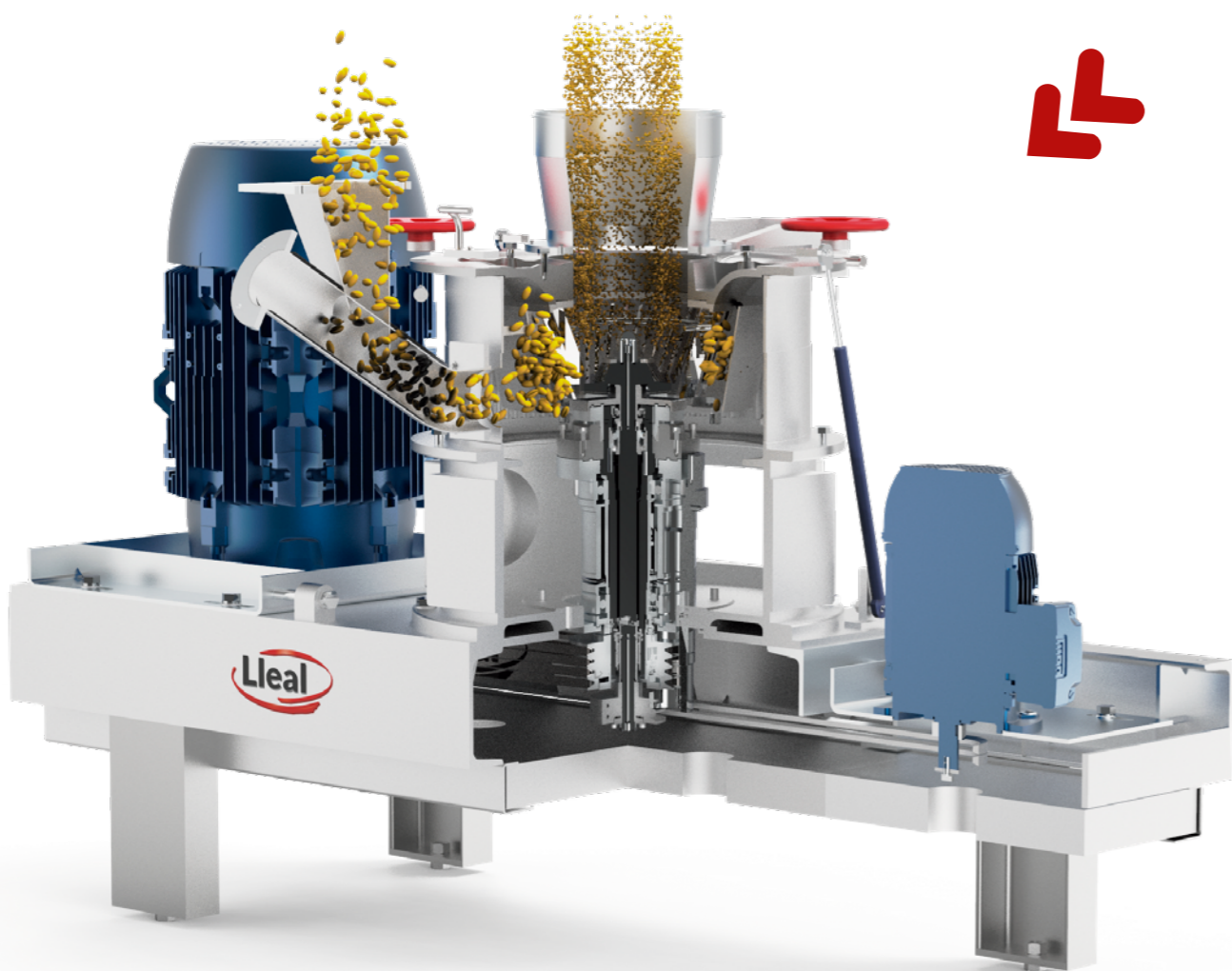


MMS MICRONISER SEPARATOR MILL



with you, step by step



MICRONISER SEPARATOR MILL

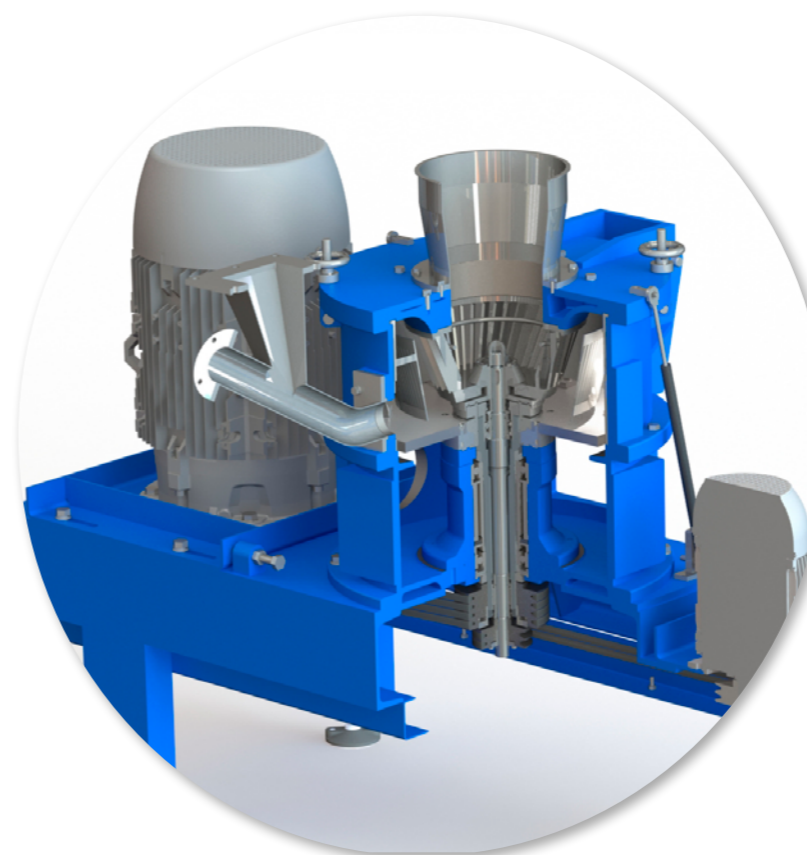
MMS



The MMS MICRONISER SEPARATOR MILL is the suitable equipment for fine and ultrafine grinding of various products, from soft to semi-hard, adjusting to the final size requirements and obtaining finenesses up to 10 µm.

The operating principle of this equipment is based on the combination of a grinding disc, equipped with pins or hammers, which break the particles by impact and a classifier formed by a disc of blades, both independently driven and controlled by frequency converters.

By choosing the appropriate parameters and grinding elements it can be used for all types of products, by changing the internal elements of the classifier or the mill.



The grinding disc can be equipped with different elements to achieve an impact, cutting, or friction effect. Output size regulation is obtained by adjusting the classifier speed and the airflow rate processed by the mill.

The MMS mill minimizes the temperature increase to very low levels, thus enabling the processing of materials with relatively low softening or melting points, such as stearates, resins or pharmaceutical intermediates (see applications).

Depending on the nature of the product and its risk index of explosion due to oxidation, Lleal designs and projects installations equipped with isolation valves and capable of withstanding water hammer at 1.5 to 10 bar.

Technical features

The production range of these equipment can reach up to 5-10 Tn/h with a fineness ranging between 10 and 500 µm. Additionally, it allows grinding of products with a hardness of up to 4 on the Mohs scale, thanks to the use of anti-abrasive materials in the grinding parts, highly resistant to wear.

The milling installations are composed of:

- » Feeding system through screw or combination of pneumatic conveying and rotary valve.
- » A collector filter that allows the separation of solids from the conveying air.
- » A centrifugal fan that classifies the product and carrying it to the filter.
- » Depending on the final size required, it will also be necessary to use a cyclone between the mill and the filter.

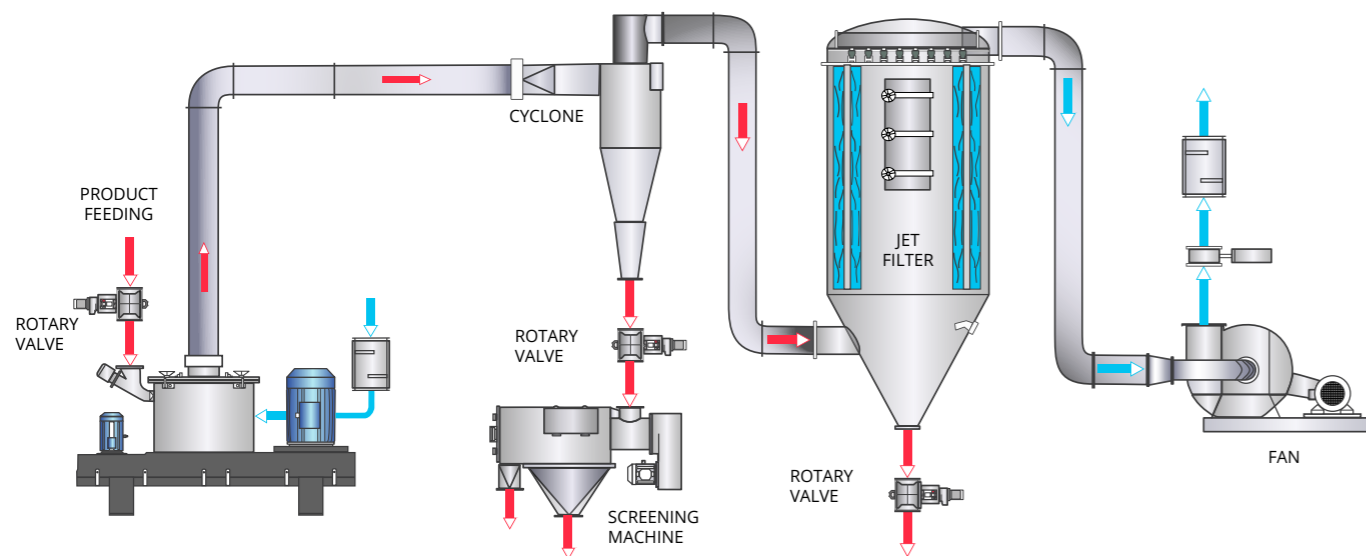
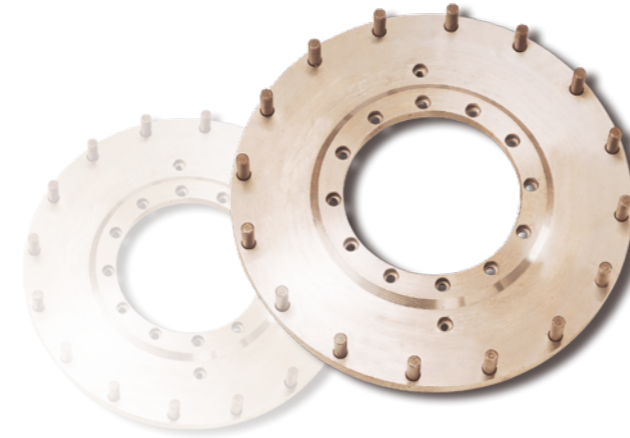


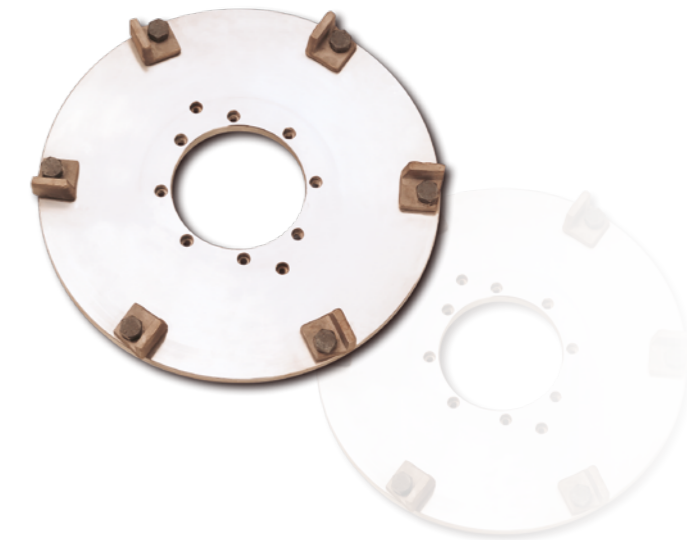
Diagram of a standard grinding plant



Components



Grinding plates with mallets or hammers are most frequently used, since the energy input is fully transmitted to the product. The use of maces enables coating the impact section with hard inputs.

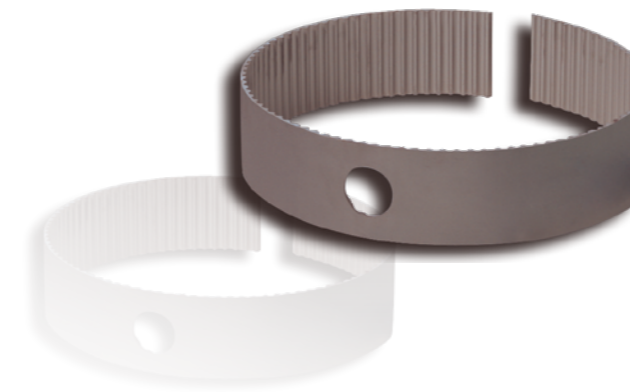
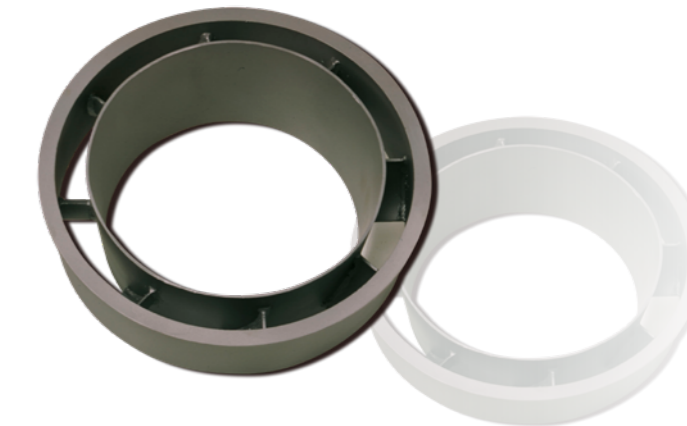


For the grinding of products where it is desired to obtain particle size distributions free of fines, **grinding plates with bolts** are used to provide minimal mechanical energy to the product.



The **separator plate** is the component intended to select the final particle size. Depending on the fineness to be obtained, particle size distribution, and production rate, the height, number of blades and their inclination will be selected.

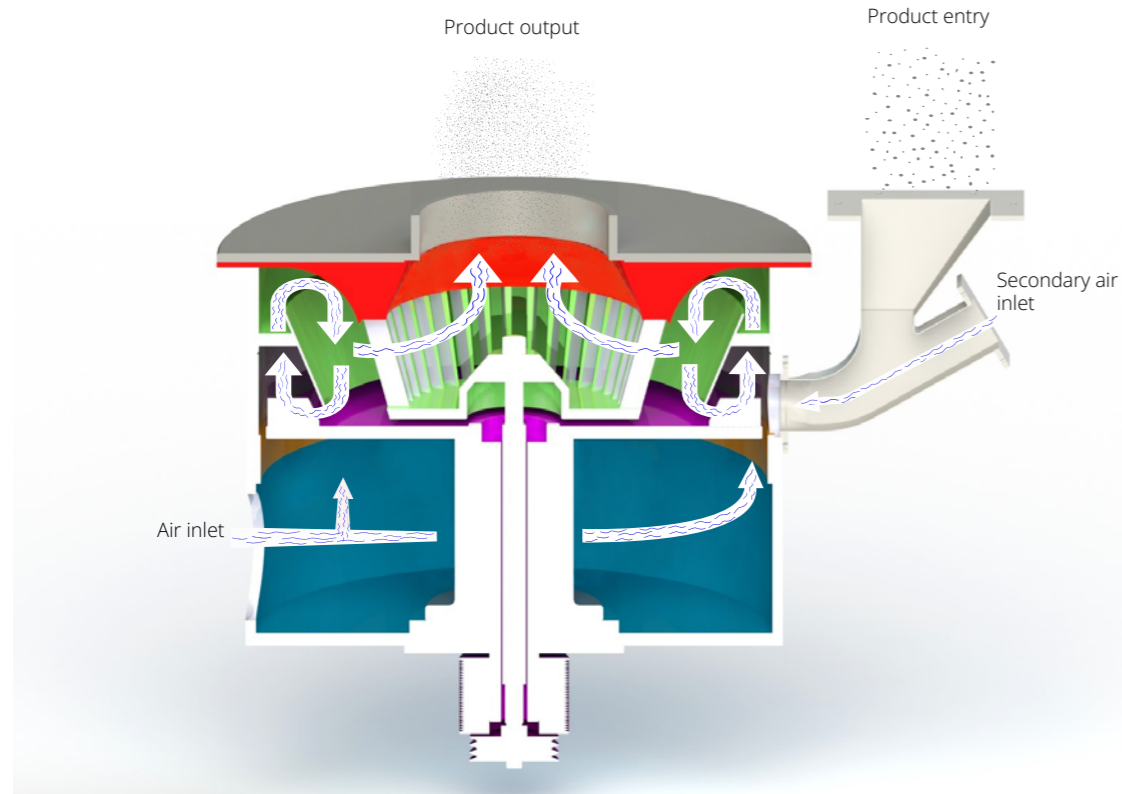
The **deflection chamber or particle distributor cone** is located between the grinding plate and the separator plate. Its function is to direct the ground product to the impact and classification points.



The **stator liner** is a ring made of high hardness elements or alumina, and it is installed inside the mill at a minimum distance from the mallets or bolts to achieve high grinding efficiency.



Production examples



Mill operation diagram

Product	Fineness (µm)	Production (Kg/h)	Mill model
Tartaric acid	100% < 600 µm	400	MMS-100
Roasted carob	100% < 74 µm	2,000	MMS-1500
Sugar	100% < 60 µm	3,000	MMS-400
Bakelite	99% < 2.000 µm	450	MMS-300
Cocoa 10 - 11%	99% < 74 µm	4,000	MMS-1500
Coal	100% < 40 µm	150	MMS-150
Calcium carbonate	99% < 100 µm	5,000	MMS-1500
Ceramic dye	99% < 40 µm	400	MMS-300
Dolomite	99% < 1.000 µm	6,500	MMS-1500
Epoxy	99,5% < 100 µm	700	MMS-400
Stearates	100% < 40 µm	1,500	MMS-1000
Locust bean	100% < 74 µm	150	MMS-100
Flour	100% < 250 µm	750	MMS-600
Fish meal	100% < 8000 µm	7,500	MMS-1500
Herbicides	100% < 40 µm	500	MMS-400
Aluminium hydroxide	100% < 20 µm	450	MMS-400
Little orange	100% < 200 µm	250	MMS-300
Pigments	100% < 10 µm	500	MMS-150
Paprika	100% < 600 µm	650	MMS-1000
Pepper	99% < 700 µm	600	MMS-400
PVC (emulsion)	100% < 60 µm	800	MMS-600
Novolac resin	100% < 100 µm	2,500	MMS-750
Urea resin	99% < 40 µm	2,000	MMS-600
Carmine red	100% < 20 µm	125	MMS-100
Soybeans	99% < 125 µm	600	MMS-600
Talc	99% < 10 µm	1,500	MMS-1500

Technical Data

Model	Length (mm)	Height (mm)	Width (mm)	Total power* (kW)	Mill speed		Flow rate		Production factor
					min. rpm	max. rpm	min. m³/h	max. m³/h	
MMS-100	1,250	820	385	16	3,000	7,200	600	900	1
MMS-150	1,250	820	385	22	3,000	7,200	900	1350	1.35
MMS-300	1,750	1,385	530	50	1,500	4,700	1,500	3,240	2.7
MMS-400	1,750	1,385	530	60	1,500	4,700	2,000	4,200	3.6
MMS-600	2,450	1,445	700	82	1,000	2,900	3,000	6,300	5.4
MMS-750	2,450	1,445	700	110	1,000	2,900	4,000	7,200	6.75
MMS-1000	2,850	1,445	850	150	800	2,600	6,500	9,600	9
MMS-1500	2,850	1,445	850	206	800	2,600	8,000	14,400	13.5

* Power of the installation to be confirmed according to the product.

