

IKA®

**ULTRA-TURRAX®
Tube Drive System**



ULTRA-TURRAX® Tube Drive

ULTRA-TURRAX® Tube Drive control

Principle

World's first: universal disposable disperser system with hermetically sealable sample tubes. Protection and security are provided for infectious sample materials, toxic and high-odor substances under defined conditions (time, energy, volume).

Test procedures are easily duplicated with no cross-contamination between samples. The control model provides a turbo function and reverse rotation switch to optimize mixing and crushing performance. The control USB interface enables PC operation and data storage.

Procedure

The sample containers (tubes) are easily attached to the drive unit. Desired speed and duration are set, then the test is started. An acoustic signal indicates completion of experiment.

All tubes are available in two sizes:

20 ml tube : working volume from 2 to 15 ml

50 ml tube : working volume from 15 to 50 ml



ULTRA-TURRAX® Tube Drive UTTD

One-of-a-kind disposable dispersing system with hermetically sealable disposable sample tubes.

Provides a means for safe processing of infectious, toxic sample materials and strong-smelling substances.

- Dispersing, stirring, and grinding with a single drive unit
- No possibility of cross-contamination
- High level of user safety
- Suitable for individual use or use in series
- Anti-locking function
- Chemical-resistant plastic
- Simple and safe disposal

Technical data

Motor rating input / output	20 / 17 W
Speed range / turbo speed	300 - 6.000 rpm
Display	LED (timer)
Speed display	scale (0 - 9)
Timer	1 - 59 s (300 - 6.000 rpm)
	1 - 29 min (300 - 4.000 rpm)

Reversal of rotating direction interval

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General Data

Dimensions (W x D x H)	100 x 160 x 40 mm
Weight	0,75 kg
Protection class acc. to DIN EN 60529	IP 20
Ident. No. Single Unit	3646000
Ident. No. Workstation*	3645000

ULTRA-TURRAX® Tube Drive control UTTD control

The control version offers these additional advantages:

- USB interface for experiment control and documentation
- Collecting tray for protection against leaking liquids
- Simple, precise and multilingual menu navigation with OLED display
- Programmable sample conditions (library)
- Turbo button for short-term, intensive mixing, dispersing and grinding
- Adjustable reverse operation

Technical data

Motor rating input / output	20 / 17 W
Speed range / turbo speed	400 - 6.000 rpm / 8.000 rpm
Display	OLED
Speed display	digital
Timer	10 s - 30 min (infinitely adjustable)
Reversal of rotating direction interval	10 - 60 s

General Data

Dimensions (W x D x H)	122 x 178 x 48 mm
Weight	1,0 kg
Protection class acc. to DIN EN 60529	IP 20
Ident. No. Single Unit	4135300
Ident. No. Workstation*	3827500

* For information on workstation, see page 11.

The IKA® Tubes

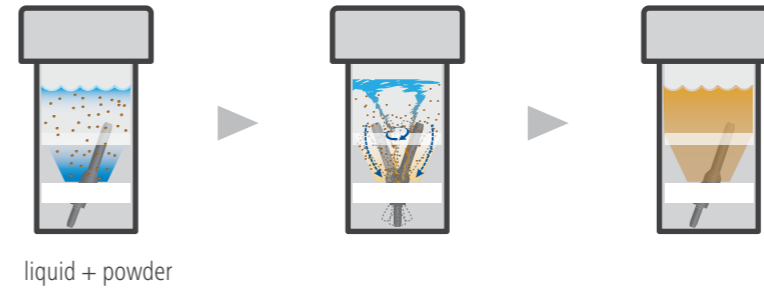
ST TUBE Tube with stirring device



- Suitable for:
- Mixing
 - Stirring
 - Extractions
 - Preparation of soil sample suspensions

Application examples for ST Tube

- Dissolving properties of drugs
- Incorporation of coloured pigments into a solvent
- Accelerated dissolution of sugar solutions
- Extraction of plant substances
- Accelerated dissolution of tablets, dragées, suppositories and capsules
- Mixing of fluids with higher viscosities



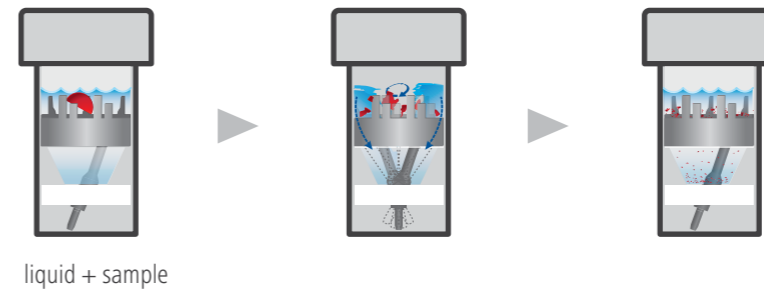
DT TUBE Tube with rotor-stator element



- Suitable for:
- Dispersion
 - Homogenization
 - Suspensions
 - Pharmacokinetics
 - Metabolism studies
 - Diagnosis

Application examples for DT Tube

- Homogenization of tissue samples including brain, liver, muscle tissue, kidney and lung
- Milling of plant samples including rosemary, rapeseed, tomato seeds, grapes, potatoes, cress, leaves and roots
- Production of O/W and W/O emulsions
- Homogenization of effluent samples



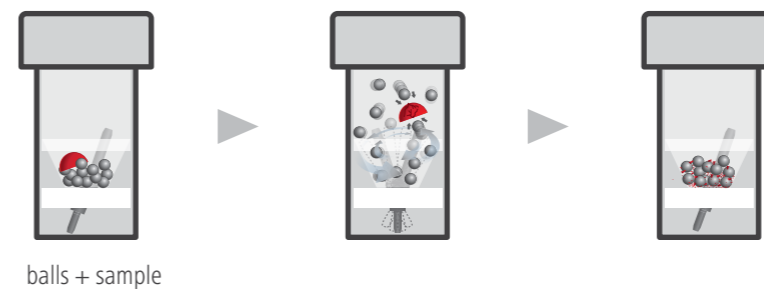
BMT G / S TUBE Tube for grinding with glass balls (G) or with stainless steel balls (S)



- Suitable for:
- Dry milling of dry and brittle samples (e.g. kaolin, gypsum, colored pigments, tablets)
 - Cell maceration
 - Processing of materials mixed with fluids

Application examples for BMT G/S Tube

- Decomposition of animal, plant and human cells
- Dry milling of e.g. pigments, building materials and coal samples
- Dry milling of freeze-dried samples
- Milling of samples to determine water content



All tubes are also available with a pierceable membrane and gamma-sterilized

Application examples for M Tube

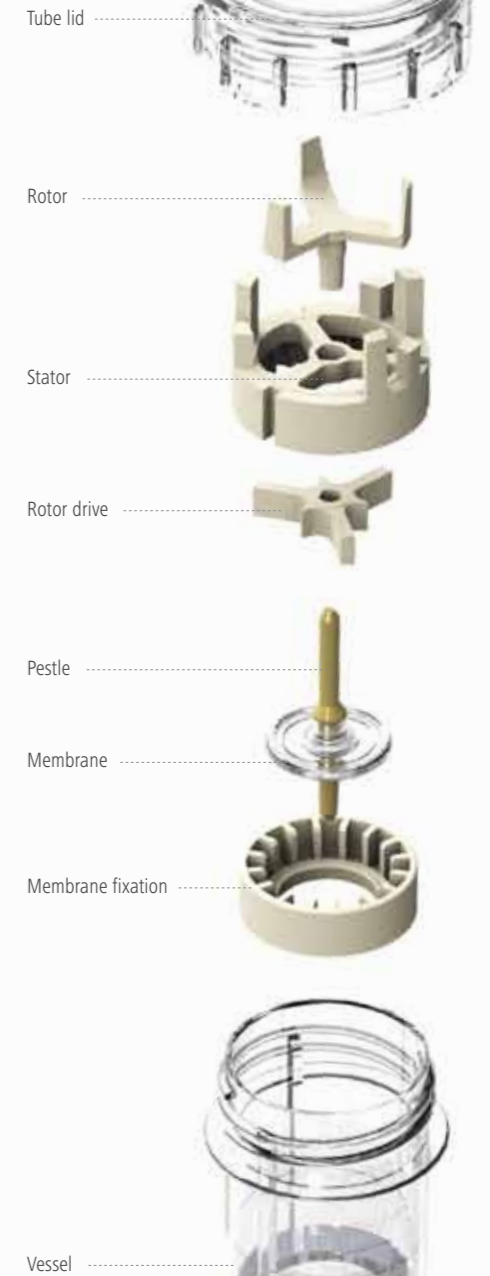
- Sample extraction from dissolved pharmaceuticals
- Addition of a reaction partner, e.g. for pigment reactions
- Storage of samples in the tube, with option to remove material from the closed container at any time

Application examples for gamma-sterilized Tube

- Homogenization of sterile samples e.g. for medical, pathology or pharmaceutical use
- Storage of sterile sample material after preparation directly in sample vessel (even at temperatures down to -20 °C)
- Simple handling preparation of aseptic samples in the laboratory



DT TUBE



Applications and Industries



algae
amion
apple leaves
brain of pigs
capsules
carrots
catalysts
cheese

grape pods
grass
heart
hop pellets
ivy
kidney
liver
lung



potato beetle
potatoes
potato shells
raspberry leaves
roots
rosemary
sage dried
salad oil



sediment
seeds
silicon carbid
sludge
soil samples
starch grains
sugar-coated tablet
sunflower kernels



cherry leaves
chicken, lean meat
color pigments
compost
conductivity paste
cress seeds
crude oil
dry frozen leaves



lymph nodes
malt pellets
medicine analeptic
muscle tissue
mushrooms, dried
nematode
oil
ointments



textiles paints and pigment
thymus
tobacco leaves
tomato seeds
trachea
turkey liver
turkey meat
umbilical cord



fat cream
fibrin-cells
flavor capsules
food paste
fruit juice concentrates
fuel oil
giblets
grape leaves



oleander leaves
olives without stone
orange peel
pills
plant leaves
plant lice
plums leaves
pork meat



vegetable
vegetable mixture
waste water
wood



Industries

- Agriculture
- Biology
- Botany
- Brewery
- Building Materials Industry
- Chemical Industry
- Cosmetics
- Ecology
- Environmental Protection
- Food Analysis
- Genetic Research
- Hematology
- Human Medicine
- Immunology
- Medicine
- Paint and Varnish Industry
- Pathology
- Pharmacy
- Petrochemistry
- Tobacco Industry
- Veterinary Institute

IKA® offers a free application hotline:
00 8000 4522777 (00 8000 IKAAPPS)*
E-mail: applicationsupport@ika.de
* Monday - Thursday: 8:30 am - 4:30 pm
Friday: 8:30 am - 3:30 pm

How to work with the ULTRA-TURRAX® Tube Drive System



STEP 1
Application: Dispersing of mint leaves.



STEP 2
The mint leaves are combined with ethanol and are placed in a DT Tube.



STEP 3
The tube is attached onto the drive system.



STEP 4
The dispersion is started.



STEP 5
The mint leaves are homogenized by the rotor-stator unit in the DT Tube.



STEP 6
The dispersion is stopped.



STEP 7
The tube is removed from the drive system.



STEP 8
Test result: the mint leaves are dispersed homogeneously.



STEP 9
If required the sample can be extracted for analysis with a syringe through the pierceable membrane of the tube lid.



STEP 10
The tube is labeled and stored as a reference sample.

Advantages

- ✓ Stir, disperse, homogenize and grind using a single drive unit
- ✓ No possibility of cross-contamination
- ✓ Hermetically sealable disposable sample tubes
- ✓ No cleaning required
- ✓ High level of user safety
- ✓ Suitable for individual use and use in series
- ✓ Gamma-sterilized tubes
- ✓ Tubes with pierceable membrane lids
- ✓ Tubes with 2 to 15 ml and 15 to 50 ml
- ✓ Anti-locking function
- ✓ Increases safety due to low voltage (24 V)
- ✓ Chemical-resistant plastic
- ✓ Simple and safe disposal
- ✓ Worldwide service guaranteed by IKA®
- ✓ Reproducible tests
- ✓ Patented

You can get a demo unit to test your application or send samples directly to our lab for a complimentary process analysis. IKA® will send you a customized test report along with your processed samples.



ULTRA-TURRAX® Tube Drive Workstation

Included with delivery

ULTRA-TURRAX® Tube Drive	1
ULTRA-TURRAX® Tube Drive control	-
ST-20 Tube with stirring device	2
DT-20 Tube with rotor-stator element	2
BMT-20 G / S Tube for grinding with glass (G) or stainless steel balls (S)	2
Removal hook for removal of rotor-stator element	1
Power supply	1
Ident. No. Workstation	3645000

UTTD Workstation	UTTD control Workstation
-	1
2	2
1	1
1	1
1	1
3645000	3827500

The IKA® Tubes:

What material are the tubes made of and against which solvents are they resistant?

The tubes are manufactured from polypropylene (PP), polyetheretherketone (PEEK), a thermoplastic elastomer (TPE), polyethersulfone (PES) and polyetheretherketone with teflon (PEEK + PTFE). The balls are manufactured from either stainless steel AISI 304 or soda-lime glass. All plastic materials conform to the FDA regulations.

The parts have a good stability against weak acids, chlorides, hypochlorides and many other chemicals.

What volumes can be processed in the tubes?

Tubes are available in two sizes: 20 ml and 50 ml. The working volume range is from 2 to 50 ml.

What does cross-contamination mean?

Cross-contamination refers to the contamination of a sample with a second sample. For example, residue on a processing tool may be transferred into future tests. Because the UTDD tubes are closed and used only one time, cross-contamination is prevented.

Why can I use the tubes only once?

The tubes are intended for single use to prevent cross-contamination and avoid the need for cleaning. Also, the tube membrane is made of a flexible plastic which can only be exposed to high mechanical stress for a limited time.

Can the tubes be used several times or for longer periods (> 30 min)?

IKA® does not recommend using tubes multiple times or for periods longer than 30 minutes. Tubes may leak and cause fluid to pass into the drive. This may lead to serious drive damage or failure.

Can the balls of the BMT Tubes be used for several times?

After each experiment, balls can be cleaned, sterilized and reused.

Can other ball sizes and materials be used for the BMT Tubes?

It is possible to use balls made of other materials with the UTDD (e.g. ceramic). The size of the balls is variable, but should not exceed a diameter of 6 mm. For cell disruption, IKA® recommends using balls with a diameter < 2 mm.

Are the sterilized tubes really sterile?

The sterilized tubes are first blister packed and then gamma sterilized. To further guarantee sterility, an expiration date is printed on the packaging. On a rotational basis, revalidation is performed to ensure the tubes are sterile in accordance with ISO 11137-1.

The IKA® ULTRA-TURRAX® Tube Drive:

Can I use the UTDD for my special application?

Please consult the IKA® application database to see if your application has already been tested. If no similar items have been tested, you may send a sample to our test laboratory. We will be happy to test, analyze and report results directly to you. If you prefer, we will send you a demo UTDD unit to test in the privacy of your own lab. IKA® provides these services at no cost to the customer.

What are the advantages of the UTDD against the conventional dispersing systems?

- Safety:** The hermetically sealed tubes prevent the user from coming in contact with toxic or infectious samples.
- Storage:** The tubes are used only once and can then be used for sample storage.
- Disposable:** Tubes can be discarded after one use. No time or money is wasted on expensive sterilization of a dispersing tool.

Why is the reproducibility better than similar systems?

Because the tests are carried out in a defined closed vessel (tube), the conditions are always identical. In addition, the test time and the speed can be precisely controlled. With the UTDD control, application programs can be stored so that the experiment conditions can be precisely duplicated.

What are the benefits of the turbo and reverse buttons on the UTDD control?

The turbo and reverse functions provide superior mixing and grinding effects. The additional functions provide the ability to achieve good process results with samples that are difficult to process with the basic version of the UTDD.

Our Product Manager
Mr. Oliver Vogelsang
is happy to provide answers to your questions regarding the UTDD:

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E-mail: ov@ika.de





You are optimally equipped and ready to go with the UTDD case.

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**Designed
to work perfectly**

Subject to technical changes.

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