

This type of installations are specially built for the grinding and micronizing of soft and or semi-hard materials, at sizes smaller than 500 μ and an stable d50 throughout the useful life of the machine.

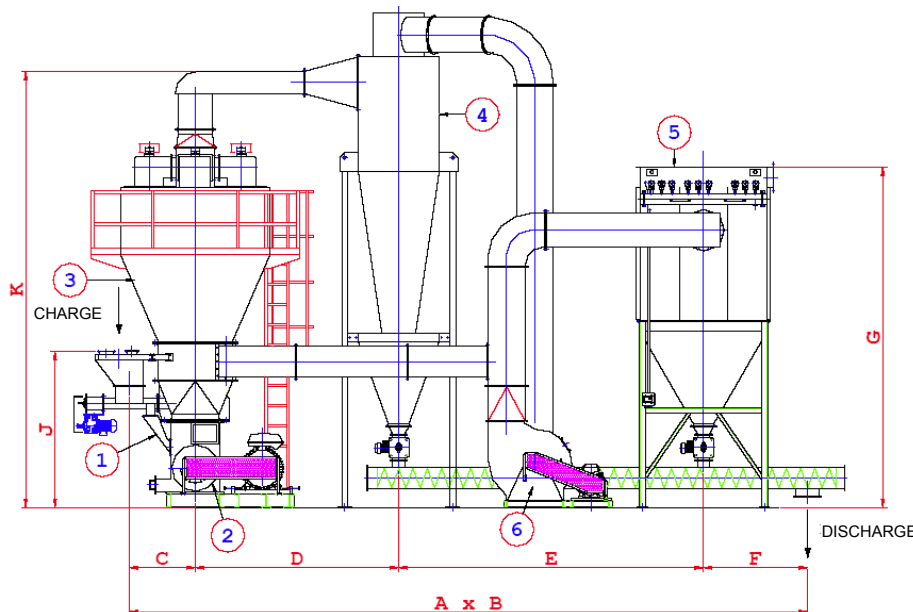
Micronizing installations designed and manufactured by **GRUBER HERMANOS, S.A.** are conceived to make maintenance works easier and quicker, ensuring high throughput rates for the longest time possible, thus making the most of the installation.



Mill MS 105-M1/4 for high finenesses.

GRUBER HERMANOS, S.A.'s micronizing installations are designed and built to work together. All elements that make up the installation (mill, classifier, cyclones, air filter and fan) work together as one at a high performance level.

This way, the process of installing the machinery at the clients' premises is more simple and economic.



| MARK | |
|------|------------|
| 1 | Feed |
| 2 | Mill |
| 3 | Classifier |
| 4 | Cyclone |
| 5 | Air Filter |
| 6 | Fan |

| TYPE | A | B | C | D | E | F | G | H | J | K |
|---------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MS 33 | 6.550 | 2.000 | 650 | 2.000 | 2.300 | 1.500 | 4.800 | 5.500 | 1.100 | 2.950 |
| MS 35 | 8.000 | 2.500 | 1.000 | 2.500 | 3.000 | 1.500 | 6.000 | 6.700 | 1.500 | 4.000 |
| MS 70 | 10.200 | 3.000 | 1.200 | 3.000 | 4.000 | 2.000 | 8.000 | 7.000 | 1.750 | 4.200 |
| MS 105 | 10.700 | 3.500 | 1.200 | 3.000 | 4.000 | 2.500 | 8.500 | 7.000 | 2.200 | 5.000 |

*Approx. dimensions in mm

GRUBER HERMANOS, S. A.

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MS 33/105-4 en
 V.01.05

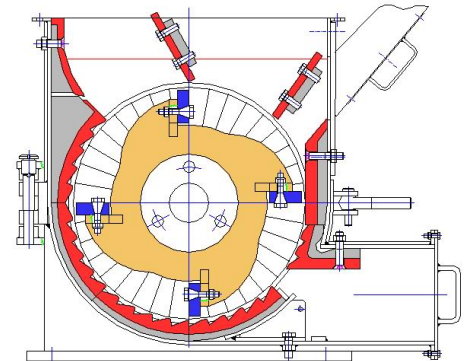
Operation principle

The material is fed into the mill, where it is crushed by the grinding shoes of a **high speed turning rotor**.

An air stream generated by the fan sucks the micronized particles up to the **classifier** chamber. Inside the classifier, there is a rotary cage that turns and **lets in particles of a certain size**. This size can be adjusted and depends on the rotation speed and the suction generated by the fan. Coarser particles will drop again to the rotor where the milling process starts over again.

Particles going up and down inside the classifier chamber collide and make it possible to separate coarse from fine ones.

The fan sucks milled and classified grains into the **cyclone**, where particles bigger than 10μ are deposited. Smaller ones will be transported to the **air filter** and will drop. This way two products of different grain sizes can be obtained from one mill. By means of a worm gear both discharges from the cyclone and the air-filter can be connected as to obtain a sole product.



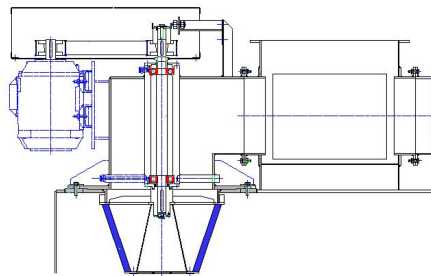
Sectional of mill MS 33. In red you can see the plates, in brown the rotor and in blue the grinding shoes.



MS 70 mill in milling of calcium carbonate.



High performance Classifier.



By using VSD devices, the rotation speed of the cage can be changed and adjusted in order to obtain different grain sizes of one product as well as to adjust the grain size when the product fed is not homogeneous.

It is not necessary to stop the mill's operation to change the rotary cage or to adjust the rotation speed.

GRUBER HERMANOS, S.A.'s technical and commercial team will be happy to address any questions or requests concerning micronizing processes and to find a solution that meets all your requirements, thanks to our valuable experience and know-how on the field of milling and micronizing processes.

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