Tube Mill control
Disposable system

IKA®

designed
for scientists

IKA® introduces the world's first disposable grinding system for safe, instant and precise milling results. Its unique and compact design makes the unit space saving and ultra-portable. The disposable grinding chamber eliminates the possibility of cross-contamination and saves you cleaning costs and time.

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.

The Tube Mill control is the world's first patented batch mill with disposable grinding chamber, designed and manufactured exclusively by IKA®.

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World's first

> Disposable grinding chamber
> Cross-contamination free
> No cleaning required
> Precise milling results
> Large application range

3 Year warranty*

* 2+1 years after registering at www.ika.com/register, glassware and wearing parts excluded

reddot design award winner 2013

German Design Award NOMINEE 2014

Protection class according to DIN EN 60529: IP 30

CE

Applications & Industries

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

> Food

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

> Pharmacy

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

> Cosmetics

Color pigments
Rubber benzoe
Bees wax
(with dry ice)

> Chemical Industry

Rubber
PE
PET flakes
Molecular sieve

> Biology

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

> Renewable energy

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

> Medicine / Forensic

Chicken bones
Chicken skin
(with dry ice)
Pig craw
(with dry ice)
Chicken gristle
Teeth
Bone

> Building Materials Industry

Gypsum
Marble

Cryo grinding for advanced results

Typical applications for sample embrittlement with dry ice:

> chocolate
> bread
> nuts
> soil samples
> gummy bears
> leaves
> meat
> sausages
> some plastics
> beef
> bones
> feedstuffs
> tobacco
> grass

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	Tube Mill control
Process type	batch
Operating principle	cutting / impact
Motor rating input / output	100 / 80 W
Speed range	5000 – 25,000 rpm
Max. circumferential speed	65 m/s
Max. usable volume	40 ml
Timer	5 s – 3 min
Interval timer	5 – 60 s
Display	OLED
Max. Feed hardness	5 Mohs (manganese or apatite: 5 Mohs)
Max. granularity of task	10 mm
Mill feed can be cooled in milling chamber with dry ice	yes
Dimensions (W x D x H)	180 x 300 x 170 mm
Weight	2.7 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative moisture	80%
Protection class according to DIN EN 60529	IP 30
USB interface	yes
Voltage	220 – 240 V
Frequency	50/60 Hz

Ident. No. 0004180000*

*** Two single grinding chambers are included in the delivery**

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Special safety features

> The mill can only operate if the hood is closed

> The motor does only operate with a correct grinding chamber

> The system recognizes if the grinding chamber is not properly closed and the machine will not operate

> The grinding chamber cannot be opened during the process

> The motor is fitted with a labyrinth seal, preventing dust from entering the motor

Disposable grinding chamber, 40 ml	Ident. No.
MT 40.10	0004425000
Disposable grinding chamber 40 ml (10 pieces/pack)	
MT 40.100	0020001173
Disposable grinding chamber 40 ml (100 pieces/pack)	
MTC 40.100	0020001182
Cover for MT 40	
MT 40.10 steril	0020001984
Disposable grinding chamber steril 40 ml (10 pieces)	
MT 40.100 steril	0020001985
Disposable grinding chamber steril 40 ml (100 pieces)	

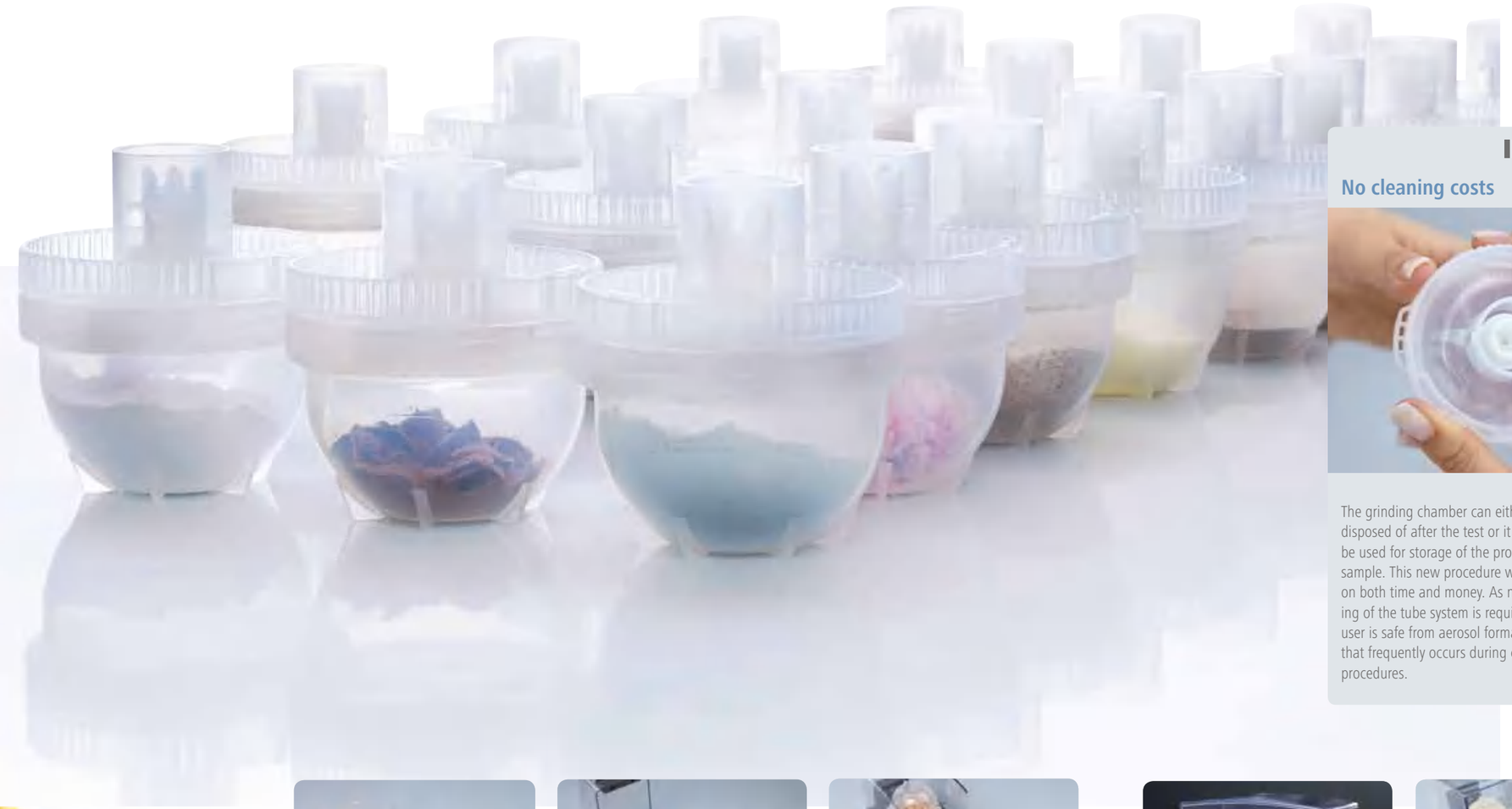
The disposable grinding chamber with a stainless steel beater reduces soft, medium, hard and brittle materials with a Mohs hardness of up to 5 (manganese or apatite: 5 Mohs). The chamber is made of transparent plastic so grinding tests can be observed at any time. In addition the chamber shows excellent resistance to chemicals and temperature.

Multiple grinding chamber, 40 ml	Ident. No.
MMT 40.1	0020003165
MMT 40.1 Stainless Steel package, includes 1 MMT 40 chamber, 25 sealings, 5 beaters, 5 couplings	
A-MMT 40.100	0020003378
A-MMT 40.100 Abrasion Set Spare Parts, includes 100 sealings, 10 beaters, 10 couplings	

Disposable grinding chamber:
Stops cross-contamination
No cleaning required
Easy handling

100 ml chamber coming soon.
Please contact your IKA® representative for further information

The Multi-use Milling Tube MMT 40.1 with a maximum volume of 40 ml can be used and cleaned in a dishwasher multiple times. The package includes a rich set of spare parts so that wearing parts can be replaced if necessary. Therefore it is possible to carry out a number of experiments with the grinding chamber depending on the nature of the sample.



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No cleaning costs

The grinding chamber can either be disposed of after the test or it can be used for storage of the processed sample. This new procedure will save on both time and money. As no cleaning of the tube system is required, the user is safe from aerosol formation that frequently occurs during cleaning procedures.

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.

Step 1 | Fill the sample in the grinding chamber

Step 2 | Attach the grinding chamber onto the Tube Mill

Step 3 | Start the milling process

Step 4 | Grinding the sample

Step 5 | Remove the grinding chamber

Step 6 | Remove the grinding sample

IKA® offers more

Worldwide service network – direct contact in your region

Our dedicated team of engineers provides comprehensive worldwide technical service. Please feel free to contact IKA® directly or your dealer in case of any service questions.

For spare parts IKA® guarantees 10 years of availability. In the event of an equipment malfuncation or technical questions regarding devices, maintenance and spare parts, please call us at 00 8000 4524357 (00 8000 IKAHELP) or send an email to service@ika.com

IKA® Application Support

Our Application Center spans 400 sqm and offers modern facilities for presenting and testing lab devices and processes. This brings us even closer to our customers and improves our service. Here, prospective buyers and customers can test processes that involve stirring, shaking, dispersing, grinding, heating, analyzing and distilling.

Call us at 00 8000 4522777 (00 8000 IKAAPPS) or send an email to applicationsupport@ika.com or visit our website at www.ika.com/applicationsupport

Customizing Center

It is important that IKA® products work for your application. We have a special program: product solutions tailored to your needs.

Should you not find the appropriate device in our standard product range, please send us your requested specifications through the online form. Our team will determine its feasibility and offer a solution to you.

Please visit www.ika.com/customizingcenter
to review already implemented product modifications.

Tube Mill control | **Your benefits**

Adjustable safety speed and time

Interval operation available

USB interface to control and document all the parameters and for updating your firmware

Patent pending

Special safety features

Clearly arranged, multi-lingual OLED display

Quiet operation

3 Year warranty*

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Protection class according to DIN EN 60529: IP 30

CE

Service | **FAQ**

Is it possible to use the grinding chamber more than one time?
We recommend to use the grinding chamber only once to avoid cross-contamination

What about the cleaning methods of the grinding chamber?
Before the first use, the grinding chamber can be autoclaved

What material are the grinding chamber, knife and vlies made of?
The grinding chamber is made of PP, the knife is made of spring steel 1.4310 and vlies are made of PA

Can standard grinding chamber be used with dry ice?
Yes, the grinding chamber can be used with dry ice

What about the end fineness of samples?
The end fineness is between 1 – 100 µm (depends on sample)

What about the minimum quantity for the grinding chamber?
One corn

What about the Mohs hardness of the samples?
The maximum Mohs hardness for samples is 5

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IKA® German technology