



Stirrer and Shaker

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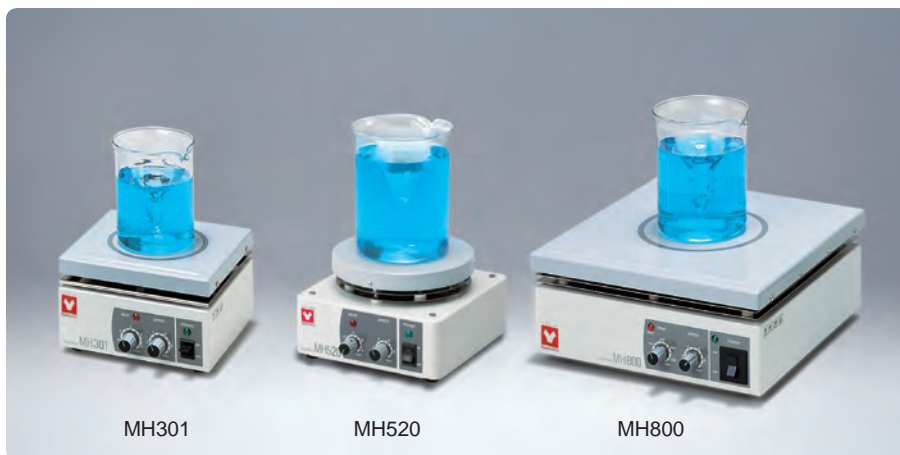
Laboratory Shaker

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Magnetic Stirrer with Hot Plate

MH301/520/800·MG600H

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

MH520

MH800

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	MH520	MH800
Plate material	Aluminum with ceramic coating		
Plate dimensions	W176xD151mm	∅168mm	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 H114mm	W190 x D223 x H123mm	W309 x D315 x H151mm
Weight	~2.6kg	~3.1kg	~6.7kg
Accessory	Stirrer bar 30mm 1pc.	Stirrer bar 30mm 1pc.	Stirrer bar 40mm 1pc.

* Protrusions not included

MH520 optional item

Product code	Product name
231397	Tipping preventor



MH520+Tipping preventor (optional)

6 Points Controllable Type (individual stirring heating)

MG600H

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



MG600H

Specifications

Model	MG600H
Plate material	Aluminum with ceramic coating
Plate dimensions	∅126mm 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 H122mm
Weight	~14kg
Accessory	Stirrer bar 30mm 6 pcs.

* Protrusions not included

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 and LT400D 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	LT400D	LT500A	LT500B
Viscosity of sample	High	Medium	Medium-low	Low	High	Medium
Speed range	10~300rpm	15~600rpm	25~1,200rpm	60~3,000rpm	15~600rpm	25~1,200rpm
Torque	0.9N•m (9.0kgf•cm)	0.5N•m (5.0kgf•cm)	0.3N•m (3.0kgf•cm)	0.1N•m (1.0kgf•cm)	1.0N•m (10.0kgf•cm)	0.6N•m (6.0kgf•cm)
Motor	DC brushless motor 30W			DC brushless motor 70W		
Speed control	Feedback control					
Panel display	Digital speed display, Overload display ^{*1} , Torque indicator (20% gradation) ^{*2}					
Chuck	ø8mm drill chuck					
Safety device	Current limit circuit ^{*3} , Thermal protector ^{*4} , 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

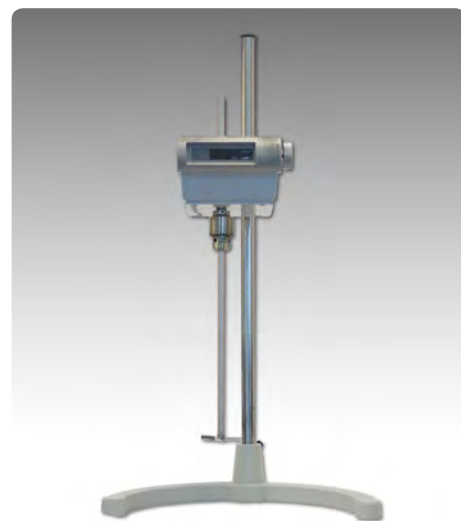
- DC brushless motor considered superior in safety as there are no brushes to cause sparks and no brush replacement required
- Direct-drive system reduces noise and require low maintenance
- Achieves high torque enabling stirring of high viscosity solution
- Digital tachometer for easy speed setting 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 ^{*1}	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 (5x10 ⁻² 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 (5x10 ⁻² 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	40x16mmx3t
F-4022-02		50x19mmx3t
F-4022-03		60x19mmx4t
F-4022-04		75x20mmx4t
F-4022-05		90x24mmx4t
F-4022-06		100x24mmx4t
F-4022-07		125x30mmx5t
F-4022-08		150x30mmx5t

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
2310661018	LR500	60mm	ø10



2 blade propeller

For wide mouth bottle. Use for high viscosity samples.
Material: Stainless steel SUS 304

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
Material: Stainless steel SUS 304

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



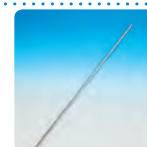
2 stage round plate turbine

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



Compact Shaker

MK161

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 IN602CSW incubator for shaking incubation

Specifications

Model	MK161
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. (6sec.) 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)

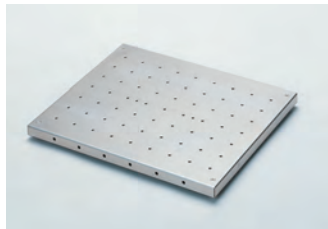


Incubator IN602CW slide shaker stage (optional) and MK161 installation example

*Glassware not included.

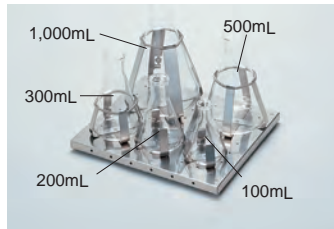
Operational accessories

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

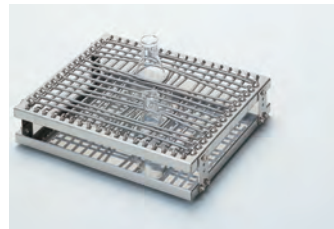
Non-skid sheet



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

*Mounting stage sold separately

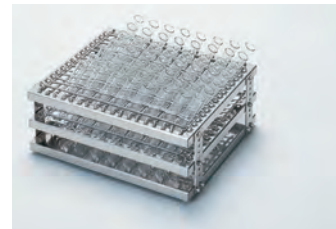
Single spring shaking rack



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

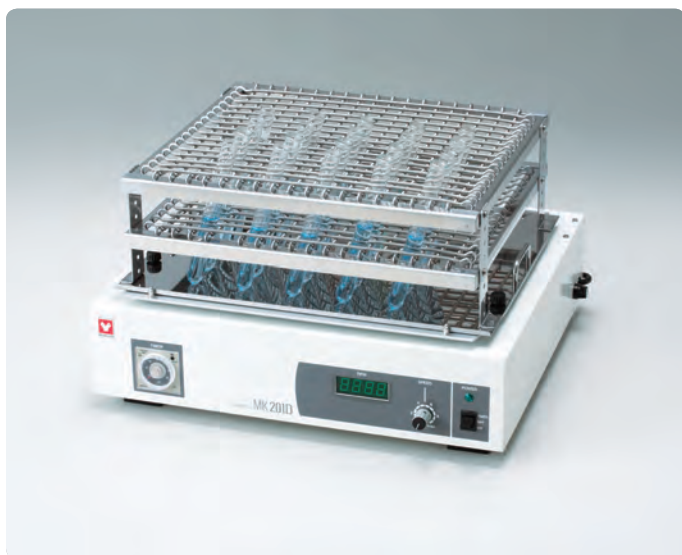
*Mounting stage not necessary
This can be set directly to the main unit.

*Glassware not included.

Compact Shaker

MK201D

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 IN-602CSW incubator for shaking incubation

Specifications

Model	MK201D
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



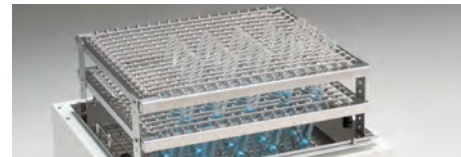
A type: for polyethylene bottle	
Size 250ml	up to 9pcs.
Product code:	232180

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

SA300/320/400

SA300/400

20~300rpm

SA320

20~210rpm

Shaking
width

40mm



SA320 with test tube holder

SA300 with separating funnel holder

Glassware not included



SA320 with separating funnel holder

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	SA320	SA400
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, 500ml 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 / 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

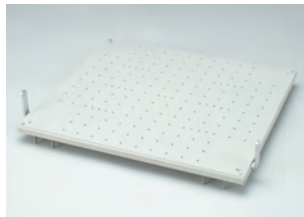


For all models
Vertical shaking

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

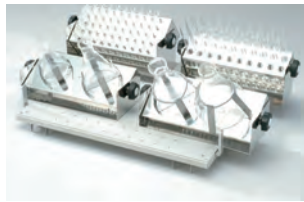
Erlenmeyer flask holder clamp



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

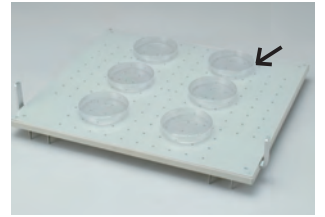


For SA300/320
Horizontal shaking

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



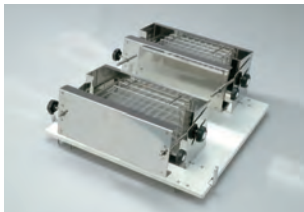
For SA300/320
Horizontal shaking

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