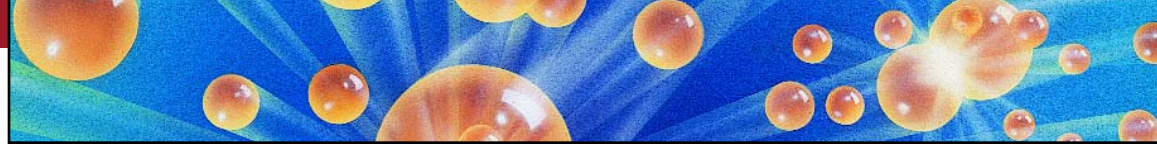
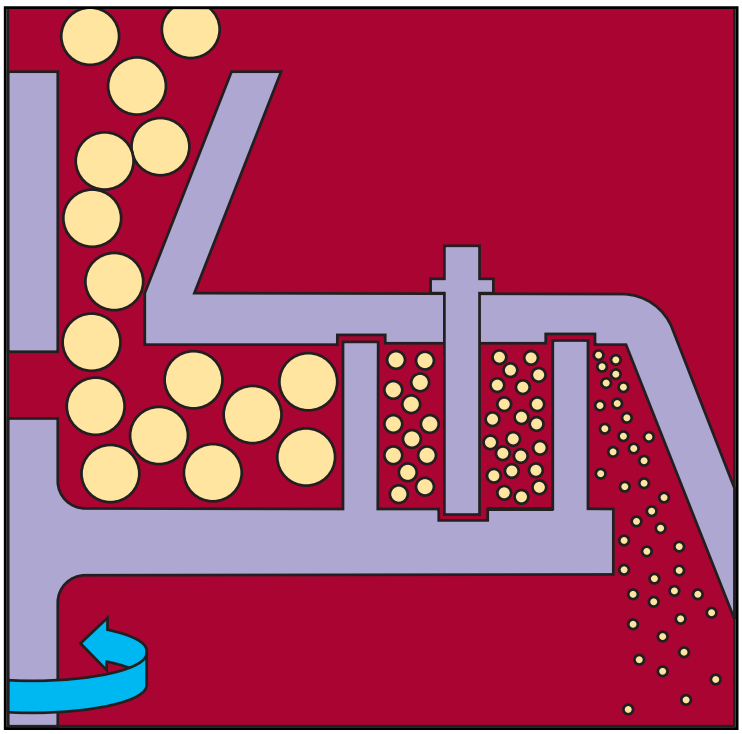


PIN MILLS



STURTEVANT
SINCE 1883

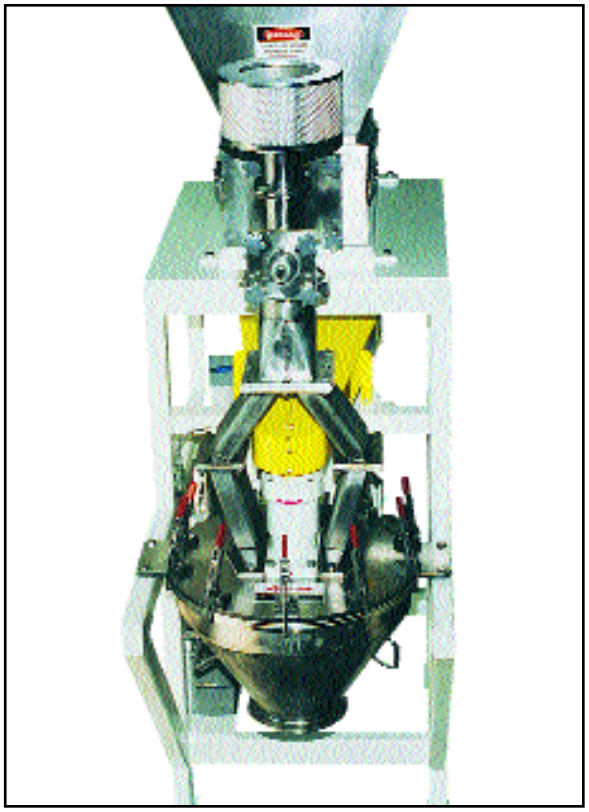
POWDER PROCESSING TECHNOLOGY: THE STURTEVANT SOLUTION.

STURTEVANT PIN MILLS

THINK VERSATILE. THINK STURTEVANT.

Designed to use varying degrees of impact and agitation to process your materials, Sturtevant Pin Mills are among the most versatile equipment available in the materials processing industry. From high-impact grinding at tip speeds of 45,000 feet per minute to controlled, slower RPM mixing and blending, Sturtevant Pin Mills are easy to operate, highly reliable, safe and simple to adapt for your application.

- Various internal components are available to custom-design the Pin Mill to your process.
- Multiple sealing options can accommodate your controlled atmosphere.
- Optional bearing columns allow the Pin Mill to operate with either your pressure pneumatic or gravity feeding system.
- Different materials of construction and finishes allow the Pin Mill to meet your sanitary standards.
- Grinding components can be provided with special wear-resistant or corrosion-resistant surfaces to process abrasive or corrosive liquids or solids.



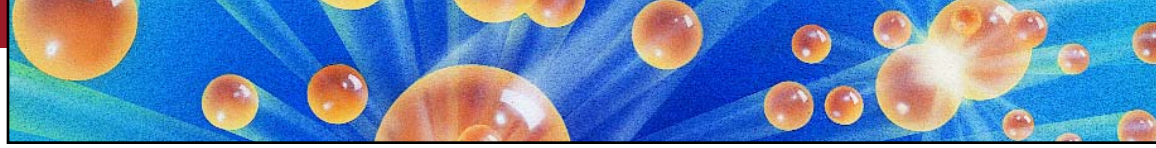
Ultra-sanitary pin mill for pharmaceutical R&D project

Sturtevant Pin Mills offer an easy-maintenance, low-cost solution for:

- Size reduction
- Deagglomeration
- Defiberization
- Densification
- Fluffing
- Mixing
- Blending
- Dispersion or homogenization

Whether liquids, solids or flowable combinations.

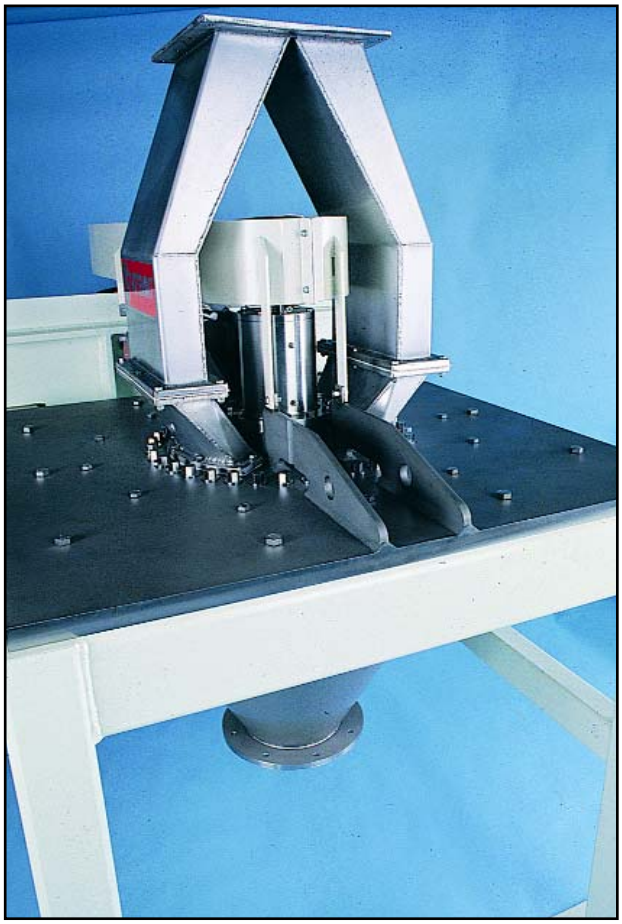
300-H.P. pin mill for wet corn milling



FEATURES

Sturtevant Pin Mills combine simple design and Sturtevant dependability, applying centrifugal force to generate the energy for impact. These mills allow uniform size reduction, greater energy-efficiency, less wear and tear of equipment, along with these distinct features:

- Free impact, no attrition
- No screen to clog
- High throughput per H.P.
- Handles liquids or solids
- Simple construction
- Easy to clean
- Blow-through capability
- Low temperature rise
- Compact installation dimensions



Industrial-duty pin mill for fine chemical size reduction

BENEFITS

Adaptable to a variety of applications and materials, Sturtevant Pin Mills are available in carbon steel, stainless steel and many other materials of construction. These proven performers provide specific processing solutions for a wide range of needs in the chemical, food, pharmaceutical, grain milling and mineral industries:

External bearing column

- Fast, easy maintenance
- Isolates bearings from material to avoid contamination

Oil or grease lubrication

- Optimum lubrication for specific application prevents premature bearing failure and reduces maintenance costs

Completely sealed construction

- Allows in-line controlled atmosphere grinding or mixing, so you don't need extraordinary, expensive separate processing steps
- Kind to operating environment, no dust

Robust design

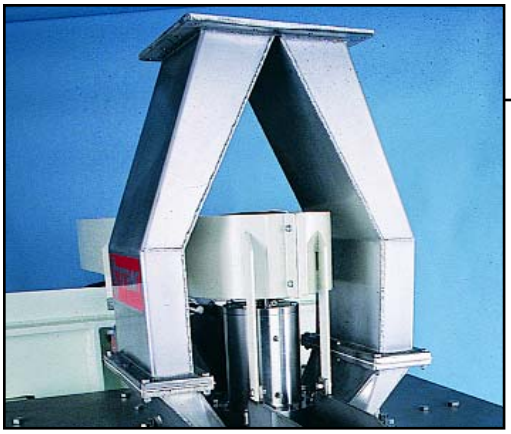
- Gives you longer equipment life, reducing maintenance and replacement costs

Makes product homogeneous

- Improves your product quality

No internal screens

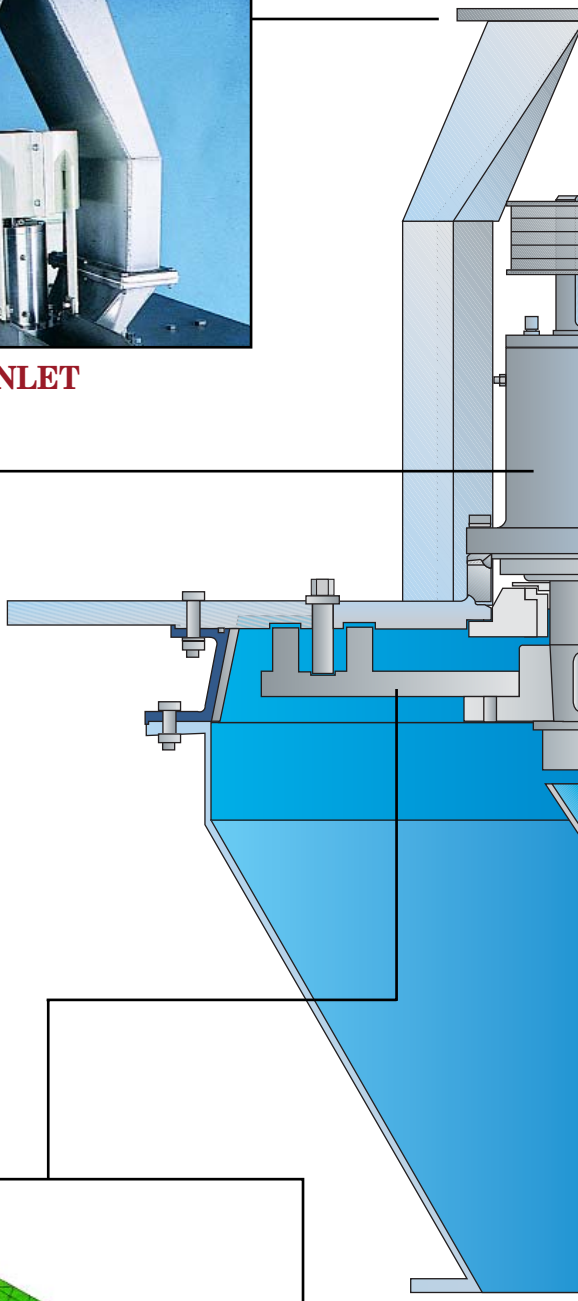
- No blinding, so your machine runs continuously
- No need to shut down machine to clean screen, saving you maintenance time and money



SINGLE-FEED INLET TRANSITION

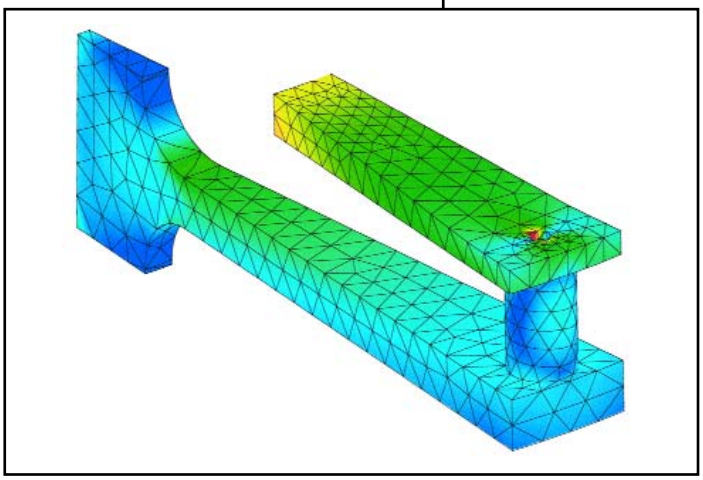
BEARING COLUMN

Easily accessible for maintenance



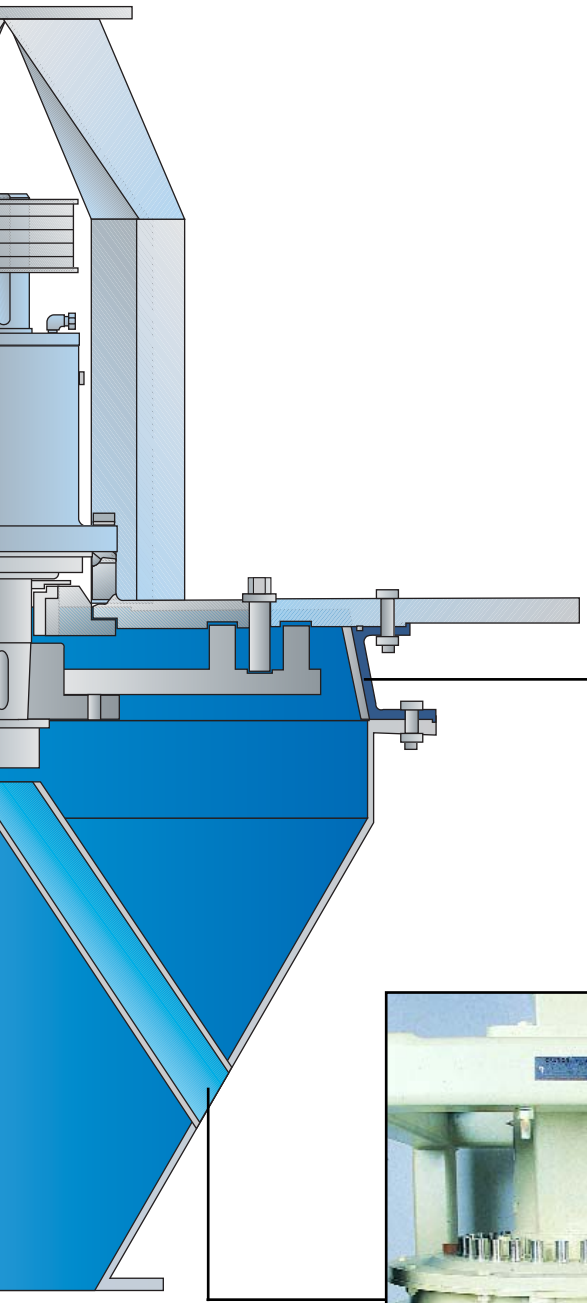
HOW IT WORKS

Materials are fed to the single-feed inlet which divides the stream to pass on either side of the external bearing column. These two streams drop onto the turning rotor plate. Centrifugal force drives the material out to the periphery of the rotor plate where it is acted upon by the selected pins or impactors. In this zone, the material is subjected to multiple impacts as it passes through the maze of pins or blocks which results in size reduction, or high-intensity mixing. The force imparted to the material is controlled by the speed of the rotor. For maximum energy, the rotor speed would be high; for more gentle handling, low rotational speeds are selected. The rotor speed can be controlled by sheave changes, manual adjustment, or variable frequency controller. After passing through the impact zone, the material discharges from the hopper cone in a vortex configuration.



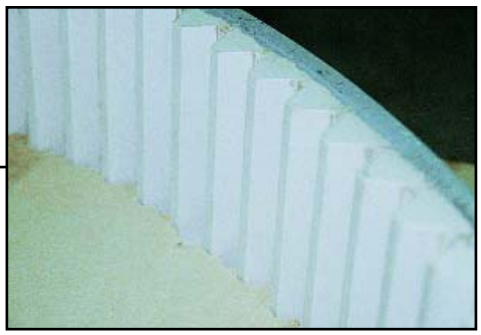
ROTOR PLATE

Designed using latest CAD and finite element analysis



VARIETY OF LINER OPTIONS

For wear protection, grinding and mixing efficiency



CERAMIC LINER

CORRUGATED LINER

SMOOTH LINER

PIN LINER

VENTED HOPPER

For use in gravity feed installations, eliminating complex air recirculation

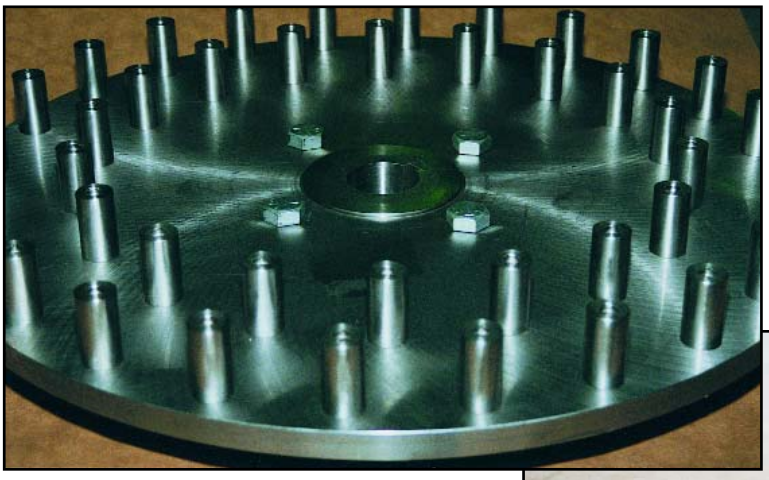
ROTORS

At the “heart” of the pin mill is the rotor to which the pins or blocks are affixed. Factors affecting performance of the pin mill include:

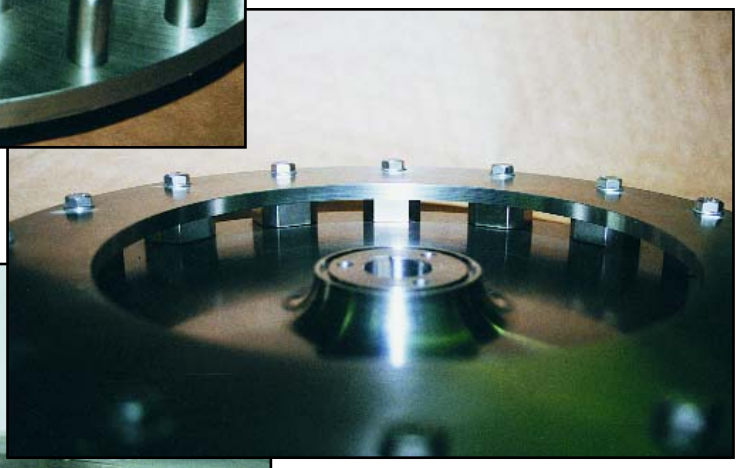
- Rotational speed, which directly relates to tip speed
- Diameter, which also affects tip speed and therefore impacts energy
- The number and orientation of pins or blocks

The intermeshing pin design subjects material for size reduction to multiple shattering blows as material negotiates the maze of pins. The block rotor reduces the number of blows, but creates high-exit velocity for shattering materials against the impact wall liner.

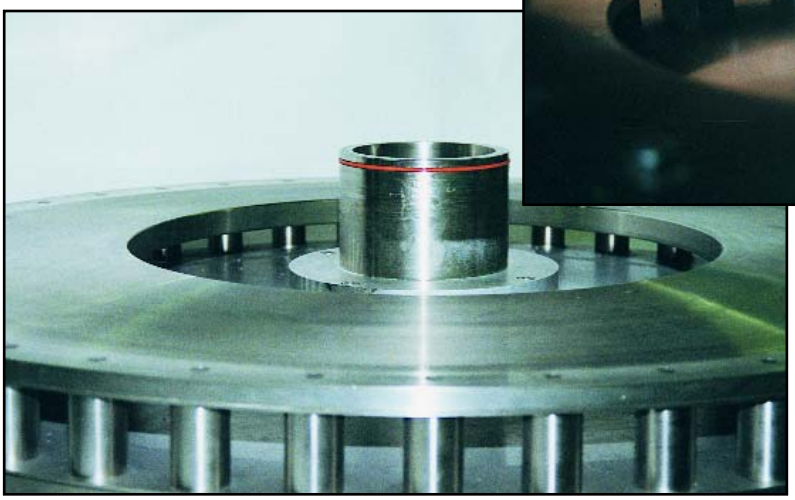
For mixing, the speed of the rotor may be reduced, and a smooth impact wall liner employed to avoid product degradation, while creating sufficient turbulence to produce a homogeneous blend. In this way, controlled energy is directly and efficiently applied to the product.



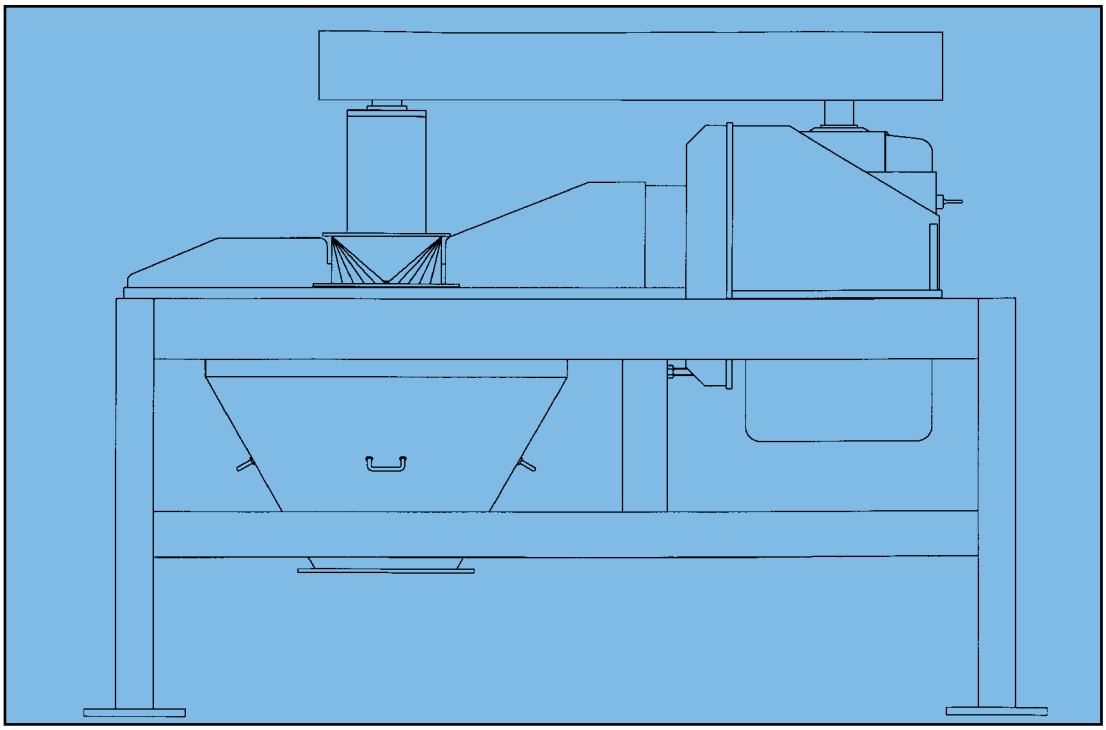
INTERMESHING ROTOR



HD ROTOR



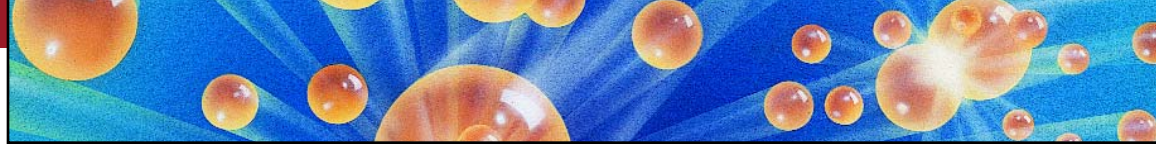
NON-INTERMESHING PIN ROTOR



CAPACITIES

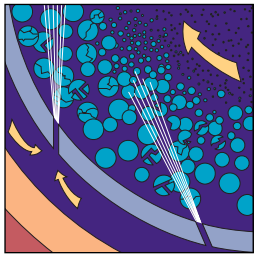
Sturtevant Pin Mills range in size from 5 horsepower to 300 horsepower. Designed to reduce energy consumption, Sturtevant Pin Mills combine economy with precision performance — delivering throughput rates of up to 100 tons per hour:

MODEL	MAX. H.P.	CAPACITY	LENGTH	WIDTH	HEIGHT	WEIGHT
SERIES						
Simpactor						
3	25	4 TPH	54”	26”	52”	1,000 lbs.
6	150	30 TPH	72”	36”	70”	3,700 lbs.
40	300	60 TPH	96”	60”	102”	10,000 lbs.
High-Intensity Mixer						
3	15	8 TPH	54”	26”	52”	1,000 lbs.
6	60	30 TPH	72”	36”	70”	2,500 lbs.
40	200	100 TPH	96”	60”	102”	8,500 lbs.

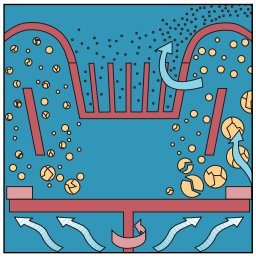


PROVEN PERFORMERS

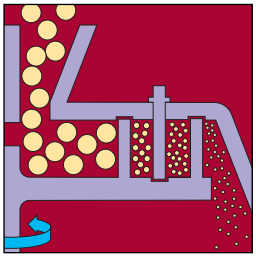
For most dry material size reduction or separation needs,
Sturtevant's extensive line of products can meet your requirements.



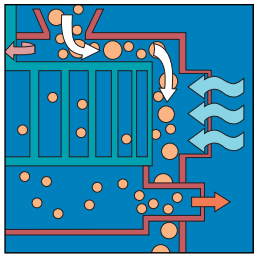
Micronizer®: Jet mills dry particles to sub-micron size; some models USDA-accepted.



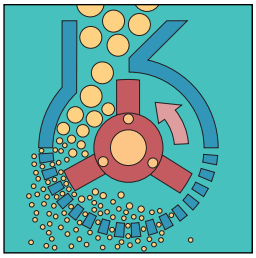
Powderizer®: Air-swept impact mill with integral classifier; grinds to low-micron range with tightest particle size distribution.



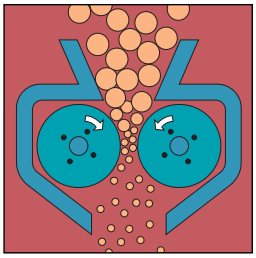
Simpactor®: Centrifugal, pin-type impact mill; reduces low- to medium-density materials to 50-200 mesh.



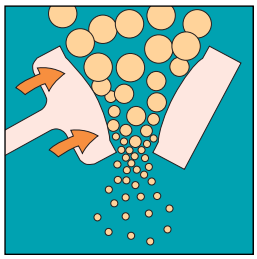
Air Classifiers: Air streams separate fine and coarse particles with mechanical rejector for product quality assurance.



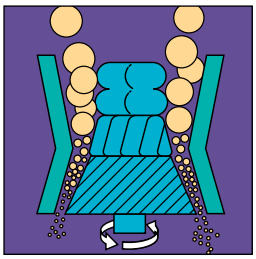
Hammermill: Versatile, perfect for friable materials; easy access for maintenance or inspection.



Roll Crusher: Best-suited for controlled reduction of friable materials; minimal fines.



Jaw Crusher: Ideal for coarse and intermediate crushing; minimal fines production.



Rotary Crusher: Rugged rotary action produces high reduction ratios and production rates for soft-to medium-hard materials.

Sample Grinders: Disk type grinder for very fine work at small throughput rates.

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