Grinding Mills

AVAILABLE CUSTOM MADE
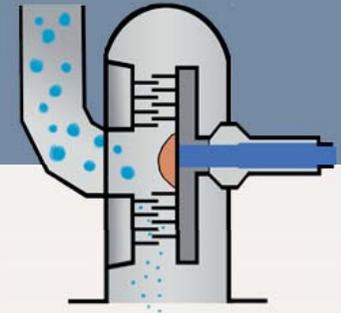
Pin mills range
4 standard models: UM160 UM315 UM500 UM630

MICRONIZATION OF POWDERS

▶ OPERATING SEQUENCE

The material supply is centralized. A magnetic separator is integrated upstream of the grinding chamber.
The grinding is done by impact between the rows of pins concentrically mounted on the rotary disc.
The particle size of the powder output is determined by three main factors:
1- Rotation speed
2- Number and shape of the pins
3- Passing air flow rate

UM160   UM315   UM500   UM630

Material inlet

Additional air inlet

Magnetic bars

Grinding chamber

Rotating pin disk

Rotation motor
Stepped pulley drive

Micronized material outlet

Models	UM160	UM315	UM500	UM630
Power in Kw	5.5	18.5	37	75
Theoretical flow in m³/hr.	250	1,000	2,000	3,600
Scale factor	0.25	1	2	3.6

*These flow rates are given on a production of icing sugar with an output particle size <130 microns for 98%.

POLY-MILL grinding mill offers the perfect solution for the grinding of a wide variety of bulk and powdered products.
Each grinding process involves a specific solution according to the desired powder particle size.
POLY-MILL pin mills are used for fine and ultra-fine grinding purposes (D50 = 5 microns) of crumbly or hard to grind dry materials.

▶ Example of granulometric curve

Grinding Mills

Ex AVAILABLE CUSTOM MADE
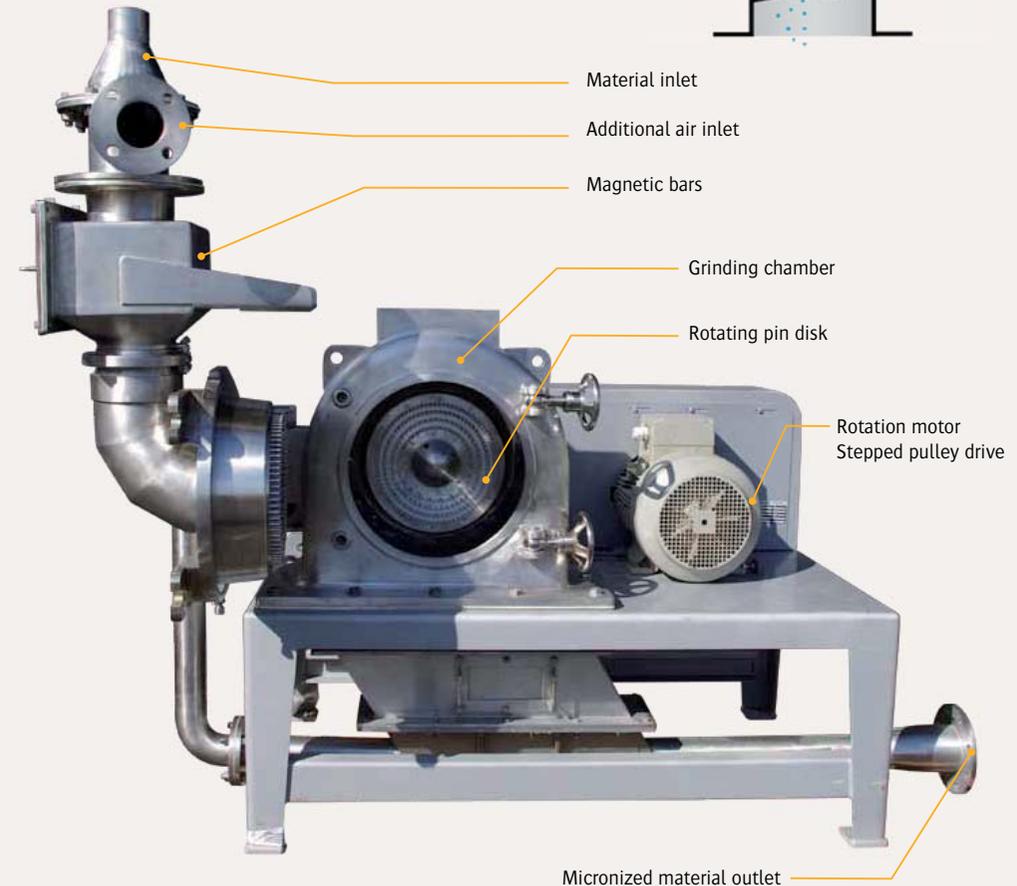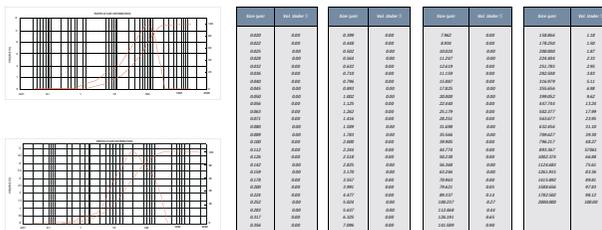
TECHNICAL CHARACTERISTICS

Designed with high mechanical strength, it does not only offer efficiency and safety of use, but also a grinding of a very high quality over long production periods.

▶ FEATURES

. Efficiency
. Safety of use
. Ease of maintenance and cleaning
. Proven multi-product experience
. No cross-contamination risk

▶ APPLICATIONS

. Food processing
. Spices
. Pharmaceutics
. Animal nutrition
. Chemicals
. Wood and plywood
. Mineral powders
. Plastics

Equipment
TEST CENTER
Available

▶ DIMENSIONS

| Models	A	B	C	D	ØD1	ØD2	E	F	G	KW	Max. Air Volume m³/hr.
UM160	625	645	714	1,340	76	165	660	1,210	1,115	5.5	400
UM315	910	1,035	614	1,524	168	280	910	1,470	1,105	18.5	1,500
UM500	1,185	1,035	614	1,800	219	336	910	1,470	1,280	37	3,200
UM630	1,450	1,335	614	2,065	219	336	1,215	2,620	1,462	75	5,500

Advantages
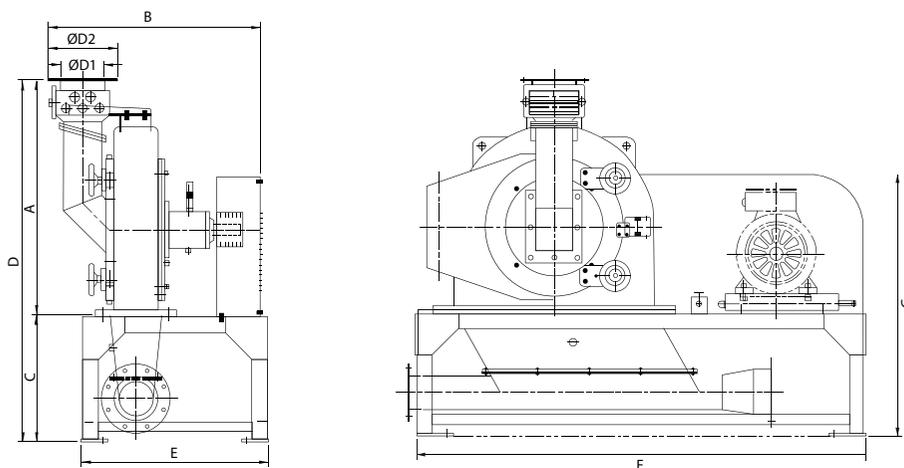
Engine configuration according to the space available:

▶ The engine mounting is carried out according to your implantation constraints.
In both configurations, the motor is located on an adjustable device ensuring the tension of the transmission belts.
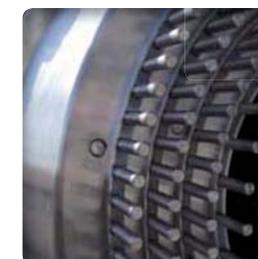
▶ **Easy access to the grinding chamber** thanks to a large door and **possibility of tool changing**: implanting of blades and calibrating cages
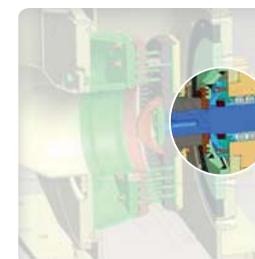
▶ **Reinforced shaft passage conception** ensuring high rotation velocity and total sealing

▶ **Ultra fine grain size** thanks to a very high rotation velocity: up to 6,000 rev./min.

▶ **Adjustable pin rows quantity**

Conception Examples

❱ PROCESS IN THE FOOD INDUSTRY

Many powders to be grinded have significant explosive hazards. These materials, generally organic powders, require the installation of safety against explosions. This type of installation ensures dosing, grinding, conveying and extraction of the powder with all ATEX safety requirements.

Powders additions as additives or specific options can be studied by our research department.

PROCESS
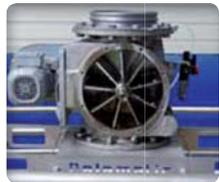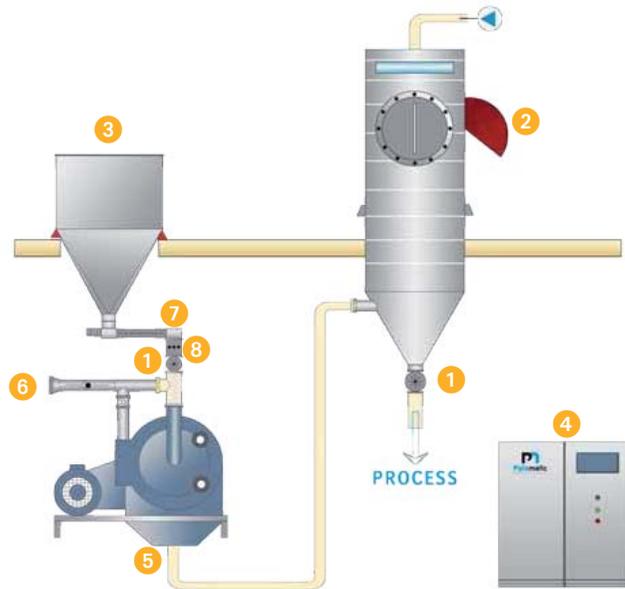
① **The rotary valve** ensures the isolation of the volumes

② **The explosion vent** allows the evacuation of the explosion pressure

③ **Feeding hopper** for the storage of raw material

④ **The control panel** ensures management of doses and flow rate

⑤ **The venturi** ensures the conveying of the micronized powder
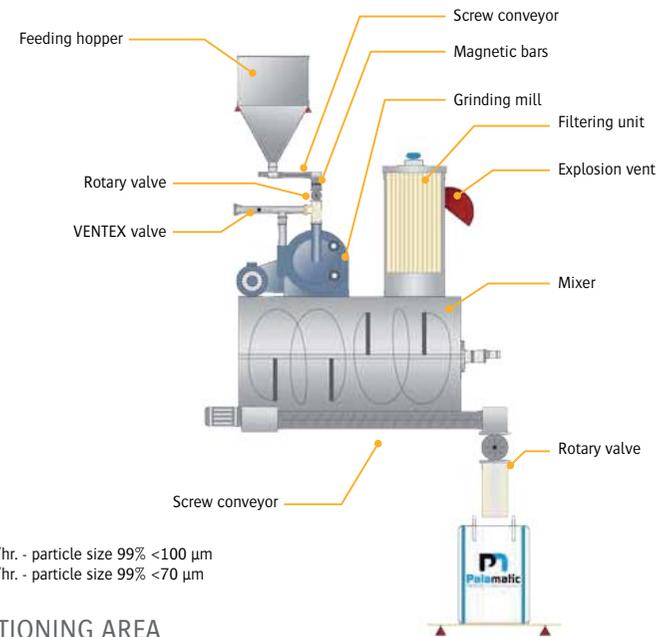
⑥ **VENTEX valve:** flame check valve

⑦ **The screw feeder** enables precise feeding of the mill

⑧ **Magnetic bars** for the guarantee of a material free of foreign particles

❱ PROCESS OF ICING SUGAR GRINDING

The icing sugar manufacturing process represents an important activity of PALAMATIC PROCESS grinding applications. Complete sets of grinding ensure the proper particle size, the correct dosing of anti-caking agents, the quality of final product and the drop of temperature of the material.

Its hygienic design is ideal for food applications.

Feeding hopper
Screw conveyor
Magnetic bars
Grinding mill
Filtering unit
Rotary valve
Explosion vent
VENTEX valve
Mixer
Screw conveyor
Rotary valve

Characteristics
- Flow rate 3,5t./hr. - particle size 99% <100 μm
- Flow rate 2,5t./hr. - particle size 99% <70 μm

▶ CONDITIONING AREA