

Selection guide  
 Constant temperature incubator shaker OD-Monitor  
 CO<sub>2</sub> incubator shaker  
 Shaker  
 Mixer Rotator Stirrer  
 Bead beater homogenizer Ultrasonic homogenizer  
 Aluminum block bath Minisize bath  
 Water bath Shaking water bath Immersion cooler  
 Hybridation oven Constant temperature chamber  
 Centrifugal concentrator Cold trap  
 Freeze dryer  
 Electrophoresis and Blotting apparatus  
 Constant temperature water circulating system [Chiller]  
 Appendix

# Bioshaker BR-21/22/23 Series

Widely used for Cultivation of microbes etc. that require temp. control. The compact sized can be put under and on the Lab bench.

Dimensions --> P.038 OD-Monitor Turbidimeter while shaking --> P.034 Shaker NR-1/2/3 --> P.062



[FP type]



**BR-23FP-MR**  
The compact sized can be put under and on the Lab bench.



**BR-23UM-MR**  
Lift-up door allows good visibility inside the chamber.



### Compact design and Stackable

The compact sized can be placed under the Lab bench. Stackable up to Two levels with "Stackable base (Option)." Excellent performance for microbial cultures thanks to the shaking speed Max. 300r/min even 200r/min at the upper of stacked units.

### Sliding retractable control panel

Sliding retractable control panel allows space saving and excellent in operability. Setting for Temperature, Shaking speed and Operation program with simply.



Drawer type control panel

### USER'S VOICE

FR type is CFC-free that relieves us from the gas leakage and the procedures for disposal.



### Features

- "9 models" can be selected by temp. range, shaking motion and door (right or left-opening)
- Stackable up to Two levels. The platform can be changed.
- Capacity : Erlenmeyer flask 500mL x 4 pcs, 2L x 1 pc

### Applications


- Cultivation of Microbes such as E.Coli.
- Cultivation of Yeast and Insect cell (FR)
- Cultivation of Thermophile and Hybridization (FH).

Temperature range	FP type: 15°C to 60°C (*1)			UM type: 5°C above RT to 70°C			FH type: 5°C above RT to 100°C		
Model	BR-21FP-MR	BR-22FP-MR	BR-23FP-MR	BR-21UM-MR	BR-22UM-MR	BR-23UM-MR	BR-21FH-MR	BR-22FH-MR	BR-23FH-MR
Shaking motion	Reciprocal	Orbital	Reciprocal/Orbital	Reciprocal	Orbital	Reciprocal/Orbital	Reciprocal	Orbital	Reciprocal/Orbital
Temp. control accuracy (*1)	±0.2°C			±0.2°C to ±0.4°C			±0.1°C to ±0.5°C		
Speed range/Shaking width	20 to 300r/min (200r/min at the upper of stacked units), 25mm								
Platform size/Capacity	290 x 250mm (Max. inside height: FP/FH = 270mm, UM = 315mm), Erlenmeyer flask 500mL x 4, 2L x 1								
Door type	Single swing door (Leftward open)			Swing lift-up door			Single swing door (Leftward open)		
Ambient temp. range	5°C to 35°C								
Maximum load	Approx. 3.5kg (Platform and Vessel holder included)								
Heating method	Peltier element (4 x 70W)			Heater (350W)					
Cooling method	-								
Display (Temp./Speed)	Digital display								
Program functions	1 program, 9 segments: Temp., Shaking speed and time/per segment (Setting range: 00h00min to 99h59min), Temp. gradient function (*2)								
Safety devices/functions	Leakage/Overcurrent breaker, Fuse, Alarm of abnormal sample temp. (Set as desired), Detecting the door opening and closing, Self-diagnosis function for sensor error, Overcurrent protection of Peltier (FR), Motor current limiter								
Dimensions (W x D x H)	437 x 585 x 545mm			422 x 550 x 540mm			437 x 550 x 545mm		
Weight	Approx. 48kg	Approx. 49kg	Approx. 49.5kg	Approx. 41.5kg	Approx. 42.5kg	Approx. 43kg	Approx. 42kg	Approx. 43kg	Approx. 43.5kg
Power supply (*3)	AC100V/5A								
Standard accessories	1 x Spring net shaking platform (MR-2925), 1 x Drain nozzle, 1 x Drain hose								

(\*1)The value at the ambient temperature 25°C. (\*2)The transfer time of temperature can be set up. (\*3)Voltage variation rate is ±5% for AC100V.


# Optional accessories and Capacity/Qty of Vessels

## Spring net shaking platform and Capacity/Qty of Vessels

Model	MR-2925			
	Vessels can be easily mounted on regardless its shapes. It can be used by removing some springs and changing the height of the spring net as necessary. Universal shaking platform (w/o Clamp) *It is option recommended if vessel should be tightly held.			
Spring net Pitch	20mm			
Spring net stage	1 stage (Height is changeable.)			
External dimension	290x250x108Hmm			
Weight	Apporx.1.1kg			
Capacity of Vessel	φ16 mm test tubes (*1)	50 (*2)	Erlenmeyer flask 300mL	5
	Disposable Centrifuge tube for 50 mL	20 (*2)	Erlenmeyer flask 500mL	4
	Erlenmeyer flask 50mL	20	Erlenmeyer flask 1L	2
	Erlenmeyer flask 100mL	10	Erlenmeyer flask 2L	1
	Erlenmeyer flask 200mL	9	Sakaguchi flask 500mL (*3)	2
	Erlenmeyer flask 250mL	5		

(\*1)φ16 mm or less should be with the stand to be mounted on in Spring net.  
 (\*2)The qty when Angle rack tilted 45°.  
 (\*3)Be careful when using Shake flask as it is fragile.

## Universal shaking platform and Capacity/Qty of Flasks

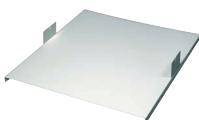

Model	MT-2925			
	It is used together Clamps, Angle racks and "OD-Monitor" series (Clamps of Erlenmeyer flask and Shake flask are available). It can hold flasks tightly than Spring shaking platform.			
External dimension	290x250x23Hmm			
Weight	Apporx.0.9kg			
Capacity of Flask	Erlenmeyer flask 50mL	20	Erlenmeyer flask 500mL	4
	Erlenmeyer flask 100mL	10	Erlenmeyer flask 1L	2
	Erlenmeyer flask 200mL	9	Erlenmeyer flask 2L	1
	Erlenmeyer flask 250mL	5	Sakaguchi flask 500mL	3
	Erlenmeyer flask 300mL	5		

## Angle rack for Test tubes and Disposable Centrifuge tubes (Mounted on MT-2925 for use)

Model	AT-1250	AT-1620	AT-1650	AT-3518 (*1)
Vessels / Capacity	φ12mm test tubes x50	φ16.5mm test tubes x20	φ16.5mm test tubes x50	Disposable Centrifuge tube for 50 mL x18
Mounting qty on MT-2925	1 (*2)	2 (*2)	1 (*2)	1
External dimension (mm)	250x100x95H	285x70x80H	286x110x100H	285x110x102H
Weight	Apporx.0.8kg	Apporx.0.6kg	Apporx.0.9kg	Apporx.0.8kg


(\*1)Be sure be used below 50°C. (\*2)The qty when Angle rack with 160mm test tube tilted 45°.

## Other optional accessories

Product Name / Model	Stackable base STB-4842	Inner rack RSB-3430
Shape		
Description	The fixing tool that prevents slippage when the stacked in use (Required when stacked)	It can be installed to the upper of chamber. The height of space that the sample placed differs depending on the mounting position.

● Protuberances not included in Dimensions. ● Vessels of photo not included.

## Stick sheet shaking platform

Model	SR-2925
	Flat bottoms such as Erlenmeyer flask and Petri dish can be held simply by placing on the platform. The decreasing an adhesive force by dirt can be recovered by washing with water and drying it. Even Erlenmeyer flasks can be used up to 200r/min by using Optional Clamp belt.
Max. shaking speed	100r/min (200r/min when using Clamp belt)
External dimension / Weight	290x250x30Hmm / Apporx.1.1kg
Standard accessories	Stick sheetx1



## Stick sheet, Clamp belt

Stick sheet (ST-2925) above also available as sold separately. Clamp belt (CB-0205/1000) is for securely holding Erlenmeyer flask on Stick sheet shaking platform.

Model	ST-2925	Model	CB-0205	CB-1000
External dimension	290x250mm	Capacity of Erlenmeyer flask	200 to 500 mL	1 to 3 L (*)

(\*)Up to 2L of Erlenmeyer flask can be used with the BR-21/22/23 series.


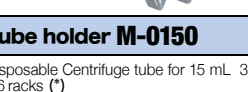
## Clamps (Mounted on MT-2925 and AF-2070 for use.)

Shape	Vessels / Capacity	Model
 Above 300mL Clamps comes with Spring and Above 500 mL comes with Octagonal rubber sheet.	50mL	<b>CF-0050</b>
	100mL	<b>CF-0100</b>
	200mL	<b>CF-0200</b>
	250mL	<b>CF-0250</b>
	300mL	<b>CF-0300</b>
	500mL	<b>CF-0500</b>
 MT-2925 with Multiple clamps mounted.	1L	<b>CF-1000</b>
	2L	<b>CF-2000</b>
	Sakaguchi flask	500mL <b>SF-0500</b>

## Angle rack for Erlenmeyer flasks (Mounted on MT-2925 \*Clamps required for use)

Model	AF-2070
Capacity	50mL:4, 100mL:3, 200 to 300mL:2, 500mL:1
Mounting qty on MT-2925	2 sets (The qty when Angle rack tilted 30°)
External dimension / Weight	250x110x50Hmm, Apporx.0.8kg

## Tube holders (Mounted on MT-2925 for use)

 M-0150	<b>Tube holder M-0015</b> 3 sets x 8 racks for 1.5/2.0 mL Microtube and Micro Vial
 M-0150	<b>Tube holder M-0500</b> Disposable Centrifuge tube for 15 mL 3 sets x 6 racks (*)
	<b>Tube holder M-0500</b> Disposable Centrifuge tube for 50 mL 3 sets x 4 racks (*)

(\*)Up to 2 sets can be mounted on MT-2925 in BR-21/22/23 series.

## The mounting direction of Angle rack. AT-3518

The tilt direction of Angle rack should be mounted orthogonal to the shaking direction when reciprocating due to the inside dimension of chamber.

