

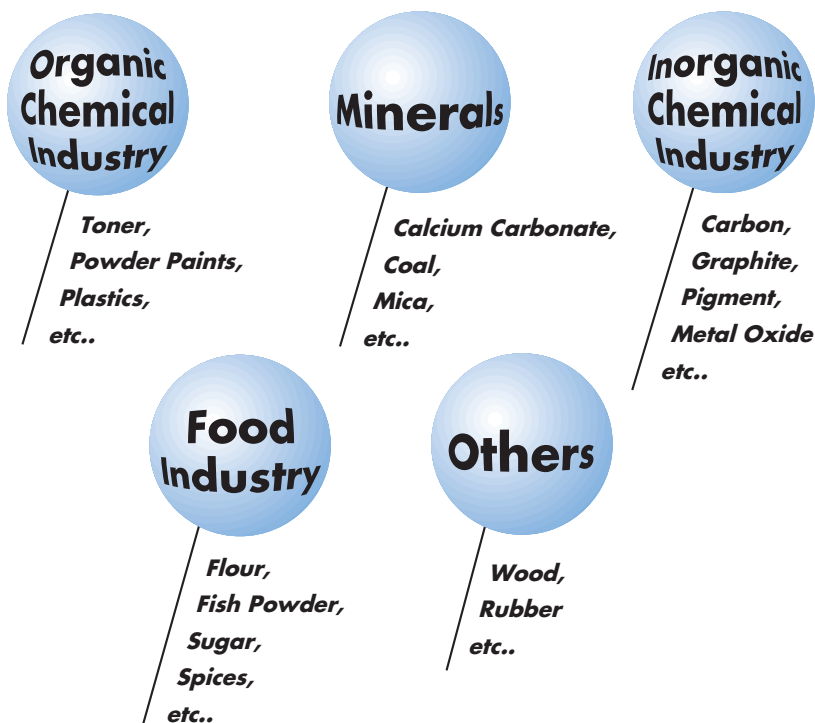
High Speed Rotor Mill / Super Rotor / Blade Mill

SUPER ROTOR / BLADE MILL

Applications

Highly efficient, fine particle processing system.

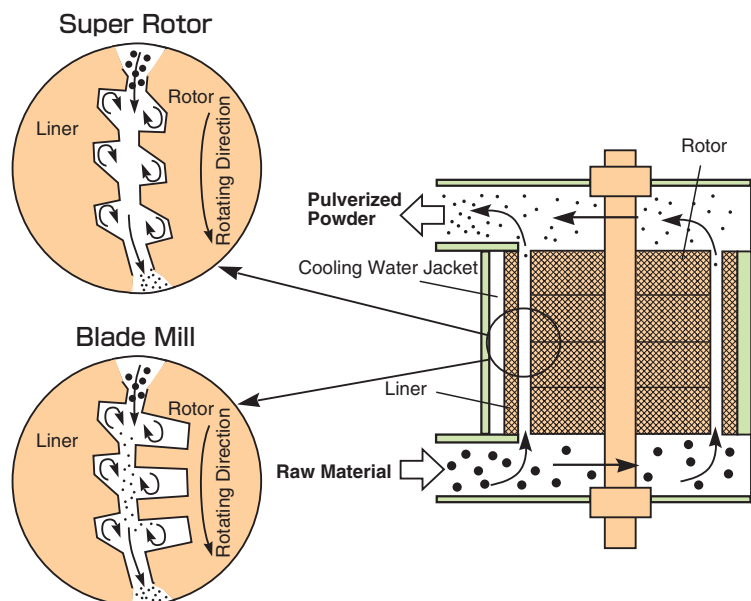
Particle sizes reduced from several mm's to several microns. The Super Rotor, with low operating cost and the ability to pulverize while collecting a narrow particle size distribution, is an optimal machine for producing high valued-added powders in the fine range.



Pulverizing Mechanism

High speed swirling action created by the proprietary designed grooves on the rotor and the liner

The raw material that is put into the machine passes between the rotor and liner (the crushing zone). The high-speed swirling action created by the troughs in-between the rotor and liner traps and pulverizes the powder. The swirling action causes the powder to remain in the crushing zone longer, thereby improving the fineness of the powder.



The Super Rotor- optimal for fine pulverizing of resins etc.. The Blade Mill-allows pulverization of elastic fibrous materials. In the gap between our fixed liner and proprietary high-revolution rotor with grooves, a strong swirling-action is created, which yields high-efficiency fine pulverizing.

The Super Rotor / Blade Mill is a unique rotor which makes possible stable pulverizing and long-term low-cost operation. Fine pulverization of powder can be achieved without over-pulverization, and the range of the finished powder will be very narrow.

Features

●Ultra-fine Pulverizing

Pulverizing down to the several micron size for use with a Jet Mill is possible with this system.

●Low Cost Operation

This system does not employ pressurized air, keeping operational costs low.

●High Product Recovery Rate, Narrow Particle Range

While pulverizing the powder over-pulverization of particles is avoided, resulting in a very narrow particle range and a high product recovery rate.

●Ease of Particle Size Adjustment

Particle size can be adjusted simply by changing the rotor speed.

●Pulverization of soft or ball-shaped particles

Even pulverization of colliding particles that is difficult, such as soft or ball-shaped particles, is possible.

●Simplification of the pulverization flow

Originally, Primary → mid → fine-level pulverization process was necessary. This has been incorporated into one process of pulverization (classification).

ex: Raw Material 2cm or smaller → finished product, average diameter 5 microns.

●Scalability

From small to large-scale machines, for its high peripheral velocity (~150m/s), large-scale systems (several hundred kg/h) are possible.

●Pulverization of heat-sensitive material

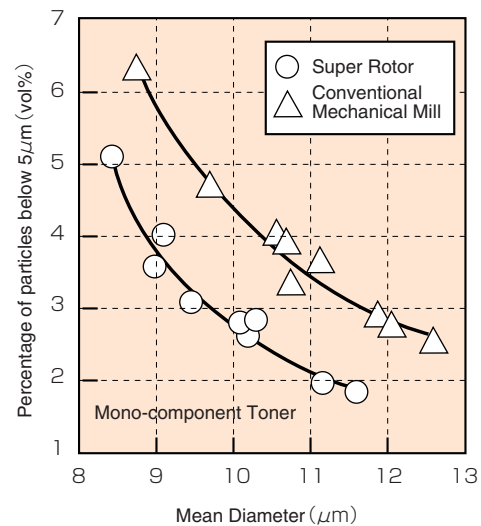
With an optional cold-air system heat-sensitive material (toner, powder paints, etc..) can be pulverized.

●Solid results from continuous production

The quick air flow produced during machine operation keeps powder from sticking to the inside of the machine, with particle range assured during short runs, and long-runs alike.

●Options

A hot-air system for drying while pulverization and a freezing while pulverizing are options.



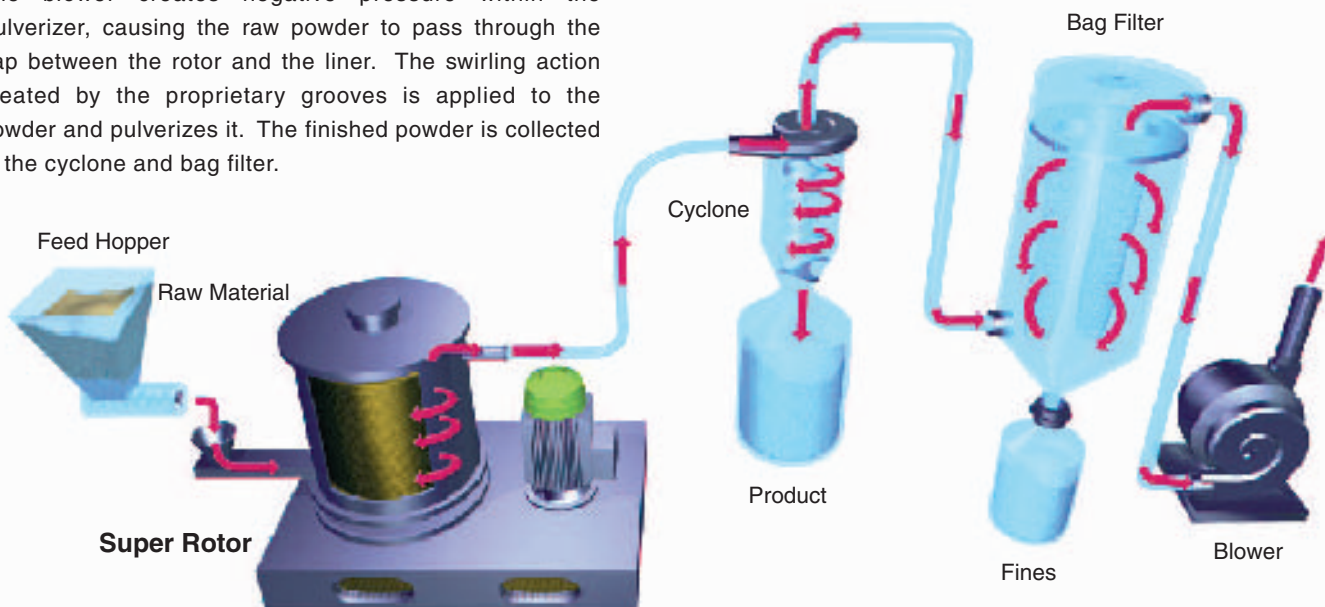
Examples of avoiding Over-pulverization

SUPER ROTOR / BLADE MILL

Pulverizer system flow

The grooves made with a proprietary design create a swirling action resulting in finely pulverized powder.

The blower creates negative pressure within the Pulverizer, causing the raw powder to pass through the gap between the rotor and the liner. The swirling action created by the proprietary grooves is applied to the powder and pulverizes it. The finished powder is collected in the cyclone and bag filter.



Pulverizing example

Ability to pulverize various types of powders

In addition to the standard configuration which has produced considerable results, the addition of a cool-air system and a brine circulator, low-heat pulverization can be performed. All areas that come into contact with the powder are abrasion-resistant, e.g. sintered Tungsten Carbide, and thus can also pulverize metals and ceramics.

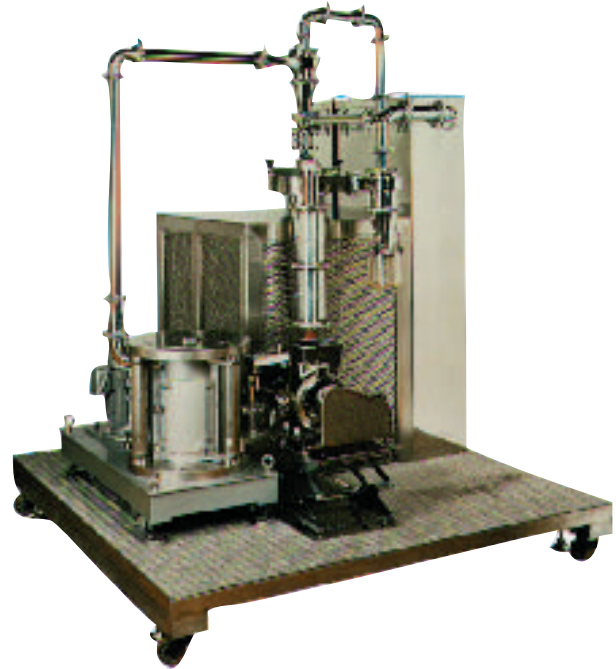
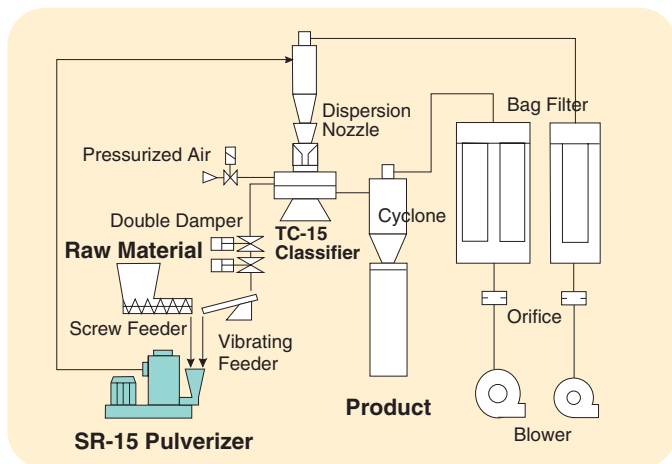
Raw Material	Model	Throughput (kg/h)	Raw Material Size		Product Size	
			D ₅₀ (μm)	D ₁₀₀ (μm)	D ₅₀ (μm)	D ₁₀₀ (μm)
Ion Exchange Resin	SR-15	2	—	1,200	9.6	40.3
Black Toner	SR-25	10	—	2,000	6.9	18.9
Hard Carbon	SR-25WC	10	26	88	9.8	26.2
Activated Carbon	SR-25WC	50	—	500	29.6	104
Wheat Flour	SRC-25	50	63.1	209	16.5	88.0
Epoxy Polyester Powder Paints	SR-25+TC-40	120	—	20,000	19.0	62.0
Color Toner	SR-15+TC15	2	—	2,000	8.9	20.0
Black Toner	SR-75+TC-40	95	—	2,000	7.9	16.0
Wheat Bran	BM-15	1	—	2,000	10	100
Buckwheat	BM-25	8	—	500	7.8	31
Scallop shell	BM-25	37	—	4,000	10.8	100
Carboxy cellulose	BM-15	0.3	—	5,000	18.3	88
Seed coat of grape	BM-25	10	—	10,000	18.5	176
Wood waste	BM-25	10	—	2,000	27.3	249
Cinnamon	BM-25	47	—	10,000	18.4	88
Glass fiber reinforced plastic	BM-15	4	—	1,000	7~18	62
PVC pipe	BM-25	48	—	5,000	—	710
Silica gel	BM-50	300	—	2,000	9.6	26

High Speed Rotor Mill / Super Rotor / Blade Mill

Integrated System

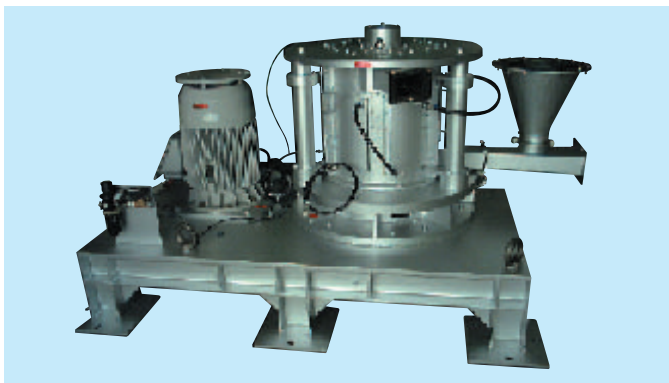
Ideal for small samples of various types of powder.

A highly-efficient combined system of a laboratory-use TC-15 classifier and a laboratory-use SR-15. The machines and pipes are all simple to clean.



Turbo Classifier TC-15 and Super Rotor SR-15 integrated system

Specifications



BM-50/SR-50



SR-75 at use in a Toner Plant.

Model	SR-15 / BM-15	SR-25 / BM-25	SR-50 / BM-50	SR-75 / BM-75	SR-100 / BM-100
Throughput (kg/h)	1~25	10~250	25~500	50~1,000	100~2000
Dimensions W×L×H (mm)	850×400×480	1295×835×845	2090×1160×1340	2870×1430×1613	3300×1750×2200
Weight (kg)	165	800	3,000	5,000	12,000
Revolutions (min ⁻¹)	~15,000	~12,000	~5,500	~4,000	~3,000
Air Flow Rate (m ³ /min)	0.5~3	4~8	8~20	15~30	30~60
Motor Horse Power (kw)	3.7~5.5	11~18.5	30~45	55~75	110~132