

Data Sheet

Cone Mill MKO 2000/20



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The IKA MKO 2000 is a high-performance inline cone mill capable of performing wet and fine milling of tough and grainy or crystalline raw materials. The MKO 2000 is especially suitable for the de-agglomeration of suspensions. Excellent dispersing performance allows the IKA Cone Mill MKO 2000 to be used for continuous processes, providing a narrow distribution range of ground particles in a single pass. For challenging milling tasks the cone mill can be installed into a recirculation loop with a working vessel by means of tube connections.

The cone mill MKO 2000 differs from the colloid mill MK 2000 offered by IKA due to its special milling tool. The first stage is identical with that of the colloid mill, geared towards and serves for feeding and pre-milling of the product. Instead of gear cutting tools, the other conical rotor/stator parts are 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. Alternatively, IKA also provides solid tools comprised of zirconium ceramic. The milling tool produces an intense shear zone that can process materials with medium or high viscosities. It generally causes an even narrower distribution and finer particle size than a colloid mill. The wet milling combined with a solid content provides good results even with low viscosity masses.

The conical geometry of the milling tool enables an axial displacement of the stator for an infinite adjustment of the milling gap. In addition to the rotating speed, the energy input and thus the dispersion effect can also be affected by adjusting the gap between rotor and stator. For applications with a fixed grinding gap and high demands for reproducibility, the infinite adjustment of the milling gap can be replaced by a system with fixed spacers

The combination of small grinding gaps with the friction between the tools and product allows for an excellent grinding effect. Unlike other corundum mills where tool-wear leads to permanent contamination, the rotor/stator tools of the MKO are not in contact with each other. Special versions are designed in a manner which precludes any metal contamination, even with abrasive products. These collective features make the IKA cone mill a unique device for wet milling and the de-agglomeration of suspensions.

The IKA Cone Mill MKO 2000 is available in seven different sizes, with varied possible throughput from 25 to 6.000 l/h referring to water. All machine sizes do work with the same circumferential rotor speed, which ensures reliable scale-up.

Advantages of the IKA MKO 2000:

- Controlled throughput in combination with excellent grinding result
- Infinitely adjustable gap settings between rotor/stator for control of particle size reduction

Technical Data	
Flow rate (max.)	1500 l/h
Viscosity (max.)	50000 mPas
Motor power	37 kW
Motor power EExe..	36 kW
Motor speed	3000 rpm
Tip speed	23 m/s
Speed regulation possible	yes
Single mechanical seal	yes
Double mechanical seal	yes
Process pressure (max.)	16 bar
Process temperature	120 °C
Flame proof possible	yes
Dispersing tool	milling tool
Cleaning	yes CIP
Sterilisation	yes SIP
Weight approx.	600 kg
Ident. No.	000MKO200020

- Compactness of production systems with IKA Cone Mill MKO as a result of the inline design of the machine
- Suitable for products in a wide viscosity range, up to 50.000 mPas
- Capable of operation under pressures up to 16 bar
- Simple speed adjustment by use of belt drive
- Easy scale-up processes developed with the laboratory machine MKO onto production machine MKO
- All wetted parts are made of 316L / 316Ti stainless steel
- High-value seal with wear-resistant materials
- High quality surface finishes for easy cleaning
- Other materials and finishes are available upon request
- Machine is self-draining. CIP and SIP capable
- Low noise levels
- Manufactured according to EHEDG guidelines (European Hygienic Engineering and Design Group)
- 3A-Sanitary conformed and certified
- Pharmaceutical execution available upon request
- Explosion protected executions according to ATEX 95 guidelines deliverable

IKA engineers and application experts are available to assist you with selection of machine type and its execution as well as provide you with advice regarding installation of the machine into existing or new process systems.

Technical data of the IKA cone mill MKO: