor speed [rpm]	Circumferential speed [m/s]
MK 2000/03 (magic LAB)	0.9	200	3,000	23
MK 2000/04 (Process Pilot)	1.5	300	3,000	23
MK 2000/05	7.5	2,500	3,000	23
MK 2000/10	15	7,500	3,000	23
MK 2000/20	37	20,000	3,000	23
MK 2000/30	55	40,000	1,500	23
MK 2000/50	160	60,000	1,500	23

* Self pumping rate with H₂O, 0.1 mm shear gap and standard tool

Cone mill MKO

/// Intensive shear to achieve the very smallest particles

Another unique IKA innovation, the cone mill MKO 2000 was designed to extend beyond the capabilities of the colloid mill. With its innovative design, it is capable of wet milling and grinding, producing even smaller particle sizes than a colloid mill. The milling gap is infinitely adjustable so that milling can be precisely controlled.

The surface of the milling tool is coated with an extremely hard coating that has a very rough surface texture. The coatings consist of high quality materials such as carbides and ceramics, and have different grain sizes. The machine generates an extremely intense shear zone that can process materials with high or low viscosities, but with even finer distribution and particle sizes than the colloid mill.

Example applications

- > Pigments
- > Polymers
- > Coatings
- > Crystals, wet milling
- > Ceramic slurries



Sizes MKO 2000	Motor power [kW]	Flow rate* max. [l/h]	Motor speed [rpm]	Circumferential speed [m/s]
MKO 2000/03 (magic LAB)	0.9	25	3,000	23
MKO 2000/04 (Process Pilot)	1.5	100	3,000	23
MKO 2000/05	4	150	3,000	23
MKO 2000/10	15	500	3,000	23
MKO 2000/20	37	1,500	3,000	23
MKO 2000/30	55	3,000	1,500	23
MKO 2000/50	160	6,000	1,500	23

* Typical flow rates for medium viscosity products at 0.1 mm shear gap

Corundum Disk Mill MCD

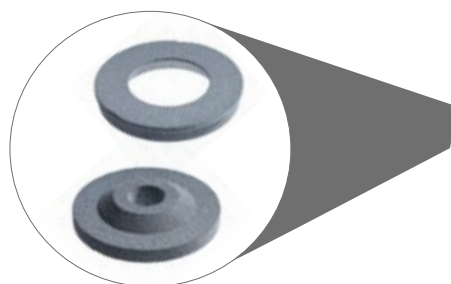
/// Inline mill for wet grinding

Corundum disk mills are mainly used for wet grinding of food products such as nuts and seeds. The corundum disks are available in different grains and are adapted to the product depending on the initial particle size and target fineness. The axially displaceable stator is moved relative to the rotor to adjust the grinding gap and is another process parameter in addition to the rotation speed. Due to the high shear forces and the rough surfaces of the grinding discs, the product is finely milled between rotor and stator and then discharged through the outlet at the side of the milling chamber. A cooling jacket integrated into the grinding chamber ensures a constant process temperature and therefore consistent quality, even with sensitive products.

Example applications

Fine milling of:

- > Mustard
- > Chili
- > Spice pastes
- > Nuts
- > Almonds
- > Sesame
- > Cocoa
- > Soybeans
- > Fruits
- > Vegetables
- > Fish pastes
- > Hemp seeds
- > Oats
- > Chickpeas



Sizes MCD	Flow rate [kg/h]	Motor power [kW]
MCD 2000/03 (magic LAB)	1 – 20	0.9
MCD 2000/04 (Process Pilot)	5 – 100	2.2
MCD 2000/05	10 – 200	4
MCD 2000/10	25 – 500	7.5
MCD 2000/20	45 – 1,100	11
MCD 2000/30	125 – 2,500	37
MCD 2000/50	200 – 4,500	75

Advantages

- > Depending on the product, outlet is via a funnel with a feed screw or via a feed pump.
- > Cooling jacket integrated into the housing
- > Precise and reproducible grinding gap adjustment
- > Grinding disks with different grain sizes
- > Separate bearing for the drive shaft
- > Sealing systems suitable for dry running
- > Low installation height