IKA

designed for scientists

EN

GRINDING WITH THE DISPOSABLE SYSTEM | Tube Mill control

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Tube Mill control

/// FAST, SAFE, CLEAN!

The Tube Mill control is the first batch mill with the possibility to use disposable grinding chambers. It can grind a variety of soft, fibrous, hard and brittle samples in a short time without cross-contamination. IKA's patented universal mill works quickly, safely and delivers perfect, reproducible grinding results for your analyses. Sample preparation can be this simple and efficient.

Personalized Application Support

In the IKA Application Center you can test the Tube Mill control yourself. Our experts will show you the application with the single- and multi-use milling chambers and demonstrate the extended range of accessories.

Worldwide Service

To opt for the IKA batch mill Tube Mill control is also to opt for the excellent IKA service in your region. Our team is available worldwide for your service and application needs. Spare parts are guaranteed for 10 years.

3 years warranty*

CE

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Tube Mill control / Tube Mill 100 control

/// THE WORLD'S FIRST DISPOSABLE GRINDING SYSTEM IS AVAILABLE IN TWO SIZES

Tube Mill control

The smaller instrument is suitable for small sample volumes. Its grinding chambers hold up to 40 ml of sample material.

Tube Mill 100 control

The Tube Mill 100 control batch mill can be equipped with grinding chambers with a volume of 40 ml as well as those with a volume of 100 ml.

reddot design award
winner 2013

German
Design Award

NOMINEE 2015

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Disposable grinding chambers

The disposable grinding chambers with integrated stainless steel beater are at the same time perfect storage containers. Time-consuming cleaning is no longer necessary.

YOUR BENEFITS

- Save a lot of time when working with a large number of samples.
- No more cross-contamination.
- No health hazard from sample dust.

Reusable grinding chambers

Of course, there are also durable and environmentally friendly reusable grinding chambers available for Tube Mill control and Tube Mill 100 control which can be cleaned in the dishwasher. Wearing parts are already included in the scope of delivery and are easy to replace.

YOUR BENEFITS

- Avoid costs when working with small numbers of samples through multiple use.

Various beaters

In addition to the classic stainless steel beater, IKA also offers titanium blades as well as curved stainless steel blades - especially for mixing fine powders.

YOUR BENEFITS

› Better grinding results due to sample-specific beaters

Interval grinding

With this batch mill, you can set individual grinding intervals depending on the sample.

YOUR BENEFITS

› More uniformly comminuted samples thanks to individual grinding intervals.

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Magnetic safety hood

The grinding operation works only when the safety hood is closed. This closes magnetically and thus keeps reliably tight.

YOUR BENEFITS

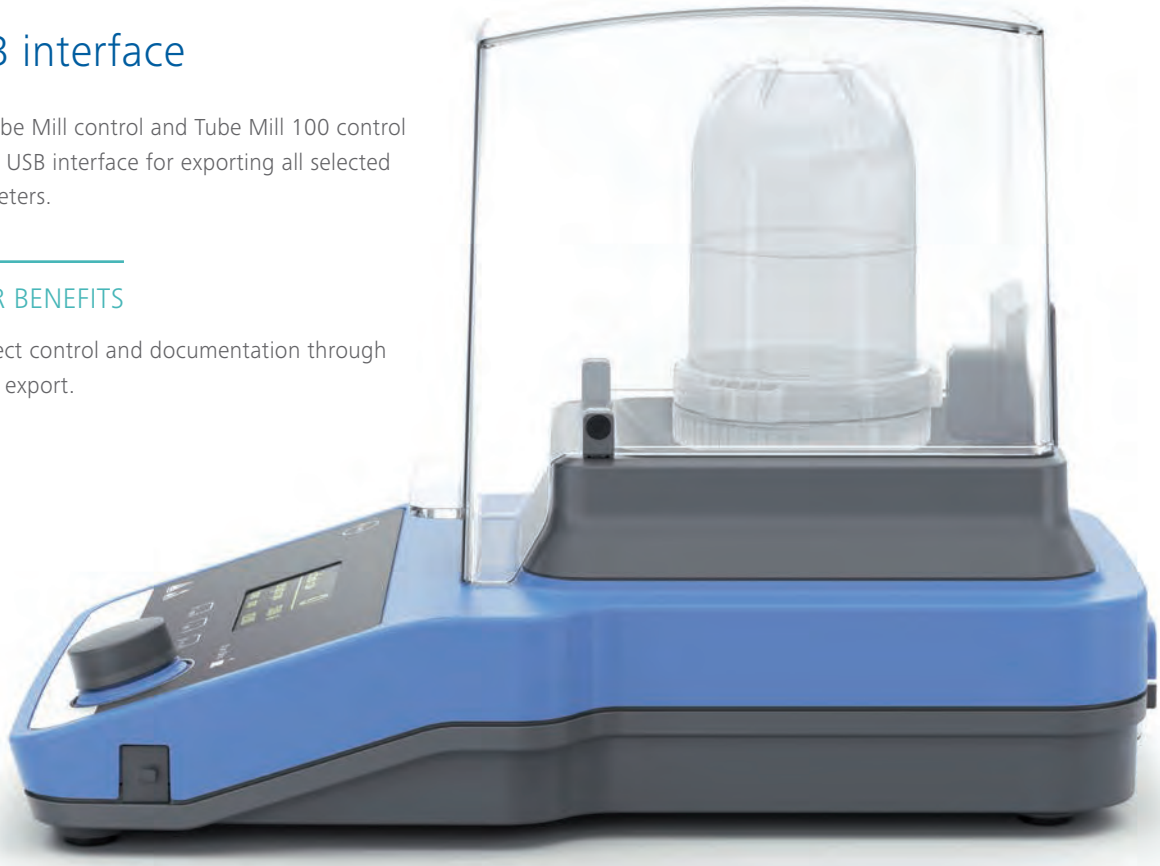
› Safe operation and more occupational safety.

USB interface

The Tube Mill control and Tube Mill 100 control have a USB interface for exporting all selected parameters.

YOUR BENEFITS

› Perfect control and documentation through data export.



Accessories for Tube Mill control / Tube Mill 100 control

MT 40 disposable grinding chamber
Transparent disposable grinding chamber with stainless steel beater allows grinding samples up to Mohs hardness 5.

Useful volume: 40 ml
Material grinding chamber: PP
Material beater: stainless steel (AISI 301)

MT 40.10
Quantity: 10 pieces / pack
Ident No.: 0004425000

MT 40.100
Quantity: 100 pieces / pack
Ident No.: 0020001173

MT 40.10 steril disposable grinding chamber
Sterile, transparent disposable grinding chamber with stainless steel beater.

Useful volume: 40 ml
Material grinding chamber: PP
Material beater: stainless steel (AISI 301)
Max. hardness: 5 Mohs
Quantity: 10 pieces / pack
Ident No.: 0020001984

MTT 40.10 disposable grinding chamber
Transparent disposable grinding chamber with titanium beater, suitable for heavy metal analysis.

Useful volume: 40 ml
Material grinding chamber: PP
Material beater: titanium
Max. hardness: 5 Mohs
Quantity: 10 pieces / pack
Ident No.: 0020015380

MMT 40.1 reusable grinding chamber
Multi-use grinding chamber with stainless steel beater allows grinding samples up to Mohs hardness 5. Cleaning in the dishwasher possible. The scope of delivery includes a set of spare parts so that wear parts can be replaced if necessary. In addition, the spare parts set A-MMT.100 is available.

Scope of delivery: 1 x MMT 40, 25 x sealing, 5 x beater, 5 x coupling
Useful volume: 40 ml, Material grinding chamber and cover: PA
Material inner chamber: stainless steel (AISI 316L),
Material beater: stainless steel (AISI 301)
Ident No.: 0020003165

MT 40 P disposable grinding chamber
Transparent disposable grinding chamber with curved stainless steel beater (45° angle) for mixing of powders.

Useful volume: 40 ml
Material grinding chamber: PP
Material beater: stainless steel (AISI 301)
Max. hardness: 5 Mohs

MT 40 P.10
Quantity: 10 pieces / pack
Ident No.: 0020017838

MT 40 P.100
Quantity: 100 pieces / pack
Ident No.: 0020011531

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Accessories for Tube Mill 100 control

MT 100 disposable grinding chamber
Transparent disposable grinding chamber with stainless steel beater allows grinding samples up to Mohs hardness 5.

Useful volume: 100 ml
Material grinding chamber: PP
Material beater: stainless steel (AISI 301)

MT 100.10
Quantity: 10 pieces / pack
Ident No.: 0020008386

MT 100.50
Quantity: 50 pieces / pack
Ident No.: 0020006984

MT 100.10 steril disposable grinding chamber
Sterile, transparent disposable grinding chamber with stainless steel beater.

Useful volume: 100 ml
Material grinding chamber: PP
Material beater: stainless steel (AISI 301)
Max. hardness: 5 Mohs
Quantity: 10 pieces / pack
Ident No.: 0020012571

MMT 100.1 reusable grinding chamber
Multi-use grinding chamber with stainless steel beater allows grinding samples up to Mohs hardness 5. Cleaning in the dishwasher possible. The scope of delivery includes a set of spare parts so that wear parts can be replaced if necessary. In addition, the spare parts set A-MMT.100 is available.
Scope of delivery: 1 x MMT 100, 25 x sealing 5 x beater, 5 x coupling

Useful volume: 100 ml, Material grinding chamber and cover: PA
Material inner chamber: stainless steel (AISI 316L),
Material beater: stainless steel (AISI 301).
Ident No.: 0020016315

MTT 100.10 reusable grinding chamber
Transparent disposable grinding chamber with titanium beater, suitable for heavy metal analysis.

Useful volume: 100 ml
Material grinding chamber: PP
Material beater: titanium
Max. hardness: 5 Mohs
Quantity: 10 pieces / pack
Ident No.: 0020019576

Accessories for Tube Mill control / Tube Mill 100 control

labworldsoft® 6 Starter
› For small equipment configurations, up to 3 devices
› For laboratory equipment from all manufacturers
Ident No.: 0020019397

labworldsoft® 6 Advanced
› For all equipment configurations
› Control any number of devices at the same time
Ident No.: 0020105873

labworldsoft® 6 Pro
› For all equipment configurations
› For laboratory equipment from all manufacturers
› Supports the requirements of the FDA 21 CFR Part 11
Ident No.: 0020017366

MTC 40.100
Cover for disposable grinding chambers, 100 pieces
Ident No.: 0020001182

A-MMT.100
Abrasion set for MMT 40.1 / 100.1
Scope of delivery: 100 x sealing, 10 x beater, 10 x coupling
Ident No.: 0020003378

Industries

The Tube Mill control is a highly-versatile milling device suitable for a broad range of applications used in various industries:

Pharmacy

Vitamin tablets
Tea leaves
Pastilles
(with dry ice)
Glauber salt
Salt of hartshorn
Blond plantain
Sour orange paring
Hawkbit roots
Calamus roots

Food

Rice
Wheat
Cobnuts
Coffee beans
Spices
Seeds
Parsley
Chocolate
(with dry ice)

Renewable energy

Straw
Wood pellets
Woodwool + wax
Solid recovered fuel pellets
Tetrapack
Charcoal
Chipped wood

Medicine / Forensic

Chicken bones
Chicken skin *(with dry ice)*
Pig craw *(with dry ice)*
Chicken cristle
Teeth
Bones

Biology

Leaves *(with dry ice)*
Gras *(with dry ice)*
Tobacco
Fresh ginger
(with dry ice)

Cosmetics

Color pigments
Rubber benzoe
Bees wax
(with dry ice)

Building materials

Gypsum
Marble

Chemical industry

Rubber
PE
PET flakes
Molecular sieve

Application

The Tube Mill control is a batch mill for grinding soft, fibrous, hard and brittle materials (Mohs hardness up to 5).The transparent grinding chamber and cover facilitate observation at all times. Convenient and safe to use while assuring high safety and reproducibility to cover a broad range of applications.

Amongst other applications, the mill is suitable for grinding seeds, such as corn and wheat. The ability to cool the sample with dry ice expands applications tremendously. During development of the mill, particular emphasis was placed on user safety.

After grinding, a part of the sample will be analyzed. The remaining sample can either be discarded or it can be stored as a reference sample directly in the grinding chamber. In the later case, grinding chambers can be labeled and either stored in a refrigerator or in a drying room. Reference samples can be re-analyzed and traced at any time.

Cryo grinding with dry ice

The Tube Mill control can also be used to process moist, fatty, elastic and fibrous samples.

Dry ice is introduced directly into the grinding chamber in order to embrittle the sample. The insulating effect of the plastic chamber allows minimal amounts of dry ice to be used. The cold remains in the milling chamber, allowing the user to handle the grinding chamber even after cooling. This greatly increases the range of applications for which the Tube Mill control can be used.

Technical data

TECHNICAL DATA	TUBE MILL CONTROL	TUBE MILL 100 CONTROL
Process type	batch	batch
Operating principle	Cutting / impact	Cutting / impact
Motor rating input	100 W	100 W
Motor rating output	80 W	80 W
Speed range	5000 – 25 000 rpm	5000 – 25 000 rpm
Speed deviation	2 ±%	2 ±%
Circumferential speed max.	65 m/s	65 m/s
Useable volume max.	40 ml	100 ml
Feed hardness max.	5 Mohs	5 Mohs
Feed grain size max.	10 mm	10 mm
Power-ON time	3 min	3 min
Mill feed can be cooled in milling chamber with dry ice	yes	yes
Dimensions (W x H x D)	180 x 170 x 300 mm	180 x 212 x 300 mm
Weight	2.7 kg	2.8 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C
Permissible relative humidity	80 %	80 %
Protection class according to DIN EN 60529	IP 30	IP 30
USB interface	yes	yes
Voltage	220 – 240 / 100 – 120 / 100 V	220 – 240 / 100 – 120 / 100 V
Frequency	50/60 Hz	50/60 Hz
Power input	100 W	100 W

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FAQ

1. How finely can the samples be ground?
The samples can be ground to a particle size of 1 – 100 µm depending on the sample.

2. What is the minimum quantity in the grinding chamber?
Even a single grain can be milled with the Tube Mill control.

3. How large may the individual feed grain size be?
The individual specimen pieces must not be larger than 1 cm in diameter.

4. Which model of Tube Mill control is suitable for me?
If you only need to grind small sample quantities of up to 40 ml, the Tube Mill control is completely sufficient. For larger or alternately large sample quantities, it is best to opt for the Tube Mill 100 control. Here you can use grinding chambers with 40 ml as well as those with 100 ml.

5. When does the use of disposable grinding chambers make sense?
The more samples you have to grind, the more worthwhile it is to use disposable cups. You save a lot of time because there is no need for time-consuming cleaning of the chambers. Since this also prevents cross-contamination, your results are also more reliable.

6. When to use titanium or curved knives?
Curved knives reduce the accumulation of ground specimen material at the edge of the chamber and thus ensure better mixed and ground specimens. Titanium knives are intended for applications where no heavy metals (Cr or Ni) resulting from abrasion of the stainless steel beater may be permitted to contaminate the sample.

7. How do I achieve the desired grind?
The length of the grinding process determines the degree of grinding. The finer your sample needs to be, the longer it should be ground. The necessary grinds vary from sample to sample.

8. Which cleaning methods can be used for the grinding chambers?
Before single use, the grinding bowls can be autoclaved.

9. What materials are the grinding chamber, beater and seal made of?
The disposable grinding chambers are made of PP, the blade is made of AISI 301 stainless steel and the seal is made of PA. For the reusable grinding chambers, the grinding bowl and lid are made of PA, and the inner vessel is made of stainless steel (AISI 316L).

10. Can the grinding chambers be used with dry ice?
Yes, the grinding chambers can be used with dry ice.

11. Can the disposable grinding chambers be used several times?
The disposable grinding chambers should only be used once to exclude cross-contamination.