



R&D

Clinical trials

Production

## DEC MicroJet Series

*The Next Generation of  
Jet Milling Technology*

## Powder Handling Excellence

# DEC Micronizing

R&D

# DEC Micronizing

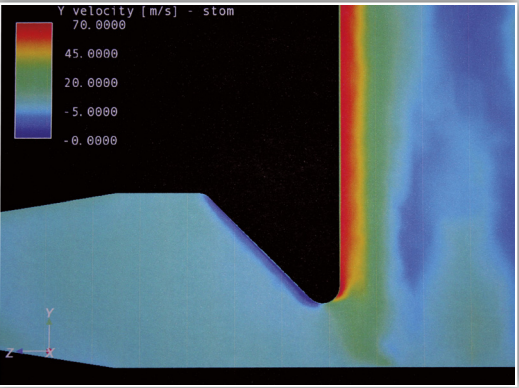
Clinical trials

# DEC Micronizing

Production



With a new monoblock design, the pre-clinical trials development tool **DEC's MicroJet 10** jet mills is the only tool you will ever need for NCE (New Chemical Entity) product development, with ability to produce batches of less than 1 gram.



From CFD mathematical modelling comes **DEC's MicroJet 4th Generation Jet Mill**, re-designed from the ground up using "Smoothflow Jet Technology" – Jet Milling Technology re-engineered, re-worked and re-invented.



Dec's "**Single Pass Jet Milling Technology**" used in the new range surpasses all existing jet milling systems on the market in terms of performance, product recovery and PSD manipulation.



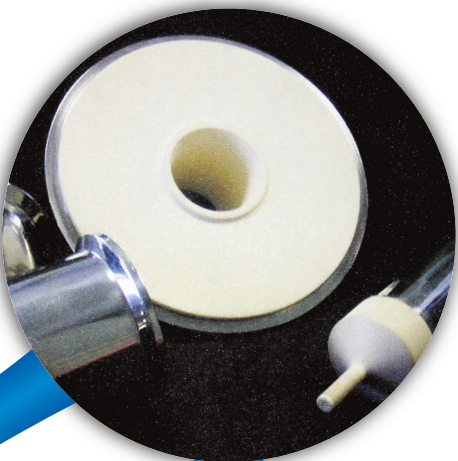
The 4th Generation **DEC MicroJet 10**, **DEC Microjet 25** and **DEC MicroJet 50** are jet mills for extended NCE development and pre-clinical trials. With CFD re-modelled and re-designed internals including Dec's monoblock system and the use of "Smoothflow" the jet nozzle development creates advanced systems able to generate nano particles with less gas use, ensuring a greener process.

The clinical trials scale **DEC Microjet 100** and **DEC MicroJet 150** share the same technology as the R&D models complete with top and bottom exit configurations, however, for improved ergonomics, these models can also be supplied both vertically and horizontally with containment available as a standard option.

As for sterile jet mills, the new MicroJet Series is designed to support CIP/SIP allowing for full closed loop processing from start to finish. This is aided by use of Dec's own integrated self draining monoblock system and integrated intermediate cyclone and "Sterile Break Technology" when necessary.



These systems are temperature and pressure mapped for complete sterility assurance throughout the process combined with DEC's patent pending sterile pack off systems, all of which are designed with full CFR21 part 11 compliance if required.



The new larger production systems including the **DEC MicroJet 200**, **DEC MicroJet 300** and **DEC Microjet 400** share the same uprated technology as part of the 4th Generation but they are also available with a number of advanced product collection systems to suit your facility, from the new "wing" cartridge filter system through to sterile intermediate cyclone technology. That combined with "Single Pass Technology" and high yield recovery makes them the ideal tools for intermediate production throughputs.

Ergonomics is also critical to the new design with the intuitive assembly system. To enhance this further, Dec have designed the jet mills in horizontal or vertical mode thus reducing the foot print of the larger systems. These are available in both sterile or non-sterile and contained or non-contained configurations.



Dec's 4th Generation with single pass philosophy results in superior yields, significantly improved PSD manipulation, improved ergonomics, intuitive assembly and reduced downtime. The future is here today.

**One Pass - One Time.**

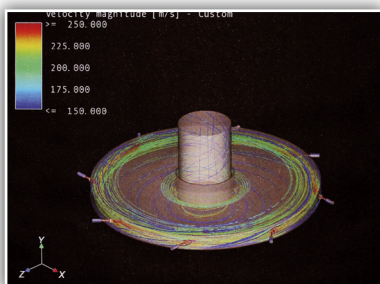


# DEC Micronizing Technology

Re-Engineered · Re-Worked · Re-Invented

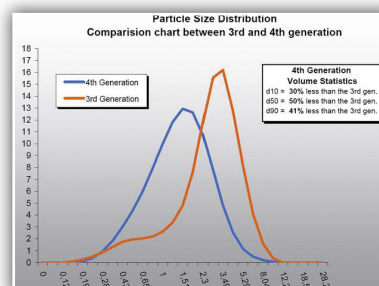
## The Inspirational DEC MicroJet 4th Generation Jet Mills from Dec. The next step into a new generation.

The **DEC MicroJet 10** is the new CFD (Computational Fluid Dynamics) developed jet mill (patent pending) for pre-clinical trials and stage 1 development tool for Particle Size Reduction and Control. This new series of DEC MicroJet jet mills has been designed and developed using this new technology creating a complete range of 4th Generation of Jet Mills incorporating Jetpharma Technology.



The New Generation of jet mills allows for greater manipulation of the PSD (Particle Size Distribution), the production of nano particles (below 1 micron), all with "Single Pass Technology" and complete product scalability throughout the **DEC MicroJet** series of jet mills.

The design team developed and built new micronizing equipment to deal with the most difficult products from sticky to hard and from brittle to soft, while minimizing blow back and product build up which includes the use of alternative materials.



The design was achieved by the use of advanced mathematical modelling and "Real World Trials" with the aim of increasing product residence time which maximizes energy in the grinding process allowing for maximum particle size reduction and PSD profile manipulation for today's difficult products.

To improve ergonomics and flexibility, the DEC MicroJet series can be operated both vertically and horizontally with full SIP and CIP options for sterile production. It also has green credentials as it has an optimized gas flow, therefore less gas consumption than current systems. It can be supplied contained for HAPI's or non-contained for non-toxic products.





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