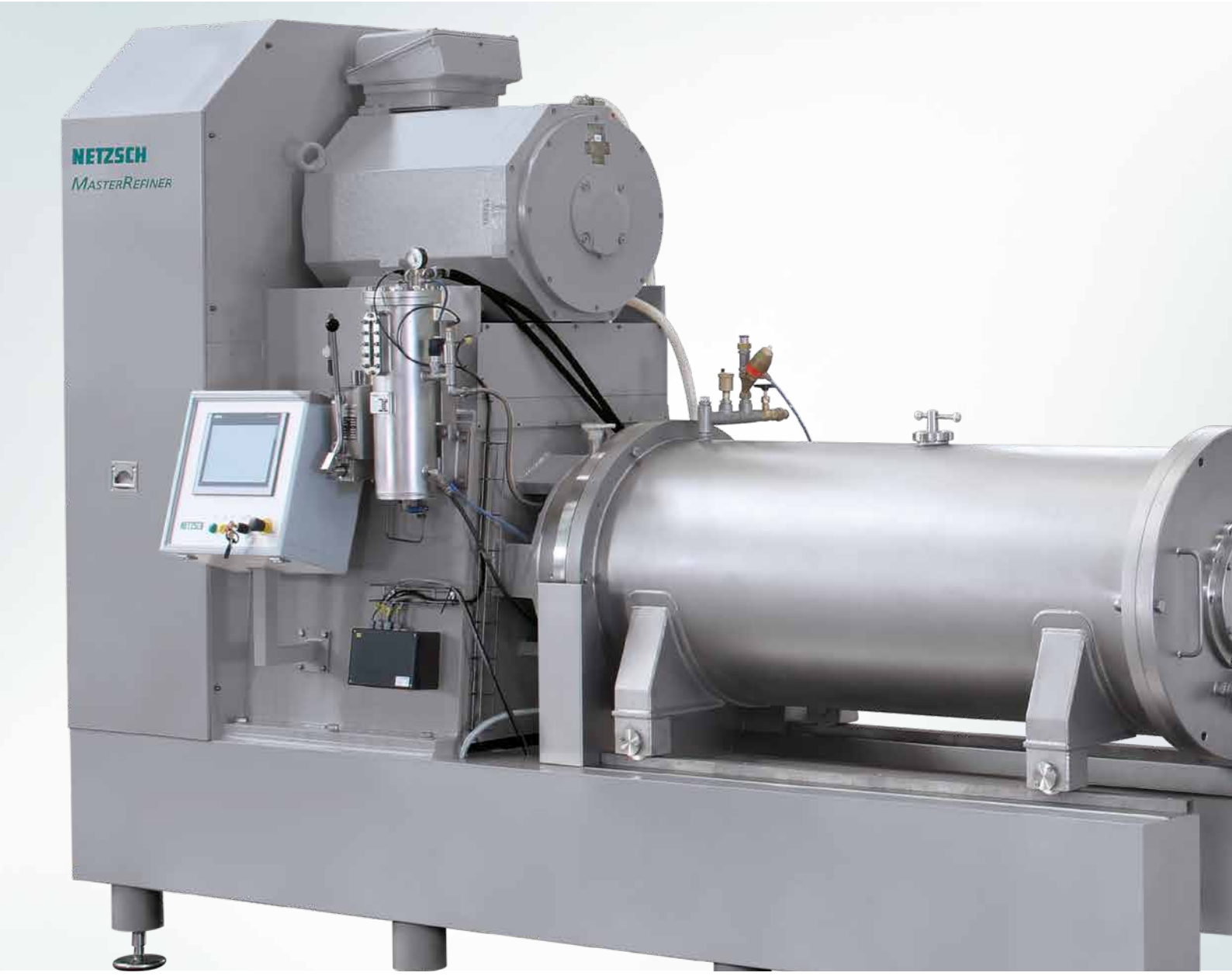
NETZSCH



MasterRefiner

The Agitator Bead Mill for the Food Industry

Business Unit
GRINDING & DISPERSING

NETZSCH Food & Confectionery – Your Global Partner

Across the globe, NETZSCH provides support for your confectionery mass production projects, from the raw materials all the way through to the finished product. To ensure the success of your investment from the very beginning, we take on the planning and implementation of your new production lines and train your personnel.

NETZSCH Food & Confectionery offers

- Applications support
- Service
- Modern solutions
- Supervision of tests and demonstrations
- Product development and control
- Quality

Your Advantage is Our Focus

- Completely closed system
- Easy cleaning
- Low energy consumption
- Short processing times
- Highest quality
- Space-saving
- Great flexibility

Product Development

Our modern applications laboratory is always state-of-the-art, fulfills your wishes and gives your ideas free rein. Here you can test new recipes or optimize the production of existing products. Visit us and experience our know-how for yourself.

Flexibility

The *MasterRefiner* combines the optimal performance of integrated pre-crushing, optimized length-diameter ratio, optimized grinding disks with high impact effect and the successful centrifugal separation system. This means that a broad range of products, throughputs and ideal grinding bead sizes can be processed easily in one passage with premium quality under suitable process conditions.

Creativity

In addition to standard products such as chocolate, fillings, compounds, spreads and nut pastes, you can also produce specialties, for example with different types of sugar and additives. You can also make white chocolate that is true-to-color, fully temperature controlled and with consistent, reproducible quality.

Savings

Compared to other agitator bead mills, the *MasterRefiner* is characterized by a lower energy requirement, up to 30 kWh/Ton less, as well as smaller space requirements, in particular for larger capacities machines with grinding chambers up to 1 000 l. The machine, which has been optimized for single passage operation, also provides the best conditions for fast and easy cleaning, and for changing product with small amounts of cleaning agents.

Economic Efficiency

The use of smaller grinding beads in combination with the specifically-conceived lower speeds significantly minimizes wear, even when grinding cocoa mass. Added to this are lower maintenance costs, little fluctuation in the results and minimal production downtimes. Plants with fewer machines mean lower service and spare parts costs.

Quality

With the *MasterRefiner* you achieve the best reproducibility in a continuous process. The simple menu-guided control concept, including energy and temperature control, allows precise adjustment for the desired quality, with end finenesses of <18 µm possible.

NETZSCH *MasterRefiner*
Fine Grinding of the Initial Mass

The desired end finenesses of chocolate coatings, icings and fillings are usually between 18 and 30 µm. Agitator bead mills that guarantee high throughputs are used to achieve these finenesses.

Of course, the maximum throughput capacity is - in addition to the efficiency of the separator system - influenced by the initial particle size of the sugar being used. With our integrated *Samba*® pre-grinding system, you save the extra step of pre-grinding the sugar.

With the *MasterRefiner* horizontal agitator bead mill, NETZSCH-Feinmahltechnik GmbH offers the optimal wet grinding system for the required crushing processes. The mill is equipped with highly-effective *NexWing*® grinding disks and an extremely efficient separation system.

This combination facilitates very high throughputs without compression of the grinding media in the outlet area.

The grinding chamber is available in chilled cast iron or wear-resistant steel. Steel grinding beads with various diameters are normally employed, depending on the feed fineness of the sugar.

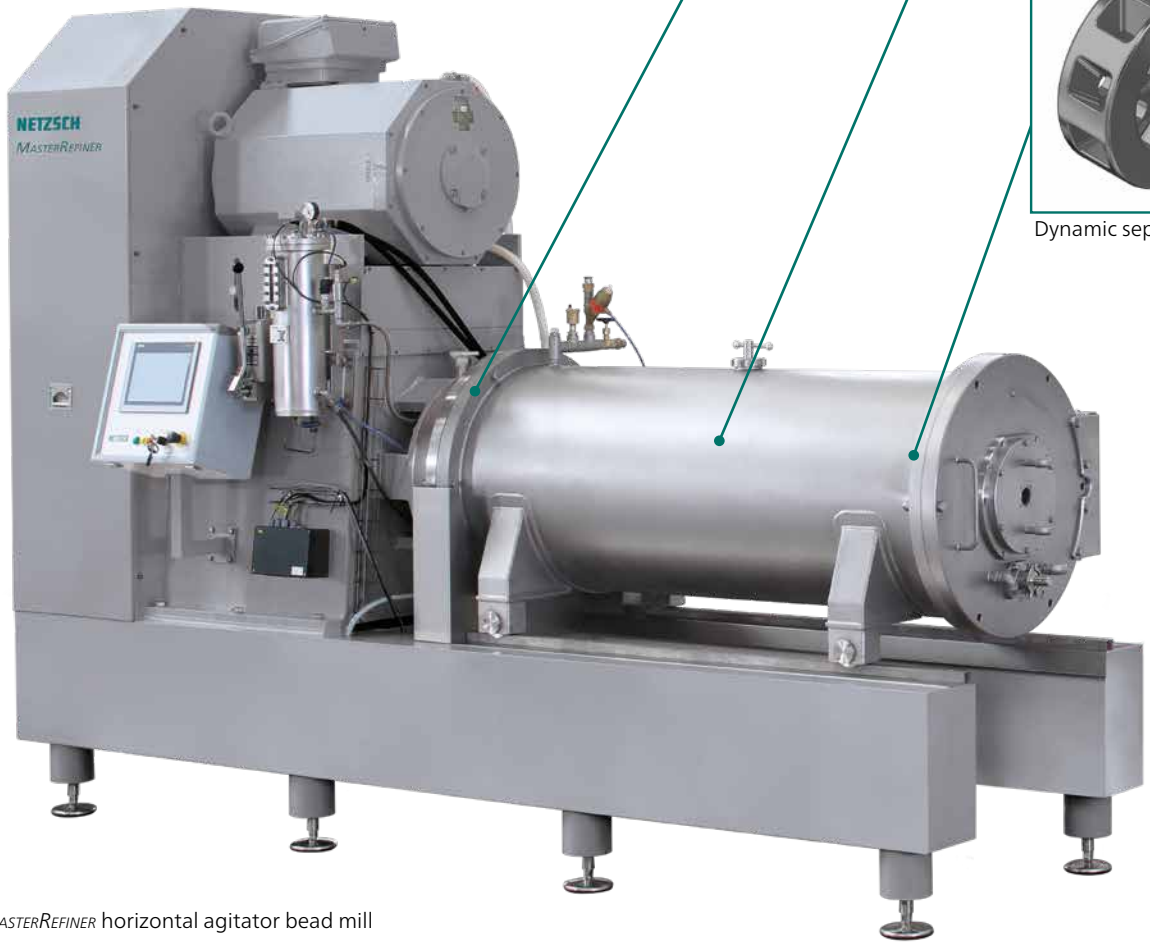
Alternative Designs

- Grinding tank removal assembly
- Heating/cooling unit
- New geometry, effective grinding in only one passage
- Integrated improved *Samba*® 2.0 pre-crushing system - effective pre-crushing of coarse particles in the charge material
- Compact plants and skids

Samba® pre-crushing system

NexWing® grinding disks

Dynamic separator rotor



MasterRefiner horizontal agitator bead mill

The Sizes at a Glance

A Variety of Sizes

First, the production capacity of a plant is dependent on the size of the *MasterRefiner* agitator bead mill employed. Second, it is strongly dependent on the initial fineness of the sugar used. This correlation is shown in the table below.

Mill type	Motor Power	Typical Throughput	Grinding Chamber Capacity
MasterRefiner 6	7.5 kW	20 - 60 kg/h	7 l
MasterRefiner 30	22 kW	100 - 300 kg/h	26 l
MasterRefiner 60	45 kW	200 - 600 kg/h	55 l
MasterRefiner 150	55 kW	300 - 1 000 kg/h	125 l
MasterRefiner 200	75 kW	500 - 1 500 kg/h	200 l
MasterRefiner 300	110 kW	700 - 2 100 kg/h	300 l
MasterRefiner 500	160 kW	1 000 - 3 000 kg/h	500 l
MasterRefiner 1000	250 kW	2 000 - 5 000 kg/h	1 000 l

The information stated here serves only as a guideline and can vary for technical reasons or due to product properties

NETZSCH Food & Confectionery
Service and Competence

Your Global Partner for the Production of Confectionery Masses

Our Technical Center in Selb/Bavaria is specifically furnished and equipped and hygienically designed for testing food and confectionery applications. After clarification of the technical details, you can unleash your creativity when it comes to the recipe. Our team in the Applications Laboratory is fully committed to ensuring that the tests lead to the anticipated result.

Machines and plants for varied applications and tasks:

- *MasterRefiner* 6 – feasibility tests and recipe development
- *MasterConch* 300 / *MasterRefiner* 30 – scale-up and toll grinding
- *MasterCream* 10 for pre-crushing various products (nuts, etc.) and processing rework
- *MasterNibs* 100 for grinding cocoa nibs to cocoa mass
- *GammaVita* for the preparation of suspensions, solutions and emulsions

On-site quality control with modern analytical instruments:

- Mastersizer 3000 for definition of the particle size distribution using laser diffraction
- Haake Mars II for determination of yield point and viscosity with coaxial cylinder system
- Spectra Star quantitative determination of ingredients such as sugar, fat and protein using near infrared spectroscopy

After every test, a test report is prepared with the machine parameters and analysis results and promptly forwarded to the customer.

NETZSCH Service

- Applications lab
- Product development
- Process-specific support
- Scale-up to your production requirements
- Project planning and management
- Commissioning, customer service, on-site service
- Training at NETZSCH and on site

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 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

customer portal

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

G&D · MasterRefiner · EN · 01/25 · Technical specifications are subject to change.