TECNOLOGIA MECCANICA

J-200 J-300 J-400

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J-200 J-300 J-400 Fluid Jet Micronizers

Fluid jet micronizers designed for medium wide production

The Fluid Jet family of micronizers (including the J-200 J-300 J-400 milling chambers) is based on TECNOLOGIA MECCANICA's jet milling technology. These micronizers work at a constant temperature (endothermic) and independently with the lowest consumption of process gas compared to similarly sized units available on the market (see technical data). The powder is fed at subsonic speeds (approximately 50 m/s) into the flat cylindrical milling chamber tangentially through a Venturi system using pressurized air or nitrogen. Once inside the milling chamber the particles are then accelerated by a series of jets around the perimeter to supersonic speeds (300 m/s), in a spiral movement. The micronizing effect occurs when the slower incoming particles and the faster particles in the spiral path collide. While centrifugal force retains the larger particles at the periphery of the milling chamber, the smaller particles exit with the exhaust gas from the center of the chamber.

At a glance

- Productivity from 0.50 to 350.00 kg/hour
- One single collecting point (dimensional homogeneity)
- Scalability of the process for any milling chamber size maintaining the same PSD
- Very low product loss, typical yields are 99.5% of batch size
- Elimination of blow-back phenomenon
- Limited caking of sticky powders
- Quick and easy assembling and disassembling of the system with a limited number of clamped components
- Rapid cleaning and easy validation
- Simplicity of the whole unit
- Every equipment is manufactured in Aisi type 316L (EN 1.4404) stainless steel or in Hastelloy mirror polished to Ra 0.25 micron
- Special internal lining, Ptfe, Pur (Vulkollan), Ceramic, Titanium nitride, etc …

Discover your own tailored equipment

There are many possibilities and configurations available to tailor our micronizers to your application. We are able to test your custom version since our engineering team works with you in order to develop your personal system. Options already available:

- Volumetric or gravimetric pharma feeders
- Many different models of cyclone filters
- Sanitary rotary valve for the product collection
- In line sampling device
- Low Emission version with Hepa filter
- Balance line
- CIP and SIP systems
- J-200 / J-300/ J-400 milling chambers
- Explosion proof version
- Sterile version
- System fully automated by PLC/HMI

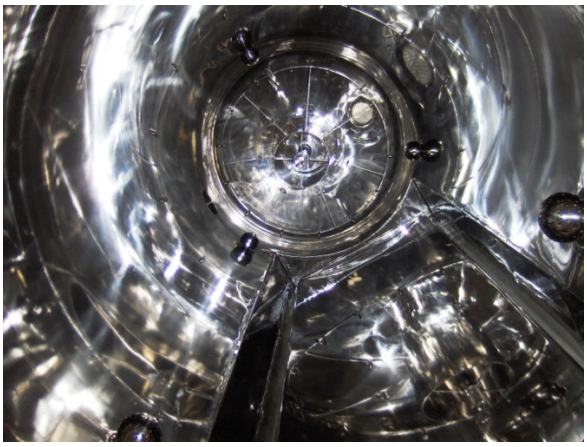
J-200 J-300 J-400 FLUID JET MICRONIZERS

Technical Features

Fluid jet mill technology of our own design, based on statistical matrix algorithm, developed and constantly upgraded, is available for trials in our testing center. TECNOLOGIA MECCANICA has advanced spiral jet mill technology significantly forward by re-designing the internal geometries of the milling chamber, geometries that have remained untouched on all jet mills on the market for decades. Further upgrades have been brought about by the development of special grinding nozzles that help maintain jet streams as laminar as possible, bringing about a real quantum leap in micronization technique.

The Particle Size Distribution is controlled by adjusting two main parameters:

- PRESSURE: the energy used to micronize; increased pressure increases the micronization effect
- FEED RATE: the concentration of product fed into the milling chamber; the greater the feed rate, the less the micronization effect. This is due to the fact that particles must have space to achieve proper acceleration before collision occurs.



Standard Pharma Version

- Open manifold execution, FDA validatible
- Upper and lower plates + central nozzles ring closed by four handles or by a single V-clamp
- Twin screw volumetric feeder
- Manifold with automatic main valve, ball process valves, two pressure gauges, one thermometer
- Cyclone filter with polyester anti-static filter sleeves, ending with a sanitary butterfly valve for product collection
- Final filtering unit with pre-filter, semi absolute, absolute Hepa filter (99.997% efficiency)
- Main control panel
- Simplified version based on the same Pharma concept can be customized for other applications:
  - Cosmetics
  - Fine chemicals
  - Food
  - Fillers

Available Versions

- J-200 or J-300 or J-400 milling chamber
- Open version for clean room
- Totally closed version stand alone
- LE (low emission version)

Technical Data

- Milling Chamber: J-200
  - Process gas at 7 bar = 1.70 m3/min (60.0 CFM)
  - Process gas at 12 bar = 2.74 m3/min (96.8 CFM)
  - Estimated capacity = from 0.5 to 50.0 kg/hour
- Milling Chamber: J-300
  - Process gas at 7 bar = 4.20 m3/min (148.3 CFM)
  - Process gas at 12 bar = 6.90 m3/min (243.7 CFM)
  - Estimated capacity = from 5.0 to 200.0 kg/hour
- Milling Chamber: J-400
  - Process gas at 7 bar = 7.00 m3/min (247.2 CFM)
  - Process gas at 12 bar = 12.00 m3/min (423.8 CFM)
  - Estimated capacity = from 10.0 to 350.0 kg/hour

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