

### J-100 J-125 J-150 Fluid Jet Micronizers

Fluid jet micronizers designed for small production

The Fluid Jet family of micronizers (including the J-100 J-125 J-150 machines) is based on TECNOLOGIA MECCANICA jet milling technology. These micronizers work at a constant temperature (endothermic) and independently with a small air compressor or a standard nitrogen supply. 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 centre of the chamber.

#### At a glance

- Productivity from 0.50 to 30.00 kg/hour
- One single collecting point
- Static classifier in three different configurations
- Scalability of the process to bigger micronizers
- Very low product loss, typical yields are 99% 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, Ptfе, 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. Try your custom version, our team works with you in order to develop your personal system.

Options already available:



- Volumetric or gravimetric pharma feeders
- Many different configurations for cyclone filter
- Sanitary rotary valve for the product collection
- In line sampling device
- Low Emission version with Hepa filter
- Balance line
- CIP and SIP systems
- Cold / Cryogenic process gas version
- Explosion proof version
- Sterile version
- System fully automated by PLC/HMI
- Totally contained solution in isolator



## Technical Features

This series of micronizers has been developed in order to satisfy the market request for a new line of micronizers which stands between the bigger pilots and the smaller production equipments. Our original and modular study has allowed us to develop a transversal new line of equipments able to micronize batches/samples from 1-2 kg/hour till 30 kg/hour for little production at extremely narrow particle size distribution  $D_{99} < 3$  micron.

The main strength/innovation of these machines is their capability to work with an incredible small quantity of process gas and in an extremely easy way that can't be absolutely done with bigger production equipments, in few words *"this line of equipments brings micronization to an ever reach easy level of operation and of maintenance plus with an incredible low cost of energy for process gas and related equipments"*. Our technical team has developed this new family of micronizers which has the lowest consumption of process gas per kg of production on the market.

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

- Modular components that can be shared by all the different milling chambers
- Upper and lower plates + central nozzles ring closed by three handles or by a single V-clamp
- Open manifold execution, FDA validable
- Stainless steel cyclone filter with polyester anti-static filter sleeve
- Pneumatic shaking system totally automated
- Supporting table with two pressure gauges, one thermometer and two ball valves
- Anti static swivel castors

### Available Versions

- J-100 or J-125 or J-150 milling chamber
- J-100/J-125/J-150 glass process side parts
- J-100/J-125/J-150-LE (low emission version)
- J-100/J-125/J-150-CRYO (cryogenic version)

### Technical Data

- Milling Chamber: J-100
  - Process gas at 7 bar = 0.45 m<sup>3</sup>/min (15.9 CFM)
  - Process gas at 12 bar = 0.73 m<sup>3</sup>/min (25.8 CFM)
  - Estimated capacity = from 0.50 to 7.50 kg/hour
- Milling Chamber: J-125
  - Process gas at 7 bar = 0.59 m<sup>3</sup>/min (20.9 CFM)
  - Process gas at 12 bar = 1.01 m<sup>3</sup>/min (35.7 CFM)
  - Estimated capacity = from 0.50 to 15.00 kg/hour
- Milling Chamber: J-150
  - Process gas at 7 bar = 0.73 m<sup>3</sup>/min (25.8 CFM)
  - Process gas at 12 bar = 1.25 m<sup>3</sup>/min (44.2 CFM)
  - Estimated capacity = from 0.50 to 30.00 kg/hour

**Our Workshop address:**

## Tecnologia Meccanica Srl

Via S. Cristina 37 - 24048 Albegno di Treviolo – Bergamo – Italy

**Telephone** +39 035 691320

**Facsimile** +39 035 201175

**Electronic mail** [info@tecnologia.it](mailto:info@tecnologia.it)

**Website** [www.tecnologia.it](http://www.tecnologia.it)

The manufacturer reserves the right to modify specifications without prior notice.