

## 4. Stirring, Shaking, Mixing Shakers and mixers/Overhead shakers

### 1 Overhead mixer LLG-uniROTATOR 2

Analogue overhead mixer with vertical rotary motion for gentle but effective mixing. Ideal for biological samples. Suitable for cutting and mixing processes of powdered and liquid samples in tubes up to 50 ml. With easily interchangeable clamps that allow a quick cleaning of the mixer.

- Compact design
- Housing easy to clean
- Non-slip, adjustable screw feet

**Scope of delivery:** Overhead mixer incl. 12 clamps each for 2 ml, 15 ml and 50 ml tubes

**Specifications**

Type of movement:	overhead
Speed:	0 ... 80 min <sup>-1</sup>
Rotation angle:	360°
Permissible shaking weight (incl. attachment):	2 kg
Permissible relative moisture:	80 %
Permissible ambient temperature:	5 ... 40 °C
Motor rating input:	20 W
Dimensions (W x D x H):	530 x 150 x 190 mm
Power supply:	100 ... 240 V, 50/60 Hz
IP code:	IP 21
Warranty:	3 years



Type	Plug type	PK	Cat. No.
LLG-uniROTATOR 2	EU	1	6.263 660
LLG-uniROTATOR 2	UK	1	6.263 661

### 2 Vertical mini rotator PTR-25

Compact, economy solution with simple to use controls, providing thorough mixing of samples in tubes up to 50ml. Suitable for preventing blood coagulation in tubes and for fulfilment of procedures of extraction of biological components. For use in cold rooms and incubators.

- 360° vertical rotation
- Vertical rotation speed range: 5rpm to 30 rpm
- Timer: 1 min to 24 hours, with audible alarm and automatic switch-off
- Simple to use controls
- Platform accommodating 22 tubes (up to 16mm diameter) is included as standard

Grant



Type	Plug type	PK	Cat. No.
PTR-25	EU/UK	1	9.721 016

### 3 Vertical mini rotator RotoFlex™ Plus

This simple benchtop rotator is ideal for a number of laboratory applications including DNA purification, hybridization or sample mixing. It is digitally controlled and can also be set in an oscillating mode to increase mixing efficiency. This tube rotator accepts tubes from 0.5 to 50 ml. The rotisseries to hold each of the tubes are included in the set.

Argos Technologies

**Features:**

- 360° revolution, adjustable angle from 0 to 90°
- Speed: 10 to 40 rpm, adjustable
- For tubes of 0.5 to 50 ml, interchangeable tube racks
- Can be used in a cold room or incubator (4 °C to 60 °C)

Type	PK	Cat. No.
RotoFlex™ Plus	1	6.281 561



**1**

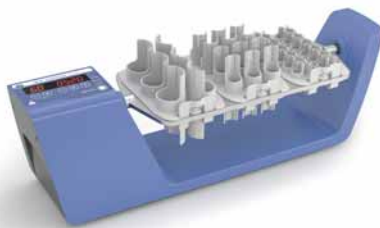

### 1 Multi-function rotator PTR-35/PTR-60

360° vertical multi-function rotator for thorough mixing in tubes, with multi-segment programme.

*Grant*

- Multi-function: vertical rotation, reciprocation, vibration
- Continuous or timed operation for each phase
- Choice of two models with different microtube capacities
- Speed: 1 rpm to 100 rpm with 1 rpm increment
- Reciprocal rotation: 1° to 90° turning angle
- Vibration: programmable in a burst of 1 to 5 seconds
- Fully programmable sequence of functions, including pause
- Alternative platforms for larger tubes

Type	Permissible shaking quantity / maximum load kg	Plug type	PK	Cat. No.
PTR-35	0.5	EU/UK	1	9.721 028
PTR-60	0.8	EU/UK	1	9.721 030

**2**


9.837 871

### 2 Overhead shaker Trayster basic/digital

Overhead shaker with vertical rotation for smooth but effective mixing with a fixed speed. Ideal for biological samples, particularly blood samples. Suitable for separating and mixing processes of powdered and liquid samples in Eppendorf tubes and Greiner tubes up to 50 ml. The easy removable attachments allow simple and quick cleaning of the unit of spilled samples.

*IKA*

- Different attachments allow a variety of applications
- Usable at 4 to 50°C in incubators
- Suitable for continuous operation
- Easy operation by foil keypad
- Trayster digital only:**
- Timer: Countdown, adjustable from 1s to 99h 59min
- Counter: Display of shaking time
- Error code display

**Attachments are not included. Please order separately.**

#### Specifications

Type of movement:	overhead
Shaking diameter:	vertical or horizontal
Permissible shaking weight (incl. attachment):	2kg
Motor rating input/output:	16/9 W
Dimensions (W x D x H):	460 x 140 x 180 mm
Protection class acc. to DIN EN 60529:	IP 21
Power supply:	100-240V, 50/60Hz

Type	PK	Cat. No.
Trayster basic, EU	1	9.837 870
Trayster digital, EU	1	9.837 871

**3**


### 3 Overhead Shaker Reax 2

- Incl. Universal adapter with clamps for 2 closed vessels of 50 to 160 mm height
- Especially suitable for hematology, medical diagnostics and biochemistry
- Speed continuously adjustable
- Additionally an optional adaptor is available for the use of 20 test tubes

*Heidolph*

#### Specifications

Type of movement:	overhead
Speed:	20 ... 100 rpm
Rotation angle:	360°
Permissible shaking weight:	1 kg
Motor rating input:	27 W
Dimensions (W x D x H):	510 x 235 x 180 mm
Weight:	5.2 kg
Power supply:	230 V/50 Hz
Protection class:	IP 21

Type	Plug type	PK	Cat. No.
Reax 2	EU	1	6.270 264
Reax 2	UK	1	6.290 978

## 4. Stirring, Shaking, Mixing Shakers and mixers/Overhead shakers

### Overhead shaker Reax 20

- Overhead Shaker for 4, 8 or 12 bottles or mixing cylinders with 160 to 270 mm height and max. 136 mm diameter
- Ideal for waste water analysis acc. to DIN 38414 Part 4
- Bottles can be easily inserted and removed by quick-release technology
- Set and continuously adjust the variable speed on the analog control knob
- Other rotation speeds available upon request, for example 0.5 to 8 rpm or 2 to 32 rpm

Heidolph



9.839 805

#### Specifications

Type of movement:	overhead
Speed:	1 ... 16 rpm
Rotation angle:	360°
Permissible shaking weight:	30 kg
Motor rating input:	280 W
Power supply:	230 V/50 Hz
Protection class:	IP 21

Type	Dimensions (W x D x H) mm	Net weight kg	PK	Cat. No.
Reax 20 / 4	490 x 520 x 465	23	1	9.839 805
Reax 20 / 8	770 x 520 x 465	28	1	9.839 806
Reax 20 / 12	1050 x 520 x 465	33	1	9.839 807

### 2 Disc rotator LLG-uniLOOPMIX 2

- Analogue Disc rotator for gentle and effective sample mixing. Suitable for all biological samples. With easily interchangeable clamps that allow a **quick cleaning** of the rotator.
- For a maximum of 48 x 1.5 ml, 16 x 5 or 15 ml, 8 x 50 ml tubes. Also for parallel use of different sizes, can be equipped individually.
- Compact design
  - Housing easy to clean
  - Non-slip, adjustable screw feet
  - Additional clamps on request

**Scope of delivery:** Disc rotator incl. 12 clamps each for 2 ml, 15 ml and 50 ml tubes

#### Specifications

Type of movement:	rotating
Speed:	0 ... 80 min <sup>-1</sup>
Rotation angle:	360°
Permissible shaking weight (incl. attachment):	2 kg
Permissible relative moisture:	80 %
Permissible ambient temperature:	5 ... 40 °C
Motor rating input/output:	20 W
Dimensions (W x D x H):	220 x 300 x 310 mm
Power supply:	100 ... 240 V, 50/60 Hz
IP code:	IP 21
Warranty:	3 years

Type	Plug type	PK	Cat. No.
LLG-uniLOOPMIX 2	EU	1	6.263 665
LLG-uniLOOPMIX 2	UK	1	6.263 666

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### Rotators SB2/SB3

The Stuart rotators give gentle but effective mixing, ideal for life sciences applications such as keeping blood samples in suspension. The angle of tilt is fully adjustable. The Rotators can be used in incubators up to 60°C and in cold rooms down to 4°C.

Stuart

**SB2:** Fixed speed of 20rpm.

**SB3:** Variable speed of 2rpm to 40rpm. Additional digital timer of 1 to 999 minutes. Digital speed control.

**There are six types of tube holder available. Please order separately.**

#### Specifications:

Dimensions (W x D x H):	200 x 270 x 230mm
Supply:	230 V/50 Hz, 50W
Weight:	3.2kg

Type	PK	Cat. No.
SB2	1	9.645 322
SB3	1	9.645 323

3



9.645 323

### 1 Tube holders for rotators SB2/SB3

Stuart

Type	For	No. of vessels	PK	Cat. No.
SB3/1	Micro tubes, 10 to 11.5mm dia.	46	1	9.645 324
SB3/2	Test/blood tubes, 9 to 20mm dia.	20	1	9.645 325
SB3/3	50ml centrifuge tubes, 25 to 35mm dia.	12	1	9.645 326
SB3/4	Culture tubes, 12mm dia.	63	1	9.645 327
SB3/5	Culture tubes, 16mm dia.	63	1	9.645 328
SB3/6	Culture tubes, 26mm dia.	30	1	9.645 329
SB3/1/PC	Spare Clips for SB3/1	-	1	6.258 527

Additional accessories on request.

### Rotators Loopster basic/digital

Rotators for smooth but effective mixing with a fixed speed. Ideal for biological samples, particularly blood samples. Suitable for separating and mixing processes of powdered and liquid samples in Eppendorf tubes and Greiner tubes up to 50ml. The easy removable attachments allow simple and quick cleaning of the unit of spilled samples. IKA

- Freely adjustable rotary angle
- Different attachments allow a variety of applications
- Usable at 4 to 50°C in incubators
- Easy operation by foil keypad
- Suitable for continuous operation

#### Loopster digital only:

- Timer: Countdown, adjustable from 1s to 99h 59min
- Counter: Display of shaking time
- Error code display

#### Specifications

Type of movement:

Shaking diameter:

Permissible shaking weight (incl. attachment):

Motor rating input/output:

Dimensions (W x D x H):

Protection class acc. to DIN EN 60529:

Power supply:

rotating

adjustable from horizontal to vertical

2kg

16/9W

300 x 300 x 360mm

IP 21

100-240V, 50/60Hz

Type	Min. speed rpm	Max. speed rpm	PK	Cat. No.
Loopster basic	20	20	1	9.729 982
Loopster digital	5	80	1	9.729 983

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9.729 983

## Roller Mixers LLG-uniROLLER 6 easy and pro



1

Analog or digital tube rollers with 6 rolls for the efficient mixing of biological samples, viscous substances and liquid-solid suspensions. Used in a variety of applications, such as the prevention of blood coagulation, immune precipitation.

- Max speed 70 rpm
- For gentle rolling of samples
- Easy to clean

LLG-uniROLLER 6 easy:

- Analog control
- Easy to use

LLG-uniROLLER 6 pro:

- LCD display
- Continuous or timer operation



6.263 645

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6.263 647

### Specifications

	LLG-uniROLLER 6 easy // LLG-uniROLLER 6 pro
Type of movement:	rocking and rolling
Amplitude:	24 mm
Speed:	0 ... 70 rpm
Timer:	- // 1 ... 1199 min
Load max.:	4 kg
Ambient temperature:	5 ... 40 °C
Max. humidity:	80 % RH
Dimensions (W x D x H):	260 x 450 x 120 mm
Weight:	4.5 kg // 5.1 kg
Power consumption:	25 W // 30 W
Power supply:	100 ... 240 V, 50/60 Hz
IP code:	IP 21

Type	Plug type	PK	Cat. No.
LLG-uniROLLER 6 easy	EU	1	6.263 645
LLG-uniROLLER 6 easy	UK	1	6.263 646
LLG-uniROLLER 6 pro	EU	1	6.263 647
LLG-uniROLLER 6 pro	UK	1	6.263 648

## Tube Roller Mixer, SRT6, SRT6D, SRT9, SRT9D

3 Stuart

There are four models available, two analogue models with either 6 or 9 rollers, with a fixed speed of 33 rpm. Or two more advanced digital models with either 6 or 9 rollers, with digitally controlled speed between 5 and 60 rpm and programmable timer. The rollers conveniently detach to accommodate larger vessels. Recommended for mixing blood samples, viscous substances and liquid-solid suspensions where minimum aeration is required. Units can be used in incubators up to 60 °C and humidity up to 80 %, or in cold rooms down to 4 °C.

- Rocking and rolling action for complete mixing
- 6 or 9 roller design with footprint
- With antimicrobial BioCote protection

### Specifications

	SRT6/SRT6D // SRT9/SRT9D
Type of movement:	rocking and rolling
Amplitude:	16 mm
Speed:	33 rpm // 5 ... 60 rpm
Number of rollers:	6 // 9
Load max.:	3 kg
Timer:	continuous // 1 s ... 9 h, continuous
Ambient temperature:	up to 60 °C
Max. humidity:	up to 80 %
Dimensions (W x D x H):	565 x 240 x 110 mm // 565 x 360 x 110 mm
Roller size (l x Ø):	340 x 30 mm
Weight:	5.1 kg // 6.9 kg
Power supply:	230 V, 50/60 Hz
IP code:	IP 20



9.728 811

Type	Display type	PK	Cat. No.
SRT6	analogue	1	9.728 810
SRT6D	digital	1	9.728 811
SRT9	analogue	1	9.728 812
SRT9D	digital	1	9.728 813

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9.729 970

### Tube roller Roller 6 basic/6 digital/10 basic/10 digital

Roller shaker with 6 or 10 rolls, with smooth rocking and rolling action and a fixed speed. Particularly for mixing blood samples, solid and liquid suspensions and viscous samples. The unit can be used for all conventional tubes and cylindrical bottles. The easy removable rolls allow simple and quick cleaning of the unit from spilled samples.

IKA

- Usable from 4 to 50°C in incubators
- Suitable for continuous operation
- Removable rolls make it suitable for larger tubes
- Easy operation by foil keypad
- Easy removable rolls

#### Roller 6 digital/10 digital only:

- Timer: Countdown, adjustable from 1s to 99h 59min
- Counter: Display of shaking time
- Error code display

**2**


9.729 973

#### Specifications

Type of movement:	rocking and rolling
Amplitude:	24.5 (height)
Speed:	30 rpm // 5 ... 80 rpm
Number of rollers:	6 // 10
Load max.:	2 kg
Timer:	- // 1 s ... 99 h 59 min
Ambient temperature:	+4°C to +50°C
Max. humidity:	80%
Dimensions (W x D x H):	240 x 545 x 115 mm // 380 x 545 x 115 mm
Roller size (l x Ø):	310 x 32 mm
Weight:	4 kg // 6 kg
Power supply:	100-240V, 50/60Hz
IP code:	IP 21

#### Roller 6 /10 basic // Roller 6 /10 digital

Type	PK	Cat. No.
Roller 6 basic	1	9.729 970
Roller 6 digital	1	9.729 971
Roller 10 basic	1	9.729 972
Roller 10 digital	1	9.729 973

**3**


### 3 Tube roller RM 2

Robust tube roller with gentle tilting and rolling movement. Small space requirement. Suitable for all common tube sizes, bottles and other cylindrical vessels with a diameter of up to 80 mm.

Bühler

- Gentle start-up for optimum development of cell cultures.
- Minimal heat emission, thus no influence on the ambient conditions
- Can be used at CO<sub>2</sub> concentrations up to 5%.
- Easy setting of speed and time via LED display
- Drip tray and plastic rollers can be removed for easy cleaning
- Overhead attachment available as accessory

**Scope of delivery:** basic unit including 6 removable plastic rollers and drip tray

#### Specifications

Type of movement:	rocking and rolling
Amplitude/angle:	15 mm, 3° fixed
Speed:	5 ... 80 rpm
Max. load:	2 kg
Number of rollers:	6
Timer:	0 ... 99 h 59 min/continuous
Temperature range:	5 ... 45 °C
Max. CO <sub>2</sub> range:	5 %
Max. humidity:	85 %, not condensing
Dimensions (W x D x H):	244 x 465 x 115 mm
Roller size (l x Ø):	300 x 32 mm
Weight:	7.3 kg
Power supply:	100 ... 240 V, 50/60 Hz
Protection class:	IP 21

Type	PK	Cat. No.
RM 2	1	4.663 359

## 4. Stirring, Shaking, Mixing

### Shakers and mixers/Roller mixers-Microtitre plate shakers

#### 1 Overhead attachment RM 2, PVC

For tube rollers RM 2. With 12 holes at 29.5 mm Ø. Other borings available on request. Bühler

Type	PK	Cat. No.
Overhead rack RM 2	1	4.663 360



#### 2 3 Microtitre shaker LLG-uniPLATESHAKER 1

The LLG-uniPLATESHAKER 1 has been designed for accommodating and mixing a single micro plate. Due to its **small footprint** it can be used in working areas with limited space such as fume hoods and bio safety cabinets. It can also be used inside a cold-room.

- Digital display with speed and time settings
- **Variable speed** from 300 to 1800 min<sup>-1</sup>
- Maintenance-free brushless DC motor
- Orbital Diameter of 2 mm for thorough mixing
- Timer setting from 1 to 99 min and continuous mode
- **Universal fit**; comes with interchangeable clamps for different micro plate sizes
- Comes with foam attachment for 20 x 1.5/2 ml microtubes

**Scope of supply:** shaker, mains adapter, 2 attachments (foam attachment and attachment for microtitre plates), 6 clamps

#### Specifications

Type of movement:	orbital
Orbital diameter:	2 mm
Speed range:	300 ... 1800 min <sup>-1</sup>
Max. load:	1 kg
Motor:	brushless DC motor
Timer:	1 ... 99 min, continuous
Power consumption:	15 W
Permissible ambient temperature:	4 ... 40 °C
Dimensions (W x D x H):	127 x 85 x 86 mm
Weight:	1.4 kg
Power supply:	100 ... 230 V, 50/60 Hz
Warranty:	3 years

Type	Plug type	PK	Cat. No.
LLG-uniPLATESHAKER 1	EU	1	6.263 488
LLG-uniPLATESHAKER 1	UK	1	6.263 489



#### 4 Microtitre shaker PMS-1000i

Reliable, regulated shaking for two or four microplates. Simple screw attachments allow quick and easy fitting of any standard depth 96 or 384 well plates, holding the plate securely in place. Grant

- direct drive
- brushless motor
- RPM set and display
- variable speed: 150rpm to 1200rpm
- orbit: 2mm
- continuous or timed operation
- integral timer: 1 min to 24 hours
- standard option for two microplates
- optional platform MPP-4 for four microplates
- ambient 4°C to 40°C

Type	PK	Cat. No.
PMS-1000i	1	9.721 074



#### Accessories for Microtitre shaker PMS-1000i

Description	PK	Cat. No.
Platform for 4 micro plates	1	9.721 026

*Grant*

### Microtitre Plate Shakers Titramax 100/101/1000

- Set and continuously adjust the variable speed on the analog control knob for gentle to powerful mixing
- An analog process timer allows for unattended operation.

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#### Specifications

Type of movement:	orbital, vibrating
Speed range:	150 ... 1350 rpm
Timer:	120 min, continuous
Power consumption:	31 W
Permissible ambient temperature:	5 ... 31 °C
Permissible relative moisture:	80 %
Weight:	5.5 kg
Power supply:	100 ... 240 V, 50/60 Hz
Protection class:	IP 30

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9.839 831

### Microtitre Plate Shakers Titramax 100/101

Compact and space-saving models for 4 microtiter plates. Titramax 100 with 1.5 mm shaking orbit is ideal for gentle mixing. Titramax 101 with a 3 mm shaking orbit is especially suitable for mixing of viscous media and solids.

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#### Specifications

Max. Load:	2 kg
Platform dimensions (W x D):	220 x 220 mm
Overall dimensions (W x D x H):	245 x 310 x 125 mm

Type	Shaking stroke / Shaking orbit mm	PK	Cat. No.
Titramax 100	1.5	1	9.839 831
Titramax 101	3.0	1	9.839 832

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### Microtitre Plate Shakers Titramax 1000

Compact model for 6 microtiter plates for gentle mixing. The Titramax 1000 is suitable for the modular Incubator 1000 and is recommended for applications which require variable temperatures.

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#### Specifications

Orbit:	1.5 mm
Max. Load:	5 kg
Platform dimensions (W x D):	290 x 258 mm
Overall dimensions (W x D x H):	320 x 375 x 125 mm

Type	PK	Cat. No.
Titramax 1000	1	9.839 830

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9.721 033

### Microplate thermoshaker PHMP/PHMP-100/PHMP-4

For 96- and 384-well plates. The PHMP is a variable speed, variable temperature microplate shaker incubator with excellent temperature uniformity across the microplate. The patented heated lid and base which completely cover the plate produce a controlled micro-environment. This is combined with powerful orbital shaking to produce the maximum yield from your incubations.

*Grant*

- Stability  $\pm 0.1$  °C, uniformity  $\pm 0.25$  °C, rapid heat-up
- For standard 96 or 384-well plates (max. 14mm height)
- Variable speed: 250 rpm to 1200 rpm
- 2mm shaking orbit for effective mixing
- Temperature setting range: +25 to 60°C, PHMP-100: +25 to 100°C
- Temperature control range: RT +5 to 60°C, PHMP-100: RT +5 to 100°C
- Timed operation: 1 min to 96 hours

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6.227 761

Type	Min. operating temperature RT + °C	Max. operating temperature °C	For	PK	Cat. No.
PHMP	5	60	2 microplates	1	9.721 033
PHMP-4	5	60	4 microplates	1	6.227 761
PHMP-100	5	100	2 microplates	1	6.280 073