

Versatile combined fine grinding system

Fine grinding any material in a moment without changing its flavors colors!

AIBIM



Air stream fine grinding mill packed with original technology.

Creates high-grade powder with better flavor, taste, and color.



[AIBIM] means ?

AI Air Impact

BI Blade Impact

M Mill·Mixer

Fine grinding principle and features

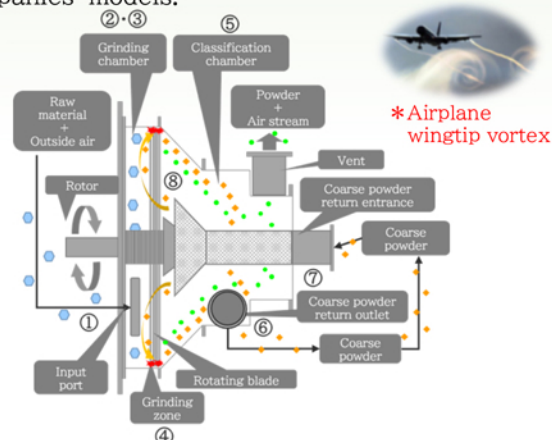
- ① The raw material is supplied to fine grinding mill body in a circumferential direction.
- ② It rotates at high speed with the swirling flow generated by the high-speed rotor in the machine and is introduced into the grinding chamber.
- ③ In the grinding chamber, the particles are accelerated from the center of the rotor in the radial direction of the rotating blades and collide with the particles swirling around the outer periphery at high speed.
- ④ The tangential vortex formed after the blade rotates and a vortex of air in the normal direction similar to the wingtip vortice of an airplane formed on the surface of a blade are rotated at high speed by the swirling airflow generated by the rotation of the blade. The vortex and swirling airflow amplify the particle collision at an accelerating rate, and fine grinding proceeds.
- ⑤ Particles crushed by particle collision move to classification zone.
- ⑥ Only coarse particles are once discharged to the outside of fine grinding mill by a high-speed swirling air stream.
- ⑦ The discharged coarse particles return to fine grinding mill rotating rotor from the reintroduction line arranged on the rotating shaft.

Point

- The rotating rotor, rotating blade generate a swirling flow.
- It has the role of accelerating the particles in the radial direction.
- Particle collision (autogenous fine grinding) by swirling flow is the main grinding action.

Mechanical & Structural features

- No foreign matter mixed in since there are no collision between metal parts.
- It generates less heat and does not require a cooling device such as a chiller.
- Easy particle size adjustment by inverter control.
- The automatic classification system sharpens the particle size distribution.
- Space saving is possible due to the compact design.
- The sanitary structure makes it easy to disassemble and clean.
- It uses 1/2 to 1/3 of the small motors of other companies' models.



※ The principle is different from impact pulverization in which particles collide with a blade or repulsion plate.

- ⑧ The reintroduced coarse particles are accelerated by the rotation of the blades and arrive at grinding chamber, where they collide with each other and are fine grinding again.

- ① Since the temperature rise is small, it is suitable for fine grinding of heat-sensitive materials.
- ② Since it consumes less power, running costs are low.
- ③ Since the machine wears less, it suppresses the occurrence of contamination.

Fine grinding area and features depending

[Can be assembled into two machines types]

- One unit can handle a wide variety of raw materials regardless of whether they are food or industrial.
- We can meet various manufacturing requirements from small-lot production of high variety to mass production.

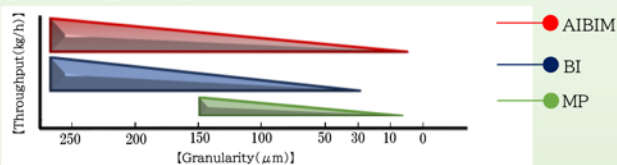
[Airtag mill parts] mounted

- 1) Ingredients with high oil content such as soybeans and coffee beans that easily adhere.
- 2) Create single micron to 10 μm size samples.
- 3) Fine grinding green tea to 10 μm or less, etc.

[BI mill parts] mounted

- 1) Mass fine grinding of powder over 15 μm.
- 2) Manufactures rice flour with less damaged starch of about 60 μm to 100 μm.
- 3) Raw materials for resins that dislike heat generation, etc.

[Grinding area]



[Comparison of model size and grinding capacity when each part is mounted]

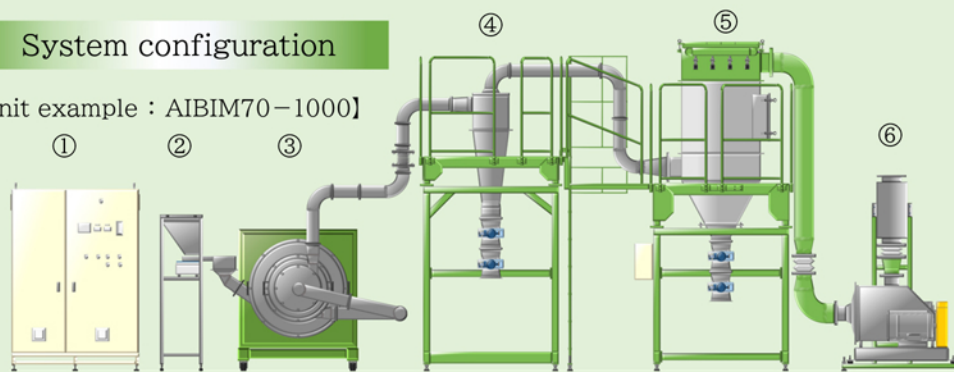
Airtag mill parts	Grinding Capacity		BI mill parts	Grinding Capacity	
Model	For 25 μm	For 60 μm	Model	For 25 μm	For 60 μm
MP2-350	2kg/h	5kg/h	BI2-350	5kg/h	10kg/h
MP10-550	10kg/h	20kg/h	BI10-550	15kg/h	30kg/h
MP20-700	30kg/h	60kg/h	BI20-700	50kg/h	90kg/h
MP70-1000	80kg/h	200kg/h	BI70-1000	150kg/h	300kg/h

AIBIM	粉砕量	
Model	For 25 μm	For 60 μm
AIBIM2-350	The same amount of processing as the Airtag mill and BI mill depending on the combination of parts.	
AIBIM10-550		
AIBIM20-700		
AIBIM70-1000		

• Processing amount may vary significantly depending on the raw material and target particle size. Thinning e stated grinding capacity should only be viewed as a guide.

System configuration

[Unit example : AIBIM70-1000]



- ① Control Pane
- ② Electromagnetic Feeder
Raw material input apparatus
- ③ Fine grinding mill body
- ④ Cyclone type powder recovery device
(With automatic discharge butterfly valve)
- ⑤ Filter unit
(With automatic discharge butterfly valve)
- ⑥ Suction blower

Model	Grinding Motor	Grinding Capacity	Fine powder Recovery unit	Input port size	Supply device Supply volume	Utility	Occupied area Device mass
AIBIM 2-350	2.2kw	2~5 kg/h	Batch type	21×36mm	Electromagnetic Feeder 7L	AC200V·3-Phase·20A Supply air None	L2600×H2200×W800 280kg
AIBIM 10-550	7.5kw	10~20 kg/h	Batch type	21×46mm	Electromagnetic Feeder 60L	AC200V·3-Phase·100A Supply air 0.5MPa 15Nℓ/min	L3000×H2200×W3100 570kg
AIBIM 20-700	15kw	30~60 kg/h	Continuity	36×63mm	Electromagnetic Feeder 60L	AC200V·3-Phase·150A Supply air 0.5MPa 240Nℓ/min	L4000×H4000×W4000 2300kg
AIBIM 70-1000	55kw	100~200 kg/h	Continuity	46×131mm	Electromagnetic Feeder 60L	AC200V·3-Phase·500A Supply air 0.5MPa 270Nℓ/min	L6000×H4500×W6000 3700kg

- ◆ Processing amount may vary significantly depending on the raw material and target particle size.
Threading e stated grinding capacity should only be viewed as a guide.
- ◆ The supply air is used for the butterfly valve and the automatic air pulse jet for removing the filter.

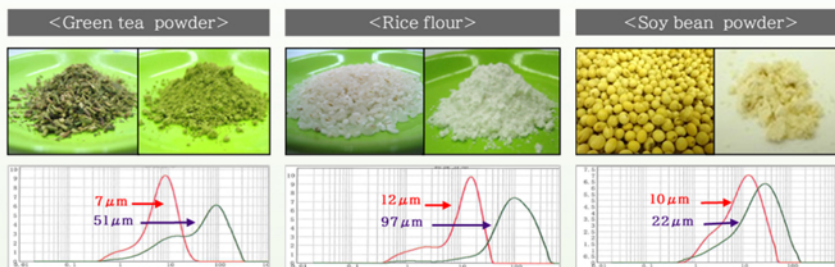
- ◆ Continuous butterfly valve discharge is available as an option.
- ◆ The equipment will be delivered on-board, and transportation costs, machine installation, electrical work, and air piping work will be charged separately.

Processing Example

Raw material	Particle size (d0.5)	Raw material	Particle size (d0.5)	Raw material	Particle size (d0.5)	Raw material	Particle size (d0.5)	Raw material	Particle size (d0.5)	Raw material	Particle size (d0.5)
Rice	12.3 μm	Green onion	58.5 μm	Soybeans	10.5 μm	Dried bonito shavings	12.4 μm	Bee pollen	21.0 μm	Acrylic resin	18.8 μm
Soaked rice	59.4 μm	Japanese horseradish	16.3 μm	Black soybean	17.1 μm	Dried mackerel shavings	12.1 μm	Bamboo grass	27.0 μm	FRP	36.8 μm
Glutinous Rice	18.0 μm	Ginger	22.1 μm	Coffee beans	21.9 μm	Dried small sardines	26.7 μm	Bamboo chips	39.9 μm	Carbon black	37.3 μm
Five main cereals rice	29.1 μm	Shitake mushroom	17.7 μm	Dried Okara soy pulp	20.7 μm	Dried shrimp	23.8 μm	Apatite	6.6 μm	Carbon fiber	6.3 μm
Green tea	7.4 μm	Dried cooked rice	24.8 μm	Vanilla beans	59.3 μm	Dried sea cucumber	26.2 μm	Vitamin B2	10.3 μm	Wood chips	27.5 μm
Roasted green tea	10.9 μm	Mustard oil extraction residue	38.1 μm	Apple pomace	15.7 μm	Dried kelp	39.2 μm	Salmon bone	9.1 μm	Chaff	50.7 μm
Mulberry tea	6.6 μm	Lotus root	34.3 μm	Tigemuts	76.1 μm	Dried seaweed	14.8 μm	Codfish bone	8.1 μm	Boron oxide	41.3 μm
Tencha green tea	13.3 μm	Mignonette vine	7.8 μm	Corn gluten meal	27.9 μm	Fish scale	78.0 μm	Calcined calcium	10.0 μm	Fluorine resin	360.0 μm
Black tea	11.2 μm	Turmeric	25.2 μm	Purple sweet potato	30.1 μm	Shark cartilage	17.8 μm	Sheep placenta	14.0 μm	Cellulose	21.5 μm
Stalks tea	25.8 μm	Dried bracken	24.3 μm	Dried kale	10.1 μm	Corbicula shell	9.8 μm	Egg shell	7.7 μm	Copper sulfate	13.7 μm

Features of finished powders

- The combination of airstream fine grinding and our original technology enables production of uniform powder without sieving.
⇒ Even mixed raw materials for tea leaves and stems can be finely crushed uniformly.
- By autogenous fine grinding by air stream, powder particles are finished in a round shape.
- Easy particle size adjustment by inverter control.
- Achieves a sharp particle size distribution.



User Comments

- It is easy to particle size can be easily adjusted and various products can be processed.
- It is easy to dismantle and cleaning of the machine.
- Smoother feel than powders made by other companies with fine particle size.
- Brightly colored powder with less heat history than other products.
- Since the fine grinding can be performed without increasing the temperature, the introduction cost of auxiliary equipment such as a cooling device can be reduced.
- The variation in particle size is small even when processed in large quantities.

Contact

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