



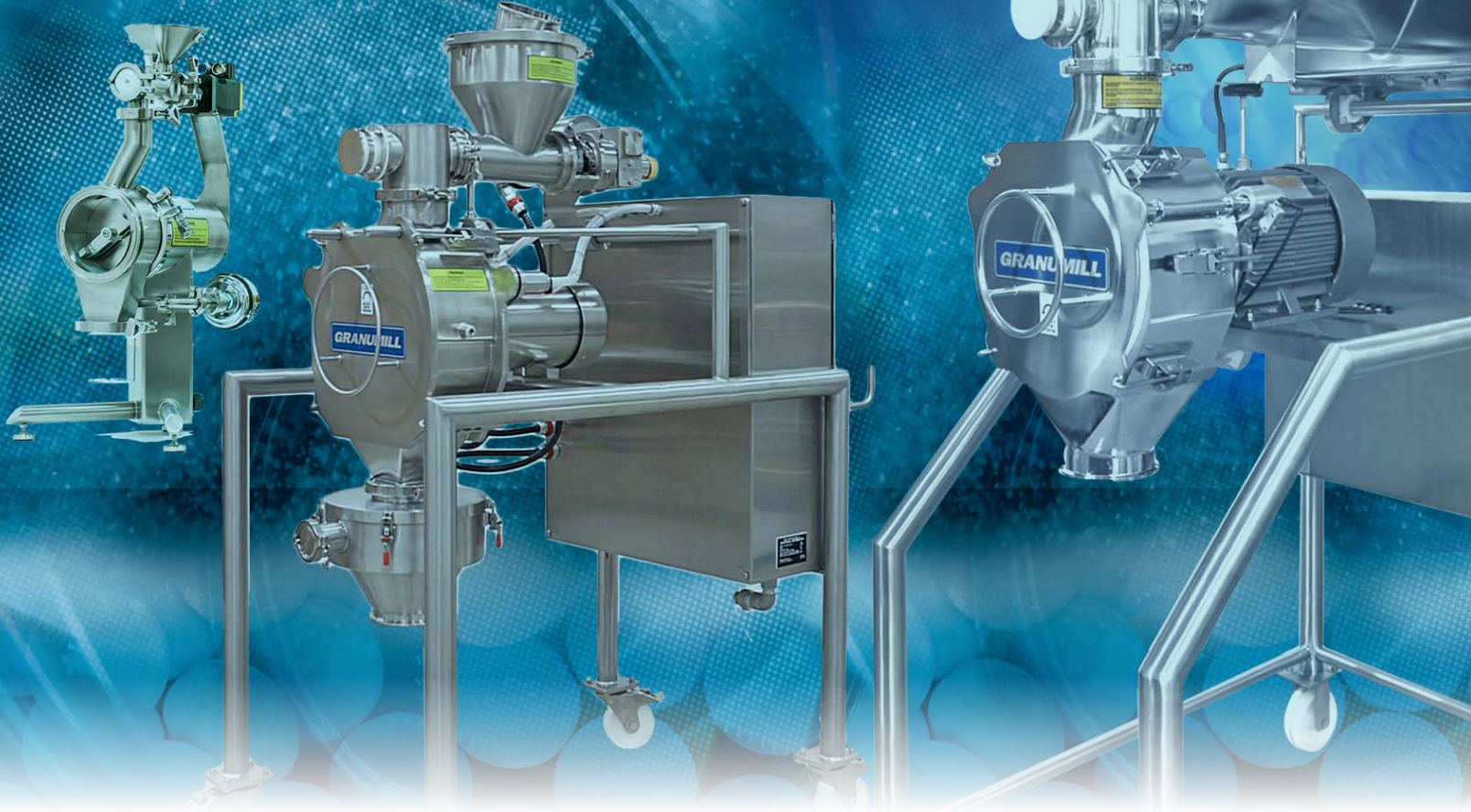
GRANUMILL® SIZE REDUCTION SYSTEMS



IMPACT AND SCREENING
MILLS IN A SINGLE SYSTEM



**Experts in Solid
Dosage Technology**
A Division of *Spraying Systems Co.*



SIZE REDUCTION SOLUTIONS

DESIGN FLEXIBILITY ENSURES PEAK PERFORMANCE FOR SIZE REDUCTION SYSTEMS

Our GRANUMILL® size reduction systems offer a solution for milling, grinding, and comminuting both wet and dry materials. A cost-effective combined system with low speed screening and high speed impacting customized to meet your unique processing challenges.

Let us help you optimize your production.

BENEFITS:

- Dust-free and easy to clean
- Direct Variable Speed Drive (no belts)
- Superior operation, with intuitive controls
- Easier to validate and scale-up
- Reduced maintenance
- Cost-effective
- Custom configurations

DEFINITIONS

What is Particle Size Reduction?

GRANUMILL® systems reduce the size of wet or dry powders in the range of 175 - 2000 microns. A typical GRANUMILL® system consists of an inlet, chamber with rotor, screen, and discharge. The critical process parameters of rotor speed and feed rate are tightly controlled to produce a narrow particle size distribution. Interchangeable screens and rotor profiles allow for a variety of milling actions such as delumping, fracturing, and shredding. As both a screen mill and an impact mill in one machine, the GRANUMILL® system offers two applications to suit your processing needs at any scale.

Impact Mills

Impact mills use a high-speed rotor to impact the product, causing it to shatter and reduce in size. A screen at the base of the mill chamber prevents the particles from escaping until they are appropriately sized.

Screening Mills

Screening mills use a low-speed rotor to push product through a screen, reducing the size of the particles. Screening mills work best on friable materials that break down easily with minimal force.

EFFICIENT POWDER AND PARTICLE PROCESSING

SIMPLIFIED SCALE-UP/VALIDATION

Rotor blade types and tip speeds are maintained between R&D and production systems, making your process easier to scale-up and validate.

COST-EFFECTIVE—A SINGLE SYSTEM FOR HIGH—AND LOW—SPEED MILLING

GRANUMILL® size reduction systems meet SUPAC guidelines and are both impact mills and screening mills. Basic operating principles allow for low-RPM screening of agglomerates and high-speed impact milling within the same machine.

QUIET OPERATION

An innovative rotor design and the mill's housing geometry allow GRANUMILL® systems to achieve superior results characterized by a narrow particle distribution curve with a reduction of fines while operating at lower, quieter speeds.



GRANUMILL® SYSTEM ADVANTAGES

- Variable speed operation allows for both high-speed fine grinding as well as low-speed deagglomeration of wet or dry materials
- Touch screen controls and machine integration using Batch Architect™ & Batch Architect Pro™ to meet compliance requirements
- GMP design and quick-release housing allow entire mill to be broken down in minutes for cleaning
- Approved for USDA 3A applications including dairy processing
- Choose from multiple feed and discharge options to fit your process
- Three interchangeable rotor designs available for greater particle size control (square/flat, round, and knife)
- Virtually identical operation tip speed range from R&D through production scale ensures easier scale-up and validation
- Adjustable feed and discharge heights to fit existing equipment
- Quiet operation
- Custom applications

GMP DESIGN

EASY MAINTENANCE AND CLEANING

GRANUMILL® systems are equipped with a quick-release housing allowing product contact parts to be completely disassembled in a matter of minutes. The components can then be more easily cleaned and inspected in significantly less time than is required to disassemble and clean other mills.

- All stainless steel construction
- NEMA 4X control panel
- Crevice-free
- Tool-free assembly/disassembly
- Quick clamps
- Speedy product change-over



GRANUMILL® DESIGN OPTIONS

- Explosion-proof construction
- Machine mounted/pivot bases
- Water jacketed housing for temperature-sensitive products
- Vacuum feeding & discharge
- Efficient nitrogen inerting
- Wash-in-place configurations
- Containment isolation
- Flexible connection option — dust skirt, inflatable seals, isolation valves, etc.
- Custom feed option — cones, pans, rotary valves, screw feeders, etc.
- MAGNALIFT mounting
- Custom applications

GRANUMILL® SIZE REDUCTION SYSTEMS SPECIFICATIONS

Model Number	Granumill Jr.*	Granumill 007*	Granumill 014*
Speed (RPM)	500 - 10000	500 - 5000	600 - 3600
Finished particle size (micron)	175 - 2000	175 - 2000	175 - 2000
Throughput ((lbs/kg)/hour)	0.2 - 60 / .1 - 25	2 - 2250 / 1 - 1000	4 - 3860 / 2 - 1750
Height (inches/mm)	25 / 635	80 / 2032	80 / 2032
Width (inches/mm)	12 / 304	32 / 813	40 / 1016
Length (inches/mm)	15 / 381	60 / 1524	68 / 1727
Screen width (inches/mm)	4 / 102	7 / 178	14 / 356

*Dimensions include screwfeeder



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2119 Fisher Drive, Naperville, IL 60563

Tel: 630.665.5001 Intl. Tel: 1.630.665.5000
Fax: 630.665.5981 Intl. Fax: 1.630.260.0842

www.fluidairinc.com