IKA

designed for scientists

EN

Solutions for your Life Science lab

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Life Science has experienced a great growth all around the world in the past decade. Scientists have made one breakthrough after another exploring the mysteries of nature. Studying the most basic mechanisms of life in organisms can be extended to treat diseases, to give more possibilities and new hope to patients. Those benefits for our world give a great meaning and depth to the field of Life Science, including all biological sciences exploring the structures of life.

As the research gets deeper, the importance of sample preparations is rising, having a great impact on the results. Repeatable and reproducible conditions and traceable error sources are challenges that have to be tackled within continuously changing and optimizing methods. The only constant in this varying system is the spirit of scientists and tool makers to improve, as the results can only be as good as the equipment. The high-quality laboratory equipment of IKA has been valued for a long time and its variety of products has become irreplaceable for biological, diagnostic and medical laboratories.

Over the years IKA has developed its own distinctive product line, providing solutions for your Life Science lab.

For more devices, accessories and information visit our website at **www.ika.com**.

PCR Sample Preparation

PCR, or polymerase chain reaction, is a technique to amplify specific DNA sequences. The key to a qualitative and successful PCR is to minimize sources of error in the sample preparation process.

Challenge 1

Animal and plant tissues need to be disrupted at a low temperature to stabilize nucleic acids.

IKA's solution

Tube Mill control

The intermittent running mode helps to improve sample size uniformity and can be accompanied by dry ice, which avoids the thermal breakdown of DNA during high speed grinding. The main unit has a number of programs installed, which can be altered by the user and several precautions for safe operations. Contamination-free processing can be achieved using single-use disposable milling chambers or autoclavable, reusable tubes.

Tube Mill control

Ident. No. 0004180000

Technical Data	Tube Mill control
Motor rating input / output	100 / 80 W
Speed range	5000 – 25 000 rpm
Useable volume max.	40 ml
Timer	5 s – 3 min
Circumferential speed max.	65 m/s
Feed hardness max.	5 Mohs
Feed grain size max.	10 mm
Dimensions (W x H x D)	180 × 170 × 300 mm

ULTRA-TURRAX® Tube Drive P control

Ident. No. 0025005981*

* Tubes are not included in the scope of delivery and have to be ordered separately.

T 10 basic ULTRA-TURRAX®

Ident. No. 0003737000*

* Dispersing tools are not included in the scope of delivery.

ULTRA-TURRAX® Tube Drive P control

The forward and reverse function can be used to help unwind tangled fibres when the sample is fiber-rich. The multi-purpose device can be combined with tubes for different applications and is commonly used for tissue dispersion or cell disruption in plants and animals. There are disperser tubes, ball mill tubes, stirring tubes or dissolver tubes available. It is equipped with a number of pre-stored programmes and safety precautions. Sterile-free disposable consumables are also available for high-throughput sample preparation.

Technical Data	ULTRA-TURRAX® Tube Drive P control
Motor rating input / output	36 / 28 W
Speed range	400 – 8000 rpm
Display	OLED
Timer	10 s – 30 min
Dimensions (W × H × D)	122 × 54 × 178 mm
Weight	1.3 kg
Protection class according to DIN EN 60529	IP 20

T 10 basic ULTRA-TURRAX®

Compact, hand-held tissue homogenizer for volumes from 0.5 to 100 ml with a quick-connect coupling for easy interchangeability of dispersing tools, and a wide range of plastic disposable tools to avoid cross-contamination. Ideal for dispersing samples in very small volume vessels, such as Eppendorf tubes or Greiner tubes.

Technical Data	T 10 basic ULTRA-TURRAX®
Motor rating input / output	125 / 75 W
Volume range (H_2O)	0.5 – 100 ml
Viscosity max.	5000 mPas
Speed range	8000 – 30 000 rpm
Speed display	scale
Speed control	stepless
Noise without element	65 dB(A)
Extension arm diameter	8 mm
Extension arm length	100 mm
Weight	0.61 kg
Dimensions (W × H × D)	56 × 178 × 66 mm
Protection class according to DIN EN 60529	IP 30

Challenge 2

Cell lysis with enzymes like Proteinase K requires temperature and time controlled incubation.

IKA's solution

MATRIX thermoshaker

A wide range of interchangeable attachments enables the thermoshakers to be flexibly adapted to different requirements and applications. Sample vessels with different volumes as well as microtiter plates and deep well plates can be mixed and tempered. Optionally, the insulated and heatable lid "ThermoCover" can be added to prevent temperature gradients in the vessel during incubation.

GERMAN DESIGN AWARD WINNER 2021

Technical Data	MATRIX Orbital	MATRIX Orbital Delta F0.5	MATRIX Orbital Delta F1.5	MATRIX Orbital Delta F2.0	MATRIX Orbital Delta FP	MATRIX Delta Plus	MATRIX Orbital Delta Plus
Ident. No.	0010006246	0010006255	0010006249	0010006258	0010006252	0010006850	0010006853
Mixing function	√	√	√	√	√	×	√
Heating function	×	√	√	√	√	√	√
Cooling function	×	×	×	×	×	√	√
Attachments	variable	0.5 ml tubes	1.5 ml tubes	2.0 ml tubes	plates (MTP/DWP)	variable	variable

Challenge 3

To extract nucleic acids from the lysate, several purification steps need to be performed.

IKA's solution

IKA PETTE vario

An ergonomic feel combined with uncompromisingly precise performance: the IKA PETTE vario can be used for many applications. The colour coding simplifies the rapid selection of a suitable pipette. The highly precise pipettes are fully autoclavable and resistant to UV-light and chemicals to ensure sterile working conditions and robust, long-lasting quality. Accidental volume changes can be avoided with the volume locking feature to ensure accurate pipetting results.

GERMAN DESIGN AWARD WINNER 2020

DESIGN AWARD 2020

IKA PETTE vario	Ident. No.	Max. volume tip
0.1 – 2 µl	0020011210	10 µl
0.5 – 10 µl	0020011211	10 µl
2 – 20 µl	0020011213	200 µl
10 – 100 µl	0020011214	200 µl
20 – 200 µl	0020011215	200 µl
100 – 1000 µl	0020011216	1000 µl
0.5 – 5 ml	0020011217	5 ml
1 – 10 ml	0020011218	10 ml

Information on fixed-range pipettes and suitable tips can be found on www.ika.com.

IKA G-L

Ident. No. 0030000774*

* The scope of delivery includes the metal rotor and cover for 12 vessels, with a capacity of 1.5 / 2 ml.

IKA G-L

IKA G-L is the ideal midi centrifuge for all types of separation processes such as the extraction of nucleic acids or for simple spin down applications. It can be used with standard 1.5 / 2 ml vessels, as well as with PCR strips. The cover opens automatically at the press of a button. The centrifuge is made of quality and sturdy materials, ensuring that it remains stable even during high speed operation. To save time, programs can be set for repeated experiments.

Technical Data	IKA G-L
Capacity	12 × 1.5 / 2.0 ml
Centrifugal acceleration	16 500 G
Speed range	800 – 15 700 rpm
Motor rating input	65 W
Unbalance sensor	yes
Quick stop	yes
Cover opening	automatic
Protective cover	yes
Dimensions (W × H × D)	200 × 140 × 280 mm
Weight	3.9 kg

IKA mini G

Ident. No. 0003958000*

* The scope of delivery includes rotors for 1.5 / 2 ml tubes and 0.2 ml PCR strips as well as several adapters for smaller tubes.

IKA mini G

Mini centrifuge for all applications which do not require high speeds, like spinning down sample tubes, microfiltrations or cell separation in tubes such as PCR vessels or PCR strips. The transparent cover allows constant observation of the centrifuge. As a safety feature, the centrifuge will run only when the lid is closed.

Technical Data	IKA mini G
Capacity	8 × 1.5 / 2.0 ml
Centrifugal acceleration	2000 G
Speed range	6000 rpm
Motor rating input	12 W
Unbalance sensor	No
Quick stop	yes
Cover opening	automatic
Protective cover	yes
Dimensions (W × H × D)	155 × 105 × 175 mm
Weight	1.4 kg

Molecular Cloning

Molecular cloning is a method to produce many copies of a specific DNA fragment. The DNA or RNA is extracted from a sample and amplified in a PCR. The amplified fragment can then be digested with restriction enzymes and ligated with a vector to produce a plasmid with the desired DNA. A micro-organism such as *E.coli* is then transformed with the plasmid, enriched and harvested to produce a high quantity of plasmids containing the desired DNA fragment.

Challenge 1

The extraction of nucleic acids is crucial for the success of the whole experiment. Therefore the sample has to be disrupted carefully and under low temperature conditions to prevent degradation of the DNA material.

IKA's solution

Tube Mill control

The sample can be mixed with dry ice directly during processing to avoid thermal degradation of DNA during high speed grinding (see page 5 for details).

ULTRA-TURRAX® Tube Drive P control

The disperser ensures the best stirring, dispersing, grinding and homogenization results and has been designed in particular for the safe processing of infectious, toxic or odour-intensive samples. With the forward and reverse function, the efficiency of homogenization is increased and tangled fibers can be easily unwound (see page 6 for details).

T 10 basic ULTRA-TURRAX®

Compact, hand-held tissue homogenizer for volumes from 0.5 to 100 ml. With its small diameter, samples in small tubes can be easily dispersed, without the need to transfer the samples to another vessel, hence preventing sample loss during transfer (see page 6 for details).

Challenge 2

All enzyme reaction steps and the cultivation of *E.coli* require precise control of temperature and time to be able to successfully produce the plasmid.

IKA's solution

MATRIX

Mixing, heating and cooling functions are performed as required with precise temperature control. Uniform tempering of the samples is ensured by the various attachments fitting perfectly to the common reaction vessels in Life Science labs. The MATRIX thermoshakers are ideal for incubation of enzymatic reactions (see page 7 for details).

Dry Block Heater

Digital dry bath incubator for aluminum blocks provides precise temperature control in small vessels. Included PT 1000.60 temperature sensor allows temperature control directly in the sample vessel. It can be used with PCR tubes, PCR strips, Greiner tubes, microplates and cuvettes.

Technical Data	Dry Block Heater 1 | 2 | 3 | 4
Number of blocks	1 | 2 | 3 | 4
Heat output	165 | 250 | 330 | 412 W
Heating temperature range	RT +5 °C – 120 °C
Display	LED
Adjustment and display resolution	± 1 K
Fixed safety circuit	150 °C
PT 1000 variation; DIN EN 60751 Kl. A	≤ ± (0.15 + 0.002xITI) K
Set-up plate material	Aluminum alloy
Time setting range	1 min – 99 h 59 min

Dry Block Heater 1 | 2 | 3 | 4

Ident. No. 0004025100

Ident. No. 0004025200

Ident. No. 0004025300

Ident. No. 0004025400

ICC control pro 20 c

Ident. No. 0008036400

ICC control pro 20 c

Water bath solution with powerful pressure / suction pump and external temperature sensor, perfect for precise tempering of enzyme reaction samples in floating racks or tube racks. The bath is easy to clean, as there are no dead spaces and the vessel holders are easily exchangeable.

Technical Data	ICC control
Appliance type	Compact immersion circulator
Heat output (230 / 115 V)	2000 / 1000 W
Temperature range	RT +10 °C* – 150 °C
Display	TFT
Temperature stability DIN 12876	± 0.01 K
Max. flow rate	18 l/min
Max. pump pressure	0.3 bar
Min. suction pressure	0.2 bar
Dimensions (W × H × D)	145 × 340 × 200 mm

* Possible operating temperatures with cooling coil: -20 °C to 150 °C

KS 3000 i control | ic control

Ident. No. 0003940000 | 0003940100

KS 4000 i control | ic control

Ident. No. 0003510000 | 0003510100

KS 3000, KS 4000

The KS 3000 / 4000 incubator shakers provide stable fixing of multiple tubes, flasks or beakers in various sizes and shapes. Available in two sizes and two models. The control model offers more features, such as cooling down to -10 °C (when connected to an external chiller). All models ensure reliable and unattended shaking and tempering of samples or cultured organisms.

Technical Data	KS 3000 i | ic	KS 4000 i | ic
Type of movement	Orbital	Orbital
Shaking stroke	20 mm	20 mm
Permissible shaking weight (incl. attachment)	7.5 kg	20 kg
Motor rating input / output	45 / 10 W	82 / 24 W
Permissible ON time	100 %	100 %
Speed range	10 – 500 rpm	10 – 500 rpm
Temperature range (inlet T>3°C)	RT +5 °C – 80 °C | RT -10 °C – 80 °C	RT +5 °C – 80 °C | RT -10 °C – 80 °C
Time setting range	1 min – 999 h	1 min – 999 h
Timer display	LED	LED
Operating mode	Timer and continuous operation	Timer and continuous operation
Dimensions (W x H x D)	465 × 430 × 695 mm	580 × 525 × 750 mm

STICKMAX

For flexible arrangement of various vessels on shakers or incubators. Easy to clean and disinfect.

Ident. No. 0003920000

Cell Culture

Cultivating cells is generally divided in cultivating immortalized cell lines or primary cells. The former can be grown without limit, whereas the latter have to be obtained freshly from the tissue and its replication capacity is limited. If the cells are not used immediately, they can be frozen for storage and thawed up when needed. The thawing process must be controlled carefully to prevent damage to the cells.

Challenge 1

To obtain primary cell lines, the tissue has to be disrupted sufficiently, but carefully, to ensure cell viability.

IKA's solution

Dry Block Heater 3
Digital dry bath can be used in clean rooms, cell rooms, etc. Safe and convenient working is guaranteed, as they incubate without using water. This prevents contamination of bacteria (see page 13 for details).

T 10 basic ULTRA-TURRAX®
Suitable for mechanical tissue disruption. Due to its small diameter, even tissue samples in small tubes can be dispersed directly in the tubes easily. The compact and hand-held design is especially made for smaller volumes from 0.5 to 100 ml. The metallic dispersing tool is autoclavable to ensure sterile dispersing (see page 6 for details).

Challenge 2

Cells must be thawed up evenly to ensure their viability. Media or additives have to be prewarmed.

IKA’s solution

ICC control pro 20 c

The different attachable racks and floating tube racks make the water bath compatible for centrifuge tubes from 0.5 ml to 50 ml. Suitable accessories facilitate also the tempering of larger media bottles or beakers (see page 14 for details).

MATRIX Orbital Delta Plus

This thermoshaker ensures precise mixing and tempering. The different modes for slow or fast heating and the specific 1.5 / 2 ml centrifuge tube attachment, allow the controlled thawing of the cells at specific rates (see page 7 for details).

Challenge 3

Incubation steps occur over longer time periods, require precise temperature control and often sterile conditons.

IKA’s solution

ROLLER 10 digital

The digital roller shaker with 10 rolls provides smooth rocking and rolling action at infinitely adjustable speeds. It is ideal for rotating cell cultures in conventional tubes and cylindrical flasks of various sizes cultivated in an incubator with up to 50 °C. Easily removable attachments provide for quick cleaning in case of sample spills.

ROLLER 10 digital

Ident. No. 0004013000

Technical Data	ROLLER 10 digital
Type of movement	Rocking and rolling
Speed range	0 – 80 rpm
Timer display	7 segment LED
Speed display	7 segment LED
Operating mode	Timer and continuous operation
Number of rolls	10
Dimensions (W × H × D)	380 × 115 × 545 mm
Permissible ambient temperature	4 – 50 °C
Protection class according to DIN EN 60529	IP 21

KS 4000 ic control

Incubator shaker for reliable and unattended cultivation of cells. Ideal for shaking and tempering of media and cell cultures in different vessels, such as flasks, beakers, plates or smaller tubes. The beakers and flasks can be fixed with clamps. Plates or smaller tubes for cell cultures can be safely attached with the adhesive mat STICKMAX (see page 15 for details).

IKA PETTE

Single channel pipettes with different sizes ranging from 0.1 µl to 10 ml. The design and interchangeable handles make the pipette easy and comfortable to operate. The construction is durable and robust, using high quality UV resistant and chemical resistant materials. The pipettes are fully autoclavable to ensure sterility and compliance to stringent laboratory standards, which makes it ideal for the use in cell culture applications (see page 8 for details).

Microbial Culture

A high variety of viruses, fungi and bacteria are cultivated in Life Science laboratories. In accordance with their natural habitats, these microorganisms require certain climates and conditions to grow well. When cultivated in a laboratory, special media is needed in order to provide the necessary nutrients for them to thrive.

Challenge 1

The various media and its additives require extensive preparation, like weighing multiple components, adjusting the pH and need heated stirring steps.

IKA's solution

RET control-visc

Magnetic stirrer with heating and integrated balance. To facilitate the preparation of buffer solutions, a BNC socket allows the connection of a pH electrode. As pH is an important parameter for microbial growth, pH variations can lead to microbial deactivation and inactivity. The integrated temperature control feature enables connection of a temperature sensor, placed directly in the medium, to control the actual temperature with a high degree of precision. Program editing and storage functions allow customization of speed, time and temperature for unattended mixing and tempering.

Integrated SAFETY

RET control-visc

Ident. No. 0005020000*

* A PT 100.70 temperature sensor is supplied with the unit.

Technical Data	RET control-visc
Stirring quantity max. (H_2O)	20 l
Motor rating output	9 W
Speed range	50 – 1700 rpm
Heat output	600 W
Heating temperature range	RT – 340 °C
Adjustable safety circuit	50 – 380 °C
Load capacity weighing function max.	5 kg
Set-up plate material	stainless steel 1.4301
Set-up plate dimensions	Ø 135 mm
Dimensions (W × H × D)	160 × 85 × 270 mm
Weight	2.7 kg

Challenge 2

Thawing or heating of media and components before usage.

IKA's solution

ICC control pro 20 c

The variety of hookable racks and floating racks give the waterbath many purposes from prewarming media, cultivating cells to tempering reaction mixes. With a bottom plate, even bigger bottles or beakers can be placed easily in the bath (see page 14 for details).

MATRIX Orbital Delta Plus

This thermoshaker ensures precise mixing and tempering. The different modes for slow or fast heating and the specific 1.5 / 2 ml centrifuge tube attachment, allow the controlled thawing of the cells at specific rates (see page 7 for details).

Challenge 3

Cultivation of microorganisms needs sterile conditions to avoid contamination.

IKA's solution

KS 3000, KS 4000

The KS incubator shakers are ideal for the shaking and tempering of media and cell cultures in different vessels, such as flasks, beakers, plates or smaller tubes. The beakers and flasks can be fixed with clamps. Plates or smaller tubes for cell cultures can be safely attached with the adhesive mat STICKMAX (see page 15 for details).

IKA PETTE

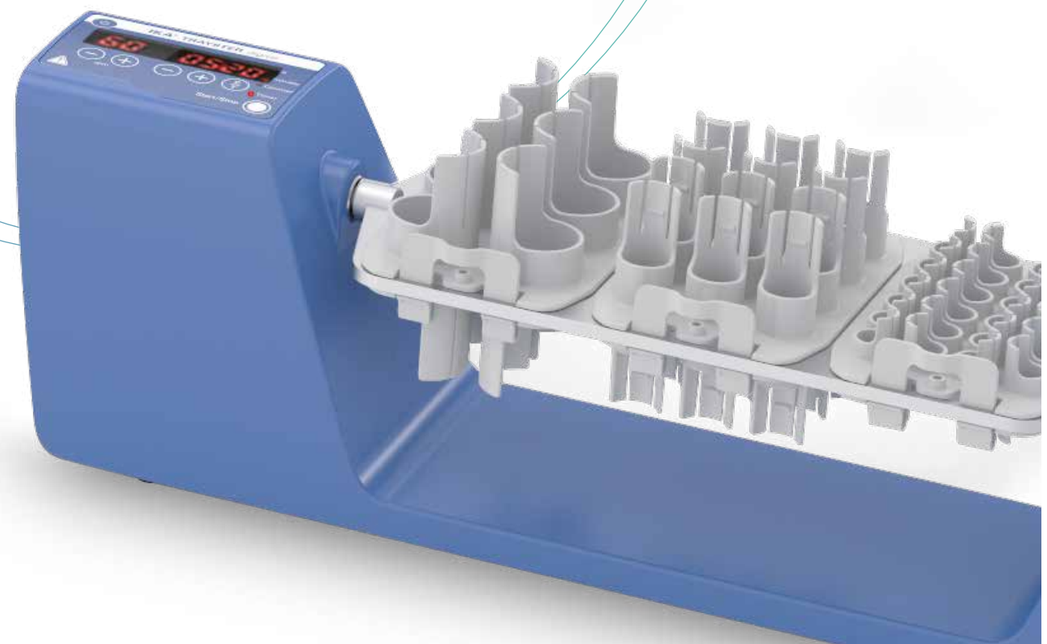
Single channel pipettes with different sizes ranging from 0.1 µl to 10 ml. All pipettes and components are fully autoclavable and UV resistant for working in sterile or decontaminated conditions (see page 8 for details).

STICKMAX

For added safety and flexible loading, the adhesive mat STICKMAX easily keeps vessels in place quickly and securely.

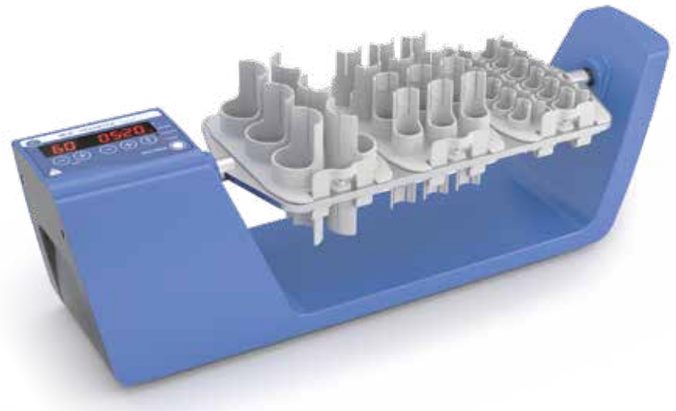
Immunoprecipitation

Immunoprecipitation is a method of selectively purifying and enriching a protein. Through a specific antibody-protein reaction, the target protein is isolated from a sample containing thousands of different proteins, then enriched and purified.



Challenge 1

The sample has to be incubated overnight and slowly agitated.



IKA’s solution

Trayster digital

Digital overhead shaker with vertical rotating motion for smooth but effective 360 degree mixing with infinitely adjustable speed. Ideal for biological samples, particularly blood samples. The variety of tube insert sizes allow sample mixing in Eppendorf tubes and Greiner tubes up to 50 ml. Perfect for immunoprecipitation as it can be timed and placed in the refrigerator or incubator.

Technical Data	Trayster digital
Type of movement	Overhead
Permissible shaking weight (incl. attachment)	2 kg
Motor rating input / output	16 / 9 W
Speed range	0 – 80 rpm
Speed display	7 segment LED
Time setting	1 s – 99.9 h
Timer display	7 segment LED
Dimensions (W × H × D)	460 × 180 × 140 mm
Weight	3.282 kg
Permissible ambient temperature	4 – 50 °C

Trayster digital

Ident. No. 0004006000*

* Attachements are not included in the scope of delivery, please order separately.

Loopster digital

Ident. No. 0004016000*

* Accessories, such as tube attachments, have to be ordered separately.

Loopster digital

Digital rotator for smooth but effective mixing with adjustable speed. Ideal for biological samples and suitable for separating and mixing processes of powdered and liquid samples in Eppendorf tubes and Greiner tubes up to 50 ml. The easy removable attachments allow simple and quick cleaning of the unit. The universal plate system allows a flexible and personalized attachment of individual clips in all sizes. Ideal for usage in a refrigerator or incubator.

KS 4000 ic control

The temperature control mode ensures that the set temperature remains accurate even after long hours of operation. Features such as the antibacterial coating of the controls, the liquid pressure struts (to assist and prevent the hood from falling), the emergency stop for opening the hood and the sump drainage are all part of a design based on safety and user-friendliness. The standard USB interface allows remote control and uninterrupted recording of experiment-related parameters (see page 15 for details).

Technical Data	Loopster digital
Type of movement	Rotating
Permissible shaking weight (incl. attachment)	2 kg
Motor rating input / output	16 / 9 W
Speed range	0 – 80 rpm
Speed display	7 segment LED
Timer display	7 segment LED
Operating mode	Timer and continuous operation
Dimensions (W × H × D)	300 × 360 × 300 mm
Permissible ambient temperature	4 – 50 °C

Challenge 2

The tissue sample has to be lysed fully, but not excessively to safely release the target protein and contamination has to be avoided.

IKA's solution

IKA PETTE

Single channel pipettes with different models ranging from 0.1 µl to 10 ml. They can be used for a wide range of laboratory applications, as they are highly chemical resistant, fully autoclavable and highly precise. Simple liquid transfer and handling of microliter volumes can be done easily, accurately and precisely (see page 8 for details).

T 10 basic ULTRA-TURRAX®

Compact, hand-held tissue homogeniser for small volumes can be combined with a wide range of plastic disposable heads to avoid cross contamination (see page 6 for details).

MATRIX

The perfect assistant for incubating samples in the laboratory. With a wide range of functions and programmable temperature and mixing series, the MATRIX shakers perfectly meet the diverse needs of enzymatic or chemical reaction conditions (see page 7 for details).

Western Blot

In Western blotting, cells or biological tissue samples are prepared for separation via gel electrophoresis, transferred to a membrane and then stained with antibodies bound to a specific protein. The location and intensity of the antibody staining is analyzed to obtain information about the expression level and size of the proteins in the sample.

Challenge 1

Gentle disruption and lysis of the sample is needed, often in very small sample volumes.

HANDS FOR CHILDREN by IKA

Vortex 3

Ident. No. 0003340000

IKA's solution

VORTEX 3

Practical vortex shaker with a sturdy construction and stable operation - touch or continuous. The device is suitable for centrifuge tubes, conical flasks, enzyme plates etc. due to the availability of a high variety of attachments. For safe, reliable and hands-free operation.

Technical Data	VORTEX 3
Type of movement	orbital
Shaking stroke	4 mm
Permissible shaking weight (incl. attachment)	0.4 kg
Motor rating input / output	58 / 10 W
Speed range	500 – 2500 rpm
Speed control	scale (0 – 6)
Timer display	no
Operating mode	continuous operation
Dimensions (W × H × D)	127 × 136 × 149 mm
Weight	4.5 kg

Challenge 2

Proper staining and destaining is achieved with long incubation times and gentle shaking.

IKA's solution

ROCKER 3D digital

Ident. No. 0004001000

ROCKER 3D digital

Digital shaker with three-dimensional tumbling motion and adjustable speed for smooth mixing tasks. Ideal for gentle incubation at low speeds and for continuous operation modes. Various clamps and the STICKMAX are available for the attachment of different kind of vessels such as flasks, tubes or plates. The device can also be placed in an incubator for temperatures up to 50 °C.

Technical Data	Rocker 3D digital
Type of movement	Tumbling
Tumbling angle adjustable	0 – 15°
Permissible shaking weight (incl. attachment)	2 kg
Motor rating input / output	16 / 9 W
Permissible ON time	100 %
Speed range	0 – 80 rpm
Speed display	7 segment LED
Time setting	1 s – 99.9 h
Timer display	7 segment LED
Operating mode	Timer and continuous operation
Dimensions (W × H × D)	280 × 185 × 330 mm
Weight	2.3 kg
Permissible ambient temperature	4 – 50 °C
Permissible relative humidity	80 %

T 10 basic ULTRA-TURRAX®

Compact, hand-held tissue homogeniser for volumes from 0.5 to 100 ml, a quick-insert interface for easy interchangeability of dispersing tools, and a wide range of disposable plastic tools to avoid cross contamination (see page 6 for details).

Dry Block Heater 1

Digital dry bath can be used in clean rooms, cell rooms, etc. Safe and convenient working is guaranteed, as they incubate without using water. This prevents contamination of bacteria (see page 13 for details).

IKA PETTE

Single channel pipettes with different models ranging from 0.1 µl to 10 ml (see page 8 for details).

In-situ Hybridization

In-situ hybridization is used to detect specific nucleic acids in cells or tissue samples. Labelled DNA or RNA is inserted into the cells, where they anneal to complementary nucleic acids Depending on the type of nucleic acids used in the probe and sample, the hybridization process can be divided into three types: DNA-DNA hybridization, DNA-RNA hybridization and RNA-RNA hybridization.

Challenge 1

For the enzymatic digestion, precise control of temperature is required and contamination has to be avoided.

IKA's solution

Dry Block Heater 3
Dry bath incubator used with PCR tubes, PCR strips, Greiner tubes, microplates and cuvettes (see page 13 for details).

ICC control pro 20 c
A wide range of accessories is available to match the requirements of incubation reactions such as enzymatic digestion. The bath is easy to clean with no dead spaces and therefore helps to reduce contamination risks (see page 14 for details).

MATRIX
The easily exchangeable attachments and the intuitive interfaces of the thermoshaker facilitate every day steps in the laboratory. Enzyme reaction conditions can be set and even automatically stopped with a programmed increase of temperature after a defined time period (see page 7 for details).

Challenge 2

The effect of hybridization depends on the degree of coverage of the sample with the reaction solution, as well as a sufficient incubation.

KS 260 basic
Ident. No. 0002980200

IKA's solution

KS 260 basic
Made for smooth agitation of cell cultures, nutrient media in Petri dishes, culture bottles and vessels in an orbital shaking motion. Comes with an integrated slip resistant foil (PP) which prevents vessels from sliding off during long operation times. Can run for a long time period at a low speed level to promote an even coverage of membranes during incubation. The LED display allows real-time observation of speed and time during the mixing process. For more advanced experimental settings, the KS 260 control model is available with additional features.

Technical Data	KS 260 basic
Type of movement	orbital
Shaking stroke	10 mm
Permissible shaking weight (incl. attachment)	7.5 kg
Motor rating input / output	45 / 10 W
Speed range	0 – 500 rpm
Speed display	LED
Time setting range	5 – 50 min
Operating mode	timer and continuous operation
Dimensions (W × H × D)	360 × 98 × 420 mm
Weight	8.5 kg

ROCKER 3D digital
Made for smooth agitation of cell cultures, nutrient media in Petri dishes, culture bottles and vessels in an orbital shaking motion (see page 31 for details).

IKA PETTE
Highly precise single channel pipettes with different models ranging from 0.1 µl to 10 ml. They can be used for a wide range of laboratory applications, as they are highly chemical resistant, fully autoclavable and ergonomic in their design with exchangable handles to fit perfectly into any user's hand. The risk of RSI is greatly minimized with the ergonomic design of the IKA PETTE (see page 8 for details).

Dialysis

Dialysis is a method to physically separate and purify biological macromolecules from small molecules by using a semi-permeable membrane. Small molecules diffuse out of the membrane into the surrounding water or buffer solution and the macromolecules remaining in the membrane can be further processed.

Challenge 1

Stable and effective stirring is required without constant observation of devices.

IKA's solution

big squid white

Digital LED display showing the speed and outstanding chemical resistance due to the glass top and the synthetic bottom made of TPC-ET. The big squid is long-lasting and reliable for dialysis experiments, providing a means for gentle, low shear mixing of low viscosity liquids.

big squid white

Ident. No. 0003672000

Technical Data	big squid white
Stirring quantity max. per stirring position (H_2O)	1.5 l
Motor rating input / output	4 / 2 W
Speed range	0 – 2500 rpm
Speed display	LED
Stirring bar length max.	30 mm
Setting accuracy speed	50 rpm
Set-up plate material	glass
Set-up plate dimensions	Ø 160 mm

Challenge 2

If many vessels are used simultaneously, space needs to be saved and multiple stirring stations are needed.

IKA's solution

RO 5

Noiseless and consistent stirring on 5-positions without heating. The RO 5 is designed for synchronous stirring and therefore ideal for dialysis set-ups with more than one sample. The models RO 10 and RO 15 provide you with even more mixing points.

RO 5

Ident. No. 0003690500

Technical Data	RO 5
Number of stirring positions	5
Stirring quantity max. (H_2O)	0.4 l
Stirring position distance	90 mm
Speed display	LED
Speed range	0 – 1200 rpm
Setting accuracy speed	10 rpm
Set-up plate material	stainless steel 1.4301
Set-up plate dimensions	120 × 470 mm

Blood Test

By analyzing human blood, diseases like anaemia, diabetes, blood diseases, microbial infections, kidney or liver dysfunctions and physical abnormalities can be diagnosed. Levels of cholesterol, calcium and more can also be tested. Blood tests are an integral part of many medical treatments in hospitals or blood donation centers.

Challenge 1

After obtaining a blood sample of the patients, it has to be quickly processed to prevent coagulation.

IKA's solution

ROLLER 6 digital

The digital roller shaker with 6 rolls provides smooth rocking and rolling action for rotating all kind of common blood collection tubes. No additional clamps are needed to fasten the bags or tubes. The device can also be placed in a refrigerator or incubator with temperatures ranging from 4 - 50 °C. In case of spillage and for easy cleaning and disinfection, the rolls can be removed easily (see page 19 for details).

IKA PETTE

Single channel pipettes with different models ranging from 0.1 µl to 10 ml. Pipettes can be used in blood donation centers to identify patient blood types on-site with a simple prick of a fingertip (see page 8 for details).

MATRIX thermoshaker

For more advanced temperature and mixing processes with additional requirements (see page 7 for details).

Dry Block Heater 4

Digital dry bath can be used in cell culture rooms, biosafety cabinets, laminar flow cabinets etc. The exchangeable blocks are available for various vessel designs and as they incubate without using water, the risk of contaminating the blood samples is greatly reduced. The device is supplied with a PT 1000.60 stainless steel temperature sensor which can be directly inserted into the sample vessel for monitoring the actual sample temperature throughout the entire process (see page 13 for details).

ROCKER 3D digital

Digital shaker tumbling motion can be used for mixing blood bags to prevent the blood from coagulating (see page 31 for details).

Trayster digital

Digital overhead shaker, ideal for mixing biological samples, particularly blood samples (see page 25 for details).

IKA

designed for scientists

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