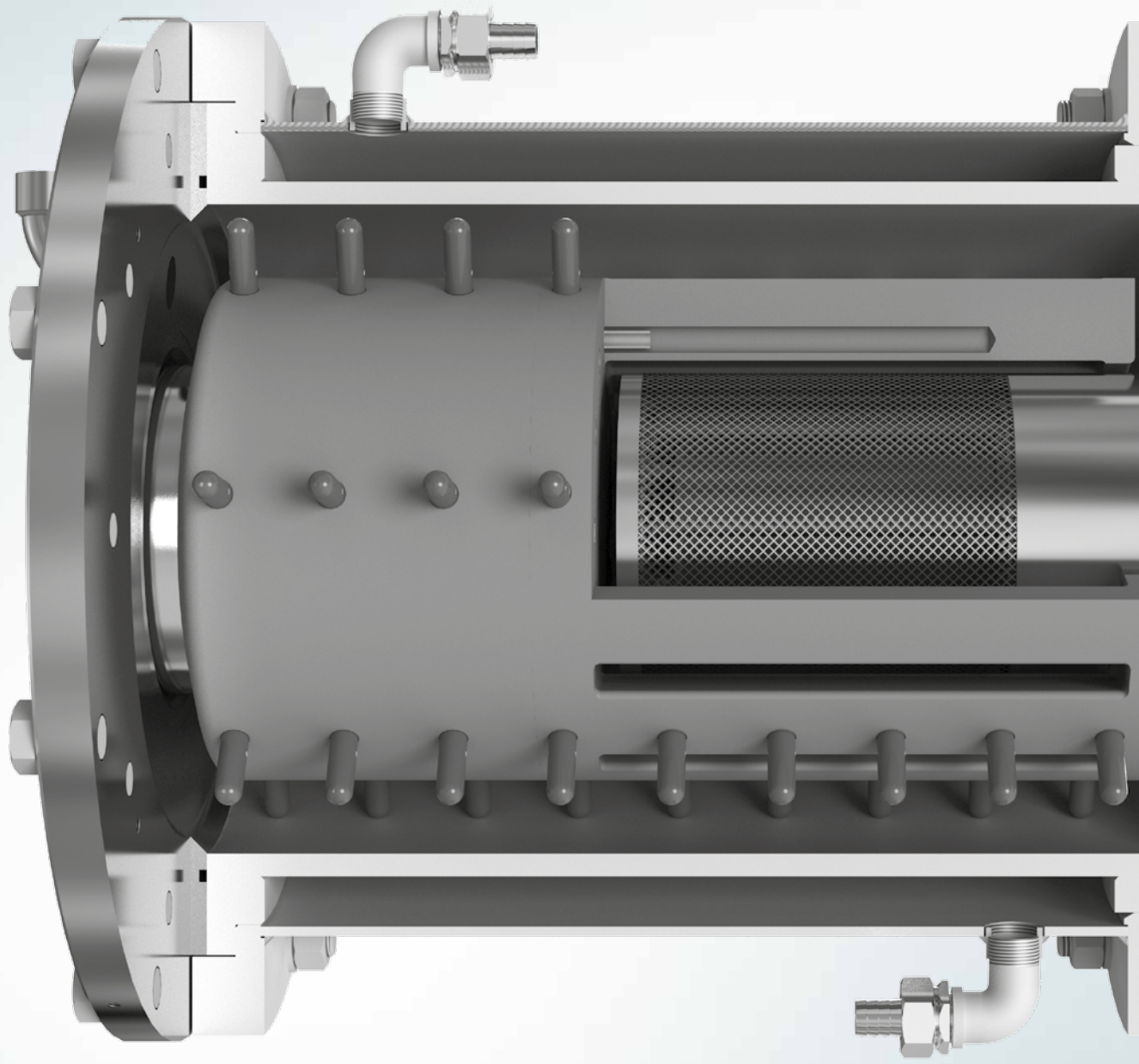


NETZSCH



Grinding System *NEOS*

Performance and Efficiency – More than one Step Ahead

CHEMICAL INDUSTRY | a Business Field of
NETZSCH Grinding & Dispersing

NETZSCH *NEOS* Grinding System

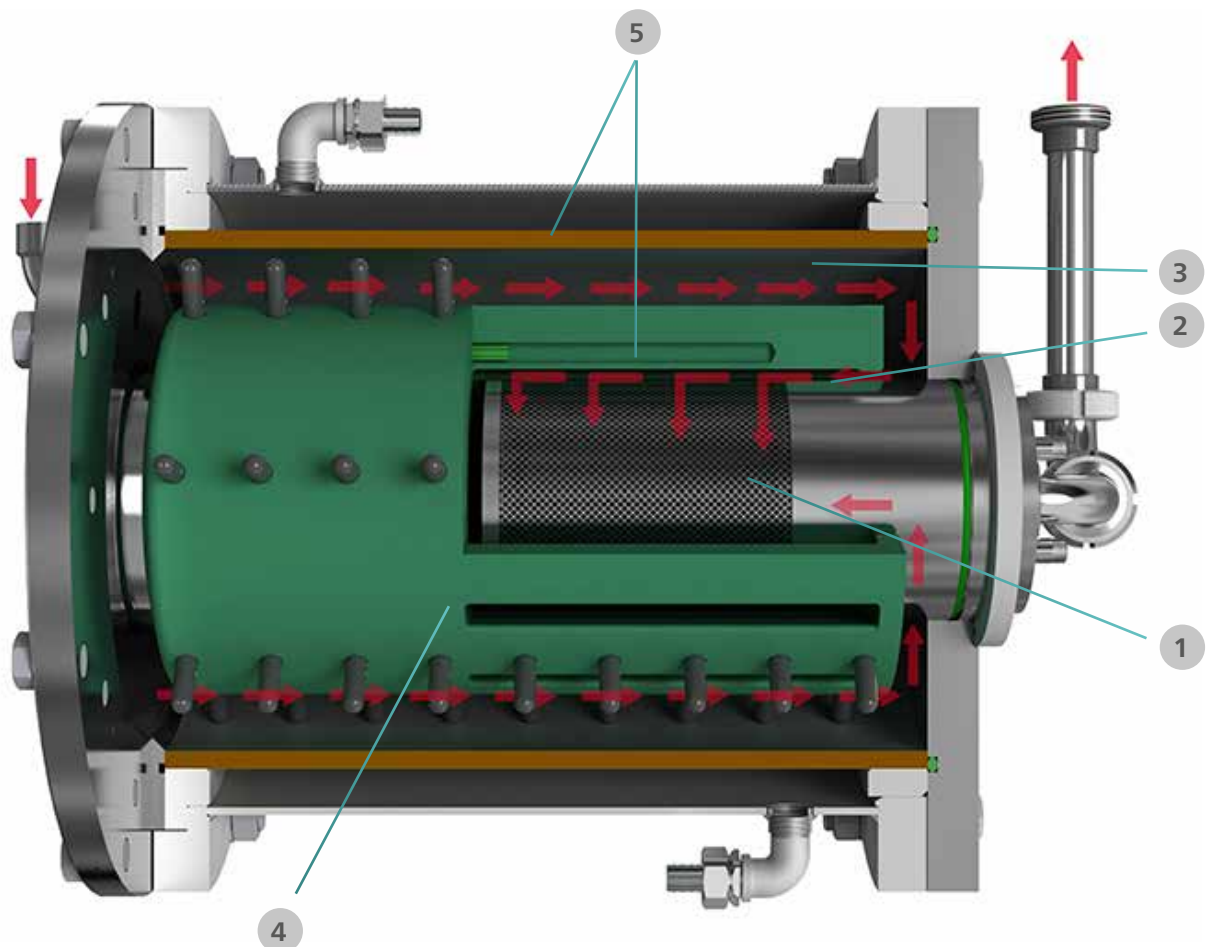
Performance and Efficiency – More than a Step

The agitator bead mill with the newly-developed *NEOS* grinding system stands for maximum performance, product quality and efficiency.

Coupled with the reliable use of extremely small grinding media, you can achieve your required product quality with high production output and low specific energy consumption.

During the design phase, particular attention was given to achieving maximum cooling efficiency. As a result, it is possible to stay within the required temperature limits even with high power input.

This means a significant increase in production output compared to similar grinding systems.



Features of the *NEOS* grinding system:

- 1 Maximum slotted pipe surface area
- 2 Optimized grinding media separation
- 3 Maximum cooling surface to grinding chamber volume ratio
- 4 New rotor design for efficient power input
- 5 Optimum grinding chamber cooling with NETZSCH-CERAM C inner tank and optional rotor cooling



Ahead

Model Sizes – from the laboratory to large-scale production

Models	Grinding chamber volume [l]	Batch size [l]	Drive [kW]	Throughput in circulation mode [kg/h]
<i>ALPHALAB</i>	0.5	2 - 10	3	70 - 200
<i>ALPHANEOS 2</i>	1.6	5 - 50	7.5	200 - 600
<i>ALPHANEOS 10</i>	8.5	30 - 500	22 / 30	1 000 - 3 000
<i>ALPHANEOS 20</i>	20	400 - 2 000	45 / 55	2 000 - 6 000
<i>ALPHANEOS 50</i>	55	1 000 - 4 000	90 / 110	4 000 - 12 000

Application

- Printing Inks
- Lacquers & Coatings
- Agrochemistry
- Pigment Preparations

Your Benefits

- The highest power input without overheating the product
- Maximum volume throughput
- The highest cooling efficiency
- Use of extremely small grinding beads (0.1 to 0.8 mm)
- Reproducible product quality
- High degree of process reliability
- Low operating costs
- Conversion of existing machines to the latest technology

NETZSCH *NEOS* – Increase your Production

High Power Input

A high power input is achieved with the new grinding system *NEOS* which realizes a high productivity.

Maximum Volume Throughput

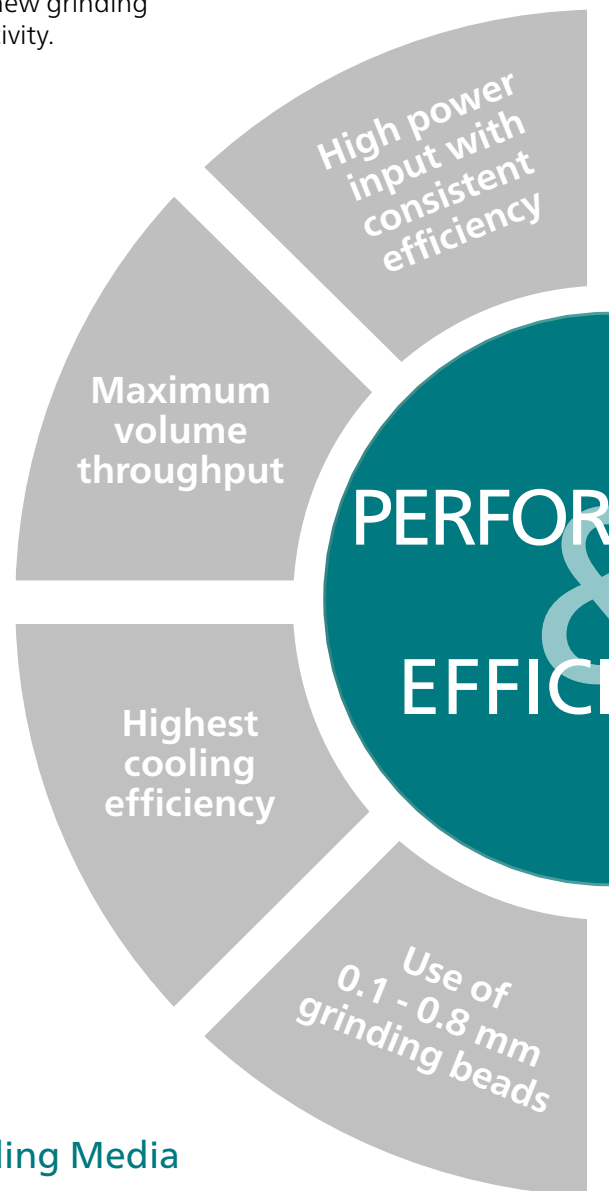
In the circulation operation mode, the required number of cycles is achieved very quickly due to the extremely high volume throughput.

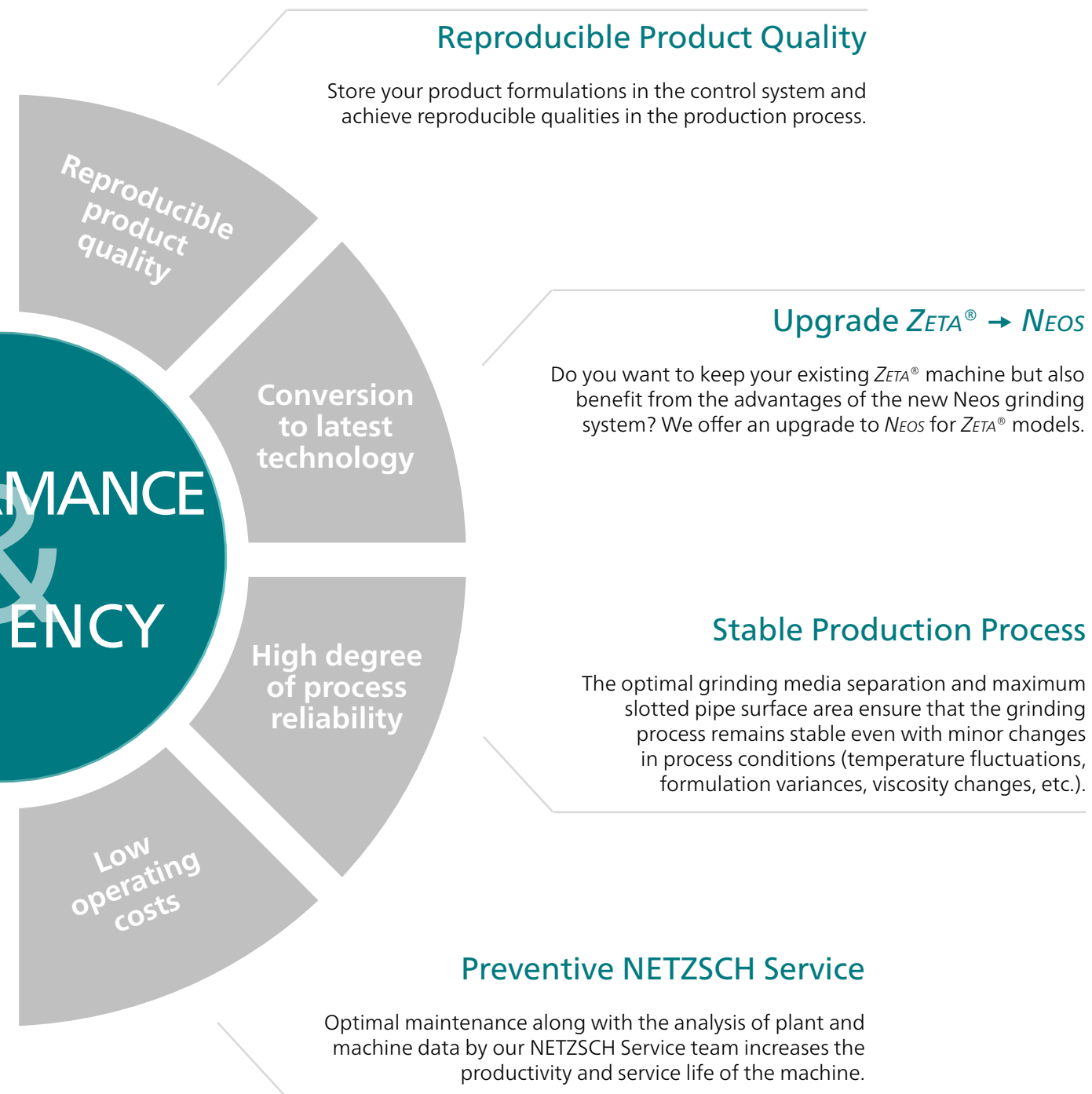
Optimized Cooling

The highest cooling efficiency results from the use of new materials and optimum utilization of the available cooling surface.

Use of extremely small Grinding Media

Select the right size of NETZSCH *ZETA*®-*BEADSPLUS* for your process.





NETZSCH *NEOS* – Successfully implemented

Test the new *NEOS*

NC Flexo Printing Inks

During production of an NC flexo printing ink with a *NEOS* 20, a net power input to the grinding chamber of 37 kW was possible without reaching the temperature limit of the product. In the existing process with a standard machine, the temperature limit was met with a net power input of 23 kW.

With the use of the new *NEOS* in combination with optimized process parameters, the production performance was increased to more than 200% when employing a comparable machine size.

Machine	Standard machine	<i>NEOS</i> 20
Grinding beads [mm]	0,9	0,8
Net power input [kW]	23	37
Temperature [°C]	49	43
Flow rate [kg/h]	1 500 - 2 000	3 500 - 4 000
Specific energy [kWh/t]	260	175
Net productivity [kg/h]	90	220
Increase in productivity		240%

Textile Inkjet

For the processing of Digital Ink, covering decorative, packaging and functional inkjet, *NEOS* grinding system is also the optimal machine, in terms of design and materials selection.

In the case of textile inkjet grinding, our customers are getting results 30% - 40% better in terms of productivity to use of other peg-counter pegs systems available in the market. *Neos* provides in our grinding chamber sizes from 10 l - 50 l a perfect temperature control below 45°C.



ed Projects

grinding system at our pilot plant

Included in our extensive range of services are our applications laboratories, which are equipped to the latest technical standards. Applications labs are available to you at our locations around the world in Germany, China, Brazil, Russia, India, Korea and the USA.

In these laboratories, we test the products you provide for us for grinding or processing, in order to achieve optimum results based on your specifications. The tests can be carried out on laboratory machines as well as production plants. Upon completion of the tests, we provide you with an informative report, including the test results. In addition, it is possible to characterize the products on site with appropriate technical analysis.

Tests can be carried out for the process steps shown below:

- mixing and kneading
- dispersion
- fine grinding
- homogenization
- deaeration



NETZSCH *ALPHA*® - Series

Modular machine platform for customized solutions

The new *ALPHA*® sets the standard in flexibility and handling and, thanks to its modularity, allows customer-specific solutions: different grinding systems can be mounted on one base stand – tailor-made for the requirements of your product.

Your benefit from the modular design is the cross-system standardization and, with it, the possibility to change a machine over to a new grinding system at a reasonable cost. In addition, the *ALPHA*® is also the platform for future NETZSCH technologies, which guarantees you long-term investment security.





Focus on your benefits

- Common platform for four grinding systems allow for easy changeover
- Long-term investment security: *ALPHA*® is your platform for future NETZSCH technologies
- Cantilever grinding chamber and top-fed supply lines for optimal accessibility
- High level of work safety due to spatial separation of rotating machine parts from media-conveying installations allows safe access even during operation
- *ALPHA*® Cart service cart for removal of the grinding tank and accommodation of the grinding media



Product inlet

The tangential intake of product in the direction of rotation reduces recirculation of the grinding media, leads to a pressure reduction and prevents backup. It also facilitates emptying of the grinding beads for service or maintenance.



Cooling water flow

Optimal cooling of the grinding chamber and, depending on the system, the agitator shaft, makes extremely low processing temperatures possible. This means you can process even temperature-sensitive products.



Supply connections

For optimal connection of the *ALPHA*® to existing piping systems, all supply lines feed into the machine from the top. Obstacles on the floor are avoided and the mill is accessible to industrial trucks from all sides.

NETZSCH *ALPHA*NEOS

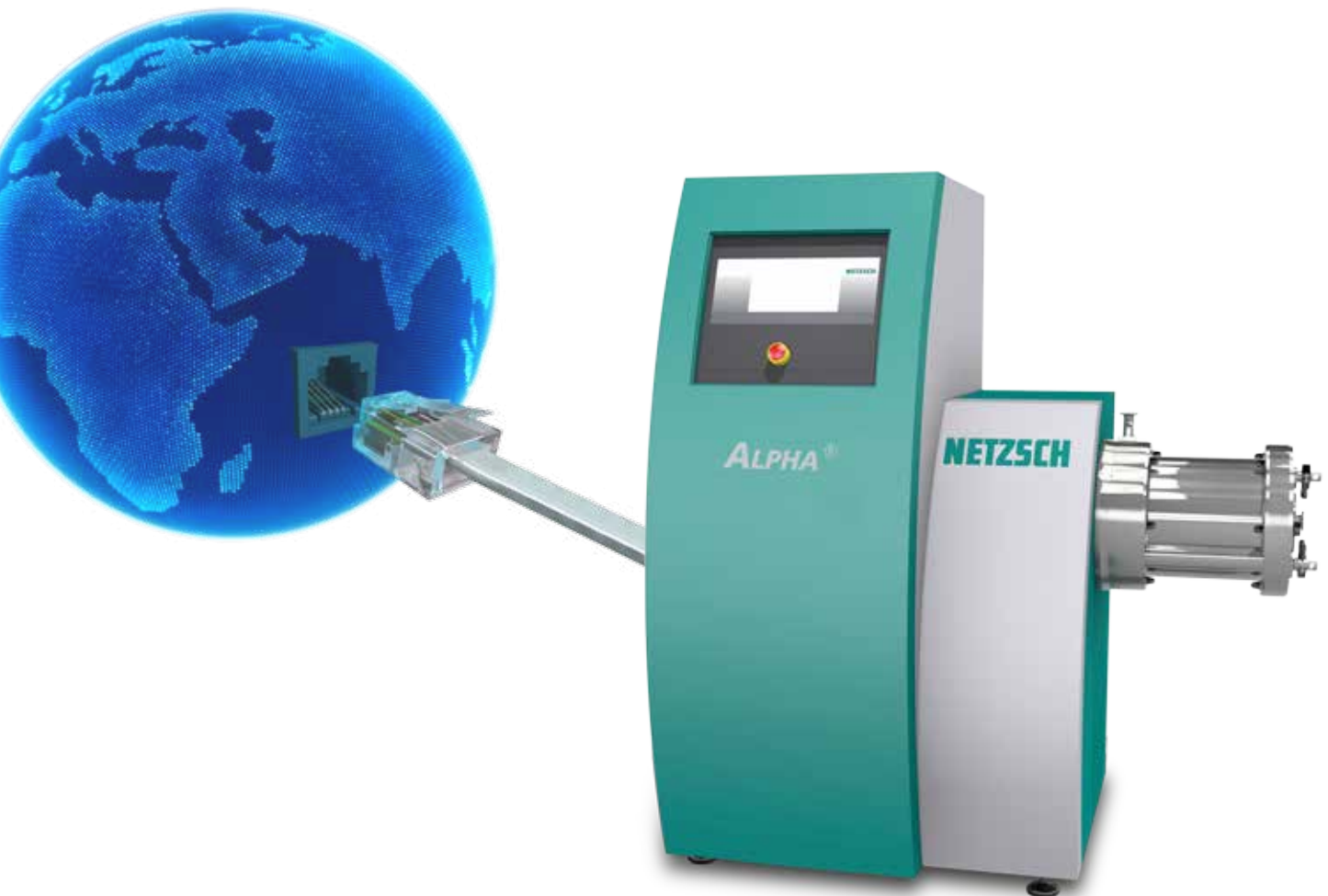
Operational Safety / Process Monitoring & Control

NETZSCH-CONNECT – ready for Industry 4.0

Linking the NETZSCH *ALPHA*® to NETZSCH-CONNECT enables you to acquire and store various process data from your machine.

With the database-oriented tool, which can be controlled via web browser, process data are continuously recorded, pre-processed and transferred to a central server as encrypted XML files via a VPN network. With the appropriate access authorization, you and your process specialists can view, analyze and export the data from any network-capable PC.

This provides you with indications of relevant changes in your production process, allowing you to draw conclusions about effects on the production quality. The evaluation of process data over an extended period of time aids in the optimization of your production. Maintenance and service work can be better planned. In addition, you receive details on production and shutdowns as well as their possible causes.



The choice is yours – Select the control system that is right for you:

NETZSCH BASE

With the capability for efficient process control through recording of the energy input, the basic version, NETZSCH BASE, offers more than just the necessary safety functions. The automatic screen cleaning sequence facilitates trouble-free processing of the most difficult products.

- Measurement and display of the agitator motor performance
- Fault lights to indicate values above/below limits
- kWh meter to record energy input (kWh), preset value for process shutdown, display toggling to current power input (kW)
- Infinitely adjustable agitator and pump speeds by means of frequency converter
- Automatic screen cleaning sequence
- Mill control via pushbuttons

NETZSCH GRAPH

Automatic operation is possible with the NETZSCH GRAPH control system. Operation, input and calculation parameters are shown on the graphic display. Automatic start allows reliable run-up of the machine to the preset operating parameters.

- Display of operation, input and calculation parameters (mill rotational and peripheral speed; gross and net mill output; pump speed; product pressure; product throughput – with optional flow meter, otherwise calculated from pump speed; product temperature and more ...)
- Presets for nominal and limiting values for automatic operation
- 7" color graphic display with touch-screen function and 16 colors

NETZSCH GRAPH *Plus*

Various control strategies are available with NETZSCH GRAPH Plus. The measured values are graphically assigned to the data points on the display. In automatic mode, the process parameters can be acquired from the process databank, which manages formulations for a maximum of 98 product data sets. This allows you to process any formulation automatically according to individual parameters.

- Display of operation, input and calculation parameters analogous to NETZSCH GRAPH
- Display of trend graphs for the most important process data
- Preset values for all operational modes for a batch
- Control strategies such as power, temperature, pressure or throughput control – flow meter required
- Shutdown functions can be selected and combined:
 - Timer
 - Energy input and/or number of cycles
 - For passage mode, shutdown is pressure-dependent
- 12" (IP) or 10.4" (ATEX) color graphic display with touch-screen function and 256 colors

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

NETZSCH-Feinmahltechnik GmbH
Selb, Germany

NETZSCH Lohnmahltechnik GmbH
Bobingen, Germany

NETZSCH Premier Technologies,
LLC. Exton PA, USA

NETZSCH Indústria e Comércio de
Equipamentos de Moagem Ltda.
Pomerode, Brazil

NETZSCH Technologies India
Private Ltd.
Chennai, India

NETZSCH Trockenmahltechnik GmbH
Hanau, Germany

NETZSCH España, S.A.U.
Terrassa/Barcelona, Spain

NETZSCH Mastermix Ltd.
Lichfield, Great Britain

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and Instruments Co., Ltd.
Shanghai, China

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The NETZSCH Group is a mid-sized, family-owned German company engaging in the manufacture of machinery and instrumentation with worldwide production, sales, and service branches.

The three Business Units – Analyzing & Testing, Grinding & Dispersing and Pumps & Systems – provide tailored solutions for highest-level needs. Over 3400 employees at 210 sales and production centers in 35 countries across the globe guarantee that expert service is never far from our customers.

NETZSCH-Feinmahltechnik GmbH
Sedanstraße 70
95100 Selb
Germany
Tel.: +49 9287 797 0
Fax: +49 9287 797 149
info.nft@netzsch.com

NETZSCH®

www.netzsch.com