



MCH horizontal colloidal mill

general features



MCH-6 colloidal mill in AISI-316 stainless steel, fed by a sanitary Salomon helicoidal pump, connected by heated piping.

Many manufacturing processes require continuous handling and treatment of raw materials, with in-line assemblies that optimize throughput and reduce operating costs. The horizontal colloidal mill is designed for in-line assembly and it is used for grinding, dispersion, and emulsification of particles (solids or liquids) suspended in a liquid medium, achieving perfect homogenization, uniform particle size, and excellent percentage distribution in the final product.

MCH mills have a wide application in the industry. Thanks to their robust construction and easy-to-clean design, this equipment can be implemented in the pharmaceutical industry (for antibiotic suspensions, ointments, pectin, etc.), cosmetics (production of lip balm paste, cleansing creams, nail polish, etc.), food (fruit compotes, fondant chocolates, meat pâtés, etc.), and chemicals (pigments, herbicides, lacquers, etc.).

OPERATION

The MCV colloidal mill works by hydraulic shearing effect on a thin film of the product to be processed. The basic operating elements include a body with a double chamber for cooling or heating that allows maintaining a constant grinding temperature, and two conical rotor/stator grindstones, with adjustable separation and made of stainless steel or ceramic. The rotor grindstone rotates at a high speed, while the stator grindstone remains fixed to the mill cover.

As the product passes between the two grindstones, it is subjected to shearing and rubbing forces that generate high turbulence, with ultrasonic vibrations that break down agglomerates, disperse solids, and emulsify liquids achieving high fineness and high throughput.

GRINDSTONES

Depending on the application, type of product, and process, three types of grindstones are available:

» Tricone-grooved stainless steel grindstones with different profiles, for emulsion processes and wet grinding of particles from 2 to 3 mm in size, up to fine dispersions with particles of 95% < 40 μ, with an average of 40 / 50% < 10 μ.

» "Multident" stainless steel grindstone, with a rotor plate composed of concentric crown gear, separated by clearances that overlap with the crown gear of the stator plate of similar design.



3 D image. Equipment operation

» Corundum abrasive grindstones for milling with a high content of solids in dispersion. The roughness of the Corundum grain forms edges and cavities that micronise with great intensity, thus obtaining refined products which, in the best case, can reach particle sizes of 95% < 15 μ, with 50% < 5 μ. Corundum abrasive grindstone stand out for their low energy consumption, generating very little heat.

FEEDING

The feeding of the product in the MCV Mill is one of the key factors for optimizing the fineness and throughput.

If the mill incorporates corundum grindstones, it is always essential to install a product feed pump in all cases.

For mills with metallic grindstones (grooved or crown gear), there are two options depending on the product's viscosity:

» Direct suction feeding: in these cases, the rotor grindstone shaft incorporates one or two propellers enabling product suction. This system is applicable with medium or low viscosity products.

» Forced suction tubular inlet: This allows the equipment to be connected to a positive displacement pump (helicoidal or lobe type), with frequency converter to adjust the product flow rate to the mill conditions. For high viscosity products, this type of feeding is required.

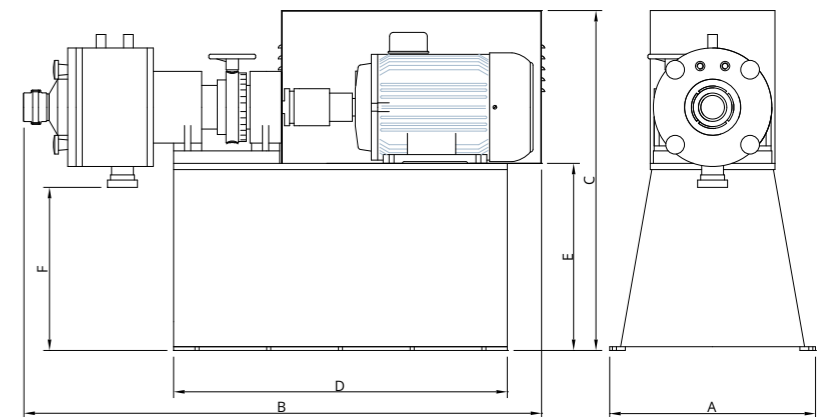


GRINDSTONES ADJUSTMENT SYSTEM

The fineness required by the process is obtained by means of the mechanical system for adjusting and separating the grindstones. This system consists of a micrometer vernier equipped with a graduated scale that allows the separation of the grindstones and the locking of their position in order to obtain the desired fineness.

This system allows the mill to work with a minimum clearance, between grindstones, of 75 μ for Corundum grindstones.

With metallic grindstones, the equipment includes a mechanical stop that prevents physical contact between the two grindstones, and thus avoiding their destruction.



Technical data

Model	Power KW	Speed rpm	Grindstone diameter (mm)	Dimensions mm					
				A	B	C	D	E	F
MCH-2	4	3,000	85	418	910	550	650	330	300
MCH-3	5.5	3,000	95	500	1,127	746	830	410	394
MCH-4	7.5	3,000	120	546	1,195	819	860	450	404
MCH-5	15	3,000	150	625	1,492	900	1,000	510	430
MCH-6	22	3,000	200	660	1,667	1,070	1,070	600	523