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Designed to work perfectly

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IKA® Catalog 2011 EN

IKA®

Catalog 2011

www.ika.com

Designed to work perfectly

IKA® is the center where the industry's future begins.

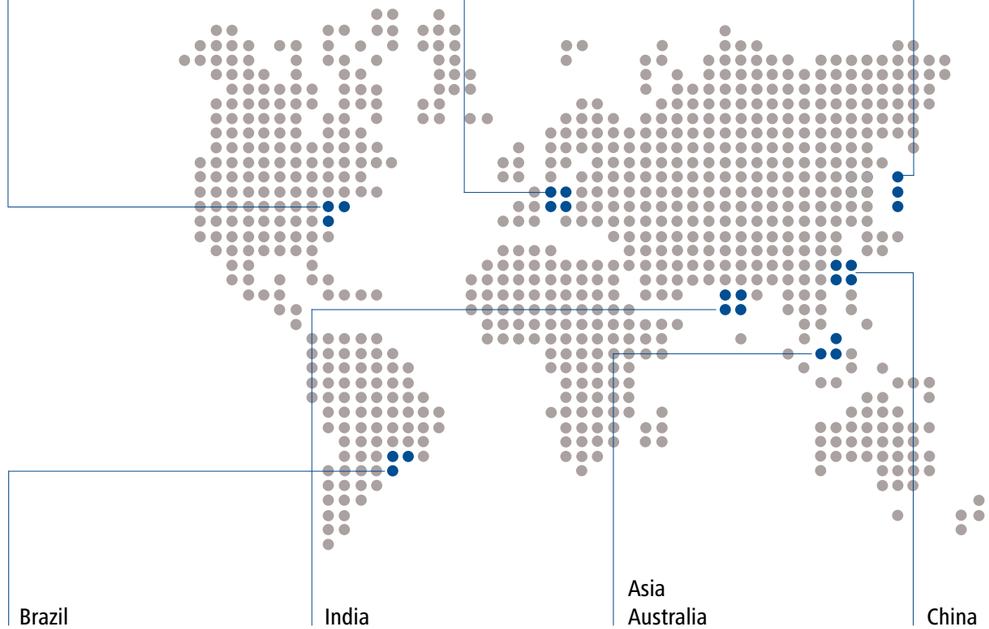
Precision for ideas
When leading researchers and specialists find themselves amazed by specialty laboratory equipment, IKA® is typically involved. With samples and processes that will change our future, substances in all states of aggregation can be transformed into innovative products through experimentation and production. Mixed or crushed, tempered or distilled, in new compounds or reproducible results; from anti-aging cream to cement, as a tissue sample or pioneering a new development, in the small range or on an industrial scale, IKA® is the beginning.

Here IKA® not only ensures the highest possible degree of precision and quality in the results, but also demonstrates through its innovative design, that a laboratory need not be boring. The power of innovation can be visible.

Laboratory Technology/Analytical Technology
Laboratory and analysis equipment of the very latest type is produced at the central location in Staufen by nearly 300 IKA® employees. In recent years IKA® has gained a leading position in the world market with its innovative magnetic stirrers, overhead stirrers, shakers, homogenizers, mills, rotary evaporators, calorimeters, laboratory reactors and specially developed software for laboratory and analysis applications.

Process Technology
The Process Technology section has around 80 employees who make a major contribution to the success of the IKA® group. Production machines are made for the dispersion, stirring and kneading fields as well as complex, individually designed units for the sectors of pharmaceuticals, chemistry, food, paints, cosmetics, plastics and many other branches of the industry.

The IKA® group



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RV 10 control

p. 106

RV 10 Rotary evaporators awarded for outstanding performance. For over 50 years the iF design award has served as a recognized trademark for outstanding design all over the world. We are delighted that our RV 10 series has just been selected to receive one of these coveted design prizes. The RV 10 series was among the top entries in one of the world's most well-known design competitions, asserting itself in a highly competitive field.

ULTRA-TURRAX® Tube Drive control

p. 69

The new control version offers the following additional advantages:
- USB interface for experiment control and documentation
- Collecting tray for protection against leaking liquids
- Simple and precise menu navigation thanks to the OLED display
- Programmable sample conditions (library)

KS 4000 i control

p. 54

Incubator shaker with innovative design allowing unattended operation in a temperature-controlled environment.
- Optionally available with built-in cooling coil for connecting an external refrigerator, e.g. KV 600
- Collecting tray with drainage hose at rear of device
- Incl. PT 1000.60 temperature sensor
- Integrated PID temperature control (use of two PT 1000 temperature sensors)

product design award
2009

topolino

p. 19

Extremely convenient magnetic mini-stirrer.
- For mixing quantities up to 250 ml
- High magnetic adhesion
- Continuously adjustable speed range
- Durable, brushless motor

ULTRA-TURRAX® Tube Drive Tubes

p. 70

Hermetically sealable disposable sample tubes for safe processing of infectious, toxic and high-odour sample materials.
new: Gamma-sterilized tubes
new: Tubes with piercable membrane covers
new: Tubes with 2 - 15 ml and 15 - 50 ml

C-MAG HP 7

p. 98

Hotplate made of glass ceramic.
- Offers excellent chemical resistance
- Fixed safety circuit of 550 °C
- Exact temperature setting via digital display (LED)

STICKMAX

p. 62

New universal adhesive mat for the fixing clip attachments of various shakers.
- Ideal for frequently changing vessel types and sizes
- Self-adhesive
- Devices can be easily removed by side tilting movement
- Suitable for disinfection

Reaction Block System

p. 29

The reaction block allows syntheses to be carried out in round flasks at temperatures of up to 180 °C. This system ensures optimal heat transfer from the heating plate directly into the medium. Uniform mixing is also guaranteed because there is no interference of the magnetic field from the aluminium blocks.

color squid

p. 22

The popular color squids are back with new designs. This compact magnetic stirrer not only stands out thanks to its new functions, such as a digital speed display, but the color squid now features a new electronically controlled motor for more stirring capacity.

Mixing

Quarter System

Multiple syntheses with just one magnetic stirrer (RCT and RET line) using aluminium quarters which guarantee optimal heat transfer. The different colours used for the various quarters make them easier to distinguish from one another.
Page 28

RET basic *safety control* IKAMAG®
The classic: now with new design and many new functions.

ETS-D5
Electronic contact thermometer with PID control and RESET function, incl stainless steel temperature sensor H 62.51, **page 26**
Ident. No. 3378000

H 44
Boss head clamp, **page 31**
Ident. No. 2437700

H 38
Holding rod for connecting ETS-D5 with H 44 to the support rod H 16 V, **page 31**
Ident. No. 3547700

H 16 V
Support rod for all magnetic stirrers with M 10 threaded bushing, **page 31**
Ident. No. 1545100

RCT basic *safety control* IKAMAG®
Magnetic stirrer with digital display, incl. protective cover H 100, **page 12**
Ident. No. 3810000

Ident. No.

3810000	230 V 50/60 Hz
3810001	115 V 50/60 Hz

included with unit
Ident No. 3516800

RCT basic *safety control* IKAMAG®

The improvement of the bestseller: Now with new technology for more capacity.
new: Stronger motor for a higher speed range
new: Additional temperature control mode for faster heating of medium
- Integrated temperature control
- Incl. PT 1000 temperature sensor (PT 1000.60)
- Exact temperature and speed setting via digital display, even when switched off
- Digital display of set safety temperature limit
- Hot Top indicator >> hot surface warning to prevent burns!
- Digital error code display
- With adjustable safety circuit of heating plate temperature (50 - 360 °C)
- Safety magnetic stirrer with heating, suitable for unsupervised operation
- Bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control
- High level of safety due to improved heat control technology
- Enclosed assembly (IP 42) guarantees long service life
- Highly polished aluminum heating plate for optimal heat transfer
- Improved magnetic adhesion
- Incl. protective cover H 100

Accessories (page):
Quarter System (28), Reaction Block System (29), PT 1000.70 Temperature sensor (27), ETS-D5 Electronic contact thermometer (26), IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32), H 16.1 Extension (31)

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input	16 W
Motor rating output	9 W
Speed display	digital
Speed range	50 – 1.500 rpm
Max. magnetic bar (L x Ø)	80 x 10 mm
Heating function	
Heat output	600 W
Heating rate (1 l H_2O)	6,5 K/min
Temperature range	RT – 310 °C
Setting accuracy	± 1 K
Temp. undulation without temp. sensor	± 2 K
Adjustable safety circuit	50 – 360 °C
Digital temperature limit display	50 – 360 °C
Control accuracy with sensor	PT 1000 / ± 1 K ETS-D5 / ± 0,5 K
Heating plate	
Material	aluminum alloy
Dimensions	Ø 135 mm
General data	
Dimensions (W x D x H)	160 x 270 x 85 mm
Weight	2,5 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input	16 W
Motor rating output	9 W
Speed display	digital
Speed range	50 – 1.700 rpm
Max. magnetic bar (L x Ø)	80 x 10 mm
Heating function	
Heat output	600 W
Heating rate (1 l H_2O)	7 K/min
Temperature range	RT – 340 °C
Setting accuracy	± 1 K
Temp. undulation without temp. sensor	± 2 K
Adjustable safety circuit	50 – 360 °C
Control accuracy with sensor	PT 1000 / ± 1 K ETS-D5 / ± 0,5 K
Heating plate	
Material	stainless steel
Dimensions	Ø 135 mm
General data	
Dimensions (W x D x H)	160 x 270 x 95 mm
Weight	2,5 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

RET basic *safety control* IKAMAG®

The classic: Now with new design, functions and features.
new: Wide speed range from 50 - 1.700 rpm
new: Integrated temperature control
new: Incl. PT 1000 temperature sensor (PT 1000.60)
new: Exact temperature and speed setting via digital display, even when switched off
new: Digital display of set safety temperature limit
new: Hot Top indicator >> hot surface warning to prevent burns!
new: Digital error code display
- With adjustable safety circuit of heating plate temperature (50 - 360 °C)
- Safety magnetic stirrer with heating, suitable for unsupervised operation
- Bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control
- High safety standard due to improved heat control technology
- Enclosed assembly (IP 42) guarantees long service life
- Very broad temperature range (RT - 340 °C)
- Extremely fast heating times
- Electronic speed control
- High magnetic adhesion
- Incl. protective cover H 100

Accessories (page):
Quarter System (28), Reaction Block System (29), PT 1000.70 Temperature sensor (27), ETS-D5 Electronic contact thermometer (26), IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32), H 16.1 Extension (31)

Ident. No.

3622000	230 V 50/60 Hz
3622001	115 V 50/60 Hz

included with unit
Ident No. 3516800

Ident. No.

3964000	230 V 50/60 Hz
3964001	115 V 50/60 Hz

labworldsoft®

RET control/t IKAMAG®

New safety magnetic stirrer with heating, suitable for unsupervised operation.
- Timer: min. 1 min / max. 9 h 59 min
- 2 adjustable safety circuits
- Stirring bar crack detection
- Setting acc. medium temperature: 0,5 K
- HOT warning display indicating any residual heat when unit is switched off
- Easy-to-read backlit LCD display
- Actual medium temperature resolution displayed: 0,5 K (RT to 100 °C); 1 K (from 100 °C upwards)
- Fuzzy control and microprocessor technology guarantee maximum control accuracy
- PC control via RS 232 interface, with optional safety function
- Software labworldsoft® is available to control and document all measured values via PC
- 3 modes of operation, e.g. stirring and heating functions can be secured against inadvertent changes of set parameters
- Enclosed assembly (IP 42) guarantees long service life
- Incl. protective cover H 99

Accessories (page):
Quarter System (28), Reaction Block System (29), Temperature sensors (27): PT 100.50, PT 100.51, PT 100.52, IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32), labworldsoft® (139)

Note: Not available in USA.

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input	12 W
Motor rating output	5 W
Speed display	digital
Speed range	0 – 1.200 rpm
Timer	1 min - 9 h 59 min
Max. magnetic bar (L x Ø)	80 x 10 mm
Heating function	
Heat output	600 W
Heating rate (1 l H_2O)	7 K/min
Temperature range	RT – 340 °C
Setting accuracy	0,5 K (< 100 °C)
	1 K (> 100 °C)
Adjustable safety circuit	50 – 350 °C
Sensor for temperature in medium	1 x PT 100
	or 2 x PT 1000
Control accuracy with sensor	± 0,2 K
Heating plate	
Material	stainless steel
Dimensions	Ø 135 mm
General data	
Dimensions (W x D x H)	160 x 280 x 97 mm
Weight	2,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog

RH basic 1 IKAMAG®
RH basic 2 IKAMAG®

Economic magnetic stirrer with stainless steel heating plate.
- Fixed safety circuit 400 °C
- Soft-start stirring motor

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remove (32)

Note: RH basic 1 is only available in Asia, Australia and South America.

Technical data		
Stirring quantity (H_2O)	RH basic 1	5 l
	RH basic 2	10 l
Motor rating input		15 W
Motor rating output		2 W
Speed display		scale (0 – 6)
Speed range	RH basic 1	150 – 1.500 rpm
	RH basic 2	100 – 2.000 rpm
Max. magnetic bar (L x Ø)		40 x 8 mm
Heating function		
Heat output		400 W
Heating rate (1 l H_2O in H15)		3 K/min
Temperature range		RT – 320 °C
Heating plate		
Material		stainless steel (AISI 304)
Dimensions		Ø = 125 mm
General data		
Dimensions (W x D x H)		168 x 220 x 105 mm
Weight		2,4 kg
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protect. class acc. to DIN EN 60529		IP 21

RH basic 1

Ident. No.

3479000	230 V 50/60 Hz
3479001	115 V 50/60 Hz

RH basic 2

Ident. No.

3339000	230 V 50/60 Hz
3339001	115 V 50/60 Hz

C-MAG HS 4

Ident. No.

3581000	230 V 50/60 Hz
3581026	115 V 50/60 Hz

C-MAG HS 7

Ident. No.

3581200	230 V 50/60 Hz
3581226	115 V 50/60 Hz

C-MAG HS 10

Ident. No.

3581400	230 V 50/60 Hz
3581426	115 V 50/60 Hz

C-MAG HS 4 / C-MAG HS 7 / C-MAG HS 10 IKAMAG®

New magnetic stirrers with heating and glass ceramic heating plate which offers excellent chemical resistance.

- Powerful motor for stirring quantities of up to 5 l, 10 l, 15 l (H_2O)
- Fixed safety circuit of 550 °C
- Hot Top indicator >> hot surface warning to prevent burns!
- Precise temperature setting via digital display (LED)
- Digital error code display
- Elevated control panel to protect against leaking liquids

C-MAG HS 7, C-MAG HS 10 additionally:
- Bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32), H 16 V Support rod (31)
C-MAG HS 7, C-MAG HS 10 additionally: ETS-D5 Electronic contact thermometer (26)

Technical data		
Stirring quantity (H_2O)	HS 4	5 l
	HS 7	10 l
	HS 10	15 l
Motor rating input		15 W
Motor rating output		1,5 W
Speed display		scale
Speed range		100 – 1.500 rpm
Max. magnetic bar (L x Ø)	HS 4	30 x 8 mm
	HS 7	80 x 10 mm
	HS 10	80 x 10 mm
Heating function		
Heat output	HS 4	250 W
	HS 7	1.000 W
	HS 10	1.500 W
Heating rate (1 l H_2O)	HS 4	2,5 K/min
	HS 7 / HS 10	5 K/min
Temperature range		50 – 500 °C
Setting accuracy		± 10 K
Safety circuit fixed		550 °C
Control accuracy with sensor	HS 4	–
	HS 7 / HS 10	ETS-D5 / ± 0,5 K
Heating plate		
Material		glass ceramic
Dimensions	HS 4	100 x 100 mm
	HS 7	180 x 180 mm
	HS 10	260 x 260 mm
General data		
Dimensions (W x D x H)	HS 4	150 x 260 x 105 mm
	HS 7	220 x 330 x 105 mm
	HS 10	300 x 415 x 105 mm
Weight	HS 4	3 kg
	HS 7	5 kg
	HS 10	6 kg
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protect. class acc. to DIN EN 60529		IP 21

Technical data	
Stirring positions	5
Max. stirring quantity per stirrer (H_2O)	0,4 l
Distance between stirring places	90 mm
Motor rating input	7,2 W
Motor rating output	1,8 W
Speed display	scale (1 – 10)
Speed range	0 – 1.100 rpm
Deviation for individual stirring positions	5 %
Max. magnetic bar (L x Ø)	30 x 8 mm
Heating function	
Heat output	175 W
Temperature range (surface)	RT – 120 °C
Max. temperature medium (dep. on vessel)	70 °C
Heat control	scale (1 – 10)
Temperature consistancy in the medium	± 2 K
Heating plate	
Material	silicone
Dimensions	120 x 450 mm
General data	
Dimensions (W x D x H)	138 x 552 x 65 mm
Weight	3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

RT 5 power IKAMAG®

The RT 5 power is a high-performance multi-position magnetic stirrer with 5 stirring positions and integrated temperature control plate. Precise temperature distribution on the heating plate allows for performing series experiments, max. temperature of medium is 70 °C.
- Simultaneously operating stirrers
- Sample conditions consistent throughout individual samples

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Ident. No.

2930300	230 V 50/60 Hz
2930301	115 V 50/60 Hz

Technical data	
Stirring positions	10
Motor rating input	14,4 W
Motor rating output	3,6 W
Heating function	
Heat output	375 W
Heating plate	
Dimensions	180 x 450 mm
General data	
Dimensions (W x D x H)	198 x 552 x 65 mm
Weight	4,2 kg

RT 10 power IKAMAG®

Same features as RT 5 power, but with 10 stirring positions.

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Ident. No.

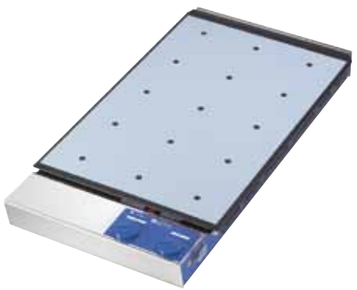
2930500	230 V 50/60 Hz
2930501	115 V 50/60 Hz

Technical data	
Stirring positions	15
Motor rating input	21,6 W
Motor rating output	5,4 W
Heating function	
Heat output	580 W
Heating plate	
Dimensions	270 x 450 mm
General data	
Dimensions (W x D x H)	288 x 552 x 65 mm
Weight	6 kg

RT 15 power IKAMAG®

Same features as RT 5 power, but with 15 stirring positions.

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)



Ident. No.

2930700	230 V 50/60 Hz
2930701	115 V 50/60 Hz

Ident. No.

2930200	230 V 50/60 Hz
2930201	115 V 50/60 Hz

RO 5 power IKAMAG®

Multi-position magnetic stirrer with 5 stirring positions, without heating. The stainless steel surface covers the unit allowing easy cleaning and providing protection against the penetration of liquids.
- Optimal use of laboratory space
- Incl. removable PUR cover

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring positions	5
Max. stirring quantity per stirrer (H_2O)	0,4 l
Distance between stirring places	90 mm
Motor rating input	7,2 W
Motor rating output	1,8 W
Speed display	scale (1 – 10)
Speed range	0 – 1.100 rpm
Deviation for individual stirring positions	5 %
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	stainless steel (AISI 304)
Dimensions	120 x 450 mm
General data	
Dimensions (W x D x H)	122 x 552 x 65 mm
Weight	2,3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.

2930400	230 V 50/60 Hz
2930401	115 V 50/60 Hz

RO 10 power IKAMAG®

Same features as RO 5 power, but with 10 stirring positions.

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring positions	10
Motor rating input	14,4 W
Motor rating output	3,6 W
Set-up plate	
Dimensions	180 x 450 mm
General data	
Dimensions (W x D x H)	182 x 552 x 65 mm
Weight	3,2 kg

Ident. No.

2930600	230 V 50/60 Hz
2930601	115 V 50/60 Hz

RO 15 power IKAMAG®

Same features as RO 5 power, but with 15 stirring positions.

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring positions	15
Motor rating input	21,6 W
Motor rating output	5,4 W
Set-up plate	
Dimensions	270 x 450 mm
General data	
Dimensions (W x D x H)	272 x 552 x 65 mm
Weight	4,7 kg

Technical data		
Stirring quantity (H_2O)		max. 250 ml
Motor rating input		1,1 W
Motor rating output		0,8 W
Speed range		300 – 1.800 rpm
Max. magnetic bar (L x Ø)		40 x 6 mm
Set-up plate		
Material		PP
Dimensions		Ø 80 mm
General data		
Dimensions (W x D x H)	topolino	95 x 115 x 40 mm
	topolino mobil	Ø 140 x 40 mm
Weight	topolino	300 g
	topolino mobil	320 g
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

topolino IKAMAG®

Extremely convenient magnetic mini-stirrer for mixing quantities up to 250 ml.
- Durable, brushless motor
- Continuously adjustable speed range
- High magnetic adhesion

Topolino mobil additionally:
Same features as the Topolino, plus:
- Portable unit with long operating time (8 - 12 h)
- Short charging time (2 - 3 h)
- Standard replaceable AA rechargeable batteries
- Optional power mode:
a) Mains-free with standard batteries
b) With supplied mains adapter (without batteries)
c) Combined mains/battery operation (with batteries fitted)

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Ident. No.

3368000	230 V 50/60 Hz

Ident. No.

3381300	230 V 50/60 Hz

Technical data	
Stirring quantity (H_2O)	1,0 l
Motor rating input	3 W
Motor rating output	2 W
Speed range	0 – 2.500 rpm
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	polyester
Dimensions	115 x 115 mm
General data	
Dimensions (W x D x H)	114 x 127 x 37 mm
Weight	0,25 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Mini MR standard IKAMAG®

The improvement of the magnetic stirrer.
new: For stirring quantities up to 1.000 ml (H_2O)
new: Infinitely variable speed from 0 - 2.500 rpm
- White set-up plate suitable for observing color reactions

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Ident. No.

3674000	100 – 240 V 50/60 Hz

Technical data	
Stirring quantity (H_2O)	5 l
Motor rating input	14 W
Motor rating output	4 W
Speed display	scale
Speed range	0 – 1.100 rpm
Max. magnetic bar (L x Ø)	50 x 8 mm
Set-up plate	
Material	stainless steel (AISI 304)
Dimensions	140 x 120 mm
General data	
Dimensions (W x D x H)	140 x 200 x 75 mm
Weight	1,4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

KMO 2 basic IKAMAG®

Small, powerful magnetic stirrer without heating.
- Strong magnetic field
- Motor with optoelectronic speed control
- Infinitely variable speed from 0 - 1.100 rpm
- Stainless steel casing facilitates cleaning and sterilization
- Incl. M 10 thread for H 16 V support rod

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32), H 16 V Support rod (31)

Ident. No.

2812000	230 V 50/60 Hz
2812001	115 V 50/60 Hz

lab disc IKAMAG® –
the ultra-flat magnetic stirrer with new designs

Height only
12mm

Ident. No.
3907500 100 – 240 V 50/60 Hz

lab disc IKAMAG®

Ultra-flat compact magnetic stirrer, guaranteed with modern magnet coil technology. Wear-free drive with no moving parts. To ensure better mixing, the lab disc can reverse direction of rotation automatically every 30 seconds.
- High IP protection class (IP 65)
- Set-up plate and casing made from chemically resistant materials
- Slip-proof, safe stand

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

	Ident. No.	Design
1	3765000	pattern
2	3907500	white
3	3916100	stream
4	3920700	meadow
5	3920900	maracuja

Technical data	
Stirring quantity (H_2O)	800 ml
Motor rating input	5 W
Motor rating output	3 W
Speed range	15 – 1.500 rpm
Reversion of rotation direction (switchable)	every 30 s
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	polyester
Dimensions	Ø 100 mm
General data	
Dimensions (W x D x H)	117 x 180 x 12 mm
Weight	0,3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 65


1 pattern


2 white


3 stream


4 meadow


5 maracuja

Ident. No.	Design	
3671000	white	100 – 240 V 50/60 Hz

color squid IKAMAG®

The improved small magnetic stirrers now in new designs.
new: Digital speed display (LED)
new: Electronically controlled motor for more capacity
new: Higher speed range from 0 - 2.500 rpm
new: Max. stirring quantity 1 l
- Outstanding chemical resistance due to glass top and synthetic bottom made of TPE
- Recyclable materials

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring quantity (H_2O)	1 l
Motor rating input	3 W
Motor rating output	2 W
Speed display	digital
Speed range	0 – 2.500 rpm
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	glass
Dimensions	Ø 115 mm
General data	
Dimensions (W x D x H)	145 x 160 x 45 mm
Weight	0,55 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

Ident. No.	Design	
3672000	white	100 – 240 V 50/60 Hz

big squid IKAMAG®

The improved magnetic stirrers now in new designs.
new: Digital speed display (LED)
new: Electronically controlled motor for more capacity
new: Higher speed range from 0 - 2.500 rpm
- Outstanding chemical resistance due to glass top and synthetic bottom made of PA
- Recyclable materials

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring quantity (H_2O)	1,5 l
Motor rating input	3 W
Motor rating output	2 W
Speed display	digital
Speed range	0 – 2.500 rpm
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	glass
Dimensions	Ø 160 mm
General data	
Dimensions (W x D x H)	180 x 195 x 40 mm
Weight	0,7 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

color squid IKAMAG® – the compact magnetic stirrer with attractive designs


1 white


2 zebra


3 bubbles


4 wave


5 palm tree


1 white

	Ident. No.	Design
1	3671000	white
2	3698200	zebra
3	3698300	bubbles
4	3698400	wave
5	3698500	palm tree

Technical data on page 22.

big squid IKAMAG® – the magnetic stirrer with the extra large set-up plate


1 white


2 leaves


3 frozen


4 twist


5 hibiscus


1 white

	Ident. No.	Design
1	3672000	white
2	3857100	leaves
3	3857200	frozen
4	3857300	twist
5	3857400	hibiscus

Technical data on page 22.

Ident. No.

2621900	230 V 50/60 Hz
2621901	115 V 50/60 Hz

Midi MR 1 digital IKAMAG®

Powerful magnetic stirrer without heating.

- Flat, sturdy stainless steel casing
- Non-locking motor
- Infinitely variable speed
- Digital LED speed display
- Timer (0 - 56 min) or continuous operation
- For stirring quantities up to 50 liters (H_2O)
- Incl. magnetic stirring bar IKAFLON® 50

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring quantity (H_2O)	50 l
Motor rating input	70 W
Motor rating output	19 W
Speed display	digital
Speed range	0 – 1.000 rpm
Max. magnetic bar (L x Ø)	80 x 10 mm
Set-up plate	
Material	stainless steel (AISI 304)
Dimensions	350 x 350 mm
General data	
Dimensions (W x D x H)	360 x 430 x 110 mm
Weight	10,7 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Ident. No.

2621800	230 V 50/60 Hz
2621801	115 V 50/60 Hz

Maxi MR 1 digital IKAMAG®

Same features as Midi MR 1 digital.

- For stirring quantities up to 150 l (H_2O)

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RSE Stirring bar remover (32)

Technical data	
Stirring quantity (H_2O)	150 l
Motor rating input	80 W
Motor rating output	35 W
Speed display	digital
Speed range	0 – 600 rpm
Max. magnetic bar (L x Ø)	155 x 27 mm
Set-up plate	
Material	stainless steel (AISI 304)
Dimensions	500 x 500 mm
General data	
Dimensions (W x D x H)	505 x 585 x 110 mm
Weight	16 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

C-MAG MS 4 / C-MAG MS 7 / C-MAG MS 10 IKAMAG®

New magnetic stirrers without heating. With glass ceramic set-up plate which offers excellent chemical resistance.
- Powerful motor for stirring quantities of up to 5 l, 10 l, 15 l (H_2O)
- Elevated control panel to protect against leaking liquids

Accessories (page):
IKAFLON®-Stirring bars (32), TRIKA®-Stirring bars (32), RS 1 Set of stirring bars (32), RSE Stirring bar remover (32)

Technical data		
Stirring quantity (H_2O)	MS 4	5 l
	MS 7	10 l
	MS 10	15 l
Motor rating input		15 W
Motor rating output		1,5 W
Speed display		scale
Speed range		100 – 1.500 rpm
Max. magnetic bar (L x Ø)	MS 4	30 x 8 mm
	MS 7	80 x 10 mm
	MS 10	80 x 10 mm
Set-up plate		
Material		glass ceramic
Dimensions	MS 4	100 x 100 mm
	MS 7	180 x 180 mm
	MS 10	260 x 260 mm
General data		
Dimensions (W x D x H)	MS 4	150 x 260 x 105 mm
	MS 7	220 x 330 x 105 mm
	MS 10	300 x 415 x 105 mm
Weight	MS 4	3 kg
	MS 7	5 kg
	MS 10	6 kg
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

C-MAG MS 4

Ident. No.

3582200	230 V 50/60 Hz
3582226	115 V 50/60 Hz

C-MAG MS 7

Ident. No.

3582400	230 V 50/60 Hz
3582426	115 V 50/60 Hz

C-MAG MS 10

Ident. No.

3582600	230 V 50/60 Hz
3582626	115 V 50/60 Hz

Ident. No.
3378000

Electronic Contact Thermometer ETS-D5

Ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimized PID control and RESET function, incl. stainless steel sensor H 62.51.
For all magnetic stirrers with contact thermometer bushing according to DIN 12878, class 2 (e.g. IKA®, Heidolph and Corning with adapter AD-C1, Ident. No. 3414000, please order separately).

3 modes of operation guarantee optimum adjustment to your working method:
Operating mode A
Suitable for work with varying parameters (from -50 °C to 450 °C). Safety temperature adjustable.
Operating mode B
Suitable for series operation under uniform conditions.
Operating mode C
Suitable for unsupervised operation.
All values are taken from the memory.
This ensures protection against inadvertent adjustment.

Accessories ETS-D5 (page):
Sensor (26): H 62.51, H 66.51, H 70 Extension cable (27), H 16 V Support rod (31), H 44 Boss head clamp (31), H 38 Holding rod (31)

Temperature	
Temperature measuring range	-50 – 450 °C
Resolution	0,1 K
Measuring accuracy	± 0,2 K + Sensor tolerance PT 1000 DIN IEC 751 class A
Setting accuracy	0,1 K
Control deviation	± 0,5 K
General data	
Supply voltage	8 – 16 VDC
Power consumption	15 mA (at 9 V)
Max. ON time	100 %
Plug	6 pin DIN 45322
Connection	DIN 12878 class 2
Dimensions (W x D x H)	82 x 22 x 83 mm (without sensor)
Weight	0,2 kg
Permissible ambient temperature	0 – 60 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

Ident. No.
2735451

H 62.51 Stainless steel sensor

Spare sensor for use with ETS-D5.

General data	
Depth of immersion	230 mm
Diameter	3 mm
Length	260 mm
Material	AISI 316 Ti

Ident. No.
2735551

H 66.51 Stainless steel sensor glass-coated

For use with ETS-D5, for work with aggressive media such as acid and alkaline solutions.

General data	
Depth of immersion	230 mm
Diameter	6 mm
Length	260 mm
Material	borosilicate glass 3.3

General data	
Length	1 m

H 70 Extension cable

To separate the casing from the sensor. The casing with the electronics may thus be kept away from dangerous vapor released by the medium (for use with ETS-D5).

Ident. No.
2735600

General data	
Depth of immersion	230 mm
Diameter	3 mm
Material	AISI 316 Ti

PT 100.50 Temperature sensor

For use with RET control/t.

Accessories (page):
H 16 V Support rod (31), H 44 Boss head clamp (31), H 38 Holding rod (31)

Ident. No.
2601900

General data	
Depth of immersion	230 mm
Diameter	8 mm
Material	borosilicate glass 3.3

PT 100.51 Temperature sensor

For use with RET control/t, glass-coated for work with aggressive media such as acid and alkaline solutions.

Accessories (page):
H 16 V Support rod (31), H 44 Boss head clamp (31), H 38 Holding rod (31)

Ident. No.
2600300

General data	
Depth of immersion	230 mm
Diameter	3 mm
Material	AISI 316 Ti

PT 1000.60 Temperature sensor

Made of stainless steel, for use with RCT basic (3380000 and 3810000) and RET basic (3622000).

Ident. No.
3516800

General data	
Depth of immersion	230 mm
Diameter	7 mm
Material	borosilicate glass 3.3

PT 1000.70 Temperature sensor glass-coated

Glass-coated, for work with aggressive media such as acid and alkaline solutions, for RCT basic (3380000 and 3810000) and RET basic (3622000).

Ident. No.
3736000

Quarter System

The carrier plate can be fitted with four identical or differing aluminium quarters, allowing up to 36 reaction vessels to be processed at the same time. The aluminium quarters guarantee optimal heat transfer throughout the process with no interference to the magnetic field. This ensures that all the containers are processed at the same temperature and that the contents are uniformly mixed. The different colours used for the various quarters makes them easier to distinguish.

- Multiple syntheses with only one magnetic stirrer
- Uniform mixing in every vessel
- High-precision thermal conduction directly into the quarters
- Same temperature in all vessels
- Wide range of applications thanks to exchangeable quarters
- Safe and clean working

Code	Name	Description	Colour	Ident. No.
H 135.3	Carrier plate	Ø 135 mm	Green	3904000
H 135.310	*Quarter, 20 ml reaction vessel	4 bore holes (Ø 28 mm, 24 mm deep)	Black	3904100
H 135.311	*Quarter, 30 ml reaction vessel	4 bore holes(Ø 28 mm, 30 mm deep)	Green	3904200
H 135.312	*Quarter, 40 ml reaction vessel	4 bore holes (Ø 28 mm, 42,8 mm deep)	Orange	3904300
H 135.313	*Quarter, 4 ml reaction vessel	9 bore holes (Ø 15,2 mm, 19 mm deep)	Gold	3904400
H 135.314	*Quarter, 8 ml reaction vessel	8 bore holes (Ø 17,75 mm, 25,5 mm deep)	Blue	3904500
H 135.315	*Quarter, 16 ml reaction vessel	4 bore holes (Ø 21,6 mm, 31,7 mm deep)	Red	3904600

*Glassware not included

H 135.3
Carrier plate

H 135.310
Quarter 20 ml

H 135.311
Quarter 30 ml

H 135.312
Quarter 40 ml

H 135.313
Quarter 4 ml

H 135.314
Quarter 8 ml

H 135.315
Quarter 16 ml

Reaction Block System

The reaction block allows syntheses to be carried out in round flasks at temperatures of up to 180 °C. This system ensures optimal heat transfer from the heating plate directly into the medium. Uniform mixing is also guaranteed because there is no interference to the magnetic field from the aluminium blocks. The Teflon coating prevents burning and ensures that working with the system is safe. Reaction blocks are available in three standard sizes. These can be adapted to various flask sizes using the appropriate inserts.

- Syntheses in round flasks at up to 180 °C
- Uniform mixing
- High-precision thermal conduction directly into the reaction block
- Teflon coating protects against burning
- Wide range of applications thanks to exchangeable inserts
- Safe and clean working

Code	Name	Suitable inserts	Colour	Ident. No.
H 135.4	*Reaction block, 100 ml round flask	H 135.410, H 135.411, H 135.412	Black	3904700
H 135.5	*Reaction block, 500 ml round flask	H 135.510, H 135.511, H 135.512	Purple	3905100
H 135.6	*Reaction block, 1.000 ml round flask	H 135.610	Blue	3905600
H 135.410	*Insert, 10 ml round flask		Gold	3904800
H 135.411	*Insert, 25 ml round flask		Blue	3904900
H 135.412	*Insert, 50 ml round flask		Red	3905000
H 135.510	*Insert, 200 ml round flask		Turquoise	3905200
H 135.511	*Insert, 250 ml round flask		Silver	3905300
H 135.512	*Insert, 300 ml round flask		Black	3905400
H 135.610	*Insert, 500 ml round flask		Purple	3905500

*Glassware not included

H 135.4
Reaction block 100 ml

H 135.410
Insert 10 ml

H 135.411
Insert 25 ml

H 135.412
Insert 50 ml

H 135.5
Reaction block 500 ml

H 135.510
Insert 200 ml

H 135.511
Insert 250 ml

H 135.512
Insert 300 ml

H 135.6
Reaction block 1.000 ml

H 135.610
Insert 500 ml

H 16 V
Support rod for all magnetic stirrers with M 10 threaded bushing, **page 31**
Ident. No. 1545100

PT 1000.70
Temperature sensor, glass-coated, **page 27**
Ident. No. 3378100

H 38
Holding rod for fastening ETS-D5 with H 44 to the support rod H 16 V, **page 31**
Ident. No. 3547700

H 44
Boss head clamp, **page 31**
Ident. No. 2437700

H 135.310, H 135.311, H 135.312, H 135.314
Quarter, **page 28**
Ident. No. 3904100, 3504200, 3504300, 3504400

H 135.3
Carrier plate, **page 28**
Ident. No. 3904000

H 135.511
Insert 250 ml, **page 29**
Ident. No. 3505300

H 135.4
Reaction block 500 ml, **page 29**
Ident. No. 3905100

RCT basic *safety control* IKAMAG®
The improvement of the bestseller, incl. protective cover H 100, **page 12**
Ident. No. 3810000

General data	
Diameter	10 mm
Length	450 mm
Thread	M 10
Material	stainless steel (AISI 304)

H 16 V Support rod

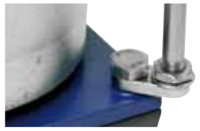
Stainless steel support rod for all magnetic stirrers with M 10 threaded bushing.

Accessories (page):
H 16.1 Extension (31), H 44 Boss head clamp (31), H 38 Holding rod (31)

Ident. No.
1545100

H 16.1 Extension

For work with bath attachment over 180 mm Ø.



Ident. No.
5000500

H 44 Boss head clamp

For fastening the holding rod H 38 (p. 31) to the support rod H 16 V (p. 31).

Ident. No.
2437700

H 38 Holding rod

For fastening ETS-D5 and PT 1000 with H 44 (p. 31) to the support rod H 16 V (p. 31).

Ident. No.
3547700

IKAFLON® Magnetic stirring bars

Round, PTFE-coated.

Ident. No.	Description	Length	Ø
1572000	IKAFLON® 10*	10 mm	6 mm
1572100	IKAFLON® 15*	15 mm	6 mm
1572200	IKAFLON® 20*	20 mm	8 mm
1572300	IKAFLON® 25*	25 mm	8 mm
1572400	IKAFLON® 30*	30 mm	8 mm
1572500	IKAFLON® 40*	40 mm	8 mm
1572600	IKAFLON® 50*	50 mm	8 mm
1572800	IKAFLON® 80*	80 mm	10 mm
0793300	IKAFLON® 110	110 mm	27 mm
1129000	IKAFLON® 155	155 mm	27 mm

TRIKA® Magnetic stirring bars

Triangular, PTFE-coated, especially suited for stirring liquids which have a low solids content and where sedimentation is not desired.

Ident. No.	Description	Length
0356600	TRIKA® 25*	25 mm
0356500	TRIKA® 40*	40 mm

Ident. No.
1358600

RS 1 Set of magnetic stirring bars

Consisting of the IKAFLON® and TRIKA® Magnetic stirring bars marked with *, see above.

Ident. No.
1293100

RSE Stirring bar remover

For all stirring bars up to 80 mm in length, PTFE-coated.

General data	
Material	silicone
Max. temperature	135 °C
Protective cover	
H 99	for RET control/t (3964000), RET basic (3188800, 3197600)
H 100	for RET basic (3622000), RCT basic (3380000, 3810000)

H 99 Protective cover
H 100 Protective cover

Resistant to most acids, alkaline solutions and organic solvents.
The protective cover is included with the magnetic stirrer.

H 99
Ident. No.
2734500

H 100
Ident. No.
3661000

Ident. No.	
1091500	Euro plug
3564500	USA plug
2410700	UK plug
1091600	CH plug

H 11 Mains cable

Spare

IKA® Mixing

Overhead stirrers

RW 20 digital

Overhead stirrer with digital display. Technical improvements on the trusted RW 20 series designs.

IKA® Mixing

Electronic overhead stirrers

EUROSTAR power control-visc

Stirrer for quantities up to 40 l, with RS 232 interface, **page 39**

Ident. No. 2600000

R 271

Boss head clamp, **page 122**

Ident. No. 2664000

R 2723

Telescopic stand, **page 121**

Ident. No. 1412100

R 1375

Paddle stirrer, **page 44**

Ident. No. 0757700

RH 5

Strap clamp, **page 122**

Ident. No. 3159000

labworldsoft®

With labworldsoft® you can network up to 64 laboratory devices and control these from a PC, see **page 139.**

RW 11 basic „Lab egg“

Small-sized stirrer.

- Glass-housing resistant to chemicals
- Max. stirring quantity 2 l (H_2O)
- Incl. paddle stirrer R 1001 and extension arm

Accessories (page):
R 1001 Spare paddle stirrer (46), R 1002 Screw-type stirrer (46), R 104 Stand (120)

Technical data	
Stirring quantity H_2O)	2 l
Max. viscosity	100 mPas
Motor rating input	8 W
Motor rating output	1 W
Output at stirring shaft	1 W
Max. ON-time	100 %
Max. torque (plug-in coupling)	0,8 Ncm
Speed range	0 – 2.000 rpm
Speed display	none
Plug-in coupling Ø	4 mm
Support holder Ø	integrated (10 mm)
General data	
Dimensions (W x D x H)	86 x 175 x 89 mm
Weight	0,39 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

creamy blue		
Ident. No.		
2830004	100 – 240 V	50/60 Hz

EUROSTAR digital
Stirrer for quantities up to 20 l, **page 38**
Ident. No. 2482000

RW 16 basic
Stirrer for quantities up to 10 l, **page 38**
Ident. No. 2572100

R 182
Boss head clamp, **page 122**
Ident. No. 2657700

R 1330
Anchor stirrer, **page 44**
Ident. No. 2022300

RH 3
Strap clamp, **page 122**
Ident. No. 3008600

R 1825
Plate stand, **page 120**
Ident. No. 3160000

RW 16 basic

Laboratory stirrer for simple stirring tasks of up to 10 liters (H_2O) with ideal speed range from 40 - 1.200 rpm. Especially suitable for schools, universities and inspection laboratories.
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities

Accessories (page):
Stands (120): R 1822, R 1826, R 1827, R 182 Boss head clamp (122), FK 1 Flexible coupling (46), RH 3 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1342, R 1330

Technical data	
Stirring quantity (H_2O)	10 l
Max. viscosity	10.000 mPas
Motor rating input	75 W
Motor rating output	55 W
Output at stirring shaft	53 W
Max. ON-time	100 %
Max. torque at chuck	40 Ncm
Speed range	40 – 1.200 rpm
Speed display	scale (1 – 10)
Chuck range	0,5 – 10 mm
Hollow shaft, inner diameter	11 mm
Diameter / length of extension arm	13 mm / 160 mm
General data	
Dimensions (W x D x H)	80 x 190 x 222 mm
Weight	2,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.	
2572100	230 V 50/60 Hz
2572101	115 V 50/60 Hz

EUROSTAR digital

Laboratory stirrer that can be used up to "medium viscosity" range.
- Constant speed due to microprocessor control
- Digital display of set and actual speed
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety due to smooth start

Accessories (page):
Stands (120): R 1822, R 1826, R 1827, R 182 Boss head clamp (122), FK 1 Flexible coupling (46), RH 3 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1342, R 1330

Technical data	
Stirring quantity (H_2O)	20 l
Max. viscosity	10.000 mPas
Motor rating input	75 W
Motor rating output	55 W
Output at stirring shaft	53 W
Max. ON-time	100 %
Max. torque at chuck	30 Ncm
Speed range	50 – 2.000 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Hollow shaft, inner diameter	11 mm
Diameter / length of extension arm	13 mm / 160 mm
General data	
Dimensions (W x D x H)	80 x 190 x 222 mm
Weight	2,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.	
2482000	230 V 50/60 Hz
2482001	115 V 50/60 Hz

Technical data	
Stirring quantity (H_2O)	40 l
Max. viscosity	50.000 mPas
Motor rating input	130 W
Motor rating output	110 W
Output at stirring shaft	105 W
Max. ON-time	100 %
Max. torque at chuck	60 Ncm
Speed range	50 – 2.000 rpm
Speed display	scale
Chuck range	0,5 – 10 mm
Hollow shaft, inner diameter	11 mm
Diameter / length of extension arm	16 mm / 200 mm
General data	
Dimensions (W x D x H)	80 x 190 x 253 mm
Weight	3,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	analog

EUROSTAR power basic

Powerful laboratory stirrer for tasks up to "high viscosity" range.
- Constant speed due to microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety due to smooth start
- Analog recording of speed parameters is possible

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), FK 1 Flexible coupling (46), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1345, R 1375

Ident. No.	
2572200	230 V 50/60 Hz
2572201	115 V 50/60 Hz

Technical data	
Stirring quantity (H_2O)	40 l
Max. viscosity	50.000 mPas
Motor rating input	130 W
Motor rating output	110 W
Output at stirring shaft	105 W
Max. ON-time	100 %
Max. torque at chuck	60 Ncm
Speed range	50 – 2.000 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Hollow shaft, inner diameter	11 mm
Diameter / length of extension arm	16 mm / 200 mm
General data	
Dimensions (W x D x H)	80 x 190 x 253 mm
Weight	3,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog
Torque measurement	trend

EUROSTAR power control-visc

Powerful, digital laboratory stirrer for tasks up to "high viscosity" range. Same features as EUROSTAR power basic, additionally:
labworldsoft® software is available to allow speed and torque parameters to be controlled, regulated and documented via PC.
- Digital display of rated - / actual speed
- Integrated torque trend display for viscosity control
- Analog interface for recording speed and torque
- RS 232 interface

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), FK 1 Flexible coupling (46), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1345, R 1375, labworldsoft® (139)

Ident. No.	
2600000	230 V 50/60 Hz
2600001	115 V 50/60 Hz

labworldsoft®

Ident. No.

3460000	230 V 50/60 Hz
3460001	115 V 50/60 Hz

labworldsoft®

EUROSTAR power control-visc 6000

High-performance digital laboratory stirrer for tasks up to "medium viscosity" range.
Same features as EUROSTAR power control-visc (page 39), additionally:
- Speed range up to 6.000 rpm
- Agitator shafts are not push-through
- Cone seat for precision shaft, incl. with delivery (stirring elements can be screw-connected, please order separately, see page 46)
- Analog output of speed and torque

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), R 1402 Dissolver (46), R 1405 Propeller (46), R 1401 Propeller (46), labworldsoft® (139)

Technical data	
Stirring quantity (H_2O)	20 l
Max. viscosity	10.000 mPas
Motor rating input	130 W
Motor rating output	110 W
Output at stirring shaft	95 W
Max. ON-time	100 %
Max. torque at chuck	15 Ncm
Speed range	150 – 6.000 rpm
Speed display	digital
Diameter / length of extension arm	16 mm / 220 mm
General data	
Dimensions (W x D x H)	80 x 190 x 317 mm
Weight	4,8 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog
Torque measurement	trend

EUROSTAR power control-visc P1

Powerful, digital laboratory stirrer for tasks up to "high viscosity" range.
- Constant speed due to microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety due to smooth start
- Digital display of rated- and actual speed
- Integrated torque trend display for viscosity control
- Analog interface for recording speed and torque
- RS 232 interface
- Software labworldsoft® is available to control and document all measuring values via PC

Ident. No.

3330000	230 V 50/60 Hz

labworldsoft®

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1331, R 1312, labworldsoft® (139)

Technical data	
Stirring quantity (H_2O)	60 l
Max. viscosity	70.000 mPas
Motor rating input	153 W
Motor rating output	134 W
Output at stirring shaft	126 W
Max. ON-time	100 %
Max. torque at chuck	100 Ncm
Speed range	50 – 1.200 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Hollow shaft, inner diameter	11 mm
Diameter / length of extension arm	16 mm / 200 mm
General data	
Dimensions (W x D x H)	80 x 190 x 253 mm
Weight	4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog
Torque measurement	trend

EUROSTAR power control-visc P4	
Transmission reduction	4-fold
Stirring quantity (H_2O)	40 l
Max. viscosity	100.000 mPas
Motor rating input	130 W
Motor rating output	110 W
Output at stirring shaft	95 W
Max. ON-time	100 %
Max. torque at chuck	200 Ncm
Speed range	14 – 530 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Diameter / length of extension arm	16 mm / 200 mm
General data	
Dimensions (W x D x H)	80 x 190 x 330 mm
Weight	4,9 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog
Torque measurement	trend

EUROSTAR power control-visc P7	
Transmission reduction	7-fold
Stirring quantity (H_2O)	40 l
Max. viscosity	150.000 mPas
Motor rating input	130 W
Motor rating output	110 W
Output at stirring shaft	95 W
Max. ON-time	100 %
Max. torque at chuck	380 Ncm
Speed range	8 – 290 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Diameter / length of extension arm	16 mm / 200 mm
General data	
Dimensions (W x D x H)	80 x 190 x 330 mm
Weight	4,9 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42
Interface	RS 232 / analog
Torque measurement	trend

EUROSTAR power control-visc P4
EUROSTAR power control-visc P7

Powerful, digital laboratory stirrer for tasks up to "high viscosity" range.
- Constant speed due to microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Enhanced safety due to smooth start
- Digital display of rated- and actual speed
- Integrated torque trend display for viscosity control
- Analog interface for recording speed and torque
- RS 232 interface
- Software labworldsoft® is available to control and document all measuring values via PC

P4 with 4-fold transmission reduction and P7 with 7-fold transmission reduction; agitator shafts are not push-through.

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 46): e.g. R 1331, R 1312, labworldsoft® (139)

EUROSTAR power c.-v. P4

Ident. No.

2850000	230 V 50/60 Hz
2850001	115 V 50/60 Hz

EUROSTAR power c.-v. P7

Ident. No.

2850700	230 V 50/60 Hz
2850701	115 V 50/60 Hz

labworldsoft®

RW 20 digital

Overhead stirrer with digital display. Technical improvements on the trusted RW 20 series designs.
- With digital display
- Robust, slim line, ergonomic design
- With constant power-drive
- Two speed ranges for universal use from 60 - 2.000 rpm
- Push-through agitator shafts (only when stationary)

Accessories (page):
Stands (120): R 1822, R 1826, R 1827, R 182 Boss head clamp (122), FK 1 Flexible coupling (46), RH 3 Strap clamp (122), R 301 Stirring shaft protection (46), Stirring elements (44 / 45): e.g. R 1342, R 1381

Technical data	
Stirring quantity (H_2O)	20 l
Max. viscosity	10.000 mPas
Motor rating input	70 W
Motor rating output	35 W
Output at stirring shaft	26 W
Max. ON-time	100 %
Max. torque at chuck	150 Ncm
Speed range I (per 50 Hz)	60 – 500 rpm
Speed range II (per 50 Hz)	240 – 2.000 rpm
Speed display	digital
Chuck range	0,5 – 10 mm
Diameter / length of extension arm	13 mm / 160 mm
General data	
Dimensions (W x D x H)	88 x 212 x 294 mm
Weight	3,1 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 20

Ident. No.	
3593000	230 V 50/60 Hz
3593001	115 V 50/60 Hz

RW 28 basic

Powerful, mechanically controlled stirrer. Suitable for quantities up to 80 l (H_2O) for use in laboratories and pilot plant stations.
- Two selectable speed ranges for high viscosity (range I) or intensive mixing (range II)
- Push-through agitator shafts

Accessories (page):
Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), FK 1 Flexible coupling (46), RH 5 Strap clamp (122), R 301 Stirring shaft protection (46), R 301.1 Support holder (46), Stirring elements (44 / 45): e.g. R 1345, R 1300

Technical data	
Stirring quantity (H_2O)	80 l
Max. viscosity	50.000 mPas
Motor rating input	220 W
Motor rating output	90 W
Output at stirring shaft	90 W
Max. ON-time	100 %
Max. torque at chuck	
per 60 rpm	1.144 Ncm
per 100 rpm	900 Ncm
per 1.000 rpm	86 Ncm
Speed range I (per 50 Hz)	60 – 400 rpm
Speed range II (per 50 Hz)	240 – 1.400 rpm
Speed range I (per 60 Hz)	72 – 480 rpm
Speed range II (per 60 Hz)	288 – 1.680 rpm
Speed display	scale
Chuck range	1 – 10 mm
Hollow shaft, inner diameter	10,5 mm
Diameter / length of extension arm	16 mm / 145 mm
General data	
Dimensions (W x D x H)	123 x 252 x 364 mm
Weight	7,4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.	
2760000	230 V 50/60 Hz
2760001	115 V 50/60 Hz

Technical data	
Stirring quantity (H_2O)	200 l
Max. viscosity	100.000 mPas
Motor rating input	513 W
Motor rating output	370 W
Output at stirring shaft	300 W
Max. ON-time	100 %
Max. torque at chuck	
per 60 rpm	4.642 Ncm
per 100 rpm	3.000 Ncm
per 1.000 rpm	285 Ncm
Speed range I (per 50 Hz)	57 – 275 rpm
Speed range II (per 50 Hz)	275 – 1.300 rpm
Speed range I (per 60 Hz)	69 – 330 rpm
Speed range II (per 60 Hz)	330 – 1.560 rpm
Speed display	scale
Chuck range	3 – 16 mm
Hollow shaft, inner diameter	13 mm
Fixing	flange
General data	
Dimensions (W x D x H)	145 x 340 x 445 mm
Weight	15 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

RW 47 D

The most powerful IKA® stirrer for laboratories, pilot plant stations and small-scale production.
- For stirring tasks up to 200 l (H_2O)
- Two speed ranges for highly viscous material and intensive mixing
- Cables with plugs not included in delivery

Accessories (page):
R 472 Floor stand (121), R 474 Telescopic stand (121), R 302 Stirring shaft protection (47), Stirring elements (44 / 45): e.g. R 2305, R 2311, SI 400 Safety switch (47), Fixing devices (47): SI 472, SI 474

Ident. No.	
1602000	3 x 400 V 50 Hz
1602010	3 x 230 V 60 Hz

Propeller stirrer, 4-bladed

Standard stirring element. For drawing the material to be mixed from the top to the bottom. Local shearing forces. Generates axial flow in the vessel. Used at medium to high speeds.

Propeller stirrer, 3-bladed

Flow-efficient design. For drawing the material to be mixed from the top to the bottom. Minimum shearing forces. Used at medium to high speeds.

Turbine stirrer

For drawing the material to be mixed from above. Generates axial flow in the vessel. Minimum danger of injury when contact is made with vessel. Minimum shearing forces. Used at medium to high speeds.

Dissolver stirrer

Radial flow, for drawing the material to be mixed from the top and the bottom. High turbulence, high shearing forces. Particle reduction. Used at medium to high speeds.

Centrifugal stirrer

Two-bladed, blades open with increasing speed. For stirring in round vessels with narrow necks. Effect is similar to that of a 4-bladed propeller stirrer. Medium to high speeds required.

Paddle stirrer

Tangential flow, minimum turbulence, good heat exchange, gentle treatment of product. Used at low to medium speeds.

Anchor stirrer

Tangential flow, high shearing rate at edges, minimum deposits on the vessel wall. Used at low speeds. Polymer reactions, even distribution of high mineral contents in liquids. The ideal stirrer for medium to highly viscous fluids.

	Ident. No.	Stirrer Ø	Shaft Ø	Shaft length	Max. speed	RW 16 basic	EUROSTAR digital	EUROSTAR power basic / power control-visc / P1	EUROSTAR power control-visc P4 / P7	RW 20 digital	RW 28 basic	RW 47 D
Propeller stirrer, 4-bladed												
R 1342	0741000	50 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		
R 1345	0741300	100 mm	8 mm	540 mm	800 rpm			•	•		•	•
R 2302	0739000	150 mm	13 mm	800 mm	600 rpm							•
Propeller stirrer, 3-bladed												
R 1381	1296000	45 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		
R 1382	1295900	55 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		
R 1385	0477700	140 mm	10 mm	550 mm	800 rpm				•		•	•
R 1388	0477800	140 mm	10 mm	800 mm	400 rpm				•		•	•
R 1389 (PTFE-coated)	2343600	75 mm	8 mm	350 mm	800 rpm	•	•	•	•	•		
Turbine stirrer												
R 1311	2332900	30 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		
R 1312	2333000	50 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		
R 1313	2333100	70 mm	10 mm	400 mm	800 rpm			•	•		•	
Dissolver stirrer												
R 1300	0513500	80 mm	8 mm	350 mm	2.000 rpm		•	•		•	•	
R 1302	2387900	100 mm	10 mm	350 mm	1.000 rpm			•			•	•
R 1303	2746700	42 mm	8 mm	350 mm	2.000 rpm	•	•	•		•		
Centrifugal stirrer												
R 1352	0756900	60 / 15 mm	8 mm	350 mm	2.000 rpm	•	•	•		•		
R 1355	1132700	100 / 24 mm	8 mm	550 mm	800 rpm			•			•	•
Paddle stirrer												
R 1375	0757700	70 mm	8 mm	550 mm	800 rpm			•	•		•	
R 1376	0757800	150 mm	10 mm	550 mm	800 rpm				•		•	•
R 2311	0739500	150 mm	13 mm	800 mm	600 rpm							•
Anchor stirrer												
R 1330	2022300	45 mm	8 mm	350 mm	1.000 rpm	•	•	•	•	•		
R 1331	2022400	90 mm	8 mm	350 mm	1.000 rpm			•	•		•	
R 1333	2747400	150 mm	10 mm	550 mm	800 rpm				•		•	•

Note: Recommended stirring elements are marked with a dot.

Ident. No.
0527400

R 1001 Paddle stirrer

Spare for use with RW 11 basic.

General data	
Shaft length	160 mm
Shaft Ø	4 mm
Stirrer Ø	34 mm

Ident. No.
0527500

R 1002 Screw-type stirrer

For use with RW 11 basic.

General data	
Shaft length	140 mm
Shaft Ø	4 mm
Stirrer Ø	12 mm

R 1401 Propeller
R 1402 Dissolver
R 1405 Propeller

For use with EUROSTAR power control-visc 6000.

R 1401 Propeller	
Working range	1 – 30 l
Rotor diameter	55 mm
R 1402 Dissolver	
Working range	1 – 30 l
Rotor diameter	42 mm
R 1405 Propeller	
Working range	0,25 – 30 l
Rotor diameter	45 mm

Ident. No.

1242900	R 1401
1243300	R 1402
1289800	R 1405

Ident. No.
2336000

FK 1 Flexible coupling

Required for stirring tasks using glass stirring rods. The flexible coupling compensates for any structural variances.

General data	
Clamping range	6 – 10 mm
Max. torque	10 Ncm

Ident. No.
2603000

R 301 Stirring shaft protection

Prevents potential injuries at the rotating shafts and stirring elements. Can be directly attached to the stirring motors RW 16 basic, RW 20 digital and the EUROSTAR series.

General data	
Length adjustment	190 – 310 mm
Material	plexiglass

Ident. No.
2604000

R 301.1 Support holder

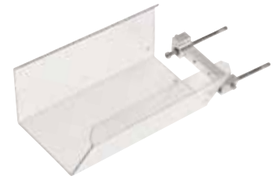
For fixing the stirring shaft protection R 301 to the stand.

Accessories (page):
Boss head clamp (122): R 182, R 270

General data	
Dimensions (W x D x H)	139 x 99 x 250 mm
Material	macrolon

R 302 Stirring shaft protection

Prevents potential injuries due to the rotating shafts and stirring elements. Can be directly attached to the stirrer RW 47 D.



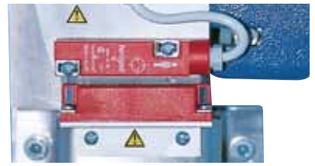
Ident. No.
2953800

General data	
Dimensions end switch (W x D x H)	84 x 19 x 16 mm
Dimensions switch contact (W x D x H)	73 x 10 x 19 mm
Contact	1 normally closed contact
Casing material	plastic (ABS)
Protection class	IP 67
Operating temperature	- 10 – 65 °C
Voltage / current	max. 250 VAC / 2A

SI 400 Safety switch

The SI 400 consists of an end switch (normally closed contact / switch) and a magnetic switch contact (actuator) which is mounted on the floor stand R 472 with the fixing device SI 472 and on the telescopic stand R 474 with the fixing device SI 474. The stirring unit RW 47 can only be switched on through the SI 400, when the agitator is adjusted in the mixing vessel to the user designated height. The power of the RW 47 automatically shuts off if the stirring unit is lifted off the designated height.
Also suitable for dispersing instrument T 65 D ULTRA-TURRAX®.

Accessories (page):
Fixing devices (47): SI 472, SI 474



Ident. No.
3294800

SI 472 Fixing device

To attach the safety switch SI 400 to the floor stand R 472.

Ident. No.
3264000

SI 474 Fixing device

To attach the safety switch SI 400 to the telescopic stand R 474 and to the telescopic stand T 653 (for T 65 D ULTRA-TURRAX®).

Ident. No.
3264400

KS 4000 i control

New, innovative incubator shaker design allowing unattended operation.

Technical data		
Shaking movement		orbital
Orbital diameter		4,5 mm
Max. permitted shaking weight (incl. attachment)		0,5 kg
Motor rating input		10 W
Motor rating output		8 W
Permissible ON time		100 %
Infinitely adjustable speed range		0 – 3.000 rpm
Speed display		scale
Timer	MS 3 basic	no
	MS 3 digital	yes
Time setting	MS 3 basic	–
	MS 3 digital	1 s – 999 min
Operating mode	MS 3 basic	Continuous / touch operation
	MS 3 digital	Timer and continous mode, touch operation
General data		
Dimensions (W x D x H)		148 x 205 x 63 mm
Weight		2,9 kg
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

MS 3 basic
MS 3 digital

Compact, universal small shaker suitable for shaking small vessels and microtiter plates
- Wide range of attachments
- Attachment detection
- Continuous or touch operation (with standard attachment)
- Two operating modes:

Mode A (safe mode with attachment detection)
The maximum speed of 3.000 rpm is only reached with the standard attachment in touch mode. When using other attachments the speed is limited to 1.300 rpm.
Mode B (without attachment detection)
A speed of 3.000 rpm is possible with all attachments.
- Stable in all speed ranges
- Sturdy zinc die cast casing

MS 3 digital additionally:
Timer with countdown function

Accessories (page):
Attachments (56): MS 1.31, MS 1.32, MS 1.33, MS 3.5

Included with delivery (page):
MS 3.1 Standard attachment (56), MS 3.3 Universal attachment (56), MS 1.21 One-hand insert (56), MS 3 digital complete with MS 3.4 Microtiter attachment and MS 1.32 Test tube insert (56)

MS 3 basic

Ident. No.	
3617000	100 – 240 V 50/60 Hz
3617001	100 – 240 V 50/60 Hz

MS 3 digital

Ident. No.	
3319000	100 – 240 V 50/60 Hz
3319001	100 – 240 V 50/60 Hz

Technical data	
Shaking movement	orbital
Orbital diameter	4,5 mm
Shaken quantity (1 test tube)	max. 50 ml
Motor rating input	1,2 W
Motor rating output	0,8 W
Speed (fixed)	2.800 rpm
General data	
Material casing	PP
Material attachment	TPU
Material bottom	zinc, coated
Dimensions (Ø x H)	100 x 70 mm
Weight	0,55 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 40

lab dancer

Economic, compact test tube shaker with touch function. Its compact and clever design makes it an indispensable tool for every laboratory.
- Can be used with all small vessels of up to 30 mm in diameter, e.g. test tubes, centrifuge tubes, Eppendorf vessels
- Excellent mixing action
- The upper casing and the test tube surface are made from inert plastic
- Secure stand due to coated zinc die cast base
- Incl. light 12 V power pack set

Ident. No.	
3365000	100 – 240 V 50/60 Hz

Ident. No.

3340000	230 V 50/60 Hz
3340001	115 V 50/60 Hz

VORTEX Genius 3

Vortex shaker suitable for short-time operation (touch function), activated through pressing shaker attachment or continuous operation.
- Wide speed range, infinitely adjustable
- Different applications due to 3 interchangeable attachments and 7 inserts (e.g. Eppendorf tubes, microtiter plates, Erlenmeyer flasks 250 ml etc.), please order separately
- Attachments securely click onto appliance in any position
- Special strap (VG 3.36, page 57) ensures easy handling of round/Erlenmeyer flasks
- Sturdy metal zinc die cast casing
- Compact design
- Short-time operation activated by pressing attachment (touch function)
- Stable at high speeds due to special feet (silicon base with ultra high vibration damping)
- Eccentric with ball bearings
- Suitable for continuous operation with low self heating due to self ventilation of motor

Accessories (page):
Attachments (57): VG 3.1, VG 3.2, VG 3.3
Inserts (57): VG 3.31, VG 3.32, VG 3.33, VG 3.34, VG 3.35, VG 3.36, VG 3.37

Technical data	
Shaking movement	orbital
Orbital diameter	4 mm
Max. shaking weight	0,4 kg
Motor rating input	58 W
Motor rating output	10 W
Permissible ON time	100 %
Infinitely adjustable speed range	500 – 2.500 rpm
Speed display	scale 0 – 6
Speed setting	knob, front
General data	
Dimensions (W x D x H)	127 x 149 x 136 mm
Weight	4,5 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Ident. No.

2819000	230 V 50/60 Hz
2819001	115 V 50/60 Hz

VXR basic Vibrax®

Opto-electronically controlled small shaker with a very wide speed range.
- Suitable for continuous operation
- New design and improved drive system
- Circular shaking motions
- Slow speeds are well maintained
- Attachments are interchangeable

Accessories (page):
Attachments (58 / 59): VX 1, VX 2, VX 2E, VX 7, VX 8, VX 8.1, VX 11, VX 11.1, VX 11.2, VX 11.3, VX 11.4

Technical data	
Shaking movement	orbital
Orbital diameter	4 mm
Max. shaking weight (with attachment)	2 kg
Motor rating input	35 W
Motor rating output	13,2 W
Permissible ON time	100 %
Speed range	0 – 2.200 rpm
Speed display	scale
General data	
Dimensions (W x D x H)	157 x 247 x 130 mm
Weight (without attachment)	6,1 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Technical data	
Shaking movement	orbital
Orbital diameter	3 mm
Max. shaking weight	2 or 4 microtiter plates
Motor rating input	35 W
Motor rating output	13,2 W
Permissible ON time	100 %
Speed range	0 – 1.100 rpm
Speed display	scale
Timer	∞ / 1 – 99 min
Timer display	digital
General data	
Dimensions (W x D x H)	185 x 320 x 105 mm
Weight	2,7 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

MTS 2/4 digital Microtiter shaker

Special shaker for shaking two or four microtiter plates.
- Electronic speed control
- Digital timer
- Alarm to indicate set time has expired
- Incl. attachment (without microtiter plate)

Ident. No.

3208000	230 V 50/60 Hz
3208001	115 V 50/60 Hz

Technical data		
Shaking movement		orbital
Orbital diameter		4 mm
Max. shaking weight (with attachment)		2 kg
Motor rating input		45 W
Motor rating output		10 W
Permissible ON time		100 %
Speed range		80 – 800 rpm
Speed display	KS 130 basic	LED line
	KS 130 control	digital
Timer	KS 130 basic	∞ / 5 – 50 min
	KS 130 control	∞ / 0 – 9 h 59 min
General data		
Dimensions (W x D x H)		270 x 316 x 98 mm
Weight	KS 130 basic	8,8 kg
	KS 130 control	9,8 kg
Permissible ambient temperature		5 – 50 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21
Interfacetrol	KS 130 control	RS 232 / analog

KS 130 basic
KS 130 control

Small, quiet shaker ensures long life with ideal swivel motion, for a maximum shaking weight of 2 kg.
- Electronic adjustment of speed and timer
- LED display for speed and time adjustment
- Wide range of attachment combinations allows for using almost all shapes and sizes of vessels
- Attachments are not included, please order separately

KS 130 control additionally with:
- A digital display allows for reading the speed, timer function and operating modes
- Electronic time switching clock: 0 - 9 h 59 min or continuous operation (∞)
- With integrated end point positioning (for automated robot-controlled sampling)
- All functions can be controlled and documented with labworldsoft®
- Special version with reverse rotating direction available upon request

Accessories (page):
Attachments (60): AS 130.1, AS 130.2, AS 130.3, AS 130.4, STICKMAX (62)
KS 130 control additionally:
labworldsoft® (139), PC 1.5 Cable (143)

KS 130 basic

Ident. No.

2980000	230 V 50/60 Hz
2980001	115 V 50/60 Hz

KS 130 control

Ident. No.

2980100	230 V 50/60 Hz
2980101	115 V 50/60 Hz

labworldsoft®

KS 260 basic

Ident. No.

2980200	230 V 50/60 Hz
2980201	115 V 50/60 Hz

KS 260 basic
KS 260 control

Compact, flat shaker with optimal swivel motion, for a maximum shaking weight of 7,5 kg.
- Electronic adjustment of speed and timer
- LED display for speed and time adjustment
- Wide range of attachment combinations allows for using almost all shapes and sizes of vessels
- Attachments are not included, please order separately

KS 260 control additionally with:
- Digital display allows for reading the speed, timer function and operating modes
- Electronic time switching clock: 0 - 9 h 59 min or continuous operation
- With integrated end point positioning (for automated robot-controlled sampling)
- All functions can be controlled and documented with labworldsoft®
- Special version with reverse rotating direction available upon request

Accessories (page):
Attachments (60 / 61): AS 260.1, AS 260.2, AS 260.3, STICKMAX (62)
KS 260 control additionally:
labworldsoft® (139), PC 1.5 Cable (143)

Technical data		
Shaking movement		orbital
Orbital diameter		10 mm
Max. shaking weight (with attachment)		7,5 kg
Motor rating input		45 W
Motor rating output		10 W
Permissible ON time		100 %
Infinitely adjustable speed range		
	KS 260 basic	20 – 500 rpm
	KS 260 control	10 – 500 rpm
Speed display	KS 260 basic	LED line
	KS 260 control	digital
Timer	KS 260 basic	∞ / 5 – 50 min
	KS 260 control	∞ / 0 - 9 h 59 min
Timer display	KS 260 control	digital
General data		
Dimensions (W x D x H)		360 x 420 x 98 mm
Weight	KS 260 basic	8,5 kg
	KS 260 control	8,8 kg
Permissible ambient temperature		5 – 50 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21
Interface	KS 260 control	RS 232 / analog

KS 260 control

Ident. No.

2980300	230 V 50/60 Hz
2980301	115 V 50/60 Hz

labworldsoft®

Ident. No.

2526400	230 V 50/60 Hz
2526401	115 V 50/60 Hz

KS 501 digital

Low profile laboratory shaker with a pleasant design, large mounting surface and load capacity of up to 15 kg.
- Infinitely variable speed control of 0 - 300 rpm
- Digital display
- Ideal for vessels with a volume of more than 250 ml, e.g. round flasks, Erlenmeyer flasks, culture flasks and culture bottles
- Guaranteed continuous operation (∞) even under extreme loads
- Incl. timer
- Attachments are not included, please order separately

Accessories (page):
Attachments (61 / 62): AS 501.1, AS 501.4, AS 501.5, STICKMAX (62)

Technical data		
Shaking movement		orbital
Orbital diameter		30 mm
Max. shaking weight (with attachment)		15 kg
Motor rating input		70 W
Motor rating output		19 W
Permissible ON time		100 %
Infinitely adjustable speed range		0 – 300 rpm
Speed display		digital
Timer		∞ / 1 – 56 min
General data		
Dimensions (W x D x H)		505 x 585 x 120 mm
Weight		26 kg
Permissible ambient temperature		5 – 50 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

Technical data		
Shaking movement		reciprocating
Orbital diameter		20 mm
Max. shaking weight (with attachment)		7,5 kg
Motor rating input		45 W
Motor rating output		10 W
Permissible ON time		100 %
Infinitely adjustable speed range		
	HS 260 basic	20 – 300 rpm
	HS 260 control	10 – 300 rpm
Speed display	HS 260 basic	LED line
	HS 260 control	digital
Timer	HS 260 basic	∞ / 5 – 50 min
	HS 260 control	∞ / 0 - 9 h 59 min
Timer display	HS 260 control	digital
General data		
Dimensions (W x D x H)		360 x 420 x 100 mm
Weight	HS 260 basic	8,5 kg
	HS 260 control	8,8 kg
Permissible ambient temperature		5 – 50 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21
Interface	HS 260 control	RS 232 / analog

HS 260 basic
HS 260 control

Compact, flat shaker with optimal swivel motion, for a maximum shaking weight of 7,5 kg.
- Electronic adjustment of speed and timer
- LED display for speed and time adjustment
- Wide range of attachment combinations allows for using almost all shapes and sizes of vessels
- Attachments are not included in delivery, please order separately

HS 260 control additionally:
- Digital display allows for reading the speed, timer function and operating mode
- Electronic time switching clock: 0 - 9 h 59 min or continuous operation
- With integrated endpoint positioning (for automated robot-controlled sampling)
- All functions can be controlled and documented with labworldsoft® software

Accessories (page):
Attachments (60 / 61): AS 260.1, AS 260.2, AS 260.3, AS 260.5, STICKMAX (62)
HS 260 control additionally:
labworldsoft® (139), PC 1.5 Cable (143)

HS 260 basic

Ident. No.

3066600	230 V 50/60 Hz
3066601	115 V 50/60 Hz

HS 260 control

Ident. No.

3066700	230 V 50/60 Hz
3066701	115 V 50/60 Hz

labworldsoft®

HS 501 digital

Low profile laboratory shaker with a pleasant design, large mounting surface and load capacity of up to 15 kg.
- Infinitely variable speed control of 0 - 300 rpm
- Digital display
- Ideal for all lying vessels, e.g. separating funnels
- Guaranteed continuous operation even under extreme loads
- Includes timer
- Attachments are not included in delivery, please order separately

Accessories (page):
Attachments (61 / 62): AS 501.1, AS 501.2, AS 501.3, AS 501.4, AS 501.5, AS 501.6, STICKMAX (62)

Technical data		
Shaking movement		reciprocating
Orbital diameter		30 mm
Max. shaking weight (with attachment)		15 kg
Motor rating input		70 W
Motor rating output		19 W
Permissible ON time		100 %
Infinitely adjustable speed range		0 – 300 rpm
Speed display		digital
Timer		∞ / 1 – 56 min
General data		
Dimensions (W x D x H)		505 x 585 x 120 mm
Weight		26 kg
Permissible ambient temperature		5 – 50 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

Ident. No.

2527000	230 V 50/60 Hz
2527001	115 V 50/60 Hz

KS 4000 i control

Ident. No.

3510000	220 – 240 V 50/60 Hz
3510001	110 – 120 V 50/60 Hz

KS 4000 ic control with built-in cooling coil

KS 4000 ic control

Ident. No.

3510100	220 – 240 V 50/60 Hz
3510101	110 – 120 V 50/60 Hz

included with unit
Ident. No. 3516800

KS 4000 i control
KS 4000 ic control

New incubator shaker with innovative design allowing unattended operation in a temperature-controlled environment.

KS 4000 ic control with built in cooling coil for connecting an external cooling unit e.g. KV 600.

- Large LED display for speed and time settings
- Controls with antimicrobial coating for reduction of bacteria
- Integrated PID temperature control (use of two PT 1000 temperature sensors)
- Junction box in the workspace for connection of an additional temperature sensor e.g. PT 1000.60 (incl. with delivery)
- Electronic temperature and speed control
- Electronic timer switch: ∞ / 1 s - 999 h (set by the minute or by the hour)
- Unit switches off automatically if unstable
- Unit stops automatically when hood is lifted
- Collecting tray with drain hose on rear of unit
- Simple operation
- All functions can be controlled and documented using the labworldsoft® software
- Attachments not included – please order accessories as needed

Accessories (page):
AS 4000.1 Universal attachment (55), AS 4000.2 Fixing clip attachment (55), AS 4000.3 Dish attachment (55), STICKMAX (62)

Technical data		
Shaking movement		orbital
Orbital diameter		20 mm
Max. shaker weight (with attachment)		20 kg
Motor rating input		82 W
Motor rating output		24 W
Power consumption (at 230 V)		1.120 W
Permissible ON time		100 %
Speed range		10 – 500 rpm
Heater power		1.000 W
Temperature range		RT + 5 °C to 80 °C
Temperature stability		0,1 K
(200 ml H_2O at target T = 37 °C, RT 25 °C)		
Timer switch		∞ / 1 s - 999 h
(select minutes/hours)		
Speed, time and temperature display		digital
Additional cooling function for KS 4000 ic control		
Cooling coil		built in
Temperature range		RT - 10 °C to 80 °C
at flow temperature (3 °C) KV 600		
Cooling connection for hose		Ø 10 mm
Adapter nipple for hose connection		yes
General data		
Dimensions (W x H x D)		580 x 750 x 525 mm
Space required (W x D)		600 x 600 mm
Weight	KS 4000 i	50 kg
	KS 4000 ic	55 kg
Permissible ambient temperature		15 – 32 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 30
Interface		RS 232

General data	
Dimensions (W x D x H)	470 x 447 x 135 mm
Set-up plate	380 x 410 mm
Weight	3.200 g

AS 4000.1 Universal attachment

For various types of vessels. Infinitely variable clamping rolls allow universal adaptation to the vessels.

Included with delivery:
1 x Basic holder, 6 x Clamping roll, 12 x Fastening screw

Ident. No.
8022200

General data	
Dimensions (W x D x H)	470 x 444 x 25 mm
Number of fixing clips (volume)	50 x AS 2.1 (25 ml)
	48 x AS 2.2 (50 ml)
	25 x AS 2.3 (100 ml)
	16 x AS 2.4 (250 ml)
	12 x AS 2.5 (500 ml)
	7 x AS 2.6 (1.000 ml)
Set-up plate	430 x 430 mm
Weight	2.650 g

AS 4000.2 Fixing clip attachment

For shaking flasks, Erlenmeyer flasks and bottles with a round crosssection (without fixing clips).

Accessories (page):
Fixing clips (65): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5

Ident. No.
3710100

General data	
Dimensions (W x D x H)	470 x 444 x 25 mm
Set-up plate	430 x 430 mm
Weight	800 g

AS 4000.3 Dish attachment

For smooth shaking operations in the low viscosity range, e.g. for cell cultures, nutrient media in Petri dishes, culture bottles and vessels with a low center of gravity. With integrated slip-resistant foil (PP).

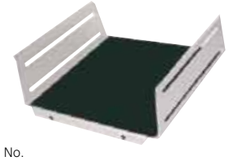
Ident. No.
3710000

General data	
Dimensions (W x D x H)	446 x 447 x 135 mm

AS 1.400 Basic holder

Spare for use with universal attachment AS 4000.1.

Accessories (page):
AS 1.401 Clamping roll (55), AS 1.402 Fastening screw (55)



Ident. No.
3710200

General data	
Length	417 mm

AS 1.401 Clamping roll

Spare for use with universal attachment AS 4000.1.

Ident. No.
3712000

AS 1.402 Fastening screw

Spare for use with universal attachment AS 4000.1.
Two AS 1.402 fastening screws are required for fastening a clamping roll onto the corresponding basic holder.

Ident. No.
3712300

Ident. No.
3426300

MS 3.1 Standard attachment

For test tubes and small vessels up to Ø 50 mm, included with the minishakers MS 3 basic and MS 3 digital.

Ident. No.
3426600

MS 3.3 Universal attachment

For various foam inserts, included with the minishakers MS 3 basic and MS 3 digital.

Ident. No.
3426400

MS 3.4 Microtiter plate attachment

For use with a microtiter plate, included with the minishaker MS 3 digital.

Ident. No.
3428000

MS 3.5 PCR plate attachment

For holding PCR plates, 96-well.

Ident. No.
L001540

MS 1.21 One-hand insert

For inserting into the universal attachment, included with the minishakers MS 3 basic and MS 3 digital.

Ident. No.
L001840

MS 1.31 Test tube insert

For inserting into universal attachment, for 14 test tubes Ø 10 mm, material: ethylvinyl-acetate.

Ident. No.
L001850

MS 1.32 Test tube insert

For inserting into the universal attachment, for 6 test tubes Ø 12 mm. Material: ethylvinyl-acetate. Included with the minishakers MS 3 digital.

Ident. No.
L001860

MS 1.33 Test tube insert

For inserting into the universal attachment, for 4 test tubes Ø 16 mm. Material: ethylvinyl-acetate.

Ident. No.
L001830

MS 1.34 Test tube insert

For inserting into the universal attachment, for any number of bore holes. Material: ethylvinyl-acetate.

VG 3.1 Standard attachment

Standard attachment for reagent glasses / small vessels (continuous / touch operation), included with delivery.

Ident. No.
3341200

VG 3.2 One-hand attachment

One-hand attachment, 88 mm, round, with rubber insert (continuous / touch operation).

Ident. No.
3342300

VG 3.3 Universal attachment

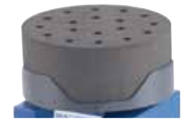
Universal attachment, 150 mm, with rubber insert (continuous operation).

Ident. No.
3342400

VG 3.31 Test tube attachment*

For 54 Eppendorf tubes (continuous operation).

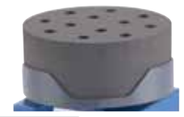
Ident. No.
3344300



VG 3.32 Test tube attachment*

For 18 reagent glasses, 10 mm (continuous operation).

Ident. No.
3343900



VG 3.33 Test tube attachment*

For 12 reagent glasses, 12 mm (continuous operation).

Ident. No.
3344000

VG 3.34 Test tube attachment*

For 8 reagent glasses, 16 mm (continuous operation).

Ident. No.
3344100

VG 3.35 Test tube attachment*

For 8 reagent glasses, 20 mm (continuous operation).

Ident. No.
3344200

VG 3.36 Erlenmeyer flask attachment*

For 1 Erlenmeyer / round flask from 100 to 250 ml (continuous operation).

Ident. No.
3342100

VG 3.37 Microtiter plate attachment*

For 1 standard microtiter plate (continuous operation).

Ident. No.
3344400

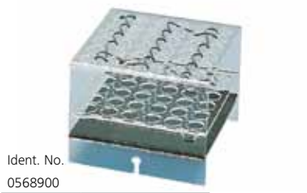
* for VG 3.3 Universal attachment

Ident. No.
0607200

VX 1 One-hand attachment

For shaking single, non-fixed vessels of 1 - 250 ml.

General data	
Dimensions (W x D x H)	130 x 135 x 40 mm
Weight	160 g



Ident. No.
0568900

VX 2 Test tube attachment

For up to 36 test tubes or centrifugal tubes with a diameter of 16 mm.

General data	
Dimensions (W x D x H)	140 x 145 x 115 mm
Material	macrolon
Weight	300 g

Ident. No.
1618100

VX 2E “Eppendorf” attachment

For intensive mixing of up to 64 “Eppendorf” tubes (1,5 ml).

General data	
Dimensions (W x D x H)	210 x 210 x 65 mm
Weight	790 g

Ident. No.
0953300

VX 7 Dish attachment

For careful mixing of culture bottles, Petri dishes, etc.

General data	
Dimensions (W x D x H)	410 x 210 x 40 mm
Weight	740 g

Ident. No.
0910400

VX 8 Universal attachment

For rapid and secure clamping, e.g. 2 Erlenmeyer flasks up to 500 ml.

General data	
Dimensions (W x D x H)	265 x 136 x 60 mm
Clamping range	25 – 135 mm
Min. height of vessel	80 mm
Weight	760 g

Ident. No.
3375400

VX 8.1 Clamping roll

Spare for use with VX 8 universal attachment.

VX 11 Basic holder

Attachment for test tube inserts.

Ident. No.
3627700

VX 11.1 Test tube insert

Attachment for Eppendorf tubes or test tubes.

General data	
Bore holes (number)	70
Hole Ø	10 mm

Ident. No.
3659000

VX 11.2 Test tube insert

Attachment for test tubes.

General data	
Bore holes (number)	41
Hole Ø	12 mm

Ident. No.
3659100

VX 11.3 Test tube insert

Attachment for test tubes.

General data	
Bore holes (number)	32
Hole Ø	16 mm

Ident. No.
3659200

VX 11.4 Test tube insert

Attachment for test tubes.

General data	
Bore holes (number)	18
Hole Ø	20 mm

Ident. No.
3659300

Ident. No.
8017300

AS 130.1 Universal attachment

For use with various types of vessels by means of universal, infinitely variable clamping rolls.

Included with delivery (page):
1 x AS 1.30 Basic holder (63),
3 x AS 1.31 Clamping roll (63),
6 x AS 1.5 Fastening screw (64)

General data	
Dimensions (W x D x H)	325 x 234 x 88 mm
Set-up plate	220 x 220 mm
Weight	850 g

Ident. No.
3115000

AS 130.2 Fixing clip attachment

For processing round flasks, measuring flasks and Erlenmeyer flasks. Please order fixing clips separately.

Accessories (page):
Fixing clips (65): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5

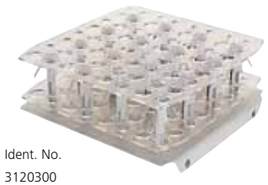
General data	
Dimensions (W x D x H)	230 x 230 x 24 mm
Number of fixing clips (volume)	20 x AS 2.1 (25 ml) 12 x AS 2.2 (50 ml) 12 x AS 2.3 (100 ml) 4 x AS 2.4 (250 ml) 4 x AS 2.5 (500 ml)
Weight	650 g

Ident. No.
3120000

AS 130.3 Dish attachment

For smooth shaking operations in the low viscosity range, e.g. Petri dishes or culture bottles. With integrated slip-resistant foil (PP).

General data	
Dimensions (W x D x H)	420 x 270 x 32 mm
Set-up plate	220 x 340 mm
Weight	370 g



Ident. No.
3120300

AS 130.4 Test tube attachment

For intensive shaking, e.g. small tubes, test tubes, cuvettes, centrifuge tubes.

General data	
Dimensions (W x D x H)	220 x 230 x 95 mm
Capacity	64
Vessel Ø	10 – 16 mm
Min. height of vessel	80 mm
Weight	670 g

Ident. No.
8017400

AS 260.1 Universal attachment

For various types of vessels. Infinitely variable clamping rolls allow universal adaptation to the vessels.

Included with delivery (page):
1 x AS 1.60 Basic holder (63),
4 x AS 1.61 Clamping roll (63),
8 x AS 1.5 Fastening screw (64)

General data	
Dimensions (W x D x H)	425 x 335 x 135 mm
Set-up plate	320 x 320 mm
Weight	1.600 g

General data	
Dimensions (W x D x H)	330 x 330 x 24 mm
Number of fixing clips (volume)	56 x AS 2.1 (25 ml) 23 x AS 2.2 (50 ml) 23 x AS 2.3 (100 ml) 11 x AS 2.4 (250 ml) 9 x AS 2.5 (500 ml) 5 x AS 2.6 (1.000 ml)
Weight	1.290 g

AS 260.2 Fixing clip attachment

For shaking flasks, Erlenmeyer flasks and bottles with a round crosssection (without fixing clips).

Accessories (page):
Fixing clips (65): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5

Ident. No.
3115500

General data	
Dimensions (W x D x H)	410 x 370 x 32 mm
Set-up plate	320 x 320 mm
Weight	460 g

AS 260.3 Dish attachment

For smooth movement for cell cultures, nutrient media in Petri dishes, culture bottles and vessels with a low center of gravity. With integrated slip-resistant foil (PP).

Ident. No.
3120600

General data	
Dimensions (W x D x H)	334 x 425 x 145 mm
Capacity: (number of separating funnels per volume, pear-shaped)	6 x 50 ml 5 x 100 ml 3 x 250 ml 3 x 500 ml
Weight	1.550 g

AS 260.5 Separating funnel attachment

For shaking out, salting out, extracting, eluting, enriching. The 3 clamping rolls (included in delivery) are height-adjustable for adaption to different separating funnel sizes. The separating funnels are secured with O-rings (6 O-rings included).

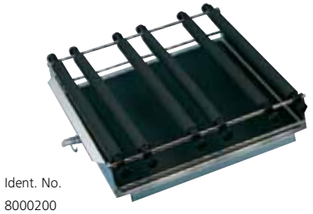
Ident. No.
3120900

General data	
Dimensions (W x D x H)	480 x 500 x 120 mm
Set-up plate	420 x 420 mm
Weight	4.000 g

AS 501.1 Universal attachment

For various types of vessels with a minimum volume of 50 ml. Ideally more than 250 ml. The clamping rolls may be adjusted to two levels.

Included with delivery (page):
1 x AS 1.10 Basic holder (63), 6 x AS 1.11 Clamping roll (63), 12 x AS 1.6 Fastening screw (64)



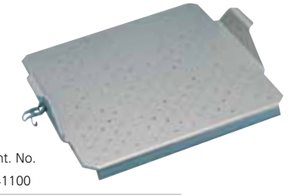
Ident. No.
8000200

General data	
Dimensions (W x D x H)	475 x 460 x 95 mm
Number of fixing clips (volume)	110 x AS 2.1 (25 ml) 55 x AS 2.2 (50 ml) 35 x AS 2.3 (100 ml) 16 x AS 2.4 (250 ml) 12 x AS 2.5 (500 ml) 8 x AS 2.6 (1.000 ml)
Weight	2.640 g

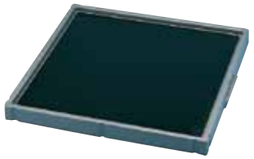
AS 501.4 Fixing clip attachment

For shaking flasks, Erlenmeyer flasks and pear-shaped flasks (without fixing clips).

Accessories (page):
Fixing clips (65): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5



Ident. No.
2341100

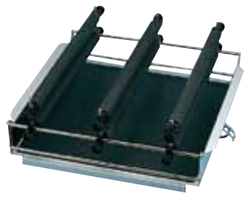


Ident. No.
2339600

AS 501.5 Dish attachment

For smoothly shaking dishes, but also for smooth mixing in vessels with a large, flat bottom (wide-necked Erlenmeyer flasks and beakers). A plastic foil with mild adhesive prevents the vessel from slipping.

General data	
Dimensions (W x D x H)	450 x 450 x 45 mm
Set-up plate	420 x 420 mm
Weight	1.120 g



Ident. No.
8000300

AS 501.2 Separating funnel attachment

For shaking out, eluting, extracting, gassing out, dissolving, enriching, etc. Adjustment for the clamping rolls is infinitely variable, the set-up height can be changed by means of clamping devices.

Included with delivery (page):
1 x AS 1.10 (63), 6 x AS 1.11 (63), 6 x AS 1.6 (64), 6 x AS 1.7 (64)

General data	
Dimensions (W x D x H)	480 x 505 x 190 mm
Capacity: (number of separating funnels per volume, pear-shaped)	12 x 50 ml 10 x 100 ml 6 x 250 ml
Weight	4.180 g

Ident. No.
8000400

AS 501.3 Separating funnel attachment

Same features as AS 501.2.

Included with delivery (page):
1 x AS 1.10 (63), 4 x AS 1.11 (63), 4 x AS 1.6 (64), 4 x AS 1.7 (64)

General data	
Dimensions (W x D x H)	480 x 505 x 190 mm
Capacity: (number of separating funnels per volume, pear-shaped)	4 x 500 ml 3 x 1.000 ml 2 x 2.000 ml
Weight	3.720 g

Ident. No.
8000500

AS 501.6 Separating funnel attachment

Same features as AS 501.2. This attachment will hold 4 x 1.000 ml separating funnels.

Included with delivery (page):
1 x AS 1.10 (63), 4 x AS 1.6 (64), 4 x AS 1.12 (65), 8 x AS 1.13 (65)

General data	
Dimensions (W x D x H)	480 x 505 x 225 mm
Capacity: (number of separating funnels per volume, pear-shaped)	4 x 1.000 ml
Weight	5.500 g

Ident. No.
3920000

STICKMAX

New universal adhesive mat for the fixing clip attachments of KS 130, KS/HS 260, KS/HS 501 and KS 4000 i shakers.
– Ideal for frequently changing vessel types and sizes
– Self-adhesive
– Devices can be easily removed by side tilting movement
– Suitable for disinfection
– Peel-away strength required: 5 N/cm²

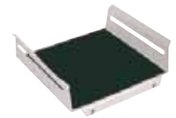
General data		
Dimensions (W x D x H)		200 x 200 mm
Permissible ambient temperature		5 – 80 °C
Max. speed		300 rpm
Number of adhesive mats per shaker	KS 130	1 pcs.
	KS/HS 260	3 pcs.
	KS/HS 501	4 pcs.
	KS 4000 i	4 pcs.

General data	
Dimensions (W x D x H)	252 x 234 x 88 mm

AS 1.30 Basic holder

For use with universal attachment AS 130.1.

Accessories (page):
AS 1.31 (63), AS 1.5 (64)



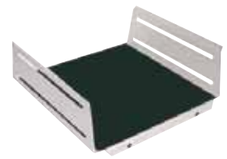
Ident. No.
3148000

General data	
Dimensions (W x D x H)	348 x 335 x 135 mm

AS 1.60 Basic holder

For use with universal attachment AS 260.1.

Accessories (page):
AS 1.61 (63), AS 1.5 (64)



Ident. No.
3149000

General data	
Dimensions (W x D x H)	480 x 480 x 120 mm

AS 1.10 Basic holder

For use with universal attachment AS 501.1 and separating funnel attachments AS 501.2, AS 501.3 and AS 501.6.

Accessories (page):
AS 1.11 (63), AS 1.6 (64), AS 1.7 (64), AS 1.8 (64), AS 1.12 (65), AS 1.13 (65)

Ident. No.
2339700

AS 1.31	
For basic holder	AS 1.30
Length	228 mm
AS 1.61	
For basic holder	AS 1.60
Length	335 mm
AS 1.11	
For basic holder	AS 1.10
Length	410 mm

Clamping roll

AS 1.31

AS 1.61

AS 1.11

Ident. No.	
3030500	AS 1.31
3030501	AS 1.61
2339800	AS 1.11

Ident. No.
2979400

AS 1.5 Fastening screw

Fastening screw for the universal attachments AS 130.1, AS 260.1 and the separating funnel attachment AS 260.5. Two AS 1.5 fastening screws are required for fastening a clamping roll onto the corresponding basic holder.

Ident. No.
1268400

AS 1.6 Fastening screw

Two AS 1.6 clamping devices are required for fastening a clamping roll to the corresponding basic holder (for basic holder AS 1.10 only).

Ident. No.
1269200

AS 1.7 Clamping device

Two AS 1.6 and two AS 1.7 clamping devices are required for fastening two clamping rolls one above the other (for clamping separating funnels). For basic holder AS 1.10 only.

Ident. No.
1268900

AS 1.8 Supporting clamping device

Two AS 1.6 clamping devices and two AS 1.8 supporting clamping devices are required if a clamping roll is to be attached at a higher position (e.g. for fixing a vessel which has a higher point of gravity). For basic holder AS 1.10 only.

General data	
Length	437 mm

AS 1.12 Supporting bar

For attaching two AS 1.13 ground section holders for fixing 1.000 ml separating funnels. For basic holder AS 1.10 only.

Accessories (page):
AS 1.13 (65)

Ident. No.
2594500

AS 1.13 Ground section holder

For attaching separating funnels with ground opening NS 29 (2 x AS 1.13 necessary per separating funnel). For basic holder AS 1.10 only.

Ident. No.
2597000

General data		
For flask volume	AS 2.1	25 ml
	AS 2.2	50 ml
	AS 2.3	100 ml
	AS 2.4	200 ml / 250 ml
	AS 2.5	500 ml
	AS 2.6	1.000 ml

1 AS 2.1 Fixing clip
2 AS 2.2 Fixing clip
3 AS 2.3 Fixing clip
4 AS 2.4 Fixing clip
5 AS 2.5 Fixing clip
6 AS 2.6 Fixing clip

	Ident. No.	
1	1234300	AS 2.1
2	1234400	AS 2.2
3	1234500	AS 2.3
4	1234600	AS 2.4
5	1234700	AS 2.5
6	3819300	AS 2.6

Crushing

BMT-20-S-M

20 ml tube with stainless steel balls and with pierceable membrane.

Page 72

DT-20 Tube

Now more types of tube!

Technical data	
Rating input	20 W
Rating output	17 W
Speed range, infinitely adjustable	300 – 6.000 rpm
Timer	
1 – 59 s	(300 – 6.000 rpm)
1 – 29 min	(300 – 4.000 rpm)
Speed display	scale (0 – 9)
Display	LED (timer)
Dimensions (W x D x H)	100 x 160 x 40 mm
Volume 20 ml Tube	2 - 15 ml
50 ml Tube	15 - 50 ml
Weight	0,75 kg
Protection class acc. to DIN EN 60529	IP 20

ULTRA-TURRAX® Tube Drive

A unique, universal, single-use dispersing system with hermetically sealable sample vessels. Protection and security for: Infectious sample materials, toxic substances, high-odor substances.
- Gamma-sterilized tubes
- Tubes with piercable membrane covers
- Tubes with 2 - 15 ml and 15 - 50 ml
- Disperse, stir and grind using a single drive unit
- No possibility of cross-contamination
- Hermetically sealable disposable sample tubes
- High level of user safety
- Suitable for individual use and use in series
- 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

Ident. No.
3646000 100 – 240 V 50/60 Hz

Technical data	
Rating input	20 W
Rating output	17 W
Speed range, infinitely adjustable	400 – 6.000 rpm / 8.000 rpm
Timer, infinitely adjustable	10 s – 30 min
Speed display	digital
Display	OLED
Dimensions (W x D x H)	122 x 178 x 48 mm
Volume 20 ml Tube	2 - 15 ml
50 ml Tube	15 - 50 ml
Weight	1,0 kg
Protection class acc. to DIN EN 60529	IP 20

ULTRA-TURRAX® Tube Drive control

The new control version offers the following additional advantages:
- USB interface for experiment control and documentation
- Collecting tray for protection against leaking liquids
- Simple and precise menu navigation thanks to the OLED display
- Programmable sample conditions (library)
- Adjustable reverse operation
- Turbo-button for short time intensive mixing, homogenizing or grinding
- Multilingual menu
- Digital display for all functions

Ident. No.
4135300 100 – 240 V 50/60 Hz

	UTTD Workstation	UTTD control Workstation
Included with delivery (page)		
ULTRA-TURRAX® Tube Drive (69)	1	-
ULTRA-TURRAX® Tube Drive control (69)	-	1
ST-20 Tube with stirring device (72)	2	2
DT-20 Tube with rotor-stator element (72)	2	1
BMT-20 G / S Tube for grinding with glass (G) or stainless steel balls (S) (72)	2	1
Removal hook for removal of rotor-stator	1	1
Power supply	1	1

ULTRA-TURRAX® Workstations

Application areas:
Human medicine, pathology, veterinary medicine, animal hygiene institutes, clinical diagnosis research, foodstuffs testing laboratories, diagnostic laboratories, toxicology, medical research, pharmaceutical research, biological research, tumor biology, immunology, chemistry, cosmetics.

Ident. No.
UTTD Workstation
3645000 100 – 240 V 50/60 Hz
UTTD control Workstation
3827500 100 – 240 V 50/60 Hz

ST

Tube with stirring device
Suitable for:
- Mixing
- Stirring
- Extractions
- Preparation of soil sample suspensions

Application examples for the 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, suppositories and capsules
- Mixing of fluids with higher viscosities

DT

Tube with rotor-stator element
Suitable for:
- Dispersion
- Homogenization
- Suspensions
- Pharmacokinetics
- Metabolism studies
- Diagnosis

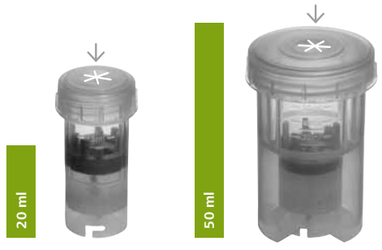
Application examples for the DT Tube
- Homogenization of tissue samples including brain, liver, muscle tissue, kidney and lung
- Milling of plant samples including rosemary, rapeseed, tomato seeds, grapes, potatoes, cress, leaves and roots
- Homogenization of effluent samples

BMT G/S

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, coloured pigments, tablets)
- Cell maceration
- Processing of materials mixed with fluids

Application examples for the 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

M



Tube with pierceable membrane
Suitable for:
- Introduction of media during the stirring, dispersing or milling process
- Sample extraction during the stirring, dispersing or milling process

Application examples for the 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
- No contamination when removing samples of materials hazardous to health

gamma

γ-sterilized tube
Suitable for:
- Grinding, mixing and dispersing under sterile conditions
- Aseptic storage of samples (tissue, blood, etc.)

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

20 ml					
Ident. No.		Product description	With pierceable membrane	Gamma sterilized	Quantity per pack
3703000	tube	ST-20	–	–	25
3703100	tube	DT-20	–	–	25
3703200	tube	BMT-20-S	–	–	25
3703300	tube	BMT-20-G	–	–	25
3749700	cover	TC-20	–	–	25
3702500	tube	ST-20-M	+	–	25
3702600	tube	DT-20-M	+	–	25
3702700	tube	BMT-20-S-M	+	–	25
3702800	tube	BMT-20-G-M	+	–	25
3700500	tube	ST-20-M-γ	+	+	20
3700600	tube	DT-20-M-γ	+	+	20
3700700	tube	BMT-20-S-M-γ	+	+	20
3749900	cover	TC-20-M	+	–	25

50 ml					
Ident. No.		Product description	With pierceable membrane	Gamma sterilized	Quantity per pack
3699500	tube	ST-50	–	–	10
3699600	tube	DT-50	–	–	10
3699700	tube	BMT-50-S	–	–	10
3699800	tube	BMT-50-G	–	–	10
3749800	cover	TC-50	–	–	10
3629500	tube	ST-50-M	+	–	10
3629600	tube	DT-50-M	+	–	10
3629700	tube	BMT-50-S-M	+	–	10
3629800	tube	BMT-50-G-M	+	–	10
3701500	tube	ST-50-M-γ	+	+	10
3701600	tube	DT-50-M-γ	+	+	10
3701700	tube	BMT-50-S-M-γ	+	+	10
3750000	cover	TC-50-M	+	–	10

BMT		
Ident. No.	Product description	Quantity per pack
3599200	Glass balls Ø 6 mm	250 g
3599300	Stainless steel balls Ø 6 mm	250 g

Dispersion example in a DT-20 tube: liver

Technical data	
Motor rating input	125 W
Motor rating output	75 W
Volume range (H_2O)	0,5 – 100 ml
Max. viscosity	5.000 mPas
Speed adjustment	stepless
Speed range	8.000 – 30.000 rpm
Speed stability	< 6 %
Speed display	scale
Noise without dispersing element	65 dB (A)
Overload protection	yes
Permitted ON-time (ON / OFF)	max. 10 min / min. 5 min
General data	
Dimensions (W x D x H)	46 x 57 x 201 mm
Weight	0,4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 30

T 10 basic ULTRA-TURRAX®

Competitively priced dispersing instrument for volumes of 0,5 to 100 ml. A wide speed range allows you to work at high circumferential speeds even with small rotor diameters. Perfect ergonomic finish.

- Quick-release coupling makes changing the dispersing elements easy
- Immense speed stability with various materials due to high performance 125 Watt drive
- Ideal for manual operation due to its light weight and ergonomic form
- Extremely mobile due to direct line power (no transformer required)
- Stainless steel dispersing elements (5 mm, 8 mm and 10 mm diameter) can be cleaned quickly and easily as they can be dismounted without tools
- Plastic disposable dispersing elements in two sizes, particularly suitable for PCR analysis

Accessories (page):
R 200 Clamp (122), R 104 Stand (120), H 44 Boss head clamp (122), Dispersing elements (80): S 10 N – 5 G, S 10 N – 8 G, S 10 N – 10 G, Plastic dispersing elements (81): S 10 D – 7 G – KS – 65, S 10 D – 7 G – KS – 110

Ident. No.	
3420000	230 V 50/60 Hz
3420001	115 V 50/60 Hz

T 18 basic ULTRA-TURRAX®

Competitively priced dispersing instrument for volumes of 1 to 1.500 ml (H_2O).
A wide speed range allows you to work at high circumferential speeds.
- Electronic speed control
- Electronic overload protection
- Quick release button for dispersing element
- As standard, the T 18 is equipped with a connection for a revolution counter
- Dispersing elements not included with delivery

Accessories (page):
Dispersing instruments (78 / 79), Stands (120):
R 1825, R 1826, R 1827, R 182 Boss head clamp (122)

Technical data	
Motor rating input	500 W
Motor rating output	300 W
Volume range (H_2O)	1 – 1.500 ml
Max. viscosity	5.000 mPas
Speed adjustment	stepless
Speed range (under load)	3.500 – 24.000 rpm
Speed display	scale
Noise without dispersing element	73 dB (A)
Overload protection	yes
Diameter / length of extension arm	13 mm / 175 mm
General data	
Dimensions (W x D x H)	65 x 80 x 240 mm
Weight	1,6 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 20

Ident. No.	
3561000	230 V 50/60 Hz
3561001	115 V 50/60 Hz

T 25 digital ULTRA-TURRAX®

High-performance dispersing instrument for volumes from 1 - 2.000 ml (H_2O).
The spectrum of applications ranges from homogenizing waste water samples to the use in laboratory reactors, to dispersion tasks under vacuum / pressure and sample preparation in medical diagnostics.
- Three types of shaft bearings
- Standard version with digital display and a connection for a revolution counter
- Rotor-stator configurations have thirty years of proven, guaranteed comparability of test results
- Wide range of dispersing elements (not included with delivery, page 78 /79)

Accessories (page):
Dispersing instruments (78 / 79), Stands (120):
R 1825, R 1826, R 1827, R 182 Boss head clamp (122), RH 3 Strap clamp (122)

Technical data	
Motor rating input	500 W
Motor rating output	300 W
Volume range (H_2O)	1 – 2.000 ml
Max. viscosity	5.000 mPas
Speed adjustment	stepless
Speed range (under load)	3.400 – 24.000 rpm
Speed display	digital
Noise without dispersing element	73 dB (A)
Overload protection	yes
Diameter / length of extension arm	13 mm / 175 mm
General data	
Dimensions (W x D x H)	65 x 80 x 240 mm
Weight	1,6 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 20

Ident. No.	
3565000	230 V 50/60 Hz
3565001	115 V 50/60 Hz

T 25 digital ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 2.000 ml, **page 74**
Ident. No. 3565000

T 18 basic ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 1.500 ml, **page 74**
Ident. No. 3561000

R 182
Boss head clamp, **page 122**
Ident. No. 2657700

S 18 N – 19 G
Dispersing element for quantities between 10 – 1.500 ml, **page 78**
Ident. No. L004640

S 25 N – 18 G
Dispersing element for quantities between 10 – 1.500 ml, **page 79**
Ident. No. 0593400

RH 3
Strap clamp, **page 122**
Ident. No. 3008600

R 1827
Plate stand, **page 120**
Ident. No. 3160200

Ident. No.

3783500	230 V 50/60 Hz
3783501	115 V 50/60 Hz

T 50 basic ULTRA-TURRAX®

- High-performance dispersing instrument for volumes from 0,25 - 30 l (H_2O)
- Three types of shaft bearings
- Several rotor-stator configurations
- Agitator shaft R 50 allows the use of the T 50 basic as a "high-speed stirrer" (not included in delivery, page 83)
- Infinitely variable speed control, for continuous operation
- Reproducible operations due to constant speed even with viscosity changes
- Large selection of dispersing elements
- Plug-in connectors facilitate exchange of dispersing elements
- Electronic safety circuit and smooth start
- As standard, the T 50 basic is equipped with a connection for the revolution counter
- Wide range of dispersing elements (not included in delivery, page 80)

Technical data	
Motor rating input	1.100 W
Motor rating output	700 W
Volume range (H_2O)	0,25 – 30 l
Max. viscosity	5.000 mPas
Speed adjustment	stepless
Speed range	500 – 10.000 rpm
Speed stability	1 %
Speed display	scale
Noise without dispersing element	72 dB (A)
Diameter / length of extension arm	16 mm / 220 mm
Overload protection	yes
General data	
Dimensions (W x D x H)	125 x 120 x 367 mm
Weight	6 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 20

Accessories (page):
Dispersing elements (80), Special dispersing elements (83), Stands (120 / 121): R 2722, R 2723, R 271 Boss head clamp (122), RH 5 Strap clamp (122)

T 50 basic ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 30 l, **page 78**
Ident. No. 3783500

R 271
Boss head clamp, **page 122**
Ident. No. 2664000

S 50 N – G 45 G
Dispersing element for coarse crushing, **page 80**
Ident. No. 8003000

RH 5
Strap clamp, **page 122**
Ident. No. 3159000

R 2723
Telescopic stand, **page 121**
Ident. No. 1412100

Technical data	
Motor rating input	1.800 W
Motor rating output	1.500 W
Volume range (H_2O)	2 – 50 l
Max. viscosity	5.000 mPas
Speed, fixed	7.200 rpm
Speed stability	5 %
Noise without dispersing element	75 dB (A)
Overload protection	yes
General data	
Dimensions (W x D x H)	190 x 580 x 380 mm
Weight	28 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

T 65 D ULTRA-TURRAX®

The high-performance T 65 D dispersing instrument has been designed for typical pilot plant stations quantities from 2 - 50 l (H_2O).
- Three rotor-stator configurations for a variety of applications (not included with delivery)
- Plug-in connectors facilitate exchange of dispersing elements
- Speed controller on request
- Dispersing instruments for the production area: ask for our process technology catalogs
- Cables and plugs not included with delivery

Accessories (page):
Dispersing elements (81), T 653 Stand (121), SI 400 Safety switch (47), Fixing device SI 474 (47)

Ident. No.

1602800	3 x 400 V 50 Hz
1602802	3 x 230 V 60 Hz

Nomenclature dispersing elements

The variety of media to be processed also requires a variety of rotor-stator configurations and seals. In many cases it is neccessary to use subsequently two dispersing elements, for pre-crushing and fine crushing. The plug-in connectors facilitate the exchange of the dispersing elements.

Example of the S 50 N – G 45 M dispersing element set-up

For dispersing instrument	Dispersing element Shaft / Agitator shaft	With seal or bearing type*	Generator or element**	With outer diameter (mm)	Degree of fineness achieved***
T 10	S 10	N	–	5 / 8 / 10	G
T 18	S 18	N	–	10 / 19	G
T 25	S 25	N / KR / KV / NK	–	8 / 10 / 18 / 19 / 25	G / F
T 50	S / R 50	N / KV / KR / KG – HH	G / W	45 / 65 / 80	G / M / F
T 65	S 65	KG – HH	G	65	G / M / F

* N = PTFE bearing, KR = Ball bearing with FKM- seal, KV = Ball bearing with vacuum-tight sliding-ring seal with silicon carbide seal rings, NK = PTFE bearing with additional ball bearing without seal, KG - HH = Ball bearing with sliding-ring seals of hard metal allow with FFPM seal rings

** G = proved configuration, W = special element

*** G = coarse, M = medium, F = fine

Dispersing elements T 18 basic, T 25 digital

For nomenclature see page 77

Ident. No.
1 1024200

Ident. No.
2 0594000

Ident. No.
3 0593400

Ident. No.
4 1713300

Ident. No.
5 1713800

Dispersing element	**S 18 N – 10 G**	**S 18 N – 19 G**	**S 25 N – 8 G**	**S 25 N – 10 G**	**S 25 N – 18 G**	**S 25 KV – 18 G**
Ident. No.	**L004639**	**L004640**	**1024200**	**0594000**	**0593400**	**2348000**
Fig.	**similar to fig. 2**	**similar to fig. 3**	**1**	**2**	**3**	**without fig.**
Suitable for dispersing instrument	T 18 basic	T 18 basic	T 25 digital	T 25 digital	T 25 digital	T 25 digital
Working range	1 – 100 ml	10 – 1.500 ml	1 – 50 ml	1 – 100 ml	10 – 1.500 ml	10 – 1.500 ml
Stator diameter	10 mm	19 mm	8 mm	10 mm	18 mm	18 mm
Rotor diameter	7,5 mm	12,7 mm	6,1 mm	7,5 mm	12,7 mm	12,7 mm
Gap between rotor and stator	0,35 mm	0,4 mm	0,25 mm	0,35 mm	0,3 mm	0,3 mm
Circumferential speed	9,4 m/s	15,9 m/s	7,7 m/s	9,4 m/s	15,9 m/s	15,9 m/s
Min. / max. immersion depth	25 / 70 mm	35 / 170 mm	27 / 85 mm	22 / 85 mm	40 / 165 mm	40 / 225 mm
Shaft length	108 mm	204 mm	108 mm	105 mm	194 mm	270 mm
Materials in contact with medium	PTFE, AISI 316L	PTFE, AISI 316L	PTFE, AISI 316L	PTFE, AISI 316L	PTFE, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes	yes	yes	yes
Suitable for abrasive substances	yes	yes	yes	yes	yes	no
Max. temperature	180 °C	180 °C	180 °C	180 °C	180 °C	220 °C
Sterilization methods	all methods	all methods	all methods	all methods	all methods	wet chemical
Min. vacuum	–	–	–	–	–	1 mbar
Max. pressure	–	–	–	–	–	6 bar
Ultimate fineness, suspensions	10 – 50 µm	10 – 50 µm	10 – 50 µm	10 – 50 µm	10 – 50 µm	10 – 50 µm
Ultimate fineness, emulsions	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 10 µm

Dispersing element	**S 25 NK – 19 G**	**S 25 N – 25 G**	**S 25 KV – 25 G**	**S 25 N – 25 F**	**S 25 KV – 25 F**
Ident. No.	**2494700**	**1713300**	**2466900**	**1713800**	**2404000**
Fig.	**similar to fig. 3**	**4**	**without fig.**	**5**	**without fig.**
Suitable for dispersing instrument	T 25 digital	T 25 digital	T 25 digital	T 25 digital	T 25 digital
Working range	25 – 1.500 ml	50 – 2.000 ml	50 – 2.000 ml	100 – 2.000 ml	100 – 2.000 ml
Stator diameter	19 mm	25 mm	25 mm	25 mm	25 mm
Rotor diameter	12,7 mm	17 mm	17 mm	18 mm	18 mm
Gap between rotor and stator	0,3 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm
Circumferential speed	15,9 m/s	21,4 m/s	21,4 m/s	22,6 m/s	22,6 m/s
Min. / max. immersion depth	40 / 165 mm	40 / 165 mm	40 / 225 mm	40 / 165 mm	40 / 225 mm
Shaft length	194 mm	194 mm	270 mm	194 mm	270 mm
Materials in contact with medium	PTFE, AISI 316L	PTFE, AISI 316L	FFPM / SIC, AISI 316L	PTFE, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes	yes	yes
Suitable for abrasive substances	yes	yes	no	yes	no
Max. temperature	120 °C	180 °C	220 °C	180 °C	220 °C
Sterilization methods	wet chemical	all methods	wet chemical	all methods	wet chemical
Min. vacuum	–	–	1 mbar	–	1 mbar
Max. pressure	–	–	6 bar	–	6 bar
Ultimate fineness, suspensions	10 – 50 µm	15 – 50 µm	15 – 50 µm	5 – 25 µm	5 – 25 µm
Ultimate fineness, emulsions	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 5 µm	1 – 5 µm

Ident. No.
1 3304000

Ident. No.
2 3305500

Ident. No.
3 3370100

Dispersing elements T 10 basic

For nomenclature see page 77

Dispersing element	S 10 N – 5 G	S 10 N – 8 G	S 10 N – 10 G
Ident. No.	**3304000**	**3305500**	**3370100**
Fig.	**1**	**2**	**3**
Suitable for dispersing instrument	T 10 basic	T 10 basic	T 10 basic
Working range	0,5 – 10 ml	1 – 50 ml	1 – 100 ml
Stator diameter	5 mm	8 mm	10 mm
Rotor diameter	3,8 mm	6,1 mm	7,6 mm
Gap between rotor and stator	0,1 mm	0,25 mm	0,2 mm
Min. / max. immersion depth	20 / 75 mm	20 / 95 mm	20 / 100 mm
Shaft length	92 mm	115 mm	115 mm
Materials in contact with medium	PTFE, AISI 316L	PTFE, AISI 316L	PTFE, AISI 316L
pH range	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes
Suitable for abrasive substances	yes	yes	yes
Max. temperature	180 °C	180 °C	180 °C
Sterilization methods	all methods	all methods	all methods
Min. vacuum	–	–	–
Max. pressure	–	–	–
Ultimate fineness, suspensions	5 – 25 µm	5 – 25 µm	5 – 25 µm
Ultimate fineness, emulsions	1 – 10 µm	1 – 10 µm	1 – 10 µm

Dispersing elements T 50 basic

For nomenclature see page 77

Ident. No.
1 8003000

Ident. No.
2 8003300

Ident. No.
3 8003900

Dispersing element	S 50 N – G 45 G	S 50 N – G 45 M	S 50 N – G 45 F
Ident. No.	**8003000**	**8003300**	**8003900**
Fig.	**1**	**2**	**3**
Suitable for dispersing instrument	T 50 basic	T 50 basic	T 50 basic
Working range	0,5 – 20 l	0,5 – 15 l	0,25 – 10 l
Stator diameter	45 mm	45 mm	45 mm
Rotor diameter	36 mm	40,5 mm	40 mm
Circumferential speed	18,8 m/s	21,2 m/s	20,9 m/s
Min. / max. immersion depth	70 / 250 mm	70 / 250 mm	70 / 250 mm
Shaft length	300 mm	290 mm	290 mm
Materials in contact with medium	PTFE, AISI 316L	PTFE, AISI 316L	PTFE, AISI 316L
pH range	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes
Suitable for abrasive substances	yes	yes	yes
Max. temperature	180 °C	180 °C	180 °C
Sterilization methods	all methods	all methods	all methods
Min. vacuum	–	–	–
Max. pressure	–	–	–
Ultimate fineness, suspensions	40 – 100 µm	25 – 50 µm	10 – 30 µm
Ultimate fineness, emulsions	10 – 30 µm	5 – 20 µm	1 – 10 µm

S 50 N - Special length shafts also available in 430 mm (order label S 50 N 1)

Dispersing elements T 65 D

For nomenclature see page 77

Dispersing element	S 65 KG – HH – G 65 G	S 65 KG – HH – G 65 M	S 65 KG – HH – G 65 F
Ident. No.	**8005500**	**8005700**	**8005900**
Fig.	**1**	**2**	**3**
Suitable for dispersing instrument	T 65 D	T 65 D	T 65 D
Working range	2 – 50 l	2 – 40 l	2 – 30 l
Stator diameter	65 mm	65 mm	65 mm
Rotor diameter	58 mm	58 mm	58 mm
Circumferential speed	21,9 m/s	21,9 m/s	21,9 m/s
Min. / max. immersion depth	90 / 450 mm	80 / 450 mm	80 / 450 mm
Shaft length	520 mm	510 mm	500 mm
Materials in contact with medium	FFPM / SIC, AISI 316L	FFPM / SIC, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes
Suitable for abrasive substances	no	no	no
Max. temperature	180 °C	180 °C	180 °C
Sterilization methods	wet chemical	wet chemical	wet chemical
Min. vacuum	1 mbar	1 mbar	1 mbar
Max. pressure	6 bar	6 bar	6 bar
Ultimate fineness, suspensions	25 – 75 µm	20 – 50 µm	5 – 20 µm
Ultimate fineness, emulsions	5 – 25 µm	5 – 15 µm	1 – 10 µm

Ident. No.
1 8005500

Ident. No.
2 8005700

Ident. No.
3 8005900

Nomenclature: Plastic dispersing elements

Plastic dispersing elements are ideal for those applications where absolutely no cross-contamination is permitted. They are disposable and can be thrown away after a single use. The element is disposable and designed for one-way use. However, it can be re-used several times in applications where this is permitted. If you decide to re-use the element, make sure that you follow the cleaning instructions carefully. Example use: homogenizing tissue samples.

For disperser	Dispersing element shaft	Seals	Diameter stator (mm)	Degree of fineness achieved	Material
T 10	S 10	D = without seal	7	G = coarse	KS = plastic
T 18	S 18	D = without seal	10 / 14	G = coarse	KS = plastic
T 25	S 25	D = without seal	10 / 14	G = coarse	KS = plastic

Plastic dispersing elements for T 10 basic

Dispersing element	S 10 D – 7 G – KS – 65	S 10 D – 7 G – KS – 110
Ident. No. [Packing unit]	**3433225** [25 pcs.]	**3433325** [25 pcs.]
Suitable for dispersing instrument	T 10 basic	T 10 basic
Working range	1 – 20 ml	1 – 40 ml
Stator diameter	7 mm	7 mm
Rotor diameter	4,8 mm	4,8 mm
Min. / max. immersion depth	20 / 50 mm	20 / 90 mm
Shaft length	65 mm	110 mm
Materials in contact with medium	Polycarbonate (PC) Polysulfon (PSU)	Polycarbonate (PC) Polysulfon (PSU)
Max. temperature	100 °C	100 °C
Sterilization methods	yes, autoclavable	yes, autoclavable

Plastic materials used approved by FDA.

S 10 D – 7G – KS – 65
Ident. No.
3433225 25 pcs.

S 10 D – 7G – KS – 110
Ident. No.
3433325 25 pcs.

S 18 D – 10 G – KS

Ident. No.

3452400 10 pcs.*

S 18 D – 14 G – KS

Ident. No.

3452300 10 pcs.*

Plastic dispersing elements for T 18 basic

Dispersing element	S 18 D – 10 G – KS	S 18 D – 14 G – KS
Ident. No. [Packing unit]	**3452400** [10 pcs.*]	**3452300** [10 pcs.*]
Suitable for dispersing instrument	T 18 basic	T 18 basic
Working range	10 – 100 ml	10 – 500 ml
Stator diameter	10 mm	14 mm
Rotor diameter	6,75 mm	9,5 mm
Min. / max. immersion depth	15 / 85 mm	15 / 85 mm
Shaft length	150 mm	150 mm
Materials in contact with medium	Polycarbonate (PC) Polyetheretherketon (PEEK)	Polycarbonate (PC) Polyetheretherketon (PEEK)
Max. temperature	100 °C	100 °C
Sterilization methods	yes, autoclavable	yes, autoclavable

Plastic materials used approved by FDA.

* incl. 1 Disposable tube

S 25 D – 10 G – KS

Ident. No.

3452200 10 pcs.*

S 25 D – 14 G – KS

Ident. No.

3452100 10 pcs.*

Plastic dispersing elements for T 25 digital

Dispersing element	S 25 D – 10 G – KS	S 25 D – 14 G – KS
Ident. No. [Packing unit]	**3452200** [10 pcs.*]	**3452100** [10 pcs.*]
Suitable for dispersing instrument	T 25 digital	T 25 digital
Working range	10 – 100 ml	10 – 500 ml
Stator diameter	10 mm	14 mm
Rotor diameter	6,75 mm	9,5 mm
Min. / max. immersion depth	15 / 85 mm	15 / 85 mm
Shaft length	150 mm	150 mm
Materials in contact with medium	Polycarbonate (PC) Polyetheretherketon (PEEK)	Polycarbonate (PC) Polyetheretherketon (PEEK)
Max. temperature	100 °C	100 °C
Sterilization methods	yes, autoclavable	yes, autoclavable

Plastic materials used approved by FDA.

* incl. 1 Disposable tube

Ident. No.

3452500

Disposable tube S 18 / 25-ET50

50 ml for attaching onto plastic tools from S 18 D and S 25 D series. Allows dispersing in a closed system (splash guard).

General data	
Material	PP

General data	
Immersion depth	180 mm
Working range	0,25 – 30 l
Max. circumferential speed	15,7 – 23 m/s
Max. permissible rotor diameter	50 mm
Material	stainl. steel (AISI 316L)

R 50 “high speed” stirring shaft

With the stirring shaft R 50, the T 50 basic is quickly converted into a high speed stirrer. 700 W and 10.000 rpm are provided for rapid mixing, dissolving, and disagglomerating pigment agglomerates. The conical shaft is supported by means of ball bearings, the mixing elements have a screw connection. For operational safety a protective cage is fitted around the mixing element.

Included with delivery (page):
R 1402 Dissolver (83)

Accessories (page):
Dispersing elements (83): R 1405 , R 1402

Ident. No.

1689300

General data	
Working range	0,25 – 10 l
Rotor diameter	45 mm

R 1405 Propeller

Ident. No.

1289800

General data	
Working range	1 – 30 l
Rotor diameter	42 mm

R 1402 Dissolver

Ident. No.

1243300

Min. / max. immersion depth	140 / 350 mm
Working range	1 – 50 l
Generator diameter	80 mm
Available seals	S 50 N S 50 KR

S 50 N – W 80 SMK Jet mixer head

For shortening mixing and dissolving times. The vertical flow and the high circumferential speed up to 10.000 rpm ensure intensive mixing. The head is used for adding gases or liquids, for lump-free suspension of difficult to dissolve powders or for dissolving sedimented, already hardened substances.

Ident. No.

8006300 S 50 N – W 80 SMK

General data	
Min. / max. immersion depth	80 / 350 mm
Working range	1 – 10 l
Generator diameter	65 mm
Available seals	S 50 N

S 50 N – W 65 SK Cutting head

To crush large pieces (up to 50 mm) of fibrous materials, such as vegetation, vegetables and fruit

Ident. No.

8005100

IKA® Crushing

One machine for many mixing tasks. Same working modules for laboratory and production.

Module DISPAX-REACTOR® DR

Module Colloid mill MK

Module MHD (mixing, homogenizing, dispersing)

Module CMS

magic LAB® with module UTL

magic LAB® with module CMS and accessories
- for powder incorporation into liquid in recirculation mode

magic LAB® with module Micro-Plant 1 l
- for recirculation process in the open vessel

magic LAB® with module Micro-Plant 2 l
- for recirculation process in the closed vessel

magic LAB®
- for batch process as ULTRA-TURRAX®

Technical data	
Motor power	900 W
Temperature long / short time operation	80 °C / 120 °C
Max. process pressure	2,5 bar
Standard rotational speed	16.000 rpm
Adjustable rotational speed range	3.000 - 26.000 rpm
Flow capacity (at standard speed)	130 l/h (H_2O)
General data	
Dimensions basic machine (W x D x H)	170 x 270 x 215 mm
Weight basic machine	7 kg
Dimensions transport box (W x D x H)	350 x 460 x 560 mm
Weight basic machine in transport box	20 kg

IKA® magic LAB® 2000/03

Small inline dispersing laboratory machine for the production of emulsions and suspensions with extension capabilities for specific mixing tasks in the continuous and recirculation operation. Control and info center for adjustment and indication of speed, torque and temperature. Double-walled working chamber. Module ULTRA-TURRAX® UTL with rotor-stator system 4M.

All metal parts in contact with the product are made of stainless steel. Temperature sensor PT 100, transport box with wheels and drawers for various modules, telescopic handle and built-in power supply are included.

Optional: Software labworldsoft® for the control of the machine magic LAB® from the PC, additional modules and tools, peripherals for extension into a batch plant.

Ident. No.	
U078310	230 V / 50 Hz
U077729	115 V / 50 Hz

Optional generators (rotor-stator systems) for one-stage dispersing module ULTRA-TURRAX® UTL

6F (fine) 4M (medium) 2C (coarse)

Basic version with module UTL

magic LAB® as a mobile inline machine with transport box

Modules and application

More information please see page 86 and page 87.

Module	Application
DISPAX-REACTOR® DR	Three-stage dispersing
Module Colloid mill MK	Wet-milling
Module Cone mill MKO	Wet-milling as with the MK-module
Module MHD	Continuous mixing and dispersion of powders in liquids
Module CMS	Suction of solids into fluids in the recirculation process
ULTRA-TURRAX® UTC	Single-stage batch dispersing
Micro-Plant	Recirculation process using UTL , DR, MK, MKO module

Module ULTRA-TURRAX® UTL

Single-stage dispersing for manufacturing of emulsions and suspensions.
Included with delivery.

Technical data (at 50 Hz)	magic LAB®	LABOR-PILOT	PROCESS-PILOT
Flow rate (H_2O)*	130 l/h	500 l/h	500 l/h
Standard rotational speed	16.000 rpm	8.050 rpm	8.050 rpm
Circumferential speed*	23 m/s	23 m/s	23 m/s
Inlet socket	clamp ¾"	DN 25	DN 25
Outlet socket	clamp ½"	DN 15	DN 15

Module DISPAX-REACTOR® DR

Three-stage dispersing for manufacturing of fine emulsions and suspensions.

Technical data	magic LAB®	LABOR-PILOT	PROCESS-PILOT
Flow rate (H_2O)*	80 l/h	210 l/h	210 l/h
Standard rotational speed	16.000 rpm	8.050 rpm	8.050 rpm
Circumferential speed*	23 m/s	23 m/s	23 m/s
Inlet socket	clamp ¾"	DN 25	DN 25
Outlet socket	clamp ½"	DN 15	DN 15
Ident. No.	U078352	T055013	T058133

Module MHD

Continuous mixing and dispersion of powders in liquids. Patented process. Fast and homogeneous mixing in only one passage, avoiding agglomerates. Solids content up to 80%.

Technical data	magic LAB®	LABOR-PILOT	PROCESS-PILOT
Flow rate (H_2O)*	60 l/h	200 l/h	200 l/h
Standard rotational speed	11.000 rpm	8.050 rpm	8.050 rpm
Circumferential speed*	23 m/s	23 m/s	23 m/s
Inlet socket (solids)	25 mm / 35 mm	DN 50	DN 50
Inlet socket (liquids)	6 mm	DN 15	DN 15
Outlet socket	clamp 1/2"	DN 15	DN 15
Ident. No.	U075262	T055142	T058148

* At standard speed and 50 Hz.

Module CMS

Suction of solids into fluids in the recirculation process. Free from lumps and dust processing of powders and granules.
Energy-efficient homogeneous mixing.

Technical data	magic LAB®	PROCESS-PILOT***
Flow rate (H_2O)*	1.000 l/h	6.500 l/h
Standard rotational speed	11.000 rpm	8.050 rpm
Circumferential speed*	27 m/s	27 m/s
Inlet socket (solids)	clamp 3/4"	DN 25
Inlet socket (liquids)	clamp 3/4"	DN 25
Outlet socket	clamp 3/4"	DN 25
Ident. No.	U075333	T061272

Module Colloid mill MK

Wet-milling by means of spiral gearing milling tool. Production of colloidal solutions (finest suspensions) and emulsions.
Adjustable flow rate and friction by setting the gap between the rotor and stator.

Technical data	magic LAB®	LABOR-PILOT	PROCESS-PILOT
Flow rate (H_2O)**	200 l/h	1.500 l/h	1.500 l/h
Standard rotational speed	16.000 rpm	8.050 rpm	8.050 rpm
Circumferential speed*	23 m/s	23 m/s	23 m/s
Inlet socket (liquids)	clamp 3/4"	DN 25	DN 25
Outlet socket	clamp 1/2"	DN 15	DN 15
Ident. No.	U076662	T054917	T058583

Module Cone mill MKO

Wet-milling as with the MK-module. The cones are furnished with an abrasion-resistant tungsten carbide-cobalt coating.
Narrowest grinding gap enables producing of even finer suspensions.

Technical data	magic LAB®	LABOR-PILOT	PROCESS-PILOT
Flow rate (H_2O)**	25 l/h	75 l/h	75 l/h
Standard rotational speed	16.000 rpm	8.050 rpm	8.050 rpm
Circumferential speed*	23 m/s	23 m/s	23 m/s
Inlet socket	clamp 3/4"	DN 25	DN 25
Outlet socket	clamp 1/2"	DN 15	DN 15
Ident. No.	U079664	T061069	T061674

* At standard speed and 50 Hz.
** At standard speed, 50 Hz and minimal gap between the rotor and stator.
*** Only with 4 kw motor.

IKA® Crushing

Ident. No.
T055396 (with on/off switch)

IKA® LABOR-PILOT 2000/04

Inline dispersing machine in pilot size with upscale possibilities on the production scale. Three phase asynchron motor with V-belt drive. PTFE shaft seal. All metal parts in contact with the product are made of stainless steel. CIP-/SIP-capable. Standard execution with module UTL: Single stage dispersing chamber including rotor-stator system 4M. Exchangeable modules for special mixing tasks (see pages 86 and 87) as well as accessories for extension into a system working in recirculation available. Can be delivered with on/off switch or with LABOR-PILOT-CONTROLLER for variable speed adjustment.

Technical data	
Power supply	3 x 380 - 420 V / 50 Hz
Motor power	1,5 kW
Max. admissible temperature	120 °C
Max. process pressure	3 bar
Rotational speed	8.050 rpm
Circumferential speed	23 m/s
Flow capacity (H_2O)	approx. 500 l/h
General data	
Dimensions (W x D x H)	450 x 250 x 350 mm
Weight	36 kg

Ident. No.
T058102 (with on/off switch)

IKA® PROCESS-PILOT 2000/04

Inline dispersing machine in pilot size; suitable for working under vacuum / pressure and at elevated temperatures (when using optional temperature-resistant materials). Equipped with double mechanical seal in cartridge design. This allows, in addition to other LABOR-PILOT modules, the use of the CMS module for easy and dust-free suction of powders into liquids in batch operation. A locking pressure system guarantees safe working even at dry run. Standard execution with module ULTRA-TURRAX® UTL.
Exchangeable modules for special mixing tasks (see pages 86 and 87) as well as accessories for extension into a system working in recirculation available. Can be delivered with on/off switch or with PROCESS-PILOT-CONTROLLER for variable speed adjustment.

Technical data	
Power supply	3 x 380 - 420 V / 50 Hz
Motor power	2,2 kW
Max. admissible temperature	120 °C
Max. process pressure	10 bar
Rotational speed	8.050 rpm
Circumferential speed	23 m/s
Flow capacity (H_2O)	approx. 500 l/h
General data	
Dimensions (W x D x H)	425 x 250 x 900 mm
Weight	53 kg

Controller for LABOR-PILOT / PROCESS-PILOT

Technical data	LABOR-PILOT-CONTROLLER	PROCESS-PILOT-CONTROLLER
Power	2,2 kW	4 kW
Frequency range	20 - 87 Hz	20 - 87 Hz
Rotational speed range (drive + controller)	3.170 - 13.789 rpm	3.170 - 13.789 rpm
Circumferential speed (drive + controller)	9,4 - 41 m/s	9,4 - 41 m/s
Ident. No.	T055171	T058761

Technical data	
Power supply	3 x 400 V / 50 Hz
Motor power	1,5 kW
Max. admissible temperature	60 °C
Homogenizing pressure max.	2.000 bar
Min. feeding volume	10 ml
Driving shaft speed (at 50 Hz)	344 rpm
Piston diameter	5 mm
Flow rate (H_2O)	3 l/h
General data	
Dimensions (W x D x H)	286 x 639 x 509 mm
Weight	36 kg

High pressure homogenizer HPH 2000/04-SH5

High energy density and highly turbulent flow at the valve outlet. Particle and droplet size reduction to the nano range. Optimal setting of homogenizing effect by infinite adjustment of the valve gap as well as optional adjustment of the speed. Versions with one piston. All metal parts in contact with the product are made of stainless steel. The standard version is equipped with an on / off switch. Variable speed control via a HPH-CONTROLLER optionally available.

Ident. No.
U068906

Technical data	
Power supply	3 x 400 V / 50 Hz
Motor power	1,5 kW
Max. admissible temperature	60 °C
Homogenizing pressure max.	2.000 bar
Min. feeding volume	20 ml
Driving shaft speed (at 50 Hz)	344 rpm
Piston diameter	5 mm
Flow rate (H_2O)	6 l/h
General data	
Dimensions (W x D x H)	284 x 656 x 568 mm
Weight	36 kg

High pressure homogenizer HPH 2000/04-DH5

High energy density and highly turbulent flow at the valve outlet. Particle and droplet size reduction to the nano range. Optimal setting of homogenizing effect by infinite adjustment of the valve gap as well as optional adjustment of the speed. Version with two pistons. All metal parts in contact with the product are made of stainless steel. The standard version is equipped with an on / off switch. Variable speed control via a HPH-CONTROLLER optionally available.

Ident. No.
U071735

Technical data	
Power	1,5 kW
Frequency range	20 - 50 Hz
Dimensions (W x D x H)	200 x 310 x 405 mm
Weight	17 kg

HPH-CONTROLLER

Ident. No.
U071728

Ident. No.

2900000	230 V 50/60 Hz
2900001	115 V 50/60 Hz

A 11 basic Analytical mill

Batch mill for 2 different grinding procedures:
Impact grinding of hard, brittle or non-elastic grinding materials with high-grade stainless steel beater. This beater can be used for a Mohs hardness up to 6 (incl. with delivery).
Cutting grinding for pulverizing soft, fibrous materials with a cutting blade (not incl. with delivery).
- Moist and gluey materials can be pulverized by adding water
- Grinding chamber made of Tefcel (ETFE, glass fiber-reinforced) with stainless steel inlet (AISI 316L), useful volume 80 ml (incl. with delivery). For embrittlement of grinding materials with liquid nitrogen in the grinding chamber
- Optionally, a 250 ml grinding chamber is available (page 91)

Accessories (page):
A 11.1 Spare beater (90), A 11.2 Cutting blade (90), A 11.3 Beater (90), A 11.4 Grinding chamber (91), A 11.5 Spare grinding chamber (91), A 11.6 Double beater (91), A 11.7 Funnel (91)

Technical data	
Motor rating input	160 W
Motor rating output	100 W
Speed	28.000 rpm (fixed)
Useful volume	80 ml
Duty cycle ON / OFF	1 min / 10 min
Overload protection	yes
Circumferential speed	53 m/s
Max. granularity of task	10 mm
Dimensions (W x D x H)	85 x 85 x 240 mm
Weight	1,5 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 43

Ident. No.
2904600

A 11.1 Spare beater

For pulverizing substances with a Mohs hardness up to 6. Included with the analytical mill A 11 basic.

General data	
Material	stainl. steel (AISI 420)

Ident. No.
2905200

A 11.2 Cutting blade

For pulverizing soft, fibrous grinding materials.
Not included with the analytical mill A 11 basic.

General data	
Material	stainl. steel (AISI 440B)

Ident. No.
2983000

A 11.3 Beater

For pulverizing substances with a Mohs hardness up to 9, coated with chromium carbide.
Not included with the analytical mill A 11 basic.

General data	
Material	stainl. steel (AISI 440B)

General data	
Useful volume	250 ml
Material	stainl. steel (AISI 316L)

A 11.4 Grinding chamber

Made of polycarbonate with stainless steel inlet. Not suitable for cooling with N_2, only applicable with double beater A 11.6.
Not included with the analytical mill A 11 basic.

Ident. No.
2904100

General data	
Useful volume	80 ml
Material	stainl. steel (AISI 316L)

A 11.5 Spare grinding chamber

Made of Tefcel (ETFE, glass fibre-reinforced) with stainless steel inlet. Excellent resistance to chemicals and low temperatures (- 200 °C).
Included with the analytical mill A 11 basic.

Ident. No.
2983100

General data	
Material	titanium, surface-hardened

A 11.6 Double beater

For use up to Mohs hardness 3.
Only applicable with grinding chamber A 11.4.
Not included with the analytical mill A 11 basic.

Ident. No.
3302900

General data	
Material jacket	PTFE
Material sieve	stainl. steel (AISI 316L)

A 11.7 Funnel

Prevents splashing by pouring in liquid nitrogen in the grinding chamber A 11.5.
Not included with the analytical mill A 11 basic.

Ident. No.
3048700

Ident. No.

1603500	230 V 50/60 Hz
1603502	115 V 50/60 Hz

A 10 basic

Suitable for low-loss dry grinding of soft, hard and brittle substances
- With a built-in cooling chamber
- Removable, easy-to-clean, high-grade steel chamber
- 3 interchangeable cutters available
- Electronic overload protection
- A 14 Spare cutter and A 18 Grinding chamber reduction included with delivery

Accessories (page):

A 14 Spare cutter (92), A 15 Hard metal cutter (92), A 17 Star-shaped cutter (92), A 18 Grinding chamber reduction (92)

Technical data	
Motor rating input	180 W
Motor rating output	80 W
Speed max.	20.000 rpm
Usable volume max.	50 ml
Circumferential speed max.	57 m/s
Feed hardness max.	5 Mohs
Feed grain size max.	6 mm
Material beater/cutter	stainless steel 1.4034
Material milling chamber	stainless steel 1.4301
Duty cycle ON / OFF	5 min / 10 min
Dimensions (W x H x D)	120 x 225 x 105 mm
Weight	2,2 kg
Permissible ambient temperature	5 - 40 °C
Permissible relative moisture	80 %
Protection class according to DIN EN 60529	IP 21

Ident. No.
1059300

A 14 Spare cutter

Suitable for crushing materials up to Mohs hardness 5. Included with A 10.

Technical data	
Material	stainl. steel (AISI 420)

Ident. No.
1059100

A 15 Hard metal cutter

Made of tungsten carbide for hard materials up to Mohs hardness 9. Not included with A 10.

Technical data	
Material	tungsten carbide (86,5 WC 13,5 Col)

Ident. No.
1462700

A 17 Star-shaped cutter

Used to crush fibrous substances such as paper and vegetation, but also for plastics and material with a low specific weight. Not included with A 10.

Technical data	
Material	stainl. steel (AISI 304)

Ident. No.
2318200

A 18 Grinding chamber reduction

Included with A 10.

Technical data	
Material	stainl. steel (AISI 440B)

Technical data	
Motor rating input	440 W
Motor rating output	225 W
Speed	20.000 rpm (fixed)
Circumferential speed	72 m/s
Overload protection	current limitation
Useful volume	250 ml
Material grinding chamber	stainl. steel (AISI 304)
Material cover	stainl. steel (AISI 304)
Max. granularity of task	max. 5 – 7 mm
Duty cycle ON / OFF (with cooling)	7 min / 10 min
Weight	6,6 kg
Dimensions (W x D x H)	170 x 170 x 350 mm
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

M 20 Universal mill

Batch mill suitable for dry grinding of hard and brittle substances.
- Double-walled grinding chamber can be cooled with water through two hose adapters
- Removable grinding chamber, easy to clean
- Two grinding chambers can be alternately operated using one drive
- M 21 Spare cutter incl. with delivery

Accessories (page):
M 21 Spare cutter (93), M 22 Hard metal cutter (93), M 23 Star-shaped cutter (93), M 20.1 Grinding chamber (93)

Ident. No.

1603600	230 V 50/60 Hz
1603603	115 V 50/60 Hz

General data	
Material	stainl. steel (1.4122)

M 21 Spare cutter

Suitable for crushing materials up to Mohs hardness 5. Included with M 20.

Ident. No.
0328200

General data	
Material	tungsten carbide (86,5 WC 13,5 Col)

M 22 Hard metal cutter

Made of tungsten carbide for hard materials up to Mohs hardness 9. Not included with M 20.

Ident. No.
0521800

General data	
Material	stainl. steel (AISI 304)

M 23 Star-shaped cutter

Used to crush fibrous substances such as paper and vegetation, but also for plastics and material with a low specific weight. Not included with M 20.

Ident. No.
1443400

M 20.1 Grinding chamber

A second grinding chamber ensures effective processing. The grinding chambers can be placed on the drive alternately. One chamber is cleaned and filled while the other is being processed.

Accessories (page):
M 21 Spare cutter (93), M 22 Hard metal cutter (93), M 23 Star-shaped cutter (93)

Ident. No.
8006200

IKA® Crushing

Microfine grinder and accessories

Ident. No.

2836000	230 V 50/60 Hz
2836001	115 V 50/60 Hz

MF 10 basic Microfine grinder drive

Continuously operating universal grinder.
- Powerful drive
- Easy to clean working surface made of stainless steel
- Two different grinding heads can be attached to the drive
- Heads are easily changeable
- Grinding heads not incl. with delivery

Accessories (page):
MF 10.1 Cutting-grinding head (94),
MF 10.2 Impact grinding head (94)

Technical data	
Motor rating input	1.000 W
Motor rating output	500 W
Speed range	3.000 – 6.500 rpm
Circumferential speed	
Cutting-grinding head	22,5 m/s
Impact grinding head	31,4 m/s
Materials in contact with medium	stainl. steel (AISI 316L)
Duty cycle* ON / OFF	120 / 30 min
Overload protection	yes
Weight	320 x 300 x 380 mm
Dimensions (W x D x H)	9,7 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 22

Ident. No.
2870900

MF 10.1 Cutting-grinding head

For crushing fibrous substances such as paper and vegetation, but also for plastics and material with a low volume weight. Before being discharged, the ground material passes through a sieve. This sieve is interchangeable and available in different hole sizes (not incl. with delivery). The ground material can then be collected using an NS 29 standard ground vessel.

Accessories (page):
MF Sieve (94)

Technical data	
Circumferential speed	22,5 m/s
Max. granularity of task	max. 15 mm
Dimensions including MF 10 basic	320 x 300 x 560 mm
Weight incl. MF 10 basic	11,9 kg
Materials in contact with medium	stainl. steel
Grinding channel and cover	(AISI 304)
Blades	(AISI 440B)
Shaft, rotor, screws	(AISI 316L)

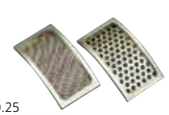
Ident. No.
2871000

MF 10.2 Impact grinding head

For crushing brittle, hard materials such as minerals, building materials up to Mohs hardness 6. Before being discharged, the ground material passes through a sieve. This sieve is interchangeable and available in different hole sizes (not incl. with delivery). The ground material can then be collected using an NS 29 standard ground vessel.

Accessories (page):
MF Sieve (94)

Technical data	
Circumferential speed	31,4 m/s
Max. granularity of task	max. 10 mm
Dimensions including MF 10 basic	320 x 300 x 450 mm
Weight incl. MF 10 basic	12,4 kg
Materials in contact with medium	stainl. steel
Grinding channel and cover	(AISI 304)
Hammer beater	(AISI 304)
Shaft, rotor, screws	(AISI 316L)



Ident. No.

2938900	MF 0.25
2939000	MF 0.5
2939200	MF 1.0
2939400	MF 2.0
2939500	MF 3.0
2939600	MF 4.0

MF Sieve

Interchangeable sieves for insertion into the grinding heads ensure maximum particle size filtering.

General data			
Material			stainl. steel (AISI 304)
Hole size (diameter)			
MF 0.25	0,25 mm	MF 2.0	2,0 mm
MF 0.5	0,5 mm	MF 3.0	3,0 mm
MF 1.0	1,0 mm	MF 4.0	4,0 mm
			Wider holes on request

IKA® Crushing

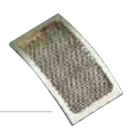
Microfine grinder

MF 10 basic
Drive for inline microfine grinder. Grinding head and sieves not incl. with delivery, **page 94**
Ident. No. 2836000

MF 10.1
Cutting-grinding head, interchangeable with impact grinding head MF 10.2, **page 94**
Ident. No. 2870900

MF 10.2
Impact grinding head, interchangeable with cutting-grinding head MF 10.1, **page 94**
Ident. No. 2871000

MF 0.5
Sieve for insertion into cutting-grinding head MF 10.1 or impact grinding head MF 10.2, with hole size 0.5 mm, **page 94**
Ident. No. 2939000



MF 2.0
Sieve for insertion into cutting-grinding head MF 10.1 or impact grinding head MF 10.2, with hole size 2,0 mm, **page 94**
Ident. No. 2939400

Heating / Tempering

C-MAG HP 7

New hotplate made of glass ceramic which offers excellent chemical resistance.
- Fixed safety circuit of 550 °C
- Hot Top indicator >> hot surface warning to prevent burns!
- Exact temperature setting via digital display (LED)

Page 98

IKA® Heating / Tempering

C-MAG HP 4

Ident. No.

3581600	230 V 50/60 Hz
3581626	115 V 50/60 Hz

C-MAG HP 7

Ident. No.

3581800	230 V 50/60 Hz
3581826	115 V 50/60 Hz

C-MAG HP 10

Ident. No.

3582000	230 V 50/60 Hz
3582026	115 V 50/60 Hz

C-MAG HP 4 / HP 7 / HP 10 IKATHERM®

New hotplate made of glass ceramic which offers excellent chemical resistance.
- Fixed safety circuit of 550 °C
- Hot Top indicator >> hot surface warning to prevent burns!
- Precise temperature setting via digital display (LED)
- Digital error code display
- Elevated control panel to protect against leaking liquids

C-MAG HP 7, C-MAG HP 10 additionally:
- Bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control

Accessories (page):
C-MAG HP 7, C-MAG HP 10 additionally:
Electronic contact thermometer ETS-D5 (123)

Heating function		
Temperature display		digital
Heat output	HP 4	250 W
	HP 7	1.000 W
	HP 10	1.500 W
Heating rate	HP 4	2,5 K/min
(1l H_2O)	HP 7 / HP 10	5 K/min
Temperature range		50 – 500 °C
Setting accuracy		± 10 K
Safety circuit fixed		550 °C
Control accuracy with sensor	HP 4	–
	HP 7 / HP 10	ETS-D5 / ± 0,5 K
Heating plate		
Material		glass ceramic
Dimensions	HP 4	100 x 100 mm
	HP 7	180 x 180 mm
	HP 10	260 x 260 mm
General data		
Dimensions (W x D x H)	HP 4	150 x 260 x 105 mm
	HP 7	220 x 330 x 105 mm
	HP 10	300 x 415 x 105 mm
Weight	HP 4	3 kg
	HP 7	5 kg
	HP 10	6 kg
Permissible ambient temperature		5 – 40 °C
Permissible relative humidity		80 %
Protection class acc. to DIN EN 60529		IP 21

Ident. No.

3642000	230 V 50/60 Hz
3642001	115 V 50/60 Hz

HB 10 digital Heating bath

The digital display featured on IKA®'s heating bath HB 10 offers each user a high ease of operation.
The heating bath HB 10 digital's key characteristics are:
- Heating power 1.350 watts
- Particularly suited for operation with the rotary evaporator RV 10
- Optimized bath shape for quick heating
- Integrated carrying handles for safe handling
- Adjustable safety circuit, for a safe switch-off in the case of errors
- Protection against dry running
- High-quality recyclable materials
- Digital display makes for easy operation
- Temperature controlled by micro controller
- IR interface for communication with the rotary evaporator RV 10 digital / control
- Choice of operating modes A, B, C

Accessories (page):
HB 10.1 Shield (109), HB 10.2 Protective cover (109)

Heating function	
Heat output	1.350 W
Temperature range	RT – 180 °C
Setting tolerance	± 1 K
Deviation (3 l H_2O, 90 °C)	± 1 K
Temperature display	digital
Safety class acc. to DIN 12877	2
Filling point min	50 mm
Fixed safety circuit	180 °C
Adjustable safety circuit min	50 °C
Adjustable safety circuit max	190 °C
General data	
Useful volume	3 l
Material	stainless steel 1.4301
Dimensions (W x H x D)	295 x 190 x 265 mm
Outer height	185 mm
Inner height	134 mm
Weight	3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Heating function	
Heat output	1.000 W
Temperature range	RT – 200 °C
Setting tolerance	± 1 K
Deviation (3 l H_2O, 90 °C)	± 1 K
Temperature display	digital
Safety class acc. to DIN 12877	2
Stirring function	
Stirring function	yes
Speed range	100 – 800 rpm
General data	
Useful volume	4 l
Material	stainl. steel (AISI 304)
Outer diameter	250 mm
Inner diameter	200 mm
Outer height	250 mm
Inner height	160 mm
Weight	4,4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

HBR 4 digital Heating bath

The heating bath is characterized by the following features:
- Cylindrical bath shape
- High-grade recyclable materials
- The heating elements are situated underneath the bath vessel
- Either low viscosity oil (50 mPas) or water can be used as the heat transfer fluid
- Infinitely adjustable safety temperature limiter acc. to DIN 12877
- Double jacket provides protection against burns
- Digital display presents rated, actual and safety temperature as well as speed
- Fuzzy logic control
- Integrated magnetic stirring drive to circulate the tempering fluid, which contributes to improved heat distribution
- The safety elements are checked when the unit is switched on

Accessories (page):
H 240 Ring set (100), H 159 Intermediate bottom (100), IKAFLON®-Stirring bars (32)

Ident. No.

2602300	230 V 50/60 Hz
2602301	115 V 50/60 Hz

Heating function	
Operating temperature range	28 – 300 °C
Min. temperature with refrigerator	-20 °C
Temperature stability at 70 °C	0,02 K
Temperature adjustment	digital
Resolution of display	0,1 K
Absolute accuracy	setup for calibration
Temperature control internal	PT 100
External sensor	PT 100
Analog Interface In/Out	4 – 20 mA alternative 1 – 5 V
Safety classification	FL
Heating power	3 kW
Pressure pump	
Pump flow (pressure) max.	33 l/min
Delivery pressure (head)	0,7 bar
Pump flow (suction) max.	22 l/min
Delivery suction pressure (head)	0,4 bar
Pump connection	M 16 x 1
General data	
Max. permissible kin. viscosity	50 mm²/s
Bath volume	8,5 l
Bath capacity with displacement rack	5,2 l
Width bath opening W x D / bath depth	130 x 110 / 155 mm
Dimensions (W x D x H)	240 x 405 x 390 mm
Height of bath opening	190 mm
Weight	18 kg
Ambient Temperature	5 – 32 °C

CC3-308B vpc Circulation thermostat

Heating circulator bath with housing, bath and all moistened parts are made of stainless steel. With cooling coil for water-cooling, pressure and suction pump. Adjustable overtemperature protection according to DIN 12876.
Complete functions: With level protection and maximum and minimum set point for additional safety, external temperature sensor connection, external temperature control and temperature programmer (50 segments, may be split into 10 programs), interactive, contains a digital RS 232 / RS 485 interface as well as a (4...20 mA) analog interface for bidirectional communication.
Plug & Play Technology - new generation of microprocessor controlled compatible control. Simple operation with a rotary knob and digital display, easy control, clear text, menu-driven, set point limiting, visually and acoustically alarm, mains failure automatic, programmable.

Accessories (page):
LT 5.20 Hose (101), LT 5.24 Hose adapter (101), PC 2.1 Cable (101), labworldsoft® (139), PT 100.5 Temperature sensor (101)

Ident. No.

3658800	230 V 50/60 Hz
3658801	115 V 50/60 Hz

labworldsoft®

Ident. No.

3164000	230 V 50/60 Hz
3164001	115 V 50/60 Hz

EH 4 basic Immersion thermostat

For temperature control of liquids (NFL/I) up to 100 °C in open baths (min. bath depth 160 mm, min. usable depth 75 mm).
- Complies with all safety requirements for electrically operated devices
- Intended for supervised use
- For operation with non-flammable liquids only
- With universal clamp, suitable for all standard bath vessels

Accessories (page):
Bath vessels (100)

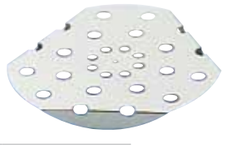
Heating function	
Heat output	1.500 W
Temperature range	25 – 100 °C
Temperature display	scale
Temperature stability (70 °C)	± 0,12 K
Adjustable temperature limitation	25 – 200 °C
Max. pump pressure	0,08 bar
Max. delivery rate	5 l/min
General data	
Dimensions (W x D x H)	105 x 139 x 319 mm
Weight	2,3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 31
Safety class acc. to DIN 12876	yes

Ident. No.
2858700

H 240 Ring set

To cover the heating bath HBR 4 digital. Prevents dust penetration, uncontrolled heat dissipation as well as water absorption and the formation of oil mist when working with oil.

General data	
Number of rings	10
Diameter of opening (variable)	25 – 185 mm



Ident. No.
1809700

H 159 Intermediate bottom

Allows vessels to be inserted in the heating bath HBR 4 digital without obstructing movement of the rotating magnetic bars.

Bath vessels

Ident. No.

3335000	EH 4.1 (5 l)
3335100	EH 4.2 (11 l)
3335200	EH 4.3 (18 l)

Polycarbonate bath vessels, suitable for use with the immersion thermostat EH 4 basic, up to 100 °C.

General data		
Material		polycarbonate
Volume without vessels		5, 11, 18 l
Outer dimensions (W x D x H)	EH 4.1	132 x 280 x 160 mm
	EH 4.2	350 x 313 x 168 mm
	EH 4.3	350 x 473 x 168 mm
Inner dimensions (W x D x H)	EH 4.1	120 x 262 x 150 mm
	EH 4.2	302 x 295 x 150 mm
	EH 4.3	302 x 455 x 150 mm

General data	
Material	metal
Length	1 m
Max. temperature	300 °C

LT 5.20 Hose

Coated metal hoses for circulation thermostat CC3-308B vpc. Package contains 2 hoses.

Accessories (page):
LT 5.24 Hose adapter (101)

Ident. No.
2606700

General data	
Dimensions adapter	R 1/8" x M 16 x 1

LT 5.24 Hose adapter

For connection to the reactor vessels LR 2000.1 and LR 2000.2.

Ident. No.
2578100

General data	
Length	3 m

PC 2.1 Cable

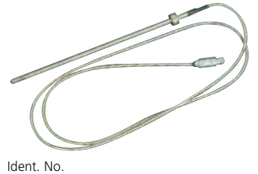
For connection to the circulation thermostat CC3-308B vpc control to a PC (9 pin interface).

Ident. No.
2700700

General data	
Length	255 mm
Diameter	6 mm
Material	stainl. steel (AISI 316L)

PT 100.5

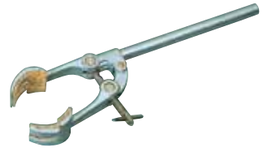
Temperature sensor for use with laboratory reactor systems LR 2000.



Ident. No.
2506800

R 350 Universal clamp

For clamping flask necks, condensers, etc. up to 11 cm diameter.



Ident. No.
1752900

Distilling

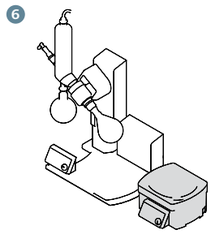
product design award 2009

RV 10 control V

RV 10 Rotary evaporators awarded for outstanding performance.
Page 106

product design award 2009

1. Vertical glassware (other options available)
2. Various flask sizes
3. Vacuum connection plus Woulf bottle
   Highly solvent-resistant PTFE seal
4. Adjustable safety stop
5. Two displays for optimal view
6. Heating bath can be used separately
   Ergonomic carrying handles on heating bath
7. Can be moved by 150 mm to accommodate different flasks
8. Motorised height-adjustable lift
   Lift raised automatically in case of power outage
9. Choice of angle



5 Year warranty*

* 2 + 3 years after registering at www.ika.com/register, glassware and wearing parts excluded

RV 10 basic

The RV 10 basic rotary evaporator with integrated HB 10 heating bath is the base system of IKA®'s new rotary evaporator line. The RV 10 basic is available with vertical glassware, either coated or uncoated.

- Analog heating bath with adjustable safety circuit, "stand alone" operation is possible, pivoting safety hood as an accessory
- Safe and simple operation by means of ergonomically shaped control unit in the front
- Motorised lift (stroke 140 mm) with"safety stop" function, if the power cuts out the evaporator flask is automatically lifted out of the heating bath
- Adjustable end position recognition to protect the glass from breaking
- Speed range from 20 to 280 rpm
- Smooth start from 100 rpm
- Digital speed display
- Rotates clockwise and counterclockwise in interval operation for the drying process
- Timer function for time lapse control
- Water/oil heating bath with integrated carrying handles for safe handling
- Heats up quickly because of optimized bath volumes
- Push-off mechanism to loosen tightly fitting flasks
- 5 year warranty after registration

product design award 2009

RV 10 Basic

Model	Description	Ident. No.
RV 10 basic V	with heating bath HB 10 basic and vertical glassware RV 10.1	8022300
RV 10 basic V-C	with heating bath HB 10 basic and vertical glassware, coated RV 10.10	8022900

RV 10 digital

IKA®'s RV 10 digital is a combination of performance, reliability and versatility and offers users the precision of an accurate, digitally controlled heating bath. The perfectly coordinated data transfer between the heating bath and the drive unit as well as the option of remote operation from a PC ensure results that can be reproduced any time.

Same properties as RV 10 basic, with the following additional functions:

- Digital water/oil heating bath with integrated carrying handles, "stand alone" operation is possible
- Temperature control of the heating bath by a micro controller
- Digital temperature display
- Infrared interface for data transfer from the heating bath to the drive unit
- RS 232 interface for PC remote operation with labworldsoft®
- Timer function shuts off heating bath at completion of timer sequence
- 5 year warranty after registration

product design award 2009

RV 10 Digital

Model	Description	Ident. No.
RV 10 digital V	with heating bath HB 10 digital and vertical glassware RV 10.1	8022500
RV 10 digital V-C	with heating bath HB 10 digital and vertical glassware RV 10.10	8023100
RV 10 digital FLEX	with heating bath HB 10 digital, incl. Woulff bottle	8031500

! Required glassware for the FLEX package has to be ordered separately.

product design award 2009

RV 10 control

The RV 10 control is the flagship of the new rotary evaporator series by IKA®. It offers all the functions of the RV 10 digital. But the IKA® RV 10 control goes one step further. Like the RV 10 digital, it can be precisely controlled via the RS 232 interface for remote PC operation with IKA®'s labworldsoft and is thus ideal for automatic operation but that's not all; the control functions also enable completely automatic distillation both for volume-based processes and full drying depending on the area of application. The expandable solvent library also allows you to incorporate new processes.

Functions and benefits

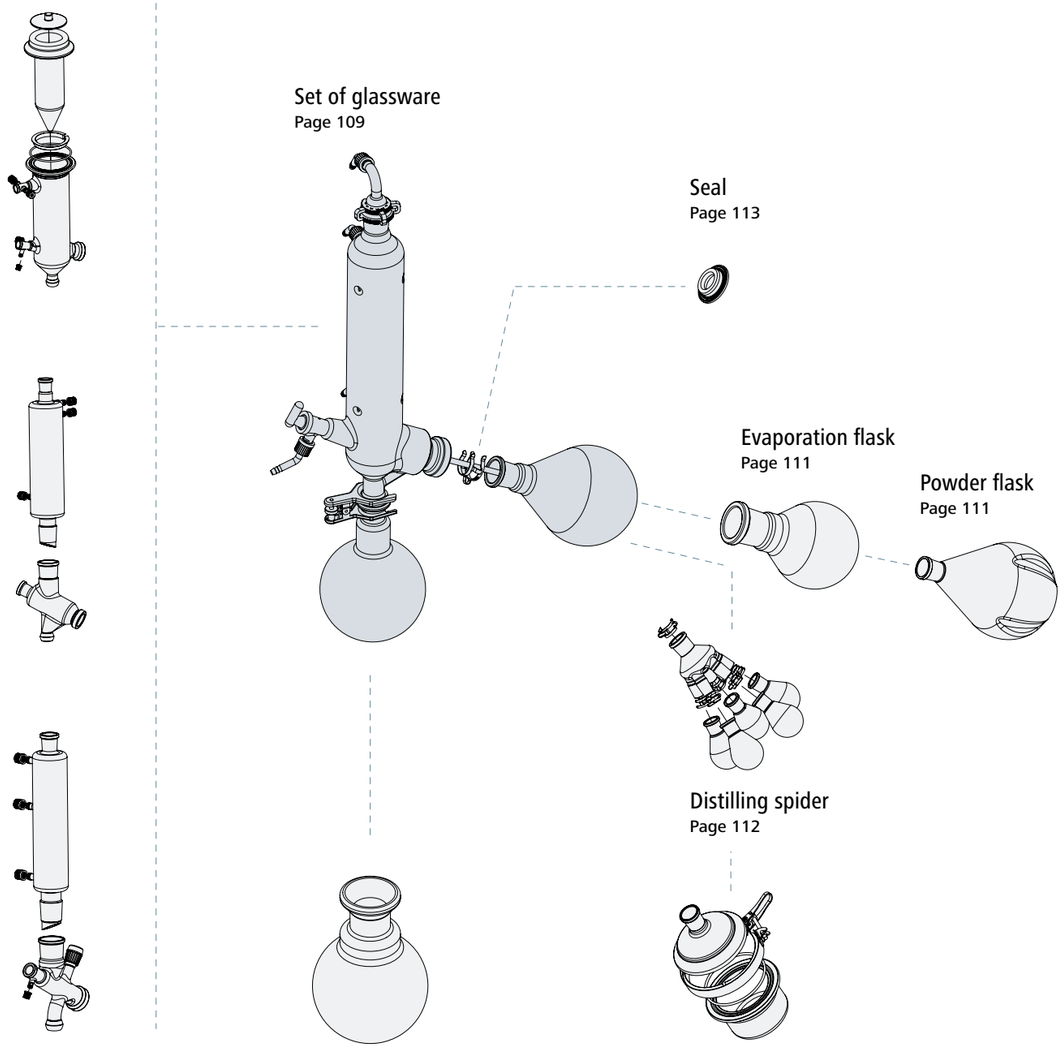
Same properties as RV 10 digital, with the following additional functions:
- Integrated vacuum controller with central display for automatic distilling and ramp programming
- Integrated solvent library, which can be extended by the user
- Distillation specific parameters stored for standard distillations
- Automatic transfer of measurements and distillation type with one key press
- Programmable volume controlled distillation
- Color graphic display for safe and comfortable operation
- Display of distillation curves
- Multiple languages
- Automatic ventilation at the end of each test
- Cooling water switched off automatically at the end of the test
- Integrated cooling water monitoring
- Heating bath safety management; automatic heating bath monitoring with distillation stop in case of temperature errors
- Heating bath switched off automatically at the end of the test
- USB interface
- 5 years warranty after registration
- New: Now RV 10.4002 Magnetic Valve included in delivery

RV 10 control		
Model	**Description**	**Ident. No.**
RV 10 control V	with heating bath HB 10 control, vertical glassware RV 10.1 and RV 10.4002 Magnetic valve laboratory vacuum	8022700
RV 10 control V-C	with heating bath HB 10 control, vertical glassware, coated RV 10.10 and RV 10.4002 Magnetic valve laboratory vacuum	8023300
RV 10 control FLEX	with heating bath HB 10 control, incl. Woulff bottle and RV 10.4002 Magnetic valve laboratory vacuum	8031600

! Required glassware for the FLEX package has to be ordered separately.

	RV 10 basic	RV 10 digital	RV 10 control
Packages with glassware	RV 10 basic V RV 10 basic V-C	RV 10 digital V RV 10 digital V-C	RV 10 control V RV 10 control V-C
Cooler type	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated	V=vertical V-C=vertical coated D=diagonal D-C=diagonal coated
Cooling surface	1.200 cm^2	1.200 cm^2	1.200 cm^2
Drive			
Motor type	brushless DC drive motor	brushless DC drive motor	brushless DC drive motor
Motor rating input	50 W	50 W	50 W
Speed range	20 to 280 rpm	20 to 280 rpm	20 to 280 rpm
Speed display	digital	digital	digital
Clockwise and counter-clockwise interval operation	yes	yes	yes
Smooth start	yes	yes	yes
Head angle adjustable	0 to 45°	0 to 45°	0 to 45°
Stroke displacement	140 mm, motorised	140 mm, motorised	140 mm, motorised
Setting of lower end stop	60 mm, contact-free	60 mm, contact-free	60 mm, contact-free
Vacuum controller	accessories	accessories	integrated
Heating bath	**HB 10 basic**	**HB 10 digital**	**HB 10 control**
Temperature range	RT to 180 °C	RT to 180 °C	RT to 180 °C
Heating power	1.300 W	1.300 W	1.300 W
Controller	capillary tube controller	micro controller	micro controller
Temperature display	scale	digital	digital
Setting accuracy	scale	1 K	1 K
Control deviation	± 5 K	± 1 K	± 1 K
Required accessories for an existing vacuum*			
In-house vacuum (industrial vacuum source for many users)	[1]	[1]	RV 10.4002 Magnetic valve **
Laboratory vacuum pump (multiple connections)	[1]	[1]	RV 10.4002 Magnetic valve **
Diaphragm vacuum pump (one single connection)	[1]	[1]	RV 10.4002 Magnetic valve **
General data			
Dimensions without glassware (W x D x H)	530 x 410 x 570 mm	530 x 410 x 570 mm	530 x 410 x 570 mm
RV 10 diagonal (W x D x H)	890 x 410 x 670 mm	890 x 410 x 670 mm	890 x 410 x 670 mm
RV 10 vertical (W x D x H)	680 x 410 x 990 mm	680 x 410 x 990 mm	680 x 410 x 990 mm
Weight of evaporator incl. heating bath without glass parts	20 kg	20 kg	21.5 kg
Permisable ambient temperature	5 to 40 °C	5 to 40 °C	5 to 40 °C
Protection class acc. to DIN EN 60529	IP 20	IP 20	IP 20
Ident. No.			
Package with vertical glassware	8022300	8022500	8022700
Package with vertical coated glassware	8022900	8023100	8023300

* will be controlled by the vacuum controller of the RV 10 control rotary evaporator.
** Magnetic valve now included with delivery of every RV 10 control.
[1] no accessories required for vacuum pump connection (vacuum level must be controlled by external vacuum controller)



General data	
Condenser type	vertical
Cooling surface	1.200 cm²

RV 10.1 Set of glassware, vertical

Compact vertical condenser for all standard distillations. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. A 1.000 ml evaporator and 1.000 ml receiving flask are included. Also available with coating for shatter protection.

! Glassware included in all packages, except FLEX.

Ident. No.	
3655300	RV 10.1
3755400	RV 10.10 (coated)

General data	
Condenser type	diagonal
Cooling surface	1.200 cm²

RV 10.2 Set of glassware, diagonal

Diagonal condenser for all standard distillations. A 1.000 ml evaporator and 1.000 ml receiving flask are included. Also available with coating for shatter protection.

Ident. No.	
3755300	RV 10.2
3755500	RV 10.20 (coated)

General data	
Material	polycarbonate

HB 10.1 Shield

For heating bath HB 10; for optimal protection against splashes of hot liquid.

Ident. No.
3641800

General data	
Material	polycarbonate

HB 10.2 Protective cover

For heating bath HB 10; essential accessory if it is not possible to work in an extractor hood. Protects the user against splashes of hot liquid and in the event of the evaporator flask breaking.

Ident. No.
3641000

RV 10.3 Vertical-intensive condenser with manifold

Vertical-intesive condenser with double jacket and manifold for particularly efficient condensation. The solvent to be distilled can be continuously fed in at the manifold using the PTFE inlet tube. Also available with coating for shatter protection.

General data	
Condenser type	vertical-intensive
Cooling surface	1.400 cm²

Ident. No.	
3741000	RV 10.3
3741100	RV 10.30 (coated)

RV 10.4 Dry ice condenser

Dry ice condenser for distilling low-boiling point solvents. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Cooling by dry ice, no cooling water required. Max. condensation thanks to low temperatures. Also available with coating for shatter protection.

! Not possible with autodistillation mode on RV 10 control.

General data	
Condenser type	dry ice condenser
Cooling surface	620 cm²

Ident. No.	
3742000	RV 10.4
3742100	RV 10.40 (coated)

RV 10.5 Vertical-condenser with manifold and cut-off valve for reflux distillation

The solvent to be distilled can be continuously fed in through the PTFE inlet tube.
Also available with coating for shatter protection.

! Requires RV 10.74 Vapor tube short.

General data	
Condenser type	vertical
Cooling surface	1.200 cm²

Ident. No.	
3743000	RV 10.5
3743100	RV 10.50 (coated)

General data	
Condenser type	vertical-intensive
Cooling surface	1.400 cm²

RV 10.6 Vertical-intensive condenser with manifold and cut-off valve for reflux distillation

The manifold features a condensate cover and an outlet channel which prevent the condensate from coming into contact with the seal. The solvent to be distilled can be continuously fed in through the PTFE inlet tube. Also available with coating for shatter protection.

! Requires RV 10.74 Vapor tube short.

Ident. No.	
3744000	RV 10.6
3744100	RV 10.60 (coated)

General data	
Material	borosilicate glass

RV 10.70 Vapor tube NS 29/32

For all glassware.

Ident. No.	
3812200	

General data	
Material	borosilicate glass

RV 10.74 Vapor tube short NS 29/32

For vertical condensers RV 10.5 and RV 10.6.

Ident. No.	
3971700	

General data			
Material			borosilicate glass
Volume (in ml)		RV 10.83	500 ml
RV 10.80	50 ml	RV 10.84	1.000 ml
RV 10.81	100 ml	RV 10.85	2.000 ml
RV 10.82	250 ml	RV 10.86	3.000 ml

Evaporation flask NS 29/32

The flask, which is made of high quality borosilicate glass, is available in seven different sizes.

Ident. No.	
3740100	RV 10.80
3740200	RV 10.81
3740300	RV 10.82
3740400	RV 10.83
3740500	RV 10.84
3740600	RV 10.85
3740700	RV 10.86

General data		
Material		borosilicate glass
Volume (in ml)	RV 10.300	500 ml
	RV 10.301	1.000 ml
	RV 10.302	2.000 ml

Powder flask NS 29/32

The flask, which is made of high quality borosilicate glass, is available in three different sizes. The powder flask optimizes powder drying applications by avoiding the accumulation of powder on the walls of the flask and makes full use of the clockwise and counterclockwise interval rotation.

Ident. No.	
3738200	RV 10.300
3738300	RV 10.301
3738400	RV 10.302

Evaporation cylinder NS 29/32

The cylinder, which is made of high quality borosilicate glass, is available in two different sizes. Makes retrieval of viscous substances easy.

General data		
Material		borosilicate glass
Volume (in ml)	RV 10.400	500 ml
	RV 10.401	1.500 ml

Ident. No	
3738800	RV 10.400
3738900	RV 10.401

RV 10.500 Foam brake NS 29/32

The rising foam produces bursts in the glass ball extension. This stops foam from entering the receiving flask.

! Note: when using a 3 liter evaporation flask, RV 10.3000 Extension plate is required.

General data	
Material	borosilicate glass

Ident. No	
3739200	

Distilling spider with distilling sleeves NS 29/32

For simultaneous distillation in 6, 12 or 20 distilling sleeves, 20 ml.
Included with purchase.

General data		
Material		borosilicate glass
Model	RV 10.600	with 6 distilling sleeves
	RV 10.601	with 12 distilling sleeves
	RV 10.602	with 20 distilling sleeves
	RV 10.61	Distilling sleeve, 20 ml

Ident. No	
3739400	RV 10.600
3739500	RV 10.601
3739600	RV 10.602
3919400	RV 10.610

Distilling spider with 5 flasks NS 29/32

For simultaneous distillation in 5 evaporation flasks.
Included with purchase.

General data		
Material		borosilicate glass
Model	RV 10.606	with 5 flasks, 50 ml
	RV 10.607	with 5 flasks, 100 ml
	RV 10.90	Evaporation flask, 50 ml
	RV 10.91	Evaporation flask, 100 ml

Ident. No	
3740800	RV 10.606
3740900	RV 10.607
3741200	RV 10.90
3741300	RV 10.91

General data			
Model			
RV 10.100	100 ml	RV 10.200	100 ml
RV 10.101	250 ml	RV 10.201	250 ml
RV 10.102	500 ml	RV 10.202	500 ml
RV 10.103	1.000 ml	RV 10.203	1.000 ml
RV 10.104	2.000 ml	RV 10.204	2.000 ml
RV 10.105	3.000 ml	RV 10.205	3.000 ml

Receiving flask KS 35/20

The flask, which is made of high quality borosilicate glass, is available in six different sizes, either coated or uncoated.

Ident. No.	
3742200	RV 10.100
3742300	RV 10.101
3742400	RV 10.102
3742500	RV 10.103
3742600	RV 10.104
3742700	RV 10.105
3743200	RV 10.200 (coated)
3743300	RV 10.201 (coated)
3743400	RV 10.202 (coated)
3743500	RV 10.203 (coated)
3743600	RV 10.204 (coated)
3743700	RV 10.205 (coated)

General data	
Dimensions (W x D x H)	200 x 270 x 27 mm

RV 10.3000 Extension plate

Accessories required when using the RV 10.500.

! Note: Allows the heating bath to be moved 150 mm horizontally. Accessory required when using the RV 10.500 foam brake and 3 liter evaporation flask.

Ident. No.
3859000

General data	
Material	FFKM / PTFE

RV 06.15 Seal

Particularly solvent-resistant.
Included in delivery.

Ident. No.
2114700

General data	
Material	PTFE, stainless steel

RV 10.8001 Seal

New airtight lip-seal from a PTFE compound with a built-in stainless steel spring.

Ident. No.
3907000

Ident. No.
3880300

RV 10.4002 Magnetic valve laboratory vacuum

For single or multiple connection benchtop diaphragm vacuum pump.

! Accessory required for an existing vacuum.
New: now included with each RV 10 control system.

General data	
Power	24 V / 9 W
Accessory for	RV 10 control

Ident. No.
3900200

RV 10.4003 Pump control incl. magnetic valve

One rotary evaporator at one pump / tabletop operation. Pump stops when the set pressure is reached and automatically switches back on again.

! Accessory required for an existing vacuum.
For non EU countries plug adapter required.

General data	
Power magnetic valve	24 V / 6 W
Power pump control	100-240 V, 50/60 Hz
Accessory for	RV 10 control

Ident. No.
3902700

RV 10.5001 Choke water valve

To regulate the water flow. The integrated magnetic valve closes/opens the water circuit during automatic distillation.

! Accessory recommended for tap water connection.

General data	
Power	24 V / 6 W
Connection Ø	10 mm
Accessory for	RV 10 control

General data	
Mesh thickness	100 µm
Connection Ø	10 mm
Pressure	max. 11 bar
Accessory for	RV 10 control

RV 10.5002 Filter

To prevent contamination of the water pipes. With removable filter for easy cleaning.

! Accessory recommended for tap water (faucet) connection.

Ident. No.
3903800

General data	
Connection Ø	10 mm
Pressure	max. input 25 bar, max. output 1 bar
Accessory for	RV 10 basic, RV 10 digital, RV 10 control

RV 10.5003 Pressure regulating valve

For adjusting the cooling water pressure when connecting to a tap water system.

! Accessory recommended for tap water (faucet) connection.

Ident. No.
3907100

FLEX-ability with the new IKA® RV 10 FLEX Packages

The IKA® FLEX Packages enable the customer who requires specialty glassware the FLEX-ability of customizing their glassware setup for their specific application.

RV 10 FLEX		
Package	**Description**	**Ident. No.**
RV 10 digital FLEX	RV 10 digital drive, HB 10 digital heating bath, RV 10.70 vapor tube NS 29/32, clamps for glassware, Woulff bottle	8031500
RV 10 control FLEX	RV 10 control drive, HB 10 control heating bath, RV 10.70 vapor tube NS 29/32, clamps for glassware, Woulff bottle, RV 10.4002 Magnetic valve laboratory vacuum	8031600

Only three steps to configure your personalized rotary evaporator system:

Step 1
Choose your FLEX base model

+

Step 2:
Select individual glassware:
- condenser
- evaporation flask
- receiving flask

=

Step 3:
Configured RV 10 FLEX Package with selected glassware

RV 10.4
Dry ice condenser, **page 110**
Ident. No. 3742000
Ident. No. 3742100 (coated)

KS 35/20
Receiving flask, **page 113**

NS 29/32
Evaporation flask, **page 111**

RV 10 control
Rotary evaporator drive, **page106**
Ident. No. 3560000

HB 10 control
Heating bath

! More information about IKA® Rotary evaporators at www.ika.com/distilling.

Rotary evaporators RV 10 control “all in one” Package

Would you like a complete package including vacuum system and chiller? Then the RV 10 control „all in one“ package is your best option.

Rotary Evaporators RV 10 control “all in one” Package		
Model	**Description**	**Ident. No**
RV 10 control V	includes Heating bath HB 10 control and set of glassware vertical	8022700
MPC 105 T Vacuum pump	–	4067700
KV 600 digital Chiller	–	3410500

MPC 105 T Vacuum pump + **RV 10 control V** + **KV 600 digital Chiller**

KV 600 digital
Chiller, **page 155**
Ident. No. 3410500

RV 10 control V
Rotary evaporator, **page 106**
Ident. No. 8022700

MPC 105 T
Vacuum pump, **page 125**
Ident. No. 4067700

Accessories

ETS-D5

Electronic contact thermometer ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimized PID control and RESET function, incl. stainless steel sensor H 62.51.
Page 123

IKA® Mechanical accessories

Stands

Ident. No.
3386000

R 104 Stand

Small stand for T 10 basic and RW 11 basic.

Accessories (page):
R 200 Clamp (122),
H 44 Boss head clamp (122)

Ident. No.

1163100s	R 1822
3160000	R 1825
3160100	R 1826
3160200	R 1827

Plate stands
R 1822
R 1825
R 1826
R 1827

With slip resistant foil.

Accessories (page):
Boss head clamp R 182 (122),
RH 3 Strap clamp (122)

Note: R 1822 is only available in Asia, Australia, South America and New Zealand.

Ident. No.
1412000

R 2722 H-Stand

Particularly stable stand with H-shape base which prevents the stand from tipping backwards. Provides optimum stability required for larger, heavier instruments and attachments, for example with rheological measurements using overhead stirrers.
The stand has an adjustment screw which can be used to compensate for an uneven laboratory table surface.

Accessories (page):
Boss head clamps (122): R 270, R 271, RH 5 Strap clamp (122)

Ident. No.
1412100

R 2723 Telescopic stand

Similar to R 2722, additionally equipped with a pneumatic spring stand rod, which enables heavy instruments / attachments to be raised and lowered smoothly without difficulty, e.g. with rheological measurements using overhead stirrers.
The stand has an adjustment screw which can be used to compensate for an uneven laboratory table surface.

Accessories (page):
Boss head clamps (122):
R 270, R 271, RH 5 Strap clamp (122)

Ident. No.
1608000

T 653 Telescopic stand

Specially designed for the dispersing instrument T 65 D. The stand is equipped with a pneumatic spring which enables effortless raising and lowering of the dispersion unit.

Ident. No.
1643000

R 474 Telescopic stand

Specially designed for the overhead stirrer RW 47 D; can be adapted for use with other instruments. The stand is equipped with a pneumatic spring which enables effortless raising and lowering of the dispersion unit.

Accessories (page):
SI 400 Safety switch (47),
SI 474 Fixing device (47)

Ident. No.
0738700

R 472 Floor stand

Mobile floor stand, specially designed for the overhead stirrer RW 47 D; can be adapted for use with other instruments.

Accessories (page):
SI 400 Safety switch (47),
SI 472 Fixing device (47)

Description	R 104 Stand	R 1822*	R 1825	R 1826	R1827	R 2722 H-Stand	R 2723 Telescopic stand	T 653 Telescopic stand	R 474 Telescopic stand	R 472 Floor stand
Ident. No.	**3386000**	**1163100**	**3160000**	**3160100**	**3160200**	**1412000**	**1412100**	**1608000**	**1643000**	**0738700**
Diameter of support rod	10 mm	16 mm	16 mm	16 mm	16 mm	34 mm	34 mm	48 mm	48 mm	–
Dimensions (W x D)	242 x 355 mm	200 x 315 mm	200 x 316 mm	200 x 316 mm	200 x 316 mm	460 x 420 mm	460 x 420 mm	460 x 530 mm	460 x 530 mm	80 x 80 mm
Height	370 mm	800 mm	560mm	800 mm	1.000 mm	1.010 mm	620 – 1.010 mm	1.200 mm	1.200 mm	2.020 mm
Max. load	0,7 kg	–	5 kg	5 kg	5 kg	10 kg	10 kg	–	–	–
Stroke	–	–	–	–	–	–	390 mm	500 – 1.000 mm	500 – 1.000 mm	980 – 1.860 mm

IKA® Mechanical accessories

Fixing elements

Ident. No.
2437700

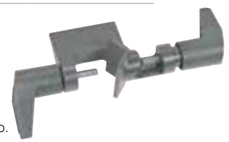
H 44 Boss head clamp

General data	
Clamping range - stand	10 – 11 mm
Clamping range - extension arm	11 mm
Material	cast aluminum

Ident. No.
2657700

R 182 Boss head clamp

General data	
Clamping range - stand	6 – 16 mm
Clamping range - extension arm	6 – 16 mm
Material	cast aluminum



Ident. No.
2657800

R 270 Boss head clamp

General data	
Clamping range - stand	25 – 36 mm
Clamping range - extension arm	5 – 21 mm
Material	cast aluminum

Ident. No.
2664000

R 271 Boss head clamp

Specialized clamp with openings for the stands R 2722 (page 120) and R 2723 (page 121) as well as extensions with Ø 16 mm.

General data	
Clamping range - stand	34 mm
Clamping range - extension arm	16 mm
Material	cast aluminum

Ident. No.
3372000

R 200 Clamp

For fastening the T 10 basic to the stand R 104 (page 120). Included with delivery of T 10 basic.

General data	
Diameter of extension arm	8 mm
Length of extension arm	130 mm

Ident. No.
3008600

RH 3 Strap clamp

For securing vessels against walls or for synchronized rotation during stirring or dispersing.

General data	
For stand diameter	8 – 16 mm
For vessel diameter	40 – 300 mm

Ident. No.
3159000

RH 5 Strap clamp

For securing vessels against walls or for synchronized rotation during stirring or dispersing, incl. boss head clamp R 270 (page 122).

General data	
For stand diameter	25 – 36 mm
For vessel diameter	40 – 300 mm

IKA® Electronic accessories

Temperature measuring instrument

Electronic contact thermometer ETS-D5

Ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimized PID control and RESET function, incl. stainless steel sensor H 62.51. For all magnetic stirrers with contact thermometer bushing according to DIN 12878, class 2 (e.g. IKA®, Heidolph and Corning with adapter AD-C1).

3 modes of operation guarantee optimum adjustment to your working method.
Operating mode A
Suitable for work with varying parameters (from -50 °C to 450 °C). Safety temperature adjustable.
Operating mode B
Suitable for series operation under uniform conditions.
Operating mode C
Suitable for unsupervised operation.
All values are taken from the memory. This ensures perfect protection against inadvertent improper adjustment.

Accessories ETS-D5 (page):
Sensors (26): H 62.51, H 66.51, H 70 Extension cable (27), H 16 V Support rod (31), H 44 Boss head clamp (31), H 38 Holding rod (31)

Temperature	
Temperature measuring range	-50 – 450 °C
Resolution	0,1 K
Measuring accuracy	± 0,2 K + Sensor tolerance PT 1000 DIN IEC 751 class A
Setting accuracy	0,1 K
Control deviation	± 0,5 K
General data	
Supply voltage	8 – 16 VDC
Power consumption	10 mA (at 9 V)
Max. ON time	100 %
Plug	6 pin DIN 45322
Connection	DIN 12878 class 2
Dimensions (W x D x H)	82 x 22 x 83 mm (without sensor)
Weight	0,2 kg
Permissible ambient temperature	0 – 60 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

Ident. No.
3378025

DTM 12 IKATRON®
Digital temperature measuring instrument

For measuring temperatures between
- 200 °C up to + 400 °C
- LED display
- Analog output (1 °C = 1mV)
- Almemo interface for PC connection
- Sensor connection: Almemo

Accessories (page):
Temperature sensors (124): PT 100.23, PT 100.24, PT 100.25, PT 100.27, DTM 12.10 Data cable (123), labworldsoft® (139)

Measuring device	
Sensor	PT 100
Measuring range	-200 – 400 °C
Temperature display	digital
Resolution	0,01 K
General data	
Interface	Almemo, analog
Dimensions (W x D x H)	125 x 150 x 70 mm
Weight	1,1 kg
Permissible ambient temperature	0 – 50 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 50

Ident. No.

3113200	90 – 240 V 50/60 Hz

DTM 12.10 Data cable, 9 pins (F)

Data cable with RS 232 interface to connect the DTM 12 with a PC.

Ident. No.

3127800	DTM 12.10
2616800	PC 1.2

PC 1.2 Adapter, 25 pins

9 pins (M) to 25 pins (F).

Ident. No.

1	3122100	PT 100.23
2	3122200	PT 100.24
3	3122300	PT 100.25

Temperature sensors

1 **PT 100.23**

Standard sensor for a wide range of laboratory tasks.

PT 100.23	
Material of protective pipe	stainl. steel (AISI 316L)
Diameter	3 mm
Length	250 mm
Measuring range	-50 – 200 °C
Resolution	0,01 K

2 **PT 100.24**

Protective pipe, glass-coated. For use in acid and alkaline solutions.

PT 100.24	
Material of protective pipe	borosilicate glass
Diameter	8 mm
Length	250 mm
Measuring range	-50 – 200 °C
Resolution	0,01 K

3 **PT 100.25**

E.g. for use with IKA® laboratory reactors in combination with sensor receptacle LR 2000.60 (page 133).

PT 100.25	
Material of protective pipe	stainl. steel (AISI 316L)
Diameter	6 mm
Length	255 mm
Measuring range	-50 – 400 °C
Resolution	0,1 K

Ident. No.
1980700

VC 1.1 Water jet pump

With valves for water jet and cooling water. Automatic cooling water cut-off at end of distillation. Suitable for rotary evaporators. Low water consumption.
For RV 05, RV 06, RV 10 basic, digital.

Ident. No.
2163500

VC 2.4 Pump control

The pump control is required when using electrical vacuum pumps, in conjuction with the vacuum controller VC 2. The pump is disconnected from the mains and then reconnected.
For RV 05, RV 06, RV 10 basic, digital.
Magnetic solenoid valve and power pack included with delivery.

Advantage over VC 1.3:
Due to the interruption of the pumps current lead, noise levels and energy costs are reduced.

Ident. No.

2439100	100 – 240 V 50/60 Hz

Technical data	
Pumping speed 50/60 Hz	1,2 m³ / h
(DIN 28432 at speed of 1350 rpm)	20 l / min
Ultimate vacuum	< 2,0 mbar
Operating pressure	1 bar
Connectors for tube	ID 8 mm
Permissible ambient temperature	+10...+40 °C
Voltage	90 - 240 V
Motor protection	IP 20
Power	830 W
Frequency	50 - 60 Hz
Weight	9 kg
Dimensions (W x D x H)	250 x 260 x 435 mm
Ports	RS 232 / SUB-D 9-pole

LVS 105 T 10-ef

- Compact, dry-running, chemical resistant pump systems, the ideal solution for many applications in chemical laboratories and research
- Fully automatic pump system with built-in solvent library
- Graphic display
- Close to 100% solvent recovery
- User-friendly operation
- Optimal stability
- Quick and easy maintenance
- Equipped with a speed regulated vacuum controller and a chemical resistant diaphragm pump. The pumping speed can be precisely controlled, e.g. for gentle distillations

Ident. No.
4067800

Technical data	
Pumping speed 50/60 Hz	0,8 m³ / h
(DIN 28432 at speed of 1350 rpm)	13 l / min
Ultimate vacuum	< 2,0 mbar
Operating pressure	1 bar
Connectors for tube	ID 8 mm
Permissible ambient temperature	+10...+40 °C
Voltage	115/230 V
Motor protection	IP 42
Power	68 W
Frequency	50-60 Hz
Weight	7,5 kg
Dimensions (W x D x H)	235 x 145 x 327 mm

MPC 105 T

- For dry, oil-free applications in the low vacuum range
- Compact and space saving design
- Quiet running and long lifetime
- Easy to service and low operating costs
- Chemically resistant diaphragm pumps (MPC) are resistant to aggressive solvents and acidic vapors - diaphragms and gas contacting parts consist of PTFE and PTFE compounds and the pumping and connection heads are carbon fiber reinforced with electrical conductibility

Ident. No.
4067800

Technical data	
Power input	14 W
Control range	1 – 1.200 mbar
Setting accuracy	1 mbar
Display	digital (LED)
Dimensions (W x D x H)	150 x 57 x 85 mm
Weight	1,0 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 50

VC 2 IKAVAC® Vacuum controller

Used to create a controlled partial vacuum in laboratory applications. Typical tasks are the evacuation of desiccators, vacuum apparatus, etc. Solvent recovery rates of up to 99 % are possible if rotary evaporators are used.
For RV 05, RV 06, RV 10 basic, digital.
- Microprocessor-controlled
- Minimum solvent loss
- Considerable reductions in water costs
- Integrated air release valve
- Easy operation
- Space-saving stand-supported instrument
- Automatic setpoint correction
- Clearly organized membrane keyboard

Accessories (page):
VC 1.1 Water jet pump (124)

Ident. No.

2300000	230 V 50/60 Hz
2300001	115 V 50/60 Hz

Laboratory reactors

Anchor stirrer

With PEEK scrapers or with flow borings, for all laboratory reactors.

Page 132

Flow breaker

Page 132

LR-2.ST Package 2

EUROSTAR power control-visc P7
Overhead stirrer, **page 41**
Ident. No. 2850700

LR 2000.11
Anchor stirrer with flow borings, **page 132**
Ident. No. 2509500

LR 2000.1
Double-walled reactor vessel, **page 132**
Ident. No. 2508300

LR-2.ST
Stand system

LR-2.SI
Safety stop

Laboratory reactor system LR-2.ST

The system LR-2.ST is a modularly expandable laboratory reactor, designed and planned for reproducing and optimizing chemical reaction processes as well as mixing, dispersing and homogenization processes at laboratory scales.

Some examples for these processes are:
- Manufacturing creams, lotions, emulsions, and liposome preparations in the pharmaceutical and cosmetic sector
- Mixing of solids such as calcium carbonate,talc, titanium oxide, etc. into liquid polymers
- Mixing of additives and solid polymer compounds into mineral oils
- Grinding and disintegrating of solids and fibers in liquids and polymers

The cost efficient LR-2.ST laboratory reactors is available for vacuum applications.

labworldsoft®

The system can be adapted individually to a wide range of different applications and specific requirements. IKA® laboratory devices, e.g. temperature measuring instruments, laboratory stirrers and dispersing instruments, pumps and thermostats can be combined and controlled via PC using labworldsoft®.

The IKA® laboratory reactors features among others are:
- Modularly expandable to accommodate interchangeable instruments for various applications (3 x NS 29 and 2 x NS 14 groand joints)
- Single- and double-walled jacketed 2 liter vessels available made of borosilicate glass, with or without bottom discharge valve
- Sealing materials (FFPM) resist solvents and temperatures for applications up to 230 °C

Technical data	
Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 digital)	800 ml
Max. volume	2.000 ml
Max. temperature Kalrez	230 °C
Attainable vacuum	25 mbar
Max. viscosity (EUROSTAR power control-visc P7)	150.000 mPas
Speed range (EUROSTAR power control-visc P7)	8 – 290 rpm
Height of telescopic stand	620 – 1.010 mm
Dimensions (W x D x H)	460 x 430 x 1.240 mm
Materials in contact with medium	stainl. steel (AISI 316L) FFPM borosilicate glass 3.3

LR-2.ST Packages

Package 1

LR-2.ST
Basic package with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer with flow borings
- LR 2.1 Single walled reactor vessel

Accessory (page):
HBR 4 digital Heating bath (99)

Ident. No.	
9008400	230 V 50/60 Hz
9008401	115 V 50/60 Hz

Package 2

LR-2.ST
Basic package with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer with flow borings
- LR 2000.1 Double-walled reactor vessel with quick-action connectors

Safety accessory (page):
LR-2.SP Splinter protection (133)

Ident. No.	
9008500	230 V 50/60 Hz
9008501	115 V 50/60 Hz

Package 3

LR-2.ST
Basic package with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer with flow borings
- LR 2000.2 Double-walled reactor vessel with quick-action connectors and bottom discharge valve

Safety accessory (page):
LR-2.SP Splinter protection (133)

Ident. No.	
9008600	230 V 50/60 Hz
9008601	115 V 50/60 Hz

Configuration possibilities

Basic package (page 130 – 132)

LR-2.ST Laboratory reactor system
consisting of:
- LR-2.ST Stand system
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer

Ident. No. 8016500

Reactor vessels (page 132) and accessories (chapter Heating / Tempering)

LR 2000.1 Double-walled reactor vessel borosilicate glass Ident. No. 2508300	**LR 2000.2** Double-walled reactor vessel with bottom discharge valve, borosilicate glass Ident. No. 2509600	**LR 2.1** Single-walled reactor vessel, borosilicate glass Ident. No. 3070000
LT 5.24 Hose adapter (2 pieces required) Ident. No. 2578100	**LT 5.24** Hose adapter (2 pieces required) Ident. No. 2578100	**HBR 4 digital** Heating bath Ident. No. 2602300
LT 5.20 Hoses Ident. No. 2606700	**LT 5.20** Hoses Ident. No. 2606700	
CC3-308B vpc Circulation thermostat Ident. No. 3658800	**CC3-308B vpc** Circulation thermostat Ident. No. 3658800	

Add-on units

DTM 12 IKATRON® Digital temperature measuring instr., p. 123, Ident. No. 3113200	**T 25 digital ULTRA-TURRAX®** Disperser, p. 74 Ident. No. 3565000	**LVS 105 T 10-ef** Vacuum pump with integrated controller, p. 125 Ident. No. 4067800

Software (page 138 – 145)

labworldsoft®
PC software
Ident. No. 2970000

Accessories (page 132)

LR 2000.10 Anchor stirrer with PEEK scraper Ident. No. 2508400	**LR 2000.11** Anchor stirrer with flow borings Ident. No. 2509500	**LR 2000.20** Flow breaker Ident. No. 2508500

Necessary components

Optional components

Ident. No.
2508400

LR 2000.10 Anchor stirrer

With PEEK scrapers, for all laboratory reactors.

General data	
Material	stainl. steel (AISI 316L), PEEK

Ident. No.
2509500

LR 2000.11 Anchor stirrer

With flow borings, for all laboratory reactors.

General data	
Material	stainl. steel (AISI 316L)

Ident. No.
2508500

LR 2000.20 Flow breaker

For LR-2.ST.

General data	
Material	stainl. steel (AISI 316L)
Installation length	180 mm

Ident. No.
3070000 LR 2.1

LR 2.1 Reactor vessel

Single-walled, for LR-2.ST.

General data	
Useful volume	2.000 ml
Material	borosilicate glass 3.3
Max. temperature	230 °C

Ident. No.
2508300 LR 2000.1

LR 2000.1 Reactor vessel

Double-walled, with quick-action connectors, for LR-2.ST.

Accessories (page):
LT 5.24 Hose adapter (2 pieces required) (101),
LT 5.20 Hose (101)

General data	
Useful volume	2.000 ml
Material	borosilicate glass 3.3
Max. temperature	230 °C

Ident. No.
2509600 LR 2000.2

LR 2000.2 Reactor vessel

Double-walled, with quick-action connectors and bottom discharge valve, for LR-2.ST.

Accessories (page):
LT 5.24 Hose adapter (2 pieces required) (101),
LT 5.20 Hose (101)

General data	
Useful volume	2.000 ml
Material	borosilicate glass 3.3
Max. temperature	230 °C

General data	
Material of seal	FFPM

LR 2000.40 Shaft receptacle

To install the dispersing elements S 25 KV (page 79).

Ident. No.
2509200

General data	
Material of seal	FFPM

LR 2000.60 Sensor receptacle

To install the temperature sensors PT 100.25 (page 124) and PT 100.5 (page 101).

Ident. No.
2509300

LR 2000.52 Tool set (without fig.)

Spare. Included in the packages of the laboratory reactors.

Ident. No.
2508800

LR-2.SP Splinter protection (without fig.)

Prevents potential injuries caused by broken glass and burns as a result of accidentally touching the hot reactor vessel.

Ident. No.
3326400

Data processing: software, cable and adapters

Software (page 138 – 145)

labworldsoft®
PC software
Ident. No. 2970000

Instruments with interface

EUROSTAR power control-visc P7
Overhead stirrer, p. 41
Ident. No. 2850700

DTM 12 IKATRON®
Digital temperature measuring instrument, p. 123
Ident. No. 3113200

CC3-308B vpc
Circulation thermostat, p. 99
Ident. No. 3658800

Cable and plug connectors (page 143)

PC 1.4
Adapter
15 – 9 pin
Ident. No. 2755900

PC 2.1
Cable
9 pin
Ident. No. 2700700

PC 1.5
Cable
15 – 25 pin
Ident. No. 2756000

DTM 12.10
Cable,
Special plug 9 pin
Ident. No. 3127800

PC 2.1
Cable
9 pin
Ident. No. 2700700

PC 2.2
Adapter
9 – 25 pin
Ident. No. 2753200

PC 1.2
Adapter
9 – 25 pin
Ident. No. 2616800

Interface / PC (page 143)

PC 4.1
RS 232 Server with 9 pin interface and RJ 45 plug for network connection
Ident. No. 3192000

PC
with 9 pin interface

PC
with 25 pin interface

PC
with 25 pin interface or multi-serial card PCI 8.2
Ident. No. 8017500

PC 4.1
RS 232 Server with 9 pin interface and RJ 45 plug for network connection
Ident. No. 3192000

9 pin interface
9 pin interface, server with network connection
25 pin interface

Dispersing / Homogenizing

T 25 digital ULTRA-TURRAX®
Disperser, p. 74
Ident. No. 3565000

S 25 KV – 18 G
Dispersing element, p. 79, Ident. No. 2348000

S 25 KV – 25 G
Dispersing element, p. 79, Ident. No. 2466900

S 25 KV – 25 F
Dispersing element, p. 79, Ident. No. 2404000

LR-2000.40
Shaft receptacle, p. 133
Ident. No. 2509200

Temperature control resp. temperature measurement

CC3-308B vpc
Circulation thermostat, p. 99
Ident. No. 3658800

PT 100.5
Temperature sensor, p. 101
Ident. No. 2506800

LR-2000.60
Sensor receptacle, p. 133
Ident. No. 2509300

DTM 12 IKATRON®
Digital temperature measuring instr., p. 123, Ident. No. 3113200

PT 100.25
Temperature sensor, p. 124
Ident. No. 3122300

LR-2000.60
Sensor receptacle, p. 133
Ident. No. 2509300

Software

labworldsoft®

Eases life in the laboratory. With this laboratory software, you can network up to 64 laboratory devices simultaneously via one PC. That makes the automation of your laboratory experiments and processes possible.
Page 138 / 139

labworldsoft®

With this laboratory software, you can network up to 64 laboratory devices simultaneously via one PC.

labworldsoft®

With this laboratory software, you can network up to 64 laboratory devices simultaneously via one PC. That makes the automation of your laboratory experiments and processes possible.
Measurements and processes may be run independently from one another. This helps to avoid long waits and you increase your productivity. The communication between PC and laboratory device is performed via the serial interface RS 232 (COM1 or COM2).
With the help of plug-in cards and Ethernet RS 232 servers, up to 64 laboratory devices can be used simultaneously via one PC. All laboratory instruments can be controlled independently from each other and the measured values (speed, temperature, torque, pH, etc.) can be documented separately.

Hard- and software requirements:
Pentium 90 with at least 16 MB RAM, and a mouse.
VGA display: monochrome with at least 16 levels of grey or color. Windows 95/98/2000/NT/ME/XP/Vista.

Accessories (page):
PCI 8.2 Plug-in card (143), PC 4.1 RS 232 Server (143)

Networking, monitoring
With labworldsoft® you can network up to 64 laboratory instruments simultaneously via one PC. From sample preparation to synthesis, all steps of research and development in the lab can be automated using labworldsoft®.

Controlling
Desired temperature and speed sequences can be precisely controlled by means of freely selectable ramp functions. The ramp functions can be graphically generated, stored, and then loaded again at any time.

Recording, evaluating
labworldsoft® enables a fast and easy recording of many physical parameters which are required in the laboratory, such as pH, conductivity, temperature, torque, weight, pump rates etc.

Exporting
Data recorded using labworldsoft® can be directly written to an Excel sheet or exported to any standard application at a later stage.

Storing / reproducing measured data
Do your test arrangements repeat themselves? With labworldsoft® all test arrangements can be stored. The stored data is available to reproduce the test, with one mouse click. The reproducibility of tests is warranted within the scope of ISO 9000 and within GLP.

Documentation
For documentation purposes, all measuring results as well as the measurement flowcharts can be printed or plotted according to GLP, ISO and QA.

For more information and a download of your free trial version please visit:
www.labworldsoft.com

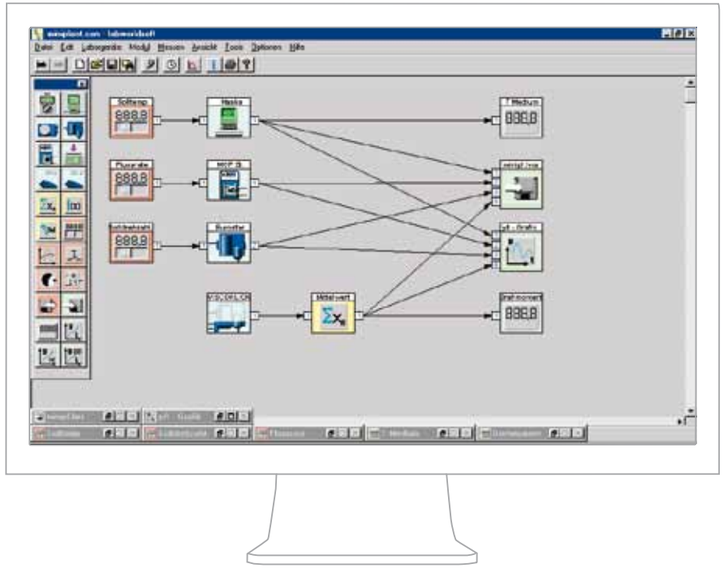
Ident. No.
2970000

labworldsoft®

Manufactures with interface devices compatible to labworldsoft®:

- Ahlborn
- Ehret
- Eyela
- Fritsch
- Gerhardt
- GFL
- Harvard
- Heidolph
- Hermle
- Huber
- IKA®
- Ilmvac / Gardner Denver
- Infors
- Ismatec
- Julabo
- Kern
- KNF Flodos
- KNF Neuberger
- Knick
- Lauda
- Martin Christ
- Metrohm
- Mettler-Toledo
- MLT
- PM Tamson Instruments
- PolyScience
- Sartorius Stedim Biotech
- Scaltec
- Sigma
- Telab
- Thermo Haake
- Thermo Neslab
- Troemner
- Vaccubrand

Interfaces to additional devices from other manufacturers will soon be available.
Please ask for a current reference list.



Presentation of results
The measuring results are directly displayed online or offline graphically with a selectable coordination system or numerically. Several numerical displays as well as four-channel displays are possible.

Storing a measuring configuration
The complete measuring configuration with all current parameters and the position of all opened windows can be stored. As a result, preconfigured flowcharts which are immediately ready for operation can be provided for the widest variety of tasks.
Fig. 1: Configuration example of a laboratory reactor with peripherals in operation. The speed of an overhead stirrer, the target temperature of a thermostat and a pump are controlled. Torque and temperature of the medium are recorded and are represented in a y/t-graphic (fig. 2).

Figure 1: Configuration of a laboratory reactor with peripherals.

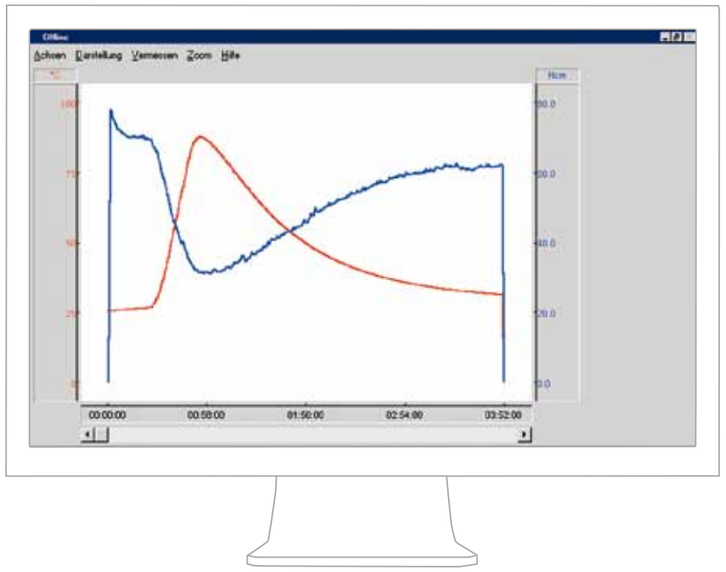


Figure 2: y/t-graphic: Shows torque and temperature changes in medium.

Configuration example – Recording rheological data during the stirring process

labworldsoft®
Laboratory software for
control and data collection, **page 139**
Ident. No. 2970000

EUROSTAR power control-visc
Stirrer, **page 39**
Ident. No. 2600025

R 270
Boss head clamp, **page 122**
Ident. No. 2657800

R 1375
Paddle stirrer, **page 44**
Ident. No. 0757700

RH 5
Strap clamp for securing the vessel,
incl. boss head clamp R 270, **page 122**
Ident. No. 3159000

R 2723
Telescopic stand, **page 121**
Ident. No. 1412100

Configuration example – Controlling and recording temperature data during magnetic stirring with heating

labworldsoft®
Laboratory software for control and data collection, **page 139**
Ident. No. 2970000

H 44
Boss head clamp, **page 31**
Ident. No. 2437700

H 38
Holding rod for casing of the PT 100.50 sensor, **page 31**
Ident. No. 3547700

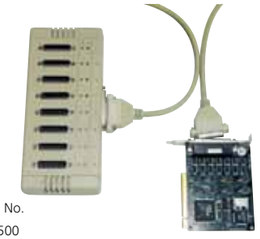
PT 100.50
Temperature sensor for RET control / t, **page 27**
Ident. No. 2601900

H 16 V
Support rod for attachment to RET control / t, **page 31**
Ident. No. 1545100

RET control / t IKAMAG®
Safety magnetic stirrer with RS 232 interface, **page 14,** incl. protective cover H 99, **page 33**
Ident. No. 3964000

PCI 8.2 Plug-in card

For mounting in the PC to connect up to 8 instruments simultaneously. Plug-in cards for up to 64 instruments available on request.



Ident. No. 8017500

PC 4.1 RS 232 Server

Up to 4 lab units can be controlled through the ethernet with the PC 4.1 RS 232 server. The server supports 4 RS 232 ports with a 10/100 mbps ethernet interface by TCP/IP. The server can be set-up through the ethernet and works as a transparent serial COM-Port without restrictions of platform and distance.

Server for connection of up to 64 instruments available on request.

Ident. No. 3192000

Cable and Adapter (without fig.)

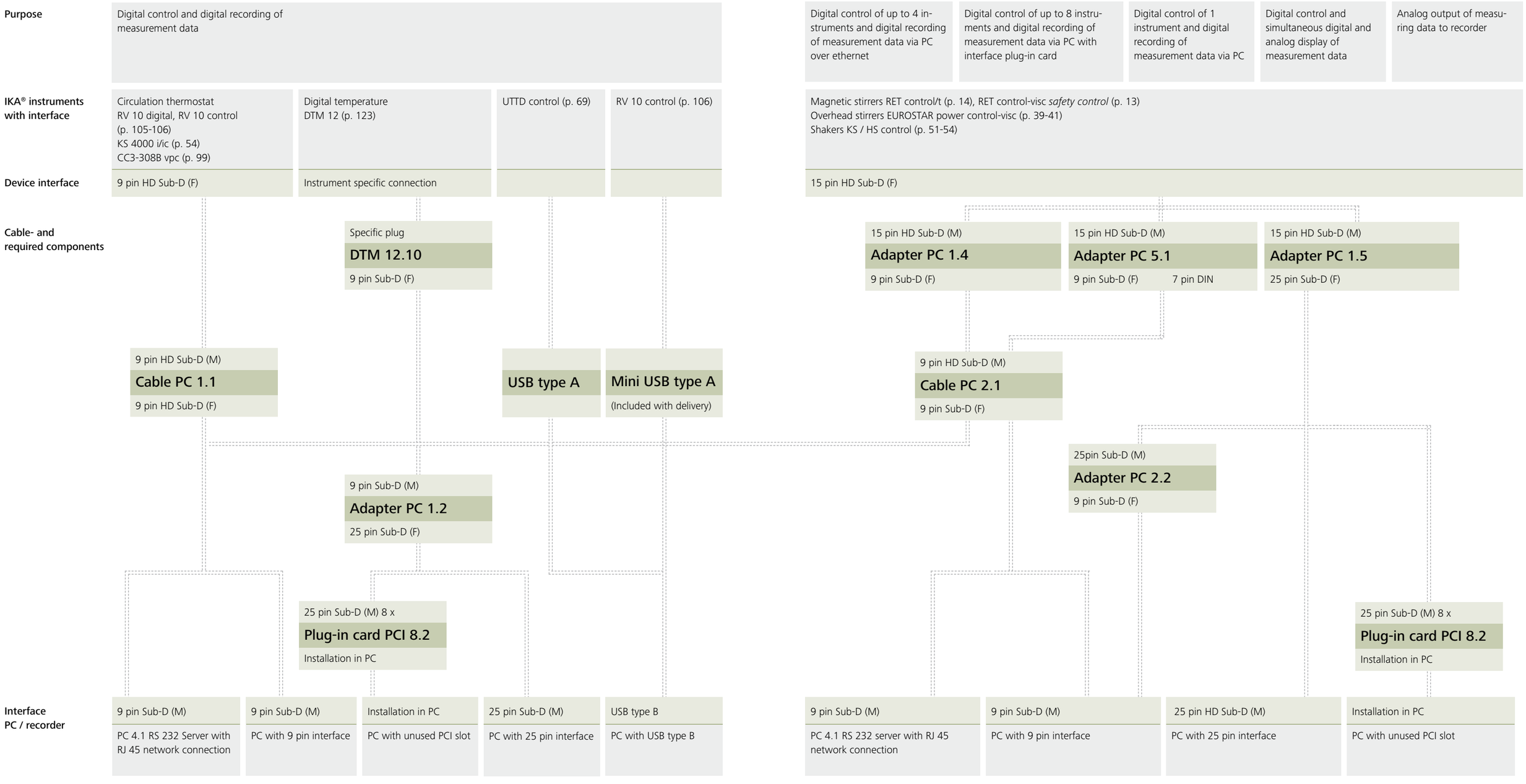
Cable	Length	Ident. No.
PC 1.1	3 m	2616700
PC 1.5	2,5 m	2756000
PC 2.1	5 m	2700700
PC 2.3	3 m	3036200
DTM 12.10	2,5 m	3127800
Adapter		
PC 1.2		2616800
PC 1.4		2755900
PC 2.2		2753200
PC 5.1		2621500

IKA® Software

Overview connection possibilities

IKA® Software

Overview connection possibilities



Analytical line

C 14

The disposable crucible makes handling much easier because there is no longer any need for a quartz or stainless steel crucible. Optimises sample combustion. No crucible to clean. Direct contact with ignition wire. No ignition thread required.
Page 159

IKA® Analytical line

Calorimeters

C 5000

The calorimeter offers three user-selected operating modes.

IKA® Analytical line

Calorimeter C 200

Technical data		
Input power max.		120 W
Rated voltage		24 V DC, 5 A
Fuse		1 x 2.5 AT
Max. On-time		continuous operation
Range of measurement		40.000 J
Measuring mode / Measuring time	isoperibol	up to 17 min
	dynamic	up to 8 min
	manuel (isoperibol)	up to 17 min
	time-controlled	up to 14 min
Reproducibility based on analysis of 1 g benzoic acid NBS 39i		0,1 % RSD
Operating oxygen pressure		30 bar
General data		
Dimensions (W x D x H)		400 x 400 x 400 mm
Weight		21 kg
Protection class		III
Interfaces		1 x serial (RS 232)
		1 x parallel (Centronics)
Ambient temperature		20 – 25 °C (constant)
Ambient humidity		80 %
Protection class according to DIN EN 60529		IP 21

C 200
C 200 halogen resistant

Compact low cost combustion calorimeter to determining calorific values of liquid and solid samples. Suitable for teaching and training (e.g. technical schools, universities) and for industrial laboratories with less need for analyses.

- In the manual mode (learning mode) the user triggers ignition and the end of measurement. The temperature changes are recorded at minute intervals. All calculations are manual.
- In the other operating modes ignition and calculation of calorific values are automatic. The calorific value is shown on the display. Acid correction of the calorific value and calculation of the heat values are performed manually.
- The C 5010 decomposition vessel can be equipped to use C 14 disposable crucible.
- Special halogen resistant vessel for quantitative decomposition of halogens and sulfur.
- The C 200 can also be operated with the "CalWin C 5040" calorimeter software. This enables control of up to eight C 200 measurement cells from a PC.

Functions:

- Working methods: isoperibol, manual, dynamic, time-controlled
- Validation according to DIN 51900, ISO 1928, ASTM D240, ASTM D4809, ASTM D5865, ASTM D1989, ASTM D5468, ASTM E711, GB/T 213-2008, EN 14582
- GOST-certified
- Automatic sample ignition
- Compact modular design
- Operator and maintenance friendly
- Complies with all global voltages, from 100 - 240 V
- Powered with a low operating voltage 24 V DC

C 200
Consisting of:
Basic device C 200 incl. power pack and ignition adapter
C 5010 Decompostion vessel standard
C 248 Oxygen station

C 200 halogen resistant
Consisting of:
Basic device C 200 incl. power pack and ignition adapter
C 5012 Decomposition vessel halogen resistant
C 200.2 Conversion kit
C 248 Oxygen station

	Ident. No.	
C 200	8802500	100 – 240 V 60 Hz
C 200 halogen resistant	8803700	100 – 240 V 50/60 Hz

C 2000 basic, C 2000 control, C 2000 basic high pressure and C 2000 control high pressure

The C 2000 basic and C 2000 control calorimeters are the tried-and-tested systems from IKA® for determining gross calorific values of liquid and solid samples.
A high level of automation with extremely simple handling characterizes these instruments. In addition to the isoperibolic measurement procedure (static jacket), a dynamic (reduced-time) working method is also available. Halogen resistant decomposition vessels of the C 5012 series for quantitative decomposition of sulfur and halogens in parallel to determining gross calorific values are available.
To provide the calorimeters with cooling water, they need to be connected to a thermostat. e.g. IKA® KV 600 (page 155) or a firmly installed water supply. The C 2000 basic is equipped with a very convenient console to operate the unit. The C 2000 control is delivered with the proven C 5040 CalWin calorimeter software in order to control the system via PC. Network connection and special configuration for data exchange with LIMS can be implemented at any time.

Functions:
- Automatic water handling system includes tempering, filling and emptying of calorimeter inner vessel
- Automatic oxygen filling of decomposition vessel
- Automatic decomposition vessel identification
- Automatic sample ignition
- Validation according to DIN 51900, ISO 1928, ASTM D240, ASTM D4809, ASTM D5865, ASTM D1989, ASTM D5468, ASTM E711, GB/T 213-2008, EN 14582
- GOST-certified
- Operating methods: isoperibol, measurement time: approx. 22 min dynamic, measurement time: approx. 7 min
- Compact, integrated modular design for convenient operation
- Cooling water supply via thermostat, e.g. KV 600 (page 155) or firmly installed water supply (C 25 pressure regulating valve recommended, page 156)
- Interface connections for each of the following: scale, printer, monitor and sample rack C 5020
- User-friendly software C 5040 CalWin for controlling the calorimeter and administrating measured data (page 155)
- LIMS integration is possible
- Special halogen resistant vessel for quantitative decomposition of halogens and sulfur
- The decomposition vessel can be changed to use disposable crucible C 14 (page 159)
- Up to 8 calorimeters can be controlled by a single PC, using a multi-serial plug-in card

	Ident. No.	
Version 1	8801800	230 V 50/60 Hz
	8801801	115 V 50/60 Hz
Version 2	8801900	230 V 50/60 Hz
	8801901	115 V 50/60 Hz
high pressure	8802300	230 V 50/60 Hz
	8802301	115 V 50/60 Hz

C 2000 basic Version 1

Consisting of:
C 2000 basic
C 5010 Decomposition vessel, standard

C 2000 basic Version 2

Consisting of:
C 2000 basic
C 5012 Decomposition vessel, halogen resistant

C 2000 basic high pressure

Consisting of:
C 2000 basic
C 62 Decomposition vessel, high pressure
C 60 Conversion set

Technical data		
Input power max.		1,8 kW
Power ON-time		continuous operation
Range of measurement		40.000 J
Reproducibility		
based on analysis of 1 g	isoperibol	0,05 % RSD
benzoic acid NBS 39i	dynamic	0,1 % RSD
Working modes / Start temperature	isoperibol	25 °C
	isoperibol	30 °C
	dynamic	25 °C
	dynamic	30 °C
Measurement time	isoperibol	up to 22 min
	dynamic	up to 7 min
Operating oxygen pressure		30 bar
Cooling medium		tap water
Min. flow rate		60 l/h
Operated with KV 600		
Pressure		0,3 bar
Temperature (depending on working mode)		18 / 25 °C
Operated at firmly installed water connection		
Pressure after C 25 pressure regulating valve		1 – 1,5 bar
Temperature (depending on working mode)		12 – 28 °C
Max. pressure at the tap		6 bar
General Data		
Dimensions (W x D x H)		440 x 450 x 500 mm
Weight		35 kg
Ambient temperature		20 – 25 °C (constant)
Ambient humidity		80 %
Protection class according to DIN EN 60529		IP 21

C 2000 control Version 1

Consisting of:
C 2000 control
C 5010 Decomposition vessel, standard
C 5040 CalWin, calorimeter software

C 2000 control Version 2

Consisting of:
C 2000 control
C 5012 Decomposition vessel, halogen resistant
C 5040 CalWin, calorimeter software
C 2000 control high pressure

C 2000 control high pressure

Consisting of:
C 2000 control
C 62 Decomposition vessel, high pressure
C 60 Conversion set
C 5040 CalWin, calorimeter software

A PC is required to operate the C 2000 control.

C 2000 Extension device

Consisting of:
C 2000 control (without calorimeter software, without decomposition vessel),
C 5041.10 Connection cable
(for 8 x interface box)

	Ident. No.	
Version 1	8802000	230 V 50/60 Hz
	8802001	115 V 50/60 Hz
Version 2	8802100	230 V 50/60 Hz
	8802101	115 V 50/60 Hz
high pressure	8802400	230 V 50/60 Hz
	8802401	115 V 50/60 Hz

Extension Device

Ident. No.	
8802200	230 V 50/60 Hz
8802201	115 V 50/60 Hz

C 5000 control

The IKA® calorimeter C 5000 is the only calorimeter in the world that offers 3 working methods. Thus, it is possible to perform determinations of gross calorific values of liquid and solid samples in adiabatic (approx. 14 - 18 min), isoperibolic (approx. 22 min) and dynamic (reduced time: approx. 10 min) mode.

A high level of automation in addition to an extensive range of accessories leaves nothing more to wish for.

Functions:
- Automatic water handling system includes tempering, filling and emptying of calorimeter inner vessel
- Automatic oxygen filling and degassing of the decomposition vessel
- Validation according to DIN 51900, ISO 1928, ASTM D240, ASTM D4809, ASTM D5865, ASTM D1989, ASTM D5468, ASTM E711, GB/T 213-2008, EN 14582
- GOST-certified
- Interface connections for each of the following: scale, printer, monitor and sample rack C 5020
- User-friendly software C 5040 CalWin for controlling the calorimeter and administrating measured data (page 155)
- LIMS integration is possible
- Special halogen resistant vessel for quantitative decomposition of halogens and sulfur (accessory)
- The decomposition vessel can be changed over to use disposable crucible C 14 burns during measuring (page 159)

	Ident. No.	
Package 1/10	8803000	230 V 50/60 Hz
	8803001	115 V 50/60 Hz
Package 1/12	8803300	230 V 50/60 Hz
	8803301	115 V 50/60 Hz

C 5000 control Package 1/10

Consisting of:
C 5000 Controller
C 5003 Measurement cell
C 5010 Decomposition vessel, standard
C 5001 Cooling system

C 5000 control Package 1/12

Consisting of:
C 5000 Controller
C 5003 Measurement cell
C 5012 Decomposition vessel, halogen resistant
C 5001 Cooling system

Technical data		
Input power max. (with one measuring cell)		1,3 kW
Power ON-time		continuous operation
Range of measurement		40.000 J
Reproducibility		adiabatic / isoperibol
based on analysis of 1 g benzoic acid NBS 39i	dynamic	0,05 % RSD 0,1 % RSD
Working modes		adiabatic isoperibol dynamic
Measurement time	adiabatic isoperibol dynamic	up to 15 min up to 22 min up to 10 min
Operating oxygen pressure		30 bar
Cooling medium (C 5004)		tap water
Flow rate		18 – 42 l/h
Operated (C 5004) with KV 600		
Temperature		15 – 20 °C
Operated at firmly installed water connection		
Min. / max. temperature		10 / 19 °C
Max. pressure at the tap		9 bar
General Data		
Dimensions (W x D x H)		
C 5000 control Package 1		740 x 380 x 400 mm
C 5000 control Package 2		560 x 380 x 400 mm
Weight Package 1		61 kg
Ambient temperature		20 – 25 °C (constant)
Ambient humidity		80 %
Protection class according to DIN EN 60529		IP 21

C 5000 control Package 2/10

Cooling water supply via thermostat KV 600 (page 155) or firmly installed water connection.

Consisting of:
C 5000 Controller
C 5003 Measurement cell
C 5010 Decomposition vessel, standard
C 5004 Heat exchanger

C 5000 control Package 2/12

Cooling water supply via thermostat KV 600 (page 155) or firmly installed water connection.

Consisting of:
C 5000 Controller
C 5003 Measurement cell
C 5012 Decomposition vessel, halogen resistant
C 5004 Heat exchanger

	Ident. No.	
Package 2/10	8803200	230 V 50/60 Hz
	8803201	115 V 50/60 Hz
Package 2/10	8803400	230 V 50/60 Hz
	8803401	115 V 50/60 Hz

C 7000

The C 7000 is the first IKA® calorimeter with a completely dry system for measuring the gross calorific value of solid and liquid samples. The temperature is measured directly in the decomposition system. This results in measurement times in the range of 3 to 7 minutes (depending on the sample). The system can manage up to 8 different decomposition vessels using a code ring scheme.

Functions:
- High sample frequency
- Precise and reproducible determination of gross calorific values according to ISO 1928
- Reduction of routine task through automatic application flow
- Automatic decomposition vessel identification
- Interface connections for scale, printer and PC
- User-friendly software C 5040 CalWin for controlling the calorimeter and administration of measuring data (page 155)
- Special halogen resistant vessel for quantitative decomposition of halogens and sulfur
- The decomposition vessel can be changed to use disposable crucibles C 14 (page 159)

Ident. No.	
8800900	230 V 50/60 Hz
8800901	115 V 50/60 Hz

C 7000 basic equipment set 1

Consisting of:
C 7000 Measurement cell
C 7010 Decomposition vessel, standard
C 7002 Cooling system
C 48 Oxygen station

Ident. No.	
8801400	230 V 50/60 Hz
8801401	115 V 50/60 Hz

C 7000 basic equipment set 2

Consisting of:
C 7000 Measurement cell
C 7012 Decomposition vessel, halogen resistant
C 7002 Cooling system
C 48 Oxygen station

Technical data	
Input power max.	0,1 kW
Power ON-time	continuous operation
Range of measurement	30.000 J
Reproducibility based on analysis of 1 g benzoic acid NBS 39i NBS 39i	0,2 % RSD
Working modes	patented double dry
Measurement time	3 – 7 min
Operating oxygen pressure	30 bar
Cooling medium (C 7002)	tap water
Flow rate (C 7002)	2 – 3 l/h
Temperature	12 – 30 °C (cooling water)
Operated at firmly installed water connection	
Max. pressure at the tap	9 bar
General Data	
Dimensions (W x D x H)	310 x 490 x 395 mm
Weight	43 kg
Ambient temperature	18 – 30 °C (constant)
Ambient humidity	80 %
Protection class according to DIN EN 60529	IP 21

C 5040 CalWin

CalWin is a control and evaluation software for all IKA® calorimeters (C 2000, C 4000, C 5000,C 7000).
PC operating system requirements:
Windows 95 / 98 / ME / NT / 2000 or XP, at least one free serial interface and 50 MB of available disc space.

- Control, monitor and view operational procedures
- Print and save measurement protocols
- Identify and record samples
- Administration of sample racks
- Flexible administration and evaluation of calibrations
- Flexible aministration and grouping of measurements
- Printing and saving calibration and result protocols suitable for certification
- Library functions
- Data transmission via RS232 interface to Microsoft® EXCEL and Microsoft® Access applications
- Preprocessed work sheets for Microsoft® EXCEL (configurable by user)

Ident. No.
3045000

Technical data	
Diameter support rod	10 mm
Dimension (W x D)	242 x 355 mm
Height	370 mm
Max.load	0,7 kg
Stroke	–

C 26 Prep stand

Enables a quick and more efficient sample preparation process when loading the C 5010 and C 5012 decomposition vessels. The lid of the decomposition vessel containing the electrodes and crucible holder is fastened with a clamp. This allows the user the freedom to use both hands while feeding the cotton thread through the electrode and into the crucible.

Ident. No.
8804000

KV 600 digital

KV 600 digital is an active condenser with air-conditioned refrigerator featuring a user-friendly microprocessor controller with large temperature display. The temperature consistency is 1 K. The heat rejection rate and flow rate of the KV 600 are customized to the IKA® Calorimeter C 2000, C 5000 control pack 2, and C 7000.

Technical data	
Temperature range	-20 – 40 °C
Temperature setting	digital
Temperature display	digital
Temperature sensor internal	PT 100
Resolution of display	0,1 K
Temperature stability at -10 °C	1 K
Refrigerating capacity at 15 °C	0,3 kW
at 0 °C	0,2 kW
at -10 °C	0,14 kW
at -20 °C	0,07 kW
Refrigerant	R134a
Max. delivery capacity of pressure pump	12 l /min
Delivery pressure (head)	max. 0,2 bar
Delivery suction pressure (head)	max. 0,1 bar
Pump connection	M 16 x 1
Pump connection for hose	NW8/12
Bath volume	4 l
General Data	
Dimensions (W x D x H)	225 x 360 x 380 mm
Power supply requirement	208 – 240 V 1 50/60 Hz
Power input	0,77 kW
Fuse	16 A
Min. ambient temperature	5 °C
Max. ambient temperature	32 °C

Ident. No.	
3410500	230 V 50/60 Hz
3410501	115 V 50/60 Hz

Calorimeters accessories

for C 200

	Ident. No.
C 5010 Decomposition vessel, standard	7114000
C 5012 Decomposition vessel, halogen resistant	7215000
C 5010.4 Attachment for combustible crucible C 14 (for C 5010 / C 5012)	3016900
C 5010.5 Crucible holder, big (for C 5010 / C 5012)	3055900
C 5030 Venting station (for C 5010 / C 5012) with gas wash bottle acc. to DIN 12596 (for gas absorption)	7198000
C 5040 CalWin	3045000
C 5041.10 Connection cable (PC / Calorimeters)	3036000
C 21 Pelleting press	1605300
C 26 Prep stand	8804000
C 29 Pressure gauge, oxygen	0750200
C 248 Oxygen station	3520000
C 200.1 Measuring cup 2.000 ml	3548900
C 200.2 Conversion kit for C 5012	4028800

for C 2000

	Ident. No.
C 5010 Decomposition vessel, standard	7114000
C 5012 Decomposition vessel, halogen resistant	7215000
C 62 Decomposition vessel, “high pressure”	3265000
C 60 Conversion set for C 62	3187400
C 5010.4 Attachment for combustible crucible C 14 (for C 5010 / C 5012)	3016900
C 5010.5 Crucible holder, big (for C 5010 / C 5012)	3055900
C 5030 Venting station (for C 5010 / C 5012) with gas wash bottle acc. to DIN 12596 (for gas absorption)	7198000
C 5020 Sample rack	7145000
KV 600 Cooling water supply (230 V)	3410500
KV 600 Cooling water supply (115 V)	3410501
C 25 Pressure regulating valve to operate with firmly installed water connection	3197200
C 5040 CalWin	3045000
C 5041.10 Connection cable (PC / Calorimeters)	3036000
C 21 Pelleting press	1605300
C 26 Prep stand	8804000
C 29 Pressure gauge, oxygen	0750200
C 58 Set of wearing parts (for C 2000 high pressure)	3296300
C 59 Combustion crucibles for C 62 (for C 2000 high pressure)	3266000

for C 5000

	Ident. No.
C 5010 Decomposition vessel, standard	7114000
C 5012 Decomposition vessel, halogen resistant	7215000
C 5010.4 Attachment for combustible crucible C 14 (for C 5010 / C 5012)	3016900
C 5010.5 Crucible holder, big (for C 5010 / C 5012)	3055900
C 5030 Venting station (for C 5010 / C 5012) with gas wash bottle acc. to DIN 12596 (for gas absorption)	7198000
C 5020 Sample rack	7145000
KV 600 Cooling water supply (230 V)	3410500
KV 600 Cooling water supply (115 V)	3410501
C 5040 CalWin	3045000
C 5041.10 Connection cable (PC / Calorimeters)	3036000
C 21 Pelleting press	1605300
C 26 Prep stand	8804000
C 29 Pressure gauge, oxygen	0750200

Calorimeters accessories

for C 7000

	Ident. No.
C 7010 Decomposition vessel, standard	3015000
C 7012 Decomposition vessel, halogen resistant	3017000
C 7010.8 Venting handle (for C 7010 / C 7012)	7095000
C 7030 Venting station (for C 7010 / C 7012) with gas wash bottle acc. to DIN 12596 (for gas absorption)	3013300
C 5040 CalWin	3045000
C 5041.10 Connection cable (PC / Calorimeters)	3036000
C 7002 Cooling system (230 V)	7011000
C 7002 Cooling system (115 V)	7011001
KV 600 Cooling water supply (230 V)	3410500
KV 600 Cooling water supply (115 V)	3410501
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200
C 48 Oxygen station	1560000
C 5010.4 Attachment for combustible crucible C 14 (for C 5010 / C 5012)	3016900
C 5010.5 Crucible holder, big (for C 5010 / C 5012)	3055900

Consumables for all Calorimeters

	Ident. No.
C 5003.1 Aqua Pro stabilizing agent (20 ml)	7207700
C 710.4 Cotton thread, cut to length (500 pieces)	1483700
C 5010.3 Ignition wire, spare (5 pieces)	7122800
C 5012.3 Ignition wire, platinum (2 pieces)	2994900
C 4 Quartz dish	1695500
C 5 Set of VA combustion crucibles (25 pieces)	1749500
C 6 Quartz dish, big	0355100
C 710.2 Set of VA combustion crucibles, big (25 pieces)	1483500
C 9 Gelatine capsules (100 pieces)	0749900
C 10 Acetobutyrate capsules (100 pieces)	0750000
C 12 Combusion bags 40 x 35 mm (100 pieces)	2201400
C 12 A Combusion bags 70 x 40 mm (100 pieces)	2201500
C 14 Combustible crucible (100 pieces)	7224500
C 15 Paraffin strips (600 pieces)	3131100
C 16 Parafilm, 1.000 x 50 mm	3801100
C 17 Paraffin, liquid, 30 ml	3801200
C 43 Benzoic acid NIST 39i (30 g)	0750600
C 723 Benzoic acid, blister package (50 pieces)	3243000
C 723 Benzoic acid, blister package (450 pieces), big pack	3717400
AOD 1.11 Control standard for sulfur and chlorine (50 ml)	3044000
AOD 1.12 Control standard for fluorine and bromine (50 ml)	3080200
C 58 Set of wearing parts (for C 2000 high pressure)	3296300
C 59 Combustion crucibles for C 62 (for C 2000 high pressure)	3266000
C 08 Pure iron ignition wire (for C 2000 high pressure) (200 m coil)	0749600

Protective device AOD 1.3
As per Pressure Vessel Directive 97 / 23 / EC
(not included with delivery), **page 159**
Ident. No. 3308000

Oxygen filling station C 48
For filling decomposition vessel with oxygen,
30 bar, **page 159**
Ident. No. 1560000

Venting station C 7030
With DIN 12596 gas wash bottle, for gas absorption (not included with delivery), **page 159**
Ident. No. 3013300

Control standard AOD 1.11 (without fig.)
For sulfur and chlorine, **page 159**
Ident. No. 3044000

Decomposition vessel AOD 1.1
High-alloy, halogen-resistant stainless steel, **page 159**
Ident. No. 3303000

External ignition unit AOD 1.2
Ignition triggered by pressing the Ignite button
Cable length: 5 m, **page 159**
Ident. No. 3348000

AOD 1 Decomposition system

Consisting of:
AOD 1.1 Decomposition vessel
C 48 Oxygen station
AOD 1.2 External ignition unit
AOD 1.11 Control standard (50 ml)

Ident. No.
8801300

- Oxidative decomposition of solid and liquid organic samples under pressure in a closed system
- Quantitative decomposition of all halogens, sulfur, as well as volatile metals, e.g. As and Hg
- Absorption of the combustion products in an aqueous medium
- Catalytic support of the oxidation process with auto-regenerating catalytic inside walls of the decomposition vessel
- Pressure vessel of high-grade stainless steel
- Decomposition temperature up to 1.200 °C
- Max. operating pressure during decomposition 195 bar
- Decomposition time < 3 min
- The decomposition vessel can be changed to use disposable crucibles C 14 (page 156 / 157)
- Control standards for Cl, S, F and Br
- Introduction of the combustion gases into the absorption solution via venting station C 7030

Technical data	
Decomposition time	< 3 min
Core temperature	> 1.200 °C
Max. operating temperature	50 °C
Max. operating pressure	195 bar
Volumen of decomposition vessel	210 ml
Oxygen pressure	30 bar

Important information:
If protective device AOD 1.3 is not used, an AOD 1.13 remote ignition head is required.

The AOD principle is based on the bomb method as per DIN 51577, Part 1 of 1982. Other standards: DIN / EN 14582, „Characterisation of waste - Halogen and sulphur content“ and DIN 51727, Testing of solid fuels - Determination of chlorine content.

AOD 1.3 Protective device

For use with decomposition vessel AOD 1.1 operated in accordance with Pressure Vessel Directive 97/23/EC. If the unit is used improperly (e.g. use of unknown explosive substances or high energy overloads) or if the decomposition vessel is worn, bursting can not totally excluded. In this case the protective device protects the user from inquiry.

Ident. No.
3308000

C 7030 Venting station

The controls venting of the combustion gases after decomposition. Complete with DIN 12596 gas wash bottle. For use with decomposition vessels AOD 1.1, C 7010 and C 7012.

Ident. No
3013300

Decomposition system accessories

	Ident. No.
AOD 1.1 Decomposition vessel	3303000
AOD 1.2 External ignition unit	3348000
AOD 1.13 Remote ignition head (required where AOD 1.3 is not used)	3348100
AOD 1.3 Protective device	3308000
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200
C 48 Oxygen filling station	1560000
C 5010.4 Attachment for combustible crucible, C 14	3016900
C 7030 Venting station	3013300

Decomposition system consumables

	Ident. No.
C 4 Quartz dish	1695500
C 9 Gelatine capsules (100 pieces)	0749900
C 10 Acetobutyrate capsules (100 pieces)	0750000
C 12 Combustion bags 40 x 35 (100 pieces)	2201400
C 12 A Combustion bags 70 x 40 mm (100 pieces)	2201500
C 14 Combustible crucible (100 pieces)	7224500
C 15 Paraffin strips (600 pieces)	3131100
C 5012.3 Platinum ignition wire (2 pieces)	2994900
C 710.4 Cotton thread, cut to length (not suitable for trace range)	1483700
AOD 1.11 Control standard for sulfur and chlorine (50 ml)	3044000
AOD 1.12 Control standard for fluorine and bromine (50 ml)	3080200
C 723 Benzoic acid, blister package (Combustion aid) (50 pieces)	3243000
C 723 Benzoic acid, blister package (450 pieces), big pack	3717400

General

IKA® General

Questionnaire

IKA® - Werke GmbH & Co. KG
Janke & Kunkel - Str.10
79219 Staufen
Germany

Fax: +49 7633 831-98

Please send via a fax or mail in window envelope

Name _____

Company _____

Department _____

Street _____

City / State / Zip _____

Country _____

Phone _____

E-Mail _____

Type of processing

☐ Mixing ☐ Dissolving ☐ Emulsifying
☐ Homogenizing ☐ Suspending ☐ Wet crushing ☐ _____

Volume / Quantity

Discontinuous _____ l/batch
Continuous _____ l/h

Viscosity

_____ mPas (20 °C)

Flow behaviour similar to

☐ Water ☐ Motor oil ☐ Honey ☐ _____

Composition

Liquid _____ %
Solid _____ %
Particle size initial _____ mm

pH range _____
Vacuum range _____ mbar

Material _____
Material _____
After end of process _____ µm

Temperature range _____ °C
Pressure range _____ mbar

Container dimensions

Diameter _____ mm Total height _____ mm Filling height _____ mm

Voltage / Frequency

_____ V _____ Hz

Ex-proof

☐ no ☐ yes, Ex-class _____

Remarks

_____

_____

_____

IKA® General

Information

Device safety, environment

All IKA® laboratory devices satisfy the international legal regulations according to DIN EN IEC 61010. Any instrument is safety tested according to this norm before it leaves IKA®. Instruments designed for the European market are labeled with the CE mark, to state that they satisfy the applicable EU regulations and norms. Environmental factors were especially taken into consideration when materials were selected (CFC-free and cadmium-free products).

Patents

Certain products featured in the catalog have been assigned property rights such as patents, trademarks, etc. These property rights only apply within the Federal Republic of Germany. On request, we will gladly provide information with regard to their validity in other countries.

Guarantee, Warranty

The warranty satisfies the relevant legal regulations. The guarantee period for our products is 2 years, for analyzing technology products the period is 1 year.

Copyright

Illustrations

The glass vessels and containers shown in the photos together with the instruments are generally not included in the product package.

Voltage / Frequency / Plugs

The instruments featured in this catalog require a voltage of 230 V (50/60 Hz), 115 V (50/60 Hz). Please contact us if you have queries concerning different connected loads.

Service

Please contact your specialist dealer or IKA® direct in case of service queries. For spare parts replacement, please indicate the serial number and instrument type.

Certification

DIN EN ISO 9001
Reg. Nr. 4343

AISI steel designation

Refers to the American steel standard.

The following terms and conditions shall apply to all sales, unless specifically agreed otherwise:

1. General

All agreements must be made in writing. Any terms and conditions of the buyer in his/its enquiries or orders which deviate from the present Terms and Conditions of Sale shall only apply if the supplier has specifically declared its agreement herewith.
Any agreements deviating from the present Terms and Conditions of Sale shall only apply to the business for which they were agreed unless they are specifically prolonged.

2. Quotations

The supplier shall be bound to all quoted prices for three months unless otherwise agreed. The right of prior sale shall be reserved. The documents pertaining to the offer, such as illustrations, drawings, weight and dimension details, etc. shall only be approximate unless they are specifically designated as binding. The supplier shall retain the ownership and copyright of cost estimates, drawings and any other documents; they may not be made available to any third parties. Plans received from the buyer and designated as confidential shall only be made available to third parties by the supplier with the consent of the buyer.

3. Conditions of delivery

The written order acknowledgement of the supplier shall be relevant for the scope of delivery. All ancillary agreements and modifications shall require written confirmation by the supplier.

4. Prices and payments

a) Unless otherwise agreed, prices are ex-works, excluding packaging. INCOTERMS 2010 apply. Unless otherwise agreed, all prices shall apply ex works excluding packing. All prices shall be subject to the statutory rate of value-added tax. Confirmed prices shall be based on prevailing material prices and wages.
The supplier shall reserve the right to charge the material prices and wages prevailing at the time of delivery.
b) Unless otherwise agreed, all payments shall be made to the cash office of the supplier without deductions or charges, with 2% cash discount for payment within 14 days or net within 30 days. If payments are deferred or not made as agreed, default interest at eight percent above the basic discount rate of the EZB shall be charged. Special payment conditions shall apply to export deliveries.
c) No withholding of payments, nor any offsetting of counter claims disputed by the supplier, shall be permitted.

5. Deliveries - Delivery period

a) Unless otherwise agreed in writing, deliveries are ex-works. INCOTERMS 2010 apply.
b) The delivery period shall commence with the dispatch of the order acknowledgement but not before receipt of the docu ments, licenses and approvals to be acquired by the buyer and not before receipt of the agreed down-payment.
c) The delivery period shall be deemed to have been upheld if the object of delivery has left the works of the supplier before the end of the delivery period or if readiness to supply has been notified.
d) The delivery period shall be reasonable prolonged in the event of labor disputes, particularly strikes or lock-outs, or in the event of unforeseen impediments can be shown to have had a material effect on the production or delivery of the object of supply. This shall also apply if the aforesaid circumstances occur at sub-contractors of the supplier.
e) If dispatch is delayed at the request of the buyer, the buyer shall be charged with the storage costs incurred commencing one month after the notification of readiness to deliver but not less than 1/2% of the invoice amount for each month if the goods are stored in the works of the supplier.
f) In case of delayed acceptance by the buyer, and after setting and fruitless course of a reasonable period of time, the supplier has the right of further disposal of the goods.

6. Call-up of goods

Goods ordered on call shall be called up within a reasonable period with special agreement, but no later than 12 months from the date of the order acknowledgement. If ordered goods are not called up on time, the supplier shall be entitled to store the goods which are ready for dispatch, such storage being at the risk of the buyer, and to invoice the goods with all the storage costs incurred as if they had been delivered or to dispatch the goods without having received a dispatch request from the buyer.

7. Transfer of risk and acceptance of goods

a) Risk shall pass to the buyer no later than the dispatch of goods, also if part-shipments are made or if the supplier has assumed other performances, e.g. dispatch costs or transportation and installation
b) If specific instructions for the dispatch of goods are not included in the order, goods shall be dispatched at the discretion of the supplier, without any obligation for the cheapest mode of transport.
c) In the interests of the buyer, the supplier shall insure shipments against theft, breakage, transport, fire and water damage and against any other reasonable risks at the cost of the buyer. Only on the specific request of the buyer transport insurance of the aforesaid type shall not be concluded. Unless otherwise agreed, the supplier shall charge 0,5% of the invoice value for transport insurance and 2% of the invoice value for fragile accessories. Any transport damages shall be notified to the supplier within 8 days, together with the damage report of the transport establishment; such transport damages shall otherwise not be accepted. Any incomplete deliveries shall likewise be notified to the supplier within 8 days; notifications of missing deliveries shall otherwise not be accepted. Shipments destined for export shall only be insured on the specific instructions of the buyer and at the cost of the buyer.
d) If dispatch is delayed for reasons attributable to the buyer, risk shall pass to the buyer on the date of readiness to supply; the supplier shall; however, be obliged to insure the goods at the request of the buyer and at the cost of the buyer.
e) Part-shipments shall be admissible.

8. Reservation of title

a) The supplier shall reserve title to the goods delivered until all claims of the supplier against the buyer arising from the business relationship have been settled in full, including all future claims arising from simultaneous or subsequent contracts. This shall also apply if individual or all claims of the supplier are placed on a current account and if a balance is drawn and recognized. In the event of any non-contractual conduct by the buyer, in particular payment delay on the part of the buyer, the supplier shall be entitled to demand the return of the reserved goods with prior notification and the buyer shall be obliged to return such goods. The return of goods or the pledging of goods by the supplier shall only constitute withdrawal from the contract if such withdrawal is specifically notified by the supplier in writing unless the German Hire Purchase Law applies. The buyer shall be obliged to notify the supplier immediately in writing if reserved goods are pledged or seized in any other way by a third party.
b) The buyer shall be entitled to sell the delivered goods in the ordinary course of business. The buyer shall, however, hereby assign to the supplier all his/its claims against his/its customers or third parties arising from such resale, irrespective of whether the resreved goods are resold without having been processed or not. The buyer shall also be entitled to collect the aforesaid claims after the aforesaid assignment to the supplier. This shall not prejudice the right of the supplier to collect such claims as long as the buyer discharges his/its payment commitments in an orderly and proper manner. The supplier shall be entitled to demand that the buyer notifies the sassigned claims and the names of the liable parties to the supplier, that all the details required for collection are provided, that the relevant documents are submitted to the supplier and that the liable parties are informed of the assignment. If the reserved goods are sold together with other goods to which the supplier has no title, the claim of the buyer against his/its customer shall be deemed as assigned to the supplier in the amount of the delivery price agreed by the supplier and the buyer.
c) Any processing or transformation of reserved goods by the buyer shall always on behalf of the supplier. If reserved goods are processed with other goods to which the supplier has no title, the supplier shall acquire co-ownership in the new chattel in the ratio of the value of the reserved goods to the value of the new processed chattel at the time of processing. The processed chattel shall also be governed by the provisions relating to the reserved goods. The supplier shall be obliged to release any securities to which he is entitled only if such security exceeds the secured claims by more than 25% provided such claims of the supplier have not already been settled by the buyer.

9. Liability for defects

Notwithstanding Section 11, the supplier shall be liable for defective supplies as follows, to the exclusion of all further claims:
a) All those parts which prove unusable or the usability of which is severely impaired within 12 months of putting into service due to circumstances prevailing prior to the transfer of risk shall be rectified or replaced by the supplier without charge and at the reasonable discretion and option of the supplier. The identification of any such defects shall be notified to the supplier in writing immediately. Any replaced parts shall become the property of the supplier. If dispatch, installation or putting into service are delayed for reasons not attributable to the supplier, the aforesaid liability shall lapse no later than 15 months from the transfer of risk.
b) The right of the buyer to enforce claims for defects shall in all cases become statute-barred 6 months from the date of the due complaint by the buyer but no later than the end of the warranty period.
c) No liability shall be assumed for damages arising for the following reasons: improper or incorrect use, defective installation or putting into service by the buyer or third parties, natural wear and tear, incorrect or negligent handling and the use of unsuitable materials, replacement materials, defective construction work, unsuitable foundations, chemical, electrochemical or electrical influences unless they are attributable to negligence or intent on the part of the supplier.
d) The buyer shall, after consultation with the supplier, grant the supplier the necessary time and opportunity to carry out all the rectifications and replacements which the supplier considers necessary at its resonable discretion, otherwise the supplier shall be exempt from its liability for the aforesaid defects. Only in cases of emergency endangering operational safety and to avert disproportionately high damages - were by the supplier is to be informed immediately - or if the supplier is in delay with the rectification of the defect the buyer shall be entitled to rectify the defect himself/itself, or the have the defect rectified by a third party and to demand reimbursement of the necessary costs from the supplier.
e) Of the direct costs directly incurred as a result of the rectification or replacements - provided the complaints of the buyer prove to be justified - the supplier shall bear the costs of the replacement parts, including dispatch costs, and reasonable dismantling and installation costs and the costs of providing any technicians and auxiliary staff of the buyer if the reimbursement of such costs can be equitably demanded in the specific circumstances. Other costs shall be borne by the buyer.
f) The liability of the supplier shall lapse for the consequences of any improper modification or maintenance work undertaken by the buyer or a third party without the prior consent of the supplier.
g) Additional claims of the buyer, particularly compensation claims and claims for damages not sustained by the delivered goods themselves, shall be excluded if permitted by law.

10. Liability for ancillary obligations

If, for reasons attributable to the supplier, the delivered goods cannot be used by the buyer as specified in the contract due to an omited or defective execution of recommendations and advice given prior to or after the conclusion of the contract - in particular usage a maintenance instructions for the delivered goods - the provisions of Sections 9 and 11 shall apply correspondingly, to the exclusion of any additional claims by the buyer.

11. Right of withdraw by the buyer

a) The buyer shall be entitled to withdraw from the contract if the supplier is finally and conclusively unable to perform prior to the transfer of risk.
b) The buyer shall be entitled to withdraw from the contract if delivery is delayed within the meaning of Section 5 and if the buyer grants the supplier a reasonable period of grace with a specific declaration that he/it will reject acceptance of the goods after such period of grace and if the period of grace is not upheld by the supplier.
c) If delivery of the goods is not possible during a period of acceptance delay or for reasons attributable to the buyer, the buyer shall be obliged to meet his/its contractual obligations.
d) The buyer shall also have a right of withdrawal from the contract if, through negligence or intent, the supplier fails to respond to a period of grace granted for the rectification or replacement of a defect attributable to the supplier within the meaning of the present Terms and Conditions of Sale. Such right of withdrawal by the buyer shall also apply in the event of impossibility to supply or the inability of the supplier to rectify or replace the aforesaid defect.
e) All other further claims of the buyer shall be excluded, if permitted by law.

12. Rights of withdrawal by the supplier

The contract shall be reasonably modified in case of unforeseen events within the meaning of Section 5 of the present Terms and Conditions of Sale, if such events materially change the financial and substantive implications of the performance of the supplier or if they materially affect the operations of the supplier and if it later transpires that the supplier is unable to perform its contractual obligations. If this is not economically possible, the supplier shall be entitled to withdraw from the whole or part of the contract. Any compensation claims by the buyer due to the exercise of such right of withdraw shall be excluded, if permitted by law. If the supplier makes use of its right to withdraw from the contract, it shall be obliged to notify the buyer immediately after having become aware of the implications of the aforesaid event.

13. Competent court and legal venue

a) For all disputes arising from the contractual relationship, legal action shall be taken at the competent court for the registered office of the supplier or the branch of the supplier effecting delivery if the buyer is a registered trader, a legal entity under public law or a public-law fund. The supplier shall also be entitled to bring action at the principal place of business of the buyer.
b) For legal relations in connection with this contract German material law is applicable, whereas the agreement of the United Nations regarding contracts ruling the international purchase of goods (CISG) is excluded.

Issue 02/2011

IKA®-WERKE GmbH & Co. KG
79219 Staufen
Germany

HANDS for children

HANDS for children is a nonprofit project of IKA®-Werke in Staufen, Germany with the goal to help and support the needy children of the Third World.

Experienced retirees from the IKA® team volunteer their time to manufacture the laboratory equipment for this program. **HANDS for children** combines the power of an independent company with the knowledge of experienced retired workers.

The profit gained by these activities is donated, in full, to institutions that help needy children or is used directly to help needy children. The recipients are chosen by the employees of **HANDS for children** and the donations are closely monitored.

The project »HANDS for Children« is supported by the following products:

EH 4 basic Immersion thermostat

For temperature control of liquids (NFL/l) up to 100 °C in open baths (min. bath depth 160 mm, min. usable depth 75 mm).
Page 100

VORTEX Genius 3

Vortex shaker suitable for short-time operation (touch function), activated by pres-sing shaker attachment or continuous operation.
Page 50

The IKA® Village Sunimarca in Peru / A development aid project in the Peruvian Andes

The indigenous population of Peru inhabits the poorest mountain regions, living mainly as peasant farmers. Theirs is an ancient culture, built on knowledge passed down through the centuries, which has allowed them to survive in their environment, even under the most extreme conditions. Indeed, the region is beset by political unrest, an extreme climate, and a lack of infrastructure. This combination of circumstances is responsible for the fact that the people of the Andes have never seen any real improvement in their living conditions. The problems of the local population are characterised by malnutrition and undernourishment, a high rate of illiteracy, and high infant mortality. Sunimarca is a village lying at an altitude of around 4.000 m above sea level. Assistance will be provided here over the coming years with the help of „HANDS for children". The farmers of Sunimarca have formulated their own vision: „Our hope is that by the year 2020 our village community will be one that is solid and strong, one that holds human values in high regard. We want to be careful in the way we deal with our natural resources. It is our goal to become leading producers of Andean products, farmers with healthy, high-grade herds of alpaca and sheep. The village should have a range of productive small businesses. Sunimarca should have access to a good road connection and electricity. All inhabitants must be guaranteed their basic human needs. There will finally be an end to hardship. We all want to and will work hard, applying ourselves to achieving these aims."

Parts of this vision are already a reality today: a road has been built and the alpaca herds strengthened with new, high-grade animals. A dairy has been established and free school meals are also planned for. The aim of the project is to lift the village out of poverty in a way that is sustainable and permanent. Children and young people should receive the chance for a better future. Help people to help themselves.

Oberle Foundation:
The Wilhelm Oberle Foundation is a the largest private foundation in the region surrounding Freiburg, Germany, with an endowment of 14 million euros. For further information please visit the following website: www.oberle-stiftung.de.

Menschen für Menschen, School Construction Projects in Ethiopia

Angered by the unjust, inhuman inequality between the poor and the rich of this world, in 1981 actor Karlheinz Böhm founded the „Menschen für Menschen e.V." (MFM) organisation. Through this organisation he was able to provide aid in Ethiopia independently of any political, economic, or religious interests.

Projects 2003 to 2007:
Working together with MFM, two schools have been built in Ethiopia thanks to funding from „HANDS for children": the „Tulla Haro Lower Primary School" in the Babile Woreda region of chronically rain deprived eastern Ethiopia; and „Chiraro Lower Primary School" in Midda, central Ethiopia. The main emphasis during the course of the project was on the building of new schools and the construction and furnishing of accommodation for the teaching staff. At the same time, campaigns were run amongst the local population to promote basic education, with the aim of reducing the illiteracy rate. In Ethiopia, the average rate is 60 percent for men and 73 percent for women.

Further information on "Menschen für Menschen" and about the sponsored project will be available at:
www.menschenfuermenschen.de
or at:
Menschen für Menschen,
Brienner Str. 46,
80333 München, Germany.