



# KNIFE MILL GRINDOMIX GM 300

Professional Food Sample Preparation

**With its special cutting knife system and variable-volume grinding chamber, the laboratory knife mill GRINDOMIX GM 300 processes a great variety of sample materials quickly and reproducibly to completely homogeneous analytical samples – within seconds!**

Thanks to the 5000 ml grinding chamber volume, this mill easily homogenizes an entire loaf of bread or a complete pizza in one working run.

Thanks to reproducible setting of parameters and programs, the knife mill GM 300 ensures analytical results with minimum standard deviation. These features plus the wide selection of lids and containers, allowing for adaptation of the mill to individual application requirements, make the GRINDOMIX GM 300 a professional device superior to any commercial household mixer.



[Click to view video](#)

## FOR LARGE FOOD SAMPLES

- | Efficient size reduction of up to 4500 ml feed quantity due to 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
- | All parts in contact with the sample material are autoclavable
- | Perfect adaptation to application requirements by variable speed from 500 to 4000 min<sup>-1</sup> with an increment of 100 min<sup>-1</sup>
- | Optional gravity lid for automatic reduction of chamber volume
- | 10 SOPs can be stored
- | Grinding jar in plastic and stainless steel available



## CRYOGENIC GRINDING WITH DRY ICE

Tough or elastic materials which cannot be homogenized at room temperature, are safely and effectively homogenized in the knife mill GM 300 with the help of dry ice. For this application, a special cryo lid with a small opening to allow for possible overpressure to escape is available. Used in combination with a stainless-steel container and full metal knife, it ensures safe and efficient cold grinding.



[Click to view video](#)

## KNIFE MILL GRINDOMIX GM 300

### **EASY AND SAFE OPERATION**

Operation of the laboratory knife mill GRINDOMIX GM 300 is exceptionally comfortable and safe. The grinding container and knife are easily attached without tools. When the set time has expired, the motor is automatically switched off and the container can be removed. Thus, the GRINDOMIX, unlike many commercial household mixers, allows filling and emptying the container outside the mill. The knife remains on the knife holder during the process and can be easily removed for cleaning afterwards. Thanks to this quick and easy procedure, cross contaminations caused by sample residues are successfully prevented. Another advantage of the GRINDOMIX knife mills: the grinding tools are autoclavable. The GM 300 features a convenient 1-button operation with graphic display. All parameters are digitally set and 10 Standard Operating Procedures (SOPs) can be stored.

### **GRAVITY LID ENABLES VARIABLE VOLUME OF THE GRINDING CHAMBER**

RETSCH has developed a gravity lid for the GRINDOMIX knife mills which reduces the volume of the grinding container, preventing the sample from escaping the homogenization process by clinging to the container walls. The lid drops under its own weight during grinding and always rests directly on the sample. The result is thorough homogenization of the complete sample material. The gravity lid is also available with overflow channels. It ensures that the cell liquid released by the sample during grinding is returned through these channels to the center of the container, allowing for perfect homogenization.



KNIFE MILL GRINDOMIX GM 300

## ACCESSORIES & OPTIONS

A range of different containers, lids and knives makes the GRINDOMIX GM 300 a truly universal device. The selection of the grinding container depends on the products to be processed. Standard plastic containers are suitable for the majority of applications. Other accessories are available for special applications.

### | Gravity lid made of autoclavable plastic

Automatically adjusts the grinding chamber volume to the changing sample volume.

### | Gravity lid with overflow channels

Ideally suited to homogenize samples with a high water content.

### | Special lid for dry ice applications

Made of autoclaveable plastic, it allows possible overpressure to escape through a small opening.

### | Stainless steel container

Minimum wear when hard sample materials are processed.

### | Knives

4 different knives available: stainless steel, stainless steel with serrated blades, full metal blades & cylinder, with titanium-niobium coating for heavy-metal-free size reduction. All are autoclavable.

### | Scraper

Facilitates the recovery of sticky samples from the container.



KNIFE MILL GRINDOMIX GM 300

## TYPICAL SAMPLE MATERIALS

RETSCH knife mills are suitable for a vast range of applications. Typical materials include candy, cereals, cheese, coated tablets, cocoa nibs, dietary supplements, dried and fresh fruit, feed pellets, fish, frozen products, ham, lettuce, meat, nuts, oil seeds, pharmaceutical products, plant materials, sausages, soap, spices, vegetables etc.



*cabbage*



*wine gum*



*cocoa filter cake*



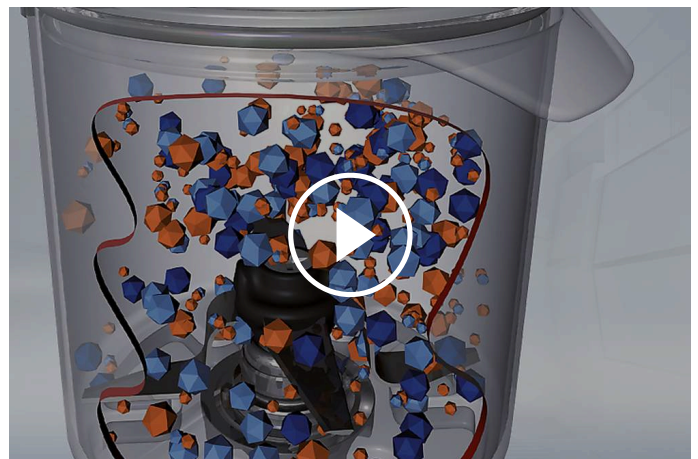
*fish*

KNIFE MILL GRINDOMIX GM 300

## FUNCTIONAL PRINCIPLE

The laboratory knife mill GM 300 features four sharp, robust blades, which rotate in the center of the grinding container. Depending on the rotational direction, size reduction is effected with the blunt side (preliminary size reduction) or the sharp side (fine grinding). The knives are protected with a counterblade from damages by hard sample materials.

The knife is indirectly driven by a powerful motor of 1.1 kW which can reach temporary peaks of 3 kW. A pre-selectable speed which is maintained electronically ensures reproducible results.



[Click to view video](#)

## KNIFE MILL GRINDOMIX GM 300 - TECHNICAL DATA

<b>Applications</b>	size reduction, homogenization and mixing
<b>Field of application</b>	agriculture, biology, food, medicine / pharmaceuticals
<b>Feed material</b>	soft, medium-hard, elastic, containing water / fat / oil, dry, fibrous
<b>Size reduction principle</b>	cutting
<b>Material feed size*</b>	~ 130 mm
<b>Final fineness*</b>	< 300 µm
<b>Batch size / feed quantity*</b>	with standard lid 4500 ml with gravity lid 4000 ml
<b>Grinding chamber volume</b>	5000 ml, reduction with gravity lid
<b>Speed setting</b>	digital, 500 - 4000 min <sup>-1</sup>
<b>Dry grinding</b>	yes
<b>Wet grinding</b>	yes
<b>Material of grinding tools</b>	grinding container: autoclavable plastic PC, stainless steel 1.4435 blade: stainless steel 1.4034 holder for blade: PVDF sealings: EPDM, FKM
<b>Setting of grinding time</b>	digital, 5 s - 3 min
<b>Interval operation</b>	yes
<b>Interval time</b>	adjustable
<b>Storable SOPs</b>	10
<b>Drive</b>	3-phase asynchronous motor with frequency converter
<b>Drive power</b>	continuously 1.1 kW, short term 3 kW
<b>Electrical supply data</b>	different voltages
<b>Power connection</b>	1-phase
<b>Protection code</b>	IP 20
<b>W x H x D closed</b>	440 mm x 340 mm x 440 mm
<b>Net weight</b>	~ 30 kg
<b>Standards</b>	CE

\*depending on feed material and instrument configuration/settings

[www.retsch.com/gm300](http://www.retsch.com/gm300)

## ORDER DATA

### KNIFE MILL GRINDOMIX GM 300

**Knife Mill GRINDOMIX GM 300 complete with grinding container 5 litre of autoclavable plastic, standard lid, knife and scraper**

20.252.0001



GM 300

220-230 V, 50/60 Hz

**other electrical versions available for the same price**

### ACCESSORIES GM 300

#### GRINDING CONTAINERS, 5 LITRE

02.045.0056



Grinding container  
autoclavable plastic (transparent and scratch-resistant), incl. knife holder

03.045.0056



Grinding container  
autoclavable plastic (transparent and scratch-resistant), without knife holder

02.045.0055



Grinding container  
stainless steel, incl. knife holder

03.045.0055



Grinding container  
stainless steel, without knife holder

#### LIDS

02.107.0449



Standard lid  
autoclavable plastic

02.107.0522



Lid  
autoclavable plastic  
for dry ice applications

02.107.0465



Gravity lid  
autoclavable plastic

02.107.0480



Gravity lid  
autoclavable plastic  
with overflow channels

#### KNIVES

02.446.0030



Knife of stainless steel, autoclavable

02.446.0054

Knife of stainless steel with serrated blades, autoclavable

02.446.0049



Knife of stainless steel (full metal blades and knife cylinder), autoclavable

02.446.0052



Knife with titanium-niobium coating, autoclavable,  
for grinding without heavy-metal contamination

## ADDITIONAL ITEMS GM 300

05.723.0002



Scraper

22.111.0002



Set of gaskets for lids, 10 pcs.

99.200.0011



IQ/OQ Documentation for GM 300