

NETZSCH

Proven Excellence.



Fine Impact Mill *CONDUX*[®] *VITA*

for Pharmaceutical Applications

Business Unit
GRINDING & DISPERSING

Fine Impact Mill *CONDUX*[®] *VITA* for Pharmaceutical Applications

In pharmaceutical manufacturing, powder properties are decisive. Particle size influences blend homogeneity, tabletability, dissolution behavior and ultimately product quality. Even small variations can have measurable effects on downstream processing and regulatory compliance.

The *CONDUX*[®] *VITA* Fine Impact Mill has been developed specifically for dry grinding and deagglomeration in regulated pharmaceutical environments. It enables controlled, reproducible particle size adjustment while supporting hygienic design and efficient cleaning procedures.

Whether processing APIs, excipients, vitamins or functional polymers, *CONDUX*[®] *VITA* helps transform raw powder into a defined, reliable starting point for stable pharmaceutical production.

Defined particle size.
Reliable processes.
Confident production.



APIs for Tablet Production

Consistency begins with controlled particle size

In tablet production, uniform distribution of the active ingredient is essential. Segregation effects, uneven blending or inconsistent dissolution behavior are often linked to inadequate or unstable particle size distributions.

With *CONDUX® VITA*, APIs can be precisely size-reduced or deagglomerated to match formulation requirements. Adjustable grinding tools and defined process parameters allow you to establish a reproducible particle size window tailored to your product.

By stabilizing the powder characteristics at an early stage, you strengthen the robustness of the entire manufacturing process.

Your Advantages at a Glance

- Improved blend homogeneity
- Reduced segregation risk
- Consistent dissolution behavior
- Reliable tablet compression
- Efficient product change in multi-product facilities

Application Example: Reliable API Milling

Processing pharmaceutical APIs requires more than simple size reduction. Cohesive, non-free-flowing powders are difficult to feed and demand absolute process stability. In a recent project, a NETZSCH *CONDUX® VITA* mill successfully reduced a challenging API from:

- $d_{90} = 1000 \mu\text{m}$

to

- $d_{90} = 30 - 100 \mu\text{m}$

at a stable throughput of 40 kg/h.

Despite the material's poor flow behavior, optimized feeding and precisely controlled milling parameters ensured consistent product quality and reproducible results.

In pharmaceutical production, it is not about maximum throughput, it is about maximum control.





Fillers & Excipients (e.g. Lactose)

Optimizing functionality through defined fineness

Excipients such as lactose do far more than fill space. They influence flow behavior, compressibility, tablet hardness and overall process stability. A precisely defined particle size distribution ensures that excipients support rather than limit formulation performance.

CONDUX® VITA enables flexible adaptation to various fineness targets. Interchangeable grinding elements and optional classification allow accurate upper particle size limitation and consistent batch-to-batch results.

For applications requiring ultrafine particle sizes for example inhalation grades, complementary jet milling technologies are available within the NETZSCH portfolio, ensuring that the most suitable solution is applied for each requirement.

Defined particle size means predictable functionality and predictable functionality means safer production.

Your Advantages at a Glance

- Tailored PSD for optimized compressibility
- Stable mixing behavior
- Improved flow characteristics
- Economical and efficient processing
- Reproducible product quality



Vitamins & Dietary Supplements

Improving flow and dosing reliability

Vitamins and nutraceutical powders frequently exhibit agglomeration or inconsistent flow behavior. These effects can result in dosing variability and uneven distribution in blends.

CONDUX® VITA supports controlled deagglomeration and fine grinding, improving powder flow and handling properties. By adjusting grinding intensity and selecting the appropriate tool configuration, the process can be adapted to the specific material behavior.

Better powder behavior directly translates into improved process stability and product consistency.

Your Advantages at a Glance

- Improved homogeneity in premixes
- Enhanced dosing precision
- Adjustable fineness for capsules or tablets
- Efficient and controlled energy input

Pharmaceutical Polymers

Supporting functional performance through precision grinding

Pharmaceutical polymers play critical roles in controlled release systems, binding mechanisms and film-forming applications. Their performance is closely linked to particle size characteristics.

CONDUX® VITA enables defined size reduction and precise upper particle limitation. The result is improved downstream processing stability and more predictable functional performance.

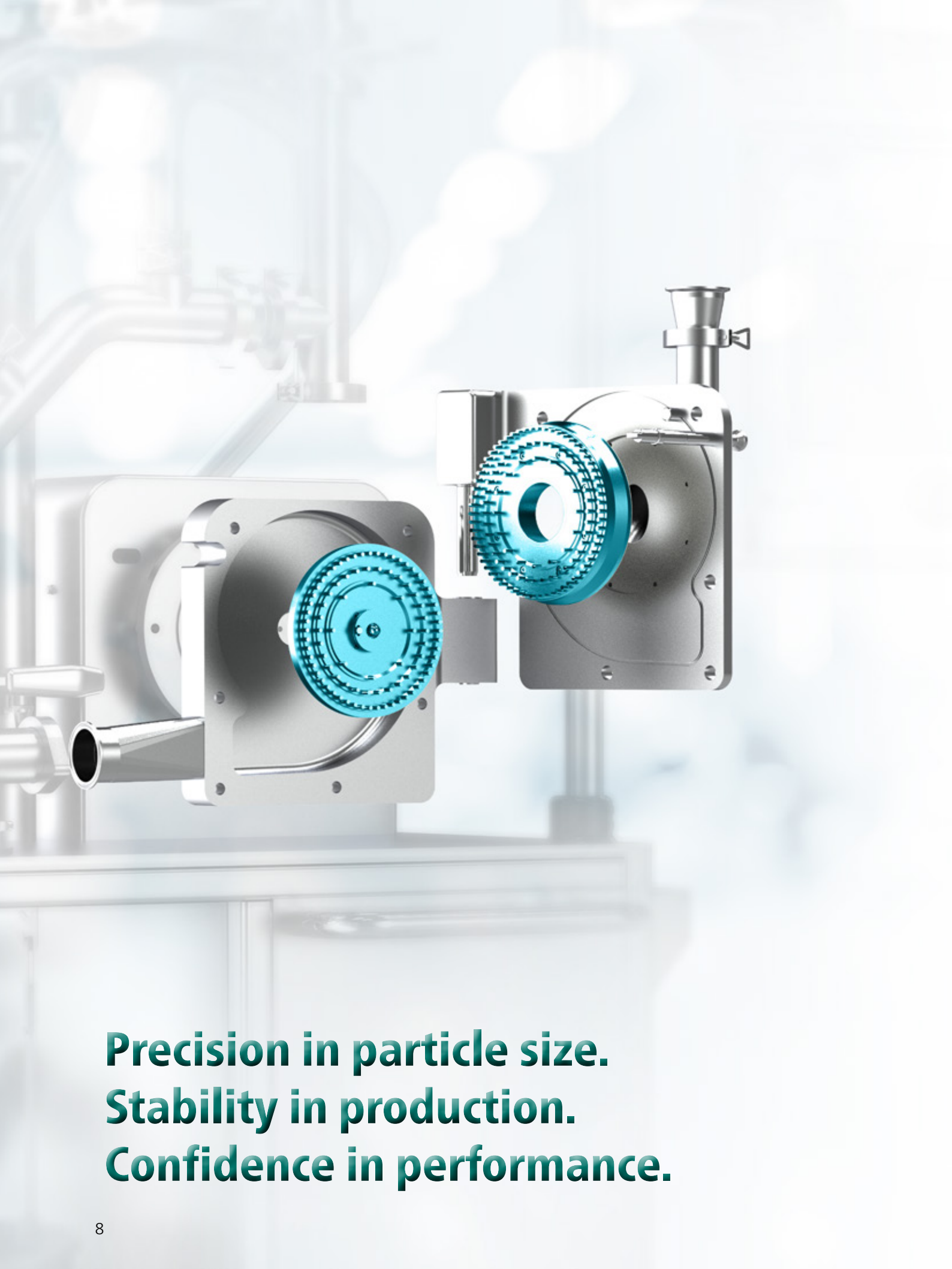
Reliable particle characteristics create a solid foundation for consistent pharmaceutical functionality.

Your Advantages at a Glance

- Stable processing in blending and tableting
- Defined particle size limits
- Flexible adaptation to material properties
- Reproducible operating conditions



NETZSCH CONDUX® VITA with cleaning system



**Precision in particle size.
Stability in production.
Confidence in performance.**

Fine Impact Mill **CONDUX® VITA** for Pharmaceutical Production Environments

Pharmaceutical processing requires more than grinding performance. It requires cleanability, documentation and process transparency.

CONDUX® VITA has been developed with these requirements in mind.

The machine concept supports safe operation in regulated production areas and multi-product facilities.

Faster Cleaning. Reduced Downtime.

Accessible design and minimized product residues simplify cleaning procedures and reduce downtime during product changes. This supports higher equipment availability and improved overall equipment effectiveness.

GMP-Oriented Construction

- GMP-focused machine design
- FDA-compliant product-contact materials
- Material and calibration certificates
- FAT, IQ and OQ documentation
- Hygienic surfaces and optimized accessibility

**Let us work together to define the optimal
solution for your pharmaceutical application**





Pharmaceutical Expertise

NETZSCH Grinding & Dispersing Business Unit combines pharmaceutical process knowledge with global engineering expertise.

From application development and trials to system integration and long-term support, customers benefit from a partner who understands both particle technology and pharmaceutical production environments.

- Application-specific consulting
- Process development and validation support
- Integration into complete system concepts
- Global service network
- Long-term partnership approach

From Trial to Reliable Scale-Up

Before implementation, NETZSCH offers application trials to define:

- Optimal fineness targets
- Throughput performance
- Tool configuration
- Process parameters for scale-up

Validated test results provide a secure basis for investment decisions and process transfer from laboratory to production.

NETZSCH *AFTERSALES* Service

Close to the Heart of NETZSCH!

In NETZSCH, we are totally convinced that AfterSales service really matters to our customers. When you acquire NETZSCH equipment, it is our commitment to keep it in operation under optimal performance through the rest of its lifetime. Our promise is to minimize downtimes by using an agile and reliable full program of preventive maintenance, remote assistance, and field service support, using, when needed, high quality original spare parts at fair prices in a short and reliable delivery time. But that is not enough; in our ongoing search for excellence, we also promise to keep your production process at an optimal and efficient state of the art operation condition, giving process advice and machine improvements.

Installation Support

To obtain and ensure the best performance from any equipment, it is essential to plan and execute the installation and supervise the commissioning and start-up of the equipment.

Our *AFTERSALES* service technicians are ready to support you in:

- Installation & Assembly
- Dry Commissioning (without product)
- Wet Commissioning (with product)
- Site Acceptance Tests (SAT)

Optimization Services

At NETZSCH we have been designing, supplying, commissioning, and servicing Grinding & Dispersing equipment for more than 140 years. Let us share some of this knowledge and experience with you.

- Upgrades
- Calibration y Certification
- Training & Education
- Process optimization

Spare Parts

At some point your machine may require replacement broken or worn-out parts. Ensure smooth operation your equipment by using NETZSCH original spare parts.

Field Service & Support

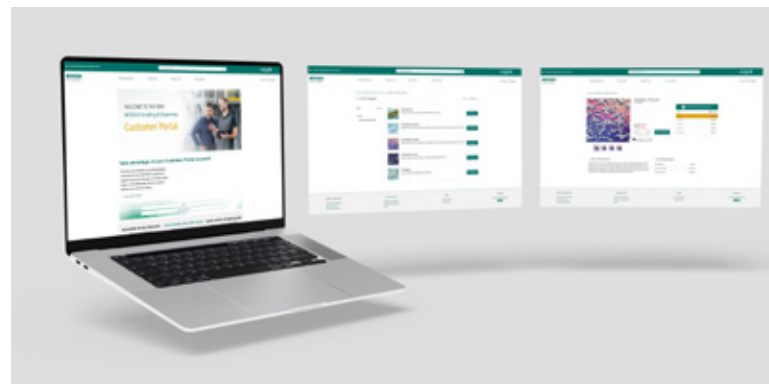
To ensure that your equipment is always in perfect condition, trust in NETZSCH support for all field services.

We help you in all areas of *AFTERSALES*:

- Inspections
- Repairs at your site
- Repairs at NETZSCH
- Remote Support
- Service Agreements
- Re-commissioning

Customer Portal

The new digital platform and online shop for NETZSCH customers. Check the service history of your equipment, open a new service case, and buy online grinding beads at the best price.



EXPLORE: mynetzsch.com

The owner-managed NETZSCH Group is a leading global technology company specializing in mechanical, plant and instrument engineering.

Under the management of Erich NETZSCH B.V. & Co. Holding KG, the company consists of the three business units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems, which are geared towards specific industries and products. A worldwide sales and service network has guaranteed customer proximity and competent service since 1873.

Proven Excellence.

Business Unit Grinding & Dispersing – The World’s Leading Grinding Technology

NETZSCH-Feinmahltechnik | Germany
NETZSCH Trockenmahltechnik | Germany
NETZSCH Vakumix | Germany
NETZSCH Lohnmahltechnik | Germany
NETZSCH Feinmahltechnik Polska | Poland
NETZSCH Mastermix | Great Britain
NETZSCH Broyage | France
NETZSCH Macinazione & Dispersione | Italy

NETZSCH España | Spain
NETZSCH Machinery and Instruments | China
NETZSCH India Grinding & Dispersing | India
NETZSCH Tula | Russia
NETZSCH Makine Sanayi ve Ticaret | Turkey
NETZSCH Premier Technologies | USA
NETZSCH Equipamentos de Moagem | Brazil

NETZSCH Trockenmahltechnik GmbH
Rodenbacher Chaussee 1
63457 Hanau
Germany
Tel.: +49 6181 506 01
Fax: +49 6181 571 270
info.ntt@netzsch.com



NETZSCH[®]

www.netzsch.com