



**THERMO  
LABOSHAKE**

HOTPLATES AND SHAKERS

# HOTPLATES HT / SANDBATHS HTS



## ROBUST AND EFFICIENT

Hotplates HT and sandbaths HTS with a generous surface for intensive and demanding tasks in any kind of lab. Robust, planar cut, grey cast iron hotplate, built into a stainless steel cover. A new flat heating element, which is fully insulated, guarantees excellent heat transfer. The housing is made of sheet steel with rubber feet. Heating power is fully adjustable using an energy controller with scale graduation. The hot plate temperature on full power goes up to a maximum of 380 °C.

## ADVANTAGES OF CAST IRON

Hotplates made from cast iron are known for their excellent capability to retain heat. If the hotplate has been turned on for a long period of time, it is possible to benefit from the residual heat - thus saving energy. The robust nature of cast iron ensures long life with minimal damage likely from impacts such as glass breaking or chemical spills.



Hotplate HT 43

## HT AND HTS AT A GLANCE

- ▶ Excellent heat transfer
- ▶ Powerful heating elements give a fast heat up time
- ▶ Extended life cycle
- ▶ Extremely high stability due to the robust cast iron hot plate
- ▶ Use of cast iron ensures no deformation of the hot plate surface
- ▶ Fully adjustable heating control up to a maximum of 380°C at full power
- ▶ All relevant safety features as e.g. excess current switch, over temperature protection and heat insulation
- ▶ Precise temperature control is possible by using an optional, external controller



Hotplate HT 43 and Sandbath HTS 22

Type	HT 22 / HTS 22	HT 42 / HTS 42	HT 43 / HTS 43	HT 64 / HTS 64
Order No. HT:	1450	1451	1452	1453
Order No. HTS:	1460	1461	1462	1463
Nominal voltage:	230 V AC	230 V AC	230 V AC	400 VAC 3N
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal wattage:	1250 W	1500 W	2100 W	4500 W
Weight:	12 kg	16 kg	24 kg	48 kg
Dim. HT (W x D x H):	370 x 320 x 164 mm	460 x 320 x 164 mm	515 x 420 x 164 mm	660 x 590 x 164 mm
Dim. HTS (W x D x H):	370 x 320 x 194 mm	460 x 320 x 194 mm	515 x 420 x 194 mm	660 x 590 x 194 mm
Working area (W x D):	240 x 240	390 x 195	440 x 295	590 x 445
Max. temperature:	380 °C	380 °C	380 °C	380 °C
<b>Accessories</b>				
Laboratory sand 2 kg:	1541	1541	1541	1541

# LABORATORY HEATERS EV



Single Heater EV 1

## SINGLE HEATER EV

Powerful 450W compact heater for the laboratory with hotplate of Ø 85 mm. With graduated fully adjustable energy controller and excess current cut off with pilot lamp.

Order No.	Type	Description
1701	EV 1	Laboratory heater, 1-place



Serial Heating Unit EV 16

## SERIAL HEATING UNITS EV

Heating units with hotplates Ø 85 mm. Each of the 4 or 6 heating positions has an independent fully adjustable energy controller. With 2 pole power switch and pilot lamp as well as an excess current cut off again for each position. With the broad variety of accessories the possibilities of using the hotplates are endless (for example see page 6).

Order No.	Type	Description
1711	EV 14	Serial heating unit, 4-place
1712	EV 16	Serial heating unit, 6-place

## ACCESSORIES FOR EV

Order No.	Description
1301	Interchangeable plate top Ø 120 mm aluminium, for beakers up to 2 l and flat bottom flasks (EV 1 only).
1302	Interchangeable top mould Ø 65 mm, aluminium, for flasks up to 100 ml.
1303	Interchangeable top mould Ø 95 mm, aluminium, for flasks up to 250 - 500 ml and Kjeldahl flasks up to 500 - 750 ml.
1310	Airbath insert for extractions, used with top mould 1303.

	Type	EV 1	EV 14	EV 16
Order No.:		1701	1711	1712
Nominal voltage:		230 V AC	230 V AC	230 V AC
Frequency:		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Nominal wattage:		450 W	1800 W	2700 W
Weight:		2 kg	7 kg	10 kg
Dimensions (W x D x H):		250 x 225 x 110 mm	600 x 225 x 110 mm	900 x 225 x 110 mm
Max. temperature:		425 °C	425 °C	425 °C
Heating places:		1	4	6
Size of flasks:		see accessories	see accessories	see accessories

# LABORATORY HEATERS KI



Flask heater KI 2

## FLASK HEATER KI 1 AND KI 2

Reliable individual heaters for intensive heating of flasks. The energy controller is fully adjustable; excess current cut off with pilot lamp.

Order No.	Type	Description
1703	KI 1	Flask heater small, 1-place
1704	KI 2	Flask heater big, 1-place



Serial flask heater KI 26

## SERIAL FLASK HEATER KI

Heating units with dished tubular heating elements contained in a stainless steel reflector. The temperature for each position can be fully adjusted. With power switch and pilot lamp as well as an excess current cut off for each position. With the broad variety of accessories the possibilities of using the hotplates are endless (for example see page 7).

Order No.	Type	Description
1715	KI 16	Flask heater, 6-place for flasks 50 - 250 ml
1718	KI 24	Flask heater, 4-place for flasks 250 - 750 ml
1719	KI 26	Flask heater, 6-place for flasks 250 - 750 ml

## ACCESSORIES FOR KI

Order No.	Description
1308	Holder with clamp for Soxhlet glass parts.
1724	Support rod 600 x 12 mm, stainless steel with screw thread.
1727	Support rod 1000 x 12 mm, stainless steel with screw thread.
1725	Forked rod for Kjeldahl-flasks, chromium plated with screw thread.

	Type	KI 1	KI 2	KI 16	KI 24	KI 26
Order No.:		1703	1704	1715	1718	1719
Nominal voltage:		230 V AC	230V AC	230 V AC	230 V AC	400VAC 3N
Frequency:		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Nominal wattage:		450 W	580 W	1800 W	2320 W	3480 W
Weight:		2 kg	2 kg	7 kg	7 kg	10 kg
Dimensions (WxDxH):		150x225x130 mm	150x225x130 mm	600x225x130 mm	600x225x130 mm	900x225x130 mm
Max. temperature:		600 °C	650 °C	600 °C	650 °C	650 °C
Heating places:		1	1	6	4	6
Size of flasks:		50 - 250 ml	250 - 1000 ml	50 - 250 ml	250 - 750 ml	250 - 750 ml

# CLASSIC APPARATUS

## EXTRACTION HEATING UNIT

Serial heating unit EV 14 or EV 16 for 4 or 6 extractions for flasks of 250 – 500 ml using the classical Soxhlet method. Supplied with top moulds, air bath inserts, support rods (600 mm x 12 mm) and power cord. Not included are cooling water feed pipe, Soxhlet glass parts, and holder (see accessories).

Order No.	Type	Description
173100	EV6 All/14	Extraction apparatus (4-place)
173200	EV6 All/16	Extraction apparatus (6-place)

## ACCESSORIES

Order No.	Description
1308	Holder with fixed clamp to attach Soxhlet glass parts on support rod.
1319	Cooling water feed pipe made of nickel and plated brass, for intake and outflow for each position, 4 place.
1320	Cooling water feed pipe made of nickel and plated brass, for intake and outflow for each position, 6 place.
1336	Set of Soxhlet glass parts consisting of 1 flat-bottom flask, 1 extractor (150 ml) and 1 condenser acc. to Dimroth.
8310	Extraction thimbles, 33 x 80 mm (25p. per box)



## CRUDE FIBRE DIGESTION

Serial heating unit EV 14 or EV 16, can be used for 4 or 6 crude fibre digestions acc. to Lepper. Supplied ready for use with special supports, glass condensers, ring shaped rest, silicone rubber tubings, beakers (1000 ml), and power cord. Please make sure to check out our new FibreBag System as well (see page 9).

Order No.	Type	Description
175400	RF16/4	Crude fibre digestion (4-place)
175600	RF16/6	Crude fibre digestion (6-place)

## HYDROLYSIS

Consists of the crude fibre digestion unit RF 16/6 plus a filter insert with 6 funnels DIN 12445, 100 mm, 1 soft polyethylene bottle with a narrow mouth (1000 ml), 100 folded filters as well as 250 g boiling stones.

Supplied with special supports, glass condensers, ring shaped rest, silicone rubber tubings, beakers (1000 ml) and power cord.

Order No.	Type	Description
176600	HY 16/6	Hydrolysis unit (6-place)





## DISTILLATION UNIT

Kjeldahl distillation apparatus available with 50, 100, 250, 500 and 750 ml Kjeldahl flasks. For a fully automatic distillation unit please ask for our VAPODEST brochure.

Supplied with Kjeldahl flasks, Reitmair tops, condensers, outlet tubes, Erlenmeyer flasks, all rubber connections, support rings, and power cord.

Serial heating unit KI 24 or KI 26 for 4 or 6 distillations in Kjeldahl flasks 500 ml or 750 ml.

Order No.	Type	Description
177850	KI 12/24	Distillation apparatus, 4-place (with flasks 500 ml)
177875	KI 12/24	Distillation apparatus, 4-place (with flask 750 ml)
177950	KI 12/26	Distillation apparatus, 6-place (with flask 500 ml)
177975	KI 12/26	Distillation apparatus, 6-place (with flask 750 ml)

Serial heating unit KI 16 for 6 distillations in Kjeldahl flasks 50 ml, 100 ml and 250 ml.

Order No.	Type	Description
177705	KI 9/16	Distillation apparatus, 6-place (with flasks 50 ml)
177710	KI 9/16	Distillation apparatus, 6-place (with flasks 100 ml)
177725	KI 9/16	Distillation apparatus, 6-place (with flasks 250 ml)



## DIGESTION UNITS

These units are designed for digestions acc. to Kjeldahl available for 50 - 750 ml Kjeldahl flasks. All units have a very efficient glass exhaust manifold with funnel shaped adapters which fit into the neck of the flasks. Exhaust systems must be ordered separately (see page 8). For automatic digestions in digestion tubes please ask for our KJELDATHERM and TURBOTHERM brochure.

### Digestion unit KI 24 and KI 26

Order No.	Type	Description
177450	KI 11/24	Digestion unit, 4-place (with flasks 500 ml)
177475	KI 11/24	Digestion unit, 4-place (with flasks 750 ml)
177550	KI 11/26	Digestion unit, 6-place (with flasks 500 ml)
177575	KI 11/26	Digestion unit, 6-place (with flasks 750 ml)

### Digestion unit KI 16

Order No.	Type	Description
177105	KI 8/16	Digestion unit, 6-place (with flasks 50 ml)
177110	KI 8/16	Digestion unit, 6-place (with flasks 100 ml)
177125	KI 8/16	Digestion unit, 6-place (with flasks 250 ml)



In case the apparatus is used without glass exhaust manifold the heating units KI can be used together with forked rods and Kjeldahl flasks.

# VARIOUS

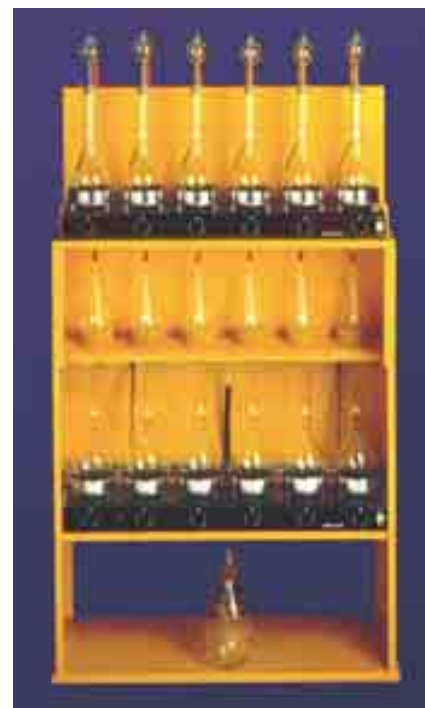
## THE COMBINATION

### Digestion and Distillation

This set up is for 6 digestions and 6 distillations to be used in the open laboratory. The lower part has a stainless steel housing with removable drain plate of as well as carrier plate on which the digestion apparatus Ki 11/26 is mounted (description on page 7). Supplied with big wash bottle (2 l content), a water jet pump as well as all relevant tubing connections. The upper part is a distillation apparatus KI 12/26 (description on page 7). Two power sockets are required.

Order No.	Type	Description
177650	KI13/26	Combination for flasks 500 ml
177675	KI13/26	Combination for flasks 750 ml

Technical data see page 9



## RAPID GLASS DRYER STL

Hot air fan for reliable rapid drying of laboratory glassware. Rotary hollow support stem, mounted on the base, with 56 lateral drying tubes. 24 tubes of 16 mm Ø for large vessels, 32 tubes of 11 mm Ø for smaller vessels. Built in 900 W fan with heating grill blows filtered air through the tubes. The temperature in the drying vessels reaches about 50 °C. Control panel at the front with pilot lamp switches for power supply and heating. Heating switch allows for cold or warm operation with 120 min. electric timer.

Order No.	Type	Description
1530	STL	Rapid glass dryer

Technical data see page 9



## SUCTION SYSTEMS (FOR DIGESTION UNITS KI)

### Turbosog

Compact fume scrubber unit to remove aggressive acid vapors via a built-in TURBOSOG centrifugal scrubber. The fumes are condensed and neutralized in the two-stage pre-separator.

Order No.	Type	Description
630010	TUR/K	Turbosog - Scrubber unit

### Water jet pump for suction

Order No.	Type	Description
1364	WSP	Water jet pump, especially designed for a large suction volume for glass exhaust manifolds
1369	ISO	Isoversinic-hose, 1,5 m, for water jet pump



# VARIOUS

## CERAN® HOTPLATE HCP

The Ceran Hotplate HCP is ideal for heating liquids quickly and safely. The heat can be adjusted in 9 levels via an infrared touch panel and uses up to 1,8 kW at level 9.

Order No.	Type	Description
1420	HCP	Ceran Hotplate 230 V AC, 50/60 Hz, Ceran-area 280 x 280 mm



## FIBREBAG

The FibreBag system developed by Gerhardt revolutionizes the classic determination like e.g. Weender, van Soest and others and simplifies the procedure dramatically. Bench space, consumption of energy and chemicals are reduced to one sixth of the traditional method; at the same time the conformity to the method is ensured. Gerhardt offers the 3 system packages at a very reasonable price. Further product information is available from our "Kjeldatherm" product brochure or directly from the product specialist at Gerhardt, or at the Gerhardt representative in your country.



## TECHNICAL DATA

Type	EV 6 All 14	EV 6 All 16	RF 16/4	RF 16/6 & HY 16/4
Order No.:	see page 6	see page 6	see page 6	see page 6
Nominal voltage:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal wattage:	1800 W	2700 W	1800 W	2700 W
Weight:	10 kg	14 kg	12 kg	18 kg
Dimensions (W x D x H):	600 x 225 x 650 mm	900 x 225 x 650 mm	600 x 225 x 340 mm	900 x 225 x 340 mm
Max. temperature:	425 °C	425 °C	425 °C	425 °C
Heating places:	4	6	4	6
Size of flasks:	250 - 500 ml	250 - 500 ml	-	-

Type	KI 12/24	KI 12/26	KI 9/16	KI 11/24
Order No.:	see page 7	see page 7	see page 7	see page 7
Nominal voltage:	230 V AC	400VAC 3N	230 V AC	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal wattage:	2320 W	3480 W	1800 W	2320 W
Weight:	25 kg	35 kg	25 kg	10 kg
Dimensions (W x D x H):	650 x 380 x 950 mm	950 x 380 x 950 mm	650 x 380 x 950 mm	600 x 250 x 300 mm
Max. temperature:	650 °C	650 °C	600 °C	650 °C
Heating places:	4	6	6	4
Size of flasks:	500 - 750 ml	500 - 750 ml	50 - 250 ml	500 - 750 ml

Type	KI 11/26	KI 8/16	KI 13/26	STL 56
Order No.:	see page 7	see page 7	see page 8	see page 8
Nominal voltage:	400VAC 3N	230 V AC	2 x 400VAC 3N	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50 Hz
Nominal wattage:	3480 W	1800 W	6960 W	1000 W
Weight:	15 kg	8 kg	75 kg	12 kg
Dimensions (W x D x H):	900 x 250 x 300 mm	600 x 250 x 300 mm	970 x 470 x 1820mm	380 x 380 x 1150mm
Max. temperature:	650 °C	600 °C	650 °C	-
Heating places:	6	6	6	-
Size of flasks:	500 - 750 ml	50 - 250 ml	500 - 750 ml	-

# LABOSHAKE / THERMOSHAKE



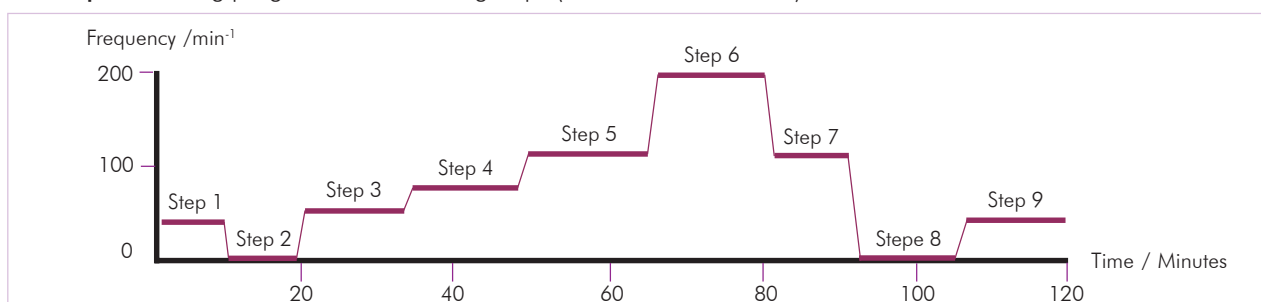
Laboshake LS 500 + TB 50 + HS 5

## GERHARDT HAS IMPROVED THE SUCCESSFUL LARGE LABOSHAKE AND THERMOSHAKE.

Some of the new features are:

- 9 different shaking programs. No need to adjust settings for individual users
- 9 steps per program, set for speed and time. For even the most complicated procedure
- Speed settings from 0 to 200 rpm, with standard 50 mm throw allows for optimal shaking conditions
- Time can be set in seconds, minutes and hours
- Separate LED displays allows shaking time and speed to be called up and changed during any procedure. Allows manual intervention without affecting the program
- Optional breaks can be set into any program

**Example:** Shaking program with 9 shaking steps (reactions are initiated)





## VERSATILITY

The basic shaker models have a wide range of optional accessories to suit virtually all laboratory applications. The three storey frame set helps to save precious bench space (see accessories page 12 and 13).

# LABOSHAKE 500

Gerhardt offers two basic models of shaker. Together with the extensive range of accessories, these shakers easily satisfy the extensive requirements of chemical, biological, or microbiological research. Heavy loads are handled with the same ease as varying temperature or humidity conditions. Both models can handle loads up to 30 kg. Delivery of the basic model includes 4 vertical rods 150 mm long to accept the variety of attachments (spanner included for easy assembly), mains cable and an instruction manual.

Technical data see page 13

Order No.	Type	Description
4155	RO 500	Shaker with orbital motion
4156	RO 500 i	Shaker with orbital motion and RS 485-Interface
4055	LS 500	Shaker with reciprocal motion
4056	LS 500 i	Shaker with reciprocal motion and RS 485-Interface

# THERMOSHAKE 500



Thermoshake THO 500 + EA 2

Using the shakers LS 500 respectively RO 500 as a base, Gerhardt also offers state-of-the-art incubation shakers. The sophisticated construction guarantees controlled and steady conditions for continuous operation as well as homogenous mixture of cultures thanks to constant speed and temperature. A large transparent and internally lit incubator chamber allows easy observation of cultures from all sides.

Technical data see page 13

Order No.	Type	Description
4355	THO 500	Incubator shaker with orbital motion
4356	THL 500	Incubator shaker with reciprocal motion

### SHAKING THE CLASSIC WAY

- ▶ Mixing of liquids
- ▶ Dissolve poorly soluble salts
- ▶ Create emulsions
- ▶ Homogenization of suspensions
- ▶ Liquid/liquid extractions

### ENVIRONMENTAL ANALYSIS

- ▶ Elute soils
- ▶ Shaking of water samples
- ▶ Dissolve contaminants of sewage sludge
- ▶ Dissolve nutrients from substrates
- ▶ Dissolve waste from soils

### MICROBIOLOGY

- ▶ Equidistribution of nutrients
- ▶ Avoid sedimentation
- ▶ Introduce oxygen
- ▶ Discharge carbon dioxide
- ▶ Equidistribution of temperature
- ▶ Substitution of stirring

### THERMOSTATIC SHAKING

- ▶ Very even temperature distribution
- ▶ Excellent use of the bench space thanks to carrier plates
- ▶ Versatile range of accessories
- ▶ Programming with 9 programs and 9 program steps
- ▶ Easy operation

# ACCESSORIES

## UNIVERSAL PLATES FOR LABOSHAKE 500 AND THERMOSHAKE 500

Any number of clip racks TK for Erlenmeyer flasks from 25 ml to 2000 ml as well as holders for separation funnels HS or holders for bottles HF can be mounted on the universal plates by using guide rails.

Order No.	Type	Description
4230	TB 50	Universal plate 500 x 375 mm made of stainless steel with 19 x 25 = 475 holes (magnetic stainless steel sheet, magnetic clips can be mounted)

### Accessories for mounting on the universal plates:

#### - Clip racks for Erlenmeyer-flasks

Order No.	Type	Capacity	max. clip racks on TB 50 =
4233	TK 25	25 ml	54
4234	TK 50	50 ml	48
4235	TK 100	100 ml	33
4236	TK 250	250 ml	20
4237	TK 500	500 ml	12
4238	TK 1000	1000 ml	8
4239	TK 2000	2000 ml	5

#### - Holder for separatory funnels or bottles

4251	HS 5	with support rail 490 mm length for separatory funnels 500, 1000 oder 2000 ml
4252	HF 5	with support rail 490 mm length for bottles with max. 75 mm Ø

#### - Magnetic clips

4130	MGH	Magnetic clips for quick and easy loading and reliable fastening (can only be used for light shaking material)
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## FINISHED PLATES FOR LABOSHAKE 500 AND THERMOSHAKE 500

This is a universal plate on which pins and clamping springs are mounted to take Erlenmeyer flasks:

Order No.	Type	Description
4231	TB 51	Finished plate for 30 Erlenmeyer. 50 - 100 ml
4232	TB 52	Finished plate for 20 Erlenmeyer. 200 - 300 ml

## STOREY FRAME FOR 3 PLATES FOR LABOSHAKE 500

Guide rails on the three levels accept finished plates TB 51 and TB 52 or universal plates TB 50 for shaking Erlenmeyer flasks of your choice (see upper part).

Order No.	Type	Description
4243	EA 3	Frame for 3 plates of your choice, consisting of: 4 rods 460 mm, no. 40660 8 spacing bars, no. 40662 2 stabilization rod, no. 40671

### UNIVERSAL PLATES

The carrier plates are made of stainless steel with a grid of holes at 20 mm intervals, complete with two guide rails. The plate is inserted from the front and attached at the sides.



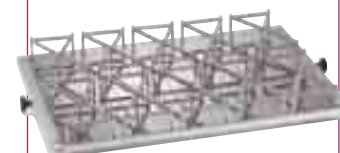
Universal plate



Clip racks



Holder for bottles



Finished plate

### STOREY FRAMES

This set can be easily mounted and then up to three storeys can be used. Thus, precious bench space as well economic savings can be made.



# ACCESSORIES

## STOREY FRAME FOR 2 PLATES FOR THERMOSHAKE 500

Due to the height of the incubator shaker only 2 story frames can be used. These can also be used on the Laboshake 500.

Order No.	Type	Description
4352	EA 2	Frame for up to 2 plates, consisting of: 4 rods 250 mm, no. 40690 4 spacing bars, no. 40662 1 stabilization rod, no. 40671

## UNIVERSAL ATTACHMENT FOR LABOSHAKE 500

Order No.	Type	Description
4205	UA 5	Universal attachment set, consisting of: 2 x fastening bars UB 50, lengthways and 3 x clamping rolls US 25, widthways

### Additional attachment supplied individually:

4213	UB 25	fastening bar 375 mm, widthways
4214	UB 50	fastening bar 545 mm, lengthways
4216	US 25	clamping roll 375 mm, widthways
4217	US 50	clamping roll 545 mm, lengthways

## UNIVERSAL ATTACHMENT FOR THERMOSHAKE 500

Order No.	Type	Description
4206	UA 5 TH	Universal attachment set, consisting of: see UA 5 except with knurled thumb screws instead of clamp lever. Fastening bars as well as clamping rolls are also available as single elements on demand.

### UNIVERSAL ATTACHMENTS

The attachments are supplied as a kit consisting of two fastening bars attached to the vertical rods on the shaker at the desired height. The clamping rolls, covered with Neoprene cushioning, then run between these two bars thus allowing a wide range of vessels to be safely attached. For special applications, additional stabilization rods can be attached widthways as well as clamping rolls lengthways.



## TECHNICAL DATA LABOSHAKE 500 AND THERMOSHAKE 500

Type	RO 500 (i)	LS 500 (i)	THO 500	THL 500
Order No.:	4155 (4156)	4055 (4056)	4355	4356
Nominal voltage:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50 Hz	50 Hz	50 Hz	50 Hz
Nominal wattage:	80 W	80 W	Motor: 80 W, Heating: 500 W, Ventilation: 40 W	Motor: 80 W, Heating: 500 W, Ventilation: 40 W
Speed frequency min <sup>-1</sup> :	0 and 20 - 200	0 and 20 - 200	0 and 20 - 200	0 and 20 - 200
Amplitude:	50 mm	50 mm	50 mm	50 mm
Time program:	99h, 59min, 59s and infinite	99h, 59min, 59s and infinite	99h, 59min, 59s and infinite	99h, 59min, 59s and infinite
Programs:	9	9	9	9
Max. load:	30 kg	30 kg	30 kg	30 kg
Shaking platform:	540x380 mm	540x380 mm	540x380 mm	540x380 mm
Dimensions (W x D x H):	610x510x120 mm	610x510x120 mm	720x510x720 mm	720x510x720 mm
Inside (W x D x H):	-	-	690x470x500 mm	690x470x500 mm
Weight:	28 kg	28 kg	55 kg	55 kg
Illumination:	-	-	7 W energy save	7 W energy save
Air circulation:	-	-	180 m <sup>3</sup> / h	180 m <sup>3</sup> / h
Temperature range:	-	-	Amb. up to 50 °C	Amb. up to 50 °C
Temperature accuracy:	-	-	< 1 %	< 1 %

# LABOSHAKE MINI



Laboshake RO 250 + MGH

## SMALL SHAKERS RO

Gerhardt increases the flexibility of its Laboshake product range to accommodate a greater variety of applications and budgets with the introduction of the mini shakers, RO 100, RO 250, and RO 300. All models offered come with a wide range of accessories, which makes them perfect for almost any shaking task in the lab.

## MODELS

- ▶ RO 100  
Mini shaker with a big range from 10 - 250  $\text{min}^{-1}$  Speed frequency, smooth circular 20 mm amplitude motion and a small platform. Can be used for all laboratory applications up to a load of 1.2 kg.
- ▶ RO 250/8 and RO 250/16  
Small shaker with a uniform circular motion with an orbit of 8 and 16 mm respectively and speed frequency of 50 - 500  $\text{min}^{-1}$ . Can be used for all applications which take a maximum load of 4 kg, like e.g. an Erlenmeyer flask, a Petri dish, a slab gel, beakers, etc.
- ▶ RO 300/8 and RO 300/16  
Small shaker as described for RO 250 but with a larger carrier plate. Is suitable for applications with a maximum load of 7kg.





## ACCESSORIES FOR LABOSHAKE MINI

Order No.	Type	Description
4130	MGH	Magnetic holder for quick and easy loading and reliable fastening
4131	HM 250	Micro plate adapter for RO 250
4132	HM 300	Micro plate adapter for RO 300
4133	UA 250	Universal attachments for RO 250, consisting of: 4 x rods 2 x fastening bars lengthways 4 x clamping rolls widthways
4134	UA 300	Universal attachments RO 300, consisting of: 4 x rods 2 x fastening bars lengthways 4 x clamping rolls widthways



Magnetic holder  
MGH



Micro plate adapter  
HM



Universal attachment  
UA

### SMALL SHAKER

- ▶ Microprocessor controlled and large digital display
- ▶ Up to 500min<sup>-1</sup>
- ▶ User friendly keyboard for easy operation
- ▶ Last setting stored
- ▶ Acoustic signal at the end of the program
- ▶ Continuous operation for several days possible
- ▶ Extensive accessories for recipients of various sizes like e.g.:
  - Magnetic holder
  - Micro plate
  - Universal attachments

## TECHNICAL DATA LABOSHAKE MINI

Type	RO 100	RO 250/8	RO 250/16	RO 300/8	RO 300/16
Order No.:	4100	4105	4106	4110	4111
Nominal voltage:	12 V DC*	12 V DC*	12 V DC*	12 V DC*	12 V DC*
Speed frequency min <sup>-1</sup> :	10 - 250	50 - 500	50 - 500	50 - 500	50 - 500
Time program:	1 - 999 min	1 - 999 min	1 - 999 min	1 - 999 min	1 - 999 min
Programs:	1	1	1	1	1
Amplitude:	20 mm	8 mm	16 mm	8 mm	16 mm
Max. load:	1,2 kg	4 kg	4 kg	7 kg	7 kg
Shak. platf. (WxD) mm:	168 x 168	347x235	347x235	409x297	409x297
Dimens. (WxDxH mm):	193x170x70	347x275x100	347x275x100	420x310x100	420x310x100
Weight:	1,4 kg	5,5 kg	5,5 kg	7,5 kg	7,5 kg

\* delivery includes an adapter 12V DC for the connection to 100 - 240V 50/60 Hz

## SPECIAL ACCESSORIES/SPECIAL MODELS

Our product specialists are here to help you whenever you have a special application need. Should you be interested in any special accessory or variation of a shaker model, please feel free to contact us.

# ANALYTICAL PROGRAM

On request we will be happy to supply you with further brochures regarding our other products.

## DISTILLATION SYSTEMS

VAPODEST

Gerhardt has set new standards worldwide with the Vapodest steam distillation system. Whenever, highly precise analysis results are needed - Gerhardt has the answer. The Vapodest product range is available in various levels of automation, from the Vapodest 20 semi-automatic distillation system to the Vapodest 50 distillation and titration system with carousel autosampler.



## RAPID EXTRACTION

SOXTERM

Based on the experiences of customers and partners worldwide Gerhardt has improved the successful Soxtherm range. Depending on the demands and sample throughput of the laboratory, the customer can now choose between a 2, 4, and 6 place, programmable units.



## DIGESTION UNITS

KJELDATHERM

TURBOTHERM

TRACE METAL SMA

The extensive Kjeldatherm digestion program produced by Gerhardt offers many options. Thanks to the infra red heating units the programmable Turbotherm rapid digestion unit has very short and reliable heating up and cooling down periods. The Kjeldatherm block digestion unit makes use of an aluminum block, where the sample tubes are heated up to exactly the temperature needed.



All stages from research & development to shipment have undergone a constant quality control under EN ISO 9001:2000, which C. Gerhardt has recently achieved.

EN ISO  
9001:2000



 **Gerhardt**

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Technical details correct as from 01/2004  
Later modifications possible.