



Another

# Technical Brochure

...from Orthos (Engineering) Ltd:

manufacturers' agents specialising in powder processing equipment and plant safety.

If your company is involved in the building materials, industrial minerals, glass, refractories, food & drink, fine chemical and pharmaceutical industries in the United Kingdom, you can call on us to discuss your next process improvement. We are constantly reviewing our product range to ensure that we're offering the most relevant capital equipment for powder processing.

You can read, listen and watch all our latest process equipment news at Orthos in Action. So whatever your need, whether it's new equipment, used equipment, or just advice, you can call on us to discuss your next process improvement – it's our business to help you.

**Orthos (Engineering) Ltd**

No.2 The Point Business Park, Market Harborough, Leics. LE16 7QU

Telephone 01858 464246

[sales@orthos.uk.com](mailto:sales@orthos.uk.com)

[www.orthos.uk.com](http://www.orthos.uk.com)

# LAARMANN

*Innovators in Solids*

Power Mortar Grinder

## MG 100

Universal, High Performance Mortar Grinder for Processing of solid materials in dry, wet or cryogenic condition

- Dry Grinding / Wet Grinding / Ultra Fine Grinding / Cryogenic Grinding
- Mixing
- Cell disruption for DNA / RNA extraction
- The MG100 can handle samples from 10 up to 200 ml

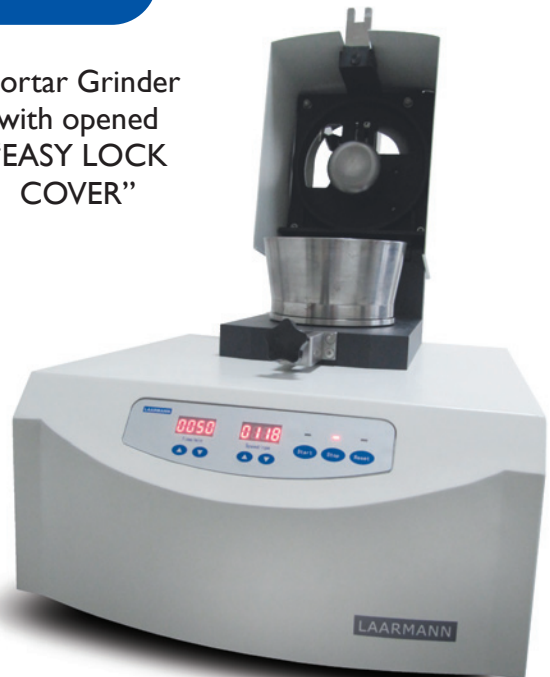


# Laarmann Power Mortar Grinder MG 100

Mortar Grinder  
with closed  
“EASY LOCK  
COVER”



Mortar Grinder  
with opened  
“EASY LOCK  
COVER”



Superior Mortar Grinder engineered to reproducibly grind and mix sample volumes from 10 of up to 200ml.

## Method of operation

The Mortar Grinder Model MG100 is used to reproducibly grind, homogenize and mix a wide range of solid materials in dry / wet or cryogenic condition. The material to be processed falls into the Pulverizing area between Mortar and Pestle by top feeding via the opening which is at the inlet cover. The material is then pulverized and mixed between the Mortar inner surface area and the bottom of the pestle.

In order to match the necessary top pressure with the requested end fineness and the breaking behaviour of the sample to be prepared the MG100 is equipped with an adjustable **Top Pressure Mechanism with**

**scale and a variable speed setting 50-130 rpm and a flexible scraper setting.**

**Only due to the combination of this 3 key adjustment features a wide range of sample preparation tasks can be reached.**

No other grinding system is more easy to clean than the MG100 Mortar Grinder. When the grinding process is finished the Mortar and Pestle can be taken out with a bayonet lock in order to perform a quick cleaning of the grinding tools.

## Grinding, homogenizing, triturating

The Mortar Grinder is the central machine in a sample prep. Laboratory of today. This system is suitable for the fine grinding of any dry substance, as well as for suspensions with different viscosities for analysis, quality control and material testing. It is perfectly suitable for the homogenization of crèmes and pastes. Typically samples with a feed size of up to 8-10mm and a total batch of up to 200 ml (volume depending on the characteristic of the samples) can be ground down to 10-20µm.

## High operator convenience and maximum safety

Maximum Grinding performance and maximum safety is important for Laarmann Mills. Due to an integrated safety switch the machine can only be started when the “**Easy Lock Cover**” is closed. The “**Adjustment mechanism**” allows the simple and fast settings and fine adjustment.

The cover as well as the housing of the **MG100** is made from solid steel. The ergonomic design of the machine and the front panel ensures the easy and simple setting of all working parameters.

## Selection Guide Recommended Grinding set (Mortar and Pestle)

We recommend always to use the same material composition for Mortar and Pestle. Do not mix.

		Recommendations				
Material of grinding set	Feed Size	Wear behaviour	Type of sample characteristic	Dry	Wet	Cryogenic
Stainless steel	10mm	good	middle hard, brittle samples.	yes	yes	yes
Hardened steel	10mm	good	middle hard, brittle samples.	yes	no	no
Tungsten carbide	10mm	very good	middle hard, abrasive samples.	yes	yes	yes
Agate	8mm	good	soft to medium hard samples	yes	yes	no
Sintered alumina	8mm	normal	soft to medium hard samples	yes	yes	no

## Performance features MG100

- Extremely easy cleaning
- Suitable for dry, wet & cryogenic grinding
- Possible to add and to remove sample material during the milling process via Cover inlet
- Representative results due to digital time and speed setting
- Precise and optimized results due to variable speed 50-130 rpm
- CE conform
- Meet all application tasks due to a wide selection of grinding tools for the mortar and the pestle.
- Meet all application tasks due to a wide selection of scraper materials (Vulkollan, Teflon, Beachwood)
- Positioning and removal of Mortar and pestle without tool
- Precise and reproducible pestle setting due to scale adjustment
- Solid steel housing
- Option of pre-crushing for coarser materials



# Power Mortar Grinder Applications

## Grinding and Mixing examples Before / After



Soil samples



Different food stuff such as maize, grain etc.



Brittle materials such as glass



Different tablets and pharmaceutical raw materials

## Features and benefits

### Benefits

- 5 different grinding media available
- 3 different Scraper materials available
- Quick and extremely easy to clean
- Variable Speed Setting 50-130 rpm
- Digital time setting
- Digital speed setting
- No tool required to open
- No tool required to take off pestle
- No tool required to take off Mortar
- Dust tight Milling chamber
- Wet grinding
- Dry grinding
- Cryo grinding
- CE certified

### Applications

- Cocoa Beans / Chocolate Paste etc..
- Food and Animal food
- Maize, Beans
- Creams, Emulsions,
- Soil samples
- Minerals
- Glass, Ceramics,
- Cement Clinker, Cement

Pharmaceutical and Homeopathic products such as  
Tablets, Dragees, Paste, Herbs and pharmaceutical additives

## Grinding media – Available in 5 different materials

- Stainless steel
- Hardened steel
- Tungsten carbide
- Agate
- Sintered alumina



## Mortar Grinder Data

TECHNICAL DATA	
Electrical details	100-120 / 200-240 Volt 50/60 Hz
Speed	50 - 130 rpm Adjustable
Motor Power	200 Watt
TRANSPORT DATA	
Gross dimensions wxdxh	app. 600 x 600 x 600 mm
Net dimensions wxdxh	app. 390 x 485 x 375 mm
Gross weight	27 kgs (only machine)
Net weight	24 kgs (only machine)
FEATURES / PERFORMANCE	
Working principle	friction
Feed size maximum	8-10 mm depending on sample
Quantity maximum	200 ml
Quantity minimum	10 ml
Endfiness maximum	10 - 20 µm
Grinding time setting	1 - 99 min./ cont. By digital display
Speed setting	50 - 130 rpm by digital display
Start / Stop function	By digital display
Pressure setting	By scale adjustable
Pestle adjustment	By adjustment wheel
Scraper adjustment	By adjustment wheel

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## Your local contact

Orthos (Engineering) Ltd  
Tel: 01858 464246  
[sales@orthos.uk.com](mailto:sales@orthos.uk.com)  
[www.orthos.uk.com](http://www.orthos.uk.com)

## Laarmann Group B.V.

Jules Breukersstraat 9  
6041 BP Roermond  
THE NETHERLANDS

t: +31 475 470 217  
f: +31 472 470 242  
e: [gla@laarmann.eu](mailto:gla@laarmann.eu)