

# Shaking Incubators

## Heavy-duty Specialists

In every-day laboratory use GFL Shaking Incubators are renowned as being extremely reliable and suitable for heavy-duty use. Model 3031, with lift-up acrylic glass cover, is made of an outer housing of heavy-duty ABS and powder-coated, electrolytically galvanised sheet steel.

The shaking platform, made of aluminium, disposes of four plastic pins to accept a shaking tray or a universal mount (accessories).

The outer housings of models 3032 and 3033 are made of powder-coated, electrolytically galvanised sheet steel. Interior cabinet, the insides of the doors and the shaking platform are made of stainless steel.

The frame, permitting the use of two shaking trays, is part of the standard scope of supply. Shaking trays are accessories. A fluorescent lamp for interior illumination is separated from the cabinet by a diffusing screen.



## 3031

### Technical Data

Shaking frequency: 10 - max. 250 rpm

Shaking amplitude: 30 mm

Load: up to 12 kg max.

Volume / capacity:  
approx. 46 l / 1 shaking tray

Interior dimensions (W x D x H):  
450 x 450 x 280 mm

Exterior dimensions (W x D x H):  
525 x 665 x 570 mm

Electrical connection:  
230 V / 50...60 Hz / 0.8 kW \*  
\* Other voltages on request

Net / gross weight: 38.5 kg / 50 kg

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

Order No. 3031

## Specifications and Features

- ▶ Fast and exact temperature setting, exact reproducibility of set values, such as temperature, shaking frequency and incubation time, due to microprocessor-technique.
- ▶ Optimum temperature distribution throughout the cabinet interior.
- ▶ Serial cooling coil for applications below ambient temperature.
- ▶ Electronic monitoring of the temperature regulators triggers visual and acoustic alarms in case of fault. The heating is switched off, the cause of the fault is shown on the LED display.
- ▶ Silent and robust shaking mechanism with gentle start-up and even orbital motion, independent of load, set shaking frequency and incubation time.
- ▶ Microprocessor-controlled timer for continuous display of the current remaining running time of the incubation period, with acoustic expiry signal.
- ▶ Soft-touch keys with clear symbols. Adjustable over- and under-temperature cut-out up to max 9.9 °C.

## Applications

Specialised in gentle mixing as well as vigorous shaking, GFL Shaking Incubators are used for applications that require exactly reproducible orbital motions and temperatures of up to +70 °C (temperature constancy  $\pm 0.2$  °C, temporal).

They are preferred by standard and research laboratories for incubations, fermentations, homogenisations, chemical and biochemical reactions, enzyme and tissue studies, as well as for cultivating bacteria cultures.

### Further technical data of models 3031 / 3032 / 3033

Temperature range:	from 8 °C above ambient temperature to +70 °C, serial cooling coil for operation below ambient temperature to connect to the water mains or to an external recirculating chiller
Temperature range (Operation with cooling coil):	+20 °C to +70 °C ** ** dependent on cooling media and ambient temperature
Temperature constancy (temporal):	±0.2 °C
Temperature regulation:	microprocessor-controlled, PID type
Temperature setting and display:	digital - LED, in 0.1 °C increments
Over-temperature cut-out:	electronical / dependent on the set value, to protect the test substances, and electro-mechanically, to protect the unit
Under-temperature cut-out:	electronical, max. 9.9 °C below set temperature
Shaking motion:	orbital, can be switched on and off
Shaking frequency regulation:	microprocessor-controlled
Shaking frequency display and setting:	digital - LED
Incubation time:	microprocessor-controlled, 1 minute to 999:59 hours
Time display and setting:	digital - LED

## 3032

### Technical Data

Shaking frequency: 10 - max. 250 rpm

Shaking amplitude: 25 mm

Load: up to 12 kg max.

Volume / capacity:  
approx. 45 l / 2 shaking trays, for vessel height of more than 150 mm 1 shaking tray

Interior dimensions (W x D x H):  
450 x 300 x 320 mm

Exterior dimensions (W x D x H):  
710 x 650 x 710 mm

Electrical connection:  
230 V / 50...60 Hz / 0.8 kW \*  
\* Other voltages on request

Net /gross weight: 70 kg / 80 kg

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

■ Order No. 3032



## 3033

### Technical Data

Shaking frequency: 10 - max. 250 rpm  
if only bottom tray is loaded;  
10 - max. 200 rpm if both trays are loaded

Shaking amplitude: 25 mm

Load: up to 20 kg max.

Volume / capacity:  
approx. 150 l / 2 shaking trays, for vessel height of more than 180 mm 1 shaking tray

Interior dimensions (W x D x H):  
674 x 540 x 430 mm

Exterior dimensions (W x D x H):  
930 x 890 x 820 mm

Electrical connection:  
230 V / 50...60 Hz / 0.8 kW \*  
\* Other voltages on request

Net /gross weight: 135 kg / 270 kg

Packing volume (wooden crate):  
approx. 1.74 m<sup>3</sup>

■ Order No. 3033



# Accessories



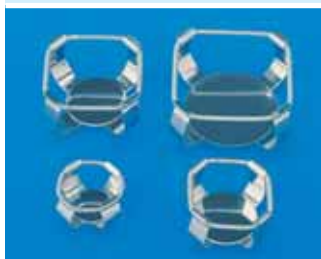
**3031**



## Shaking Tray

made of stainless steel, 450 x 450 mm, with holes to accept clamps for Erlenmeyer flasks, test tube racks and holding frames for test plates.

Order No. 3966



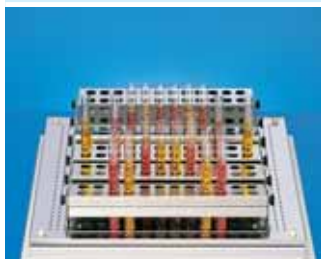
## Flask Clamps

made of stainless steel, for Erlenmeyer flasks, to be screwed onto shaking tray 3966, complete with fixing material.

- 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\* )

Other clamps on request.

\* Maximum quantity of flask clamps per shaking tray

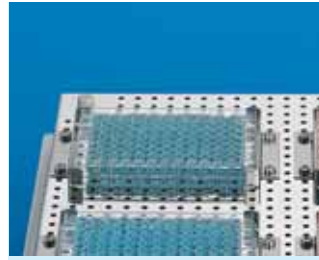


## Test Tube Rack

made of stainless steel, for test tubes, perforated part can be tilted by 90°, with clamping springs for secure hold and silent shaking of the tubes, to be screwed onto shaking tray 3966.

Order No. 3953

for max. 24 tubes: 12-17 mm Ø  
capacity of the shaking tray: 6 test tube racks

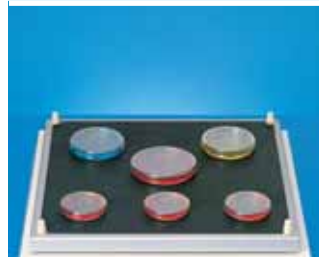


## Holding Frame

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 shaking tray: 6 test plates



## Non-slip Rubber Mat

for the shaking platform, 420 x 420 mm, for slow moving of e.g. of nutrients in Petri dishes.

Order No. 3965



## Universal Mount

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

Order No. 3967



**3032**



**3033**



**Shaking Tray**  
made of stainless steel, 450 x 300 mm, with holes to accept clamps for Erlenmeyer flasks, test tube racks and holding frames for test plates.

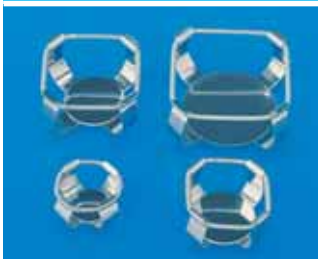
**Order No. 3970**  
Capacity of the frame: 2 shaking trays



**Shaking Tray**  
made of anodised aluminium, 670 x 537 mm, with 99 holes to accept clamps for Erlenmeyer flasks, test tube racks and holding frames for test plates.

**Order No. 3980**  
Capacity of the frame: 2 shaking trays

## 3032 and 3033



**Flask Clamps**  
made of stainless steel, for Erlenmeyer flasks, to be screwed onto shaking trays 3970 and 3980, complete with fixing material.

		3032	3033
		Tray 3970	Tray 3980
<b>Order No. 3983</b> for	25 ml flasks	(52)	(99)
<b>Order No. 3984</b> for	50 ml flasks	(33)	(99)
<b>Order No. 3985</b> for	100 ml flasks	(22)	(50)
<b>Order No. 3986</b> for	200 ml flasks	(15)	(26)
<b>Order No. 3987</b> for	250-300 ml flasks	(13)*	(26)
<b>Order No. 3988</b> for	500 ml flasks	(10)*	(26)
<b>Order No. 3989</b> for	1000 ml flasks	( 6)*	(12)*
<b>Order No. 3990</b> for	2000 ml flasks	( 3)*	( 9)*

Other clamps on request.

Quantities stated: Maximum quantity of flask clamps per shaking tray  
\* 3032 (Shaking tray 3970): From clamps 300 ml only 1 tray applicable  
\* 3033 (Shaking tray 3980): From clamps 1000 ml only 1 tray applicable



**Test Tube Rack**  
made of stainless steel, for test tubes, perforated part can be tilted by 90°, with clamping springs for secure hold and silent shaking of the tubes, to be screwed onto shaking trays 3970 and 3980.

**Order No. 3953**  
for max. 24 tubes: 12 - 17 mm Ø  
capacity of shaking tray 3970 (3032): 3 test tube racks  
capacity of shaking tray 3980 (3033): 9 test tube racks



**Holding Frame**  
made of stainless steel, for attachment of a test plate, for screwing on to shaking trays 3970 and 3980, complete with attachment materials

**Order No. 3910**  
Capacity of shaking tray 3970 (3032): 6 test plates  
Capacity of shaking tray 3980 (3033): 15 test plates