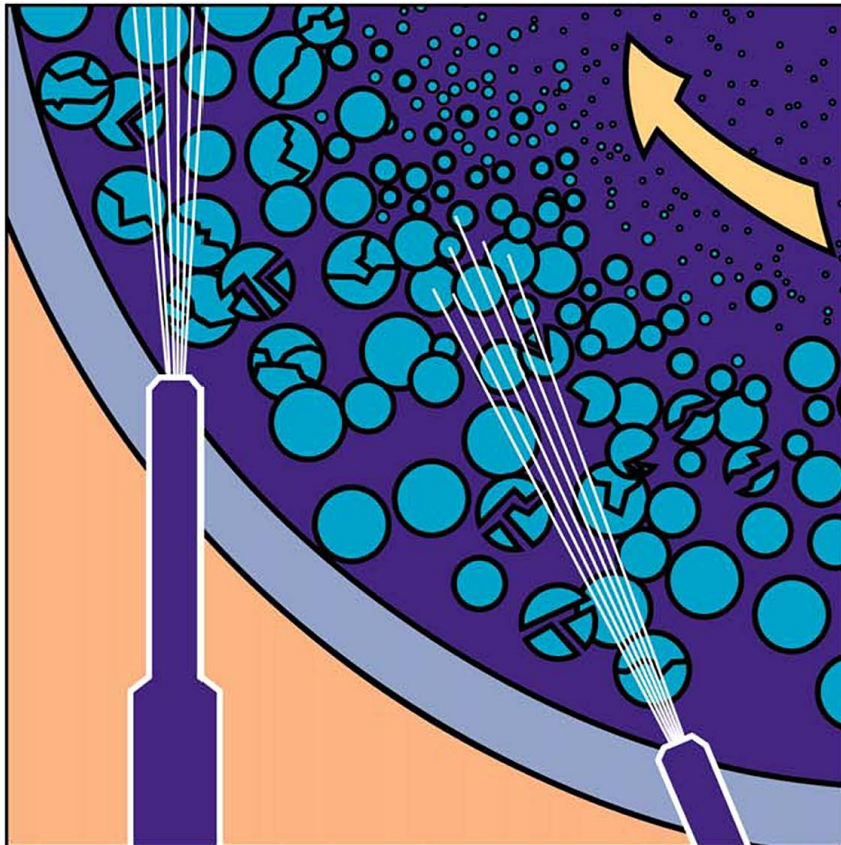




# LABORATORY SCALE MICRONIZER<sup>®</sup> JET MILL



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

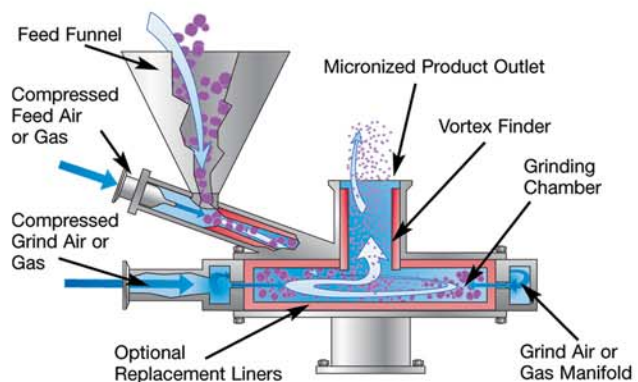
Engineered to meet sanitary demands with efficiency, the Micronizer® combines high performance and Sturtevant dependability with these benefits and sanitary features:

#### **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:

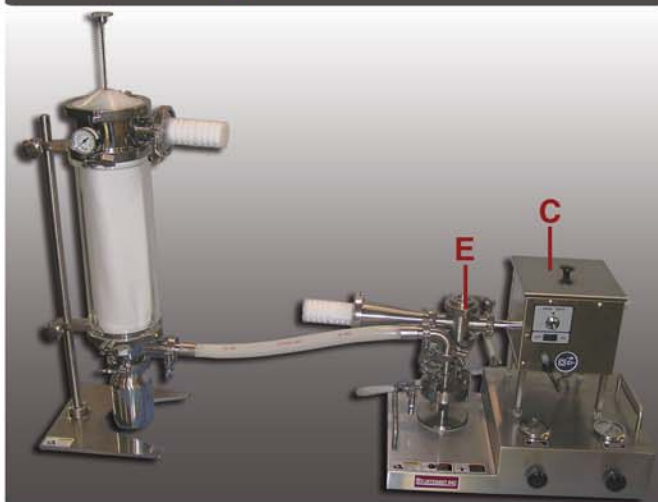
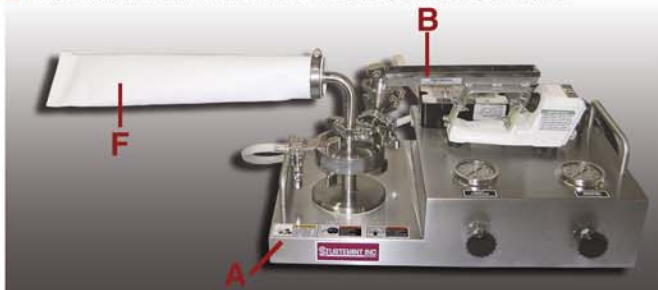
#### Portable Stainless Steel Table Top Base

- 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 ft<sup>3</sup>)
- 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

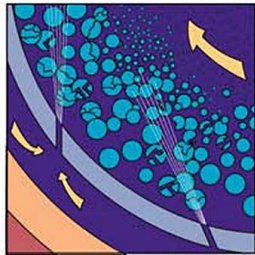
### Option F:

#### Mini Exhaust Bag for Small Batches

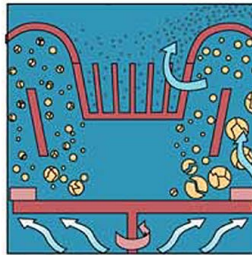
- 316 Stainless Steel Bag Adaptor to Connect Micronizer Directly To Small Exhaust Bag to Maximize Product Collection
- One Low Emission Air Filter Bag with PTFE Membrane for Maximum Product Collection & Dust Containment
- **Note:** Batch Size Should Not Exceed 30 Grams When Using Small Bag

# PROVEN PERFORMERS

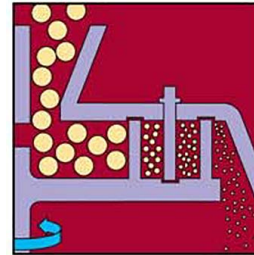
For most dry material size reduction or separation needs, Sturtevant's extensive line of products can meet your requirements.



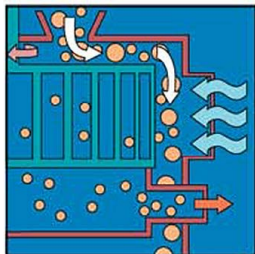
**Micronizer®:** Jet mills dry particles to sub-micron size; some models USDA-accepted.



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



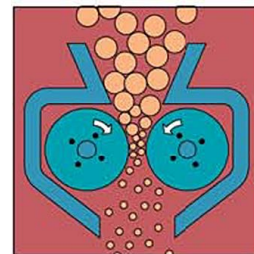
**Simpactor®:** Centrifugal, pin-type impact mill; reduces low- to medium-density materials to 50-200 mesh.



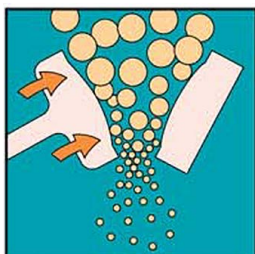
**Air Classifiers:** Air streams separate fine and coarse particles with mechanical rejector for product quality assurance.



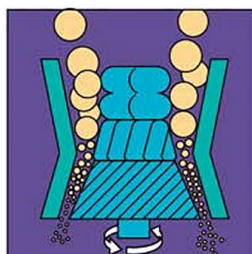
**Hammermill:** Versatile, perfect for friable materials; easy access for maintenance or inspection.



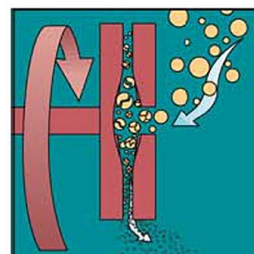
**Roll Crusher:** Best-suited for controlled reduction of friable materials; minimal fines.



**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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