Within the RETSCH range of mills and grinders there is a specialist for every application. But what they have in common is that they produce perfectly homogeneous, unaltered and uncontaminated samples so that the subsequent analysis is always trustworthy and meaningful. If you require professional solutions that combine high performance, ease of use, a maximum of operational safety and a long lifetime, then RETSCH's equipment is your only choice!

Retsch®

Solutions in Milling & Sieving

a VERDER *company*

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Retsch®

Solutions in Milling & Sieving

SM 100
the budget-priced basic model for routine applications

SM 200
the versatile standard model which covers a wide range of applications

SM 300
the high performance model with unique features which processes even the most difficult materials

NEW

CUTTING MILLS

SM 100, SM 200 & SM 300

POWERFUL PRELIMINARY AND FINE SIZE REDUCTION

RETSCH cutting mills are suitable for preliminary grinding of soft, medium-hard, elastic, tough and fibrous samples as well as for heterogeneous material mixes. Size reduction is effected rapidly and gently by cutting which makes these mills ideal for processing temperature-sensitive materials. Typical areas of application for cutting mills are the size reduction of secondary fuels, the processing of biomass for renewable energy research, the control of products in the context of RoHS and WEEE regulations or the recovery of precious metals.

Parallel section rotor or 6-disc rotor selectable

Cutting Mill SM 300 with Cyclone-Suction-Combination

ADVANTAGES SM 300

- powerful size reduction thanks to 3 kW drive with high torque and RES technology
- perfect adaptation to application requirements by variable speed from 700 to 3,000 min^{-1}
- optimum cutting effects thanks to double acting cutting bars
- quick and easy cleaning without tools due to fold-back hopper, smooth surfaces and push-fit rotor
- defined final fineness due to bottom sieves with aperture sizes from 0.25 - 20 mm
- wide range of accessories including various hoppers, collection systems, rotors and sieves
- highest safety standards due to engine brake, central locking device, electronic safety check and comfort base frame

www.retsch.com/sm300

The perfect cutting mill for every requirement

Performance data	SM 100	SM 200	SM 300
Applications	size reduction by cutting		
Feed material	soft, medium-hard, tough, elastic, fibrous		
Fields of application	agriculture, biology, chemistry / plastics, electronics, environment / recycling, food, medicine / pharmaceuticals		
Feed size*	< 60 x 80 mm		
Final fineness*	0.25 - 20 mm		
Technical data	**SM 100**	**SM 200**	**SM 300**
Drive	3-phase motor	3-phase motor	3-phase motor, frequency controlled
Motor brake	no	yes	yes
Motor speed at 50 Hz	1,500 min^{-1}	1,500 min^{-1}	700 – 3,000 min^{-1}
Nominal rating	1,500 W	2,200 W	3,000 W
W x H x D (with support and standard hopper)	582 x 1,675 x 700 mm	576 x 1,675 x 760 mm	795 x 1,691 x 765 mm
Net weight	~ 73 kg	~ 90 kg	~ 160 kg
Collecting receptacles	5 liter (standard) 0.25 / 0.5 / 30 liter (option)	5 liter (standard) 0.25 / 0.5 / 30 liter (option) 0.5 / 1 / 2 / 5 liter with cyclone	
Cyclone-Suction-Combination	no	option	option

***depending on feed material and instrument configuration/settings**

WE R SHARP

NEW

KNIFE MILLS

GRINDOMIX GM 200 & GM 300

PERFECT HOMOGENIZATION OF FOODS AND FEEDS

The GRINDOMIX Knife Mills set new standards in food sample preparation. The cutting effect produced by the steel blades in conjunction with the patented gravity lid results in the size reduction and perfect homogenization of samples with a high water, oil or fat content. It is possible to take a random, yet representative sub-sample from any location in the grinding chamber and still obtain a meaningful analysis result. The GM 200 and GM 300 produce representative samples with a minimum standard deviation in as little as 30 seconds thus beating any household mixer or conventional knife mill by far. A wide range of containers and lids makes it easy to adapt the mill to various applications.

GRINDOMIX GM 200
Homogenization of up to 700 ml sample material

Representative samples in seconds

GRINDOMIX GM 300
Homogenization of up to 4,500 ml sample material (e. g. loaf of bread or cabbage in one piece)

ADVANTAGES GRINDOMIX GM 300

- efficient size reduction of up to 4,500 ml feed quantity due to a powerful 1.1 kW motor (peak power input >3 kW)
- pre- and fine-grinding in one mill: cutting action in regular mode, grinding by impact in reverse mode, pre-grinding in interval mode
- perfect adaptation to application requirements by variable speed from 500 to 4,000 min^{-1} with an increment of 100 min^{-1}
- all parts which come into contact with the sample material are autoclavable
- optional gravitation lid for automatic reduction of the grinding chamber volume
- memory for 10 Standard Operating Procedures (SOPs)
- grinding jar in plastic and stainless steel available

www.retsch.com/gm300

Autoclavable grinding tools

Performance data	GM 200	GM 300
Applications	size reduction, homogenization and mixing	
Feed material	soft, medium-hard, elastic, containing water / fat / oil, dry	
Fields of application	agriculture, biology, environment, food, medicine/pharmaceuticals	
Feed size*	~ 10 – 40 mm	< 130 mm
Final fineness*	< 300 µm	< 300 µm
Speed setting	digital, 2,000 - 10,000 min^{-1}	digital, 500 - 4,000 min^{-1}
Batch size / feed quantity*	with standard lid 700 ml with chamber reduction lid 300 ml with gravity lid 300 – 600 ml	with standard lid 4,500 ml with gravity lid 4,000 ml
Setting of grinding time	digital, 1 s - 3 min	digital, 5 s - 3 min
Technical data	**GM 200**	**GM 300**
Drive	series-characteristic motor	3-phase asynchronous motor with frequency converter
Drive power	900 W	1,100 W (short-term peak 3,000 W)
W x H x D	350 x 275 x 392 mm	440 mm x 340 mm x 440 mm
Net weight	~ 10 kg	~ 30 kg

***depending on feed material and instrument configuration/settings**

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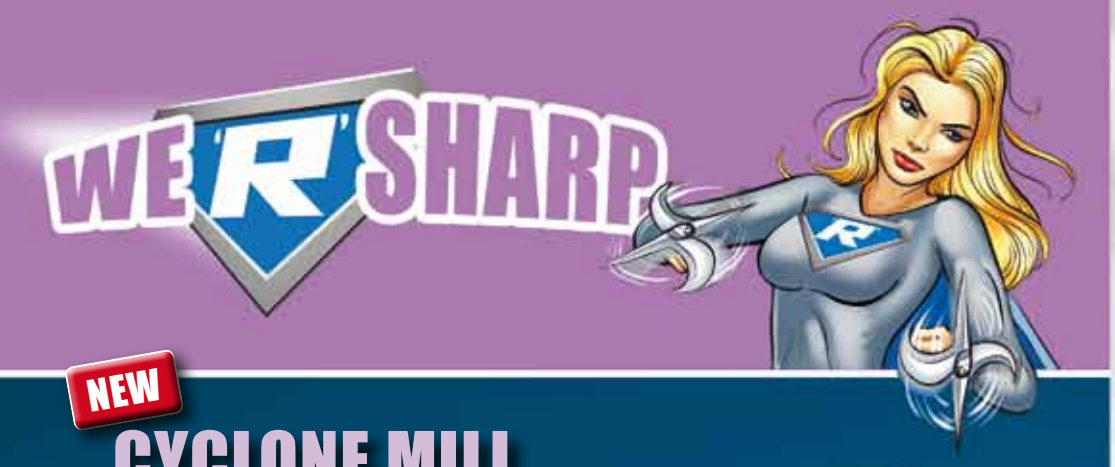

NEW

CYCLONE MILL

TWISTER

GRINDING PRIOR TO NIR ANALYSIS

The Cyclone Mill TWISTER was specially designed for the processing of foods and feeds for subsequent NIR analysis.
The optimized form of rotor and grinding chamber generates an air jet which carries the sample through the cyclone into the glass receptacle. This process cools the material, thus preventing the sample from heating up and preserving the moisture content. The rotor speed can be adjusted in 3 steps allowing for perfect adaptation to the sample requirements. Cleaning the mill is quick and easy as the air jet effects a complete discharge of the material from the grinding chamber.

TWISTER rotor, grinding ring and sieve section

Performance data	TWISTER
Applications	grinding prior to NIR analysis
Feed material	fibrous, soft
Fields of application	agriculture, foods / feeds, medicine/pharmaceuticals
Batch size*	< 250 ml
Feed size*	< 10 mm
Final fineness*	< 500 µm
Rotation speed	10,000 / 12,000 / 14,000 min^{-1}
Technical data	**TWISTER**
Drive	series-characteristic motor
Drive power	900 W
W x H x D	449 x 427 x 283 mm
Net weight	~ 14 kg

***depending on feed material and instrument configuration/settings**

ADVANTAGES TWISTER

- ideal for grinding feeds, grains, forage and other similar products
- 3 controlled speeds
- including rotor, grinding ring and sieve sections (1 mm and 2 mm)
- cyclone separator with 250 ml collecting bottle for quick extraction of sample
- no cross contamination thanks to easy cleaning
- convenient operating panel
- professional industrial design with long lifetime

www.retsch.com/twister

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Free test grinding

As part of RETSCH's professional customer support we offer our customers the individual advice required to find the optimum solution for their sample preparation task. To achieve this our application laboratories process and measure samples free-of-charge and provide a recommendation for the most suitable method and instrument.

For more information please visit our website www.retsch.com/testgrinding

Product Range

Milling
- Jaw Crushers
- Rotor Mills
- Cutting Mills
- Knife Mills and Blenders
- Mortar Grinders
- Disc Mills
- Mixer Mills
- Planetary Ball Mills

Sieving
- Sieve Shakers
- Evaluation Software
- Test Sieves

Assisting
- Sample Dividers
- Feeders
- Dryers
- Cleaners
- Pellet Presses

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Solutions in Milling & Sieving

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