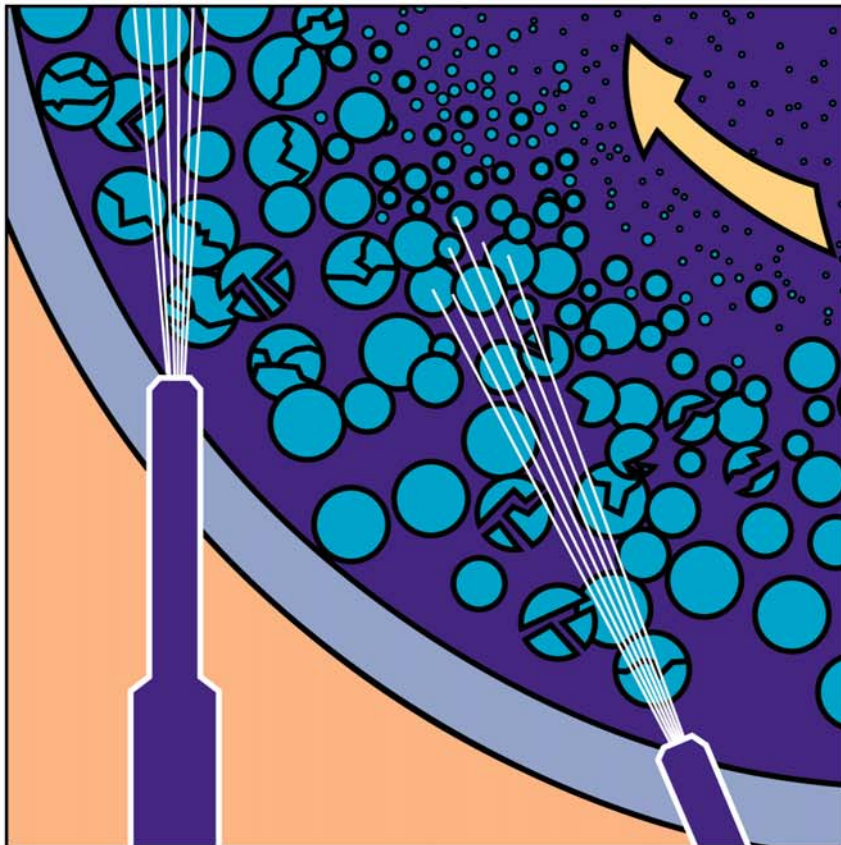




LABORATORY SCALE MICRONIZER[®] JET MILL



STURTEVANT
Inc.

POWDER PROCESSING TECHNOLOGY: THE STURTEVANT SOLUTION.



MICRONIZER®

The Sturtevant Micronizer® utilizes a unique fluid energy grinding system to generate particle-on-particle impact. The Micronizer® grinds and classifies powders to micron and sub-micron sizes in a single operation, in a single grinding chamber using compressed air or gas.

A proven performer in thousands of installations around the world, the Micronizer® processes a countless variety of materials throughout the food, chemical, ceramic, mineral, and pharmaceutical industries.

Predictable Performance

- 1000+ installations backed by Sturtevant reliability
- Sole-source responsibility with complete systems availability

Product Quality

- No heat build-up: process heat sensitive materials

- Minimized product contamination:

A variety of specialty ceramic; low carbon steels, and polymeric liners available for adherent or abrasive materials

No media contamination

No lubrication contamination

- Uniformity: Produces spherical particle shape for reduced agglomeration

Safety

Processes materials susceptible to oxidation or explosivity: easily adapts to inert gas and super-heated steam operations

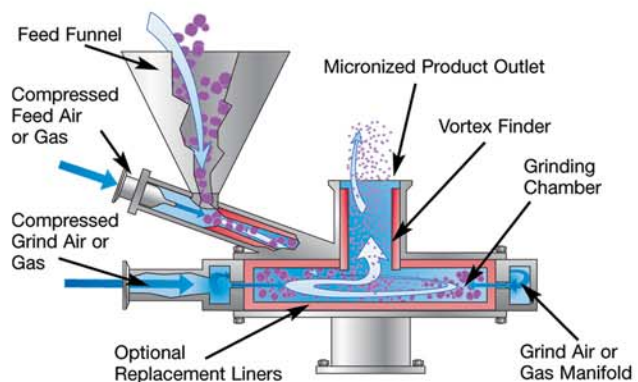
Engineered to meet sanitary demands with efficiency, the Micronizer® combines high performance and Sturtevant dependability with these benefits and sanitary features:

Simple Operation

- Preassembled bench top design
- Grinds and sizes in one step; no additional classifier needed
- Operates in any orientation

Low Maintenance

- No moving parts
- No lubrication required
- Designed for easy access and cleaning
- Robust design



Designed for high performance below 325 mesh (44 microns) — the economical fineness limit of many mechanical grinders — the Micronizer® can consistently produce fines as small as 0.5 microns.

QUALIFICATION MICRONIZER®

Capacity of 0.12-1.0 lbs/hr (1-7 grams/min) Depending on Product Fineness



Item Q2 Consisting Of The Following Components:

- Very Few Parts for Easy Disassembly or Autoclaving
- Complete Accessibility to the Internal Material Grinding Chamber
- Peripheral Feed Entry with Anti-Blowback Design
- 316 Stainless Steel Construction for Product Contact Parts
- Pharmaceutical Finish to Product Contact Surfaces
- Quick-Opening Stainless Steel Thumb Knobs
- Replaceable Venturi & Feed Nozzle Allows Wide Range of Feed Size
- Built-In Jet Nozzles
- Integral Sanitary Feed Funnel Does Not Require Fasteners
- FDA Accepted Polyethylene Tubing for Compressed Air with Quick-Release Fittings
- Large Mill Chamber and Oversized Outlet Reduces Clogging
- Mini Exhaust Air Filter Bag with Low Emission PTFE Membrane for Maximum Product Collection & Dust Containment
- Portable Stainless Steel Table Top Base with Convenient Carrying Handles
- Micronizer Controls Consist of Valves to Regulate Feed & Grind Air and Flush-Mounted Gauges to Monitor Air Pressures
- Electro-Magnetic Vibratory Feeder with Stainless Steel "V" Trough (1Ph/60Hz/110 VAC), Feeder Controller in NEMA 1 Enclosure
- Vibratory Feeder Regulates Feed Rate to Micronizer and Controls Product Size

Option A:

Sanitary Product Collector, Mini Dust Sleeve & Shaker:

Improved Dust Containment for Small Batches of Powder with Minimal Sample Loss

- 316 Stainless Steel Construction with Pharmaceutical 20 Ra Micro-Inch Finish for Product Contact Parts
- Transition Hose from Q-Micronizer to Collector with Quick-Release Clamps
- Mini Exhaust Air Filter Sleeve with Low Emission PTFE Membrane for Maximum Product Collection & Dust Containment
- Sanitary Collection Bottle (0.5 Liter) with Large Opening for Easy Product Recovery and Cleaning
- See-Thru Safety Housing for Dust Sleeve with Exhaust Pipe for Connection to Plant Nuisance Vent (8 CFM) or to an Included Secondary Air Filter
- Rod Connected to Top of Dust Sleeve Through Top of Housing Allows Manual Shaking of Dust Sleeve Before Opening Housing
- Table Top Support Stand, Independent of Q-Micronizer Base
- Pressure Gauge to Monitor Operating Pressure and Indicate the Need to Replace the Secondary Cartridge Air Filter (Included)
- Safety Pressure Relief Valve



2" MICRONIZER® - OPEN MANIFOLD DESIGN

Capacity of 0.7-2.0 lbs/hr (5-15 grams/min) Depending on Product Fineness

Item OM2 Consisting Of The Following Components:

- Open Manifold Design with Complete Accessibility to the Internal Material Grinding Chamber & Compressed Air Chamber for Easy Cleaning, Disassembles in Minutes using Large Wing Head Fasteners. Easy Jet Ring Removal
- 316 Stainless Steel Construction for Product Contact Parts
- Replaceable Stainless Steel Jet Wall, Top Plate Liner, Bottom Plate Liner, Venturi & Vortex Finder
- Single Product/Air Discharge Design with O-Ring Seals
- Round Feed Funnel & Jet Wall with Built-In Jet Nozzles
- Thumb Screw Adjustment For Feed Nozzle, Vortex Finder & Venturi
- Quick-Release Connections for Feed Funnel, Bag Holder & Compressed Air
- **Option A:** Alumina Ceramic or Tungsten Carbide Construction for Jet Wall, Top Plate Liner, Bottom Plate Liner, Venturi & Vortex Finder, instead of Stainless Steel
- **Option B:** Cyclone & Container

Option C:

Portable Stainless Steel Table Top Base

- With Convenient Carrying Handles and Built-In Air Controls
- Controls for Micronizer Consist of Valves to Regulate Feed & Grind Air and Flush-Mounted Gauges to Monitor Air Pressures
- Polyethylene Tubing for Compressed Air with Quick-Release Fittings



Option D:

Vibratory Feeder with 316 Stainless Steel "V" Trough

- To Regulate Feed Rate and Control Product Size
- Electro-Magnetic Feeder Vibrator with Controller in NEMA 1 Enclosure (1Ph/60Hz/115 VAC)
- Material's Bulk Density is Required to Confirm Feed Capacity

Option E:

Volumetric Screw Feeder for Great Feed Rate Accuracy

- 316 Stainless Steel Helix and Feed Tube
- Vinyl/Polyethylene Flexible Wall Hopper, 0.10 Cu. Ft.
- Variable Speed Controller, Feeder Mounted in NEMA 1 Enclosure Turn-Down Ratio 20:1
- 1/45 Hp, TENV Motor (1Ph/60Hz/110 or 220 VAC)
- Material's Bulk Density is Required to Confirm Capacity and Screw Size
- **Optional** Hopper Extensions or Hopper Cover Available

Option F:

316 Stainless Steel Conical Bag Holder

- 1 Liter Collection Container
- Flexible Exhaust Hose
- One Exhaust Air Filter Bag for Small Batch Runs. Exhaust Bag has Low Emission PTFE Membrane for Maximum Product Collection & Dust Containment
- Includes Stainless Steel Table Top Support Stand

Option G:

Mini Exhaust Bag for Small Batches

- 316 Stainless Steel Bag Adaptor to Connect Micronizer Directly To Small Exhaust Bag to Maximize Product Collection
- One Low Emission Air Filter Bag with PTFE Membrane for Maximum Product Collection & Dust Containment
- **Note:** Batch Size Should Not Exceed 30 Grams When Using Small Bag





2" MICRONIZER® - SANITARY USDA ACCEPTED DESIGN

Capacity of 0.7-2.0 lbs/hr (5-15 grams/min) Depending on Product Fineness

Item SDM2 Consisting Of The Following Components:

- Sanitary USDA Accepted Design for Complete Accessibility to the Internal Material Grinding Chamber & Compressed Air Chamber
- Sanitary USDA Accepted Design has Built-In Jet Nozzles, No Set Screws and No Liners
- Disassembles in Minutes Using Hand Fasteners (No Tools Required)
- 316 Stainless Steel Construction for Product Contact Parts; 304 Stainless Steel for Clamps
- Pharmaceutical 20 Ra Micro-Inch Finish to Product Contact Surfaces
- Top Discharge Design with FDA Accepted Gaskets & O-Ring Seals
- Sanitary Round Feed Funnel & Jet Wall with Built-In Jet Nozzles
- Ladish Quick-Release Flanges for All Connections, i.e. Feed Funnel, Discharge & Compressed Air

Option A:

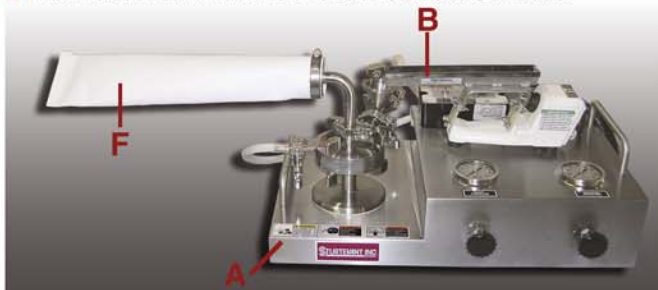
Portable Stainless Steel Table Top Base

- 304 Stainless Steel Construction with Carrying Handles
- Built-In Air Controls Consisting of Valves to Regulate Feed & Grind Air and Flush-Mounted Gauges to Monitor Air Pressures
- FDA Accepted Silicone Hoses for Compressed Air

Option B:

Vibratory Screw Feeder With Stainless Steel "V" Trough

- To Regulate Feed Rate and Control Product Size
- Electro-Magnetic Feeder Vibrator with Controller in NEMA 1 Enclosure (1Ph/60Hz/115 VAC)
- Material's Bulk Density is Required to Confirm Feed Capacity
- Pharmaceutical Finish to Product Contact Surfaces.



Option C:

Volumetric Screw Feeder (Single Screw)

- FDA Accepted Vinyl Polyethylene Flexible Wall Hopper (0.10 ft³)
- 1/45 HP, TENV Motor (1Ph/60Hz/115VAC)
- 316 Stainless Steel Screw & Feed Tube with Pharmaceutical Finish
- Hopper Cover with Handle
- Variable Speed Controller, Feeder Mounted in NEMA 1 Enclosure Turn-Down Ratio 20:1
- **Optional** Extension Hopper in NEMA 4 Enclosures

Option D: (See Open Manifold Design Option F for illustration)

316 Stainless Steel Conical Bag Holder

- 1 Liter Collection Container
- Flexible Exhaust Hose
- One Exhaust Air Filter Bag for Small Batch Runs. Exhaust Bag has Low Emission PTFE Membrane for Maximum Product Collection & Dust Containment
- Includes Stainless Steel Table Top Support Stand

Option E:

Sight Glass Assembly (Contains Dust)

- Couples Screw Feeder to Micronizer Feed Funnel, Allows Feed Venturi Aspiration & Contains Dust in Case of Blowback
- 316 Stainless Steel Construction
- Sanitary 20 Micron Feed Filter Cartridge with Adapter
- Sight Glass to View Powder Transfer from Feeder to Micronizer
- Triclamp Quick-Release Flanges for all Connections

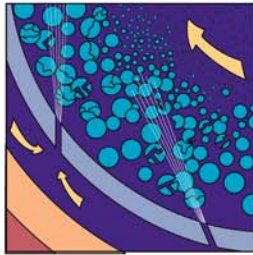
Option F:

Mini Exhaust Bag for Small Batches

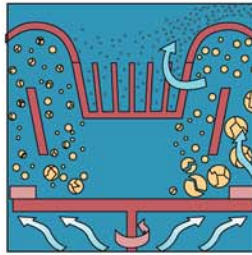
- 316 Stainless Steel Bag Adaptor to Connect Micronizer Directly To Small Exhaust Bag to Maximize Product Collection
- One Low Emission Air Filter Bag with PTFE Membrane for Maximum Product Collection & Dust Containment
- **Note:** Batch Size Should Not Exceed 30 Grams When Using Small Bag

PROVEN PERFORMERS

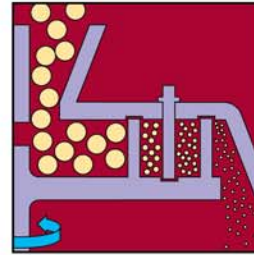
For most dry material size reduction or separation needs, Sturtevant's extensive line of products can meet your requirements.



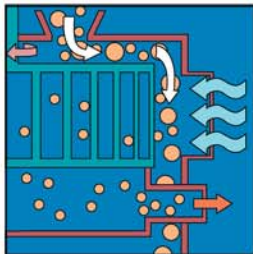
Micronizer®: Jet mills dry particles to sub-micron size; some models USDA-accepted.



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



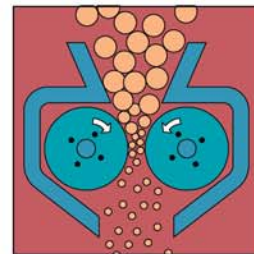
Simpactor®: Centrifugal, pin-type impact mill; reduces low-to medium-density materials to 50-200 mesh.



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



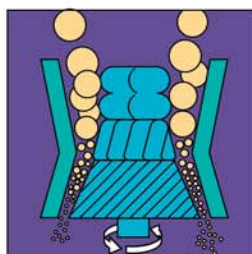
Hammermill: Versatile, perfect for friable materials; easy access for maintenance or inspection.



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



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



Screening Machines: Separates powders into several fractions for multiple products or eliminating dust and oversized particles.



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



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