

# Reciprocal shaker NR-10, Rotary shaker NR-20, Double shaker NR-30, Triple shaker NR-80

*The versatile shaker with simple operation. Reciprocal, Orbital, Switchable Reciproca/Orbitall shaking and Swing in figure 8. Options are compatible with those of BioshakerR (Middle size).*

"Bioshaker BR-40/41/42/43 with temp. control" series --> P.022 "In vitro Shake-LR/XR" equipped with Swing in figure 8 --> P.054

NR-10 with Optional shaking platform



NR-20 with Optional shaking platform



NR-30 with Optional shaking platform



NR-80 with Optional shaking platform



## Features

- Reciprocal shaking of Test tubes and Shake flasks [NR-10]
- Orbital shaking of mainly Erlenmeyer flasks [NR-20]
- Reciprocal/Orbital shaking [NR-30], Reciprocal/Orbital and Figure 8 [NR-80]

## Applications

- Shaking culture of Microbes inside Incubators etc.
- Shaking culture of Algae etc. inside Incubators with LED irradiation
- Staining/Decolorization of Gels, Membranes and Dispersion [NR-80]

The features of Swing in figure 8 and the shaker that can swing in figure 8.



Vertical and Horizontal waves occur alternately in the figure 8.

In shaking the gel, the efficiency of dye decolorization is heightened as the solution moves firmly while the gel stays at any position (1). The wider vertical and horizontal waves alternately are, the easier the vessels can be checked (2). In Erlenmeyer flasks, high aeration and dispersion efficiency like motion of liquid in the shaking flasks can be obtained (3), 50/100/150 mL in 500 mL from the left).

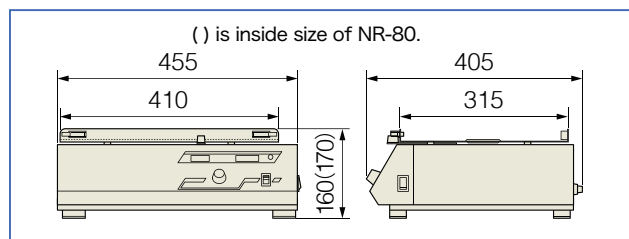


Shake-XR \*Dedicated for Figure 8 (Page 54) 3 pcs of 500mL Erlenmeyer flask Various options

Model	NR-10	NR-20	NR-30	NR-80
Shaking motion	Reciprocal	Orbital	Switchable Reciprocal/Orbital	Reciprocal/Orbital/ Figure 8
Shaking speed	20 to 200r/min (*)			
Shaking width	10 to 40mm, Stepless (Default: 25mm)			
Platform dimensions and Capacity	400 x 300mm Erlenmeyer flask 500mL x 6, 3L x 2			
Maximum load	Approx. 8kg (Shaking platform and vessel holders included)			
Shaking duration integrator	0.1h to 999.9h (Automatic resetting function)			
Safety devices/ functions	Motor protection circuit at overload, Fuse			
Dimensions (W x D x H)	455 x 405 x 160mm (NR-80: 170mm)			
Weight	Approx. 17kg			Approx. 18kg
Power supply	AC220 to 240V/0.5A			

(\*) One motion per 2r/min in the figure 8.

## Dimensions (Each model common)

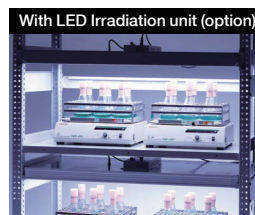


## Related products: Middle sized incubator and Culture shelf



Can be used by placing it on the lowest shelf in "In vitro box iB-230" (page 138). \*No adverse effect verified from vibration. This is an energy-saving middle sized incubator that can control temp below RT.

UR-3 is a shelf that can be shaken with up to 6 sets of NR-10/20/30/80. An empty space above can be effectively used. LED Irradiation unit available as an option.



Model	UR-3
Shelves / Maximum load	Three tire, 50kg per shelf
Dimension / weight	1350x660x1800Hmm, 115kg

Selection guide  
 Constant temperature incubator shaker  
 CO<sub>2</sub> incubator shaker  
 Shaker  
 Mixer  
 Rotator  
 Stirrer  
 Bead beater  
 homogenizer  
 Ultrasonic homogenizer  
 Aluminum block bath  
 Minimize 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]

Shaker

Mixer

Bead beater  
homogenizer  
Ultrasonic homogenizer

Aluminum block bath  
Minimize 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

# Optional accessories and Capacity of Vessels

OD-Monitor Turbidimeter while shaking --> P.034 Small size incubator "in vitro box iB-130"-->P.138

## Spring net shaking platform and Capacity of Vessels.


Model	MR-4030			
	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 Pitch	2 tier (Height is changeable.)			
Dimension	400x300x108Hmm			
Weight	Apporx.3.3kg			
Capacity of Vessels	φ16 mm test tubes (*1)	96 (*2)	Erlenmeyer flasks 250mL	9
	Disposable Centrifuge tube for 50 mL	48 (*2)	Erlenmeyer flasks 300mL	9
	Erlenmeyer flasks 50mL	24	Erlenmeyer flasks 500mL	6
	Erlenmeyer flasks 100mL	20	Erlenmeyer flasks 1L	3
	Erlenmeyer flasks 200mL	12	Erlenmeyer flasks 2L	2

(\*1)When below φ16mm test tubes, fix the test tube stand (incl. φ16mm) whole with the spring net.


(\*2)The number is when Angle rack tilted 45°.

•Be careful when using Shake flask as it is fragile.

## Universal shaking platform and Capacity of Flasks


Model	MT-4030			
	It is used together Clamps, Angle racks and "OD-Monitor" series (Clamps of Erlenmeyer flasks and Shake flask are available). It can hold flasks tightly than Spring shaking platform.			
Dimension	400x300x23Hmm			
Weight	Apporx.1.4kg			
Capacity of Vessels	Erlenmeyer flasks 50mL	35	Erlenmeyer flasks 500mL	6
	Erlenmeyer flasks 100mL	18	Erlenmeyer flasks 1L	4
	Erlenmeyer flasks 200mL	12	Erlenmeyer flasks 2L	2
	Erlenmeyer flasks 250mL	9	Erlenmeyer flasks 3L	2
	Erlenmeyer flasks 300mL	9	Sakaguchi flasks 500mL	6

## Angle rack for Test tube (Mounted on MT-4030 for use)


Model	AT-1250	AT-1620	AT-1650	AT-1820
	Capacity			
	φ12mm x50	φ16.5mm x20	φ16.5mm x50	φ18mm x20
	Qty of mounting on MT-4030			
	2 (*1)	3 (*1)	2 (*1)	3 (*1)
	Dimension (mm)			
	250x100x95H	285x70x80H	286x110x100H	320x70x80H
	Weight			
	Apporx.0.8kg	Apporx.0.6kg	Apporx.0.9kg	Apporx.0.7kg

(\*1)The number is when Angle rack with 160mm test tube tilted 45°.

## Angle rack for Disposable Centrifuge tube (Mounted on MT-4030 for use)

Model	AT-3518	
	Capacity	
	50mLx18	
	Qty of mounting on MT-4030	
	2 (When Angle rack tilted 45°)	
	Dimension/Weight	
	285x110x102Hmm, Apporx.0.8kg	
	Remarks	
	Be sure use below 50°C.	

## Stick sheet shaking platform

Model	SR-4030	
	Flat bottoms such as Erlenmeyer flasks and Petri dishes can be held simply by placing them 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)	
Dimension/Weight	400x300x30Hmm, Apporx.1.7kg	
Standard accessories	Stick sheetx1	



## Stick sheet, Clamp belts

Stick sheet (ST-4030) above also available as sold separately. Clamp belt (CB-0205/1000) is for securely holding Erlenmeyer flasks on Stick sheet shaking platform.


Model	ST-4030	Model	CB-0205	CB-1000
Dimension	400x300mm	Volume of flasks	200 to 500mL	1 to 3L (*1)

(\*1)Up to 2L of Erlenmeyer flasks can be used with the NR-10/20/30/80 series.

## Clamps (Mounted on MT-4030 and AF-2070/2570 for use.)


Shape	Vessels / Capacity	Model	
	Erlenmeyer flasks	50mL	<b>CF-0050</b>
		100mL	<b>CF-0100</b>
	Erlenmeyer flasks	200mL	<b>CF-0200</b>
		250mL	<b>CF-0250</b>
		300mL	<b>CF-0300</b>
		500mL	<b>CF-0500</b>
		1L	<b>CF-1000</b>
		2L	<b>CF-2000</b>
		3L	<b>CF-3000</b>
MT-4030 with prural clamps mounted.	Sakaguchi flasks	500mL	<b>SF-0500</b>

## Angle rack for Erlenmeyer flask (Mounted on MT-4030 \*Clamps required)

Model	AF-2070	AF-2570
	Capacity	
	50mL:4,100mL:3pcs, 200 to 300mL:2pcs, 500mL:1pc	50mL:5pcs, 100mL:4pcs, 200mL:3pcs, 250 to 500mL:2pcs
	Qty of mounting on MT-4030	
	2 (*1)	
	Dimension	
	250x110x50Hmm	
	Weight	
	Apporx.0.8kg	

(\*1)When Angle rack tilted 30°

## Tube holder (Mounted on MT-4030 for use)

Model	M-0150		M-0500	
	Tube holder <b>M-0015</b>			
	For 1.5/2.0 mL Microtubes and Micro Vials, 3 sets x 8 racks			
	Tube holder <b>M-0150</b>			
	Disposable Centrifuge tube for 15 mL 3 sets x 6 racks (*1)			
	Tube holder <b>M-0500</b>			
	Disposable Centrifuge tube for 50 mL 3 sets x 4 racks (*1)			

(\*1) Up to 3 sets can be mounted on MT-4030 in NR-10/20/30/80 series. The vessel tips will protrude from MT-4030 when 4pcs are attached. Thus, be sure not to make them hit the surroundings during shaking.