

High-speed rotor type air classifier

Turbo Classifier

Precise and efficient classification of high-performance materials over a wide range (0.5 to 100 μm)

<https://www.nisshineng.co.jp>

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TC-60

Submicron classification has been realized for the first time in the world. Powders in a diverse range of fields demanding high quality are accurately and efficiently classified over a wide range (0.5 to 100 μm).

Important role of Turbo Classifier

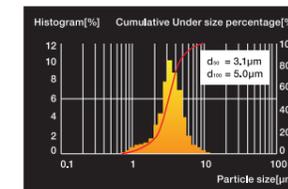
- Adjusting metal powder particle size (particle size reduction)
- Adjusting particle size of products resistant to metal contamination (with urethane lining for main powder contact area)
- Classification of highly cohesive powder prone to clogging of a sieve
- Removal of fine powder in products (improved quality and handling)
- Removal of coarse particles that cannot be removed with classification mechanism built into a pulverizer
- Classification of highly abrasive powders such as ceramic powders
- Adjusting particle size of products to prevent moisture absorption and oxidation

Overview

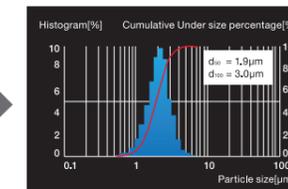
Turbo Classifier realizes high-accuracy classification of particles, controlling characteristics of new materials including fine ceramic, polymer, complex material and electronics material, according to the purpose of their use. The epoch-making classification system achieves the minimum classification diameter of as small as 0.5 μm , utilizing movement of particles, which realizes ultra fine diameter of the particles to be classified, minimal distribution range of the particle size, full control of top size or bottom size of the particle diameter, high purification of the main ingredient and selected separation of the particle shape. It will appeal the excellent functions in every industrial field including particle size adjustment required in the most advanced industry covering plastic, metal, ceramics and food.

Examples of classification

Iron alloy

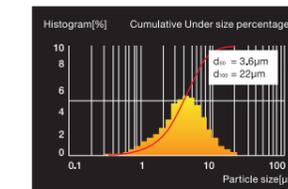


Raw material

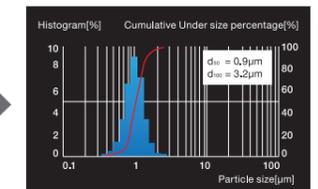


Product

Silver powder

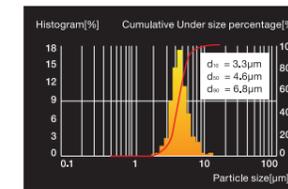


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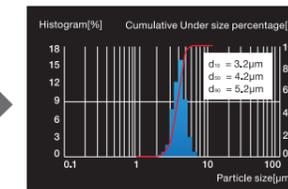


Product

Silica gel

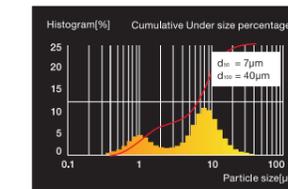


Raw material

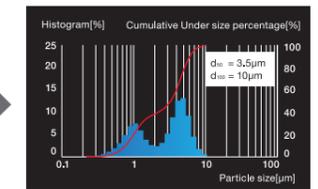


Product

Secondary battery material

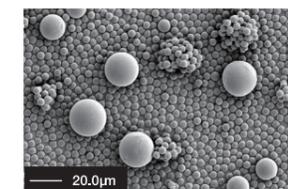


Raw material



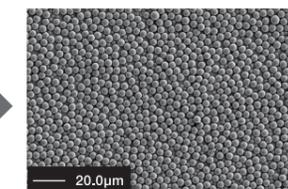
Product

Filler powder



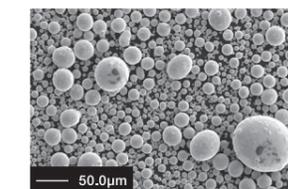
Raw material

Classification which suppresses coarse particle contamination possible



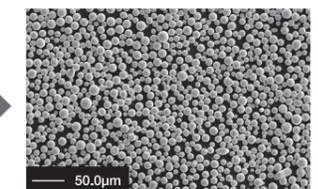
Product

Solder powder



Raw material

Minute particle classification with fewer scratches and product oxidation possible



Product

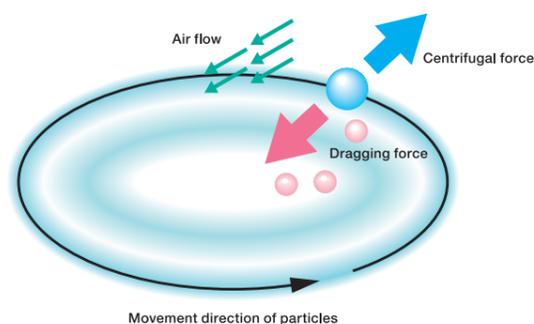
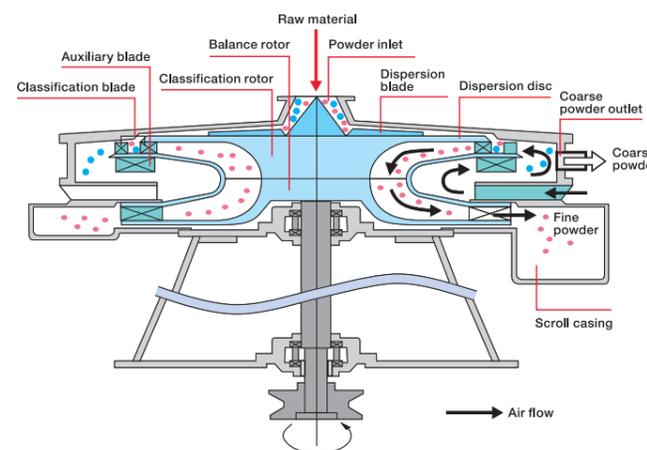
Structure and features

Powder fed to the raw material inlet is sucked into the classifier and then uniformly distributed by the dispersion blades and dispersion disk, before being fed to the classification zone. Each particle is then subjected to centrifugal force generated by the rotation of the rotor, and the drag force of air flowing toward the center. Classification involves moving coarse particles to the outside with centrifugal force, and moving fine particles to the inside with drag.

The cut point of Turbo Classifier is adjusted by changing the rotation speed of the classification rotor (centrifugal force).

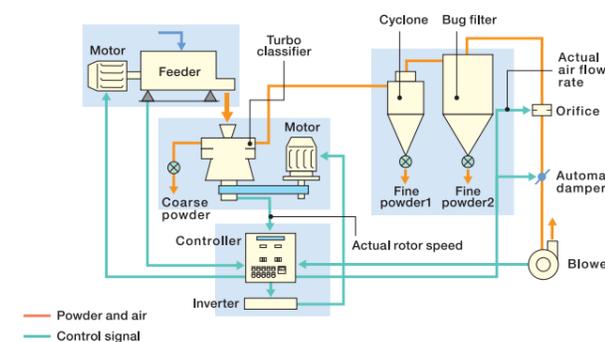
For the classification of highly abrasive powder, Nisshin Engineering has prepared a type in which the main powder contact area is lined with highly abrasion-resistant urethane rubber, and a special type processed with materials such as ceramic and cemented carbide.

Structural cross section

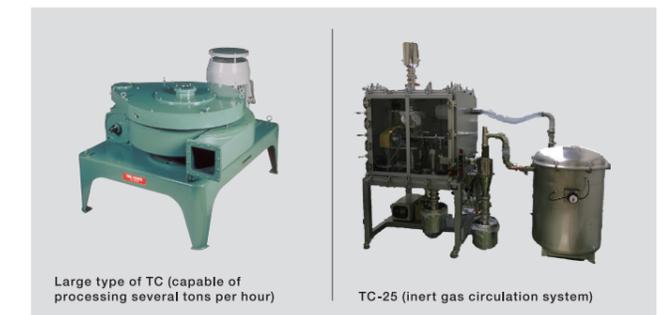


Easy operation
High precision and efficiency
High dispersibility
High production stability
Large capacity despite compact size
Abrasion resistance compatible
Accurate classification in the inert gas

System Flow



Equipment Photos



Lineup

Models	Cut point [μm]		Feed rate [kg/h]	Rotor speed [min^{-1}]	Airflow rate [m^3/min]	Power consumption [kW]	Dimension WxDxH[mm]	Weight [kg]
	Fine type	Coarse type						
TC-15*	0.5 ~ 20	2 ~ 100	~ 10	700 ~ 11,000	1 ~ 3	1.5 / 3.4	1,100 x 1,000 x 1,400 (System size)	400
TC-25*	0.6 ~ 30	2 ~ 100	~ 50	500 ~ 7,000	3 ~ 9	2.2 / 12.5	3,000 x 1,500 x 1,900 (System size)	750
TC-40	1 ~ 50	3 ~ 120	~ 200	300 ~ 6,000	15 ~ 35	3.7 ~ 15	1,200 x 1,000 x 1,000 (Body size)	1,000
TC-60	1.5 ~ 50	5 ~ 120	~ 1,000	300 ~ 5,000	30 ~ 100	7.5 ~ 75	1,600 x 1,400 x 1,200 (Body size)	2,000
TC-100II	2 ~ 50	5 ~ 120	~ 4,000	300 ~ 2,500	70 ~ 120	22 ~ 37	2,500 x 1,700 x 1,500 (Body size)	3,000
TC-100IV	2 ~ 50	5 ~ 120	~ 8,000	200 ~ 2,000	150 ~ 300	45 ~ 75	2,500 x 1,700 x 2,000 (Body size)	5,000

*As TC-15,25, there are automatic operation N type and manual operation M type.