

# Shakers

# GFL®



- For gentle motion, vigorous mixing or intensive shaking - you can choose between 15 quality products and five different types of shaking motion.



# Quality built on Tradition

Users in research labs, standard labs and special labs for medicine, science and industry throughout the world have profited from the precision and dependability of our products for more than 35 years, all of which comply with valid European standards and which bear the CE mark.

In the future, the success of a product spectrum of laboratory devices that meet the toughest demands on material, functioning and design will continue to be ensured by every-day use in detail, ongoing technical advances and an excellent quality approach.

The phrase „Quality built on Tradition“ encompasses more than just the sum of impressive product innovations however. It is also an expression of our corporate policy, which includes a high degree of ready-and-waiting service as our primary customer-friendly service goal.

This applies to all of the GFL laboratory products that are produced exclusively at our plant in Germany - Shakers, Deep Freezers, Shaking Water Baths, Water Baths, Incubators or Water Stills alike.



## Secure future

A vested quality demand in accordance with international standards is documented for all GFL laboratory products with the certification to DIN EN ISO 9001:2000, promoting more trust in the permanent high quality level of our products.

In addition to the continuous optimisation of ongoing production processes, the ISO obligation also calls for the commitment to quality awareness of our employees and the continuous development and rapid implementation of preventive measures to ensure quality assurance at a high level.

# GFL Unit Control by PC



GFL Shakers with the model designation **3012**, **3014**, **3017**, **3018** and **3020** are equipped both with microprocessor technique and with an interface module for convenient data control by I&C tasks via PC.

Trouble-free data transfer is realised via the built-in **RS 232 port**, making all of the units cited above compatible simultaneously, for example, to the PC software labworldsoft®.

Using this software, up to 64 lab devices, among other things, can be controlled independently of one another from a PC and all data evaluated. Specified and actual values are available as output signals.

Data acquisition is effected online and can be presented either graphically or numerically. Complete instrument configurations can be stored with all of their current parameters for optimum reproducibility. This allows you to call

up pre-configured instrumentation flow diagrams that are immediately ready for operation for the most varying of tasks.

## System requirements:

### Hardware

- Pentium 90 with at least 16 MB RAM, 8 MB free disk space, mouse
- VGA display; monochrome display with at least 16 grey levels, or colour

### Software

- Windows 95/98/2000/NT/ME/XP...



There are 15 different model variants of GFL Shakers with five types of motion. All of these models have the CE mark, are low-maintenance and have the German TÜV seal for „approved safety“ (GS) required by the German device safety legislation.











All of the device models are controlled either digitally or by analogue means. Their stable, low-wear drive mechanisms ensure a particularly smooth working motion and dependable, long-term service. The electronic system controls the soft start-up of the devices.

GFL Shakers are marked by their capability to easily accommodate and fasten to

the shaking platform almost all shapes of vessels used in standard laboratory applications, thanks to the variety of accessories available for the devices.

The accessories shown in the product illustrations in this catalogue are not part of the standard scope of supply for the devices. All designs are subject to change. Special devices available on request.

## Contents

Product-No.	Type of motion	Max. load	Page	Accessories / Page	
<b>3005</b>	 Orbital motion	8 kg	4	7	14
<b>3006</b>	 Reciprocating motion	8 kg	5	7	14
<b>3011 / 3012</b>	 Orbital rocking motion	15 kg	6	5	15
<b>3013 / 3014</b>	 Rocking motion	15 kg	7	5	15
<b>3015 / 3017</b>	 Orbital motion	15 kg	8	7	16
<b>3016 / 3018</b>	 Reciprocating motion	15 kg	9	7	16
<b>3019 / 3020</b>	 Orbital motion	30 kg	10	6	17
<b>3023</b>	 Vibration Shaker with orbital motion	1.2 kg	11	—	—
<b>3025</b>	 Test Tube Rotator with rotating motion	max. 24 tubes	12	—	—
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# 3005

## Power in a small package

Its use in everyday applications has already earned this model the motto „Great performance in a small package“. A powerful, quiet, space-saving model, versatile, either for gentle movement of liquids or vigorous mixing of the most varying materials. This unit is maintenance-free, carries the GS safety approval and comes with the CE mark.



**3005** Analogue Orbital Shaker with universal mount

### Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability for continuous operation
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c. motor with overload protection drives the unit
- ▶ clearly laid out control panel for easy operation

### Technical Data

Overall dimensions (W x D x H):  
380 x 510 x 140 mm

Moving platform: 330 x 330 mm

Load: max. 8 kg

Shaking motion: orbital

Timer: up to 60 minutes, or continuous operation

Shaking amplitude: 10 mm

Shaking frequency: 20 - 500 rpm

Electrical connection:  
230 V or 115 V\* 50...60 Hz, 40 W  
\*please indicate when ordering!

Net/gross weight: 11/17 kg

Packing volume (cardboard box): 0.1 m<sup>3</sup>

■ **Order No. 3005**

- ▶ electronic speed control, stepless, with gentle start-up
- ▶ constant speed during continuous operation, independent of load

### Applications

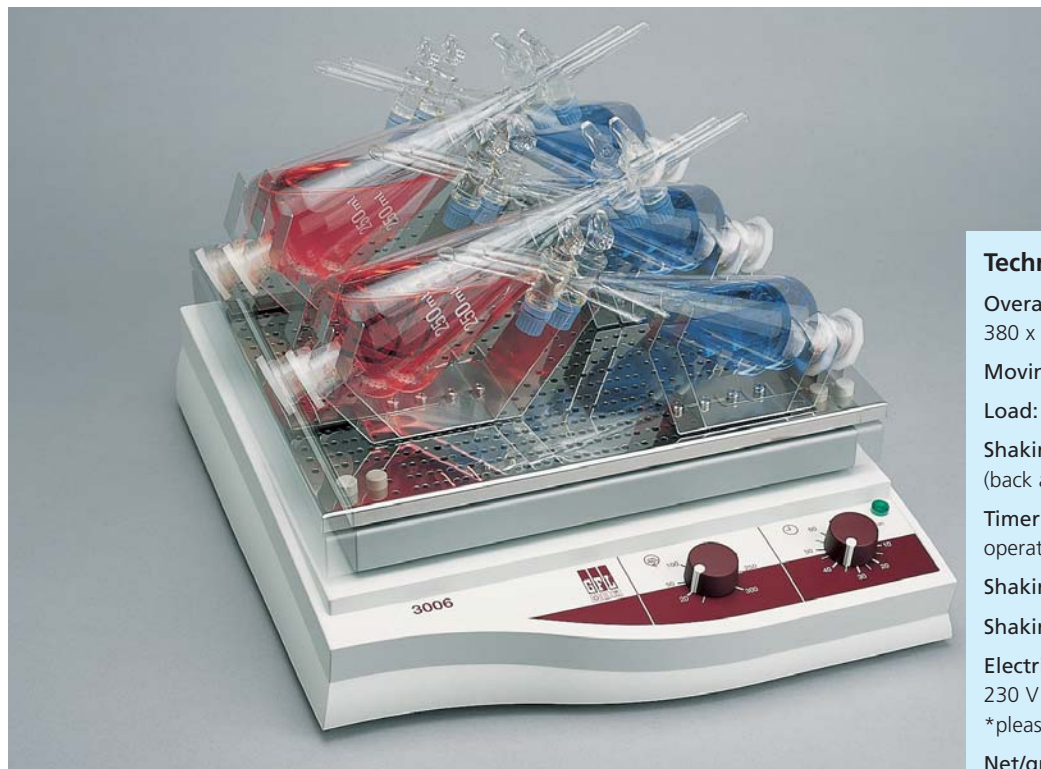
This compact Orbital Shaker proves its performance capability in daily use in biology and microbiology laboratories and in diagnostic test reactions.

Also used in laboratories, incubation rooms and moderating rooms at ambient temperatures between +10 °C and +50 °C.

## Space-saving and versatile

What sets this robust, space-saving compact Shaker apart from the 3005 Shaker is its shaking motion. Its impressive features are both its gentle back-and-forth motion and its intensive shaking of liquids, especially in separating funnels. This unit is maintenance-free, carries the GS safety approval and comes with the CE mark.

# 3006



**3006** Analogue Reciprocating Shaker with tray and clamps for separating funnels

### Technical Data

**Overall dimensions (W x D x H):**  
380 x 510 x 140 mm

**Moving platform:** 330 x 330 mm

**Load:** max. 8 kg

**Shaking motion:** reciprocating  
(back and forth)

**Timer:** up to 60 minutes, or continuous operation

**Shaking amplitude:** 20 mm

**Shaking frequency:** 20 - 300 rpm

**Electrical connection:**  
230 V or 115 V\* 50...60 Hz, 40 W  
\*please indicate when ordering!

**Net/gross weight** 11/17 kg

**Packing volume (cardboard box):** 0.1 m<sup>3</sup>

**Order No. 3006**

### Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability for continuous operation
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c. motor with overload protection drives the unit
- ▶ clearly laid out control panel for easy operation

- ▶ electronic speed control, stepless, with gentle start-up
- ▶ constant speed during continuous operation, independent of load

### Applications

This Shaker can be used in medical diagnostics or analysis, as well as for growing micro-organisms, cell and tissue cultures.

This unit is used particularly in laboratories, incubation rooms and moderating rooms at ambient temperatures between +10 °C and +50 °C.

# 3011 / 3012

## Gentle and quiet

Gentle and uniform rocking motion make this quiet unit stand out in every-day use. Both of these units are maintenance-free, carry the GS safety approval and come with the CE mark.



## Technical Data

Overall dimensions (W x D x H):

510 x 625 x 168 mm

Moving platform: 450 x 450 mm

Load: max. 15 kg

Shaking motion: three-dimensional orbital rocking

Timer:

3011 / up to 60 minutes, or continuous operation

3012 / 1 min. - 99:59 hours, or continuous operation

Shaking amplitude: 3 degrees

Shaking frequency: 2 - 50 rpm

Electrical connection: 230 V or 115 V\*

3011 / 50...60 Hz, 90 W

3012 / 50 or 60 Hz\*, 90 W

\*please indicate when ordering!

Net/gross weight: 20/26 kg

Packing volume (cardboard box): 0.16 m<sup>3</sup>

**Order No. 3011**

**Order No. 3012**  
with RS 232 port



## Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring dependability for continuous operation with three-dimensional motion
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c. motor with overload protection drives the unit
- ▶ 3011 - clearly laid-out control panel for easy operation
- ▶ 3012 - speed and remaining time indicated by two LC displays

- ▶ 3011 - electronic speed control, stepless, gentle start-up
- ▶ 3012 - microprocessor-controlled, adjustable in steps of 0.5 rpm, gentle start-up
- ▶ constant speed during continuous operation, independent of load

## Applications

In AIDS research, for diagnostic tests with test plates, or for growing cell cultures and micro-organisms this unit has become indispensable.

Also well-suited for use in laboratories, incubation rooms and moderating rooms at ambient temperatures between +10 °C and +50 °C.



**3011** Analogue Orbital Rocking Motion Shaker with non-slip pad

## Dependable and long-lasting

These versatile Shakers use their slow and uniform rocking motion to create reproducible growth and processing conditions at low speeds for cell cultures and other media.

This permits ideal rinsing and tumbling of the samples. Both of these units are maintenance-free, carry the GS safety approval and come with the CE mark.



### Technical Data

Overall dimensions (W x D x H):

510 x 625 x 168 mm

Moving platform: 450 x 450 mm

Load: max. 15 kg

Shaking motion: rocking

Timer:

3013 / up to 60 minutes, or continuous operation

3014 / 1 min. - 99:59 hours, or continuous operation

Rocking amplitude: 3 degrees

Rocking frequency: 2 - 50 rpm

Electrical connection: 230 V or 115 V\*

3013 / 50...60 Hz, 90 W

3014 / 50 or 60 Hz\*, 90 W

\*please indicate when ordering!

Net/gross weight: 18/24 kg

Packing volume (cardboard box): 0.16 m<sup>3</sup>

■ **Order No. 3013**

■ **Order No. 3014**

with RS 232 port



### Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring dependability for slow rocking motion
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c. motor with overload protection drives the unit
- ▶ 3013 - clearly laid-out control panel for easy operation
- ▶ 3014 - speed and remaining time indicated by two LC displays
- ▶ 3013 - electronic speed control, stepless, gentle start-up
- ▶ 3014 - microprocessor-controlled, adjustable in steps of 0.5 rpm, gentle start-up
- ▶ constant speed during continuous

### Applications

This model has proven itself through reliable and perfect work, also for continuous operation, and is always called upon when the best possible supply of parallel cultures and cell lines is required, or for staining or discoloration of gels.

Both of these units are well-suited for use in laboratories, incubation rooms and moderating rooms at ambient temperatures between +10 °C and +50 °C.



**3013** Analogue Rocking Motion Shaker with platform frame





## Technical Data

**Overall dimensions (W x D x H):**

510 x 625 x 142 mm

**Moving platform:** 450 x 450 mm

**Load:** max. 15 kg

**Shaking motion:** orbital

**Timer:**

3015 / up to 60 minutes, or continuous operation

3017 / 1 min. - 99:59 hours, or continuous operation

**Shaking amplitude:** 30 mm

**Shaking frequency:** 20 - 300 rpm

**Electrical connection:** 230 V or 115 V\*

3015 / 50...60 Hz, 65 W

3017 / 50 or 60 Hz\*, 65 W

\*please indicate when ordering!

**Net/gross weight:** 19/25 kg

**Packing volume (cardboard box):** 0.16 m<sup>3</sup>

■ **Order No. 3015**

■ **Order No. 3017**  
with RS 232 port



**3015** Analogue Orbital Shaker with platform and clamps for Erlenmeyer flasks

## ■ Universal and untiring

A silent operating and universally applicable Orbital Shaker that exhibits its untiring strength in particular for gentle motion and vigorous shaking of liquids. Both of these units are maintenance-free, carry the GS safety approval and come with the CE mark.



## Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability for orbital shaking motion
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c motor with overload protection drives the unit
- ▶ 3015 - clearly laid-out control panel for easy operation  
3017 - speed and remaining time indicated by two LC displays
- ▶ 3015 - electronic speed control, stepless, gentle start-up  
3017 - microprocessor-controlled, adjustable in steps of 1.0 rpm, gentle start-up
- ▶ constant speed during continuous operation, independent of load

## Applications

What counts when growing micro-organisms, cell and tissue cultures is a „reliable colleague“ - an indispensable ingredient for successful work in biochemistry, microbiology, biotechnology, bacteriology and virology.

Both of these units are particularly well-suited for use in laboratories, incubation rooms and moderating rooms in ambient temperatures between +10 °C and +50 °C.



## Robust and variable

Versatile, powerful and exceptionally quiet - those are the descriptive qualities of this robust Shaker with reciprocating (back-and-forth) motion. Use of this device is recommended for vigorous and intensive shaking of clamped lying flasks, mixing flasks or separating funnels in continuous operation. Both of these units are maintenance-free, carry the GS safety approval and come with the CE mark.

# 3016 / 3018



### Technical Data

Overall dimensions (W x D x H):  
510 x 625 x 145 mm

Moving platform: 450 x 450 mm

Load: max. 15 kg

Shaking motion: reciprocating

Timer:

3016 / up to 60 minutes, or continuous operation

3018 / 1 min. - 99:59 hours, or continuous operation

Shaking amplitude: 30 mm

Shaking frequency: 20 - 300 rpm

Electrical connection: 230 V or 115 V\*

3016 / 50...60 Hz, 65 W

3018 / 50 or 60 Hz\*, 65 W

\*please indicate when ordering!

Net/gross weight: 19/25 kg

Packing volume (cardboard box): 0.16 m<sup>3</sup>

■ **Order No. 3016**

■ **Order No. 3018**

with RS 232 port



### Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability for reciprocal shaking motion
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment
- ▶ an a.c. motor with overload protection drives the unit
- ▶ 3016 - clearly laid-out control panel for easy operation  
3018 - speed and remaining time indicated by two LC displays

- ▶ 3016 - electronic speed control, stepless, gentle start-up  
3018 - microprocessor-controlled, adjustable in steps of 1.0 rpm, gentle start-up
- ▶ constant speed during continuous operation, independent of load

### Applications

The producers of suspensions and emulsions know this shaker well. The shaking platform's jerky back-and-forth motion creates high turbulence, thus thoroughly mixing the media. This is a vital prerequisite, for example, in medical diagnostics, or in foodstuffs or environmental analyses.

Both of these units are well-suited for use in laboratories, incubation rooms and moderating rooms in ambient temperatures between +10 °C and +50 °C.



**3016** Analogue back-and-forth Shaker with platform and test tube racks

# 3019 / 3020

## Technical Data

**Overall dimensions (W x D x H):**  
745 x 730 x 135 mm

**Moving platform:** 676 x 540 mm

**Load:** max. 30 kg

**Shaking motion:** orbital

### Timer:

3019 / up to 60 minutes, or continuous operation

3020 / 1 min. - 99:59 hours, or continuous operation

**Shaking amplitude:** 32 mm

**Shaking frequency:** 20 - 250 rpm  
when the rack frame is used: 20 - 200 rpm

**Electrical connection:** 230 V or 115 V\*

3019 / 50...60 Hz, 90 W

3020 / 50 or 60 Hz\*, 90 W

\*please indicate when ordering!

**Net/gross weight:** 33.6/50.0 kg

**Packing volume (cardboard box):** 0.51 m<sup>3</sup>

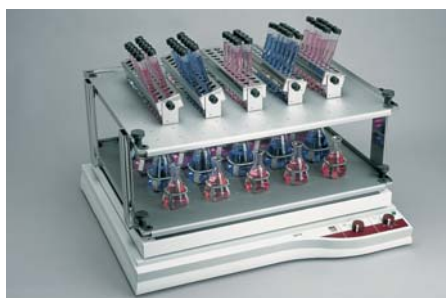
■ **Order No. 3019**

■ **Order No. 3020**  
with RS 232 port

## ■ Indispensable and powerful

A dependable, long-life Orbital Shaker with a large shaking tray for accommodating heavier loads. A universally applicable, quiet unit, indispensable in the growing of micro-organisms, cell and tissue cultures.

This unit is well-suited for vigorous mixing of the most varying liquids, even in continuous operation, thanks to its useful shaking amplitude and the option of adjusting its speed. Both of these units are maintenance-free, carry the GS safety approval and come with the CE mark.



**3019** Analogue Orbital Shaker with rack frame, trays (2), test tube racks, and clamps for Erlenmeyer flasks

## Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-

coated steel sheet, the shaking platform of anodised aluminium, equipped with four support rods with screw-type clamps for secure attachment of accessory equipment

- ▶ a special rubber pad ensures a non-slip grip of objects on the shaking tray
- ▶ an a.c. motor with overload protection drives the unit
- ▶ 3019 - clearly laid-out control panel for easy operation  
3020 - speed and remaining time indicated by two LC displays
- ▶ 3019 - electronic speed control, stepless, gentle start-up  
3020 - microprocessor-controlled, adjustable in steps of 1.0 rpm, gentle start-up
- ▶ constant speed during continuous operation, independent of load

## Applications

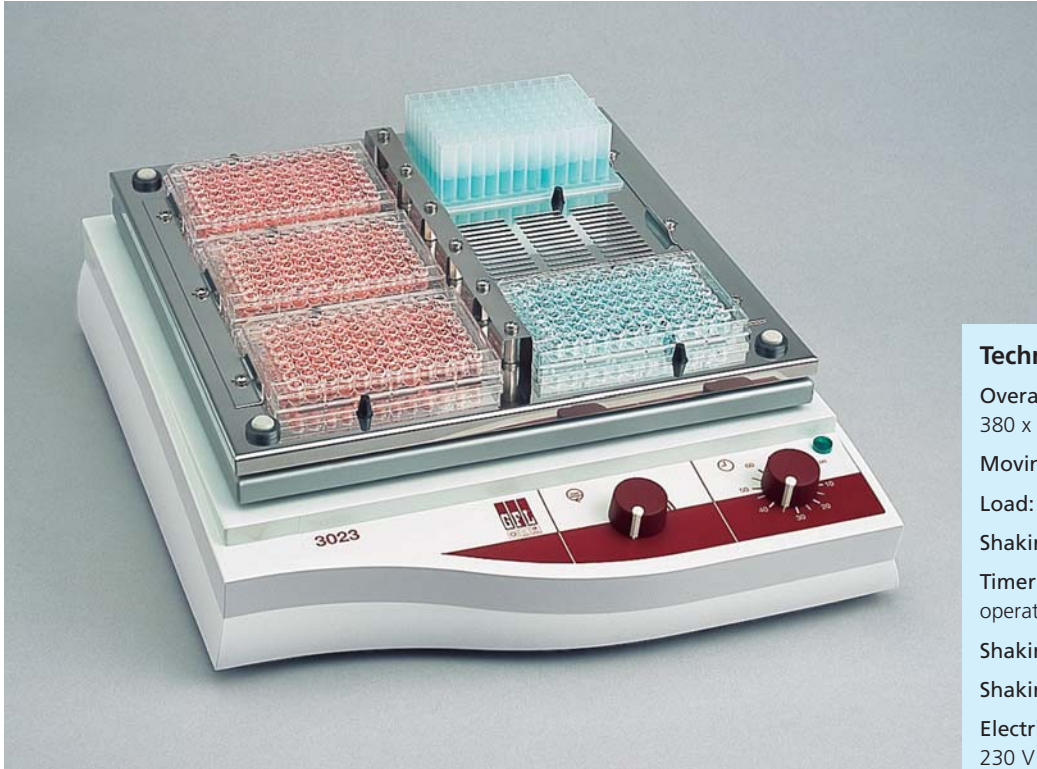
Impressive references. For this powerful orbital shaker leaves a lasting impression everywhere it has been used, for example, for analytical or diagnostic applications in the pharmaceutical industry, chemistry, biology, or in plant breeding or nutritional applications.

Both of these units are well-suited for use in laboratories, incubation rooms and moderating rooms in ambient temperatures between +10 °C and +50 °C.

■ **Fast and efficient**

This Shaker's high speed and its low shaking amplitude guarantee the best possible mixing, even in the smallest test flasks.

The basic equipment for this vibration shaker with orbital motion includes a frame holder for up to six test plates. This unit is maintenance-free, carries the GS safety approval and comes with the CE mark.



## Technical Data

Overall dimensions (W x D x H):  
380 x 510 x 125 mm

Moving platform: 330 x 330 mm

Load: max.1.2 kg

Shaking motion: orbital / vibrating

**Timer:** up to 60 minutes, or continuous operation

Shaking amplitude: 3 mm

Shaking frequency: 100 - 1450 rpm

**Electrical connection:**  
230 V or 115 V\* 50...60 Hz, 65 W  
\*please indicate when ordering!

Net/gross weight: 9/12 kg

Packing volume (cardboard box): 0.1 m<sup>3</sup>

## Features

- ▶ compact, low-wear counterbalanced drive mechanism, ensuring high stability and dependability for continuous operation
- ▶ housing made of high impact strength polystyrene, off-white varnish. The base plate is made of electrolytically galvanised, powder-coated steel sheet, the shaking platform of anodised aluminium, equipped with four plastic pins for secure attachment of accessory equipment (on request) and a frame holder for six test plates (supplied as standard)
- ▶ an a.c. motor with overload protection drives the unit
- ▶ clearly laid out control panel for easy operation

- ▶ electronic speed control, stepless, with gentle start-up
- ▶ constant speed during continuous operation, independent of load

## Applications

Reliable, versatile, efficient - the characteristics that make this Shaker so interesting for use in medical diagnostics, biotechnology or microbiology.

This unit is well-suited for use in laboratories, incubation rooms and moderating rooms in ambient temperatures between +10 °C and +50 °C.

■ Order No. 3023



# 3025

## Smooth und exact

This Test Tube Rotating Shaker is particularly well-suited for gentle to intensive shaking and mixing of powdered or liquid substances, thanks to its constant, uniform rotating tilting motion. The axle can be removed and can also be loaded outside of the rotator.

This unit is maintenance-free, carries the GS safety approval and comes with the CE mark.



### Technical Data

#### Overall dimensions (W x D x H):

490 x 330 x 220 mm

Revolutions: 6 - 80 rpm

**Rotating axle:** can accommodate a max. of 24 test tubes, 12-17 mm diameter, tube lengths between 75 und 180 mm

**Shaking motion:** orbital rotating

#### Electrical connection:

230 V or 115 V\* 50...60 Hz, 80 W

\*please indicate when ordering!

**Net/gross weight:** 9.6/15.0 kg

**Packing volume (cardboard box):** 0.1 m<sup>3</sup>

■ **Order No. 3025**

### Features

- ▶ compact, low-wear drive mechanism
- ▶ housing made of electrolytically galvanised, powder-coated steel sheet, the axle and collecting trough are made of stainless steel
- ▶ clearly laid out control panel for easy operation
- ▶ electronic speed control, stepless
- ▶ Optionally, the rotator can be equipped without surcharge with an alternative axle, including one set of clamps (on request). Now it is possible to fasten clamps of different sizes, for example for reaction vessels Ø 10 mm or even 50 ml Falcon Tubes Ø 30 mm.

### Applications

Smooth and exact motion - that is what this rotator model guarantees when it comes to separating and/or mixing applications.

This unit is well-suited for use in laboratories, incubation rooms and moderating rooms in ambient temperatures between +10 °C and +50 °C.

## Special and tried and true

The „specialist“ among the Orbital Rotators for every-day use. Use of this robustly designed unit is easy and its uses are multifarious, for example when soil samples must be exactly settled, mixed and processed. The unit is maintenance-free, carries the GS safety approval and comes with the CE mark.

### Technical Data

**Overall dimensions (W x D x H):**

770 x 700 x 715 mm

**Load:** max. 20 kg

with uniform load distribution

**Motion:** orbital rotating

**Capacity:** max. 12 bottles / vessels

**Bottle/vessel dimensions:**

110 mm diameter, round or square / rectangular, 270 mm height

**Shaking frequency:** 1 - 20 rpm

**Electrical connection:**

230 V or 115 V\* 50...60 Hz, 100 W

\*please indicate when ordering!

**Net/gross weight:** 65/78 kg

**Packing volume (cardboard box):** 0.86 m<sup>3</sup>

**Order No. 3040**



### Features

- ▶ compact, low-wear drive mechanism
- ▶ housing made of electrolytically galvanised, powder-coated steel sheet
- ▶ a d.c. motor with overload protection drives the unit
- ▶ electronic speed control, stepless
- ▶ constant speed during continuous operation
- ▶ clearly laid out control panel for easy operation: main switch with control lamp, rotary selector switch for setting and LED display for speed

indication and lever for the stopping device of the rotating rack, which guarantees easy clamping of the sample vessels

- ▶ rotating rack with ball bearings on both sides, able to accommodate a max. of 12 flasks/vessels, round or square/rectangular, up to a diameter of 110 mm and a height of 270 mm, in four planes, each plane with four holding frames. Drive is implemented via a v-belt and a sliding hub
- ▶ holding frame for safe, secure clamping of the sample vessels, made of stainless steel

### Applications

The uniform rotating motion of this special Shaker make it particularly well-suited for processing soil samples in glass/plastic wide-mouth vessels with up to 2000 ml rated volume as per DIN 38414, Part 4 „German Standard Methods for Water, Wastewater and Sludge Analysis - Determination of Leachability by Water“.

This unit can be used in ambient temperatures between +10 °C and +40 °C.

# Accessories



**3005**



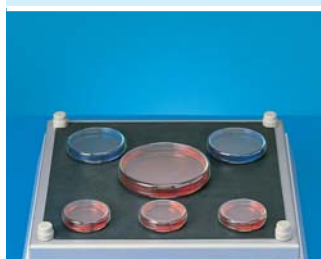
**3006**



## Shaking tray

made of stainless steel, 330 x 330 mm, with holes to accommodate clamps for separating funnels and Erlenmeyer flasks and test tube racks

**Order No. 3950**



## Non-slip mat

for the shaking platform, 300 x 300 mm size, for slow moving, e.g. nutrient solutions in Petri dishes and flasks

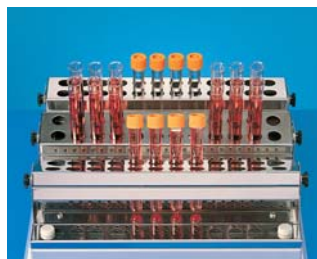
**Order No. 3951**



## Universal mount

for secure attachment of different shaking objects between the four rubber-coated bars

**Order No. 3952**

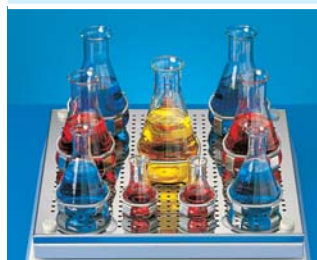


## Test tube rack

made of stainless steel, for test tubes; perforated section can be tilted by 90°, with clamping springs for secure grip and silent shaking of glasses; can be screwed on to shaking tray 3950

**Order No. 3953**

for a max. of 24 tubes: 12 - 17 mm diameter, length 75 - 160 mm, capacity of tray: three test tube racks

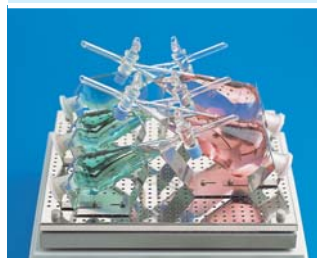


## Clamps

made of stainless steel for Erlenmeyer flasks, for screwing on to shaking tray 3950, complete with attachment materials

**Order No. 3983** for 25 ml flasks (45\*)  
**Order No. 3984** for 50 ml flasks (25\*)  
**Order No. 3985** for 100 ml flasks (16\*)  
**Order No. 3986** for 200 ml flasks (12\*)  
**Order No. 3987** for 250-300 ml flasks ( 9\*)  
**Order No. 3988** for 500 ml flasks ( 9\*)  
**Order No. 3989** for 1000 ml flasks ( 4\*)

\* max. number of clamps per shaking tray

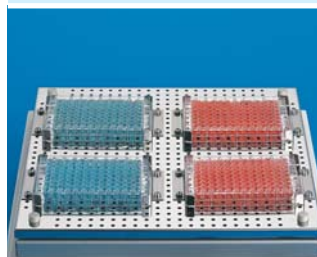


## Clamps

made of stainless steel, for separating funnels (as per ISO), for screwing on to shaking tray 3950

**Order No. 3957** for 50 ml separating funnels (6\*)  
**Order No. 3958** for 100 ml separating funnels (6\*)  
**Order No. 3959** for 250 ml separating funnels (4\*)  
**Order No. 3956** for 500 ml separating funnels (3\*)

\*max. number of clamps per shaking tray



## Holding frame

made of stainless steel, for attachment of a test plate, for screwing on to shaking tray 3950, complete with attachment materials

**Order No. 3910**

Capacity of tray: four test plates



# Accessories



**3011**



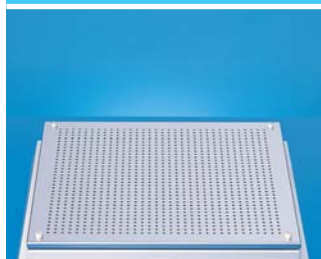
**3012**



**3013**



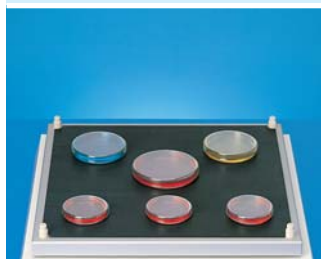
**3014**



**Order No. 3966**

## Shaking tray

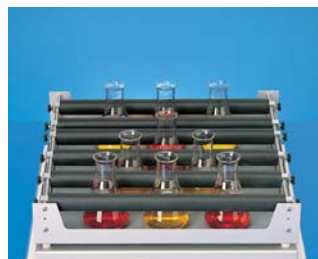
made of stainless steel, 450 x 450 mm, with holes to accommodate clamps for Erlenmeyer flasks and other accessory equipment



**Order No. 3965**

## Non-slip mat

for the shaking platform, 420 x 420 mm size, for slow moving, e.g. nutrient solutions in Petri dishes



**Order No. 3967**

## Universal mount

for secure attachment of different shaking objects between the six rubber-coated bars



**Order No. 3968**

## Platform frame

with four levels, with top rims, three levels removable. Frame and trays made of stainless steel. Distance between trays - 60 mm. Grooved rubber mats on trays to ensure secure grip of objects.



## Clamps

made of stainless steel for Erlenmeyer flasks, for screwing on to shaking tray 3966, complete with attachment materials

<b>Order No. 3983</b> for	25 ml flasks (79*)
<b>Order No. 3984</b> for	50 ml flasks (49*)
<b>Order No. 3985</b> for	100 ml flasks (36*)
<b>Order No. 3986</b> for	200 ml flasks (22*)
<b>Order No. 3987</b> for	250-300 ml flasks (16*)
<b>Order No. 3988</b> for	500 ml flasks (12*)
<b>Order No. 3989</b> for	1000 ml flasks ( 9*)
<b>Order No. 3990</b> for	2000 ml flasks ( 4*)

\* max. number of clamps per shaking tray

# Accessories



**3015**



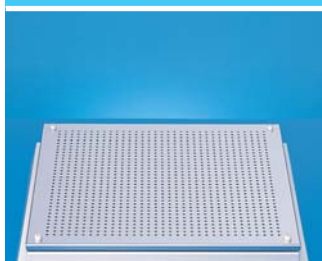
**3017**



**3016**



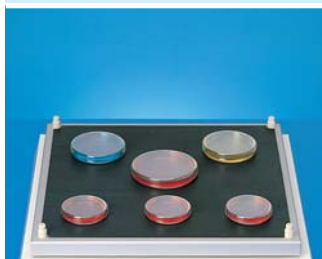
**3018**



## Shaking tray

made of stainless steel, 450 x 450 mm, with holes to accommodate clamps for separating funnels and Erlenmeyer flasks and test tube racks

**Order No. 3966**



## Non-slip mat

for the shaking platform, 420 x 420 mm size, for slow moving, e.g. nutrient solutions in Petri dishes

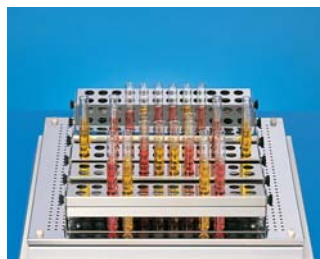
**Order No. 3965**



## Universal mount

for secure attachment of different shaking objects between the six rubber-coated bars

**Order No. 3967**



## Test tube rack

made of stainless steel, for test tubes; perforated section can be tilted by 90°, with clamping springs for secure grip and silent shaking of glasses; can be screwed on to shaking tray 3966

**Order No. 3953**

for a max. of 24 tubes: 12 - 17 mm diameter, length 75 - 160 mm, capacity of tray: six test tube racks

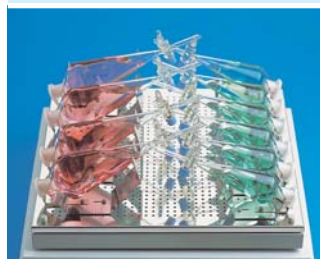


## Clamps

made of stainless steel for Erlenmeyer flasks, for screwing on to shaking tray 3966, complete with attachment materials

**Order No. 3983** for 25 ml flasks (79\*)  
**Order No. 3984** for 50 ml flasks (49\*)  
**Order No. 3985** for 100 ml flasks (36\*)  
**Order No. 3986** for 200 ml flasks (22\*)  
**Order No. 3987** for 250-300 ml flasks (16\*)  
**Order No. 3988** for 500 ml flasks (12\*)  
**Order No. 3989** for 1000 ml flasks ( 9\*)  
**Order No. 3990** for 2000 ml flasks ( 4\*)

\* max. number of clamps per shaking tray



## Clamps

made of stainless steel, for separating funnels (as per ISO), for screwing on to shaking tray 3966

**Order No. 3957** for 50 ml separating funnels (11\*)  
**Order No. 3958** for 100 ml separating funnels (11\*)  
**Order No. 3959** for 250 ml separating funnels ( 8\*)  
**Order No. 3956** for 500 ml separating funnels ( 6\*)



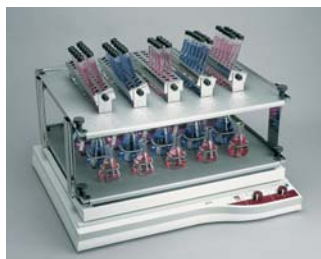
## Holding frame

made of stainless steel, for attachment of a test plate, for screwing on to shaking tray 3966, complete with attachment materials

**Order No. 3910**

Capacity of tray: six test plates

# Accessories



**3019**



**3020**



**Order No. 3980**

## Shaking tray

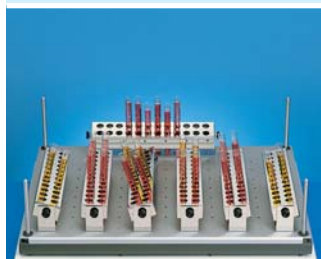
made of 3-mm-thick anodised aluminium, 676 x 540 mm, with holes to accommodate clamps for holding Erlenmeyer flasks and other accessory equipment



**Order No. 3982**

## Universal mount

for secure attachment of shaking objects. The mount consists of two longitudinal bars and six transverse bars. Screw-type clamps are used for adjusting the longitudinal bars vertically and transverse bars horizontally.



**Order No. 3953**

## Test tube rack

made of stainless steel for test tubes; perforated section can be tilted by 90°, with clamping springs for secure grip and silent shaking of glasses; can be screwed on to shaking tray 3980

for a max. of 24 tubes: 12 - 17 mm diameter, length 75 - 160 mm, capacity of tray: nine test tube racks



**Order No. 3981**

## Rack frame

for doubling the capacity by accommodating two shaking trays 3980; distance between trays - 205 mm. The bottom tray can be loaded with flasks up to a max. of 500 ml.



## Clamps

made of stainless steel for Erlenmeyer flasks, for screwing on to shaking tray 3980, complete with attachment materials

<b>Order No. 3983</b> for	25 ml flasks (99*)
<b>Order No. 3984</b> for	50 ml flasks (99*)
<b>Order No. 3985</b> for	100 ml flasks (50*)
<b>Order No. 3986</b> for	200 ml flasks (26*)
<b>Order No. 3987</b> for	250-300 ml flasks (26*)
<b>Order No. 3988</b> for	500 ml flasks (26*)
<b>Order No. 3989</b> for	1000 ml flasks (12*)
<b>Order No. 3990</b> for	2000 ml flasks ( 9*)

\* max. number of clamps per shaking tray



**Order No. 3910**

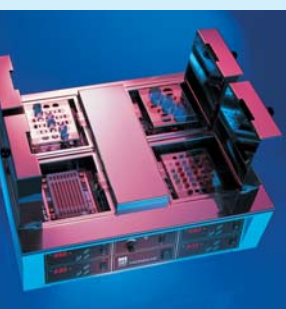
Capacity of tray: 15 test plates

## Holding frame

made of stainless steel, for attachment of a test plate, for screwing on to shaking tray 3980, complete with attachment materials



# Summary of Laboratory Products



- Chest Freezers
- Upright Freezers
- Water Baths
- Tissue Float Bath
- Shaking Water Baths
- THERMOLAB®
- Water Stills
- Shaking Incubators
- Hybridisation Incubator
- Mini Incubator
- Tube Roller Incubator
- Shakers
- Test Tube Rotator
- Rotating Shaker

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