IKA®

Catalog 2007/2008

Designed
to work perfect

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IKA®-Werke Staufen, Germany

Success through Creativity

The IKA® group is a manufacturer of laboratory and analytical technology as well as mechanical engineering with world-wide locations.
Over decades, we have built a close relationship to our international customers. This is based on our commitment to the highest quality and innovation of our products and our dedication to the development of solutions for complex applications. With an extraordinary research and development program, the company was able to achieve its leading world market position. IKA® has received many design and innovation awards for its innovative, leading edge products.

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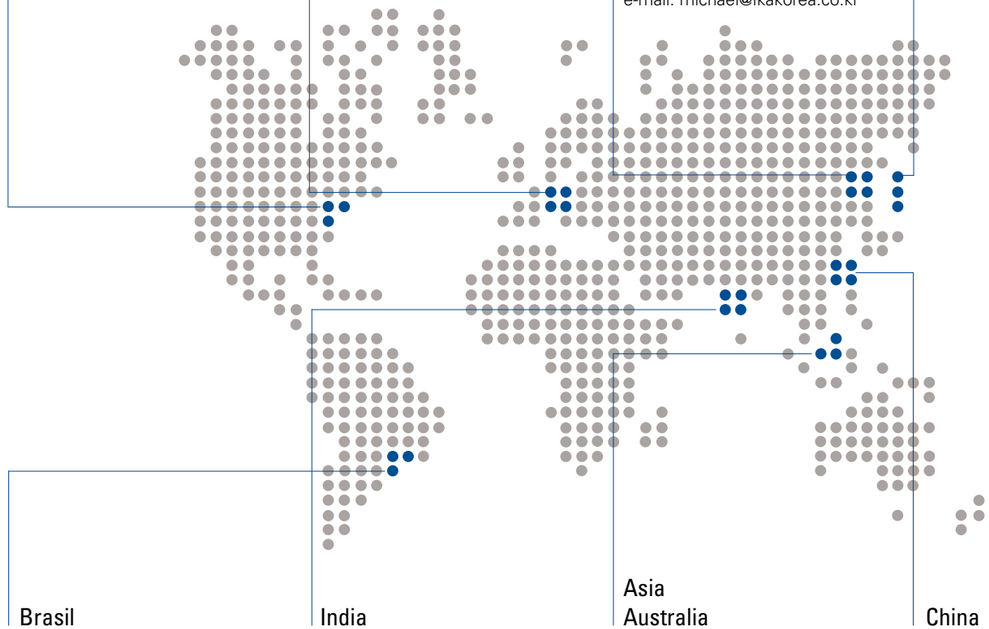

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RCT basic *safety control* p. 10 – 12

Magnetic stirrer with digital display
The new improved version of the laboratory bestseller with revolutionary technology and new functions:
new: Integrated temperature control
new: Incl. PT 1000 temperature sensor (PT 1000.60)

ULTRA-TURRAX® Tube Drive p. 63

World first: Universal disposable disperser system
- Disperse, stir and grind using a single drive unit
- High level of user safety
- No possibility of cross-contamination
- Hermetically sealable disposable sample tubes

MS 3 basic MS 3 digital p. 45

Small shakers
Compact, universal small shaker suitable for shaking tasks with all small vessels and microtiter plates.
- Attachment detection
- Continuous or touch operation

MS 3 digital additionally:
- Timer with countdown function

ETS-D5 ETS-D6 p. 117

Electronic contact thermometers
With optimised PID control and RESET function.

ETS-D6 additionally:
- With integrated pH measuring instrument (without pH electrode) and with multilingual user guide

T 25 digital p. 66

High-performance dispersing instrument
Standard version with digital display
- For volumes from 1 - 2.000 ml (H_2O)
- Three types of shaft bearings

C 200 p. 155

Calorimeter system
Recommended for learning and teaching purposes as well as for laboratories with low sampling volumes

HCT basic *safety control* p. 96

Heating plate with digital display
With revolutionary technology and new functions:
new: Integrated temperature control
new: Incl. PT 1000 temperature sensor (PT 1000.60)

RW 20 digital p. 38

Overhead stirrer with digital display
Technical improvements on the trusted RW 20 series designs
new: With digital display

»fun at work« p. 19 – 22

These are the new motifs for 2007:
- COLOR SQUID
- BIG SQUID
- lab disc

Mixing

lab dancer

Economic, compact test tube shaker with touch function. Its compact and clever design makes it an indispensable tool for every laboratory.
Page 45

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NEW!

RCT basic *safety control* IKAMAG®
The laboratory bestseller:
New with digital display for speed and temperature

ETS-D6
Electronic contact thermometer with PID control and RESET function, incl stainless steel temperature sensor H 62.51, **page 24**
Ident. No. 3378100

H 44
Boss head clamp, **page 27**
Ident. No. 2437700

H 38
Holding rod for fastening ETS-D5 or ETS-D6 with H 44 to the support rod H 16 V, **page 27**
Ident. No. 3547700

H 16 V
Support rod for all magnetic stirrers with M 10 threaded bushing, **page 27**
Ident. No. 1545100

RCT basic *safety control* IKAMAG®
Magnetic stirrer with digital display, incl. protection cover H 100, **page 12**
Ident. No. 3380000

Ident. No.

3380000	230 V 50/60 Hz
3380001	115 V 50/60 Hz

NEW!

included with unit
Ident No. 3516800

RCT basic *safety control* IKAMAG®

The new improved version of the laboratory bestseller with revolutionary technology and new functions:
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: Set safety temperature limit displayed digitally
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 level of safety thanks to improved heat control technology
- Enclosed assembly (IP 42) guarantees long service life
- Highly polished aluminium heating plate for optimum heat transfer
- High magnetic adhesion
- Incl. protection cover H 100

Accessories (page):
Electronic contact thermometers (24): ETS-D5, ETS-D6, IKAFLON®- Stirring bars (29), TRIKA®-Stirring bars (29), RS 1 Set of stirring bars (29), RSE Stirring bar remover (29), Bath attachments (28): H 15, H 28, Oil bath attachments (28): H 29, H 30

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input	9,5 W
Motor rating output	3,5 W
Speed display	digital
Speed range	50 – 1.200 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
Temperature undulation without temperature 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 ETS-D6 / ± 0,2 K
Heating plate	
Material	aluminium 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	12 W
Motor rating output	5 W
Speed display	scale
Speed range	0 – 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)	7 K/min
Temperature range	RT – 340 °C
Setting accuracy	± 10 K
Adjustable safety circuit	50 – 380 °C
Sensor for temperature in medium	ETS-D5, ETS-D6
Control accuracy with sensor	ETS-D5 ± 0,5 K ETS-D6 ± 0,2 K
Heating plate	
Material RET basic *s. c.*	stainless steel
RET basic C *s. c.*	stainless steel white coated
Dimensions	Ø 135 mm
General data	
Dimensions (W x D x H)	160 x 280 x 97 mm
Weight	2,4 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®
RET basic C *safety control* IKAMAG®

Magnetic stirrer with new heating and stirring technology for fast, accurate temperature control. The RET basic (with stainless steel surface) and the RET basic C (with white coated surface, chemical resistant) are exemplified by:
- Extremely fast heating times
- Very broad temperature range (RT - 340 °C)
- Adjustable safety circuit (50 - 380 °C)
- Electronic speed control
- Speed range from 0 - 1.500 rpm
- Bushing according to DIN 12878 for the use of contact thermometers (e.g. ETS-D5 or ETS-D6)
- Incl. protection cover H 99

Accessories (page):
Electronic contact thermometers (24): ETS-D5, ETS-D6, IKAFLON®- Stirring bars (29), TRIKA®-Stirring bars (29), RS 1 Set of stirring bars (29), RSE Stirring bar remover (29), R 380 Stand support (27), Bath attachments (28): H 15, H 28, Oil bath attachments (28): H 29, H 30

RET basic *safety control*

Ident. No.

3188800	230 V 50/60 Hz
3188801	115 V 50/60 Hz

RET basic C *safety control*

Ident. No.

3197600	230 V 50/60 Hz
3197601	115 V 50/60 Hz

RET control-visc *safety control*

Ident. No.	
3364000	230 V 50/60 Hz
3364001	115 V 50/60 Hz

RET control-visc C *safety control*

Ident. No.	
3364100	230 V 50/60 Hz
3364101	115 V 50/60 Hz

labworldsoft®

RET control-visc *safety control* IKAMAG®
RET control-visc C *safety control* IKAMAG®

Safety magnetic stirrer with heating, suitable for unsupervised operation.
- Option: 1 sensor for medium temperature (PT 100) or 2 separate temperature sensors for heat transfer fluid and medium (PT 1000) available (automatic identification)
- 2 adjustable safety circuits
- Stirring bar crack detection
- With stainless steel surface or white coated surface (chemical resistant)
- Setting acc. medium temperature: 0,5 K
- HOT warning display indicating presence of any residual heat when the 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 measuring values via PC
- HOT visual warning for hot heating plate
- 3 modes of operation, e.g. stirring and heating functions can be secured against inadvertent changes of set parameters
- Viscosity trend display
- Enclosed assembly (IP 42) guarantees long service life
- Incl. protection cover H 99

Accessories (page):
Temperature sensors (26): PT 100.50, PT 100.51, PT 100.52, PT 1000.50, PT 1000.51, IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RS 1 Set of stirring bars (29), RSE Stirring bar remover (29), R 380 Stand support (27), Bath attachments (28): H 15, H 28, labworldsoft® (143), Oil bath attachments (28): H 29, H 30, AM 1 Analog module (120)

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input	12 W
Motor rating output	5 W
Speed display	digital
Speed range	0 – 1.500 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	0,5 K (bis 100 °C) 1 K (ab 100 °C)
Adjustable safety circuit	50 – 350 °C
Digital temperature limit display	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 RET control-visc *s. c.*	stainless steel
RET control-visc C *s. c.*	stainless steel white coated
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

Technical data	
Stirring quantity (H_2O)	10 l
Motor rating input	15 W
Motor rating output	2 W
Speed display	scale (0 – 6)
Speed range	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 %
Protection class acc. to DIN EN 60529	IP 21

Technical data		
Stirring quantity (H_2O)		15 l
Motor rating input		15 W
Motor rating output		2 W
Speed display		scale (0 – 6) / digital
Speed range		100 – 2000 rpm
Max. magnetic bar (L x Ø)		40 x 8 mm
Heating function		
Heat output		500 W
Heating rate (1 l H_2O)		4,5 K/min
Temperature range		RT – 320 °C
Adjustable safety circuit		100 – 400 °C
Sensor for temperature in medium		ETS-D5, ETS-D6
Control accuracy with sensor	ETS-D5	± 0,5 K
	ETS-D6	± 0,2 K
Heating plate		
Heating plate, stainless steel		white coated
Dimensions		130 x 130 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 %
Protection class acc. to DIN EN 60529		IP 21

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 (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29), Bath attachments (28): H 15, H 28

Ident. No.	
3339000	230 V 50/60 Hz
3339001	115 V 50/60 Hz

RH basic KT/C *safety control* IKAMAG®
RH digital KT/C *safety control* IKAMAG®

Universal magnetic stirrers with heating and bushing according to DIN 12878 for connecting an electronic temperature controller, e.g. ETS-D5, ETS-D6.
RH digital KT/C safety control complete with digital display for set and actual temperature and actual speed.
- Heating plate with excellent chemical resistance
- Heat output 500 W
- Long life cycle due to foil heating and solid-state switching for heat control
- Adjustable safety circuit for heating plate temperature
- Soft-start stirring motor
- Safety feature: in the event of motor failure the heating switches off automatically

Accessories (page):
Electronic contact thermometers: ETS-D5, ETS-D6 (24), IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29), Bath attachments (28): H 15, H 28

RH basic KT/C *safety control*

Ident. No.	
3207100	230 V 50/60 Hz
3207101	115 V 50/60 Hz

RH digital KT/C *safety control*

Ident. No.	
3207000	230 V 50/60 Hz
3207001	115 V 50/60 Hz

IKA® Mixing

Multi-position magnetic stirrers with heating

Ident. No.

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

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 makes it possible to perform series experiments.
- Simultaneously operating stirrers
- Absolute consistency over sample conditions for the individual samples

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

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

Ident. No.

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

RT 10 power IKAMAG®

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

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

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

Ident. No.

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

RT 15 power IKAMAG®

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

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

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

IKA® Mixing

Multi-position magnetic stirrers without heating

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

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.
- Optimum use of laboratory space
- Including removable PUR cover

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Ident. No.

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

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

RO 10 power IKAMAG®

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

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Ident. No.

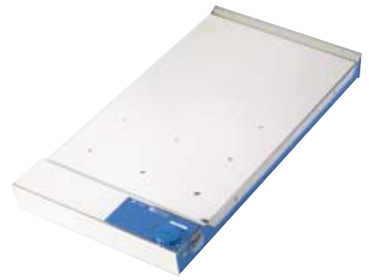
2930400	230 V 50/60 Hz
2930401	115 V 50/60 Hz

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

RO 15 power IKAMAG®

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

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)



Ident. No.

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

Ident. No.
2677000 100 – 240 V 50/60 Hz

Mini MR standard IKAMAG®

Magnetic stirrer without heating, for stirring quantities up to 800 ml (H_2O).
- Infinitely variable speed from 0 - 1.500 rpm
- White set-up plate suitable for observing color reactions

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Technical data	
Stirring quantity (H_2O)	0,8 l
Motor rating input	4 W
Motor rating output	0,5 W
Speed range	0 – 1.500 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)	115 x 130 x 40 mm
Weight	0,23 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.
2812000 230 V 50/60 Hz
2812001 115 V 50/60 Hz

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
- Includes M 10 thread for H 16 V support rod

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RS 1 Set of stirring bars (29), RSE Stirring bar remover (29), H 16 V Support rod (27)

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

Ident. No. Motif
3277700 white 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. The lab disc can reverse direction of rotation automatically every 30 seconds to ensure better mixing.
- Explosion hazard zone 2 (see techn. data)
- Rotation direction is reversible
- High IP protection class (IP 65)
- Wear-free
- Set-up plate and casing made from chemically resistant materials
- Slip-proof, safe stand

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

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 90 mm
General data	
Dimensions (W x D x H)	114 x 161 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
Ex-proof	EX II 3 G EE x nC IIB T6

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

Height only
12 mm

	Ident. No.	Motif		Ident. No.	Motif
1	3277700	white	4	3578600	brown
2	3362300	Sunny Side Up	5	3578200	green
3	3578000	orange	6	3578400	pink

1 white

2 Sunny Side Up

3 orange

4 brown

5 green

6 pink

COLOR SQUID IKAMAG® –
the compact magnetic stirrer with attractive designs

Technical data on page 22.

1 Number one

	Ident. No.	Motif		Ident. No.	Motif
1	2669917	Number one	6	3576600	bighead
2	2669936	Mighty Mouse	7	3576900	balloon
3	2669922	Wildcat	8	3576000	curly
4	2669913	Zip	9	3576300	sunny
5	2669910	Harry's notes			

2 Mighty Mouse

3 Wildcat

4 Zip

5 Harry's notes

6 bighead

7 balloon

8 curly

9 sunny

BIG SQUID IKAMAG® –
the magnetic stirrer with the extra large set-up plate

Technical data on page 22.

	Ident. No.	Motif		Ident. No.	Motif
1	3050009	White	6	3573000	pineapple
2	3050002	Froggy	7	3573200	strawberry
3	3050001	Star	8	3573600	orange
4	3050005	IKAmäleon	9	3573400	kiwi
5	3050004	Ocean			

1 White

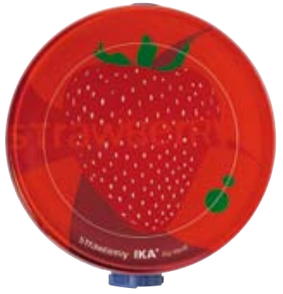
2 Froggy

3 Star

4 IKAmäleon

5 Ocean

6 pineapple



7 strawberry

8 orange

9 kiwi

Ident. No. Motif
2669917 number one 100 – 240 V 50/60 Hz

COLOR SQUID IKAMAG®

Small magnetic stirrers without heating, in a variety of motifs.
- Recyclable materials
- Very good chemical resistance due to glass top and synthetic bottom made of Hytrel®
- Electronically controlled motor with infinitely variable speed from 0 - 1.500 rpm

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Motifs on page 20.

Technical data	
Stirring quantity (H_2O)	0,8 l
Motor rating input	2 W
Motor rating output	1 W
Speed display	none
Speed range	0 – 1.500 rpm
Max. magnetic bar (L x Ø)	30 x 8 mm
Set-up plate	
Material	glass
Dimensions	Ø 110 mm
General data	
Dimensions (W x D x H)	130 x 135 x 50 mm
Weight	0,48 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

Ident. No. Motif
3050009 White 100 – 240 V 50/60 Hz

BIG SQUID IKAMAG®

Magnetic stirrer in five motifs. Same features as COLOR SQUID, but with a larger set-up plate:
- Diameter: 160 mm
- Stirring quantity (H2O) up to 1,5 l

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®-Stirring bars (29), RSE Stirring bar remover (29)

Motifs on page 21.

Technical data	
Stirring quantity (H_2O)	1,5 l
Motor rating input	2 W
Motor rating output	1 W
Speed display	none
Speed range	0 – 1.500 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 180 x 48 mm
Weight	1 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

Technical data	
Stirring quantity (H_2O)	20 l
Motor rating input / output	9,5 W / 3,5 W
Speed display	digital
Speed range	0 – 1.500 rpm
Max. magnetic bar (L x Ø)	80 x 10 mm
Set-up plate	
Material	stainless steel
Dimensions	Ø 135 mm
General data	
Dimensions (W x D x H)	160 x 270 x 85 mm
Weight	2,4 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

REO basic IKAMAG®
REO basic C IKAMAG®

Classic magnetic stirrer without heating.
- Digital speed display
- Non-locking, electronically controlled motor
- Constant speed even during changes in load
- Infinitely variable speed
- Incl. protection cover H 101

REO basic C with white coated set-up plate on request.
REO basic IKAMAG® available 3. quarter 2007.

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RS 1 Set of stirring bars (29), RSE Stirring bar remover (29)

REO basic IKAMAG®

Ident. No.
3384200 230 V 50/60 Hz
3384201 115 V 50/60 Hz

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	9 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

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)

Accessories (page):
IKAFLON®- Stirring bars (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Ident. No.
2621900 230 V 50/60 Hz
2621901 115 V 50/60 Hz

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

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 (29), TRIKA®- Stirring bars (29), RSE Stirring bar remover (29)

Ident. No.
2621800 230 V 50/60 Hz
2621801 115 V 50/60 Hz

ETS-D5
Ident. No.
3378000

NEW!

ETS-D6
Ident. No.
3378100

NEW!

Electronic Contact Thermometers ETS-D5 and ETS-D6

Ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimised 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).

ETS-D6 additionally:
- With integrated pH measuring instrument (without pH electrode)
- Large, graphic LCD display with multilingual user guide

Patented: 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 and ETS-D6 (page)**:**
Sensor (25): H 62.51, H 66.51, H 70 Extension cable (25), H 52 Power pack set (25), H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

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

Temperature	
Temperature measuring range	-50 – 450 °C
Resolution	0,01 K
Measuring accuracy	± 0,05 K + Sensor tolerance PT 1000 DIN IEC 751 class A
Setting accuracy	0,1 K
Control deviation	± 0,2 K
pH measurement	
Measuring range	0 – 14 pH
Accuracy	± 0,1 pH
Resolution	± 0,01 pH
pH connection	BNC-bushing
General data	
Supply voltage	8 – 16 VDC
Power consumption	15 mA (at 9 V)
Max. ON tim	100 %
Plug	6 pin DIN 45322
Connection	DIN 12878 class 2
Dimensions (W x D x H)	96 x 45 x 98 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

General data	
Depth of immersion	230 mm
Diameter	3 mm
Length	260 mm

H 62.51 Stainless steel sensor

Spare sensor for use with ETS-D5 and ETS-D6.

Ident. No.
2735451

General data	
Depth of immersion	230 mm
Diameter	6 mm
Length	260 mm

H 66.51 Stainless steel sensor glass-coated

For use with ETS-D5 and ETS-D6, for work with aggressive media such as acid and alkaline solutions.

Ident. No.
2735551

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 and ETS-D6).

Ident. No.
2735600

General data	
Analog output	10 mV/K

H 52 Power pack set

The power pack set is required in order to operate older magnetic stirrer models (prior to 1990) with ETS-D5 and ETS-D6. If you have any questions, please contact our service department.
In addition, the power pack set features an analog output to document signals on a recorder.

Accessories (page)**:**
labworldsoft® (143), DC 2 DATACONTROL (147), AK 2.1 Analog cable (148)

PC documentation is also possible in combination with DC 2 DATACONTROL and labworldsoft®.

Ident. No.

8010600	230 V 50/60 Hz
8010601	115 V 50/60 Hz

General data	
Depth of immersion	230 mm
Diameter	3 mm

PT 1000.60 Temperature sensor

Made of stainless steel, for use with RCT basic *safety control*.

Ident. No.
3516800

Ident. No.
2601900

PT 100.50 Temperature sensor

For use with RET control-visc *safety control* and RET control-visc C *safety control*.

Accessories (page):
H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

General data	
Depth of immersion	230 mm
Diameter	3 mm

Ident. No.
2600300

PT 100.51 Temperature sensor

For use with RET control-visc *safety control* and RET control-visc C *safety control*, glass-coated for work with aggressive media such as acid and alkaline solutions.

Accessories (page):
H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

General data	
Depth of immersion	230 mm
Diameter	8 mm

Ident. No.
2847700

PT 100.52 Temperature sensor

Made of stainless steel, for use with RET control-visc *safety control* and RET control-visc C *safety control*.

Accessories (page):
H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

General data	
Depth of immersion	60 mm
Diameter	3 mm

Ident. No.
3367600

PT 1000.50 Temperature sensor

2 separate steel sensors for heat transfer fluid and medium. Ideal for the magnetic stirrers RET control-visc *safety control* and RET control-visc C *safety control*.

Accessories (page):
H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

General data	
Depth of immersion	230 mm
Diameter	3 mm

Ident. No.
3377700

PT 1000.51 Temperature sensor

As per PT 1000.50, but glass-coated for work with corrosive media such as acids and lyes.

Accessories (page):
H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

General data	
Depth of immersion	230 mm
Diameter	3 mm

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

H 16 V Support rod

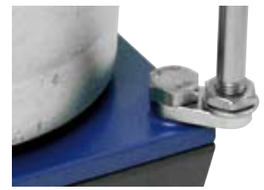
Stainless steel support rod for all magnetic stirrers with M 10 threaded bushing.

Accessories (page):
R 380 Stand support (27), H 16.1 Extension (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

Ident. No.
1545100

H 16.1 Extension

For work with bath attachment over 180 mm Ø.

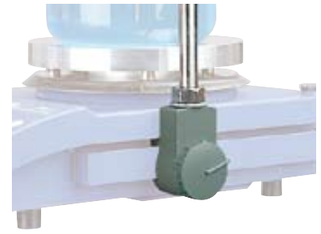


Ident. No.
5000500

R 380 Stand support

For fitting along the multifunction strips of the magnetic stirrers RET basic *safety control*, RET basic C *safety control*, RET control-visc *safety control*, RET control-visc C *safety control* and REO basic C. It allows the support rod H 16 V to be fixed at any given position. This makes it possible to use several support rods.

Accessories (page):
H 16 V Support rod (27)



Ident. No.
2636700

H 44 Boss head clamp

For fastening the holding rod H 38 (p. 27) to the support rod H 16 V (p. 27).

Ident. No.
2437700

H 38 Holding rod

For fastening ETS-D5 or ETS-D6 with H 44 (p. 27) to the support rod H 16 V (p. 27).

Ident. No.
3547700

H 99
Ident. No.
2734500
H 100
Ident. No.
3661000
H 101
Ident. No.
3666000

H 99 Protective cover
H 100 Protective cover
H 101 Protective cover

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

General data	
Material	silicone
Max. temperature	135 °C
Protective cover	
H 99	for RET series and RCT basic s.c. (3378500)
H 100	for RCT basic s.c. (3380000)
H 101	for REO basic

Ident. No.
0551300

H 15 Bath attachment

Stainless steel bath attachment, suitable for tempering 0,5 and 1 l flasks.

General data	
Inner diameter	140 mm
Height	125 mm
Volume	1,5 l

Ident. No.
2167400

H 28 Bath attachment

Stainless steel bath attachment, suitable as a sand bath basin.

General data	
Inner diameter	140 mm
Height	70 mm
Volume	1 l
Max. temperature	350 °C

H 29
Ident. No.
2829400
H 30
Ident. No.
2829500

H 29 Oil bath attachment
H 30 Oil bath attachment

The oil bath attachments H 29 and H 30 can be used as oil baths together with an IKAMAG® magnetic stirrer with heating or with an IKATHERM® heating plate having a diameter of 135 mm.
- Positioning border prevents sliding on the heating plate
- Safety grips protect you from burns caused by hot oil
- The bath attachment is made of aluminum. This ensures good heat transfer and quick heating-up of the tempering medium
- Easy cleaning
- The bath attachments can **only be used as an oil bath**

General data		
Inner diameter	H 29	136 – 180 mm
	H 30	136 – 190 mm
Height	H 29	81 mm
	H 30	110 mm
Volume	H 29	1 l
	H 30	1,5 l

General data	
For heating plate diameter	135 mm
Material	aluminium
Diameter enlarged to	200 mm

H 12 / 135 Supporting plate

For increasing the heating plate to a diameter of 200 mm.

Ident. No.
0771700

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

IKAFLON® Magnetic stirring bars

Round, PTFE-coated.

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

RS 1 Set of magnetic stirring bars

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

Ident. No.
1358600

RSE Stirring bar remover

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

Ident. No.
1293100

Ident. No.	
1091500	Euro plug
1091700	USA plug
2410700	UK plug
1091600	CH plug

H 11 Mains cable

Spare

EUROSTAR power control-visc
Powerful, digital laboratory stirrer

EUROSTAR power control-visc
Stirrer for quantities up to 40 l, with
RS 232 interface, **page 35**
Ident. No. 2600000

R 271
Boss head clamp, **page 116**
Ident. No. 2664000

R 2723
Telescopic stand, **page 115**
Ident. No. 1412100

R 1331
Anchor stirrer, **page 40**
Ident. No. 2022400

RH 5
Strap clamp, **page 116**
Ident. No. 3159000

labworld*soft*®
With labworld*soft*® you can network up to 64 laboratory devices and control these from a PC, see **page 143**

1 off-white

RW 11 basic „Lab egg“

Small-sized stirrer available in four attractive colors.

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

Accessories (page):
R 103 Stand (114), R 1001 Spare paddle stirrer (42), R 1002 Screw-type stirrer (42)

	Ident. No.	Motif	
1	2830001	off-white	100 – 240 V 50/60 Hz
2	2830005	salmon pink	100 – 240 V 50/60 Hz
3	2830004	creamy blue	100 – 240 V 50/60 Hz
4	2830000	transparent	100 – 240 V 50/60 Hz

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

2 salmon pink

3 creamy blue

4 transparent

Technical data	
Stirring quantity (H_2O)	8 l
Max. viscosity	10.000 mPas
Motor rating input	28,5 W
Motor rating output	17 W
Output at stirring shaft	17 W
Max. ON-time	100 %
Max. torque at chuck	8 Ncm
Speed range	100 – 2.000 rpm
Speed display	scale
Chuck range	0,5 – 8 mm
Diameter / length of extension arm	13 / 160 mm
General data	
Dimensions without extension arm (W x D x H)	70 x 176 x 197 mm
Weight	2 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 20

RW 14 basic

Quiet, economical laboratory stirrer with electronic infinitely adjustable speed. For stirring substances of low to medium viscosity. The laboratory stirrer is suitable for reproducibly setting the speed or processing media with substantial temporary viscosity changes.
- Constant speed thanks to electronic control
- Infinitely adjustable speed
- Very smooth thanks to direct drive
- Easy to operate
- Slimline
- Non-locking, overload capabilities

Accessories (page):
Stands (114): R 1825, R 1826, 1827, R 182 Boss head clamp (116), RH 3 Strap clamp (116), R 301 Stirring shaft protection (42), R 301.1 Support holder (42), Stirring elements (40 / 41): e.g. R 1342, FK 1 Flexible coupling (42)

Ident. No.	
3331400	230 V 50/60 Hz
3331401	115 V 50/60 Hz

EUROSTAR digital
Stirrer for quantities up to 20 l, **page 34**
Ident. No. 2482000

R 182
Boss head clamp, **page 116**
Ident. No. 2657700

RW 16 basic
Stirrer for quantities up to 10 l, **page 34**
Ident. No. 2572100

R 1373
Paddle stirrer, **page 40**
Ident. No. 0757600

R 1330
Anchor stirrer, **page 40**
Ident. No. 2022300

RH 3
Strap clamp, **page 116**
Ident. No. 3008600

R 1825
Plate stand, **page 114**
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 (114): R 1825, R 1826, R 1827, R 182 Boss head clamp (116), FK 1 Flexible coupling (42), RH 3 Strap clamp (116), DZM control.o Revolution counter (119), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1342, R 1330, R 1373

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 the "medium viscosity" range.
- Constant speed by microprocessor control
- Digital display presents 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 as a result of smooth start

Accessories (page):
Stands (114): R 1825, R 1826, R 1827, R 182 Boss head clamp (116), FK 1 Flexible coupling (42), RH 3 Strap clamp (116), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1342, R 1330, R 1373

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 the "high viscosity" range.
- Constant speed by microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety as a result of smooth start
- Analog recording of speed parameters is possible

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), FK 1 Flexible coupling (42), RH 5 Strap clamp (116), VK 600 control (139), DZM control.o Revolution counter (119), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): 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 the "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 a PC.

- Digital display presents rated - / actual speed
- Integrated torque trend display for viscosity control
- Analog interface for recording speed and torque
- RS 232 interface

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), FK 1 Flexible coupling (42), RH 5 Strap clamp (116), VK 600 control Torque measurement instrument (139), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1345, R 1375, labworldsoft® (143), RC 1 Remote control (43), AM 1 Analog module (120)

Ident. No.

2600000	230 V 50/60 Hz
2600001	115 V 50/60 Hz

labworldsoft®

EUROSTAR power control-visc 6000

High-performance digital laboratory stirrer for tasks up to the "medium viscosity" range.
Same features as EUROSTAR power control-visc (page 35), additionally:
- Speed range up to 6.000 rpm
- Agitator elements are not push-through
- Cone seat for precision shaft, incl. with delivery (stirring elements can be screw connected, please order separately, see page 42)
- Analog output of speed and torque

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), RH 5 Strap clamp (116), R 301 Stirring shaft protection (42), R 1402 Dissolver (42), R 1405 Propeller (42), R 1401 Propeller (42) , labworldsoft® (143), RC 1 Remote control (43), AM 1 Analog module (120)

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

Ident. No.

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

labworldsoft®

EUROSTAR power control-visc P1

Powerful, digital laboratory stirrer for tasks up to the "high viscosity" range.
- Constant speed by microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety as a result of smooth start
- Digital display presents 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

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), RH 5 Strap clamp (116), VK 600 control Torque measurement instrument (139), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1331, R 1312, labworldsoft® (143), RC 1 Remote control (43), AM 1 Analog module (120)

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

Ident. No.

3330000	230 V 50/60 Hz

labworldsoft®

EUROSTAR power control-visc P4	
Transmission reduction	4-fold
Stirring quantity (H_2O)	40 l
Max. viscosity	100.000 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	200 Ncm
Speed range	14 – 530 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 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	153 W
Motor rating output	134 W
Output at stirring shaft	126 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
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 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 the "high viscosity" range.
- Constant speed by microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing
- Quiet operation
- Safety circuit
- Non-locking, overload capabilities
- Push-through agitator shafts
- Enhanced safety as a result of smooth start
- Digital display presents 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; without push-through agitator shafts.

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), RH 5 Strap clamp (116), VK 600 control Torque measurement instrument (139), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1331, R 1312, labworldsoft® (143), RC 1 Remote control (43), AM 1 Analog module (120)

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.
new: With digital display
new: Robust, slimline, 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 (114): R 1825, R 1826, R 1827, FK 1 Flexible coupling (42), RH 3 Strap clamp (116), VK 600 control Torque measurement instrument (139), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1342, R 1381, VK 60/01 Adapter (139)

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

NEW!

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 elements

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), FK 1 Flexible coupling (42), RH 5 Strap clamp (116), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1345, R 1300, R 301.1 Support holder (42)

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)	80 l
Max. viscosity	50.000 mPas
Motor rating input	270 W
Motor rating output	180 W
Output at stirring shaft	135 W
Max. ON-time	100 %
Max. torque at chuck	
per 60 rpm	1.515 Ncm
per 100 rpm	911 Ncm
per 1.000 rpm	91 Ncm
Speed range I (per 50 Hz)	40 – 370 rpm
Speed range II (per 50 Hz)	120 – 1.400 rpm
Speed range I (per 60 Hz)	48 – 444 rpm
Speed range II (per 60 Hz)	144 – 1.680 rpm
Speed display	scale
Chuck range	1 – 10 mm
Diameter / length of extension arm	16 mm / 160 mm
General data	
Dimensions (W x D x H)	140 x 279 x 468 mm
Weight	9,3 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

RW 28 D

Powerful, mechanically controlled stirrer with AC motor and high IP protection class. 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
- Cables with plugs not included in delivery

Accessories (page):
Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), RH 5 Strap clamp (116), R 301 Stirring shaft protection (42), Stirring elements (40 / 41): e.g. R 1345, R 1301, R 301.1 Support holder (42)

Ident. No.	
3297000	3 x 400 V 50 Hz
3297006	3 x 230 V 60 Hz

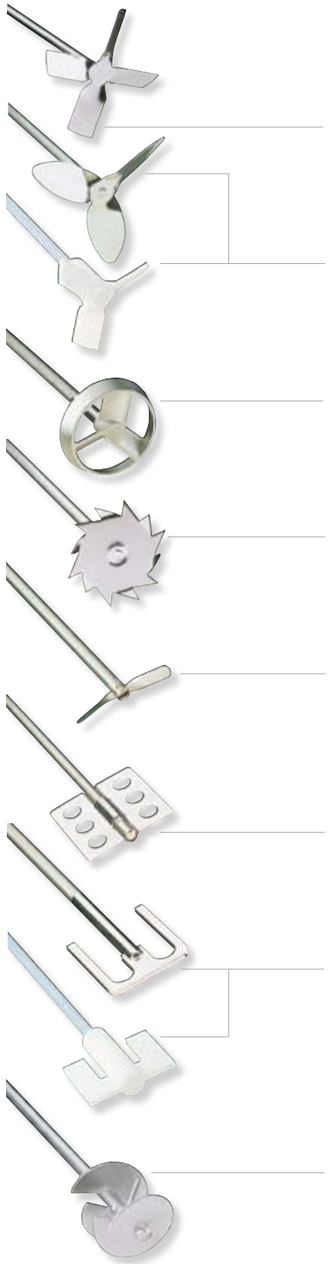
Technical data	
Stirring quantity (H_2O)	200 l
Max. viscosity	100.000 mPas
Motor rating input	513 W
Motor rating output	370 W
Output at stirring shaft	300 W
Max. ON-time	100 %
Max. torque at chuck	
per 60 rpm	4.642 Ncm
per 100 rpm	3.000 Ncm
per 1.000 rpm	285 Ncm
Speed range I (per 50 Hz)	57 – 275 rpm
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 media and intensive mixing
- Cables with plugs not included in delivery

Accessories (page):
R 472 Floor stand (115), R 474 Telescopic stand (115), R 302 Shaft protection (43), Stirring elements (40 / 41): e.g. R 2305, R 2311, SI 400 Safety switch (43), Fixing devices (43): 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 and 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.

Kneading stirrer
Tangential flow with oscillating compacting between the kneading surfaces. Minimum deposits on vessel. Used at low speeds.

	Ident. No.	Stirrer-Ø	Shaft Ø	Shaft length	Max. speed	RW 14 basic 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 28 D	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 2305	0739300	150 mm	13 mm	550 mm	1.300 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 1373	0757600	70 mm	8 mm	350 mm	1.000 rpm		•	•	•	•	•	
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 1332 (PTFE-coated)	2343700	60 mm	8 mm	350 mm	800 rpm	•	•	•	•	•	•	
R 1333	2747400	150 mm	10 mm	550 mm	800 rpm				•		•	•
Kneading stirrer												
R 1335	2022500	45 mm	8 mm	350 mm	2.000 rpm	•	•	•	•	•		

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

Ident. No.

1242900	R 1401
1243300	R 1402
1289800	R 1405

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.
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 (116): R 182, R 270

General data	
Length	275 mm
Material	plexiglass

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 (B x T x H)	84 x 19 x 16 mm
Dimensions switch contact (B x T x H)	73 x 10 x 19 mm
Contact	1 normally closed contact
Casing materia	plastic (ABS)
Protection class according to DIN EN 60529	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 (43): SI 472, SI 474

Ident. No.
3294800

General data	
Dimensions	80 x 80 mm

SI 472 Fixing device

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

Ident. No.
3264000

General data	
Dimensions (W x D x H)	95 x 83 x 20 mm

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

General data	
Power supply	Two 1.5 V batteries (included with unit)
Max. cable length	10 m
Power consumption remote	
Off-state	ca. 7 µA
On-state	ca. 7 mA
Dimensions (W x D x H)	65 x 140 x 30 mm
Weight (incl. battery)	0,3 kg

RC 1 Remote control

Remote control to operate the Eurostar power control-visc (also P1, P4 and P7) over a 10 m cable.
- Provides problem-free control of stirrers even under load
- Displays actual speed, target speed and overload status

Ident. No.
3232000

NEW!

MS 3 digital
Orbital shaker:
Timer with countdown function

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
Protection class acc. to DIN EN 60529		IP 21

MS 3 basic
MS 3 digital

Compact, universal small shaker suitable for shaking tasks with all 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 (50): MS 1.31, MS 1.32, MS 1.33

Included with delivery (page):
MS 3.1 Standard attachment (50), MS 3.3 Universal attachment (50), MS 1.21 One-hand insert (50), MS 3 digital complete with MS 3.4 Microtiter attachment and MS 1.32 Test tube insert (50)

MS 3 basic

Ident. No.	
3617000	230 V 50/60 Hz
3617001	115 V 50/60 Hz

NEW!

MS 3 digital

Ident. No.	
3319000	230 V 50/60 Hz
3319001	115 V 50/60 Hz

NEW!

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
Attachment	TPU
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
- The lab dancer 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 thanks to coated zinc die cast base
- Includes 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

New vortex shaker suitable for short-time operation (touch function), activated by pressing shaker attachment or continuous operation.
- Wide speed range, infinitely adjustable
- Different applications thanks 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 51) 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 thanks to special feet (silicon base with ultra high vibration damping)
- Eccentric with ball bearings
- Suitable for continuous operation with low self heating thanks to self ventilation of motor

Accessories (page):
Attachments (51): VG 3.1, VG 3.2, VG 3.3
Inserts (51): 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
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

*depending on attachment and loading

Ident. No.

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

VXR basic Vibrax®

Optoelectronically 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 (52 / 53): 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
Interface	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 makes it possible to use almost all shapes and sizes of vessels
- Attachments are not included, please order separately

KS 130 control additionally with:
- A digital display makes it possible to read 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 on request

Accessories (page):
Attachments (54): AS 130.1, AS 130.2, AS 130.3, AS 130.4
KS 130 control additionally:
labworldsoft® (143), PC 1.5 Cable (148)

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 control

Ident. No.

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

labworldsoft®

KS 260 basic
KS 260 control

Compact, flat shaker with ideal 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 makes it possible to use almost all shapes and sizes of vessels
- Attachments are not included, please order separately

KS 260 control additionally with:
- Digital display makes it possible to read 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 on request

Accessories (page):
Attachments (54 / 55): AS 260.1, AS 260.2, AS 260.3
KS 260 control additionally:
labworldsoft® (143), PC 1.5 Cable (148)

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	∞ / 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

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
- Orbital diameter 30 mm
- 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
- Includes timer
- Attachments are not included, please order separately

Accessories (page):
Attachments (55 / 56): AS 501.1, AS 501.4, AS 501.5

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		∞ / 0 – 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

HS 260 basic
HS 260 control

Compact, flat shaker with ideal 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 makes it possible to use almost all shapes and sizes of vessels
- Attachments are not included in delivery, please order separately

HS 260 control additionally:
- Digital display makes it possible to read 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 (54 / 55): AS 260.1, AS 260.2, AS 260.3, AS 260.5
HS 260 control additionally: PC 1.5 Cable (148), labworldsoft® (143)

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	∞ / 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

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
- Orbital diameter 30 mm
- 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 (55 / 56): AS 501.1, AS 501.2, AS 501.3, AS 501.4, AS 501.5, AS 501.6

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		∞ / 0 – 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

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 attachment

For use with a microtiter plate, included with the minishakers MS 3 basic and MS 3 digital.

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.

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. Included with the minishaker MS 3 digital.

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

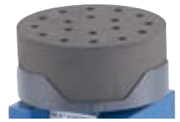
Universal attachment, 150 mm, with rubber insert (continuous / touch operation).

Ident. No.
3342400

VG 3.31 Test tube attachment*

For 54 Eppendorf tubes (continuous operation).

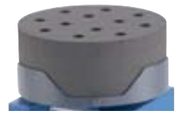
Ident. No.
3344300



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).

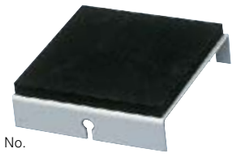
Ident. No.
3342100

VG 3.37 Microtiter plate attachment*

For 1 standard microtiter plate (continuous operation).

Ident. No.
3344400

* for VG 3.3 Universal attachment

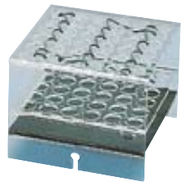


Ident. No.
0607200

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, ect.

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 (without fig.)

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

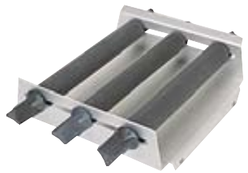
Ident. No.
3659200

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 (57),
3 x AS 1.31 Clamping roll (57),
6 x AS 1.5 Fastening screw (57)

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 (58): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5

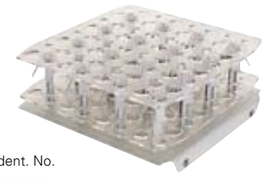
General data	
Dimensions (W x D x H)	230 x 230 x 24 mm
Capacity:	
Number of fixing clips (volume)	20 x AS 2.1 (25 ml) 12 x AS 2.2 (50 ml) 12 x AS 2.3 (100 ml) 4 x AS 2.4 (250 ml) 4 x AS 2.5 (500 ml)
Weight	650 g

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 (57),
4 x AS 1.61 Clamping roll (57),
8 x AS 1.5 Fastening screw (57)

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
Capacity:	
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)
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 (58): 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 (5 O-rings included).

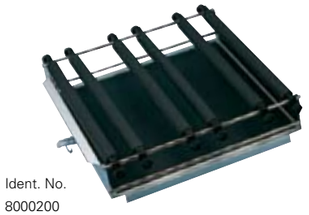
Ident. No.
3120900

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 (57), 6 x AS 1.11 Clamping roll (57), 12 x AS 1.6 Fastening screw (57)



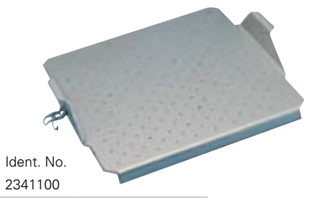
Ident. No.
8000200

General data	
Dimensions (W x D x H)	475 x 460 x 95 mm
Capacity: 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)
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 (58): AS 2.1, AS 2.2, AS 2.3, AS 2.4, AS 2.5



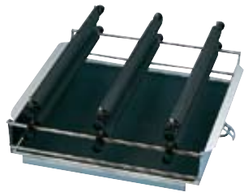
Ident. No.
2341100

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



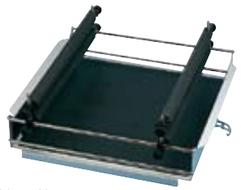
Ident. No.
8000300

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, 6 x AS 1.11, 6 x AS 1.6 (57), 6 x AS 1.7 (58)

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, 4 x AS 1.11, 4 x AS 1.6 (57), 4 x AS 1.7 (58)

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, 4 x AS 1.6 (57), 4 x AS 1.12, 8 x AS 1.13 (58)

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

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, AS 1.5 (57)

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, AS 1.5 (57)

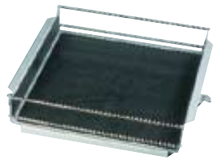
Ident. No.
3149000

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, AS 1.6 (57), AS 1.7, AS 1.8, AS 1.12,



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 AS 1.11	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

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.
2979400

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.
1268400

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.

Ident. No.
2594500

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.

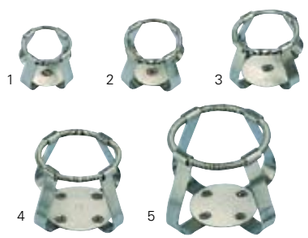
Accessories (page):
AS 1.13 (58)

General data	
Length	437 mm

Ident. No.
2597000

AS 1.13 Ground section holder

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



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

	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

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

General data	
Shape of kneading blades	duplex
Trough	
Useful volume min. / max.	100 / 300 ml
Total volume	600 ml
Attainable vacuum	50 mbar
Trough base for heating up to	210 °C
Bore hole for accomodating temperature measuring sensor PT 100.27	yes
Materials in contact with medium	stainless steel (AISI 316 Cb)
Drive	
Motor rating input	320 W
Motor rating output	180 W
Motor principle	asynchron
Motor protection	thermo contact
Nominal torque	48 Nm
Speed of front kneading blade	35 rpm
Speed of back kneading blade	18 rpm
Safety device	cover contact
General data	
Dimensions (W x D x H)	660 x 250 x 380 mm
Weight	27 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 54

HKD-T 06 D
IKA®-High-performance laboratory kneader

Ident. No.

1911800	3 x 400 V 50 Hz
1911803	3 x 230 V 60 Hz

For processing non-flowable, highly viscous media. Uniform mixing is based on intensive processing by means of wide-bladed kneading elements. The kneading medium is moved within the trough both horizontally and vertically. Additional media quantities may be added during the kneading operation.

- The double-walled kneading chamber allows cooling or heating of the product
- The product temperature may be measured directly behind the kneading blades
- Trough can easily be removed
- Kneading blades can easily be removed
- Short kneading time
- The narrrow gap between the kneading blades and trough wall ensures efficient wipe-off
- Standard version equipped for vacuum operation
- Trough cover with inspection glass and safety screen

Accessories (page):
HKD 06.2 Plunger (59), HKD 06.10 Kneading blade (59), DTM 12 Digital temperature measuring device (118), CC3-308B vpc Circulation thermostat (97), VC 2 IKAVAC® Vacuum controller (120)

HKD 06.2 Plunger

Double-walled plunger seat, for heating and cooling, which presses down the kneading material by means of spring-action. This considerably improves heat conduction in the measuring kneader. The central supply opening can be closed with a plunger. The HKD 06.2 plunger is not suitable for vacuum operation.

Ident. No.
2936000

HKD 06.10 Kneading blade

Special lined front kneading blade for viscous, elastic products to prevent dead zones. Alternative to the standard kneading blade.

Ident. No.
3134800

Crushing

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.
Page 89

Dispersers 62 – 85
Mills 86 – 91

NEW!

ULTRA-TURRAX® Tube Drive

World first! The revolutionary disposable disperser

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)
Display time	digital
Dimensions (W x D x H)	100 x 160 x 40 mm
Weight	0,75 kg
Protection class acc. to DIN EN 60529	IP 20

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, tumour biology, immunology, chemistry, cosmetics

ULTRA-TURRAX® Tube Drive

World first: Universal disposable disperser system with hermetically sealable disposable sample tubes. Protection and security for: Infectious sample materials, toxic substances, high-odour substances.

- Disperse, stir and grind using a single drive unit
- No possibility of cross-contamination
- Hermetically sealable disposable sample tubes
- γ-sterilized tubes on request
- High level of user safety
- Quick and simple
- Hygienic and clean
- Covers with pierceable membranes available on request
- Volumes from 2–15 ml
- Suitable for individual use and use in series
- Anti-locking function
- Increases safety due to low voltage (24 V)
- Chemical-resistant plastic
- Worldwide service guaranteed by IKA®
- Patent pending

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

NEW!

ULTRA-TURRAX® Workstation

Included with delivery (page):
1 x ULTRA-TURRAX® Tube Drive (63),
2 x ST-20 Tube with stirring device (64),
2 x DT-20 Tube with rotor-stator element (64),
2 x BMT-20 G / S Tube for grinding with glass balls (G) or with stainless steel balls (S) (64),
1 x removal hook for removal the rotor-stator unit, power supply

Ident. No.
3645000 100 – 240 V 50/60 Hz

ST-20 Tube with stirring device

Suitable for:
- Mixing
- Stirring
- Extractions
- Preparation of soil sample suspensions
- Solubility testing for medications
- Volumes from 2 - 15 ml
- 25 items per pack

Ident. No.	
3599500	ST-20
3681500	ST-20 γ-sterilized

DT-20 Tube with rotor-stator element

Suitable for:
- Dispersion
- Homogenisation
- Suspensions
- Pharmocokinetics
- Metabolism studies
- Diagnosis
- Volumes from 5 - 15 ml
- 25 items per pack

Ident. No.	
3599400	DT-20
3681600	DT-20 γ-sterilized

BMT-20 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
- Volumes from 2 - 15 ml
- 25 items per pack

Ident. No.	
3599600	glass balls
3553700	stainless steel balls
3681700	stain. steel, γ-sterilized
3681800	glass, γ-sterilized

NEW!

γ-sterilized tubes

All sample tubes available in γ-sterilized versions.

Dispersion example: 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)	45 x 60 x 180 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

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 media thanks to high performance 125 Watt drive
- Ideal for manual operation thanks to its light weight and ergonomic form
- Extremely mobile thanks to direct mains operation (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
- Included with delivery: empty storage case (for drive, clamp, dispersing elements) and spare seals and clamp R 200

Accessories (page):
R 200 Clamp (116), R 104 Stand (114), H 44 Boss head clamp (116), Dispersing elements (72): S 10 N – 5 G, S 10 N – 8 G, S 10 N – 10 G, Plastic dispersing elements (74): 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 (70), Stands (114):
R 1825, R 1826, R 1827, R 182 Boss head clamp (116), DZM control.o Revolution counter (119), RH 3 Strap clamp (116)

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

NEW!

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
- Rotor-Stator configurations have thirty years of proven, guaranteed comparability of test results
- Wide range of dispersing elements (not included with delivery, page 70 / 71

Accessories (page):
Dispersing instruments (70 / 71), Stands (114):
R 1825, R 1826, R 1827, R 182 Boss head clamp (116), RH 3 Strap clamp (116)

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

NEW!

T 25 digital ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 2.000 ml, **page 66**
Ident. No. 3565000

T 18 basic ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 1.500 ml, **page 66**
Ident. No. 3561000

R 182
Boss head clamp, **page 116**
Ident. No. 2657700

S 18 N – 19 G
Dispersing element for quantities between 10 – 1.500 ml, **page 70**
Ident. No. L004640

S 25 N – 18 G
Dispersing element for quantities between 10 – 1.500 ml, **page 71**
Ident. No. 0593400

RH 3
Strap clamp, **page 116**
Ident. No. 3008600

R 1827
Plate stand, **page 114**
Ident. No. 3160200

Ident. No.

2953100	230 V 50/60 Hz
2953101	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 76)
- 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 72 / 73)

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	4.000 – 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 (72 / 73), Special dispersing elements (76), Stands (114 / 115): R 2722, R 2723, R 271 Boss head clamp (116), DZM control.o Revolution counter (119), RH 5 Strap clamp (116)

T 50 basic ULTRA-TURRAX®
Dispersing instrument for quantities up to approx. 30 l, **page 68**
Ident. No. 2953100

R 271
Boss head clamp, **page 116**
Ident. No. 2664000

S 50 N – G 45 G
Dispersing element for coarse crushing, **page 72**
Ident. No. 8003000

RH 5
Strap clamp, **page 116**
Ident. No. 3159000

R 2723
Telescopic stand, **page 115**
Ident. No. 1412100

S 50 N – G 45 F
Dispersing element for subsequent fine crushing, **page 73**
Ident. No. 8003900

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 (73), T 653 Stand (115), SI 400 Safety switch (43), Fixing device SI 474 (43)

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

Ident. No.
1 1024200

Ident. No.
2 0594000

Ident. No.
3 0593400

Ident. No.
4 1713300

Ident. No.
5 1713800

Ident. No.
8011900

Dispersing elements T 18 basic, T 25 digital

For nomenclature see page 69

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 – 10 G – VS	S 25 N – 18 G	S 25 KR – 18 G	S 25 KV – 18 G
Ident. No.	L004639	L004640	1024200	0594000	1899000	0593400	0560300	2348000
Fig.	without fig.	without fig.	1	2	without fig.	3	without fig.	without fig.
Suitable for dispersing instrument	T 18 basic	T 18 basic	T 25 digital	T 25 digital	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	1 – 100 ml	10 – 1.500 ml	10 – 1.500 ml	10 – 1.500 ml
Stator diameter	10 mm	19 mm	8 mm	10 mm	10 mm	18 mm	18 mm	18 mm
Rotor diameter	7,5 mm	12,7 mm	6,1 mm	7,5 mm	7,5 mm	12,7 mm	12,7 mm	12,7 mm
Gap between rotor and stator	0,35 mm	0,4 mm	0,25 mm	0,35 mm	0,35 mm	0,3 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	9,4 m/s	15,9 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	22 / 85 mm	40 / 165 mm	40 / 185 mm	40 / 225 mm
Shaft length	108 mm	204 mm	108 mm	105 mm	105 mm	194 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	PTFE, AISI 316L	FKM, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	yes	yes	yes	yes	no	yes
Suitable for abrasive substances	yes	yes	yes	yes	yes	yes	no	no
Max. temperature	180 °C	180 °C	180 °C	180 °C	180 °C	180 °C	80 °C	220 °C
Sterilization methods	all methods	all methods	all methods	all methods	all methods	all methods	wet chemical	wet chemical
Min. vacuum	–	–	–	–	–	–	50 mbar	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	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	1 – 10 µm	1 – 10 µm

Dispersing element	S 25 NK – 19 G	S 25 N – 25 G	S 25 KR – 25 G	S 25 KV – 25 G	S 25 N – 25 F	S 25 KR – 25 F	S 25 KV – 25 F	S 25 KV – 25 G – IL	S 25 KV – 25 F – IL
Ident. No.	2494700	1713300	1713400	2466900	1713800	1713900	2404000	2563000	2830200
Fig.	without fig.	4	without fig.	without fig.	5	without fig.	without fig.	without fig.	without fig.
Suitable for dispersing instrument	T 25 digital	T 25 digital	T 25 digital	T 25 digital	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	50 – 2.000 ml	100 – 2.000 ml	100 – 2.000 ml	100 – 2.000 ml	Inline	Inline
Stator diameter	19 mm	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm
Rotor diameter	12,7 mm	17 mm	17 mm	17 mm	18 mm	18 mm	18 mm	17 mm	18 mm
Gap between rotor and stator	0,3 mm	0,5 mm	0,5 mm	0,5 mm	0,5 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	21,4 m/s	22,6 m/s	22,6 m/s	22,6 m/s	21,4 m/s	22,6 m/s
Min. / max. immersion depth	40 / 165 mm	40 / 165 mm	40 / 185 mm	40 / 225 mm	40 / 165 mm	40 / 185 mm	40 / 225 mm	40 / 85 mm	40 / 85 mm
Shaft length	194 mm	194 mm	194 mm	270 mm	194 mm	194 mm	270 mm	110 mm	110 mm
Materials in contact with medium	PTFE, AISI 316L	PTFE, AISI 316L	FKM, AISI 316L	FFPM / SIC, AISI 316L	PTFE, AISI 316L	FKM, AISI 316L	FFPM / SIC, AISI 316L	FFPM / SIC, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	yes	no	yes	yes	no	yes	yes	yes
Suitable for abrasive substances	yes	yes	no	no	yes	no	no	no	no
Max. temperature	120 °C	180 °C	80 °C	220 °C	180 °C	80 °C	220 °C	220 °C	220 °C
Sterilization methods	wet chemical	all methods	wet chemical	wet chemical	all methods	wet chemical	wet chemical	wet chemical	wet chemical
Min. vacuum	–	–	50 mbar	1 mbar	–	50 mbar	1 mbar	1 mbar	1 mbar
Max. pressure	–	–	–	6 bar	–	–	6 bar	6 bar	6 bar
Ultimate fineness, suspensions	10 – 50 µm	15 – 50 µm	15 – 50 µm	15 – 50 µm	5 – 25 µm	5 – 25 µm	5 – 25 µm	15 – 50 µm	5 – 25 µm
Ultimate fineness, emulsions	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 10 µm	1 – 5 µm	1 – 5 µm	1 – 5 µm	1 – 10 µm	1 – 5 µm

SW 18 Slab rotor

Additional rotor for dispersing elements:
S 25 N – 18 G
S 25 KR – 18 G
S 25 KV – 18 G

Technical data	
Rotor diameter	12,8 mm
Gap between rotor and stator	0,35 mm
Circumferential speed	16,1 m/s
Materials in contact with medium	stainl. steel AISI 316L
Applications	viscous, fibrous tissue

Ident. No.
1 3304000

Ident. No.
2 3305500

Ident. No.
3 3370100

Dispersing elements T 10 basic

For nomenclature see page 69

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

Ident. No.
1 8003000

Ident. No.
2 8003300

Ident. No.
3 8003900

Dispersing elements T 50 basic

For nomenclature see page 69

Dispersing element	S 50 N – G 45 G	S 50 KR – G 45 G	S 50 N – G 45 M	S 50 KR – G 45 M	S 50 N – G 45 F	S 50 KR – G 45 F	S 50 KV – G 45 G – IL
Ident. No.	8003000	8003100	8003300	8003400	8003900	8004000	8015800
Fig.	1	without fig.	2	without fig.	3	without fig.	without fig.
Suitable for dispersing instrument	T 50 basic	T 50 basic	T 50 basic	T 50 basic	T 50 basic	T 50 basic	T 50 basic
Working range	0,5 – 20 l	0,5 – 20 l	0,5 – 15 l	0,5 – 15 l	0,25 – 10 l	0,25 – 10 l	Inline
Stator diameter	45 mm	45 mm	45 mm	45 mm	45 mm	45 mm	45 mm
Rotor diameter	36 mm	36 mm	40,5 mm	40,5 mm	40 mm	40 mm	36 mm
Circumferential speed	18,8 m/s	18,8 m/s	21,2 m/s	21,2 m/s	20,9 m/s	20,9 m/s	18,8 m/s
Min. / max. immersion depth	70 / 250 mm	70 / 260 mm	70 / 250 mm	70 / 260 mm	70 / 250 mm	70 / 260 mm	70 mm
Shaft length	300 mm	300 mm	290 mm	290 mm	290 mm	290 mm	105 mm
Materials in contact with medium	PTFE, AISI 316L	FKM, AISI 316L	PTFE, AISI 316L	FKM, AISI 316L	PTFE, AISI 316L	FKM, AISI 316L	FFPM / SIC, AISI 316L
pH range	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13	2 – 13
Suitable for solvents	yes	no	yes	no	yes	no	yes
Suitable for abrasive substances	yes	no	yes	no	yes	no	no
Max. temperature	180 °C	80 °C	180 °C	80 °C	180 °C	80 °C	220 °C
Sterilization methods	all methods	wet chemical	all methods	wet chemical	all methods	wet chemical	wet chemical
Min. vacuum	–	100 mbar	–	100 mbar	–	100 mbar	1 mbar
Max. pressure	–	–	–	–	–	–	6 bar
Ultimate fineness, suspensions	40 – 100 µm	40 – 100 µm	25 – 50 µm	25 – 50 µm	10 – 30 µm	10 – 30 µm	40 – 100 µm
Ultimate fineness, emulsions	10 – 30 µm	10 – 30 µm	5 – 20 µm	5 – 20 µm	1 – 10 µm	1 – 10 µm	10 – 30 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 69

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

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

S 10 D – 7G – KS – 65

Ident. No.	
3433212	12 pcs.
3433225	25 pcs.

S 10 D – 7G – KS – 110

Ident. No.	
3433312	12 pcs.
3433325	25 pcs.

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]	**3433212** [12 pcs.]	**3433312** [12 pcs.]
	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)	Polycarbonate (PC)
	Polysulfon (PSU)	Polysulfon (PSU)
Max. temperature	100 °C	100 °C
Sterilization methods	yes, autoclavable	yes, autoclavable

Plastic materials used approved by FDA.

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]	**3452000** [5 pcs.*]	**3451900** [5 pcs.*]
	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)	Polycarbonate (PC)
	Polyetheretherketon (PEEK)	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 18 D – 10 G – KS

Ident. No.	
3452000	5 pcs.*
3452400	10 pcs.*

S 18 D – 14 G – KS

Ident. No.	
3451900	5 pcs.*
3452300	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]	**3451800** [5 pcs.*]	**3451700** [5 pcs.*]
	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)	Polycarbonate (PC)
	Polyetheretherketon (PEEK)	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.	
3451800	5 pcs.*
3452200	10 pcs.*

S 25 D – 14 G – KS

Ident. No.	
3451700	5 pcs.*
3452100	10 pcs.*

General data	
Material	PP

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).

Ident. No.
3452500

IKA® Crushing

Special dispersing elements (T 50 basic)

Ident. No.
1689300

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 (76)

Accessories (page):
Dispersing elements (76): R 1405, R 1402

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)

Ident. No.
1289800

R 1405 Propeller

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

Ident. No.
1243300

R 1402 Dissolver

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

Ident. No.

8006300	S 50 N – W 80 SMK
8006400	S 50 KR – W 80 SMK

S 50 ... – 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.

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

Ident. No.
8005100

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.

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

IKA® Crushing

Dispersers (inline operation)

Technical data	
Flow rate (H_2O)	11,6 l/min
Speed range	6.500 – 24.000 rpm
Materials in contact with medium	stainl. steel (AISI 316L) FFPM
Max. operating temperature	180 °C
Dimensions (W x D x H)	450 x 100 x 120 mm
Weight	3,8 kg
Chamber volume	26 ml
Min. vacuum	1 mbar
Max. pressure	6 bar
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 °C
Protection class acc. to DIN EN 60529	IP 20

UTL 25 digital Inline ULTRA-TURRAX®

For circulation or flow-through processings in the laboratory.
- Simple, compact and sturdy modular design
- Sterilizable, autoclave-compatible
- Table-top or stand-supported device, low space requirement
- Easy disassembly
- Large delivery capacity of 4,4 to 11,6 l/min with open outlet (the mounting of a valve can reduce the flow rate)
- For air-free, sterile, and inline suspension, emulsyfying and desagglomeration
- For vacuum or pressurized operation (up to 6 bar)
- If the DK 25.11 is used, air induction is also prevented in batch operation
- Not self-priming
- A pump can be integrated between intake nozzle and vessel. As a result, viscous fluids can be processed
- **Not suitable for continuous operation or cyclical continuous operation**

Included with delivery (page):
T 25 digital (66), AD 25 Mounting (78),
DK 25.11 Flow chamber (78),
S 25 KV – 25 G – IL Dispersing element (71)

Accessories (page):
dispersing element S 25 KV – 25 F – IL (71)

Ident. No.

8014400	230 V 50/60 Hz
8014401	115 V 50/60 Hz

Example application

Technical data	
Flow rate (H_2O)	24 l/min
Speed range	4.000 – 10.000 rpm
Materials in contact with medium	stainl. steel (AISI 316L) FFPM
Max. operating temperature	180 °C
Dimensions (W x D x H)	130 x 150 x 500 mm
Weight	6,1 kg
Chamber volume	94 ml
Min. vacuum	1 mbar
Max. pressure	6 bar
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 °C
Protection class acc. to DIN EN 60529	IP 21

UTL 50 basic Inline ULTRA-TURRAX®

For circulation or flow-through processings in the laboratory or pilot plant stations.
- Stand-supported device, low space requirement
- Large flow rate of 24 l/min with open outlet (the mounting of a valve reduces the delivery capacity)
- For vacuum or pressurized operation to 6 bar
- If the DK 50.11 is used, air induction is also prevented in batch operation
- **Not suitable for continuous operation or cyclical continuous operation**

Additional features as UTL 25 digital inline.

Included with delivery (page):
T 50 basic (68), DK 50.11 Flow chamber (78),
S 50 KV – G 45 G – IL Dispersing element (73)

Accessories (page):
R 2723 Telescopic stand (115), R 271 Boss head clamp (116)

Ident. No.

8015900	230 V 50/60 Hz
8015901	115 V 50/60 Hz

Ident. No.
2518000

DK 25.11 Flow chamber

For S 25 KV - 25 ... - IL dispersing elements. Allows inline operation mode, see UTL 25 digital, page 77.

Batch operation (see fig.):
DK 25.11 is mounted around the dispersing element. The DK 25.11 must be at a lower elevation than the surface of the liquid during operation. With this operating mode, no air is drawn in as a result of turbulence in the vessel.

General data	
Chamber volume	26 ml
Vacuum	1 mbar
Pressure	6 bar

Ident. No.
2562500

AD 25

Mounting support for DK 25.11

Ident. No.
2810000

DK 50.11 Flow chamber

For S 50 KV - G 45 ... - IL dispersing elements. Allows operation in inline mode, see UTL 50 basic, page 77.

If used in batch mode: DK 50.11 is mounted around the dispersing element. Additional features as DK 25.11.

General data	
Chamber volume	94 ml
Vacuum	1 mbar
Pressure	6 bar

Technical data	
Power	1,5 kW
Speed range (up to 40 m/s)	3.160 – 13.750 rpm
Flow rate	approx. 300 – 700 l/h
Circumferential speed	23,5 (9,4 – 41) m/s
Materials in contact with medium	stainl. steel AISI 316L/316Ti
Seal material	
Shaft sealing ring	PTFE-compound
Elastomer chamber	standard FPM
Dimensions (W x D x H)	450 x 250 x 350 mm
Generator	4M

LABOR-PILOT 2000/4

Small, multi-functional table-top dispersing system with the possibility of upscaling to production size.

Basic unit with module ULTRA-TURRAX® UTL:
- Three-phase motor with on/off-switch
- Belt drive
- Single stage dispersing chamber UTL
- Generator 4M (medium)
- PTFE-shaft sealing ring

Can be extended to a high-speed dispersing machine by means of the LABOR-PILOT-Controller.

Special features:
- Multiple use for mixing, dispersing or wet milling
- Modular design – the basic unit can be converted easily by using various mixing heads to reach circumferential speeds up to 40 m/s
- CIP/SIP (clean-in-place / sterilization-in-place) capable
- All parts in contact with the medium are made of stainless steel AISI 316 L/316 Ti
- The control system allows a product-specific adaptation to rheological characteristics

Ident. No.	
T056762	3 x 220 – 240 V 50/60 Hz
T055396	3 x 380 – 420 V 50/60 Hz
S097950	for FC-operation

Technical data	
Power	2,2 kW
Speed range (up to 40 m/s)	3.160 – 13.750 rpm
Standard speed	7.900 rpm
Flow rate	approx. 300 – 700 l/h
Circumferential speed	23,5 (9,4 – 41) m/s
Materials in contact with medium	stainl. steel AISI 316L/316Ti
Seal material	
Double acting mechanical seal	Q1Q1VMG-BQ1VMG
Elastomer chamber	standard FPM
Dimensions (W x D x H)	
(including pressure locking)	450 x 250 x 930 mm
Generator	4M
Inlet connector	DN 25
Outlet connector	DN 15

PROCESS-PILOT 2000/4

The PROCESS-PILOT is equipped with a double-acting mechanical seal complete with the necessary pressure locking system. This allows, in addition to the other modules, the use of the CMS module for easy and dust-free incorporation of powders into liquids in batch operation.

The advantages of the PROCESS-PILOT:
- Operates under pressure/vacuum
- Works at elevated temperatures
- Low maintenance mechanical seal
- Suitable for dry-running
- Available in Ex-protected design acc. to 94/9/EG (ATEX 95)

Basic unit with module ULTRA-TURRAX® UTL:
- Three-phase motor
- Belt drive
- Single stage dispersing chamber UTL
- Double acting mechanical seal, material combination Q1Q1VMG-BQ1VMG
- Generator 4M (medium)
- All parts in contact with the medium are made of stainless steel AISI 316 L/316 Ti
- O-rings made of FPM

Ident. No.	
T058102	for FC-operation

Other generators available.

LABOR-PILOT-Controller
PROCESS-PILOT-Controller

The LABOR-PILOT and the PROCESS-PILOT are controlled via the Controller, complete with:
- Frequency converter
- Speed indicator
- Temperature indicator
- Timer
- Adapter DN 15 with temperature sensor PT 100 at the product outlet

The controller enables flexible setting and measurement of processing parameters.

General data	
Power	
LABOR-PILOT-Controller	1,5 kW
PROCESS-PILOT-Controller	4 kW
Frequency range	20 – 87 Hz
Dimensions (W x D x H)	
LABOR-PILOT-Controller	220 x 340 x 380 mm
PROCESS-PILOT-Controller	220 x 340 x 450 mm

LABOR-PILOT-Controller

Ident. No.	
T054916	3 x 220 – 240 V 50/60 Hz
T055171	3 x 380 – 420 V 50/60 Hz

PROCESS-PILOT-Controller

Ident. No.	
T058761	3 x 380 – 420 V 50/60 Hz

Module DISPAX-REACTOR® DR

Extension for a three-stage dispersing machine with two additional generators, 2G (coarse) and 6F (fine).

Can be extended to the high-speed dispersing machine DRS by means of the LABOR-PILOT Controller.

Material module: stainl. steel (AISI 316L/316Ti) / FPM.
Other generators available.

General data	
Function mode	3-step inline
Generator	Standard 2G – 4M – 6F other configurations available as optional
Flow rate 2G – 4M – 6F	up to 350 l/h
Speed range (20 – 87 Hz)	3.160 – 13.750 rpm
Standard speed (50 Hz)	7.900 rpm
Inlet connector	DN 25
Outlet connector	DN 15

Ident. No.	
T055013	LABOR-PILOT
T058133	PROCESS-PILOT

Module colloid mill MK / Module cone mill MKO

Extension for getting a colloid mill/cone mill:

Tools:
- Milling tool for MK: spiral geared, stainless steel (AISI 316L/316Ti)
- Milling tool for MKO: WCCO-coated (tungsten carbide-cobalt)

Material module stainl. steel (AISI 316L/316Ti) / FPM

General data	
Function mode	two counteropposing cones for setting milling grade
Flow rate	approx. 30 – 300 l/h
Speed range	3.160 – 13.750 rpm
Standard speed	7.900 rpm
Inlet connector	DN 25
Outlet connector	DN 15

Module colloid mill MK

Ident. No.	
T054917	LABOR-PILOT
T058583	PROCESS-PILOT

Module cone mill MKO

Ident. No.	
T061069	LABOR-PILOT
T061674	PROCESS-PILOT

General data	
Function mode	continuous “solid/liquid” incorporation
Flow rate	approx. 50 – 200 l/h
Speed range	3.160 – 13.750 rpm
Standard speed	7.900 rpm
Inlet connector (solid)	DN 50
Inlet connector (liquid)	DN 15
Outlet connector	DN 15
Generator	2P

Module MHD

Extension for continuous incorporation and dispersion of powdery materials in liquids.

Tools:
- Injection unit
- Feeding screw
- Mixing blades
- Generator 2P (coarse with pump blades)

Material module: stainl. steel (AISI 316L/316Ti) / FPM

Ident. No.	
T055142	LABOR-PILOT
T058148	PROCESS-PILOT

General data	
Function mode	“solid/liquid” incorporation in batch mode
Flow rate	up to 6.000 l/h
Standard speed	9.000 rpm
Inlet connector (solid)	DN 25
Inlet connector (liquid)	DN 25
Outlet connector	DN 25

Module CMS (for PROCESS-PILOT only!)

Extension for incorporation and dispersion of powdery materials into liquids in batch operation with:
- Housing parts for powder and liquid inlet
- Rotors
- Adapter for housing and shaft

Material module: Stainless steel (AISI 316L 316Ti) / FPM

Ident. No.	
T061272	

General data	
Capacity	8 l
Funnel connector	DN 25
Ball valve connector	DN 25
3-Way stop cock	DN 15
Product temperature	up to 160 °C
Process temperature	up to 3 bar

Accessories for circulating operation

Funnel 8 l, double-jacketed, stainl. steel.
- Two-way ball valve
- Telescopic stand
- RW 28 basic (page 38)
- Anchor stirrer
- PTFE-wipers for anchor stirrer
- R 271 Boss head clamp (page 116)
- 3-Way stop cock
- Circulation bend with intermediate piece
- Sealing set for circulation bend
- Blind nut DN 15
- Hose nozzle DN 15

Circulating operation

Ident. No.	
T056458	Funnel
T056468	Two-way ball valve
T055330	Telescopic stand
2760000	RW 28 basic, page 38
T058564	Anchor stirrer
T058714	PTFE-wipers for anchor stirrer
2664000	R 271 Boss head clamp, page 116
T056482	3-Way stop cock
T057796	Circulation bend with intermediate piece
T056730	Sealing set for circulation bend
T056484	Blind nut DN 15
T056486	Hose nozzle DN 15 K

Accessories for continuous operation

Inlet side: Hose nozzle K / M DN 25
Outlet side: Hose nozzle DN 15 K

Continuous operation

Ident. No.	
T057251	Hose nozzle K / M DN 25
T056486	Hose nozzle DN 15 K

For more information go to:
www.ikaprocess.com

One basic module – Seven configurations

Module DISPAX-REACTOR® DR

Module MK

Module MHD

Module CMS

magicLAB® with module UTL

Module MICRO-PLANT

magicLAB® with module UTC

Technical data	
Motor rating	900 W
Speed range (40 m/s)	3.000 rpm – 26.000 rpm
Power supply	220 – 240 V
Frequency	50 – 60 Hz
Process pressure	up to 2,5 bar
Product temperature	
in continuous operation	up to 80 °C
in short applications (up to 18/min)	up to 120 °C
Materials in contact with	stainl. steel
medium	(AISI 316L and AISI 316Ti)
Seal material	
Shaft sealing ring	PTFE-compound
Elastomer chamber	Standard FPM
	optional EPDM (FDA), FFPM
Dimensions (W x D x H)	170 x 270 x 215 mm
Weight, basic module	7 kg

magicLAB®

Seamless transfer from laboratory to production equipment.
The magicLAB®
- Suitable for a wide range of applications
- Designed for incorporation, dispersion, wet milling and incorporating powders into fluids in laboratory quantities
- Ideal for continuous, circulating and batch processing
- Enables same working methods from prescription development right through to series production
- Makes scale-up easy thanks to constant work parameters
- Modular construction
- Simple heating and cooling of all modules
- Easy to upgrade, flexible upgrading
- Rotor-stator construction operating at circumferential speeds up to 40 m/s
- Flexible speed setting and temperature control from the magicLAB® controller and the operator panel (included as standard)

The magicLAB® basic module is fitted with the ULTRA-TURRAX® UTL (4M generator) and is designed for one-step, inline dispersion.

Included with delivery (basic module):
Basic module with inline dispersion element ULTRA-TURRAX® UTL with 4M generator, operator panel, controller, temperature probe, storage and carrying case.

magicLAB® with module UTL

Ident. No.	
U078310	magicLAB®
U077727	230 V power supply cable (EU)
U077729	115 V power supply cable (USA)

Multifunction storage and carrying case

Optional extension modules and related applications

The following extension modules are available as optionals for the basic module; for a description see pages 84 and 85.

Optional extension modules	Applications
DISPAX-REACTOR® DR	3-step dispersion
MK colloid mill	Wet and fine milling
MKO cone mill	
MHD	Continous powder incorporation
CMS	Intermittent powder incorporation
ULTRA-TURRAX® UTC	Single-step dispersion in batch mode
MICRO-PLANT	Dispersion in circulating mode – accessory for UTL, DR, MK and MKO modules

Basic module ULTRA-TURRAX® UTL

Applications:
- Single-step, inline dispersion
- In cases where standard stirring and mixing are not enough (e.g. with instable material) or to save time
- Dispersing materials of different viscosity
- To speed up dissolving processes

General data	
Function mode	inline, single-step
Generator	standard: 4M (medium) optional: 2G, 2P, 6F
Flow rate	approx. 100 – 200 l/h
Speed range	3.000 – 26.000 rpm
Standard speed	16.000 rpm
Inlet connector	¾" clamp
Outlet connector	½" clamp

Module DISPAX-REACTOR® DR

Applications:
- Extension to modules with 2G and 6F generators
- Three-step, inline dispersion
- When dispersion with ULTRA-TURRAX® is not sufficient
- For narrow dispersion spectra after just one pass
- For optimum homogeneity and stability of emulsions and suspensions

General data	
Function mode	inline, three-step
Generator	standard: 2G, 4M, 6F other configurations available as optional
Flow rate 2G – 4M – 6F	approx. 80 l/h
Speed range	3.000 – 26.000 rpm
Standard speed	16.000 rpm
Inlet connector	¾" clamp
Outlet connector	½" clamp

Module MK / Module MKO

Colloid mill with spiral-geared milling tool / Cone mill module with WCCO-coated milling tool.
With two counteropposing cones with adjustable milling grade and friction.

Applications:
- For wet and fine milling of hard and grainy material
- Making fine emulsions and pastes

General data	
Function mode	two counteropposing cones for setting milling grade
Flow rate	approx. 200 l/h
Speed range	3.000 – 26.000 rpm
Standard speed	16.000 rpm
Inlet connector	¾" clamp
Outlet connector	½" clamp

Module MHD

Applications:
- For continuous incorporation of powders in liquids, homogenising and dispersion in a single pass
- For continuous preparation of suspensions
- For rapid wetting of solids without lumps
- For solid fractions up to 80 % and for viscosities up to 50 Pas (depending on process)

General data	
Function mode	continuous "solid/liquid" incorporation
Generator	2P
Flow rate	approx. 60 l/h
Speed range	3.000 – 26.000 rpm
Standard speed	16.000 rpm
Inlet connector (solid)	inner diam. 25 mm / outer diam. 35 mm
Inlet connector (liquid)	outer calibrated 6 mm hose
Outlet connector	½" clamp

Further accessories on request.

General data	
Function mode	"solid/liquid" incorporation in batch mode
Flow rate	approx. 1.000 l/h
Speed range	3.000 – 16.000 rpm
Standard speed	11.000 rpm
Inlet connector (solid)	¾" clamp
Inlet connector (liquid)	¾" clamp
Outlet connector	¾" clamp

Module CMS

Applications:
- For intermittent incorporation of powders in liquids
- The unit creates a vacuum at the solid inlet so that the powder is directly sucked in from the hopper
- For dustless, lump-free incorporation of powders in liquids
- For enriching liquids with powders in circulating processes
- For solid fractions up to approx. 65%

General data	
Capacity	1litre (standard) 2 litres (optional)
Hopper connector	¾" clamp
Three-way ball valve connector	½" clamp
Product temperature	up tp 120 °C
Process pressure (optional)	up to 2,5 bar

MICRO-PLANT

- With 1 litre, single-wall funnel
- With three-way ball valve
- With circulation bend

Optionals:
- Heated, double-wall, 2 litre funnel
- Cover and special extensions for working with overpressure or vacuum

Applications:
- For dispersion in circulating processes.
- As extension kit for UTL, DR, MK and MKO modules
- For prescription development and defining optimum incorporation and mixing module
- For calculating process parameters such as speed, shear frequency, temperature and time

General data	
Function mode	Dispersing in batch processes
Generator	same dispersing element as T25
Volume range	up to 2.000 ml
Speed range	10.000 – 24.000 rpm
Duty cycle	25 % (= 15 min/h)

Module ULTRA-TURRAX® UTC

Applications:
- For dispersion in batch processing
- For formulating small product quantities up to 2 litres in a glass flask
- For rapid identification of rheological changes in structure, viscosity, etc
- For estimating the shear stress required
- Requires a stand.

Accessories for module UTC (page):
- Stand R 2722, R 2723 (114 / 115)
- Boss head clamp R 271 (116)

For more information please visit:
www.ikaprocess.com

A 11 basic
Batchmill for two milling processes

Technical data	
Motor rating input	300 W
Motor rating output	160 W
Speed	28.000 rpm (fixed)
Useful volume	80 ml
Duty cycle ON / OFF	5 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

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 88)

Accessories (page):
A 11.1 Spare beater (87), A 11.2 Cutting blade (87), A 11.3 Beater (87), A 11.4 Grinding chamber (88), A 11.5 Spare grinding chamber (88), A 11.6 Double beater (88), A 11.7 Funnel (88)

Ident. No.	
2900000	230 V 50/60 Hz
2900001	115 V 50/60 Hz

General data	
Material	stainl. steel (AISI 420)

A 11.1 Spare beater

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

Ident. No.
2904600

General data	
Material	stainl. steel (AISI 440B)

A 11.2 Cutting blade

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

Ident. No.
2905200

General data	
Material	stainl. steel (AISI 440B)

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.

Ident. No.
2983000

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.

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

Ident. No.
2904100

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.

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

Ident. No.
2983100

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.

General data	
Material	titanium, surface-hardened

Ident. No.
3302900

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.

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

Ident. No.
3048700

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. 6 – 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 blade incl. with delivery

Accessories (page):
M 21 Spare cutter (89), M 22 Hard metal cutter (89), M 23 Star-shaped cutter (89), M 20.1 Grinding chamber (89)

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, stainless steel

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

Ident. No.
0328200

General data	
Material	ungsten 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.
Cutters are not included with M 20.

Accessories (page):
M 21 Spare cutter (89), M 22 Hard metal cutter (89), M 23 Star-shaped cutter (89)

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 (90), MF 10.2 Impact grinding head (90)

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	9,7 kg
Dimensions (W x D x H)	320 x 300 x 380 mm
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 (90)

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	10,5 kg
Materials in contact with medium	stainl. steel
Grinding channel and cover	(AISI 304)
Blades	(AISI 440B)
Shaft, rotor, screws	(AISI 316L)

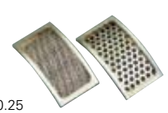
Ident. No.
2871000

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 (90)

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	11 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

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		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 90**
Ident. No. 2836000

MF 10.1
Cutting-grinding head, interchangeable with impact grinding head MF 10.2, **page 90**
Ident. No. 2870900

MF 10.2
Impact grinding head, interchangeable with cutting-grinding head MF 10.1, **page 90**
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 90**
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 90**
Ident. No. 2939400

Heating / Tempering

HCT basic

Universal laboratory heating plate with revolutionary technology and new functions:
new: Integrated temperature control
new: Incl. PT 1000 temperature sensor (PT 1000.60)
Page 96

Heating baths	94 – 95
Heating plates	96
Thermostats	97 – 99

HBR 4 digital
Heating bath with digital display

Heating function	
Heat output	1.000 W
Temperature range	RT – 225 °C
Setting tolerance	± 5 K
Deviation	± 5 K
Temperature display	scale
Safety class acc. to DIN 12877	2
Stirring function	
Stirring function	no
General data	
Useful volume	4 l
Material	stainl. steel (AISI 304)
Outer diameter	340 mm
Inner diameter	200 mm
Outer height	250 mm
Inner height	160 mm
Weight	3,9 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

HB 4 basic 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
- Useful volume of 4 liters
- Heat output 1.000 W
- Infinitely adjustable safety temperature limiter acc. to DIN 12877
- Double jacket provides protection against burns

Accessories (page):
H 240 Ring set (98)

Ident. No.	
2520000	230 V 50/60 Hz
2520001	115 V 50/60 Hz

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	340 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

HBR 4 digital additionally:
- 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 (98), H 159 Intermediate bottom (98), IKAFLON®-Stirring bars (29)

Ident. No.	
2602300	230 V 50/60 Hz
2602301	115 V 50/60 Hz

Ident. No.

2609900	230 V 50/60 Hz

HP 30 digital IKATHERM®

Heating plate with a large set-up surface (300 x 300 mm).
- Adjustable heating capacities of 25 %, 50 % and 100 %
- Homogenous temperature distribution across entire plate
- Digital temperature display and electronic control
- Safety features to prevent skin contact
- Surface is made of corrosive-resistant materials

Accessories (page)**:**
HP 30.1 Temperature sensor (98)

Heating function	
Heat output	2.500 W
Temperature range	RT – 300 °C
Setting tolerance	± 1 K
Sensor for temperature in medium	PT 100
Control accuracy with temperature sensor	± 1 K
Heating plate	
Heating plate material	cast iron
Heating plate dimensions	300 x 300 mm
General data	
Dimensions (W x D x H)	320 x 400 x 140 mm
Weight	15 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Ident. No.

3384100	230 V 50/60 Hz
3384101	115 V 50/60 Hz

NEW!

HCT basic *safety control* IKATHERM®

Universal laboratory heating plate with revolutionary technology and new functions:
new: Integrated temperature control
new: Incl. PT 1000 temperature sensor (PT 1000.60)
new: Exact temperature setting via digital display, even when switched off
new: Set safety temperature limit displayed digitally
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)
- Heating plate, 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 thanks to improved heat control technology
- Enclosed assembly (IP 42) guarantees long service life
- Highly polished aluminium heating plate for optimum heat transfer

Accessories (page)**:**
Electronic contact thermometers (117): ETS-D5, ETS-D6, Bath attachments (28): H 15, H 28, Oil bath attachments (28): H 29, H 30

Heating function	
Temperature display	digital
Heat output	600 W
Heating rate (1 l H_2O in H 15)	6,5 K/min
Temperature range	RT – 310 °C
Setting tolerance	± 1 K
Temperature undulation without temperature 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 ETS-D6 / ± 0,2 K
Heating plate	
Material	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

Operating temperature range	
Operating temperature range	28 – 300 °C
Min. temperature with refrigerator	-20 °C
Temperature stability at 70 °C	0,02 K
Temperature adjustment / temperature indication	digital 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	
With 12 mm connection	33 l/min
Delivery pressure (head)	0,7 bar
With 12 mm connection	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 WxD/ 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
Power supply requirement	230 V 1~ 50/60 Hz
Max. current	14,1 A
Fuse	16 A
Permissible 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. With adjustable overtemperature protection according to DIN 12876.

Complete functions: With level protection and maximum and minimum setpoint 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...20mA) analogue 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 (99), Hose adapters (99): LT 5.22, LT 5.23, LT 5.24, PC 2.3 Cable (99), labworldsoft® (143), Temperature sensors (99): PT 100.5, PT 100.7

Ident. No.

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

NEW!

labworldsoft®

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

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).
- 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 (98)

Ident. No.

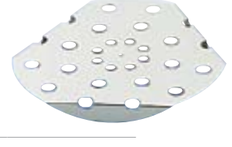
3164000	230 V 50/60 Hz
3164001	115 V 50/60 Hz

Ident. No.
2858700

H 240 Ring set

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

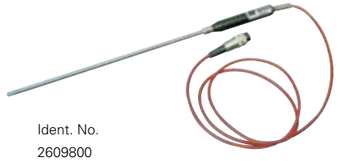
General data	
Number of rings	10
Diameter of opening (variable)	25 – 185 mm



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.



Ident. No.
2609800

HP 30.1 Temperature sensor

For heating plate HP 30 digital. For controlling the temperature in the medium.

General data	
Immersion depth	290 mm
Diameter	6 mm
Material	stainl. steel (AISI 304)

Ident. No.
1752900

R 350 Universal clamp

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

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.

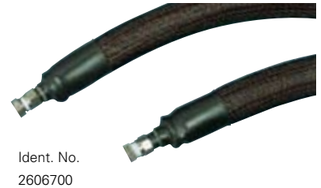
General data		
Material		polycarbonate
Volume without vessels		5, 11, 18 l
Outer dimensions (W x D x H)	EH 4.1	132 x 280 x 160 mm
	EH 4.2	350 x 313 x 168 mm
	EH 4.3	350 x 473 x 168 mm
Inner dimensions (W x D x H	EH 4.1	120 x 262 x 150 mm
	EH 4.2	302 x 295 x 150 mm
	EH 4.3	302 x 455 x 150 mm

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):
Hose adapters (99): LT 5.22, LT 5.23, LT 5.24



Ident. No.
2606700

General data	
Dimensions adapter LT 5.22	R 1/8" x M 16 x 1
Dimensions adapter LT 5.23	R 1/4" x M 16 x 1

LT 5.22 Hose adapter
LT 5.23 Hose adapter

For connection to the kneader HKD-T 06 D.
LT 5.23: For connection to the reactor vessels LR 2000.3 and LR 2000.4

Ident. No.	
2807000	LT 5.22
2235000	LT 5.23

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 2.3 Cable

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

Ident. No.
3036200

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

General data	
Length	135 mm
Diameter	3 mm
Material	stainl. steel (AISI 316L)

PT 100.7

Temperature sensor for use with laboratory kneader HKD - T 06 D.

Ident. No.
2611500

Liquid Handling

IKA®-*PET*

High-precision air cushion piston stroke pipette for 25 µl, 50 µl and 100 µl for science, research and routine work in the field of liquid handling.
Page 102

Fixed volume pipettes 102 – 103

Ident. No.	
3222202	25 µl
3222201	50 µl
3222200	100 µl

IKA®-*PET* for 25 µl, 50 µl and 100 µl

High-precision air cushion piston stroke pipette for science, research and routine work in the field of liquid handling.
- Single channel air cushion piston stroke pipette (fixed volume)
- Pipette and tips with certificate of conformity acc. to DIN EN ISO 8655
- Maximum accuracy and precision of pipette and tip system
- High quality tip with ULR (Ultra low retention) surface
- High quality casing and flask material
- Minimum manpower required even for blow out and tip ejection
- Simple operation due to ergonomic design
- Easy to maintain thanks to the assembly tool provided
- Adjustable even for liquids with different density to water
- Includes software for measurement calibration and analysis

Model 25 µl	
Nominal volume	25 µl
Accuracy systematic error [e_s]	± 1,0 %
Precision random error [CV]	≤ 0,3 %
Model 50 µl	
Nominal volume	50 µl
Accuracy systematic error [e_s]	± 0,7 %
Precision random error [CV]	≤ 0,3 %
Model 100 µl	
Nominal volume	100 µl
Accuracy systematic error [e_s]	± 0,6 %
Precision random error [CV]	≤ 0,2 %
General data	
Dimensions (W x D x H)	28 x 52 x 206 mm
Weight	0,075 kg

ULR-pipette tips

Considerably improved inner surface, similar to Lotus Effect.

Description	Pack (pcs.)	sterile	Colour	Ident. No.
IKA®-TIP 200 µl – bag	1.000	no	natural	3330700
IKA®-TIP 200 µl – box	2 x 1.000	no	natural	3330701
IKA®-TIP 200 µl – 96-rack	10 x 96	no	natural	3330702
IKA®-TIP 200 µl – 96-rack	10 x 96	yes	natural	3330703
IKA®-TIP Filter 1 – 100 µl – bag	1.000	no	natural	3330800
IKA®-TIP Filter 1 – 100 µl – bag	1.000	yes	natural	3330801
IKA®-TIP Filter 1 – 200 µl – bag	1.000	no	natural	3330900
IKA®-TIP Filter 1 – 200 µl – bag	1.000	yes	natural	3330901
IKA®-TIP Filter 100 µl – 96-rack	10 x 96	yes	natural	3331000
IKA®-TIP Filter 200 µl – 96-rack	10 x 96	yes	natural	3331100

Pipette stands	
Rack 1	1 pipette
Rack 3	max. 3 pipettes

IKA®-*PET* Rack 1 and Rack 3

Pipette stands fo IKA®-pipettes.

Ident. No.	
3224000	Rack 1
3224001	Rack 3

IKA®-*PET soft*

Is a user-friendly program for the automatic recording, analysis and management of gravimetric measurements for pipette calibration.
- Suitable for single and multi-channel pipettes with fixed and variable volumes
- Testing in accordance with DIN EN ISO 8655
- Automatic transfer of measurements from scales, air pressure, humidity and temperature by RS 232 interface
- Automatic correction of environmental air pressure and temperature conditions
- Programm controlled recalibrating of the pipette is possible
- Master data for over 580 pipettes by other manufacturers already stored
- Inventory of individual pipettes
- Date-controlled monitoring of calibration cycles
- Measuring results saved in a database
- Log according to GLP guidelines with details of all individual measurements, average, accuracy and precision
- Compatible with all Microsoft® Win32 operating systems (Win®95/98/ME/NT/2000/XP/Vista etc.)

Ident. No.
3220300

Destilling

Glass condenser

With space-saving vertical condenser. Included with delivery of set of glassware RV 06.2.
Page 110

Rotary evaporators 106 – 111

RV 06-ML 1-B

RV 06.1
Set of glassware, **page 109**
Ident. No. 1957500

HB 4 basic
Heating bath, **page 95**
Ident. No. 2520000

Lift with electrical height adjustment

RV 06-ML 2-B

RV 06.2
Set of glassware, **page 110**
Ident. No. 1957600

HB 4 basic
Heating bath, **page 95**
Ident. No. 2520000

Lift with electrical height adjustment

Set of glassware	**RV 06.1**
Type of condenser	diagonal
Cooling surface	1.200 cm²
Drive	**RV 06-ML**
Motor type	DC motor
Motor rating input / output	45 / 36 W
Speed range	10 – 240 rpm
Head inclination, adjustable	± 10 °
Lift	
Stroke min. / max.	74 / 150 mm
Drive	motor
Max. load	10 kg
Alignment end stop on top	76 mm
Lower limit switch	fixed
Heating bath	**HB 4 basic**
Temperature range	RT – 225 °C
Heating output	1.000 W
Setting accuracy	± 5 K
Control deviation	± 5 K
General data	
Dimensions (W x D x H)	840 x 390 x 880 mm
Weight	18 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

RV 06-ML 1-B

Consisting of heating bath HB 4 basic, set of glassware RV 06.1 with diagonal condenser and drive RV-06 ML with lift with electrical height adjustment.
- Wearless drive with brushless DC motor
- Convenience and safety with motorized lift; the glassware is not moved
- Condenser geometry with 1.200 cm² cooling surface, higher yield and increased condensation power
- No chimney effect
- Rodaviss screw joint allows bonded ground joints to be released easily, removable screw connections facilitate cleaning of glass components

Accessories (page):
RV 06.2 Set of glassware (110), VC 2 Vacuum controller (120)

Ident. No.	
8010000	230 V 50/60 Hz
8010001	115 V 50/60 Hz

Set of glassware	**RV 06.2**
Type of condenser	vertical
Cooling surface	1.200 cm²
Drive	**RV 06-ML**
Motor type	DC motor
Motor rating input / output	45 / 36 W
Speed range	10 – 240 rpm
Head inclination, adjustable	± 10 °
Lift	
Stroke min. / max.	74 / 150 mm
Drive	motor
Max. load	10 kg
Alignment end stop on top	76 mm
Lower limit switch	fixed
Heating bath	**HB 4 basic**
Temperature range	RT – 225 °C
Heating output	1.000 W
Setting accuracy	± 5 K
Control deviation	± 5 K
General data	
Dimensions (W x D x H)	640 x 390 x 1.130 mm
Weight	18 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

RV 06-ML 2-B

Consisting of heating bath HB 4 basic, set of glassware RV 06.2 with vertical condenser (space-saving), drive RV 06-ML with lift with electrical height adjustment.
- Wearless drive with brushless DC motor
- Convenience and safety with motorized lift; the glassware is not moved
- Condenser geometry with 1.200 cm² cooling surface, higher yield and increased condensation power
- No chimney effect
- Rodaviss screw joint allows bonded ground joints to be released easily, removable screw connections facilitate cleaning of glass components
- Suitable for DIN EN 12697-3 (Asphalt test for hot asphalt)

Accessories (page):
RV 06.1 Set of glassware (109), VC 2 Vacuum controller (120)

Ident. No.	
8010100	230 V 50/60 Hz
8010101	115 V 50/60 Hz

Ident. No.

8017900	230 V 50/60 Hz
8017901	115 V 50/60 Hz

RV 05 basic 1-B

Consisting of heating bath HB 4 basic, set of glassware RV 06.1 with diagonal condensor, drive RV 05 basic, telescopic stand RV 05.3 and boss head clamp R 271.
- Easy and jolt-free raising and lowering of the rotary evaporator
- Telescopic stand tiltable to the side
- Rodaviss screw joint allows bonded ground joints to be released easily, removable screw connections facilitate cleaning of glass components
- Condenser geometry with 1.200 cm² cooling surface, higher yield and increased condensation power
- No chimney effect

Accessories (page):
RV 06.2 Set of glassware (110), VC 2 Vacuum controller (120)

Set of glassware	**RV 06.1**
Type of condenser	diagonal
Cooling surface	1.200 cm²
Drive	**RV 05 basic**
Motor type	asynchronous
Motor rating input / output	133 / 65 W
Speed range	46 – 260 rpm
Head inclination, adjustable	any
Lift	**RV 05.3**
Stroke	190 mm
Max. load	10 kg
Swivel feature	90 °
Heating bath	**HB 4 basic**
Temperature range	RT – 225 °C
Heating output	1.000 W
Setting accuracy	± 5 K
Control deviation	± 5 K
General data	
Dimensions (W x D x H)	520 x 450 x 900 mm
Weight	12 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Ident. No.

8018000	230 V 50/60 Hz
8018001	115 V 50/60 Hz

RV 05 basic 2-B

Consisting of heating bath HB 4 basic, set of glassware RV 06.2 with vertical condenser (space-saving), drive RV 05 basic, telescopic stand RV 05.3 and boss head clamp R 271.
- Easy and jolt-free raising and lowering of the rotary evaporator
- Telescopic stand tiltable to the side
- Rodaviss screw joint allows bonded ground joints to be released easily, removable screw connections facilitate cleaning of glass components
- Condenser geometry with 1.200 cm² cooling surface, higher yield and increased condensation power
- No chimney effect
- Suitable for DIN EN 12697-3 (Asphalt test for hot asphalt)

Accessories (page):
RV 06.1 Set of glassware (109), VC 2 Vacuum controller (120)

Set of glassware	**RV 06.2**
Type of condenser	vertical
Cooling surface	1.200 cm²
Drive	**RV 05 basic**
Motor type	asynchronous
Motor rating input / output	133 / 65 W
Speed range	46 – 260 rpm
Head inclination, adjustable	any
Lift	**RV 05.3**
Stroke	190 mm
Max. load	10 kg
Swivel feature	90 °
Heating bath	**HB 4 basic**
Temperature range	RT – 225 °C
Heating output	1.000 W
Setting accuracy	± 5 K
Control deviation	± 5 K
General data	
Dimensions (W x D x H)	580 x 480 x 1.000 mm
Weight	12 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

Drive	
Motor type	asynchronous
Motor rating input	133 W
Motor rating output	65 W
Speed range	46 – 260 rpm
Speed display	scale
General data	
Dimensions (W x D x H)	130 x 200 x 260 mm
Weight	4,5 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 21

RV 05 basic Drive

Rotary evaporator drive, newly designed. The drive output is transmitted directly to the vapor tube via a control gear with secondary torque coupling.
- Condenser motor supported by means of ball bearing
- Constant operation is guaranteed even with heavy loads

Accessories (page):
RV 05.3 Lift (109), Set of glassware (109 / 110): RV 06.1, RV 06.2, HB 4 basic Heating bath (95), R 271 Boss head clamp (116)

Ident. No.

3075000	230 V 50/60 Hz
3075001	115 V 50/60 Hz

General data	
Diameter of support rod	34 mm
Max. load	10 kg
Stroke	190 mm
Height	710 – 900 mm
Dimensions (W x D x H)	580 x 450 x 900 mm

RV 05.3 Telescopic stand

Raising is made easier by a jolt-free pneumatic spring.

Ident. No.

3154100

General data	
Type of condenser	diagonal
Cooling surface	1.200 cm²

RV 06.1 Set of glassware

Diagonally mounted condenser for all standard distillation tasks.
- Can be assembled and disassembled quickly and without difficulty
- Included with delivery: one 1.000 ml evaporating flask and one 1.000 ml receiving flask

Accessories (page):
Evaporating flasks (111): RV 06.4, RV 06.5, RV 06.6, RV 06.7 Receiving flask (111), RV 06.11 Vapor tube (110), Seals (110): RV 06.13, RV 06.15

Ident. No.

1957500

Ident. No.
1957600

RV 06.2 Set of glassware

With space-saving vertical condenser.
The distributor part is fitted with a condensate blocker as well as a discharge channel which prevents the condensate from getting into contact with the seal. A PTFE inlet pipe facilitates constant infeed of the distillate.
Included with delivery: one 1.000 ml evaporating flask and one 1.000 ml receiving flask.

Accessories (page):
Evaporating flasks (111): RV 06.4, RV 06.5, RV 06.6, RV 06.7 Receiving flasks (111), RV 06.11 Vapor tube (110), Seals (110): RV 06.13, RV 06.15

General data	
Type of condenser	vertical
Cooling surface	1.200 cm²

Ident. No.
1958000

RV 06.11 Vapor tube

For set of glassware RV 06.1 and RV 06.2.

General data	
Diameter	21,6 mm

Ident. No.
1907800

RV 06.13 Seal

For RV 06.11.

General data	
Material	FKM with PTFE coating

Ident. No.
2114700

RV 06.15 Seal

For RV 06.11,
resistant to solvents.

General data	
Material	PTFE

Evaporating flasks, NS 29

RV 06.4

General data	
Volume	1 l
Material	borosilicate glass

RV 06.5

General data	
Volume	2 l
Material	borosilicate glass

RV 06.6

General data	
Volume	0,1 l
Material	borosilicate glass

Ident. No.	
1	1905600
2	1905500
3	1905700

RV 06.7 Receiving flask, KS 35

General data	
Volume	1 l
Material	borosilicate glass

Ident. No.
1906600

Accessories

ETS-D5

Electronic contract termometer ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimised PID control and RESET function, incl. stainless steel sensor H 62.51.
Page 117

Stands	114 – 115
Fixing elements	116
Temperature measuring instrument	117 – 118
Revolution counter	119
Vacuum controller	120
Vacuum pump / valve	121

Ident. No.
2972500

R 103 Plate stand

Suitable for small instruments such as the overhead stirrer RW 11 basic.

Accessories (page):
Boss head clamp H 44 (116)

Ident. No.
3386000

R 104 Stand

Small stand for T 10 basic.

Accessories (page):
R 200 Clamp (116),
H 44 Boss head clamp (116)

Ident. No.

3160000	R 1825
3160100	R 1826
3160200	R 1827

Plate stands
R 1825
R 1826
R 1827

With slip resistant foil.

Accessories (page):
Boss head clamp R 182 (116), RH 3 Strap clamp (116)

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 (116):
R 270, R 271, RH 5 Strap clamp (116)

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 (116):
R 270, R 271, RH 5 Strap clamp (116)

Ident. No.
3154100

RV 05.3 Telescopic stand

Specially designed for the rotary evaporator drive RV 05. Raising is made easier by a jolt-free pneumatic spring.

Accessories (page):
Boss head clamp R 271 (116)

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 (43),
SI 474 Fixing device (43)

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 (43),
SI 472 Fixing device (43)

Descripton	R 103 Plate stand	R 104 Stand	R 1825	R 1826	R1827	R 2722 H-Stand	R 2723 Telescopic stand	RV 05.3 Telescopic stand	T 653 Telescopic stand	R 474 Telescopic stand	R 472 Floor stand
Ident. No.	2972500	3386000	3160000	3160100	3160200	1412000	1412100	3154100	1608000	1643000	0738700
Diameter of support rod	10 mm	10 mm			16 mm	34 mm	34 mm	34 mm	48 mm	48 mm	–
Plate diameter	160 mm	–			–	–	–	–	–	–	–
Dimensions (W x D)	–	242 x 355 mm			200 x 316 mm	460 x 420 mm	460 x 420 mm	580 x 450 mm	460 x 530 mm	460 x 530 mm	80 x 80 mm
Heigt	360 mm	370 mm	560 mm	800 mm	1.000 mm	1.010 mm	620 – 1.010 mm	710 – 900 mm	1.200 mm	1.200 mm	2.020 mm
Max. load	1 kg	0,7 kg			5 kg	10 kg	10 kg	10 kg	–	–	–
Stroke	–	–			–	–	390 mm	190 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 aluminium

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 aluminium

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 aluminium

Ident. No.
2664000

R 271 Boss head clamp

Specialized clamp with openings for the stands R 2722 and R 2723 as well as extensions with Ø 16 mm.

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

Ident. No.
3372000

R 200 Clamp

For fastening the T 10 basic to the stand R 104 (page 114) (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 116).

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

IKA® Electronic accessories

Temperature measuring instrument

Electronic Contact Thermometers ETS-D5 and ETS-D6

Ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating. With optimised 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).

ETS-D6 additionally:
- With integrated pH measuring instrument (without pH electrode)
- Large, graphic LCD display with multilingual user guide

Patented: 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 and ETS-D6 (page):
Sensors (25): H 62.51, H 66.51, H 70 Extension cable (25), H 52 Power pack set (25), H 16 V Support rod (27), H 44 Boss head clamp (27), H 38 Holding rod (27)

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

ETS-D5
Ident. No.
3378000

NEW!

Temperature	
Temperature measuring range	-50 – 450 °C
Resolution	0,01 K
Measuring accuracy	± 0,05 K + Sensor tolerance PT 1000 DIN IEC 751 class A
Setting accuracy	0,1 K
Control deviation	± 0,2 K
pH measurement	
Measuring range	0 – 14 pH
Accuracy	± 0,1 pH
Resolution	± 0,01 pH
pH connection	BNC bushing
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)	96 x 45 x 98 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

ETS-D6
Ident. No.
3378100

NEW!

Ident. No.
3113200 90 – 240 V 50/60 Hz

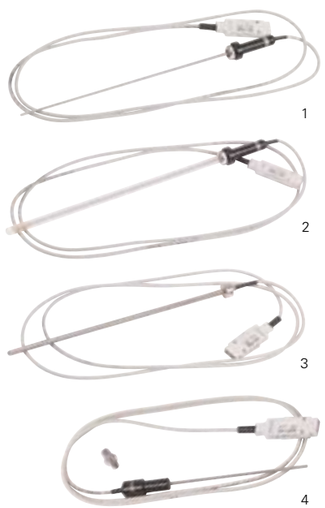
DTM 12 IKATRON®
Digital temperature measuring instrument

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 (118): PT 100.23, PT 100.24, PT 100.25, PT 100.27,
DTM 12.10 Data cable (118), labworldsoft® (143)

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

Temperature sensors



1
2
3
4

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

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

PT 100.25

E.g. for use with **IKA®** laboratory reactors in combination with sensor receptacle LR 2000.60 (page 134).

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

PT 100.27

With screw joint. Specially designed for **IKA®** laboratory kneader HKD-T 0.6 D.

PT 100.27	
Material of protective pipe	stainl. steel (AISI 316L)
Diameter	3 mm
Length	135 mm
Measuring range	-50 – 200 °C
Resolution	0,01 K

	Ident. No.	
1	3122100	PT 100.23
2	3122200	PT 100.24
3	3122300	PT 100.25
4	3122500	PT 100.27

Ident. No.
3127800 DTM 12.10
2616800 PC 1.2

DTM 12.10 Data cable, 9 pins (F)

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

PC 1.2 Adapter, 25 pins

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

DZM control.o Revolution counter

Connection of an opto-electronic sensor enables measurement of the speed of rotating shafts from 0 - 50.000 rpm.
The signals received are displayed on the monitor. This enables all **IKA®** overhead stirrers and dispersing instruments to be retrofitted with a speed display, thereby allowing reproducible work.
A RS 232 interface allows the values to be recorded digital on a PC. An analog output signal for a recorder is also available. The monitor can be used as a table-top device or mounted on a stand rod.

Included with delivery (page):
DZM-M Monitor (119),
DZM-S.o Sensor optical (119), Power pack

Accessories (page):
DZM-K Extension cable (119),
labworldsoft® (143)

General data	
Sensor	DZM-S.o
Speed range	0 – 50.000 rpm
Temperature co-efficient	0,005 %/°C
Measurement error of measured value	0,4 % = 1 Digit
Analog output (0 – 4.000 rpm)	1 mV
(> 4.000 rpm)	0,1 mV
Interface	RS 232
Dimensions (W x D x H)	70 x 180 x 75 mm
Weight	0,2 kg
Permissible ambient temperature	5 – 40 °C
Permissible relative humidity	80 %
Protection class acc. to DIN EN 60529	IP 42

Ident. No.
8014200 230 V 50/60 Hz
8014201 115 V 50/60 Hz

DZM-S.o Sensor optical

Spare sensor for DZM control.o.

General data	
Length	1 m

Ident. No.
2809300

DZM-M Monitor

Spare monitor for the revolution counter DZM control.o.

Ident. No.
2808700

DZM-K Extension cable

Enables the separation of monitor DZM.M and sensor DZM-S.o.

General data	
Length	1 m
Max. distance between monitor / sensor	2 m

Ident. No.
2808900

Ident. No.

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

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.
- 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 (121)

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

Ident. No.

2829300	230 V 50/60 Hz

AM 1 Analog module

For analog control of the magnetic stirrer RET control-visc *safety control*, RET control-visc C *safety control* and the overhead stirrers EUROSTAR power control-visc with analog signals.
- The output signal can be switched from voltage to current
- The analog input values for speed and the analog input for temperature and torque are converted to normal signals

Accessories (page)**:**
Analog cable (148): AK 2.3, AK 2.8

Technical data
(0 – 1 V, 0 – 20 mA, 4 – 20 mA)

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.

Ident. No.

1980700

VC 1.3 Magnetic solenoid valve

In conjunction with the vacuum controller VC 2, the solenoid valve can be used to regulate an in-house vacuum, the vacuum of uncontrolled water jet pumps or electrical vacuum pumps. The pump works constantly, the pipe is disconnected by the solenoid valve.

Ident. No.

2163500

VC 2.4 Pump control

The pump control is required when using the chemical diaphragm pump MZ-2C or other electrical vacuum pumps, in conjuction with the vacuum controller VC 2. The pump is disconnected from the mains and then reconnected.

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

Included with delivery:
Magnetic solenoid valve, power pack

Ident. No.

2439100	100 – 240 V 50/60 Hz

Laboratory reactors / Rheology

Anchor stirrer

With PTFE scarper or flow with bornigs, for all laboratory reactors.

Page 132

Flow breaker

Page 132

Systems up to 2 liters 124 – 137
Torque measurement instruments 138 – 139

LR-2.ST Version 1 (without reactor vessel)

EUROSTAR power control-visc P7
Overhead stirrer, **page 37**
Ident. No. 2850700

LR 2000.80
Reactor cover, **page 132**
Ident. No. 2508200

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

LR 2000.1
Double-walled reactor vessel, **page 133**
Ident. No. 2508300

LR-2.ST
Stand system

Laboratory reactor system LR-2.ST

The systems LR-2.ST and LR 2000 are modularly expandable laboratory reactors, 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 of cremes, 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 are available for vacuum applications.

The laboratory reactors of the series LR 2000 P (pressure) and LR 2000 V (vacuum) are especially designed for the use in the pharmaceutical and cosmetic sector.

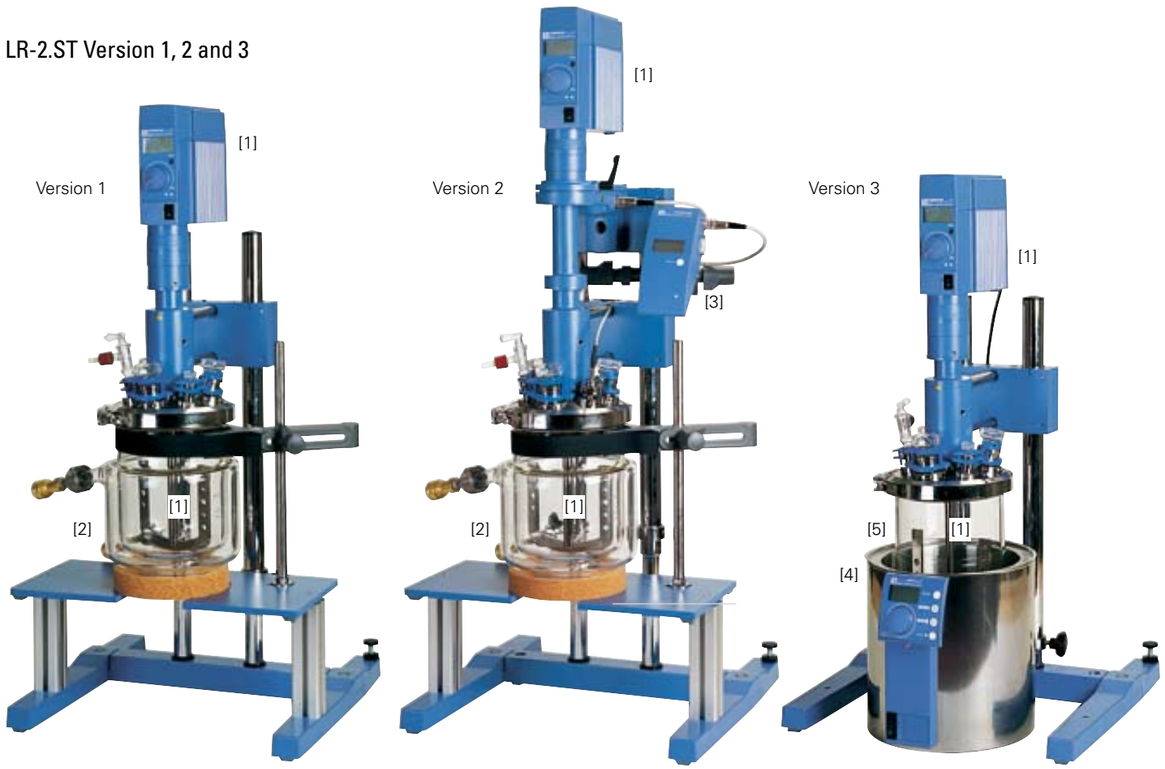
labworld*soft*®

The systems 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 torque measuring instruments VK 600 control VISCOKLICK® or VM 600 basic allow for evaluation of rheological properties.

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 or stainless steel, 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	
Visco module VM 600	150.000 mPas
Speed range	
(EUROSTAR power control-visc P7)	8 – 290 rpm
Height of telescopic stand	620 – 1.010 mm
Dimensions (B x T x H)	460 x 420 x 1.240 mm
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM) borosilicate glass 3.3

LR-2.ST Version 1, 2 and 3



LR-2.ST Version 1

[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

[2] LR 2000.1
Double-walled reactor vessel, **page 133**
Ident. No. 2508300

Safety accessory for Version 1 and 2 (page):
LR-2.SP Splinter protection (135)

LR-2.ST Version 2

[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

[2] LR 2000.1
Double-walled reactor vessel, **page 133**
Ident. No. 2508300

[3] VM 600 basic
Visco module, **page 135**
Ident. No. 8016600

LR-2.ST Version 3

[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

[4] HBR 4 digital
Heating bath, **page 95**
Ident. No. 2602300

[5] LR 2.1
Single walled reactor vessel, **page 133**
Ident. No. 3070000

Configuration possibilities:

Basic package (page 124 – 126)

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 133) 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

VK 600 control Torque measurement instr., p. 139, Ident. No. 8015700	**DTM 12 IKATRON®** Digital temperature measuring instr., p. 118, Ident. No. 3113200	**T 25 digital ULTRA-TURRAX®** Disperser, p. 66 Ident. No. 3565000	**VC 2 IKAVAC®** Vacuum controller, p. 120 Ident. No. 2300000

Software (page 142 – 146)

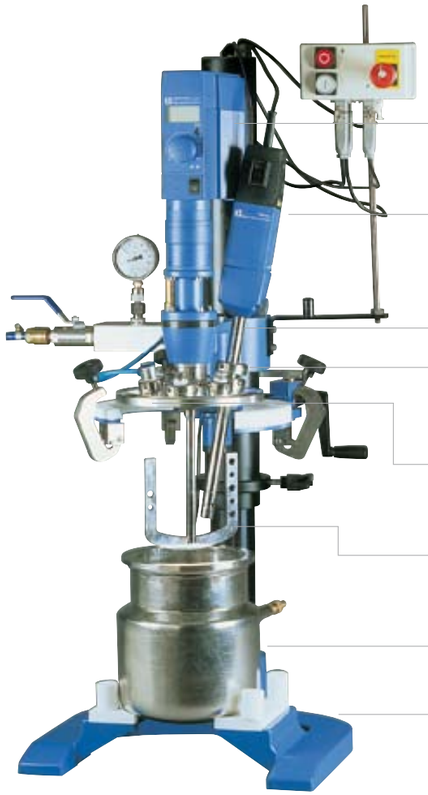
labworldsoft®
PC software
Ident. No. 2970000

Accessories (page 132)

LR 2000.10 Anchor stirrer with PTFE 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

LR 2000 P System variant pressure



EUROSTAR power control-visc P7
Overhead stirrer, **page 37,** Ident. No. 2850700

T 25 digital
Disperser can also be attached, **page 66**
Ident. No. 3565000

S 25 KV – 18 G
Appropriate dispersing element, **page 71**
Ident. No. 2348000

LR 2000.40
Shaft receptacle, **page 134,** Ident. No. 2509200

LR 2000.85
Reactor cover, **page 132**, Ident. No. 2598100

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

LR 2000.3
Reactor vessel, stainl. steel, **page 133,** Ident. No. 2509700

LR 2000.75
Stand for pressure variant, Ident. No. 2598000

Please contact IKA® or your local dealer for a detailed quotation.

Technical data	
Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 digital)	800 ml
Max. volume	2.000 ml
Max. temperature FFPM	230 °C
Attainable pressure	6 bar
Max. viscosity	150.000 mPas
Speed range (EUROSTAR power control-visc P7)	8 – 290 rpm
Lift of telescopic stand	260 mm
Dimensions (W x D x H)	500 x 500 x 1.350 mm
Weight of basic device	30 kg
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM)

Configuration possibilities:

Basic components

EUROSTAR power control-visc P7
Overhead stirrer, p. 37
Ident. No. 2850700

LR 2000.75
Stand for pressure variants, p. 128
Ident. No. 2598000

LR 2000.85
Reactor cover, p. 132
Ident. No. 2598100

Accessories (page 132)

LR 2000.10
Anchor stirrer with PTFE scraper
Ident. No. 2508400

LR 2000.11
Anchor stirrer with flow borings
Ident. No. 2509500

LR 2000.21
Flow breaker
Ident. No. 2571200

LR 2000.40
Receptacle for LR 2000.21 and dispersing element, p. 134
Ident. No. 2509200

Reactor vessels (page 133) and accessories (chapter Heating / Tempering)

LR 2000.3
Double-walled reactor vessel stainl. steel
Ident. No. 2509700

LT 5.23
Hose adapter (2 pieces required)
Ident. No. 2235000

LT 5.20
Hoses
Ident. No. 2606700

CC3-308B vpc
Circulation thermostat
Ident. No. 3658800

LR 2000.4
Double-walled reactor vessel with bottom outlet valve, stainless steel
Ident. No. 3064900

LT 5.23
Hose adapter (2 pieces required)
Ident. No. 2235000

LT 5.20
Hoses
Ident. No. 2606700

CC3-308B vpc
Circulation thermostat
Ident. No. 3658800

LR 2000.53
Stand lower set (required for LR 2000.4)
Ident. No. 2509800

LR 2000.57
Sealing set, p. 132
Ident. No. 2661200

Add-on units

VK 600 control
Torque measurement instrument, p. 139
Ident. No. 8015700

LR 2000 VK
Attachment kit for LR 2000 P, p. 135
Ident. No. 2984600

DTM 12 IKATRON®
Digital temperature measuring instrument, p. 118, Ident. No. 3113200

T 25 digital ULTRA-TURRAX®
Disperser, p. 66
Ident. No. 3565000

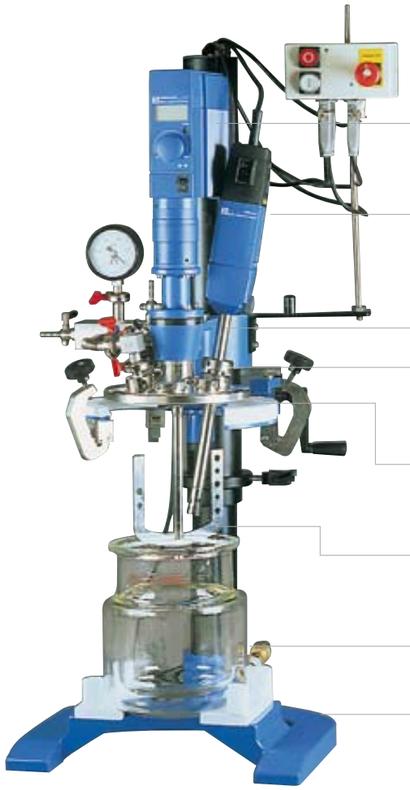
Software (page 142 – 146)

labworldsoft®
PC software
Ident. No. 2970000

Necessary components

Optional components

LR 2000 V System variant vacuum



EUROSTAR power control-visc P7
Overhead stirrer, **page 37,** Ident. No. 2850700

T 25 digital
Disperser, can also be attached, **page 66,**
Ident. No. 3565000

S 25 KV – 18 G
Appropriate dispersing element, **page 71**
Ident. No. 2348000

LR 2000.40
Shaft receptacle, **page 134,** Ident. No. 2509200

LR 2000.80
Reactor cover, **page 132,** Ident. No. 2508200

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

LR 2000.1
Reactor vessel, **page 133,** Ident. No. 2508300

LR 2000.70
Stand for vacuum variant, Ident. No. 2509000

Please contact **IKA®** or your local dealer for a detailed quotation.

Technical data	
Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 digital)	800 ml
Max. volume	2.000 ml
Max. temperature FFPM	230 °C
Attainable vacuum	25 mbar
Max. viscosity	150.000 mPas
Speed range (EUROSTAR power control-visc P7)	8 – 290 rpm
Lift of telescopic stand	260 mm
Dimensions (W x D x H)	500 x 500 x 1.350 mm
Weight of basic device	30 kg
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM) borosilicate glass 3.3

Configuration possibilities:

Basic components

EUROSTAR power control-visc P7
Overhead stirrer, p. 37
Ident. No. 2850700

LR 2000.70
Stand for vacuum variant, p. 130
Ident. No. 2509000

LR 2000.80
Reactor cover, p. 132
Ident. No. 2508200

Accessories (page 132)

LR 2000.10
Anchor stirrer with PTFE scrapers
Ident. No. 2508400

LR 2000.11
Anchor stirrer with flow borings
Ident. No. 2509500

LR 2000.20
Flow breaker
Ident. No. 2508500

Reactor vessels (page 133) and accessories (chapter Heating / Tempering)

LR 2000.1
Double-walled reactor vessel borosilicate glass
Ident. No. 2508300

LR 2000.2
Double-walled reactor vessel and bottom discharge valve, borosilicate glass
Ident. No. 2509600

LR 2000.53
Stand lower set (required for LR 2000.4)
Ident. No. 2509800

LT 5.24
Hose adapter (2 pieces required)
Ident. No. 2578100

LT 5.24
Hose adapter (2 pieces required)
Ident. No. 2578100

LR 2000.54
Sealing set, p. 132
Ident. No. 2498900

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

VK 600 control
Torque measurement instr., p. 139, Ident. No. 8015700

DTM 12 IKATRON®
Digital temperature measuring instr., p. 118, Ident. No. 3113200

T 25 digital ULTRA-TURRAX®
Disperser, p. 66
Ident. No. 3565000

VC 2 IKAVAC®
Vacuum controller, p. 120
Ident. No. 2300000

LR 2000 VK
Attachment kit for LR 2000 V, p. 135, Ident. No. 2984600

Software (page 142 – 146)

labworldsoft®
PC software
Ident. No. 2970000

Necessary components

Optional components

Ident. No.

2508200	LR 2000.80
2598100	LR 2000.85
2498900	LR 2000.54
2661200	LR 2000.57

LR 2000.80 Reactor cover

For LR 2000 V (stand LR 2000.70).
Incl. 3 x NS 29 and 2 x NS 14 / 23 groand joints.

Accessories (page):
LR 2000.54 Sealing set (132)

General data	
Material of threaded seal	FFPM

LR 2000.85 Reactor cover (without fig.)

For LR 2000 P (stand LR 2000.75).

Accessories (page):
LR 2000.57 Sealing set (132)

General data	
Material of threaded seal	FFPM

LR 2000.54 Sealing set (without fig.)

Spare, for LR 2000 V.

LR 2000.57 Sealing set (without fig.)

Spare, for LR 2000 P.

Ident. No.
2508400

LR 2000.10 Anchor stirrer

With PTFE scraper, for all laboratory reactors.

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

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

Only for LR 2000 V and LR-2.ST.

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

LR 2000.21 Flow breaker (without fig.)

Only for LR 2000 P in connection with LR 2000.40 (page 134).

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

Ident. No.
2571200

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

LR 2.1 Reactor vessel (without fig.)

Single-walled, for LR-2.ST.

LR 2000.1 Reactor vessel

Double-walled, with quick-action connectors, for LR-2.ST and LR 2000 V.

LR 2000.2 Reactor vessel (without fig.)

Double-walled, with quick-action connectors and bottom discharge valve, for LR-2.ST and LR 2000 V.

Accessories (page):
LR 2000.53 Stand lower set (133), LT 5.24 Hose adapter (2 pieces required) (99), LT 5.20 Hose (99)

Ident. No.

2508300	LR 2000.1
3070000	LR 2.1
2509600	LR 2000.2

General data	
Useful volume	2.000 ml
Material	stainl. steel (AISI 316L)
Max. temperature	230 °C

LR 2000.3 Reactor vessel

Double-walled for LR 2000 P (stand LR 2000.75).

LR 2000.4 Reactor vessel (without fig.)

Double-walled with bottom outlet valve, for LR 2000 P (stand LR 2000.75).

Accessories (page):
LR 2000.53 Stand lower set (133),
LT 5.23 Hose adapter (2 pieces required) (99),
LT 5.20 Hose (99)

Ident. No.

2509700	LR 2000.3
3064900	LR 2000.4

General data	
Height	22 cm

LR 2000.53 Stand lower set

To raise the laboratory reactor vessels LR 2000.2 and LR 2000.4. Only in connection with LR 2000.70 and LR 2000.75.

Ident. No.
2509800

Ident. No.
2509200

LR 2000.40 Shaft receptacle

To install the dispersing elements S 25 KV (page 71) and the flow breaker LR 2000.21 (page 132).

General data	
Material of seal	FFPM

Ident. No.
2509300

LR 2000.60 Sensor receptacle

To install the temperature sensors PT 100.25 (page 118) and PT 100.5 (page 99).

General data	
Material of seal	FFPM

Ident. No.
2509400

LR 2000.30 Vacuum gauge

Only for LR 2000 V. Alternative to the vacuum controller VC 2 IKAVAC® (page 120).

General data	
Material of seal	FFPM
Measuring range	1 – 1.020 mbar
Measuring accuracy acc. to DIN 16005	class 1
Max. temperature	60 °C

Ident. No.
2277000

LR 2000.90 Drip funnel

For dosing, with ground joint NS 29.
Only for LR-2.ST and LR 2000 V.

General data	
Volume	250 ml

Ident. No.
2508800

LR 2000.52 Tool set (without fig.)

Spare. Included in the packages of the laboratory reactors.

LR 2000.VK Attachment kit (without fig.)

For LR 2000 V and LR 2000 P.

Accessories (page):
Torque measurement instrument VK 600 control VISCOKLICK® (139)

Ident. No.
2984600

VM 600 basic Visco module

Torque measurement instrument for LR-2.ST, consisting of adapter kit and VK 600 control VISCOKLICK® (page 139).

Ident. No.
8016600

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 142 – 146)

labworldsoft®
PC software
Ident. No. 2970000

Instruments with interface

EUROSTAR power control-visc P7
Overhead stirrer, p. 37
Ident. No. 2850700

VK 600 control
Torque measurement instr., p. 139
Ident. No. 8015700

T 25 digital ULTRA-TURRAX®
Disperser, p. 66
Ident. No. 3565000

DTM 12 IKATRON®
Digital temperature measuring instrument, p. 118, Ident. No. 3113200

CC3-308B vpc
Circulation thermostat, p. 97
Ident. No. 3658800

IO 2.1 DATACONTROL
Power switch, p. 148
Ident. No. 3062000

IO 2 DATACONTROL
p. 148 , Ident. No. 3006000

Cable and plug connectors (page 148 – 151)

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 2.3
Cable
15 – 9 pin
Ident. No. 3036200

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

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

Interface / PC (page 147)

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. 66
Ident. No. 3565000

S 25 KV – 18 G
Dispersing element,
p. 71, Ident. No. 2348000

S 25 KV – 25 G
Dispersing element,
p. 71, Ident. No. 2466900

S 25 KV – 25 F
Dispersing element,
p. 71, Ident. No. 2404000

LR-2000.40
Shaft receptacle, p. 134
Ident. No. 2509200

Temperature control resp. temperature measurement

CC3-308B vpc
Circulation thermostat, p. 97
Ident. No. 3658800

PT 100.5
Temperature sensor, p. 99
Ident. No. 2506800

LR-2000.60
Sensor receptacle, p. 134
Ident. No. 2509300

DTM 12 IKATRON®
Digital temperature measuring instr., p. 118, Ident. No. 3113200

PT 100.5
Temperature sensor, p. 99
Ident. No. 2506800

LR-2000.60
Sensor receptacle, p. 134
Ident. No. 2509300

EUROSTAR power control-visc
Overhead stirrer, **page 35**
Ident. No. 2600000

R 271
Boss head clamp, **page 116**
Ident. No. 2664000

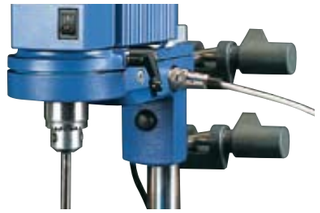
VK 600 control VISCOKLICK®
Torque measurement instrument, **page 139**
Ident. No. 8015700

R 2723
Telescopic stand, **page 115**
Ident. No. 1412100

R 1376
Paddle stirrer, **page 40 / 41**
Ident. No. 0757800

Technical data	
Measuring range	0 – 600 Ncm
Display	digital
Flange-Ø	60 / 62 mm
Flange Height	≥ 10 mm
Linearity of Display:	
0 – 60 Ncm	± 0,5
60 – 600 Ncm	± 1,0
Reproducibility:	
Static	± 0,1 Ncm
Dynamic	± 0,5 Ncm

VK 600 control VISCOKLICK®
Torque measurement instrument



Rheological material properties such as viscosity, flow and deformation behavior are among the most important characteristics of any material:
- They determine the application-technical manufacturing process of a product
- The structural composition of a material can be established from its viscosity behavior
- The sequence of chemical reactions can be documented

The VK 600 control can be combined with all **IKA®** EUROSTAR overhead stirrers. The appropriate stirrer is “clicked” into the VK 600 control. During stirring, a force transducer determines a reaction force at the stirring shaft proportional to the torque.

- Simple assembly
- RS 232 interface and analog output
- PC-controllable with labworldsoft®
- Measuring system is overload-proof
- Offset correction to eliminate errors

Accessories (page):
VK 60 / 01 Adapter (139), labworldsoft® (143)

Ident. No.	
8015700	230 V 50/60 Hz
8015701	115 V 50/60 Hz

VK 60 / 01 Adapter

For adaption of **IKA®** overhead stirrer RW 20 digital.

Ident. No.
2854100

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 142 / 143

Laboratory software for control and data collection 142 – 151

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 (147), PC 4.1 RS 232 Server (147), DC 2 DATACONTROL (147), DA 2 DATACONTROL (147), IO 2 DATACONTROL (148)

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, at a mouse click. The reproductability 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
- B. Braun Biotech
- Martin Christ
- Corning Inc.
- Ehret
- Eyela
- Fluid
- Fritsch
- Gerhardt
- GFL
- Harvard
- Heidolph
- Hermle
- Huber
- IKA®
- Ilmvac
- Infors
- Ismatec
- Julabo
- Kern
- KNF
- Knick
- Labovisco
- Lauda
- Metrohm
- Mettler-Toledo
- MLT
- PolyScience
- Sartorius
- Scaltec
- Sigma
- Telab
- Thermo Haake
- Thermo Neslab
- Troemner
- Vaccubrand
- yellowline

Interfaces to additional devices from other manufacturers will soon be available.
Please ask for a current reference list.

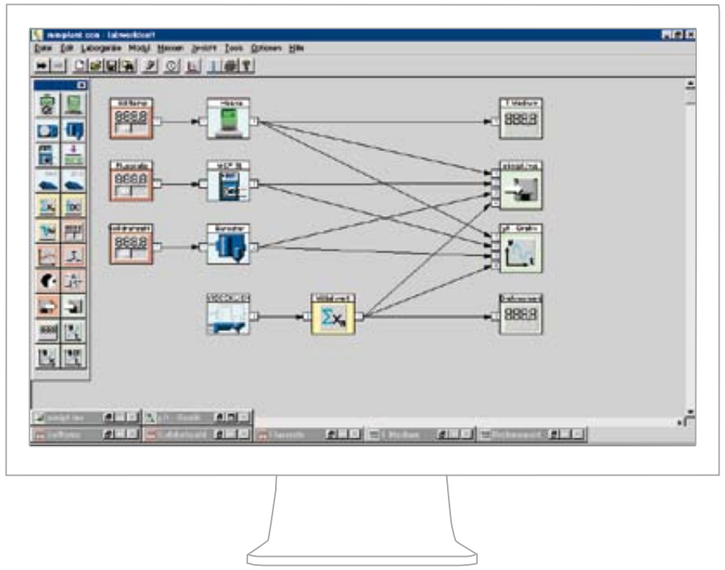


Figure 1: Configuration of a laboratory reactor with peripherals.

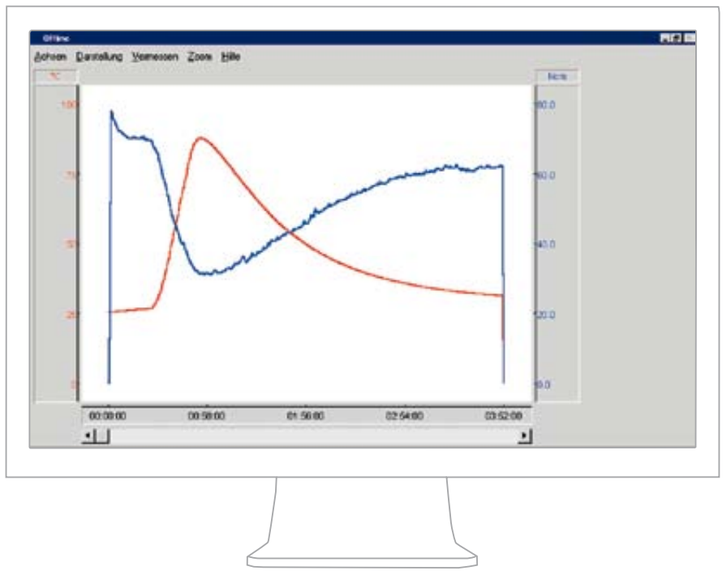
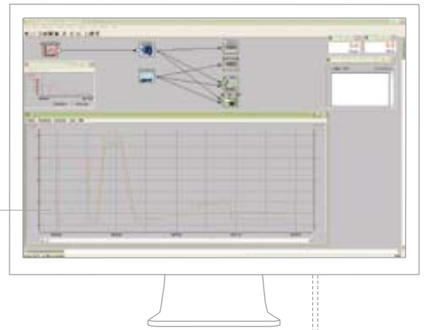


Figure 2: y/t-graphic: Shows torque and temperature changes in medium.

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). By means of a IO 2 DATACONTROL, additional external sensors or valves are possible.

Configuration example – Recording rheological data during the stirring process



labworldsoft®
Laboratory software for control and data collection, **page 143**
Ident. No. 2970000

EUROSTAR power control-visc
Stirrer, **page 35**
Ident. No. 2600000

R 270
Boss head clamp, **page 116**
Ident. No. 2657800

VK 600 control VISCOKLICK®
Torque measurement instrument, **page 139**
Ident. No. 8015700

PC 1.5
Cable, **page 148**
Ident. No. 2756000

R 1373
Paddle stirrer, **page 40**
Ident. No. 0757600

RH 5
Strap clamp for securing the vessel, incl. boss head clamp R 270, **page 116**
Ident. No. 3159000

R 2723
Telescopic stand, **page 115**
Ident. No. 1412100

PCI 8.2 Plug-in card
for mounting in the PC to control up to 8 instruments, **page 147**
Ident. No. 8017500

Configuration example – Controlling and recording temperature data during magnetic stirring with heating

labworldsoft®
Laboratory software for control and data collection, **page 143**
Ident. No. 2970000

H 38
Holding rod for casing of the PT 100.50 sensor, **page 27**
Ident. No. 3547700

H 44
Boss head clamp, **page 116**
Ident. No. 2437700

PT 100.50
Temperature sensor for RET control-visc, **page 26**
Ident. No. 2601900

H 16 V
Support rod for attachment to RET control-visc, **page 27**
Ident. No. 1545100

PCI 8.2
Plug-in card for mounting in the PC to control up to 8 instruments, **page 147**
Ident. No. 8017500

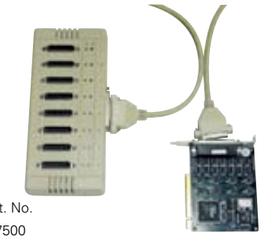
PC 1.5
Cable, **page 148**
Ident. No. 2756000

H 99
Protection cover included with the RET control-visc, **page 28**
Ident. No. 2734500

RET control-visc *safety control*
Safety magnetic stirrer with RS 232 interface, **page 14**, incl. protection cover H 99, **page 28**
Ident. No. 3364000

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

General data	
Voltage input	0 – 1 / 0 – 5 / 0 – 10 V
Current input	0 – 20 / 4 – 20 mA

DC 2 DATACONTROL

For PC documentation of analog signals from up to 4 instruments.

Accessories (page):
PC 1.5 Cable (148), PC 2.2 Adapter (148), AK 2.4 Analog cable (148)

Ident. No.	
8015600	230 V 50/60 Hz
8015601	115 V 50/60 Hz

General data	
Voltage output	0 – 1 / 0 – 5 / 0 – 10 V
Current output	0 – 20 / 4 – 20 mA

DA 2 DATACONTROL

To convert digital signals into analog signals. In this manner, devices with analog control inputs (industrial controllers, temperature controllers) can be controlled using labworldsoft®.
Connection box included.

Accessories (page):
PC 1.5 Cable (148), PC 2.2 Adapter (148), Analog cable (148): AK 2.6, AK 2.7

Ident. No.	
8017200	230 V 50/60 Hz
8017201	115 V 50/60 Hz

Ident. No.

3006000	230 V 50/60 Hz
3006001	115 V 50/60 Hz

IO 2 DATACONTROL

With the IO 2 DATACONTROL, the power switch IO 2.1 DATACONTROL and labworldsoft® any device without any interface (heaters, solenoid valves, etc.) can be turned on and off based on an event (a threshold value being exceeded, controller output, etc).
This opens up numerous control possibilities in connection with the PID, relay and trigger modules of labworldsoft®. In addition, using the 8 inputs on the IO 2 DATACONTROL, signals from switches etc. can be recorded by labworldsoft®.

Accessories (page):
IO 2.1 Power switch (148), PC 1.5 Cable (148), PC 2.2 Adapter (148)

Technical data	
8 digital outputs	
(relay contact)	30 V / 1 A
8 digital inputs	
(Voltage)	0 – 24 V

Ident. No.

3062000	230 V 50/60 Hz
3062001	115 V 50/60 Hz

IO 2.1 DATACONTROL Power switch

Technical data	
Max. power of the connected devices	1,2 kW
Cable length	0,6 m
EURO connector (other connectors available on request)	

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
Analog cable		
AK 2.1	2,5 m	2734300
AK 2.2	2 m	2756100
AK 2.3	2 m	2801200
AK 2.4	2 m	2801300
AK 2.5	2 m	2845800
AK 2.6 (blue)	1,5 m	1719400
AK 2.7 (red)	1,5 m	1719300
AK 2.8	1,8 m	2907800

Purpose	Digital control of up to 4 instruments and digital recording of measurement data via PC over ethernet	Digital control of up to 8 instruments and digital recording of measurement data via PC with interface plug-in card	Digital control of 1 instrument and digital recording of measurement data via PC
IKA® instruments with interface	Magnetic stirrers RET control-visc *safety control* (p. 14) Overhead stirrers EUROSTAR power control-visc (p. 35 – 37) Shakers KS / HS control (p. 47 – 49) Revolution counter DZM control (p. 119) Torque measuring instrument VK 600 VISCOKLICK (S.139)		
Device interface	15 pin HD Sub-D (F)		
Required components	15 pin HD Sub-D (M) **Cable PC 1.5** 25 pin Sub-D (F)		
	15 pin HD Sub-D (M) **Adapter PC 1.4** 9 pin Sub-D (F)		25 pin HD Sub-D (M) **Adapter PC 2.2** 9 pin HD Sub-D (F)
	9 pin Sub-D (M) **Cable PC 2.1** 9 pin Sub-D (F)		
		25 pin Sub-D (M), 8 x **Plug-in card PCI 8.2** Installation in PC	
Interface PC / recorder	9 pin Sub-D (M) PC 4.1 RS 232 Server with RJ 45 network connection	Installation in PC PC with unused slot	25 pin Sub-D (M) PC with 25 pin interface	9 pin Sub-D (M) PC with 9 pin interface

Purpose	Digital control and digital recording of measurement data		Digital control and simultaneous digital and analog display of measurement data	Analog output of measuring data to recorder
IKA® instruments with interface	Circulation thermostat CC3-308B vpc (p. 97)	Digital temperature DTM 12 (p. 118)	Magnetic stirrers RET control-visc *safety control* (p. 14) Overhead stirrers EUROSTAR power control-visc (p. 35 – 37) Shakers KS / HS control (p. 47 – 49) Revolution counter DZM control (p. 119) Torque measuring instrument VK 600 VISCOKLICK (p. 139)	
Device interface	15 pin HD Sub-D (F)	Instrument specific connection	15 pin HD Sub-D (F)	
Cable- and required components	15 pin HD Sub-D (M) **Cable PC 2.3** 9 pin HD Sub-D (F)	Specific plug **DTM 12.10** 9 pin Sub-D (F)	15 pin HD Sub-D (M) **Adapter PC 5.1** 9 pin Sub-D (F) / 7 pin DIN	9 pin HD Sub-D (M) **Cable PC 2.1** 9 pin Sub-D (F)
	9 pin Sub-D (M) **Adapter PC 1.2** 25 pin Sub-D (F)		7 pin DIN **Cable AK 2.1** 3 x 4 mm banana	15 pin HD Sub-D (M) **Cable AK 2.2** 3 x 4 mm banana
	25 pin Sub-D (M), 8 x **Plug-in card PCI 8.2** Installation in PC			
Interface PC / recorder	9 pin Sub-D (M) PC 4.1 RS 232 Server with RJ 45 network connection	9 pin Sub-D (M) PC with 9 pin interface	Installation in PC PC with unused PCI slot	25 pin Sub-D (M) PC with 25 pin interface
	9 pin Sub-D (M) PC 4.1 RS 232 server with RJ 45 connector to network	9 pin Sub-D (M) PC with 9 pin interface	3 x 4 mm banana Recorder	

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 163

Calorimeters 154 – 163
Decomposition system 164 – 165

IKA® Analytical line

Calorimeters

C 5000

The calorimeter offers three user-selected operating modes.

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		30 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

Ident. No.
8802500 100 – 240 V 50/60 Hz

NEW!

C 200

New, compact low cost combustion calorimeter to determine calorific values of liquid and solid samples. Designed for teaching and training applications for use in schools, technical colleges, universities and practical training courses. Also suitable for laboratories with small numbers of 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 used with a C 14 disposable crucible.
- 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
- GOST-certified
- Automatic sample ignition
- Compact modular design
- Highly operator maintenance friendly
- Complies with all global voltages, from 100 - 240 V
- Powered with a low operating voltage 24 V DC

Consisting of:
Basic device C 200 incl. power pack and ignition adaptor, C 5010 Decompostion vessel standard, C 248 Oxygen station

C 2000 basic, C 2000 control, C 2000 basic high pressure und 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 like the KV 600 (page 131) or a firmly installed water connection.
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.
The C 2000 high pressure is a combination of the C 2000 basic / C 2000 control and the C 62 digestion container (up to 1200 bar operating pressure), see page 162.

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, ASTM 240 D, ISO 1928, BSI etc.
- GOST-certified
- Working 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 (KV 600) or firmly installed water connection (C 25 pressure regulating valve recommended, page 162)
- 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 administration of measuring data (page 161)
- LIMS integration is possible
- Special halogen resistent vessel for quantitative decomposition of halogens and sulfur
- The decomposition vessel can be changed over to use disposable crucible C 14 burns during measuring (page 162/163)
- 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 (WxDxH)		440 x 450 x 500 mm
Weight		46 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

Consisting of:
C 2000 control
C 62 Decomposition vessel, high pressure
C 60 Conversion set

A PC is required to operate the C 2000 control.

C 2000 Ausbaugerät

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

Ident. No.	
8802200	230 V 50/60 Hz
8802201	115 V 50/60 Hz

max. 8 devices

C 5000 control und C 5000 duocontrol

The IKA® calorimeter C 5000 is the only calorimeter in the world that offers a free selection of 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 leave 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
- Automatic decomposition vessel identification
- Validation according to DIN 51900, ASTM 240 D, ISO 1928, BSI etc.
- 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 administration of measuring data (page 161)
- LIMS integration is possible
- Special halogen resistent vessel for quantitative decomposition of halogens and sulfur
- The decomposition vessel can be changed over to use disposable crucible C 14 burns during measuring (page 162 / 163)
- The C 5000 control can be expanded to the duocontrol system with two measurement cells at any time

	Ident. No.	
Package 1/10	8801000	230 V 50/60 Hz
	8801001	115 V 50/60 Hz
Package 1/12	8801500	230 V 50/60 Hz
	8801501	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		0,05 % RSD
	dynamic	0,1 % RSD
Working modes		adiabatic isoperibol dynamic
Measurement time	adiabatic	up to 15 min
	isoperibol	up to 22 min
	dynamic	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
C 5000 duocontrol Package 3		1.440 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 147) 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 147) or firmly installed water connection.

Consisting of:
C 5000 Controller
C 5003 Measurement cell
C 5012 Decomposition vessel, halogen resistant
C 5004 Heat exchanger

C 5000 duocontrol Package 3/10

System with two measurement cells.

Consisting of:
C 5000 Controller
C 5003 Measurement cell (2 pieces)
C 5010 Decomposition vessel, standard (2 pieces)
C 5002 Cooling system

C 5000 duocontrol Package 3/12

System with two measurement cells.

Consisting of:
C 5000 Controller
C 5003 Measurement cell (2 pieces)
C 5012 Decomposition vessel, halogen resistant (2 pieces)
C 5002 Cooling system

	Ident. No.	
Package 2/10	8801200	230 V 50/60 Hz
	8801201	115 V 50/60 Hz
Package 2/12	8801600	230 V 50/60 Hz
	8801601	115 V 50/60 Hz

	Ident. No.	
Package 3/10	8801100	230 V 50/60 Hz
	8801101	115 V 50/60 Hz
Package 3/12	8801700	230 V 50/60 Hz
	8801701	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 work 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 161)
- Special halogen resistent vessel for quantitative decomposition of halogens and sulfur
- The decomposition vessel can be changed over to use combustible crucibles C 14 burns during measuring (page 163, 165)

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 (WxDxH)	310 x 490 x 460 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). Requires a PC running any of the following operating systems: Windows 95 / 98 / ME / NT / 2000 or XP, and at least one free serial interface and 50 MB of available disk space.

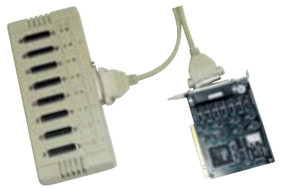
Ident. No.
3045000

- Control, monitor and view working 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 (configarable by the user)

C 5041 CalWin plus

To control up to 8 calorimeters of the same or different type.

Consisting of:
C 5040 CalWin,
PCI 8.2 PC Plug-in card (internal),
Interface box (8x)



Ident. No.
3166000

Calorimeters accessories

for C 200

	Ident. No.
C 5010 Decomposition vessel, standard	7114000
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 5041.10 Connection cable	3036000
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200
C 248 Oxygen station	3520000
C 200.1 Measuring cup 2.000 ml	3548900

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 5041.10 Connection cable	3036000
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200

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 5041.10 Connection cable	3036000
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200

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 5041.10 Connection cable	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

Calorimeters accessories

for C 7000

	Ident. No.
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200
C 48 Oxygen station	1560000

Instructions on the IKA® calorimeter systems available on request.

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 crucible, big	0355100
C 710.2 Set of VA combustion crucibles (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 43 Benzoic acid NIST 39i (30 g)	0750600
C 723 Benzoic acid, blister package (50 pieces)	3243000
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 62.1 Set of wearing parts (for C 2000 high pressure)	3296300
C 62.2 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 the delivery), **page 165,** Ident. No. 3308000

Oxygen filling station C 48
For filling decomposition vessel with oxygen, 30 bar, **page 163**
Ident. No. 1560000

Venting station C 7030
With gas with DIN 12596 gas wash bottle, for gas absorption (not included with the delivery), **page 165**
Ident. No. 3013300

Control standard AOD 1.11 (without fig.)
For sulfur and chlorine, **page 165**
Ident. No. 30440000

Decomposition vessel AOD 1.1
High-alloy, halogen-resistant stainless steel, **page 165**
Ident. No. 3303000

External ignition unit AOD 1.2
Ignition triggered by pressing the Ignite button
Cable length: 5 m, **page 165**
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)

- 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 surfaces
- 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 over to use combustible crucibles C 14 (page 162 / 163)
- Control standards for Cl, S, F and Br
- Introduction of the combustion gases into the absorption solution via venting station C 7030

Ident. No.
8801300

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

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 Control standard	3303000
AOD 1.2 External ignition unit	3348000
AOD 1.13 Remote ignition head (required where AOD 1.3 is not used)	3348100
C 21 Pelleting press	1605300
C 29 Pressure gauge, oxygen	0750200
C 5010.4 Attachment for combustible crucible, C 14	3016900

Decomposition system consumables

	Ident. No.
C 4 Quartz dish (100 pieces)	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

General

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IKA® General

Questionaire

IKA®-Werke GmbH & Co. KG

Janke & Kunkel-Str.10
D-79219 Staufen

Fax: +49 7633 831-98

Please send via a fax or mail in window envelope

Name _____

Company _____

Department _____

Street _____

City / State / Zip _____

Country _____

Phone _____

Fax _____

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 2000 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 2000 apply.
b) The delivery period shall commence with the dispatch of the order acknowledgement but not before receipt of the documents, 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.
d) The supplier shall, at the cost of the buyer, be entitled to insure the reserved goods against theft, breakage, fire, water and any other damages unless the buyer is able to prove that he/it has taken out such insurances.
e) Any intervention costs incurred by the supplier shall be borne 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.

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IKA®-WERKE GmbH & Co. KG
D-79219 Staufen

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 97

IKA®-*PET*

High-precision air cushion piston stroke pipette for science, research and routine work in the field of liquid handling.
Page 102

VORTEX Genius 3

New vortex shaker suitable for short-time operation (touch function), activated by pres-sing shaker attachment or continuous operation.
Page 46

VISION 2020: Christoffel Blind Mission in Peru

According to estimates there are 12.000 blind children under the age of 14 in Peru. Approximately 2.000 live in the capital, Lima, with eight million inhabitants. CBM and its campaign, VISION 2020, made it possible for thousands of Indios to find help for their eye problems. The exemplary work of the ophthalmic clinic for the poor is gaining widespread recognition in the region. Twelve projects for the prevention of blindness have already been implemented by the CBM.

HANDS for children was able to support the VISION 2020 campaign with more than $ 50.000 in 2001. The money was used for the purchase of needed medication, setup of operating rooms, special microscopes, and anesthetic instruments.

Further information about CBM and its projects can be requested at:
Christoffel-Blindenmission e.V.,
Niebelungenstr. 124,
64625 Bensheim, Germany.

People for People, building schools in Ethiopia project

In his anger over the unjust, inhumane gap between wealth and poverty on our planet the actor, Karlheinz Böhm, founded the association “Stiftung Menschen für Menschen e.V.” (“People for People Foundation”) in 1981. With this association he has given aid, independent of political, economic, or religious interests, to help Ethiopia. More than 1,7 million people, the majority being children, were helped in the last 20 years through the association.

However, so many still live under inhumane conditions. With profits from the sale of the EH 4 basic 2002 to 2006, **HANDS for children** will support the project in order to build schools in Babile Woreda - the extremely arid region of eastern Ethiopia.

The major activities of the project will be new buildings, furnishings and equipment as well as the repair of older schools and the building of housing for the teaching staff. At the same time primary education for the rural population will be implemented in order to minimize the illiterate rate (average in Ethiopia: males 60%, females 73%). This should set the stage for better learning and teaching. The long-term goal is to raise the educational level and with that increase the development of Ethiopia.

Further information on “People for People” and about the sponsored project will be available at:
www.menschenfuermenschen.de
or at:
Menschen für Menschen,
Brienner Str. 46,
80333 München, Germany.

Seamless transfer from the laboratory to the production line

Over the last few decades IKA® has built a reputation as a leading innovator for dispersers, kneaders and laboratory systems. Our high-quality stirrers, mixers and kneaders are widely used in the production of pharmaceuticals, chemicals, processed foods, paints, cosmetics and plastics.

Market leaders choose IKA® equipment and systems.

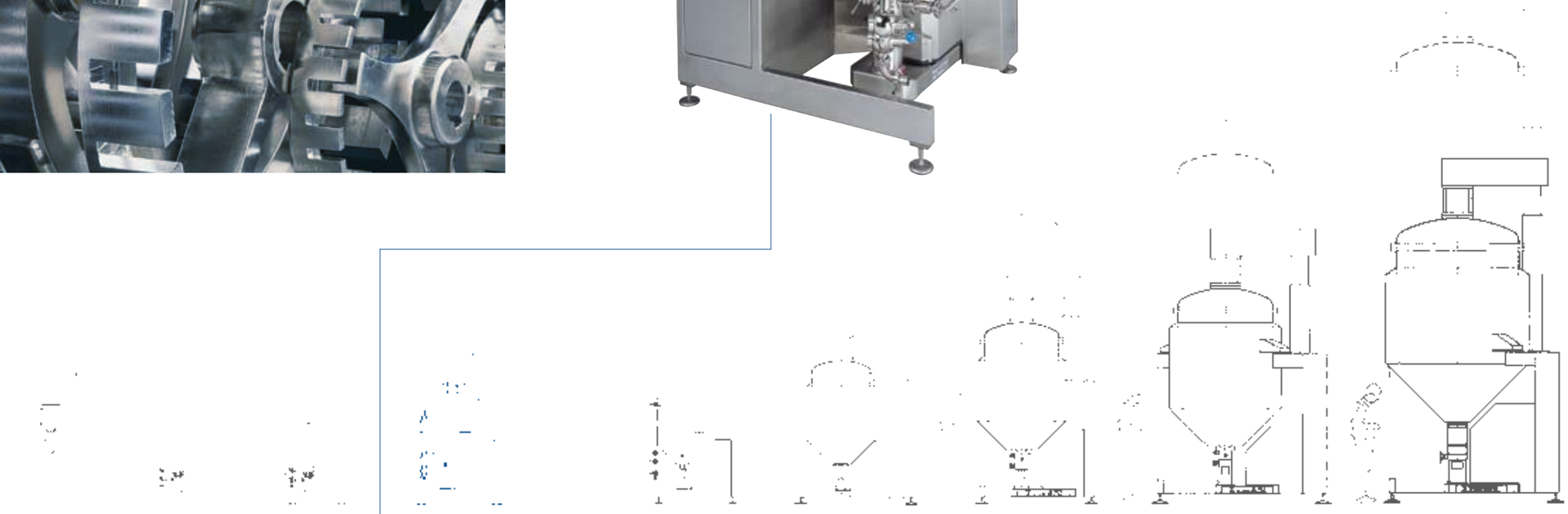
Scale Up

IKA® offers full scaleability from single units to modular series right through to complete systems. IKA® products are renowned worldwide for their high quality. Our products meet the highest specifications for functionality and technology. IKA® products are good to look at, too.

The IKA® Technical Assistance Service works closely with customers to optimise production processes and to develop customized designs.

IKA® is a one-stop supplier offering everything you need from design, prototype development, production through to after-sales service.

For more information, visit us at: www.ikaprocess.com



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