



# Shaker

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# Wide variety Shakers with Excellent Quietness and Various Shaking motions.

**Wide variety Shaking methods available to support all shaking applications in R & D and Inspection.**  
**Most models with Power saving less than 1A!!**

Selection guide			Page	Model	Size	Features
Constant temperature incubator shaker	CO <sub>2</sub> incubator shaker	Shakers for High humidity	P.052	CS-LR		Enables Stable operation under high humidity. Standard platform with anti-bacterial processing. Operation unit can be installed outside the cabinet (cable 2m).
Shaker		Constant temperature incubator shaker	P.053	EVR-034		Suitable for stirring of 96-well plates and Microtubes.
				EVR-032		
				EVR-104		Suitable for stirring of Centrifuge tubes and Microtubes.
			P.054	Shake-LR		Switchable Reciprocal and Orbital shaking. Can be used even in +4 °C inside refrigerators.
				Shake-XR		Swing in figure 8. Can be used even in +4 °C inside refrigerators.
Mixer	Rotator		P.056	Mix-VR	Bench-top Small	High-speed orbital shaking. Can be used even in +4 °C inside refrigerators.
	Stirrer			Mix-EVR		Intense shaking, like Vortex mixer. Can be used even in +4 °C inside refrigerators.
Bead beater	homogenizer		P.058	Wave-PR		Mild shaking (Wave-shaped shaking). Can be used even in +4 °C inside refrigerators.
Ultrasonic homogenizer				Wave-SI		Seesaw shaking. Can be used even in +4 °C inside refrigerators.
				Wave-SI slim		
Aluminum block bath			P.060	PR-12		Mild shaking (Wave-shaped shaking) The tilt angle of platform can be adjusted.
Minisize bath			P.061	E-36		Optimum for Stirring of 96-well plates and Microtubes. Stabilized stirring by the range switching in Low/High speed. The rack for Microtube is available as an option.
Water bath			P.062	NR-1	Bench-top Small	Reciprocal shaking of Test tubes and Shake flasks.
Shaking water bath			P.064	NR-10	Bench-top Middle	
Immersion cooler			P.062	NR-2	Bench-top Small	Orbital shaking mainly for Erlenmeyer flasks.
Hybridization oven			P.064	NR-20	Bench-top Middle	
Constant temperature chamber			P.062	NR-3	Bench-top Small	Switchable Reciprocal/Orbital shaking.
			P.064	NR-30	Bench-top Middle	
Centrifugal concentrator			P.064	NR-80	Bench-top Middle	Reciprocal/Orbital and Figure 8.
Cold trap			P.066	NR-150	Large	Switchable Reciprocal/Orbital, Shaking platform drawer lever. Shaking width can be 10mm to 50mm by stepless. Capacity is doubled in Two-tier platform except some vessels.
				Double platform NR-150	Large	
Freeze dryer			P.068	VIX-100	Middle	Strong stirring of 100pcs of 20 ml vials at the same time. 15 minutes Timer and shaking automatic inversion function. Easy fixation by the holding down Vials collectively from the top.
Electrophoresis and blotting apparatus			P.069	SR-1	Large	Dedicated for Reciprocal shaking. 50 mm shaking width. Shaking platform (option) 4 types. Capacity: 6pcs x 1L Erlenmeyer flask. Timer operation for 60 minutes, Buzzer is rung at the finish.
			P.070	SR-2DS		Vertical shaking and Horizontal shaking. The start time of shaking and the intermittent shaking can be set by the timer.
				SR-2DW	Middle	Dedicated for Vertical shaking. The capacity is doubled SR-2DS. The start time of shaking and the intermittent shaking can be set by the timer.
Constant temperature circulating system [Chiller]			P.073	SR-2DS Mojonnier tube shakers set		Six (6) mojonier tubes can be shaken at once. The Shaking duration can be set as desired by the timer. Transparent resin cover to prevent scattering of chemical solution.
			P.074	SR-10	Large	Horizontal shaking of 50 mL Disposable centrifuge tube. Capacity Max. 96pcs. Matched to the shaking function required in the extraction process of official method. Equipped with ON/OFF Timer to improve work efficiency.
			P.075	TS-10	Large	Capacity: 2pcs for 5L/6pcs for 2L (See right figure). Max. load 10kg, Energy-saving 70Wh, with Timer.
			P.076	TS-20	Large	Capacity: 6pcs for 5L/14pcs for 2L (See left figure). Dedicate for Polyethylene jars. Capacity and Max. load is doubled TS-10.

**Reciprocal (Horizontal)**

Reciprocate motion horizontally. Suitable for Test tubes, Centrifuge tubes, Sakaguchi flasks, PE bottles etc.

**Orbital**

Circular motion horizontally. Suitable for Cultivation with Erlenmeyer flasks.

**Swing in figure 8**

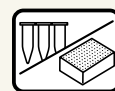
Swing in figure 8 motion that horizontally passes through the center point. Vertical and horizontal waves occur alternately and enables uniform shaking.

**Wave-shaped shaking**

Reciprocate motion vertically. Suitable for Shaking Separatory funnel intensely.

**Seesaw shaking**

Seesaw motion. Optimum for spreading liquid gently every corner in plastic containers.

**Horizontal eccentric shaking**

Finely Fast motion. Shakes delicate vessels such as Microtubes and well plates surely.

**Reciprocal (Vertical)**

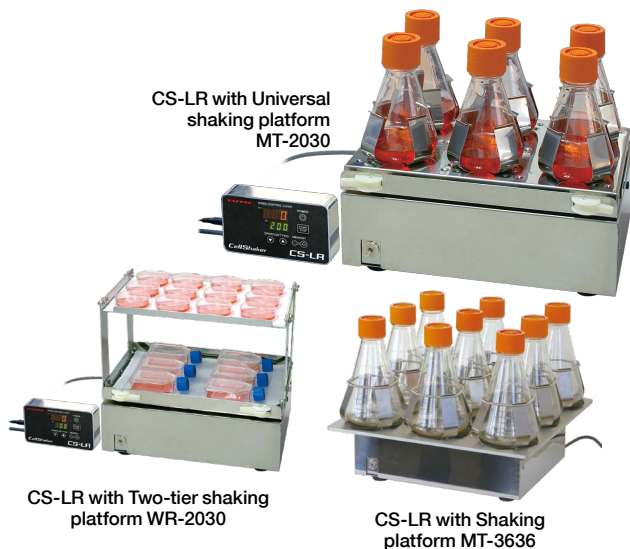
Reciprocate motion vertically. Suitable for Shaking Separatory funnel intensely.

	Applications	Shaking motion	Shaking speed/width/angle range	Page
	Shaking culture of Animal cells inside CO <sub>2</sub> incubator. Shaking culture mildly of Stem cells such as iPS cells. Shaking under high humidity environment such as Growth chambers.		15 to 200r/min 25mm (can be changed to 20mm)	P.052
	Shaking culture of Deep well plates and Microtubes. ELISA and Phage display . Enzyme digestion, Biodegradability testing etc.		200 to 1600r/min	P.053
	Erlenmeyer flasks, Centrifuge tubes, Color comparison tubes etc. Cultivation, Extraction.		50 to 500r/min	
	Trays, Erlenmeyer flasks, TC flasks etc. Dispersion, Trypsinization.		15 to 160r/min 25mm	P.054
	6 to 24-hole plates or Thickly test tubes etc. Dissolution, Extraction, Mixing.		15 to 100r/min 20mm	
	Stirring of Microtubes, 96-hole plates, Vial etc. ELISA and culture. Dissolution, Extraction, Mixing.		50 to 500r/min 10mm	P.056
	Mild shaking of Centrifuge tubes and Large-size trays. Staining/Decolorization, ImmunoPrecipitation, Western Blotting, Trypsin etc.		250 to 2500r/min 2mm	
	Mild shaking of Petri dish and Plastic containers etc. Staining/Decolorization, ImmunoPrecipitation, Western Blotting, Trypsin etc.		5 to 50r/min 2° to 10°	P.058
			10 to 60r/min 6°	
	Mild shaking for Centrifuge tubes and Plastic containers/trays. Staining/Decolorization of Gels and Membranes. Genomic DNA extraction, ImmunoPrecipitation, Trypsin-EDTA etc.		20 to 120r/min 5° to 8°	P.060
	Promotion of Enzyme digestion of mouse tail etc. Promotion of ELISA reaction, Biopanning etc. Plasmid DNA extraction.		Range switching: 300 to 1000r/min (LOW) 1200 to 2500r/min (HIGH)	P.061
				P.062
				P.064
	Shaking culture of Microbes inside Incubators etc. Shaking culture of Algae etc. inside Incubators with LED irradiation Staining/Decolorization of Gels and Membranes.			P.062
			20 to 200r/min 10 to 40mm	P.064
				P.062
				P.064
	Shaking culture of Microbes inside Incubators etc. Shaking culture of Algae etc. inside Incubators with LED irradiation Staining/Decolorization of Membranes and Gels, Dispersion			P.064
	Shaking culture of Microbes inside Incubators etc. Shaking culture of Algae etc. inside Incubators with LED irradiation. Various Dissolution/Elution testing.		25 to 250r/min 10 to 50mm	P.066
			25 to 160r/min 10 to 50mm	
	Stirring of large amount of vials and test tubes. Extraction and mixing-stirring of analysis samples. Pretreatment of liquid scintillation.	*with automatic inversion function	Up to approx. 2000r/min	P.068
	Preparation of reagents and samples for analysis. Shaking culture of Microorganisms inside Incubator. Various mixing-stirring etc.		50 to 250r/min 50mm	P.069
	Liquid extraction of analysis samples such as residual pesticides and soil components. Pretreatment of Solid phase extraction of analytical sample . Various mixing-stirring etc.		Vertical: 100 to 300r/min Horizontal: 50 to 300r/min 40mm	P.070
			50 to 300r/min 40mm	
	Fat extraction testing using majonia tube.		Horizontal: 50 to 300r/min 40mm	P.073
	Extraction in food allergen testing with official method. Elution in pesticide residue inspection in food. Applications that require shaking of a large amount of centrifuge tubes.		50 to 250r/min 45mm	P.074
	Elution of metals contained from soil and industrial waste. Extraction of analytical samples with Polyethylene jars. Various mixing-stirring etc.		50 to 250r/min 45mm	P.075
			25 to 200r/min 10 to 50mm	P.076

# Cell shaker CS-LR

**Enables Stable operation under high humidity in CO<sub>2</sub> Incubator etc. as the high waterproof. The low calorific value has uninfluent effect on inside temp.**

CO<sub>2</sub> Incubators that can be inside this unit --> P.40-42



Model	CS-LR
Shaking motion	Switchable Reciprocal/Orbital shaking
Shaking speed/width	15 to 200r/min, 25mm (can be changed to 20mm) (*1)
Platform dimensions	300 x 200mm
Ambient temp./Humidity	0°C to 50°C/Up to 95%
Maximum load	Approx. 2kg (Optional platforms and vessel holders not included)
Dimensions (W x D x H)	Main unit: 300 x 240 x 129mm/Controller: 125 x 30 x 70mm
Weight	Main unit: Approx. 7kg/Controller: Approx. 0.5kg
Power supply	AC100 to 240V/1A

(\*1) Ask our/TAITEC distributor if you would like.

## Optional accesories: Shaking platform (for detail, see p.055)

Product Name / Model	Example of Capacity
<b>Universal shaking platform MT-2030 (*1)</b>	100mL Erlenmeyer flask x 12, 250mL x 6, 300mL x 6, 500mL x 3
<b>Universal shaking platform for CS-LR MT-3636 (*1,2)</b>	100/200/250mL Erlenmeyer flask x 18, 300/500mL x 9, 1L x 5
<b>Two-tier shaking platform WR-2030 (*3)</b>	6cm dish x 24, 50mL TC flask x 12
<b>Large-size shaking platform WR-3636LR</b>	6cm dish x 36, 40mL TC flask x 28
<b>Spring net shaking platform MR-2030</b>	50mL disposable centrifuge tube x 24

(\*1) Clamps are available as an option.

(\*2) MT-3636 is specifically designed platform for CS-LR. Be sure be used below 160r/min.

(\*3) Stick sheet ST-2030 (option) is required to prevent slipping. Optional shaking platforms are not processed with antibacterially processing.

## Optional accesories: Clamps

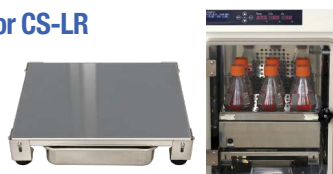
Model	CF-0100	CF-0250	CF-0300	CF-0500
Erlenmeyer flasks	100mL	250mL	300mL	500mL

## Optional accesory: Stand for CS-LR

Model	CS-3024
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The stand that CS-LR can be placed to straddle Humidity Pan inside MG-70/71 series.

•Not come with Humidity Pan.



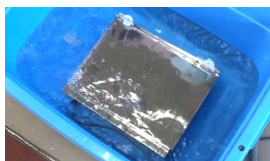
## Features

- Enables Stable operation under high humidity in CO<sub>2</sub> Incubator etc. as the high waterproof.
- Standard platform with anti-bacterial processing
- Operation unit can be installed outside the cabinet (cable 2m)

## Applications

- Shaking culture of Animal cells inside CO<sub>2</sub> incubator
- Shaking culture mildly of Stem cells such as iPS cells
- Shaking under high humidity environment such as Growth chambers

## High waterproof with stands submergence test



It has high waterproof performance that past the submersion test for 30 minutes and running test for 5 minutes in the performance test at development. \*The test not guaranteed it for use in water.

## Separated controller



Enables to control shaking speed etc. remotely by installation put away from the unit (Cable 2m). By that the operation part is not adversely affected in a harsh environment such as a low temperature incubator or high humidity in CO<sub>2</sub> Incubator.

## Switchable Reciprocal/Orbital shaking according to the shape of vessels.

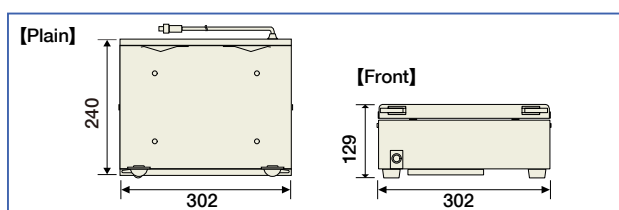
The shaking motion can be switched between such as reciprocal shaking at low speed for Petri dishes and orbital shaking for Erlenmeyer flasks. Shakes accurately even low speed. As the speed of shaking gradually rises from a low speed, good effective on reducing stress on the samples.

## Cleanly stainless steel exterior and antibacterially processed platform

The exterior made of stainless steel clean. Plus the platform processed with antibacterial processing with KENIFINE that drastically suppresses the growth of bacteria/alga/mold/virus when the culture medium is spilled or water droplets are adhered.

\*KENIFINE is made by Kobe Steel, Ltd. (Japanese corporation).

## Dimensions

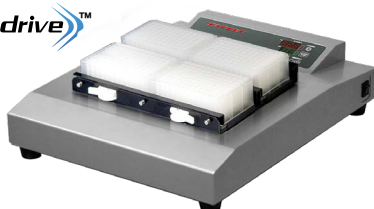




# MaxMixer EVR-034/032/104

**Powerfully, Uniformly and Quietly. Our proprietary technology NewMax drive enables an outstanding stirring effectiveness for 96-well plate, Microtubes and Disposable centrifuge tubes.**

Experiment data --> P.014



EVR-034 with Deep well plate



EVR-032 with Microtube rack (Option)



EVR-104 with Shaking platform (Option)

## Features

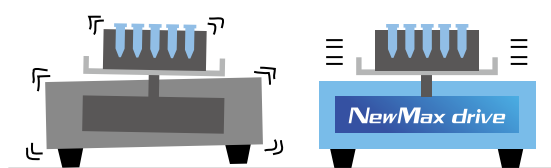
- Suitable for stirring of 96-well plates and Microtubes (Model: 034 and 032).
- Suitable for stirring of Centrifuge tubes (Model: 104)
- Handy flat simply body design for use

**Our proprietary technology NewMax drive enables a great stirring effectiveness by preventing the wobble.**

The shaker generates synergistically the wobble by its vibration and the wobbling of platform by inertia. The wobble sometimes weak the effects for shaking and stirring. NewMax drive realizes Shaker less wobbled. For example, the effect of dramatically the variation between wells in the cultivation using well plate rack improved has been obtained (see page 016).

## Applications

- Shaking culture of Deep well plates and Microtubes
- Antibody reaction in ELISA and Phage display
- Enzyme digestion, Biodegradability testing etc.



Capacity	4 x Well plate (*1) rack 4 x Microtube rack	2 x Well plate 2 x Microtube rack	1.5 or 2.0 mL microtube rack and 15mL or 50mL disposable centrifuge tube by changing the platform.
Model	<b>EVR-034</b>	<b>EVR-032</b>	<b>EVR-104</b>
Shaking motion/speed	Horizontal eccentric shaking, 200 to 1600r/min		Orbital, 50 to 500r/min
Platform dimensions	-		240 x 220mm
Ambient temp. range	5°C to 40°C		
Other functions	Shaking speed displayed digitally, 1 x Memory function of shaking speed.		
Safety devices/functions	Fuse, Motor overload/overvoltage protection, Speed limit error, Memory error		
Dimensions (W x D x H)	342 x 405 x 100mm	302 x 365 x 100mm	342 x 405 x 100mm
Weight	Approx. 10kg	Approx. 7kg	Approx. 10kg
Power supply	AC100 to 240V/0.5A		
Standard accessories	-		1 x Stick sheet (*2)

(\*1) Equipped with the platform for Well plate. Since designed for 96-well plate, the stirring effectiveness will be different by using different well sizes such as 24-well and 384-well plate. (\*2) Make the shaking speed below 100r/min with tall vessels.

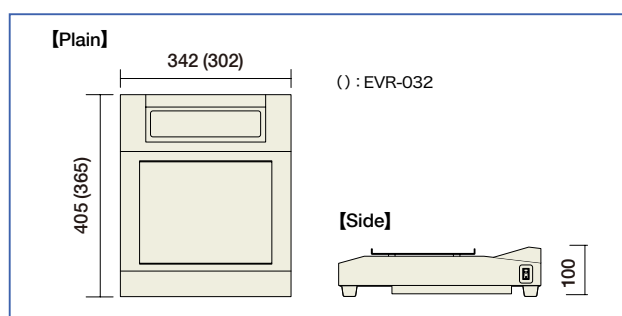
## Optional accessories

Product Name / Model	Capacity of vessels
Microtube rack EM-0524	0.5mL Microtube x 24
Microtube rack EM-1524	1.5/2mL Microtube x 24
Microtube rack EM-1515 (*1)	5mL tube x12

(\*1) Compatible with WATSON® but not Eppendorf.

Product Name / Model	Capacity of vessels
Shaking platform for 1.5mL Microtubes V-BR-1140	1.5/2mL Microtube x 40
Horizontal shaking platform for 15mL centrifuge tubes V-BR-1816	15mL disposable tube x 16
Horizontal shaking platform for 50mL centrifuge tubes V-BR-3508	50mL disposable tube x 8

## Dimensions



# In vitro shaker Shake-LR/XR

**Compact sized easy to use for bench tops and inside refrigerators. Enables to shake the samples largely and securely. Wide range of options for various applications.**

CO<sub>2</sub> Incubators that can be inside this unit --> P.138-140

Shake-LR



Shake-XR



Each above not a mounted with the shaking platform.

## Features

- Switchable Reciprocal and Orbital shaking [LR]
- Swing in figure 8 [XR]
- Enable to use even inside refrigerators with 4°C [All models]

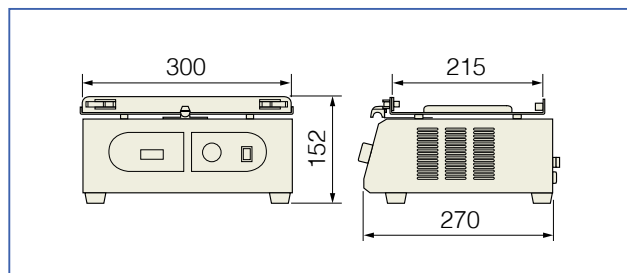
## Applications

- Erlenmeyer flasks, Centrifuge tubes, Color comparison tubes etc. [LR]
- Trays, Erlenmeyer flasks, TC flasks etc. [XR]
- Cultivation, Extraction [LR], Dispersion, Trypsinization [XR]

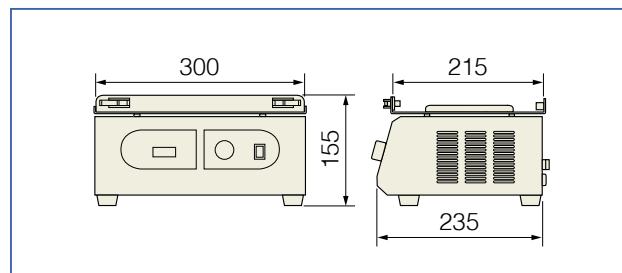
Model	Shake-LR	Shake-XR
Shaking motion	Switchable Reciprocal/Orbital shaking	Swing in figure 8
Shaking speed/width	15 to 160r/min (*1), 25mm	15 to 100r/min* (*1), 20mm *One (1) motion per 1r/min
Platform dimensions	300 x 200mm	
Ambient temp. range	0°C to 50°C	
Maximum load	Approx. 2kg (Optional platform and vessel holders not included)	
Shaking speed display	Digitally (Option)	
Safety devices/functions	Motor protection circuit at overload, Fuse	
Dimensions (W x D x H)	300 x 270 x 152mm	300 x 235 x 155mm
Weight	Approx. 7.8kg	Approx. 7.7kg
Power supply	AC100 to 240V/0.5A	

(\*1) The maximum value might not be meet depending optional platforms and vessels.

## Dimensions Shake-LR



## Dimensions Shake-XR



## 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).









## USER'S VOICE






I think there should be some effective applications for figure 8 other than this. Also interested in High-end model NR-80 with more capacity than that of Shaker-XR.



<-- NR-80 (Page 64) 6 pcs of 500mL Erlenmeyer flask Switchable Reciprocal/Orbital and Figure 8

# Example of Optional shaking platform in combination

Shake-LR (with Speed display)					
					
Plastic containers or Dishes, Reciprocal	Plastic containers or Dishes, Reciprocal	50 mL Centrifuge tube, Orbital	250 mL Erlenmeyer flasks, Orbital	100 mL Color comparison tube, Reciprocal shaking	50 mL color tube, Reciprocal shaking
Stick sheet ST-2030	Two-tier shaking platform WR-2030	Spring net shaking platform MR-2030	Universal shaking platform MT-2030	Universal shaking platform MT-2030	Universal shaking platform MT-2030
—	Stick sheet ST-2030	—	Clamp for Erlenmeyer flask CF-0250x6	Horizontal clamp for Centrifuge tube AT-0004	Horizontal clamp for Centrifuge tube AT-0004x2

Shake-LR (with Speed display)	Shake-XR (with Speed display)			
				
Plastic containers or Dishes, Reciprocal	Plastic containers or Dishes	Plastic containers or Dishes	Large-size culture trays	500 mL Erlenmeyer flask
Large-size shaking platform WR-3636LR	Stick sheet ST-2030	Two-tier shaking platform WR-2030	Large-size shaking platform WR-3636	Universal shaking platform MT-2030
—	—	Stick sheet ST-2030	—	Clamp for Erlenmeyer flask CF-0500x3

● Example of optional platform combination were selected optimally while Some combinations other than these described (e.g. Shake-XR with MR-2030 etc.) are available. Ask us for the combinations other than these if necessary.

## Stick sheet (LR/XR)

A white-colored non-slip sheet that used placing on the platform. Eco-friendly special silicon material adopted. Adhesion weakened with dust and dirt can be recovered by washing with water.

Model	ST-2030
Applicable models	Shake-LR/XR
Dimension	195x295x2Hmm

● Use below 100r/min (or any speed the vessels not fallen) with Shake-LR.



## Two-tier shaking platform (LR/XR)

Convenient to stain multiple Electrophoresis gel. Comes with 1pc of Stick sheet ST-2030. WR-2030 (with 1 pc x ST-2030)



Model	WR-2030
Applicable models	Shake-LR/XR
Dimension	204x304x168Hmm

● Use below 100r/min (or any speed the vessels not fallen) with Shake-LR. ● Maximum load should be 1.2kg when using this. ● Purchase separately ST-2030 as necessary.

## Spring net shaking platform (LR)

Convenient when shaking different sizes vessels together. Tilt slightly the vessels with approx. 20 % of the liquid volume.



Model	MR-2030
Applicable models	Suitable for Shake-LR
Dim./Cap.	W 200xD 300xH 95mm, Up to 24pcs when 50mL Disposable centrifuge tube

● It can be also mounted to Shake-XR. ● Recommended to use with Conical bottom centrifuge tube.

## Double spring net for MR-2030 (additional option)

This makes the spring net of MR-2030 double. Enhance the fixed accuracy with this when using vessels that cannot be dropped into the bottom hole



Model	SP-2030
Dimension	200x300x12Hmm

● Be careful in the shaking speed when [if] the spring net is doubled.

## Universal shaking platform (LR/XR)

This is required when using the clamps for Erlenmeyer flask or Centrifuge tube. Be sure use the clamps so that the vessels can be fixed.

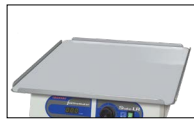


Model	MT-2030
Applicable models	Shake-LR/XR
Dimension	200x300x23Hmm

● Clamps are available as an option.

## Large-sized shaking platform (LR/XR)

Large sized culture trays and TC flasks can be mounted. 1pc of Stick sheet comes with that replaced by removing Standard platform.



Model	WR-3636LR (For Shake-LR)
Model	WR-3636 (For Shake-XR)
Dimension	364x364x12Hmm

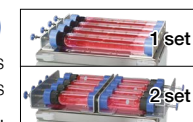
● Use below 100r/min (or any speed the vessels not fallen) with Shake-LR/XR.

● Stick sheet comes with.

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

## Horizontal clamp for Centrifuge tube (LR)

This makes Centrifuge tubes, Stoppered test tubes or Water-compliant 100 mL Color comparison tubes securely fixed. Optimal for Extraction experiment. Mounted on MT-2030 for use.



Model	AT-0004
Vessels	Diameter 10 to 37 mm, 4pcs in 1 set
Capacity	When 1 set: Vessels with 75 to 240 mm in length such as 100 mL Color comparison tubes. When 2 sets: Vessels with 75 to 110 mm in length such as 50 mL Centrifuge tubes.

## Clamps for Erlenmeyer flasks (LR/XR)

Mounted on MT-2030 for use.



Model	CF-0100	CF-0250	CF-0300	CF-0500
Vessels	100mL	250mL	300mL	500mL
Capacity	12pcs	6pcs	6pcs	3pcs

## In vitro shaker Mix-VR/EVR

***Compact sized easy to use for bench tops and inside refrigerators. Especially designed for fine and intense shaking. Various options enable high performance in Mixing and Extraction.***

High-end model with temperature control function and improved uniformity and stability --> P.053 CO<sub>2</sub> Incubators that can be inside this unit --> P.138-140



Each above not a mounted with the shaking platform.

## Features

- High-speed orbital shaking [VR]
  - Intense shaking, like Vortex mixer [EVR]
  - Enable to use even inside refrigerators with 4°C
- [All models]

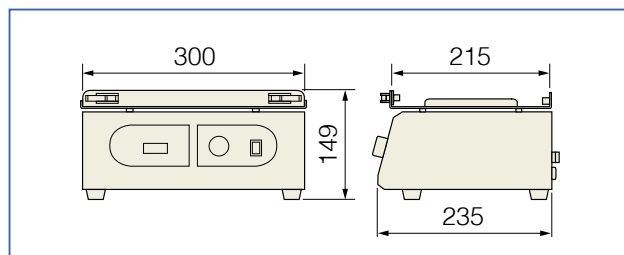
## Applications

- 6 to 24-hole plates or Thickly test tubes etc. [VR]
- Stirring of Microtubes, 96-hole plates, Vial etc. [EVR]
- Dissolution, Extraction, Mixing [All models], ELISA, Cultivation [EVR]

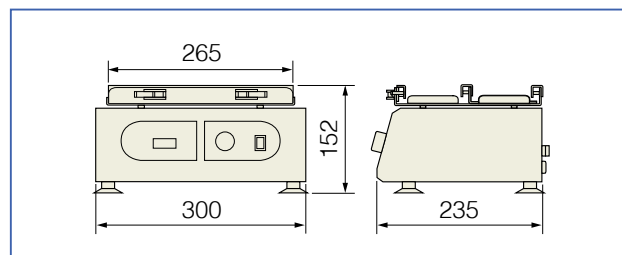
Model	Mix-VR	Mix-EVR
Shaking motion	Orbital shaking	Horizontal eccentric shaking
Shaking speed	50 to 500r/min (*1)	250 to 2500r/min (*1)
Platform dimensions	300 x 200mm	- (*2)
Ambient temp. range	0°C to 50°C	
Maximum load	Approx. 2kg (Optional platform and vessel holders not included)	
Shaking speed display	Digitally (Standard)	Digitally (Option)
Safety devices/functions	Motor protection circuit at overload, Fuse	
Dimensions (W x D x H)/Weight	300 x 235 x 149mm, Approx. 12.2kg	300 x 235 x 152mm, Approx. 6.5kg
Power supply	AC100 to 240V/0.5A	

(\*1) The maximum value might not be meet depending optional platforms and vessels. (\*2) Equipped with platform for 4pcs of well plate as standard.

## Dimensions Mix-VR



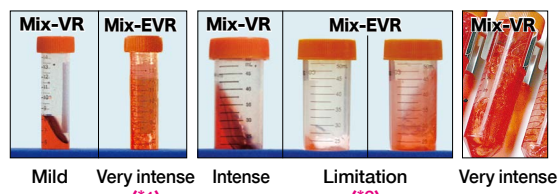
## Dimensions Mix-EVR



## The stirring forces of Mix-VR and Mix-EVR

Directions of vessels	Vertical		Horizontal	
Size of Vessels	Diameter		Length	
	Above $\phi$ 20mm	Below $\phi$ 20mm	110 to 240mm	Below 110mm
<b>Mix-VR</b>	Intense	Mild (Less than 20% Liquid volume)	Slightly intense	Very intense
<b>Mix-EVR</b>	Limitation	Very intense	Unsuitable	Slightly intense

	Suitable Well plates and Microtubes		
<b>Mix-VR</b>	6 well (Up to 200r/min)	12 well (Up to 300r/min)	24well (Up to 400r/min)
<b>Mix-EVR</b>	96 well (Up to 1000r/min)	96 well DWP (Up to 2000r/min)	0.5 to 2mL Microtube



(\*1) The stirring can be suppressed that the samples not stick to the lid depending the speed and liquid volume.

(\*2) The sticking to the lid cannot be prevented at "Very intense" near the max speed.







## USER'S VOICE







The important is to know the features and specs to use it well





# Example of Optional shaking platform in combination

Mix-VR					
					
Plastic containers or Dishes	50mL Disposal centrifuge tubes	250mL Erlenmeyer flasks	100mL Color comparison tubes	50mL Disposal centrifuge tubes for Hard	50mL Disposal centrifuge tubes
Stick sheet ST-2030	Spring net shaking platform MR-2030	Universal shaking platform MT-2030	Universal shaking platform MT-2030	Universal shaking platform MT-2030	Tilted clamp shaking platform ML-2030
-	-	Clamp for Erlenmeyer flask CF-0250x6	Horizontal clamp for Centrifuge tube AT-0004	Horizontal clamp for Centrifuge tube AT-0004x2	Tilted clamp for Centrifuge tubes Clamps ML-0050

Mix-VR	Mix-EVR (with Speed display)				
					
50mL Disposal centrifuge tubes	1.5mL Microtubes	φ18mm Test tubes	φ16.5mm Test tubes	Disposable Centrifuge tubes for 15 mL	Plastic containers or Dishes
Vertical holding shaking platform ER-2300	Microtube rack EM-1524x4	Vertical holding shaking platform ER-2300	Vertical holding shaking platform ER-2300	Tilted shaking platform ML-2030	VR standard shaking platform
50mL Centrifuge tube rack	-	Test tube rack ER-1830E	Test tube/Centrifuge tube rack ER-1636MT	Tilted clamps for Centrifuge tubes ML-0015	Stick sheet ST-2030

## Stick sheet (VR/EVR)

A non-slip sheet that used placing on the platform. Adhesion weakened with dust and dirt can be recovered by washing with water.



Model	ST-2030
Applicable models	Mix-VR/EVR (VR standard platform required in EVR *)
Dimension	195x295x2Hmm

(\*) Up to 100r/min in VR and only Tray or Dishes in EVR.

## Spring net shaking platform (VR)

This enables various shaped vessels being fixed on the platform. Spring net can be added by SP2030.



Model	MR-2030
Applicable models	Mix-VR (Below 350r/min)
Dimension/ Capacity	200x300x95Hmm Up to 24pcs when 50mL Disposable centrifuge tube.

## Microtube rack (EVR)

Equipped with a non-slip foot to make it easy to use as a Lab top tube stand. Two types available.



Model	EM-0524
Applicable models	Mix-EVR Vessels/Capacity
	0.5mLx24
Model	EM-1524
Applicable models	Mix-EVR Vessels/Capacity
	1.5mLx24

## Universal shaking platform (VR)

This is for Clamps for Erlenmeyer flask and Horizontal clamps for Centrifuge tubes be fixed on the platform.



Model	MT-2030
Applicable models/ Dimension	Mix-VR, 200x300x23Hmm

## Clamp for Erlenmeyer flask (VR)

Mounted on MT-2030 for use.

Model	CF-0100	CF-0250	CF-0300	CF-0500
Vessels/Capacity	100mL x 12	250mL x 6	300mL x 6	500mL x 3

## Tilted clamp shaking platform (VR/EVR)

This is for Centrifuge tubes. Remove the standard platform to replace it.



Model	ML-2030
Applicable models/ Dimension	Mix-VR/EVR, 256x300x30Hmm, Angle 5°

## Vertical holding shaking platform (VR/EVR)

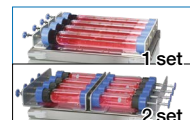
This is for Test tube rack and Shaking platforms for Test tubes/Centrifuge tubes. Remove the standard platform to replace it.



Model	ER-2300
Applicable models/ Dimension	Mix-VR/EVR, 180 (Inside dimension) x 201 x 27Hmm

## Horizontal clamp for Centrifuge tube (VR)

This makes Centrifuge tube, Stoppered test tube or Water-compliant 100 mL Color comparison tube securely fixed. Optimal for Extraction experiment. Mounted on MT-2030 for use.



Model	AT-0004
Vessels	Diameter 10 to 37 mm, 4pcs in 1 set
Capacity	When 1 set: Vessels with 75 to 240 mm in length such as 100 mL Color comparison tube. When 2 sets: Vessels with 75 to 110 mm in length such as 50 ml Centrifuge tube.

## Tilted clamps for Centrifuge tubes (VR/EVR)

Holders that stir mainly Disposable centrifuge tubes strongly. The stirring effect can be obtained even liquid volume large as ML-2030 has a 5° angle.



Model	ML-0015
Applicable models	Mix-EVR Capacity
	20pcs x Vessels with φ16.5 to 20mm and approx. 150mm in length (15 mL Disposable centrifuge tubes)
Model	ML-0050
Applicable models	Mix-VR Capacity
	12pcs x Vessels with φ28 to 35 mm and approx. 150mm in length (50mL Disposable centrifuge tubes)

## Test tube rack and Rack for Test tube/Centrifuge tube

Racks that stir Test tubes and Centrifuge tubes vertically. Recommended to make the liquid volume less than 50%.



Model	ER-1830E	ER-1636MT	50mL Centrifuge tube rack
Applicable models	Mix-EVR	Mix-EVR	Mix-VR
Capacity	φ18mm Test tube x 30	φ16.5mm Test tube or Disposable Centrifuge tube for 15 mL x 36	Disposable Centrifuge tube for 50 mL x 16

(\*) Made to Order product. We gladly manufacture other racks for such as Vials.

We contribute to the development of research and industry.  
[ 2019-2020 General Catalog ] **TATEC**

# In vitro shaker Wave-PR/SI/SI slim

**Compact sized easy to use for bench tops and inside refrigerators. The mild shaking as if shaken by hand. Optimum for Immuno Precipitation and Western Blotting at the low-temperature room.**

CO<sub>2</sub> Incubators that can be inside this unit --> P.138-140

Wave-PR



Wave-SI



Wave-SI slim



Each above not a mounted with the shaking platform.  
(Stick sheet comes with each model. Optional accessories unavailable in SI slim.)

## Features

- Mild shaking (Wave-shaped shaking)[PR]
- Seesaw shaking [SI/SI slim]
- Enable to use even inside refrigerators with 4°C [All models]

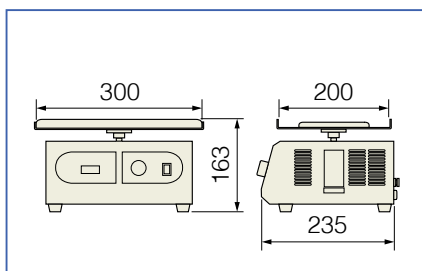
## Applications

- Mild shaking of Centrifuge tubes and Large-size trays[PR]
- Mild shaking of Petri dish and Plastic containers etc. [SI/SI slim]
- Staining/Decolorization, ImmunoPrecipitation, Western Blotting, Trypsin etc.

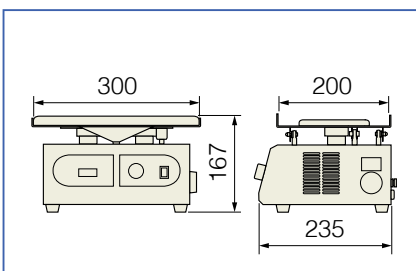
Model	Wave-PR	Wave-SI	Wave-SI slim
Shaking motion	Wave-shaped shaking	Seesaw shaking	
Speed/Angle range (*1)	5 to 50r/min, 2 to 6°	5 to 50r/min, 2 to 10°	10 to 60r/min, 6° (fixed)
Platform dimensions	300 x 200mm		180 x 120mm
Ambient temp. range	0°C to 50°C		
Maximum load	Approx. 2kg (SI slim: Approx. 1kg *Optional platform and vessel holders not included)		
Shaking speed display	Digitally (Option)		-
Safety devices/functions	Motor protection circuit at overload, Fuse		
Dimensions (W x D x H)	300 x 235 x 163mm, Approx. 5.1kg	300 x 235 x 167mm, Approx. 5.5kg	180 x 130 x 110mm, Approx. 1.8kg
Power supply	AC100 to 240V/0.5A		
Standard accessories	1 x Stich sheet (ST-2030 for SI/PR, Dedicated type for SI slim) (*2)		

(\*1) The maximum value might not be met depending optional platforms and vessels. (\*2) Shaking platforms and vessel holders are also available as an option except SI slim.

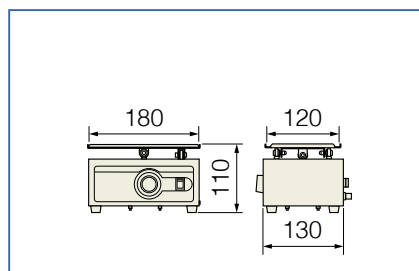
## Dimensions Wave-PR



## Dimensions Wave-SI



## Dimensions Wave-SI slim

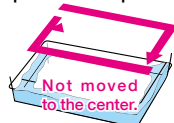


## Features for Wave-PR (Wave-shaped shaking) and Wave-SI (Seesaw shaking)

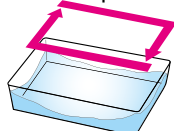
### Wave-PR

Wave-PR (Wave-shaped shaking) has less variation in the motion that enables the quite mild stirring constantly. Please note that when [if] a liquid volume quite less to the capacity of container/tray the liquid might not be moved to the center of tray.

【Liquid volume quite less】



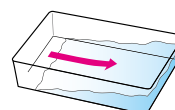
【Moderate liquid volume】



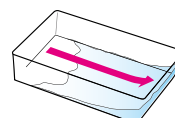
### Wave-SI

By making the longitudinal of the tray inclined and reducing the liquid volume the momentum and distance of liquid can be gained. Also even liquid volume is little that can be spreaded all over the container/tray. Please note that when [if] shaking thin samples such as PAGE the gel might be rounded at the end of the plates depending any tilt angle.







【Liquid volume little or Deep angle】



【Liquid volume large or Shallow angle】



# Example of Optional shaking platform in combination

Wave-PR (with Speed display)		Wave-SI (with Speed display)			
					
Disposable Centrifuge tubes for 50 mL	Large-size culture tray	Disposable Centrifuge tubes for 15 mL, Seesaw	100mL Color comparison tubes, Seesaw	Plastic containers or Dishes, Seesaw	Dishes or Trays, Seesaw
Centrifuge tube holder PR-3504	Large-size shaking platform WR-3636	Centrifuge tube holder PR-1808	Universal shaking platform MT-2030	Large-size shaking platform WR-3636	Two-tier shaking platform WR-2030
-	-	-	Horizontal clamp for Centrifuge tubes AT-0004	-	-

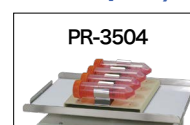
● Example of optional platform combination are selected optimally while Some combinations other than these described (e.g. Wave-PR with MR-2030 etc.) are available. Ask us for the combinations other than these as necessary.

## Stick sheet (PR/SI) ◀.....▶ Centrifuge tube holder for ST-2030 (additional option)

A white-colored non-slip sheet that used placing on the platform. Eco-friendly special silicon material adopted. Adhesion weakened with dust and dirt can be recovered by washing with water.



Holder that Disposable centrifuge tubes etc., placed on stick sheets for use. Can be placed one. Recommended to place in the direction of photo.



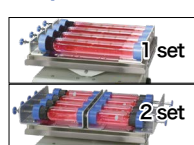
Model	ST-2030
Applicable models	Comes in Wave-PR/SI
Dimension	195×295×2Hmm

● Used any speed and angle the vessels not fallen.

Model	PR-1808	PR-3504
Applicable models	Suitable for Wave-SI	Wave-PR/SI
Vessels / Capacity	8pcs x Vessels with $\phi 16.5$ to 20mm and approx. 150mm in length (15mL Disposal centrifuge tubes)	4pcs x Vessels with $\phi 29$ to 35mm and approx. 150mm in length (50mL Disposal centrifuge tubes)

## Horizontal clamp for Centrifuge tube (PR/SI) ◀.....▶ Universal shaking platform (PR/SI)

This makes Centrifuge tube, Stoppered test tube or Water-compliant 100 mL Color comparison tube securely fixed. Optimal for Extraction experiment. Mounted on MT-2030 for use.



This is required when using Horizontal clamps for Centrifuge tubes on the left. Be sure use the clamps so that the vessels can be fixed.



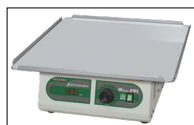
Model	AT-0004
Vessels	Diameter 10 to 37 mm, 4pcs in 1 set
Capacity	When 1 set: Vessels with 75 to 240 mm in length such as 100 mL Color comparison tube. (*) When 2 sets: Vessels with 75 to 110 mm in length such as 50 mL Centrifuge tube.

(\*)The vessels longer than 110 mm recommended for use in Wave-SI.

Model	MT-2030
Applicable models	Wave-PR/SI
Dimension	200×300×23Hmm

## Large-sized shaking platform (PR/SI)

Large sized culture trays and TC flasks can be mounted. Comes with 1pc Dedicated stick sheet. Remove the standard platform to replace it.



Model	WR-3636
Dimension	364×364×12Hmm

● Used any speed and angle the vessels not fallen.  
● Comes with Stick sheet.

## Two-tier shaking platform (SI)

Convenient to stain Mini Gel Comes with 1pc of Stick sheet ST-2030.



Model	WR-2030
Applicable models	Suitable for Wave-SI
Dimension	204×304×168Hmm

● Use any speed and angle the vessels not fallen. ● Maximum load should be 1.2kg when using this.  
● Comes with Stick sheet x1.

## The angles of platform for Wave-PR and Wave-SI.

### USER'S VOICE

I can handle to adjust the tilt angle according to the liquid volume and sample based on the advantages and disadvantages of the wave shaking and the seesaw shaking on the left page.



### Wave-PR

Indicator and Adjuster for the tilt angle are located on the right. 2°C to 6°C can be tilted to the horizontal.



### Wave-SI

Adjuster located for the tilt angle on the right and Indicator located on the back. 2°C to 10°C it can be tilted to the horizontal.



## Mini-size type (PR-12 and Wave-SI slim)

### USER'S VOICE

Mini-size type optimum for using confined areas such as inside Clean bench!



### PR-12

"Mild Mixer PR-12" (Page 60) available as mini size of Wave-PR. It can be used with the above-mentioned centrifuge tubes holder and adjusted for the tilt angle.



### Wave-SI slim

The body size about half for Wave-SI in and the platform size is the same for 1pc of Well plate. The tilt angle fixed.



## Mild mixer PR-12

**Performs mildly wave-shaped shaking. Suitable for Genomic DNA extraction etc. Disposable centrifuge tubes are stirred mildly. Suitable for Genomic DNA extraction etc. that require the shaking mildly.**

The same wave-shaped shaking with various options "Wave-PR" --> P.058



PR-12 with Centrifuge tube holders

Model	PR-12
Shaking motion	Wave-shaped shaking (Mild shaking)
Speed/Angle range (*1)	20 to 120r/min, 5 to 8° (Speed and Angle can be set separately)
Platform dimensions	150 x 150mm (inside)
Maximum load	Approx. 0.8kg (Optional vessel holder included) (*)
Timer	60-min Timer for the operation
Dimensions (W x D x H)	170 x 180 x 166mm
Weight	Approx. 2.5kg
Power supply	AC100V/0.5A
Standard accessories	1 x Stich sheet, 1 x Screwdriver

(\*) The vessels and samples should be placed that matches to the weight of main body in balance.

### Vessel holders



PR-1112



PR-1808



PR-3504

Product Name / Model	Vessels / Capacity
<b>Holder for Microtubes PR-1112</b>	1.5/2.0mL x 12
<b>Holder for disposable centrifuge tubes PR-1808</b>	15mL disposable centrifuge tube x 8
<b>Holder for disposable centrifuge tubes PR-3504</b>	50mL disposable centrifuge tube x 4

### Features

- Mild shaking (Wave-shaped shaking)
- The tilt angle of platform can be adjusted.
- The holder of centrifuge tubes and microtubes available as an option.

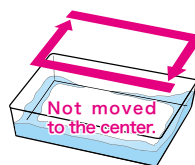
### Applications

- Mild shaking for Centrifuge tubes and Plastic containers, etc.
- Staining/Decolorization of Gels and Membranes
- Genomic DNA extraction, ImmunoPrecipitation, Trypsin-EDTA etc.

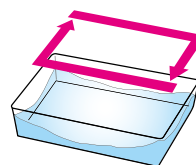
### Features for Wave-shaped shaking

Wave-shaped shaking has less variation in the motion that enables the quite mild stirring constantly. Please note that when [if] a liquid volume quite less to the capacity of tray the liquid might not be moved to the center of container.

(Liquid volume quite less)



(Moderate liquid volume)

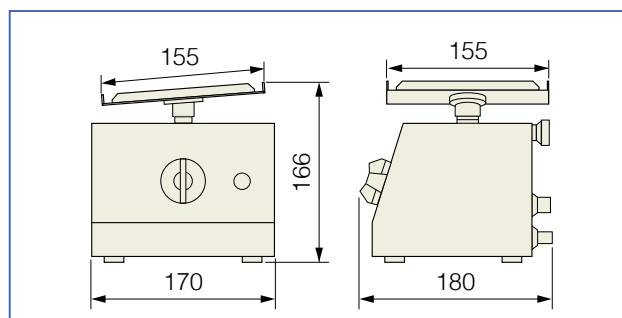


### USER'S VOICE

In order to make the best possible use of advantages of wave-shaped shaking you should use a centrifuge tube or in case of a plastic container you should make the liquid volume slightly larger.



### Dimensions





## Micro Mixer E-36

*Stirs 96-well plates and Microtubes securely. The stability improved thanks to stirring speed by the range switching. Simple and Easy-to-use for the operation.*

High-end model with temp. control and high stability and uniformity --> P.053

### Features

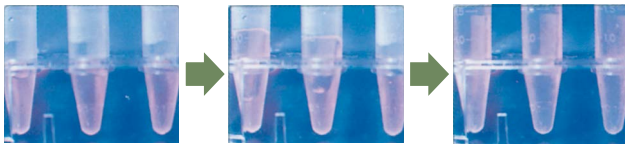
- Optimum for Stirring of 96-well plates and Microtubes
- Stabilized stirring by the range switching in Low/High speed.
- The rack for Microtubes available as an option.

### Applications

- Promotion of Eenzyme digestion of mouse tail etc.
- Promotion of ELISA reaction, Biopanning etc.
- Plasmid DNA extraction

### Features for Horizontal eccentric shaking

Horizontal eccentric shaking is a method designed that plural parallel microtubes are evenly hang for a stirring effect that is like Test tube mixers in which the tubes are stirred one by one. Optimum for 0.5/1.5mL Microtubes as well as 96-well Microplates and Deep well plates.



The state of stirring in Microtubes

E-36 with Microtube rack (Option)

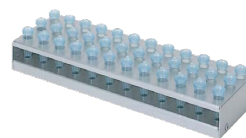


E-36 with Shaking platform for Well plates (Option \*2 sets can be fixed in standard while options available)

Model	E-36
Shaking motion	Horizontal eccentric shaking
Shaking speed (Range switching)	Low: 300 to 1000r/min High: 1200 to 2500r/min
Platform dimensions	270 x 96mm (inside)
Suitable Tubes/Plates	Microtubes (Optional racks below required) Well plates (2 sets can be fixed in standard) (*)
Timer	60-min Timer for the operation
Dimensions (W x D x H)	300 x 205 x 115mm
Weight	Approx. 5kg
Power supply	AC100 to 240V/0.5A

(\*) Well plate can be mounted directly in the standard while Optional shaking platform for well plates (WP-9602) is recommended to fix them securely.

### Option: Microtube racks etc.

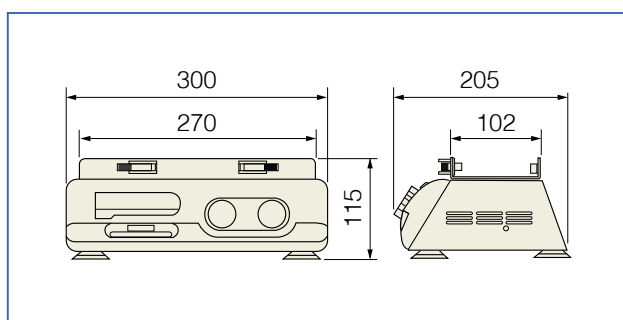


EM-1036



WP-9602

### Dimensions



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

Product Name/Model	Capacity of vessels / Remarks
<b>Microtube rack EM-0836</b>	0.5mLx36 Dimension:262x82x32Hmm
<b>Microtube rack EM-1036</b>	1.5mLx36 Dimension:262x82x32Hmm
<b>Shaking platform for well plate WP-9602</b>	For 2pcs of Microplate that cannot be fixed with Deep well plates or standard platforms. Remove the standard platform to replace it.

# Reciprocal shaker NR-1, Rotary shaker NR-2, Double shaker NR-3

**Compact sized easy to use for bench tops and inside Incubators. 3 models: Reciprocal, Orbital, Switchable Reciprocal shaking. Options are compatible with those of Bioshaker (Small sized).**

"Bioshaker BR-21/22/23 with temp. control" series --> P.018 OD-Monitors measuring turbidity while shaking --> P.034

Other platforms can be used with each model in combination other than the combination shown below.

NR-1 with Optional shaking platform



NR-2 with Optional shaking platform



NR-3 with Optional shaking platform

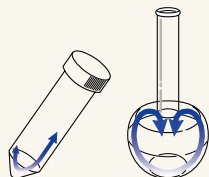


## Features

- Reciprocal shaking of Test tubes and Shake flasks [NR-1]
- Orbital shaking of mainly Erlenmeyer flasks [NR-2]
- Switchable Reciprocal/Orbital shaking [NR-3]

### Compatibility of Reciprocal shaking and Vessels.

Reciprocal shaking is suitable for Test tubes and Shake flasks. In shaking culture with Shake flasks, adjust the flow rate to 1/2 of the capacity so that the liquid can be moved properly.



Movement of liquid in Reciprocating shaking (left: Centrifuge tube, right: Shake flask)

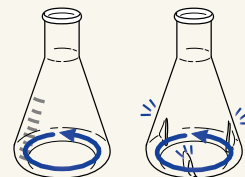
Shaking width is important rather than shaking speed so that the liquid moves like the figure in shaking flasks. The shaking width can be adjusted in NR-1/2/3.

## Applications

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

### Compatibility of Orbital shaking and Vessels.

Orbital shaking is suitable for Erlenmeyer flasks. In shaking culture with Erlenmeyer flasks, adjust the flow rate to 1/5 to 1/3 of the capacity so that the liquid can be moved properly.



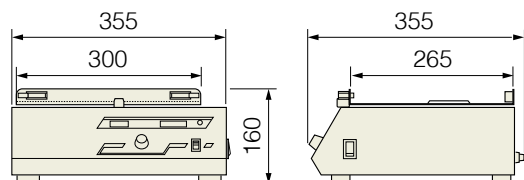
Movement of liquid inside Erlenmeyer flasks in Orbital shaking.

The baffled Erlenmeyer flask (right) has good aeration but is prone to bubbles so the applications are limited.

Model	NR-1	NR-2	NR-3
Shaking motion	Reciprocal shaking	Orbital shaking	Switchable Reciprocal/Orbital shaking
Shaking speed	20 to 200r/min		
Shaking width	10 to 40mm, Stepless (Default: 25mm)		
Platform dimensions and Capacity	290 x 250mm Erlenmeyer flask 500mL x 4, 3L x 1		
Maximum load	Approx. 5kg (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 / Weight	355 x 355 x 160mm, Approx. 13kg		
Power supply	AC220 to 240V/0.5A		

(\*)Shaking platform and vessel holder are option.

### Dimensions (Each model common)



### Related products: OD-Monitor series and Small-sized incubator



Can be combined with the "OD-Monitor series (page 34) that can automatically measure the turbidity of culture liquid (OD 600) without stopping shaking culture. Prepare the universal shaking platform and clamps when combining.




Can be put on the lowest shelf of "In vitro Box iB-130 (page 138) for use. \* No adverse effects from vibration verified. This is an energy-saving small size incubator that can control the temp. below RT. Very useful if no incubation room when culturing or incubation that requires low temp.

# Optional accessories and Capacity of Vessels

Small size incubator "in vitro box IB-130"-->P.138

## Spring net shaking platform and Capacity 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 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	1 tier (Height is changeable.)			
Dimension	290×250×108Hmm			
Weight	Apporx.1.1kg			
Capacity of vessel	φ16 mm test tubes (*1)	50 (*2)	Erlenmeyer flasks 250mL	5
	Disposable Centrifuge tubes for 50 mL	20 (*2)	Erlenmeyer flasks 300mL	5
	Erlenmeyer flasks 50mL	20	Erlenmeyer flasks 500mL	4
	Erlenmeyer flasks 100mL	10	Erlenmeyer flasks 1L	2
	Erlenmeyer flasks 200mL	9	Erlenmeyer flask 2L	1

(\*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°.

(\*3)Be careful when using Shake flask as it is fragile.

## Universal shaking platform and Capacity 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.			
Dimension	290×250×23Hmm			
Weight	Apporx.0.9kg			
Capacity of Vessels	Erlenmeyer flasks 50mL	20	Erlenmeyer flasks 500mL	4
	Erlenmeyer flasks 100mL	10	Erlenmeyer flasks 1L	2
	Erlenmeyer flasks 200mL	9	Erlenmeyer flask 2L	1
	Erlenmeyer flasks 250mL	5	Erlenmeyer flask 3L	1
	Erlenmeyer flasks 300mL	5	Sakaguchi flasks 500mL	4

## Angle rack for Test tube (Mounted on MT-2925 for use.)

Model	AT-1250	AT-1620	AT-1650	AT-1820
Capacity	φ12mm ×50	φ16.5mm ×20	φ16.5mm ×50	φ18mm ×20
Qty of mounting on MT-2925	2 (*1)	2 (*1)	2 (*1)	2 (*1)
Dimension (mm)	250×100×95H	285×70×80H	285×110×100H	320×70×80H
Weight	Apporx.0.8kg	Apporx.0.6kg	Apporx.0.9kg	Apporx.0.7kg


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

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

Model	AT-3518			
Capacity	50mL×18			
Qty of mounting on MT-2925	2 (When Angle rack tilted 45°)			
Dimension/Weight	285×110×102Hmm, Apporx.0.8kg			
Remarks	Be sure use below 50°C.			

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

## Stick sheet shaking platform

Model	SR-2925
	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	290×250×30Hmm, Apporx.1.1kg
Standard accessories	Stick sheet×1

## Stick sheet, Clamp belts



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
Dimension	290×250mm	Volume of Erlenmeyer flasks	200 to 500mL	1 to 3L (*1)

(\*1)Up to 2L of Erlenmeyer flask can be used with the NR-1/2/3 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>
	1L	<b>CF-1000</b>
	2L	<b>CF-2000</b>
 MT-2925 with Plural clamps mounted.	3L	<b>CF-3000</b>
	Sakaguchi flasks 500mL	<b>SF-0500</b>


## Angle rack for Erlenmeyer flasks

(Mounted on MT-2925 \*Clamps required for use)

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-2925	2 pcs (*1)	2 pcs (*1)
Dimension	250×110×50Hmm	300×110×50Hmm
Weight	Apporx.0.8kg	Apporx.0.9kg

(\*1)When Angle rack tilted 30°

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

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

(\*1) Up to 3 sets can be mounted on MT-2925 in NR-1/2/3 series. The vessel tips will protrude from MT-2925 when 3pcs are attached. Thus, be sure not to make them hit the surroundings during shaking.

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  
Minimize bath

Water bath  
Shaking water bath  
Immersion cooler

Hybridization oven  
Constant temperature chamber

Centrifugal concentrator  
Cold trap

Freeze dryer

Electrophoresis and blotting apparatus

Constant temperature water circulating system (Chiller)

Appendix



# 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).

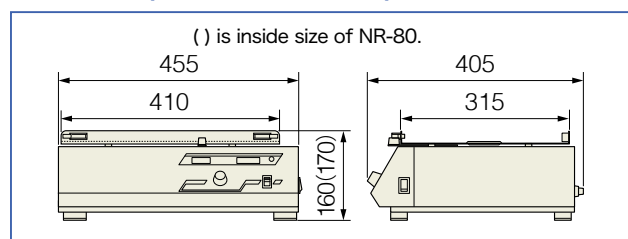


Shake-XR \*Dedicated for Figure 8 (Page 54) 3 pcs of 500mL Erlenmeyer flask Various options

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)

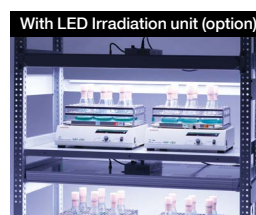


## Related products: Middle sized incubator and Culture shelf



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



# 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.)


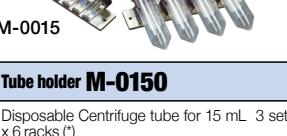
Shape	Vessels / Capacity	Model
	50mL	<b>CF-0050</b>
	100mL	<b>CF-0100</b>
	200mL	<b>CF-0200</b>
	250mL	<b>CF-0250</b>
	300mL	<b>CF-0300</b>
	500mL	<b>CF-0500</b>
	1L	<b>CF-1000</b>
	2L	<b>CF-2000</b>
	3L	<b>CF-3000</b>
	Sakaguchi flasks 500mL	<b>SF-0500</b>

## 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)	2 (*1)
Dimension	250x110x50Hmm	300x110x50Hmm
Weight	Apporx.0.8kg	Apporx.0.9kg

(\*1)When Angle rack tilted 30°

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

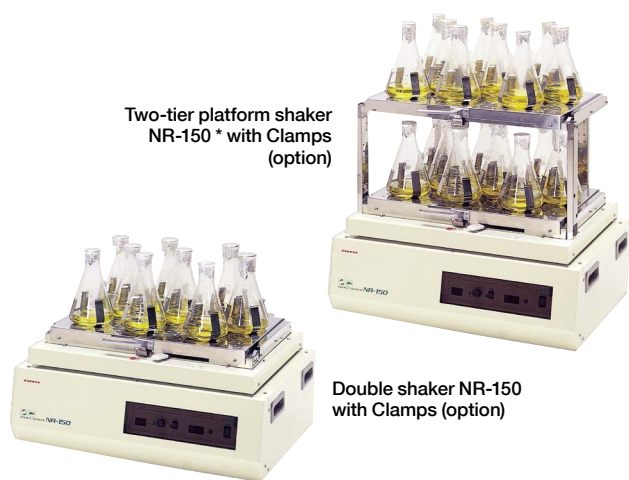
Model	M-0150	Tube holder M-0015
		
Capacity	1.5/2.0 mL Microtubes and Micro Vials, 3 sets x 8 racks	
Model	M-0500	Tube holder M-0500
		
Capacity	Disposable Centrifuge tube for 15 mL 3 sets x 6 racks (*1)	Disposable Centrifuge tube for 50 mL 3 sets x 4 racks (*1)

(\*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.

# Double shaker NR-150/Two-tier platform NR-150

**Being placed on the floor for use. Switchable Reciprocal/Orbital shaking. The capacity doubles in Two-tier platform. The adjustable shaking width enables effectively to stir large Erlenmeyer flasks and Shake flasks.**

"Bioshaker BR-300LF with temp. control" series --> P.024 "Bioshaker Double platform BR-300LF" series --> P.026 OD-Monitor Turbidimeter while shaking --> P.034



Shaking motion switching lever



Shaking platform drawer lever

## Features

- Switchable Reciprocal/Orbital, Shaking platform drawer lever
- Shaking width can be 10mm to 50mm by stepless
- The capacity doubles in Two-tier platform except some vessels

## Applications

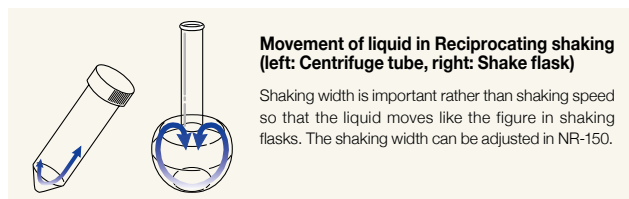
- Shaking culture of Microbes inside Incubators etc.
- Shaking culture of Algae etc. inside Incubators with LED irradiation
- Various Dissolution/Elution testing



The control unit is protected by an openable cover. (Photo shown the cover open)

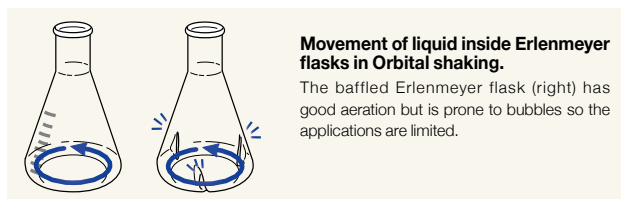
## Compatibility of Reciprocal shaking and Vessels.

Reciprocal shaking is suitable for Test tubes and Shake flasks. In shaking culture with Shake flasks adjust the flow rate to 1/2 of the capacity so that the liquid can be moved properly.



## Compatibility of Orbital shaking and Vessels.

Orbital shaking is suitable for Erlenmeyer flasks. In shaking culture with Erlenmeyer flasks adjust the flow rate to 1/5 to 1/3 of the capacity so that the liquid can be moved properly.

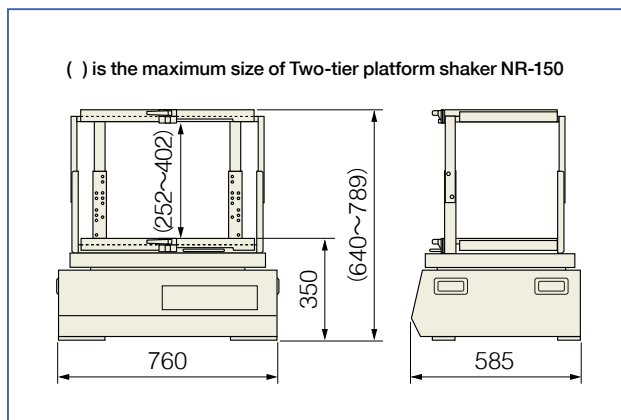


Model	NR-150	Two-tier platform NR-150
Shaking motion	Reciprocal/Orbital	
Shaking speed	25 to 250r/min	25 to 160r/min
Shaking width	10 to 50mm, Stepless (Default: 25mm)	
Platform dimensions and Capacity	600 x 400mm, Erlenmeyer flask 500mL x 15 (Two-tier platform 30pcs), 5L x 3	
Maximum load	Approx. 26kg (Shaking platform and vessel holders included *1)	
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)	760 x 585 x 350mm	760 x 585 x 789mm (*2)
Weight	Approx. 73kg	Approx. 83kg
Power supply	AC220 to 240V/2A	
Standard accessories	1 x Universal shaking platform MT-6040C (Two-tier platform : 2 sets), 4 x Spacer (2 x 1mm thick and 2 x 2mm thick), 4 x Slip prevention sheet, 1 x Hex wrench	

(\*1) When the clamps are attached to the platform of NR-150, the max. load of NR-150 is approx. 19kg and that of Two-tier platform is approx 10kg.


(\*2) The height is maximum value (Upper platform height can be adjusted.)

## Dimensions



# Optional accessories and Capacity of Vessels


## Universal shaking platform and Capacity of Flasks

Model		MT-6040C		
		It is used together Optional Clamps, Angle racks and “OD-Monitor” series. 2 sets used with Double shaking platform type (Standard accessories).		
Dimension/Weight		600×400×42Hmm, Apporx.7kg		
Capacity of Vessels	Erlenmeyer flasks 50mL	70	Erlenmeyer flasks 2L	6
	Erlenmeyer flasks 100mL	35	Erlenmeyer flasks 3L	4
	Erlenmeyer flasks 200mL	28	Erlenmeyer flasks 5L/ Disposable 3&5L	3
	Erlenmeyer flasks 250mL	21	Sakaguchi flasks 500mL	15
	Erlenmeyer flasks 300mL	21	Sakaguchi flasks 1L	9
	Erlenmeyer flasks 500mL	15	Sakaguchi flasks 2L	6
	Erlenmeyer flasks 1L	9	Sakaguchi flasks 3L	4
Capacity in Two-tier shaking platform type.				
Capacity of Vessels (two tiers in total)	Erlenmeyer flasks 50mL	140	Erlenmeyer flasks 2L (*)	6
	Erlenmeyer flasks 100mL	70	Erlenmeyer flasks 3L (*)	4
	Erlenmeyer flasks 200mL	56	Erlenmeyer flasks 5L/Disposable 3&5L (*)	3
	Erlenmeyer flasks 250mL	42	Sakaguchi flasks 500mL	30
	Erlenmeyer flasks 300mL	42	Sakaguchi flasks 1L (*)	9
	Erlenmeyer flasks 500mL	30	Sakaguchi flasks 2L (*)	6
	Erlenmeyer flasks 1L	18	Sakaguchi flasks 3L (*)	4

(\*) It cannot be used in the upper platform. Sakaguchi flask 3L with height 370Hmm assumed for use.  
 • Place the vessels (samples) so that the upper load lighter than the lower load.



## Spring net shaking platform and Capacity of Vessels.

(Mounted on MT-6040C for use)

Model	MR-4030L		
	The usable Shaking platform that Vessels can be easily mounted on regardless its shapes. Fixed with the screws on Platform MT-6040C for using. Up to Two sets can be mounted. (See Left figure.) 4 sets in total can be mounted on Two-tier platforms.		
Spring net Pitch	20mm		
Spring net Pitch	2 tier (Height is changeable.)		
Dimension/Weight	400×300×108Hmm, Apporx.2kg		
Capacity of Vessels (x2)	φ16 mm test tubes (*)	96pcs (When Four sets mounted: 2 x 96 = 196pcs) x 2 tiers	
	Disposable Centrifuge tube for 50 mL (*)	48pcs (When Four sets mounted: 2 x 48 = 96pcs) x 2 tiers	
	Erlenmeyer flasks		
	50mL	24pcs (When Four sets mounted: 2 x 24 = 48pcs) x 2 tiers	
	100mL	20pcs (When Four sets mounted: 2 x 20 = 40pcs) x 2 tiers	
	200mL	12pcs (When Four sets mounted: 2 x 12 = 24pcs) x 2 tiers	
	250mL	9pcs (When Four sets mounted: 2 x 9 = 18pcs) x 2 tiers	
	300mL	9pcs (When Four sets mounted: 2 x 9 = 18pcs) x 2 tiers	
	500mL	6pcs (When Four sets mounted: 2 x 3 = 12pcs) x 2 tiers	
	1L (*)	3pcs (When Four sets mounted: 2 x 3 = 6pcs) x 2 tiers	
	2L (*)	2pcs (When Four sets mounted: 2 x 2 = 4pcs)	
	3L (*)	1pcs (When Four sets mounted: 2 x 1 = 2pcs)	
	Sakaguchi flask 500mL	6pcs (When Four sets mounted: 2 x 6 = 12pcs) x 2 tiers	

(\*)1 The number is when Angle rack tilted 45°.  
 When below φ16mm test tubes, fix the test tube stand (incl. φ16mm) whole with the spring net.  
 (\*)2 Note: The kinds (size) of fixable vessels will less than those of Universal shaking platforms.  
 (\*)3 It cannot be used in the upper platform.  
 • Place the vessels (samples) so that the upper load lighter than the lower load.

## Clamps (Mounted on MT-6040C and AF-2070/2570 for use)

	Vessels / Volume	Model
 Above 300mL Clamps comes with Spring and Above 500 mL comes with Octagonal	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>
	1L	<b>CF-1000</b>
	2L (*)	<b>CF-2000</b>
	3L (*)	<b>CF-3000</b>
	5L (*)	<b>CF-5000</b>
 MT-6040C with Multiple clamps mounted.	3&5L (*)	<b>CF-3000DSP</b>
	500mL	<b>SF-0500</b>
	1L (*)	<b>SF-1000</b>
	2L (*)	<b>SF-2000</b>
	3L (*)	<b>SF-3000</b>

(\*)It cannot be used in the upper platform and can be used on the lower platform when that of upper removed.  
 (\*)2For Disposable Erlenmeyer flasks (Corning 3L and Thomson 5L).

## Angle rack for Test tubes

(Mounted on MT-6040C 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-6040C	4 (*)x2 tier	5 (*)x2 tier	4 (*)x2 tier	5 (*)x2 tier
Dimension (mm)	250x100x95H	285x70x80H	286x110x100H	320x70x80H
Weight	Apporx.0.8kg	Apporx.0.6kg	Apporx.0.9kg	Apporx.0.7kg

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

## Angle rack for Disposable Centrifuge tube

(Mounted on MT-6040C for use)

Model	AT-3518
Capacity	50mLx18
Qty of mounting on MT-6040C	4 (When Angle rack tilted 45°) x 2 tier
Dimension/Weight	285x110x102Hmm, Apporx.0.8kg
Remarks	Be sure be used below 50°C.

## Angle rack for Erlenmeyer flasks

(Mounted on MT-6040C \*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-6040C	4 (*)x2 tiers	4 (*)x2 tiers
Dimension	250x110x50Hmm	300x110x50Hmm
Weight	Apporx.0.8kg	Apporx.0.9kg

(\*)When Angle rack tilted 30°



# Vial Mixer VIX-100

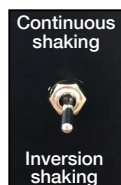
**Stirs 100 vials and Stoppered test tubes by high speed shaking and inversion function strongly. Optimum for Pretreatment of sample in the vial for analysis.**

A few small vials are stirred intensely. --> P.056



VIX-100 with 100pcs of 20mL Viral

## Shaking inversion function



Continuous shaking and Inversion shaking can be switched with the switch. When Reversing shaking  
<1>Shaking for 15 seconds  
<2>Stop for 5 seconds  
<3>Shaking for 15 seconds in the opposite direction  
will be automatically repeated.



Inversion shaking of Vials

## Fixation of Vials



Fix the vials by pressing them with the plate having the spongy contact surface with the vials. Hold down the test tubes and thin vessels with the rack such as test tube stand.

## Features

- Strong stirring of 100pcs of 20 mL vials at the same time
- 15 minutes Timer and Automatic shaking inversion function
- Easy fixation by the holding down vials collectively from the top

## Applications

- Stirring of large amount of vials and test tubes
- Extraction and Mixing-stirring of analysis samples
- Pretreatment of Liquid scintillation

## Adjustment of Shaking speed (Stirring force)



The shaking speed is adjusted by turning the analog dial. The scale is from 0 to 10. Approx. 2000r/min at 10 (No speed display).



Steady state

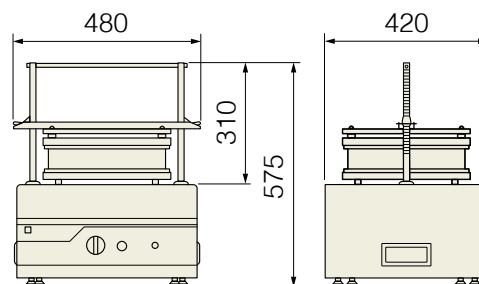


Stirring at Dial 3



Stirring at Dial 7

## Dimensions



Model	VIX-100
Shaking motion	Orbital shaking
Shaking speed	Up to approx. 2000r/min
Capacity	20mL Vial x 100, Up to 180mm length of Stoppered test tubes (The qty depends on the length.)
Timer	15-min Timer for the operation
Platform dimensions	325 x 325mm
Dimensions	480 (W) x 420 (D) x 575 (H) mm
Weight	Approx. 32kg
Power supply	AC100V/2A



# Reciprocal shaker SR-1

**Compatible with Test tubes and Erlenmeyer flasks. Shakes strongly with 50 mm shaking width. Equipped with 60-minute timer.**

Compatible in Shaking platform "Shaker for Elution testing TS-10" --> P.075

## Features

- Dedicated for Reciprocal shaking. 50 mm shaking width
- Shaking platform (option) 4 types.  
Capacity: 6pcs x 1L Erlenmeyer flask
- Timer operation for 60 minutes, Buzzer is rung at the finish.

## Applications

- Preparation of reagents and samples for analysis
- Shaking culture of Microorganisms inside constant temp. room
- Various mixing-stirring etc.

## Optional Shaking platform

Shaking platform not included. Please purchase one of the following together.



A Shaking platform for SR-1

2 sets of commercial test stand for 50 test tubes with  $\phi$  18 mm stoppers can be fixed by laying them horizontally.



C Shaking platform for SR-1

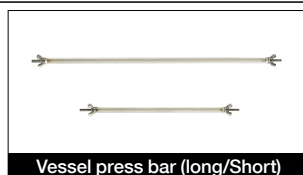
Up to 24pcs of Stoppered test tube and Centrifuge tubes of  $\phi$ 10 to 35mm x 100 to 120mm (length) can be mounted.

Model	Remarks
<b>A Shaking platform for SR-1</b>	470 (W *inside) x 300 (D) x 100 (H) mm, Approx. 2.8kg
<b>C Shaking platform for SR-1</b>	680 x 339 mm, Approx. 4.8kg



B Shaking platform for SR-1

Capacity: 6pcs x 1L (Standard). The vessel size and capacity can be changed by adding the press bars.



Vessel press bar (long/Short)

Capacity of Erlenmeyer flasks for B shaking platform, Additional number of Press bars			
50mL	40pcs (long 6, short 10)	300mL	15pcs (long 2, short 4)
100mL	24pcs (long 4, short 6)	500mL	8pcs (short 2)
150mL	15pcs (long 2, short 4)	1L	6pcs (unnecessary)

Product name / Model	Remarks
<b>B Shaking platform for SR-1</b>	Vessel press bars (long 6pcs/short 4ps) included (*), 470 (W *inside) x 300 (D) x 100 (H) mm, Approx. 2.8kg
<b>Vessel press bar (long) for SR-1</b>	For B Shaking platform additionally. $\phi$ 6mm x 505mm
<b>Vessel press bar (short) for SR-1</b>	B Shaking platform additionally. $\phi$ 6mm x 335mm

(\*) Might be required additionally due to the capacity. See the above for details.

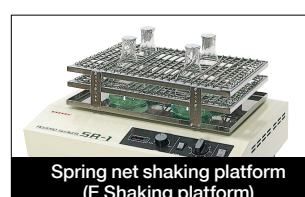
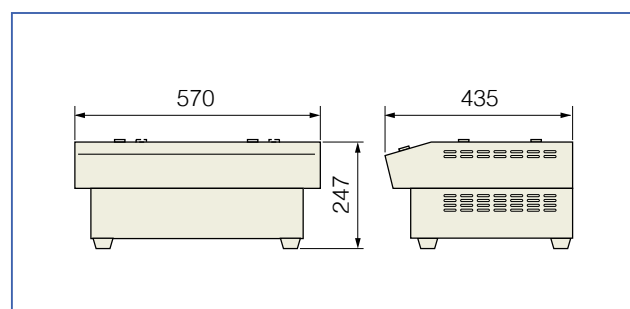


SR-1 with Test tube rack shaking platform

Model	SR-1
Shaking motion	Orbital shaking
Shaking speed	50 to 250r/min (*)
Shaking width	50mm (Fixed)
Maximum load	Approx. 7kg (Shaking platform included)
Timer	60-min Timer for the operation
Speed display	Digitally
Safety devices/functions	Motor protection circuit at overload, Fuse
Dimensions (W x D x H)	570 x 435 x 247mm
Weight	Approx. 45kg
Power supply	AC100V/2A
Standard accessories	1 x Drip-proof cover for Panel

(\*) Make the shaking speed below 160r/min when using Spring net shaking platform.

## Dimensions



Spring net shaking platform (E Shaking platform)

Various shaped vessels can be placed thanks to the spring net. (There is speed limitation for using it)

Model	Remarks
<b>E Shaking platform for SR-1</b>	460x300x120Hmm, about 2.7kg (*)

(\*) Be sure use below 160r/min.

# Strong shaker SR-2DS/2DW

**Shakes Separatory funnels vertically powerfully with energy saving. Compatible with other vessels. Low noise with our proprietary "Silent swing mechanism".**

Optimum for Soil elution testing, Soil harmful metals contained testing "Elution testing Shaker TS-20" --> P.076



SR-2DS with Separatory funnel shaking platform (Option)



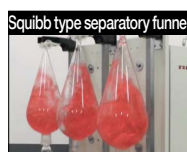
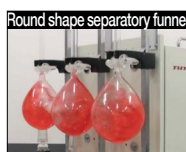
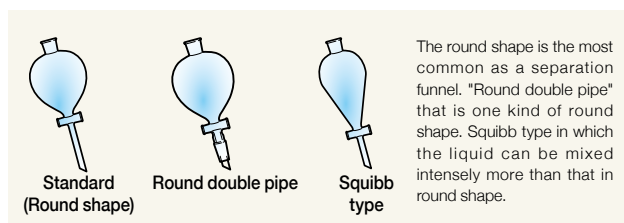
SR-2DS with Test tube shaking platform (Option)



SR-2DW with Separatory funnel shaking platform (Option)

## Shakeable separatory funnel and vessels

3 types separatory funnels available. The holders that can fit to each is prepared. Erlenmeyer flask, Centrifuge tube and Polyethylene bottle (Ask us for details) can be shaken with it.



Model	SR-2DS	SR-2DW
Shaking motion	Reciprocal (Vertical and Horizontal)	Reciprocal (Vertical)
Shaking speed	Vertical: 100 to 300r/min (*1) Horizontal: 50 to 300r/min	50 to 300r/min (*2)
Shaking width	40mm (Fixed)	
Capacity	3pcs of Up to 1L Separatory funnel (SR-2DW 6pcs) (*3)	
Maximum load	Approx. 7.5kg (Shaking platform included)	One side: Approx. 7.5kg (Shaking platform included)
Timer	Digital ON/OFF Timer (1min to 99h59min)	
Speed display	Digitally	
Safety devices/ functions	Motor protection circuit at overload, Fuse	
Dimensions (W x D x H)	410 x 585 x 500mm	410 x 760 x 500mm (*2)
Weight	Approx. 49kg	Approx. 57kg
Power supply	AC220 to 240V/1.2A	

(\*1) Might not be smoothly shaken at 50 to 99r/min.

(\*2) The shaker works when the platforms are mounted both side but while not work when the platform is mounted only one side.

## Features

- Vertical shaking and Horizontal shaking [SR-2 DS]
- Dedicated for Vertical shaking. The capacity doubles SR-2DS [SR-2DW]
- The start time of shaking and the intermittent shaking can be set by the timer.

## Applications

- Liquid extraction of analysis samples such as residual pesticides and soil components.
- Pretreatment of Solid phase extraction of analytical sample
- Various mixing-stirring etc.

## Digital ON/OFF timer that improves reproducibility.

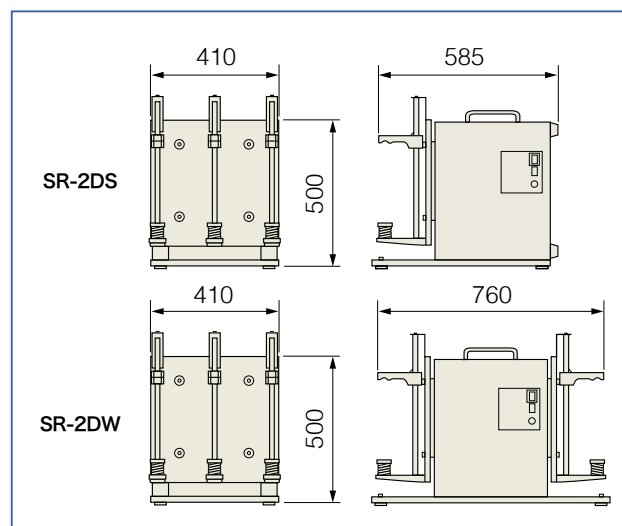
Equipped with ON/OFF timer that can be set as desired for start time and finish time. During timer operation both preset time and elapsed time are displayed and the shaking can be paused by turning OFF the shaking. Plus, the preset time and elapsed time can be always monitored even if timer is not used (The notification function by buzzer).

## We can meet various customization.



For example You want to install Emergency stop button on the top of main body You want to shake a vessel that cannot fit into the standard flask adapter. Please feel free to contact us.

## Dimensions



# Optional accessories and Capacity of Vessels

## Separatory funnel shaking platform (For Vertical shaking in SR-2DW/2DS)

Model	Standard (Round shape)	Round double pipe	Squibb type	Capacity
<b>HE-3 for SR-2</b>	50mL to 1L	—	50mL to 1L	3
	2L	—	—	2
<b>HE-3W for SR-2</b>	100mL to 1L	100mL to 1L	100mL to 1L	3
	2L	2L	—	2
<b>HE-5 for SR-2</b>	50mL to 200mL	—	50mL to 200mL	5
	300mL to 500mL	—	300mL to 500mL	3
	1L, 2L (*)	—	1L	2 (*)
<b>HE-5W for SR-2</b>	50mL to 200mL	100mL to 200mL	50mL to 200mL	5
	300mL to 500mL	300mL to 500mL	300mL to 500mL	3
	1L	—	1L	2
<b>FU-1R for SR-2</b>	100mL to 3L	—	—	1
<b>FU-2S for SR-2</b>	100mL to 2L	—	100mL to 2L	2
<b>FU-3S for SR-2</b>	100mL to 1L	—	100mL to 1L	3
	2L	—	2L	2

(\*) Up to 1pc for liquid 1L and up to 2pcs for less than liquid 500mL can be attached when 2L is used.

● In SR-2DR, mount and use two separatory funnel shaking platform of the same type.

● The vessels other than these described cannot be used. Contact us for a vessel other than these.

● The number of racks is limited by size and weight of separatory funnel, e.g. HE-3 equipped with 3 holders whereas up to 2pcs be limitedly attached when 2L round type separatory funnel. Be sure not attach the separatory funnel to the center holder.

● The holders are sold singly (below).

● The platform of former model SR-2S/2W can also be used.




HE-5



In the photo the separatory funnels in different size are attached but attach the separatory funnels in same size in balance when use. The holders (highlighted in pink) are sold singly. Contact us for singly sales of the table (Plate part, Weight 1.87 kg).

Type	code	Weight	Type	code	Weight
<b>Holders for HE-3/HE-5</b>	1927	Apporx.0.8kg	<b>Holders for FU-1R</b>	1930	Apporx.1.7kg
<b>Holders for HE-3W/HE-5W</b>	62443	Apporx.0.8kg	<b>Holders for FU-2S/FU-3S</b>	1929	Apporx.1.1kg

## Test tube/Centrifuge tube shaking platform

	Product Name / Model	Capacity of Vessel/Remarks	Dimension/Weight
① 	<b>Test tube rack shaking platform A shaking platform for SR-2</b>	Stoppered test tube stand (φ18 mm 50pcs) can be placed 2 set horizontally. ● Horizontal shaking in SR-2DS	410×300×100Hmm Apporx.2.6kg
② 	<b>Test tube shaking platform C shaking platform for SR-2</b>	φ10 to 35mm Stoppered test tube can be set.  Test tube length 45mm to 145mm, Max. weight of vessels 100g, Max. 20pcs (* 1) ● Horizontal shaking in SR-2DS, Vertical shaking in SR-2DW  Test tube length 138mm to 244mm, Max. weight of vessels 250g, Max. 10pcs (* 2) ● Horizontal shaking in SR-2DS	465×408mm Apporx.4.2kg
③ 	<b>Test tube shaking platform C half shaking platform for SR-2</b>	Up to 10 pcs of Stoppered test tube and Centrifuge tube (φ10 to 37mm x100 to 120mL in length) can be set. ● HE-3 is required for installation (HE-5 Unusable) ● For Vertical shaking in SR-2DW/2DS	408×250mm Apporx.2.4kg




(\*) 1) The vessels length differ slightly depends on the thickness and shape of vessels. (2) Horizontal shaking in SR-2DS

● The vessels other than these described cannot be used. Contact us for a vessel other than these.


● The platform of former model SR-2S/2W can also be used.

# Optional accessories and Capacity of Vessels

## Shaking platform for Erlenmeyer flasks and other vessels

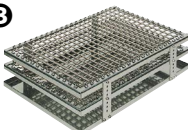
	Product Name / Model	Remarks	Vessels / Capacity
<b>4</b>  <p>The bottom holding plate is <math>\phi 80</math> mm.</p>	<b>A adapter for Flask</b>	This is for Erlenmeyer flask be attached to separatory funnel shaking platform. Applicable vessels are up to 350 mm in height, the flat bottom and the diameter of lid that fits to the diameter of adapter.	Up to 300mL Erlenmeyer flasks, Up to 200mL Messzylinder *Upper retainer for $\phi 10$ to 35mm available as an option.
<b>5</b>  <p>The bottom holding plate is <math>\phi 80</math> mm.</p>	<b>B adapter for Flask</b>	<ul style="list-style-type: none"> <li>●Dedicated for Vertical shaking in SR-2DW/2DS</li> </ul>	Plastic bottle, GL-45 screw cap bottle, Bottle for water quality inspection *Upper retainer for $\phi 38$ to 55mm available as an option.
<b>6</b> 	<b>Plastic bottle adapter (for SR-2)</b>	This is for Plastic bottle be attached to separatory funnel shaking platform.	For 2L and 3L *SR-2DS should be used at below 250r/min in Horizontal shaking.

● This is for Plastic bottle be attached to separatory funnel shaking platform. ● The platform of former model SR-2S/2W can also be used.

	Product Name / Model	Remarks	Capacity of Vessel	Dimension/Weight
<b>7</b> 	<b>Erlenmeyer flask shaking platform B shaking platform for SR-2</b>	6pcs of 500mL can be attached by the vessel press bars (accessories) *4pcs: Long, 6pcs: Short. The press bars will be required additionally depending on the number of vessels. ●Horizontal shaking in SR-2DS	50mL: 30pcs 100mL: 20pcs 200 to 300mL: 12pcs 500mL: 6pcs 1L: 4pcs	Dimension: 410×300×100Hmm Weight: Appox. 2.6kg

(\*) "Vessels press bar for SR-2 (Long)" and "Vessels press bar for SR (Short)". Ask us the required number. ● The platform of former model SR-2S/2W can also be used.

## Shaking platform

	Product Name / Model	Capacity of Vessel/Remarks	Dimension/Weight
<b>8</b> 	<b>Spring net shaking platform E shaking platform for SR-2</b>	This enables various shaped vessels being fixed on the platform. ●Horizontal shaking in SR-2DS, Below 160r/min	Dimension: 410×300×100Hmm Weight: Appox. 2.5kg

● The platform of former model SR-2S/2W can also be used.

## Mojonnier tube shaking platform (for SR-2DS \* See the next page for details)



# Mojonnier tube shaker SR-2DS with M Shaking platform

*Invented to remove the variation in shaking Mojonnier tube by hand. Improved the efficiency and repeatability of fat extraction testing that have conventionally been by hand shaking.*

## Features

- Shakes six Mojonnier tubes can at once.
- The Shaking duration can be set as desired by the timer.
- Transparent resin cover to prevent scattering of chemical solution
- The lid bracket with a lock function so as it is not open during shaking.

## Applications

- Fat extraction testing using majonia tube

### The comparison test for Shaking tube by hand versus Shaker with tubes

Put 100g of sample was into Mojonnier tube. Compared an amount of fat extraction between Shaking tube by hand to Shaker with tubes for 1 min. As a result we verified Shaker with tubes could be used equally as Shaking tube by hand. \* The shaking speed for Shaker with tubes was 240r/min.

Samples	Lipid	
	Shaking tube by hand	Shaker with tubes
Premix powder (1)	7.3	7.5
Premix powder (2)	2.2	2.4
Donut	7.8	17.6
Pasta sauce	30.1	28.2
Flour	5.8	6.1
Dough	2.1	2.1



VS.

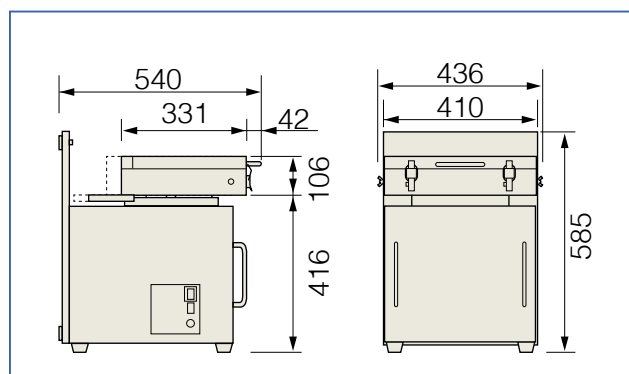


## USER'S VOICE

In the determination of lipids by the acid decomposition method food samples are heated with hydrochloric acid to conduct hydrolysis. Then lipids are extracted with diethyl ether and petroleum ether using a Mojonnier tube.



## Dimensions



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

Model		SR-2DS with M Shaking platform
M Shaking platform for SR-2DS	Capacity	6 pcs x Mojonnier tube
	Weight	Approx. 5kg
	Dimensions (W x D x H)	373 x 408 x 106mm (Protrusions not included)
Strong Shaker SR-2DS	Shaking motion	Reciprocal (Vertical and Horizontal)
	Shaking speed	50 to 300r/min (Horizontal shaking)
	Shaking width	40mm (Fixed)
	Maximum load	Approx. 7.5kg (Shaking platform included)
	Timer	Digital ON/OFF Timer (1min to 99h59min)
	Speed display	Digitally
	Safety devices/functions	Motor protection circuit at overload, Fuse
	Dimensions (W x D x H)	410 x 585 x 500mm
	Weight	Approx. 49kg
	Power supply	AC100V/1.2A
Dimensions (W x D x H)/Weight		436 x 540 x 585mm, Approx. 54kg

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

Hybridization oven  
Constant temperature chamber

Centrifugal concentrator  
Cold trap

Freeze dryer

Electrophoresis and blotting apparatus

Constant temperature circulating water system [Chiller]

Appendix

# Shaker for Food inspection pretreatment SR-10

**Conformed to the official method of food allergen testing. Shakes large amount of Disposable centrifuge tubes horizontally. Comes with 50mL Disposable centrifuge tubes 32 pcs. Capacity of that will be 96pcs by adding the shaking platforms.**

A few Centrifuge tubes are shaken horizontally. --> P.054 A few Centrifuge tubes are stirred intensely. --> P.056



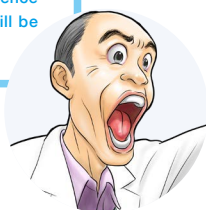
SR-10 with 2-tier platform

## Food allergen inspection and Official method

Dangerous for one with allergies to eat the processed food that contains allergen food. Thus, food manufacturers are obliged to clearly state the use/non-use of allergen food in processed foods and they conduct allergen testing on a daily basis. In the examination the method is taken that allergen substance is extracted and confirmed by ELISA that is defined as official method. The simple extraction method (10min after boiling, Vortex etc.) is used in daily voluntary inspections while the extraction work should be conducted for more than 12 hours by using this kind of shaker based on official method when they report it externally.

### USER'S VOICE

A food ingredient that contains allergen is so called Specific raw material. The number of Specific raw material has been increased year after year. Hence this shaker for food inspection pretreatment will be further active in the field from now onward!



Model	SR-10
Shaking motion	Reciprocal shaking
Shaking speed	50 to 250r/min
Shaking width	45mm (Fixed)
Capacity	32pcs of Disposable centrifuge tube for 50mL (Max. 96pcs by adding shaking platforms)
Maximum load	Approx. 10kg (Shaking platforms not included)
Timer	Digital ON/OFF Timer (1min to 99h59min)
Speed display	Digitally
Safety devices/functions	Motor protection circuit at overload, Fuse
Dimensions (W x D x H)	740 x 438 x 330mm (1-tier platform *Height 435mm at 3-tier platform)
Weight	Approx. 70kg
Power supply	AC100V/1A
Standard accessories	1 x C Shaking platform for SR-10 (*)

(\*) Up to 3 sets of C Shaking platform can be added to this unit.

We contribute to the development of research and industry.  
**TATEC** [ 2019-2020 General Catalog ]

## Features

- Horizontal shaking of 50 mL Disposable centrifuge tube. Capacity Max. 96pcs
- Matched to the shaking function required in the extraction process of official method
- Equipped with ON/OFF Timer to improve work efficiency

## Applications

- Extraction in food allergen testing with official method
- Elution in pesticide residue inspection in food
- Applications that require shaking of a large amount of centrifuge tubes

## Digital ON/OFF timer that improves reproducibility.

Equipped with ON/OFF timer that can be set as desired for start time and finish time. During timer operation both preset time and elapsed time are displayed and the shaking can be paused by turning OFF the shaking. Plus, the preset time and elapsed time can be always monitored even if timer is not used (The notification function by buzzer).

## Optional accessory: shaking rack (for addition)

Model	Remarks
<b>C shaking rack for SR-10</b>	50mL disposable centrifuge tube x32 Dimension : 680x310mm

## Custom-made shaking platform are available

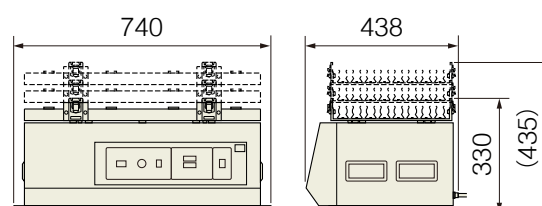
We can provide Custom-made shaking platforms such as that can fix a large test tube rack (Stoppered test tube inside). Ask us for details.



Example of Large test tube rack (Stoppered test tube inside)

## Dimensions

( ) is the height of Three-tier platform shaker SR-10



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

# Elution testing shaker TS-10

**Optimum for Soil elution testing, Soil harmful metals contained testing and the leaching operation of harmful metals contained from industrial waste.**

Compatible in Shaking platform "Reciprocal shaker SR-1" --> P.069

## Features

- Powerful shaking of Polyethylene jars
- Capacity: 2pcs for 5L/6pcs for 2L (See below)
- Max. load 10kg, Energy-saving 70Wh, with Timer

## Applications

- Harmful metals contained from soil and industrial waste.
- Extraction of analytical samples with Polyethylene jars.
- Various mixing-stirring etc.

## Soil elution testing and Soil harmful metals contained testing

This unit is optimum using for Soil elution test and Soil content test in the pretreatment.

## Capacity /Volume for Polyethylene jars

Placement	Volume and Capacity				
Horizontally	5L	3L	2L	1L	500mL
	2pcs (*1)	4pcs	6pcs (*1)	9pcs	21pcs (*1)
Vertically	-	-	-	1L	500mL
	-	-	-	10pcs (*1)	12pcs (*2)
Vertically (Below 200r/min)			2L	1L	500mL
		-	6pcs (*1)	12pcs (*1)	20pcs (*3)

(\*1) Addition of Vessel press bar (1pc/short) is required. (\*2) Addition of Vessel press bars (4pcs/short) is required. (\*3) Addition of Vessel press bars (3pcs/short) is required.

## Option: Vessel press bars (for addition) and Shaking platform for SR-1

Shaking platforms for TS-10 are compatible with A/B/C/E shaking platform for SR-1. (Replace it by removing standard platform)

Model	Remarks
<b>Vessel press bar (long) for TS-10</b>	Please purchase any as necessary referring to the above capacity.
<b>Vessel press bar (short) for TS-10</b>	
<b>A shaking platform for SR-1</b>	Test tube rack shaking platform
<b>B shaking platform for SR-1</b>	Flask shaking platform
<b>C shaking platform for SR-1</b>	Test tube shaking platform
<b>E shaking platform for SR-1</b>	Spring net shaking platform

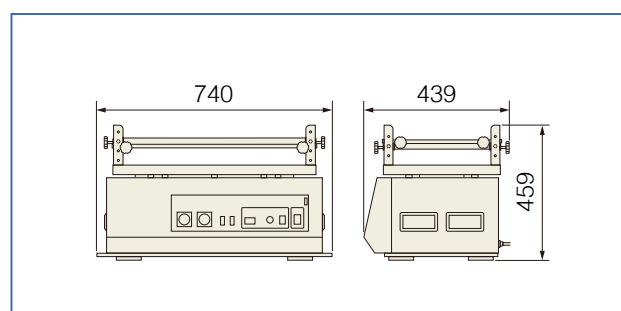


TS-10 with 4pcs for 3L Polyethylene jar.

Model	TS-10
Shaking motion	Reciprocal shaking
Shaking speed/width	50 to 250r/min, 45mm (Fixed)
Capacity	Polyethylene jar: Max. 2pcs for 5L/Max. 6pcs for 2L (See left figure)
Maximum load	Approx. 10kg (Shaking platform and Vessel press bars not included)
Timer	For setting shaking start time, For setting operation time - (Each Max. 300H)
Speed display	Digitally
Safety devices/functions	Motor protection circuit at overload, Fuse
Dimensions (W x D x H)	740 x 439 x 459mm
Weight	Approx. 70kg
Power supply	AC100V/1A (Power consumption: approx. 70Wh)
Standard accessories	Vessel press bars (long 3/short 3) for TS-10, Adjustment screwdriver for Timer

(\*) Up to 3 sets of C Shaking platform can be added to this unit.

## Dimensions



# Elution testing shaker TS-20

**Suitable for Soil elution testing, Soil harmful metals contained testing and the leaching operation of harmful metals contained from industrial waste.**

"Planetary centrifugal stirrer for volatile substance elution GR-5" --> P.082

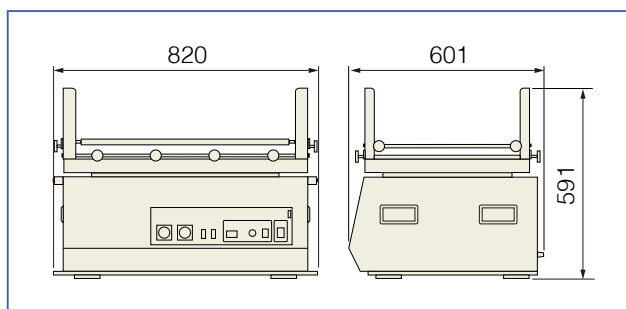


TS-20 with 10pcs for 3L Polyethylene jar.

Model	TS-20
Shaking motion	Reciprocal shaking
Shaking speed/width	25 to 200r/min, 10 to 50mm, Stepless (Default: 45mm)
Capacity	Polyethylene jar: Max. 6pcs for 5L/Max. 14pcs for 2L (See right figure)
Maximum load	Approx. 20kg (Shaking platform and Vessel press bars not included)
Timer	For setting shaking start time, For setting operation time - (Each Max. 300H)
Speed display	Digitally
Safety devices/functions	Motor protection circuit at overload, Fuse
Dimensions (W x D x H)	820 x 601 x 591mm
Weight	Approx. 100kg
Power supply	AC100V/1A (Power consumption: approx. 70Wh)
Standard accessories	Vessel press bars (long 4/short 4) for TS-20, Adjustment screwdriver for Timer

(\*1) Addition of Vessel press bar (1pc/short) is required.  
(\*2) Addition of Vessel press bars (4pcs/short) is required.  
(\*3) Addition of Vessel press bars (8pcs/short) is required.

## Dimensions



## Features

- Capacity: 6pcs for 5L/14pcs for 2L (See below)
- Dedicate for Polyethylene jars. Capacity and Max. load double those of TS-10

## Applications

- Harmful metals contained from soil and industrial waste.
- Extraction of analytical samples with Polyethylene jars.
- Various mixing-stirring etc.

## Soil elution testing and Soil harmful metals contained testing

This unit is suitable using for Soil elution test and Soil content test in the pretreatment.

## USER'S VOICE

TS-10/20 had been originally designed for Soil harmful metals contained testing based on official method whereas they were started being used for also Soil elution testing after Horizontal shaking had been recommended for use in Soil elution testing.



## Capacity for Polyethylene jars

Placement	pcs				
Horizontally	5L	3L	2L	1L	500mL
	6pcs	10pcs	14pcs	21pcs	44pcs
Vertically	5L	3L	2L	1L	500mL
	6pcs (*1)	8pcs (*2)	12pcs (*2)	20pcs (*3)	30pcs

(\*1) Addition of Vessel press bar (1pc/short) is required.

(\*2) Addition of Vessel press bars (4pcs/short) is required. (\*3) Addition of Vessel press bars (8pcs/short) is required.

## Option: Vessel press bars (for addition)

Product Name / Model	Remarks
Vessel press bar (long) for TS-20	Please purchase any as necessary referring to the above capacity.
Vessel press bar (short) for TS-20	