



## Yamato Stirrers and Shakers

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# Magnetic Stirrer with Hot Plate

MH301-115V MH301-220V / MH520-115V MH520-220V  
 MH800-115V MH800-220V / MG600H-115V MG600H-220V

Stirring rate (rpm)	400~1500 MH301	150~1150(50Hz)/150~1300(60Hz) MH520	100~1400 MH800	300~1500 MG600H	Stirring capacity(ml)	100~3000 MH301	50~5000 MH520	200~10000 MH800	100~2000 x 6 MG600H	Plate max. temp.	300°C MH301	325°C MH520	250°C MH800/MG600H
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MH301-115V  
MH301-220V

MH520-115V  
MH520-220V

MH800-115V  
MH800-220V

## Strong stirrer with ceramic coating material

MH301/800

- Hot plate is made of chemical resistant, heat conductive aluminum with ceramic coating
- Stirrable for high viscosity sample
- Volume knob type temperature control

## High temperature / boiling type magnetic stirrer with hot plate

MH520

- Stable rotation brings better results
- Excellent temperature stability and temperature rising speed with the adoption of round plate with good thermal efficiency
- Chemical resistant ceramic coating hot plate
- Equipped with circuit protector
- Strong stirring capacity up to 5L
- 20~60mm stirrer bar available

### Specifications

Model	MH301-115V MH301-220V	MH520-115V MH520-220V	MH800-115V MH800-220V
Plate material	Aluminum with ceramic coating		
Plate dimensions	W176xD151mm	ø168mm	W299xD285mm
Stirring capacity	100~3000ml	50~5000ml	200~10000ml
Stirring rate	400~1500rpm	150~1150rpm (50Hz) 150~1300rpm (60Hz)	100~1400rpm
Heater	400W	470W	1000W
Temp. control	Triac input control type		
Hot plate temp.	Max.300°C (set by volume with OFF)	Max.325°C	Max.250°C (set by volume with OFF)
Motor	AC motor, condenser motor	Induction motor, Phase control / electromagnetic brake combination	AC motor, condenser electronic control 3W
Power source (50/60Hz)	AC115V 4A AC220V 2.5A	AC115V 5.5A AC220V 3.5A	AC115V 10A AC220V 6A
External dimensions*	W184 x D202 x H114 mm	W190 x D223 x H123 mm	W309 x D315 x H151 mm
Weight	~2.6kg	~3.1kg	~6.7kg
Accessory	Stirrer bar 30mm 1pc.	Stirrer bar 30mm 1pc.	Stirrer bar 40mm 1pc.

\* Protrusions excluded

### MH520 optional item

Product code	Product name
231397	Tipping preventor



MH520+Tipping preventor (optional)

## 6 Points Controllable Type (individual stirring heating)

MG600H-115V / MG600H-220V

- Rotation and heating can be adjusted individually
- Equipped with circuit protector
- Chemical resistant ceramic coating hot plate



MG600H-115V  
MG600H-220V

### Specifications

Model	MG600H-115V MG600H-220V
Plate material	Aluminum with ceramic coating
Plate dimensions	ø126mm x 6pcs.
Stirring capacity	100~2000ml x 6pcs.
Stirring rate	300~1500rpm
Hot plate	W230mm x 6pcs. Individual temp. control (set by volume with OFF)
Cooling	--
Heater	230W x 6pcs.
Temp. control	Triac input control type
Hot plate temp.	Max.250°C
Motor	AC shading motor
Power source (50/60Hz)	AC115V 13.5A AC220V 7A
External dimensions*	W606 x D420 x H122 mm
Weight	~14kg
Accessory	Stirrer bar 30mm 6 pcs.

\* Protrusions excluded

# Laboratory Flask Mixer

## LM100/110/200/210 Series

Max. Speed Range 50 ~1000rpm

Max. Torque 0.1N·m



LM100

LM200  
with Digital Display



**LM Series compact design flask mixer features integrated drive and stirring seal allowing direct installation of flask and stirring in a vacuum and sealed state. No time-consuming shaft alignment required. Its strong stirring power is perfect for samples of high volume and high viscosity.**

**LM100/110 is designed with manual type rotation speed while LM200/210 is equipped with digital indicator.**

- Wide range rotation speed of 50-1000 rpm
- Capable of vacuuming up to 399.9Pa without impairing rotation efficiency
- Directly attachable to a three-neck flask 24/40, 29/42 optional
- Maintenance free and superior DC brushless motor
- Belt drive transmission minimizes noise and vibration
- Variety of stirring shafts and blades available to handle small to large volume samples
- Fluorine rubber seal as standard for shaft seal, superior chemical resistant Teflon® rubber seal available as option
- At the flask joint, FKM o-ring is used as standard, superior chemical resistant Kalrez® o-ring available as option
- Equipped with 24/40 rotary joint, 29/42 optional
- Capable of AC100-240 by changing power cord

### Specifications

Model	LM100	LM110	LM200	LM210
Operating temp. range	5°C~35°C			
Operating speed range*1	50~1000rpm			
Max. torque	0.1N·m			
Max. ultimate vacuum	≤399.9Pa			
Exterior	PBT /ADC12 (Surface treatment: Baking finish)			
Motor	DC brushless motor 30 W			
Power switch	Speed control dial with switch (stepless adjustment)			
Rotation speed indication	None		3 digits ×10 rpm (Digital display)	
Operation indicator lamp	LED (Green)		None (Confirm operation with speed indicator)	
Adaptable flask size	50~5000ml			
Joint size	TS24/40			
Chuck	ø8mm (ø7.9~7.95)			
Sealing material	PTFE (rotary joint) / FKM (oil seal,o ring)			
Safety device	Overload protection function*2, coupling cover (hair entanglement prevention structure), slow start function			
External dimensions	W69 × D108 × H222 mm			
Power source	Single phase AC100V~AC120V 50/60Hz 1A	Single phase AC200V~AC220V 50/60Hz 1A	Single phase AC100V~AC120V 50/60Hz 1A	Single phase AC200V~AC220V 50/60Hz 1A
Power cord	A type 3P (AC115V 50/60Hz)	O type 3P (AC220V 50/60Hz)	A type 3P (AC115V 50/60Hz)	O type 3P (AC220V 50/60Hz)
Weight	700 g (main body only)			
Included accessories	Hexagon socket head cap screw & wrench, AC adapter, 3m power cord, Coupling cover, handle(arbor), flask clip			
Operational accessories*3	Stirring shaft (PTFE, stainless steel, glass), propellers (different types and sizes), stand			

\*1 Max. revolutions differ depending on the combination of oil seal + stirring shaft  
50~1000rpm: FKM oil seal + PTFE stirring shaft / PTFE oil seal + glass or SUS stirring shaft  
50~300rpm: FKM oil seal + glass or SUS stirring shaft / PTFE oil seal + PTFE stirring shaft

\*2 When load exceeding maximum torque is applied, current limit circuit automatically controls the current to protect the motor

\*3 Sold separately

### LM Set Guide

<b>LM-100A</b>	LM-100 SET MAIN BODY, STAND, PTFE STIRRING BAR W/ PROPELLER L450mm×φ50mm, BURETTE CLAMP φ9.5~φ29mm and Double Opening Clamp 3~55mm.
<b>LM-110A</b>	LM-110 SET MAIN BODY, STAND, PTFE STIRRING BAR W/ PROPELLER L450mm×φ50mm, BURETTE CLAMP φ9.5~φ29mm and Double Opening Clamp 3~55mm
<b>LM-200A</b>	LM-200 SET MAIN BODY, STAND, PTFE STIRRING BAR W/ PROPELLER L450mm×φ50mm, BURETTE CLAMP φ9.5~φ29mm and Double Opening Clamp 3~55mm
<b>LM-210A</b>	LM-210 SET MAIN BODY, STAND, PTFE STIRRING BAR W/ PROPELLER L450mm×φ50mm, BURETTE CLAMP φ9.5~φ29mm and Double Opening Clamp 3~55mm

## LM200 with BM100 Water Bath



### Accessories

Product code	Model	Product name	No.	Specification
231640	OLM60	FKM oil seal	①	FKM Black, 2pcs/set (standard)
231641	OLM62	PTFE oil seal	②	Teflon®, 2pcs/set
231615	OLM10	PTFE stirring shaft with blade	③	L350×ø30mm, 100 ~ 300mL
231616	OLM12			L450×ø30mm, 100 ~ 500mL
231617	OLM14			L450×ø50mm, 200 ~ 1000mL
231618	OLM16			L450×ø80mm, 300 ~ 1000mL
231619	OLM18			L600×ø80mm, 1000 ~ 1500mL
231620	OLM20			L600×ø100mm, 1000 ~ 5000mL
231621	OLM22			L600×ø120mm, 3000 ~ 5000mL
231622	OLM24	Glass stirring shaft	④	L350mm
231623	OLM26			L400mm
231624	OLM28			L530mm
231625	OLM30	PTFE half-moon blade	⑤	ø40×16×t3mm
231626	OLM32			ø50×17×t3mm, 100 ~ 500mL
231627	OLM34			ø60×17×t4mm, 500 ~ 5000mL
231628	OLM36			ø100×17×t4mm, 1000 ~ 5000mL
231629	OLM38			ø125×30×t5mm, separable flask
231630	OLM40			ø50×17×t3.3mm, 100 ~ 5000mL
231631	OLM42	Glass half-moon blade	⑥	ø80×17×t3.8mm, 500 ~ 5000mL
231632	OLM44			
231633	OLM46	Burette clamp (muff)	⑦	ø5 ~ ø13mm
231634	OLM48	Burette clamp (muff)	⑧	ø6 ~ ø17mm
231635	OLM50	Burette clamp (muff)	⑨	ø9.5 ~ ø29mm
231635	OLM50	Double opening clamp	⑩	Range 3~55 mm, ø10mm, 50mL~3000mL
231636	OLM52	Double opening clamp	⑪	Range 3~80 mm, ø12mm, 50mL~5000mL
231086	--	Y stand	⑫	H725×ø25, Leg W400 (Internal 310mm) × 420mm
231640	OLM64	FFKM o ring	⑬	Kalrez® 29/42
231640	OLM66			Kalrez® 24/40
LT00038897	--	FKM o ring		29/42
LT00038898	--			24/40 (standard)
231639	OLM58	24/40 rotary joint seal set	⑭	Set of oil seal, o ring etc.
231644	OLM68	29/42 rotary joint seal set		Set of oil seal, o ring etc.
231637	OLM54	Flask clip	⑮	2 pcs set for 29/42
231638	OLM56	Flask clip		2 pcs set for 24/40



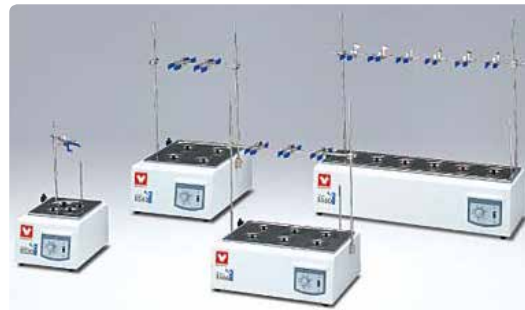
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## O ring and Oil seal Comparison Table of Chemical Resistance

Chemical	FKM O ring + FKM oil seal (Standard)	FFKM O ring + PTFE oil seal (Option)
Acetone	D	A
Acetone 60°C	D	A
Hydrochloric acid (10%)	A	A
Hydrochloric acid (10%) 70°C	A	A
Hydrochloric acid (20%)	A	A
Hydrochloric acid (20%) 80°C	A	A
Hydrochloric acid (36%)	A	A
Hydrochloric acid (36%) 70°C	A	A
Xylene	A	A
Chloroform	B	A
Acetic acid (10%)	D	A
Acetic acid (100%)	D	A
Acetic acid (25%)	D	A
Acetic acid (50%)	D	A
Acetic acid (50%) 70°C	D	A
Acetic acid (anhydrous)	D	A
Tetrahydrofuran	D	A
Toluene	C	A
Pyridine	D	A
Hexane	A	A
Benzene	C	A
Benzene 70°C	C	A

A: Good B: Usable based on a condition C/D: Unusable

### Related Products (Baths and Chiller)



BS200/401/601/660



BM100/200/401



BO601



BO500 + MB800



# Laboratory Stirrer

## LT400/500 Series

Max. Speed Range 3,000rpm (400 model) 1,200rpm (500 model)

Operation Wide speed range  
Wide torque range



LT400B

\*Operational accessories purchased separately



LT series stirrers include LT400A and LT500A with higher torque, LT400B and LT500B with well-balanced speed and torque, and LT400C with high speed to support different applications.

- Highly sensitive feedback system keeps the set speed even with changing viscosity during stir
- Maintenance free DC brushless motor
- Digital speed indicator for accurate speed setting and confirmation
- Noise prevention measures for optimal work environment
- More safety-oriented design

### Specifications

Model	LT400A	LT400B	LT400C	LT500A	LT500B
Viscosity of sample	High	Medium	Medium-low	High	Medium
Speed range	10~300rpm	15~600rpm	25~1,200rpm	15~600rpm	25~1,200rpm
Torque	0.9N·m (9.0kgf·cm)	0.5N·m (5.0kgf·cm)	0.3N·m (3.0kgf·cm)	1.0N·m (10.0kgf·cm)	0.6N·m (6.0kgf·cm)
Motor	DC brushless motor 30W				
Speed control	Feedback control				
Panel display	Digital speed display, Overload display <sup>*1</sup> , Torque indicator (20% gradation) <sup>*2</sup>				
Chuck	ø8mm drill chuck				
Safety device	Current limit circuit <sup>*3</sup> , Thermal protector <sup>*4</sup> , Drill chuck cover				
External dimensions	W146 x D154 x H165mm				
Power source	AC100V~AC125V 50/60Hz				
Power cord	Power supply cord with bipolar grounding type plug 2m				
Weight	2.4kg				
Included accessories	Clamp, Safety cover, Chuck handle				
Operational accessories*	Stirring shaft (stainless steel or glass), propellers (different types and sizes), stand and rod				

\*1, When load exceeding the maximum torque is applied, tachometer display flashes.

\*2, Torque indicator LED displays the loading status by 5 gradation.

\*3, When load exceeding the maximum torque is applied, current limit circuit automatically controls the current to protect the motor.

\*4, When temperature of the motor exceeds the upper limit temperature, thermal protector shuts off the current flowing to the motor and prevents it from burnout.

# Digital Laboratory Stirrer

## LR500A/B Series

Max. Speed Range 1,000rpm

Operation Low noise  
Maintenance free

- DC brushless motor considered superior in safety as there are no brushes to cause sparks and no brush replacement required
- Direct-drive system reduces noise and require low maintenance
- Achieves high torque enabling stirring of high viscosity solution
- Digital tachometer for easy speed setting and

- confirmation
- Load on the stirring shaft can be monitored by LED2 display. An overload lamp turns on when exceeding the maximum load, stopping the motor automatically
- Revolution feedback control function can maintain the setting rate despite change of load (especially suitable for high viscosity samples)

### Specifications

Model	LR500A	LR500B
Speed range <sup>*1</sup>	34~340rpm	100~1,000rpm
Max. torque	1.96N·m (20kgf·cm)	0.98N·m (10kgf·cm)
Display of speed / torque	Digital, 3-digit / Green LED, 2 Steps + Overload Display	
Motor (brushless DC)	70W	100W
Speed control	Speed Feedback Control	
Safety device	Stops when overloaded	
Stirring function / shaft dia.	Gearless Direct Drive Type / ø10mm	
Power source	AC100 -125V, 50/60Hz, 3A	AC100 -125V, 50/60Hz, 3.5A
Included accessories	Stirring shaft (ø10*500mm), 75mm 4-blade propeller, clamp	
Operational accessories*	Stand and rod	
Optional accessories	Propellers (different types and sizes), vacuum adapter, extra long stirring shaft (ø10*800mm), glass stirring shaft	

\*1, No load



LR500A

\*Operational accessories purchased separately

## Adapter for depressurizing stirrer (for LT400/500)

Material	Fluoride resin & Nitrile rubber		
Stirrer shaft	ø8mm		
Vacuum level	6.7Pa (5×10 <sup>-2</sup> Torr)		
Accessories	Oil Seal (Nitrile rubber) 2pcs.		
Joint type	T24/40	Product code	231380
	T29/42		231381



## Additional stirrer support (for LT400/500)

Product code	231382
Size	Max. 3L beaker 2pcs.
Stirrer shaft	ø8mm
Stirrer shaft interval	135mm
Belt	O-ring (VitonP120)
Accessories	Hexagon wrench (2pcs.)
	Belt (1pc.)
	Chuck handle (1pc.)
	Clamp (1pc.) Puller (1pc.)



## Adapter for depressurizing stirrer (for LR500)

Material	Fluoride resin & Nitrile rubber		
Stirrer shaft	ø10mm		
Vacuum level	6.7Pa (5×10 <sup>-2</sup> Torr)		
Accessories	Oil Seal (Nitrile rubber) 2pcs. Stirring propeller for small mouth		
Joint type	T24/40	Product code	231097
	T29/42		231098



## Additional stirrer support (for LR500)

Product code	231096
Size	Max. 3L beaker 2pcs.
Stirrer shaft	ø10mm
Stirrer shaft interval	135mm
Belt	O-ring (VitonP120)
Accessories	Hexagon wrench (2pcs.)
	Belt (1pc.)
	Chuck handle (1pc.)
	Clamp (1pc.) Puller (1pc.)



\*Use with propeller less than 60mm

## PTFE Stirring shaft and propeller



Product code	Product name	Model	Rod diameter	Length	Propeller	Material
F-4011-01	PTFE coated stirring shaft (with propeller)	LT400/500	ø8mm	450mm	Length 80mm	PTFE upper stainless
F-4012-04	PTFE coated stirring shaft (with propeller)	LT400/500	ø8mm	500mm	Length 100mm	PTFE internal iron core
F-4013-01	PTFE large stirring shaft	LT400/500	ø8mm	600mm	Width 16 x length 80mm	PTFE internal stainless bar
F-4013-02		LR500	ø10mm	800mm	Width 20 x length 120mm	PTFE internal stainless bar
F-4014-04	PTFE propeller type coated stirring shaft	LT400/500	ø8mm	450mm	Dia. ø52mm	PTFE upper stainless



Product code	Product name	Rod diameter	Length
F-4053-01	PTFE coated stirring shaft for LT400/500	ø8mm	350mm
F-4053-02		ø8mm	450mm
F-4053-03		ø8mm	500mm
F-4053-04		ø8mm	600mm

● F-4022 and F-4053 must be purchased together

Product code	Product name	Propeller diameter
F-4022-01	PTFE coated half-moon blade propeller	40×16mm×3t
F-4022-02		50×19mm×3t
F-4022-03		60×19mm×4t
F-4022-04		75×20mm×4t
F-4022-05		90×24mm×4t
F-4022-06		100×24mm×4t
F-4022-07		125×30mm×5t
F-4022-08		150×30mm×5t

## Propellers



### 4-blade propeller

Standard  
Material: Stainless steel SUS 304

Product code	Propeller diameter	Mounting screw
280078	75mm	M5
280079	60mm	M5
LR41AY0003	40mm	M5



### Folding propeller

For narrow mouth bottle (up to I.D.18mm)  
Material: Stainless steel SUS 304

Product code	Propeller diameter	Mounting screw
LR41AY0006	45mm	M5



### 2-blade glass propeller

Use for corrosive or strong acid samples  
Material: Hard glass

Product code	Model	Propeller Ø	Shaft Diameter
231385	LT400/500	60mm	ø8
231066101B	LR500	60mm	ø10



### 2 blade propeller

For wide mouth bottle. Use for high viscosity samples.

Product code	Propeller diameter	Mounting screw
LR41AY0009	100mm	M5
LR41AY0008	28mm	M5



### Round plate turbine

Use for deep container for less air intake during stirring

Product code	Propeller diameter	Mounting screw
LR41AY0022	100mm	M5
LR41AY0010	60mm	M5



### 2 stage round plate turbine

Material: Stainless steel SUS 304

Product code	Model	Propeller Ø	Mounting screw
2310630101	LR500	60mm	ø10
231386	LT400/500	60mm	ø8

## Stirring shaft

Product code	Model	Diameter	Material
231384	LT400/500	500mm ø8mm	SUS316
LR41231169	LR500	500mm ø10mm	
LR41AY0002	LR500	800mm ø10mm	



## Fixing Support for Water Bath (for LT400/500, LR500)

Max. thickness of container's edge	Max. 35mm
Stirring shaft's changeable angle	Up to 60°
Product code	231032



## Stand & Rod Set

Product code	Product name	Dimension
LR-41-124	Stand & rod set	~7kg
2310030209	Rod	Length 725mm E.D. 25mm
YSA000194	U-stand	Width 400mm Depth 420mm



# Heating Magnetic Stirrer

AREC-F20500011 / AREC-F20510011

Speed range 50 ~1500 rpm

Stirring capacity 15L

Overall power 800W



**For general laboratory use and for all applications requiring precise regulation of stirring speed and heating plate temperature.**

Ceramic heating plate obtains higher temperature compared to traditional aluminium heating plate and takes less time to heat the sample. Ceramic is an inert and very hard material resistant to almost any type of chemical or mechanical aggression. Its surface characteristics remain unaltered over time.

This magnetic stirrer is used to mix liquids using a magnetically driven stir bar placed inside the vessel. The size and shape of the magnetic stir bar determines the stirring efficiency at any given speed.

The instrument is turned on using the ON/OFF button. Stirring speed and temperature of the heating plate are adjusted using relative knobs on the front panel. Values are indicated on the digital display.

## Specifications

Programmable temp. range	5°C~550°C	
Type of temperature control	Digital	
Overtemperature protection	Yes	
Stirring capacity	15L of H <sub>2</sub> O	
Programmable speed range	50-1500 rpm	
Type of motor control	Electronic	
Noise level	<< 80 dBa	
Temperature range	+5 ... +40°C	
Storage temperature range	-10 ... +60°C	
Maximum humidity	80%	
Maximum altitude	4000m	
Power supply	115V 60Hz (F20500011) 230V 50-60Hz (F20510011)	
Dimensions WxHxD	203 x 94 x 344 mm	
Weight	3.5 kg	
Overall power	800W	
Dimensions of the heating plate	180 x 180 mm	
Optional accessories	Magnetic stir bar ø6x35mm	A00001056
	Magnetic stir bar ø10x40mm	A00001060
	Magnetic stir bar ø9.5x60mm	A00001061
	Hemispheric bowl for 250ml flasks	A00001071
	Hemispheric bowl for 500ml flasks	A00001072
	Hemispheric bowl for 1000ml flasks	A00001073
	Support rod	A00001069
	Knob	10002097
Foot	10000239	



# Magnetic Stirrer

Suitable for stirring heating baths

**MB800-115V / MB800-220V**

Stirring rate 70 ~ 1200 rpm

Stirring capacity 100 ml to 10L



## Equipped with optimum heat prevention function for oil bath

- Chemical-proof, anodized aluminum finish top plate
- Employs a magnetic stirrer bar to agitate solutions
- High-powered electronic controlled AC motor which provides stable rotation
- Power supply to the outlet for oil bath can be cut off and stopped when the temperature of the bottom of the oil bath reaches the specified value
- Suitable for BO500 oil bath

### Specifications

Model	MB800-115V	MB800-220V
Top plate material	Aluminum	
Top plate dimensions	W250×D270 mm	
Stirring capacity	100 ~ 10000 ml	
Stirring rate	70 ~ 1200 rpm	
Temp. control	Triac input control type	
Motor	AC motor, condenser motor	
Overheat prevention function	70 to 200°C	
Sensor	Thermistor type	
Safety device	Overheat prevention device for oil bath, earth leakage breaker	
Power source (50/60Hz)	AC115V 8.7A with external transformer	AC220V 4.5A with external transformer
External dimensions*	W250 × D270 × H150 mm	
Weight	~4.2kg	
Included accessory	Magnetic stirrer bar 40mm 1pc.	

\* Protrusions excluded



# Compact Shaker

## MK161-115V MK161-220V

### Rotary, elliptical and reciprocate motion

- Compact, space saving design
- Changeable rotary, elliptical and reciprocate motion for mixing, extracting and stirring of samples
- Stable and high torque shaking power and speed with the DC brushless motor
- Shaking frequency and timer are dial setting and digital display
- Shake pause function, timer function and constant operation by one switch
- Selectable mixing, extracting and stirring patterns when used with different shaking stage and racks (optional item)
- Can be placed inside IN604W incubator for shaking incubation

### Specifications

Model	MK161-115V MK161-220V
Shaking mode	Rotary, Elliptical and Reciprocate (manual operation)
Shaking range	Rotary:30mm Reciprocate: 30mm
Shaking frequency	20~200rpm
Frequency controller	Dial Setting, Digital Display
Timer	Dial Setting, Digital Display / Digital 0.1min. (6 sec.) to 99.9hr.
Shaking stage dimensions	Main Unit : W300 x D254mm, Stage : W290 x D250mm
External dimensions	W350 x D300 x H150mm
Weight	~15kg
Power source 50/60Hz	AC115V 0.5A AC220V 0.3A



Example of using mounting stage and erlenmeyer flask holder clamps (optional)



Incubator IN604W with optional slide shaker stage and MK161 shaker

\*Glassware not included.

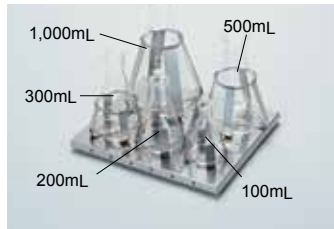
### Operational accessories

#### Mounting stage



Capacity	Number of erlenmeyer flask clamp
100ml	10pcs
200ml	9pcs
300ml	5pcs
500ml	4pcs
1,000ml	2pcs
Product code	232061

#### Erlenmeyer flask holder clamp



Product code	Capacity	No. of clamps
232062	100ml	10 pcs.
232063	200ml	9 pcs.
232064	300ml	5 pcs.
232065	500ml	4 pcs.
232066	1,000ml	2 pcs.

\*Mounting stage sold separately

#### Diagonal rack holder



Diagonal erlenmeyer flask holder		
Product code	Capacity	No. of unit
232067	100ml	3 pcs
232068	200ml	2 pcs
232069	300ml	2 pcs

\*Mounting stage sold separately

Diagonal test tube holder		
Product code	Diameter	No. of unit
232080	ø12mm	50 pcs
232081	ø16.5	20 pcs
232082	ø18	20 pcs

\*Mounting stage sold separately

#### Diagonal centrifugal tube holder



For spitz tube

Product code	Size	No. of units
232070	15ml	12 pcs.

For 50ml centrifugal tube

Product code	Diameter
232083	ø29mm

\*Mounting stage sold separately

#### Non-skid sheet



Product code	Dimension (W x D x H)
232084	290 x 250 x 30

\*Mounting stage sold separately

#### Single spring shaking rack



Dimension (W x D x H)	
290 x 250 x 66mm	
Number of test tube: ø16mm test tube x 64 (45°inclination)	
Number of erlenmeyer flask 50mlx20pcs, 100mlx10pcs, 200mlx9pcs, 300mlx5pcs, 500mlx4pcs. 1000mlx2pcs	
Product code	232050

\*Mounting stage not necessary  
This can be set directly to the main unit.

#### Two layer spring shaking rack



Dimension (W x D x H)	
290 x 250 x 110mm	
Number of test tube: ø16mm test tube x 64 (45°inclination)	
Number of erlenmeyer flask 50mlx20pcs, 100mlx10pcs, 200mlx9pcs, 300mlx5pcs, 500mlx4pcs. 1000mlx2pcs	
Product code	232056

\*Mounting stage not necessary  
This can be set directly to the main unit.

\*Glassware not included.

# Compact Shaker

MK201D-115V MK201D-220V

## Rotary and reciprocate shaking motion



- Compact, space-saving design
- Changeable rotary and reciprocate motion for mixing, extracting and stirring of samples
- Digital display of shaking frequency
- Equipped with shaking timer
- Easy to assemble and remove accessories
- Various shaking modes when used with different shaking stages and racks
- Can be placed inside IN604W incubator for shaking incubation

### Specifications

Model	MK201D-115V MK201D-220V
Shaking mode	Rotary and Reciprocate (manual operation)
Shaking range	Rotary: 30mm Reciprocate: 30mm
Shaking frequency	20~200rpm, Random adjustment
Display type	Digital
Timer	0.5sec.~100hrs.
External dimensions	W442 x D415 x H130mm
Weight	19kg
Power source (50/60Hz)	AC115V ~2A AC220V ~1.3A

### Operational accessories

Shaking rack for erlenmeyer flask clamp, fixed type



Product code	Capacity	No. of clamps
232170	100ml	20pcs.
232171	200ml	10pcs.
232172	300ml	6pcs.
232173	500ml	4pcs.
232174	1,000ml	2pcs.

Shaking rack for erlenmeyer flask clamp, inclined type



2 sets example (inclination stage sold separately)

For 1 set		
Product code	Capacity	No. of clamps
232175	100ml	8pcs.
232176	200ml	4pcs.
232177	500ml	2pcs.

Shaking rack for spitz tube



2 sets example (inclination stage sold separately)

For 1 set	
Size 15ml	12pcs.
E.D. ø16.5 x L110mm or less	
Product code:	232178

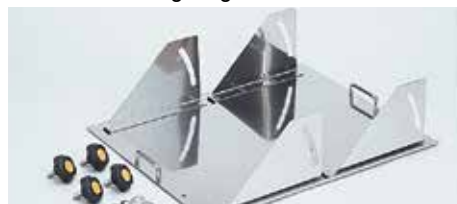
Shaking rack for centrifugal tube



2 sets example (inclination stage sold separately)

For 1 set	
Size 50mL	8pcs.
E.D. ø30 x L110mm or less	
Product code:	232179

Inclination setting stage



Necessary in tilt cases, up to 2 sets  
Product code: 232078

Shaking rack with sticky non-skid sheet



W400 x D330mm Material: silicon rubber  
Product code: 232182

(For flat bottom flask use only)

Shaking rack for SUS spring almighty type A



A type: for polyethylene bottle
Size 250ml up to 9pcs.
Product code: 232180

Shaking rack for SUS spring almighty type B



B type: for erlenmeyer flask and test tube
17 x 15 = 255 grids
Product code: 232181

Two layer shaking rack for SUS spring almighty type C



C type: for erlenmeyer flask and test tube
For erlenmeyer flask
100ml x 16pcs, 200ml x 10pcs,
500ml x 4pcs, 1,000ml x 2pcs.
For test tube ø16mm x 105pcs. when 45°inclination
Product code: 231398

\*Glassware and polyethylene bottles not included.

# Laboratory Shaker

Vertical / Horizontal / Rotary / Double-sided vertical shaking motion

**SA300-115V SA300-220V / SA320-115V SA320-220V**  
**SA400-115V SA400-220V**

SA300/400 20~300rpm

SA320 20~210rpm

Shaking width 40mm



SA320 with test tube holder

Test tube and funnel holders sold separately

SA300 with separating funnel holder

Glassware not included



SA320 with separating funnel holder

Funnel holders sold separately

SA400 with separating funnel holder

Glassware not included

The SA300 achieves two dimensional shaking (horizontal and vertical), while the SA320 enables rotary shaking and SA400 is double-sided vertical shaking. All models are efficient in extraction, culture and mixture stirring of samples.

- Stable turns from low to high speed can be obtained
- Compact and equipped with a powerful shaking load
- Easy-to-use dial settings for shaking frequency and digital displays.
- Possible to switch between timer operation and continuous operation
- Various holders can be easily attached and removed and are extremely durable

### SA300/320

- The main unit shakes vertically, but it can be laid on the side to shake horizontally

### SA400

- 6 pieces of 1 liter liquid sample holder and 4 pieces of 2 liter liquid sample holder can shake simultaneously
- Double sided shaking possibility

## Specifications

Model	SA300-115V SA300-220V	SA320-115V SA320-220V	SA400-115V SA400-220V
Shaking method	Horizontal / Vertical shaking	Horizontal / Vertical rotary shaking	Double sided vertical shaking
Max. number of sample holder	100ml x 5, 300ml x 4, 200ml x 4, 1000ml x 3, 2000ml x 2		100ml x 10, 300ml x 8, 1000ml x 6, 200ml x 8, 500ml x 8, 2000ml x 4
Shaking speed: horizontal	20~300 rpm	20~210 rpm	None
Shaking speed: vertical	20~300 rpm	20~210 rpm	20~300 rpm
Speed setting display	Dial setting		Dial setting / Digital display
Timer	Dial setting 0~60 min. (minimum scale 5 min.). Continuous switching function		
Motor	DC motor 90W		
External dimensions	W460 x D460 x H423		W520 x D460 x H483
Weight	~40kg		~39kg
Power source (50/60Hz)	Single phase AC115V 2A Single phase AC220V 1A		
Included accessories	Fuse x 1, carbon brush x 1		

### Horizontal Shaking



### Rotary + Horizontal Shaking



### Vertical Shaking



### Rotary + Vertical Shaking





## Operational Accessories

### Centrifugal tube holder



For all models  
Horizontal / vertical shaking

Dia. 16~35mm  
Length 110~130mm  
18 pcs.

Product code 232087

### Test tube holder



For SA300/320  
Horizontal shaking

Dia. 16.5~18mm  
Length 160~190mm  
18 pcs.

Product code 232086

### Separating funnel holder



For all models  
Vertical shaking

50ml  
100~1000ml  
2000ml

Product code 232089

### Separating funnel holder



For all models  
Vertical shaking

100~1000ml

Product code 232096

### Mounting stage



For SA300/320  
Horizontal shaking

Capacity	No. of pcs.
100ml	28
200ml	19
500ml	14
1L	9
Product code	232095

### Erlenmeyer flask holder clamp



For SA300/320  
Horizontal shaking

Product code	Capacity	No. of pcs.
232062	100ml	10
232063	200ml	9
232064	300ml	5
232065	500ml	4
232066	1L	2

### Diagonal rack



For SA300/320  
Horizontal shaking

Diagonal erlenmeyer flask holder		
Product code	Capacity	
232067	100ml	
232068	200ml	
232069	300ml	
Diagonal test tube holder		
Product code	Size	No. of pcs
232080	ø12mm	50
232081	ø16.5mm	20
232082	ø18mm	20

Mounting stage sold separately

### Non-skid sheet



For SA300/320  
Horizontal shaking

Thickness 1mm  
W450 x D396mm

Product code 232071

Mounting stage sold separately

### Test tube rack holder



For SA300/320  
Vertical horizontal shaking

Max. test tube rack  
W238 x D121 x H105mm  
2 lines

Product code 232088

Mounting stage sold separately

### Erlenmeyer flask holder



For SA300/320  
Horizontal shaking

Adjustable 100~1000ml

Product code 232097

### Two layer spring shaking rack



For SA300/320  
Horizontal shaking

320 pcs. of ø16 test tube  
(Pitch 20mm)

Product code 232079