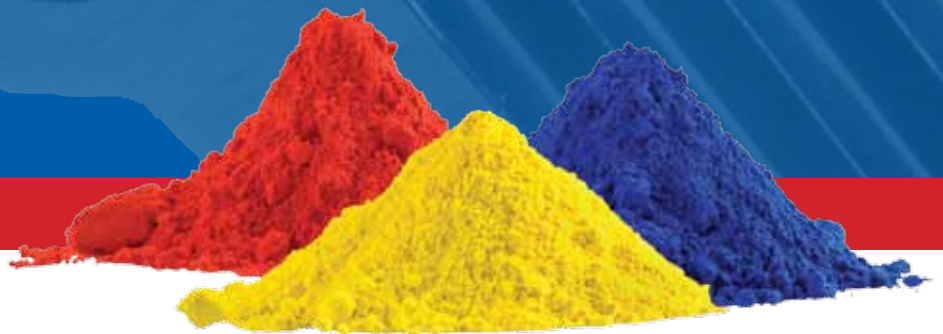
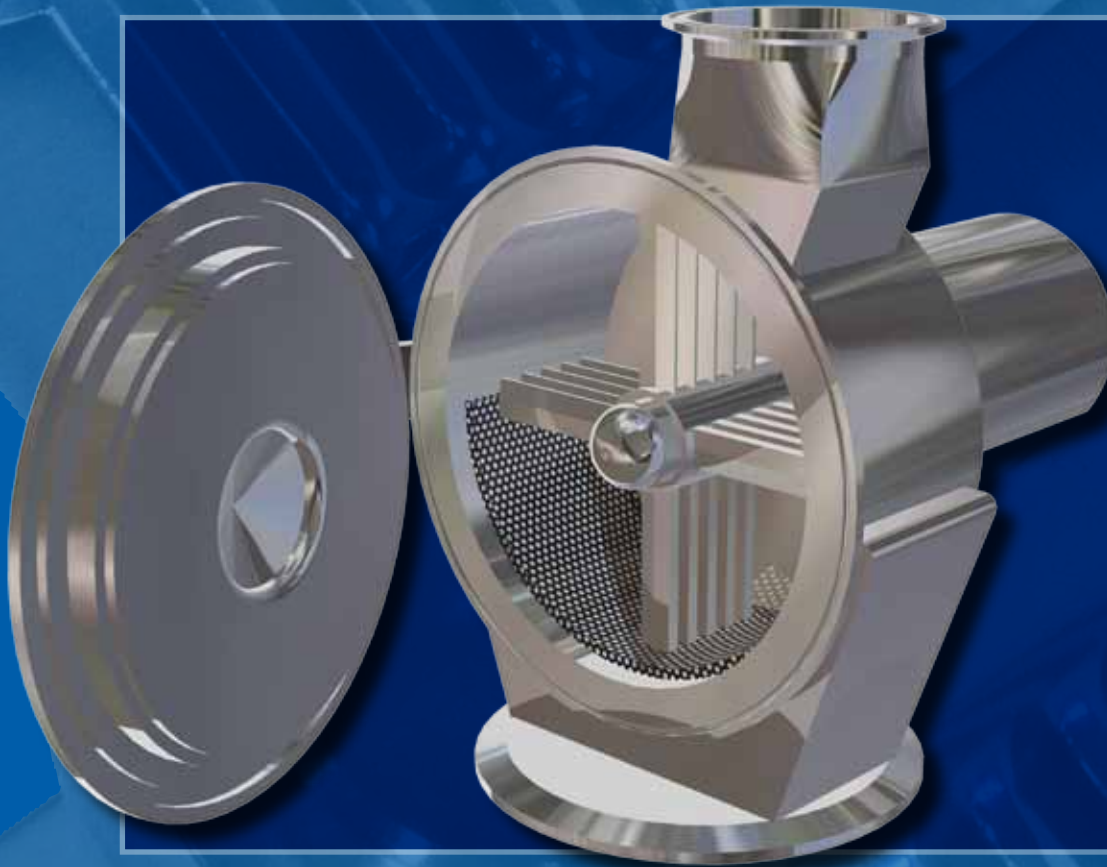


# MIKRO<sup>®</sup> UMP Knife Milling System



**HOSOKAWA**  
**MICRON POWDER SYSTEMS**

*Combining the resources of*

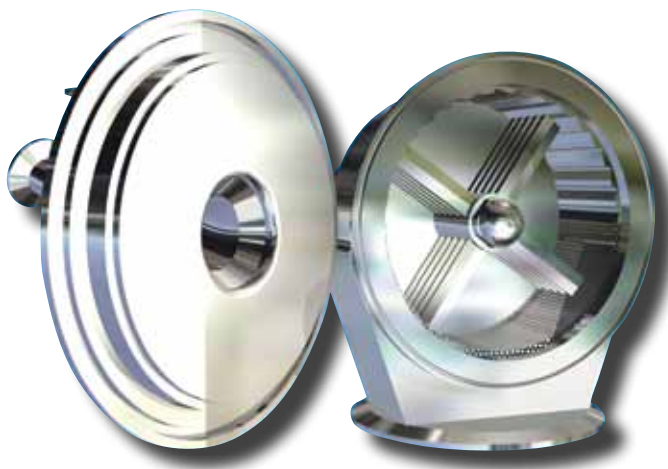
ALPINE • MIKRO • MAJAC • MICRON • VRIECO-NAUTA

## COARSE GRANULATION & MEDIUM GRINDING

**THE MIKRO® UMP KNIFE MILLING SYSTEM** is a compact, high speed impact mill designed for coarse to medium size reduction for pharmaceutical and food applications.

### DESIGN & FEATURES:

- Designed for coarse to medium milling - 1,000 µm to 100 µm
- Lab & production models available from 1 HP to 40 HP
- Capacity ranges from 5 lb. batches up to 4,000 lbs/h
- Designed for milling soft to medium-hard materials with a Moh's hardness of 4 or less
- Fabricated stainless steel construction
- Finishes available to 0.6 micron Ra
- Variable speed rotor drive
- Cantilevered drive design for easy access & cleaning
- Maintenance free, sealed for life bearings
- Double lip seal protection with gas purge back up



Model	UMP-B	UMP-1	UMP-2	UMP-3
HP	1.5	5-10	20	40
Rotor RPM - Max	10,500	7,200	5,175	3,112
Scale Factor	0.3	1	4	8
Air Flow - SCFM	50	80	200	600

### OPTIONS & ACCESSORIES:

- Center or Top feed designs available
- Gravity & pneumatic conveying discharge options
- Cryogenic operation available with CO<sub>2</sub> or liquid nitrogen
- Containment design options available for isolator installations



*Mikro® UMP Knife Milling System - Production Model*

### TYPICAL APPLICATIONS

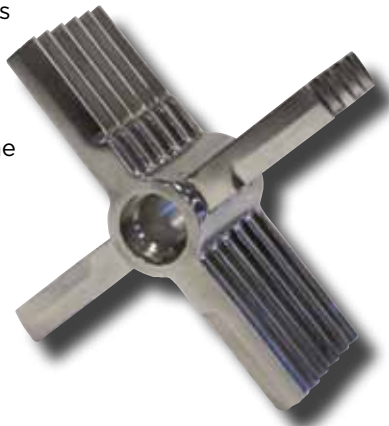
Material	Feed	Product
<b>Knife Rotor (Rotor Speeds up to 15,000 fpm)</b>		
Active Substance	5 mm agglomerates	97% < 1,000 µm
Alkaloid	10 mm granulate	97% < 1,000 µm
Amino Acid	100-200 mm	50% < 500 µm
Freeze Dried Coffee	50 mm granulate	50% < 20 µm
Glucose	850 µm	75% < 250 µm
Hormone	1-2 mm granulate	50% < 100 µm
Iron Based Food Additive	1/2" granulate	90% < 355 µm
Lactose	30 mm agglomerates	50% < 850 µm
Malic Acid	5 mm agglomerates	90% < 600 µm
Pigments	50 mm wet cake	50% < 150 µm
Polyester Resin	20% < 35 mesh	99.9% < 500 µm
Thermo Plastic Polymer	2-5 mm pellets	90% < 1070 µm
Zinc Oxide	30 mm granulate	50% < 150 µm

*Data provided in this chart is a guideline only and does not represent a performance guarantee.*

# SUPERIOR DESIGN — EXCELLENT PERFORMANCE

## DESIGN

The Mikro® UMP Knife Mill was developed to meet the Pharmaceutical and Food markets' increasing demand for high performance milling technology. The design meets the requirements of the Pharmaceutical Industry for both product performance and cleanability. The mill has been designed with reduced internal surface areas and connection points for easy cleaning. The knife rotor is fabricated in one piece, further improving cleanability and eliminating areas for contamination. The mill design also incorporates a liner and screen assembly for particle size control. Various screen types are available to suit the application.



## KNIFE ROTORS

The rotor design is reversible and has two impact surfaces; one side is provided with a flat surface for greater impact and the other side is provided with a knife edge for better shear and cutting force. The type of impact surface selected along with the rotor speed and size of the retaining screen will produce a wide range of granular to intermediate particle size distributions.

## GRINDING CHAMBER

The fabricated grinding chamber is constructed in 316 stainless steel with a high quality 0.6 micron Ra surface finish. Higher quality finishes are available for specialty applications. The access door is hinged to the grinding chamber and is secured with a tri-clamp closure for easy and quick maintenance and inspection.

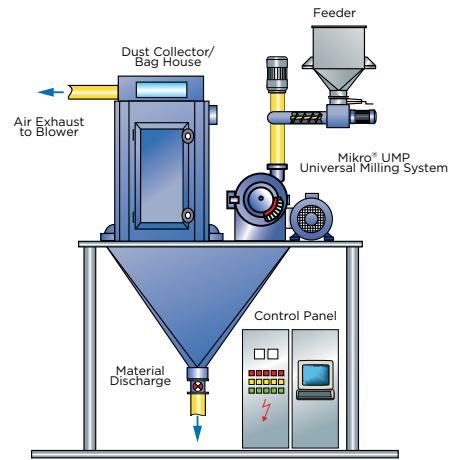
The product feed inlet can be either through the mill door (CF design) or from the top of the main body (TF design).

The bearing housing is a cantilevered design including maintenance free, sealed for life bearings. There are double lip seals and a gas purge between the drive and the process area to eliminate material contamination and protect drive components.

## SYSTEM CONFIGURATIONS

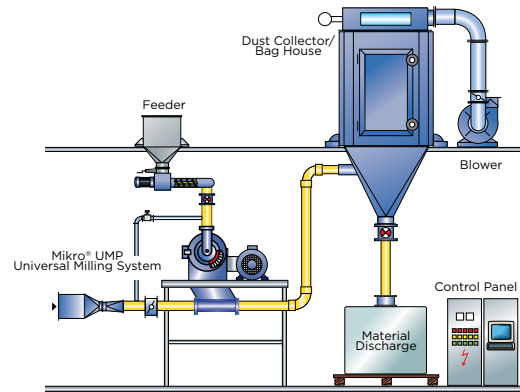
Multiple system options are available to further enhance the performance and flexibility of the Mikro® UMP Knife Milling System.

### GRAVITY/BUNKER SYSTEM



The Mikro® UMP Gravity/Bunker System, shown with Top feed option, is a simple and compact milling system designed for batch processing that requires minimal floor space.

### VACUUM/ PNEUMATIC CONVEYING SYSTEM



This system is designed for large batch or continuous processing runs. It requires less vertical space than the Bunker Configuration but uses more floor space.

## DESIGNED, MANUFACTURED AND ASSEMBLED IN THE USA

The Mikro® UMP Knife Milling System is an innovative mill designed, manufactured and assembled in the USA and comes with our pledge of performance and guaranteed dependability.





## HOSOKAWA MICRON POWDER SYSTEMS



Mikro® UMP Universal Milling System - Laboratory Model

### MIKRO® LPM - LABORATORY MILL

The Mikro® LPM - Laboratory Mill is the smallest model in the UMP line used for small sample grinding of 5 to 100 grams. This compact model has self-contained controls and product collection and can be operated in a small glove box or flexible isolator.



### SR SIZE REDUCTION EQUIPMENT

- Mikro ACM® - Air Classifying Mill
- Mikro Pulverizer® Hammer & Screen Mill
- Mikro® UMP - Universal Milling System
- Mikro LGM® - Long Gap Mill
- Mikro Atomizer® - Air Classifying Mill
- Alpine® AFG - Fluidized Bed Jet Mill
- Alpine® AS - Spiral Jet Mill
- Alpine® UPZ - Pin Mill
- Alpine® SO - Ball Mill

### CL CLASSIFICATION & SEPARATION

- Majac® Acucut Air Classifier
- Mikro® Classifier
- Micron Separator
- Alpine® ATP Turboplex Classifier
- Alpine® ASP Stratoplex Classifier
- Alpine® TTSP Tandem Classifier

### m/b MIXING, BLENDING & DRYING

- Vrieco-Nauta™ Conical Screw Mixer
- Micron Drymeister Flash Dryer
- Vrieco-Nauta™ Cyclomix
- Vrieco-Nauta™ Vacuum Dryer
- Vrieco-Nauta™ Active Freeze Dryer
- Micron Nobilta™

### CI CONTAINMENT, FILLING & WEIGHING AND ISOLATION TECHNOLOGY

- Stott Rigid Wall Isolators
- Stott Hygienic Filling & Weighing Systems
- Stott Flexible Isolators
- Vitalair Downflow Booths

### PA LABORATORY & ANALYTICAL EQUIPMENT

- Micron Air Jet Sieve MAJSb
- Mikro Air Jet Sieve™ MAJSx
- Mikro® LPM Laboratory Pin Mill
- Micron Powder Characteristics Tester PT-X
- Micron Viblette Wet Sieve VBL
- Micron Peneto Analyzer PNT-N

### TS SERVICES

- Hosokawa Brand Parts
- Engineering & System Design
- Custom Toll Processing
- Test Center & Analytical Laboratory
- On-site Service & Maintenance
- Pre-Owned Equipment Sales
- Equipment Validation & Surveying
- Educational Programs & Training



## HOSOKAWA MICRON POWDER SYSTEMS

Hosokawa Micron Powder Systems, located in Summit, New Jersey is a member of the Hosokawa Micron Group. We are a leading provider of equipment and systems for Size Reduction, Classification, Mixing/Blending, Drying, Particle Analysis, Compaction, Granulation as well as a full line of laboratory and analytical equipment. We also provide Contract Manufacturing, Complete Aftermarket Services and OEM parts, Equipment Leasing, Refurbishing, Product Development Services and Educational Programming. We serve the Chemical, Mineral, Food, Pharmaceutical, Cosmetic and Plastics processing industries.

**Disclaimer:** The content shown within this brochure may contain errors and omissions and is subject to change at anytime without notice. The data and details provided in this brochure is for promotional purposes only. The purpose of this brochure is to provide information about a specific device or service offered by Hosokawa Micron Powder Systems. This information does not constitute any equipment warranty or performance guarantee.

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