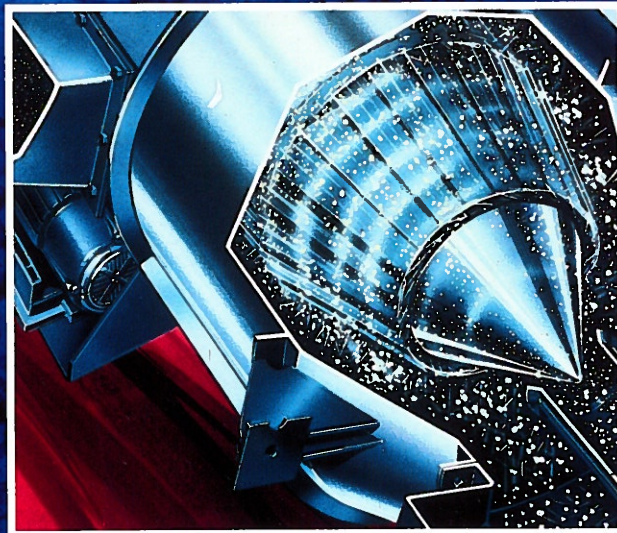


MICRON SEPARATOR

MICRON POWDER SYSTEMS



HOSOKAWA MICRON POWDER SYSTEMS

Summit, New Jersey

Combining the resources of

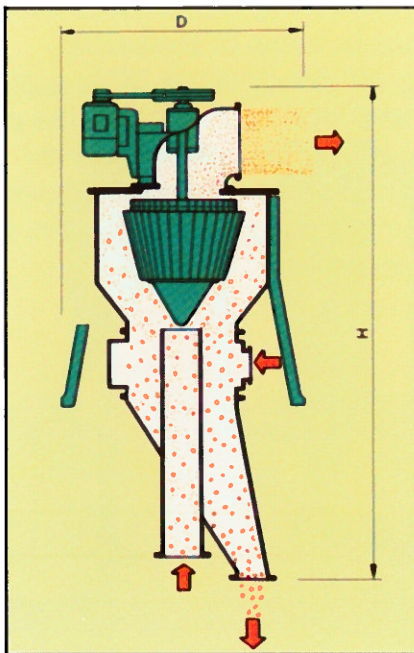
ALPINE • MIKRO • MAJAC • MICRON • VRIECO-NAUTA

Micron Separator

The Micron Separator is a mechanical centrifugal air classifier that provides precise, efficient and reliable separations of materials.

Operating Principle

The Micron Separator classifies particles by balancing the centrifugal force of the rotor and the centripetal force of the air. Material to be separated is pulled in by the fan through the inlet duct and up to the rotor, where the opposing two forces classify it. Fine particles, more susceptible to centripetal force, are carried on the air current through the rotor and then discharged through the upper outlet duct. Coarse particles, more susceptible to centrifugal force, flow down the inside wall of the machine and go out the coarse particle discharge. Since the rotor speed determines the centrifugal force, particle size can be easily adjusted by changing the rotor speed.



The Micron Separator is adjustable over a wide range of particle sizings from 3 to a few hundred microns for wide applications. It can handle spheres, flakes and fibers, both organic and inorganic.

Sharp Cut Point, Broad Classification Range

The Micron Separator is unique in the field of fine powder classification. Conventional air classifiers are not suitable when a broad range of particle cut sizes is required. Some classifiers have high capacities for coarse range particles but cannot efficiently classify fines below 50 μ m. Others can classify the fine range particles but not the larger particles. Still others have low efficiency regardless of cut point.

The Micron Separator, with its broad applications range, offers high capacity, high efficiency and cut points ranging from 3 to 150 μ m. The cosmetic, chemical, food, pharmaceutical and other industries have made the Micron Separator their choice for the classifying process. These separators operate with Newton efficiencies from 60% to 90% while achieving high capacities.

Wide Classification Range

Select any particle size between 3 and 150 μ m. Classify spherical, flaky and fibrous particles. Separate fiber from recycled rubber powder or classify sawdust. The Micron Separator can classify any material, organic or inorganic.

High Precision Classification

The classifying rotor uses the principles of fluid dynamics to create a stable centrifugal force field. This prevents the remixing of coarse particles (grit) and ensures precise classification.

High Recovery Rate of Fine Particles

The unique rotor design, combined with the secondary air stream, recovers up to 90% of fine particles.

Simple Operation and Particle Size Adjustment

Simple operation and design eliminate the need for intense training. Particle size is easily adjusted by changing the rotor speed.

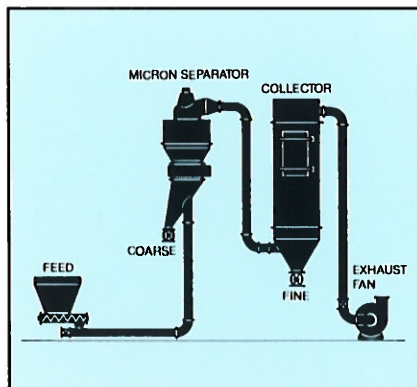
Compatible With Various Powder Processing Machines for Closed-Circuit Operation

The capacity of a size reduction unit can double when installed side by side with a Micron Separator. Closed-circuit operation permits the grinding of heat sensitive materials or products with low softening points.

MICRON SEPARATOR SPECIFICATIONS						
Model	Motor Size (HP)	Rotor Speed (Max. RPM)	Air Volume (CFM)	Capacity (Lbs./Hr.)	Dimensions (D in./H in.)	Weight (Lbs.)
Standard						
MS-1	1	2,300	350-550	330	28/59	330
MS-2	3	1,900	900-1,400	770	33/85	650
MS-3	5	1,500	1,800-2,800	1,650	47/106	1,300
MS-4	7.5	1,100	3,500-5,300	3,300	61/126	2,650
MS-5	15	800	7,000-10,500	6,600	91/217	6,500
MS-6	20	350	14,000-21,000	13,200	110/276	13,200
MS-7	30	250	28,000-42,000	26,400	138/354	26,500
High Speed						
MS-1H	5	5,000	280-425	110-265	28/59	330
MS-2H	7.5	4,000	700-1,050	330-650	33/85	650
MS-3H	20	3,000	1,400-2,500	650-1,550	47/106	1,300
MS-4H	30	2,200	2,800-4,200	1,300-2,650	61/126	2,650
MS-5H	40	1,200	5,300-7,000	2,650-4,400	91/217	6,500

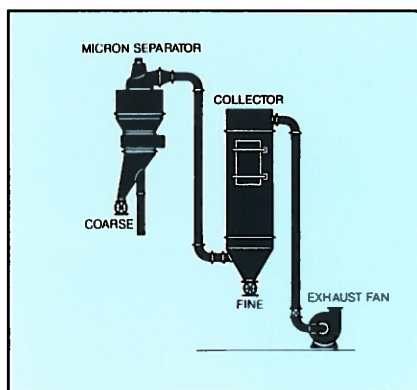
All figures are approximate.

Field Proven Classification of Dry Particles



Standard Classification System

This is the standard setup of the Micron Separator with an ancillary feeder, collector and fan. Material fed into the ducting by the feeder is air conveyed to the Micron Separator. The classified coarse is discharged through the outlet in the conical chute, while the classified fines are conveyed pneumatically into the collector. Many of these systems have been installed for the classification of cement, zirconium sand, alumina, activated carbon and coke.



Grinding and Classifying System

This is a typical setup in combination with a mechanical impact mill. The use of the Micron Separator with any type mill will considerably increase the performance of the mill. The system shown at right grinds and classifies such materials as chalk, talc, clay and graphite to produce fine particles.

MICRON SEPARATOR APPLICATIONS*

Material	Model	Feed (Lbs./Hr.)	Product Fineness
Calcium Sulfide	MS-1	440	BD = 0.78 g/cc
Kaolin	MS-1	130	99% < 10 μ m
Magnesium Hydrate	MS-1	260	90% < 5.0 μ m
Silicon Carbide	MS-1	260	90% < 5.0 μ m
Acrylic Resin	MS-2	770	2% < 10 μ m
Aluminum Hydroxide	MS-2	440	All < 20 μ m
Bauxite	MS-2	450	92% < 5 μ m
Catalyst	MS-2	440	45% < 44 μ m
Graphite	MS-2	330	97% < 43 μ m
Graphite (Artificial)	MS-2	220	98.6% < 20 μ m
Iron Oxide	MS-2	330	98% < 7 μ m
Stainless Steel Powder	MS-2H	500	All < 5 to 45 μ m
Stearic Acid	MS-2H	110	All < 10 μ m
Toner	MS-2H	22 to 33	D50 = 10 to 13; Max. 20 μ m
Activated Carbon	MS-3	1100	All < 74 μ m
Antimony Trioxide	MS-3	1100	All < 43 μ m
C.M.C.	MS-3	440	99% < 74 μ m
Granular Sugar	MS-3	2200	All < 30 μ m
Graphite	MS-3	660	97% < 50 μ m
Gypsum	MS-3	770	All < 7 μ m
Lead Monoxide	MS-3	1100	All < 43 μ m
Perlite	MS-3	770	98% < 10 μ m
White Carbon	MS-3	1550	99.5% < 43 μ m
Epoxy Resin	MS-3H	800	All < 10 μ m
Silica	MS-3H	1100	All < 12 μ m
ABS Resin	MS-4	2850	All < 250 μ m
Activated Clay	MS-4	4400	98% < 10 μ m
Diatomaceous Earth	MS-4	2200	99% < 150 μ m
Ferro Silicon	MS-4	1760	D50 = 5 μ m
Fish Meal	MS-4	5300	80% < 177 μ m
Magnesium Oxide	MS-4	4400	95% < 43 μ m
Manganese Dioxide	MS-4	4400	90% < 10 μ m
Phenolic Resin	MS-4	1750	99.8% < 43 μ m
Talc	MS-4	2400	98% < 10 μ m
Wheat Flour	MS-4	3300	All < 17 μ m
Zinc	MS-4	1750	97% < 10 μ m
Clay	MS-4H	5500	99% < 10 μ m
Iron Oxide (Yellow)	MS-4H	1300	98% < 10 μ m
Quartz	MS-4H	4400	97% < 10 μ m
Super Absorbant Polymer	MS-4H	8800	1% < 10 μ m
Bentonite	MS-5	14400	1.4% < 43 μ m
Calcium Carbonate	MS-5	4400	D50 = 4 μ m, 99.99% < 43 μ m
Coal	MS-5	16500	All < 53 μ m
Fly Ash	MS-5	33000	D50 = 7.5 μ m, 35000 cm ² /g
Zircon Sand	MS-5	6600	All < 53 μ m
Carbon Black	MS-5H	6600	99.99% < 43 μ m
Iron Oxide (Red)	MS-5H	3300	99% < 40 μ m
Chalk	MS-5(2)	16000	All < 10 & 20 μ m
Liminte	MS-6	11000	99.5% < 43 μ m

Note on mesh equivalents: 100 mesh = 150 μ m; 200 mesh = 75 μ m; 325 mesh = 45 μ m; 1 μ m = 1 \times 10⁻⁶ meter
 *Application data is based on field installations. These values are estimates and not performance guarantees.

We Keep You Up and Running

Our Aftermarket Services team brings together our experience and resources to keep your production lines up and running. Only Hosokawa Micron Powder Systems has the 70 years of powder processing experience, depth of applications knowledge, scope of field service capabilities, manufacturing facilities and Technical Center to accomplish this.

Our services encompass process/application engineering, mechanical field service, electrical/controls design as well as full in-house rebuilding and refurbishing capabilities.

We work with your operators, engineers, technicians and managers on process optimization, troubleshooting, field service, pro-active preventive maintenance, user workshops, technical seminars, consultation, etc.

When you are ready to automate, integrate, modernize or expand your powder processing facility, our technical and engineering experts are at your service—ready to help.

Aftermarket Services are complemented with our O.E.M. quality parts, many of which are maintained in inventory for one day shipment.

The combined resources of our Aftermarket Services are designed to maximize your operating efficiencies today and tomorrow.

Powder Processing Test Equipment and Systems Available in our Technical Center

Mechanical Impact Mills

- Mikro-Pulverizer® Mill
- Micron Victory Mill
- Alpine® UPZ Fine Impact Mill
- Alpine® Contraplex® Wide Chamber Mill

Knife Cutting Mills

- Alpine® Rotoplex Granulator

Mechanical Impact Classifier Mills

- Mikro-ACM™ Mill

Fluid Energy Classifier Mills

- Alpine® AFG Jet Mill

Air Classifiers

- Alpine® Turboplex ATP Ultra-fine Classifier
- Alpine® Ventoplex Classifier
- Alpine® MZR Classifier
- Alpine® Multiplex Zig-Zag Classifier
- Acucut® Classifier
- Micron Separator

Mixers and Dryers

- Vrieco-Nauta™ Conical Screw Mixer
- Vrieco-Nauta™ Vacuum Dryer
- Micron Dryer

Lab/Pilot Scale Processing

- Alpine® 100 AFG/50 ATP
- Alpine® 100 UPZ-II Mechanical Impact Mill
- Alpine® 25 MZ Hammer Mill
- Mikro-ACM™ Classifier Mill
- Mikro-Bantam™ Mechanical Impact Mill
- Mikro-Samplmill™ Mechanical Impact Mill

Analytical Devices

- E-SPART Analyzer
- Micron Air Jet Sieve™
- Micron Powder Characteristics Tester
- Coulter Counter
- Granulometre
- Hegman Scale
- Optical Microscope
- SediGraph
- Fisher Sub-Sieve Sizer

Hosokawa Micron Powder Systems
10 Chatham Road
Summit, NJ 07901 USA
Tel: 908-273-6360
Fax: 908-273-7432



HOSOKAWA MICRON POWDER SYSTEMS

Hosokawa Micron Powder Systems is a member of the Hosokawa Micron Group, responding to global needs through emphasis on materials science and engineering. The Group is an international provider of equipment and systems for powder processing, thermal processing, environmental protection, and plastics processing. The Group maintains facilities for research, engineering, manufacturing, and service in each of the world's major industrial markets.