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Мешалки, миксеры и шейкеры



Shakers, Mixers and Stirrers

Orbital platform shakers

PSU-10i orbital platform shaker
PSU-20i multi-function orbital-
platform shaker

Microplate shaker

PMS-1000i two or four microplate shaker
MPS-1 high speed shaker/vortex

Vortex mixers

MSV-3500 multi speed vortex
V-32 multi tube vortex mixer
PV-1 personal vortex mixer

Magnetic stirrer

MMS-3000 mini magnetic stirrer
MSH-300i digital magnetic stirrer hotplate

Shakers, mixers and stirrers

A range of compact, versatile, reliable and efficient equipment for a variety of routine shaking, mixing and stirring applications in chemistry, life-science, analytical or research laboratories. Ideal for use in cold rooms and incubators.

Orbital shakers - single and multi-platform options for optimal mixing

High speed shaker/vortex - combined use for plates and microtubes

Vortex mixers - for reliable high-speed mixing

Magnetic stirrers - for routine and more sophisticated lab procedures



PSU-10i



PSU-20i



MSH-300i



MMS-3000



V-32



PV-1



PMS-1000i



MSV-3500



MPS-1

PSU-10i

Orbital platform shaker

Microprocessor controlled shaking platform providing smooth and quiet orbital motion. Ideal for mixing in bottles, flasks, beakers and tubes.

Loads up to 3kg

Variable speed: 5 to 450 oscillations per minute

Continuous or timed operation, with automatic switch-off

Reliable direct drive system

Automatic load balancing system

Five interchangeable platforms for vessels up to 250ml including an 88 place spring loaded platform for tubes up to 30mm diameter

Simple to set up and easy to operate

Soft start feature ensures a smooth ramp-up - avoids potential damage to vessel content.

Exceptionally quiet motor - consistent and even shaking.

2-line LCD display clearly indicates both set and actual shaking speed, plus set and elapsed time. Works in combination with simple push buttons for easy set up.



Choice of 5 interchangeable platforms to suit different types of vessels - maximum flexibility. Please order platform separately.

Low voltage power supply for safe cold room operation and low energy consumption.

Integral electronic timer with audible alarm and automatic switch-off. Accurate repeatability of time sensitive incubations.

Applications

- Biotechnology and microbiology - micro-organism cultivation and extraction of biologically active substances
- Immunology and biochemistry - agglutination and precipitation assay
- Biochemistry - washing off electrophoresis gel
- Molecular and cell biology - cultivation of biological liquids

PSU-20i

Multi-functional orbital multi-platform shaker

Powerful and efficient microprocessor controlled, multi-functional orbital shaker. Designed to provide multiple features required to mix your samples; rotation, reciprocation and vibration. This multi-use shaker optimises mixing in flasks, beakers, Petri dishes or other laboratory vessels.

Powerful, reliable and exceptionally quiet motor - combines an 8kg loading capacity with consistent even motion and quiet operation.

Universal detachable platform accommodates vessels of different shapes and sizes for maximum flexibility. Please order separately. See page 107 for full list of accessory platforms. No tools are needed to change the platform.

Very easy to operate, with simple set up of multi-segment programs via push buttons.



Product highlights

- Orbital motion (20 to 250rpm), reciprocation (20 to 250rpm) and vibration functions all in one product
- Loads up to 8kg
- Fully programmable sequence that can use one, two or all the functions
- Six interchangeable platforms for vessels up to 1000ml including a multi-level platform to hold multiple microplates, Petri dishes and culture bags
- Reciprocal rotation: 0 to 360° turning angle, in 30 degree steps
- Vibration: 0 to 5° turning angle, 1 degree steps



All mixing functions - orbital motion, reciprocation and vibration - can be set continuous or timed operation, or be linked together in different combinations to establish optimum mixing and ensure accurately repeatable conditions for your application.

Direct drive system and brushless motor.

2-line LCD status display of actual and set parameters.

Low voltage cord easily fits through door gaskets, allowing use in incubators, refrigerators and workstations. Safe and low energy consumption.

Applications

- Biomedical and biopharmaceutical laboratories - cultivation of cells, extracting, dissolving slow reacting samples, extraction of mineral oil from soil, tissues culture for analytical diagnostics, de-aeration of tested biodegradable materials and samples, rotating closed containers for dialysis, bacterial growth.

Grant-bio compact rockers

Technical specifications



		PSU-10i	PSU-20i
		Platform shaker	Multi-platform shaker
Dimensions	h x d x w mm	90 x 205 x 220	130 x 410 x 410
Operating temperature	°C	4 to 40	
Maximum load	kg	3	8
Orbit ø	mm	10	20
Speed (load dependent)	rpm	50 to 450	20 to 250
Angle (reciprocal mode)		-	0 to 360°
Angle (vibration mode)		-	0 to 5°
Display		2-line 16 character LCD	
Timer, with automatic switch-off		1 minute to 96 hours	
Motion timer (orbital/reciprocal modes)	sec	-	0 to 250
Motion timer (vibration mode)	sec	-	0 to 5
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V	
Power consumption	W	9.6 (0.8A)	40 (3.2A)
Input voltage	V dc	12	
Weight	kg	3.4	11.7

Platforms sold separately - see page 107.






Shakers

Options and accessories

			PSU-10i	PSU-20i
PI6-88		Platform with spring holders for up to 88 tubes, \varnothing up to 30mm. Dimensions*: 275 x 205 x 75 mm.	•	-
PI2-100		Platform with clamps for 12 x 100/150ml flasks/beakers. Dimensions*: 250 x 190 mm.	•	-
BIO-PP-4		Flat platform with non-slip rubber mat. Dimensions*: 230 x 230 mm.	•	-
P6-250		Platform with clamps for 6 x 250-300ml flasks/beakers. Dimensions*: 250 x 190 mm.	•	-
PUP-12		Universal platform, with adjustable bars. Dimensions*: 270 x 195 x 40 mm Extra holding bars - HB-200	•	-
PUP-330		Adjustable bars and two fixing levels. Dimensions*: 300 x 400 x 80 mm Extra holding bars - HB-330.	-	•
PP-20- (2/3/4 level)		Flat platform with non-slip rubber mat. Dimensions*: 365 x 465 mm. Height between levels: 140mm.	-	•
P30-100		Platform with clamps for 30 x 100-150ml flasks. Dimensions*: 360 x 400 mm	-	•
PI6-250		Platform with clamps for 16 x 250-300ml flasks. Dimensions*: 360 x 400 mm	-	•
P9-500		Platform with clamps for 9 x 500ml flasks. Dimensions*: 360 x 400 mm	-	•
P6-1000		Platform with clamps for 6 x 1000ml flasks. Dimensions*: 360 x 400 mm	-	•
UP-168		Universal platform for flasks clamps. (see below) Dimensions*: 360 x 400 mm	-	•
TR-21-50		Adjustable tilt test tube rack for 21x 50ml tubes	-	•
TR-44-15		Adjustable tilt test tube rack for 44x 15ml tubes	-	•

* Working area dimensions

Flask clamps

For use with the USP-168 platform, on PSU-20i, ES-20/60 and ES-20/80.		Dimensions	PSU-10i	PSU-20i	
FC-100		For 100ml flask	\varnothing 65 mm	-	•
FC-250		For 250ml flask	\varnothing 85 mm	-	•
FC-500		For 500ml flask	\varnothing 105 mm	-	•
FC-1000		For 1000ml flask	\varnothing 130 mm	-	•
FC-2000		For 2000ml flask	\varnothing 165 mm	-	•

PMS-1000i

Microplate shaker

Compact and efficient variable speed, horizontal shaker for reliable, regulated shaking of two or four microplates.

Ambient temperature range +4°C to 40°C

Variable shaking speed: 150 to 1200rpm

Direct drive and brushless motor

Set and display the speed in rpm

Continuous or timed operation with automatic switch-off

Holds two or four microplates

Platform for two microtitre plates supplied as standard. Platform for four plates (MPP4) available as an option.

Easy to use integral electronic timer ensures accurate countdown and repeatability.

Low voltage cord easily fits through door gaskets, allowing use in incubators, refrigerators and workstations. Safe economical running.



Quick and easy to use screw fittings - keep the plates securely in position and allow fitting of any standard-depth well plates.

Easy to read LED display clearly indicates time remaining on timed operation and displays actual speed (rpm).

Digital setting to adjust the speed to suit the application - gentle shaking to ensure that the well contents remain in-situ, or more vigorous agitation for effective aeration across the surface area of each well.

Applications

- Life-science - immunoassay, shaking ELISA plates, staining cells for flow cytometry, shaking by paramagnetic beads for RNA extraction from serum and milk, 96 well plate preparation prior to LC-MS/MS, plate shaking for library preparation, shaking plates in cold rooms
- Food & Beverage - histamine in cheese, vitamins in milk testing

PMS-1000i

Technical specifications



PMS-1000i

Microplate shaker

Dimensions	h x d x w mm	90 x 205 x 220
Operating temperature range	°C	4 to 40
Orbit ø	mm	2
Speed (load dependent)	rpm	150 to 1200
Display		4 digit LED
Timer, with automatic switch-off		1 minute to 24 hours
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V
Power consumption	W	3,4 (0,28A)
Input voltage	V dc	12
Weight	kg	2

PMS-1000i

Options and accessories

MMP4



Platform for four SBS plates
Dimensions 266 x 170 mm

MPS-1

High speed shaker and vortex mixer

An economical space-saving solution for all high-speed shaking and vortex mixing of plates and tubes from 0.2ml through to 50ml. Efficient mixing of difficult samples, - compact pellets, small or viscous samples.

Ambient temperature range +4°C to 40°C

Versatile for single tube vortex to shaking of microplates, PCR plates, microtubes and deep well plates

Mixing of 0.2ml to 50ml tubes at high speed

Safe in humid environments due to low voltage 12V power supply

Quiet operation <65dBA

Adjustable rpm or four pre-sets



Applications

- Education, research, QC, QA, R&D, Biopharm and healthcare
- Life science applications, molecular biology, cell biology, cell lysis, DNA isolation and purification, sample preparation for PCR, pellet re-suspension, mixing viscous liquids, multiple microtube mixing

MPS-1

Technical specifications



		MPS-1
		High-speed shaker/vortex mixer
Dimensions	h x d x w mm	150 x 215 x 225
Ambient Temperature range	°C	+4 to 40
Mixing speed control range	rpm	300 - 3200
Speed control increment	rpm	100
Mixing pre-sets:	rpm	
Vortex		3200
Hard		2600
Medium		1800
Soft		1000
Custom		Adjustable
Pulse mode		Saw tooth profile of ramp speed cycles
Mixing orbit	mm	3
Acceleration time		5 seconds
Timer, with audible alarm		1 to 60 minutes (15 sec increment) or non stop
Types of vessels accommodated (may require accessory insert)		Microplate U, V or flat bottom PCR plate 96 or 384 well fully/semi/unskirted Deepwell plate 250µl to 2000µl Microtubes 0.2, 0.5, 1.5, 2.0ml 0.2ml strips Tubes 2 to 50ml
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V
Power consumption	W	10 (0.8A)
Input voltage	V dc	12
Weight	kg	5.1

MPS-1

Options and accessories

MPS-1K kit		Contains: MPS-1 with 4 additional inserts (see below)
P-2-24		Microtube insert for 24 x 1.5/2.0ml tubes
P-05-32		Microtube insert 32 x 0.5ml tubes
P-02-05		Microtube insert for 24 x 0.5ml PLUS 48 x 0.2ml tubes or 8 x 0.2ml strips
P-02-96		Microtube insert for 96 x 0.2ml tubes or 12 x 0.2ml strips or 96 well semi/unskirted PCR plates

MSV-3500

Multi-speed vortex

Digital multi speed vortex mixer designed for soft or intensive mixing of reagents in different size and type plastic tubes 0.2 to 50 ml.

Adjustable speed control: 300 to 3500rpm

Set and actual values of time and speed displayed

Acceleration time to max speed: 3 seconds

Four interchangeable platforms available for a variety of tube sizes

Reliable and extremely quiet motor produces reproducible agitation throughout the speed range.

Easy to change platforms - simply unscrew.

Rubber suction pads hold tight to the work surface and prevent the unit from 'walking' - they also prevent its transmission to the workbench.



Four interchangeable platforms available:

- SV-4/30 for 4 x 50ml tubes
- SV-10/10 for 10 x 10ml tubes
- SV-16/8 with 16/8/8 sockets for 1.5/0.5/0.2ml microtubes
- SV-8/15 for 8 x 15ml tubes

Low voltage cord easily fits through incubator door gaskets. Safe and economical running.

2 line LCD display of each set and actual values.

Applications

- Designed for operation in life science laboratories working in the fields of biochemistry, cell and molecular biology
- Intensive stirring of bacterial and yeast cells, extraction of metabolites and enzymes from cells and cell cultures, and various DNA operations such as deproteinisation of DNA/protein complexes and purification of low molecular weight DNA/RNA fragments in PCR diagnostics.

V-32

Multi-platform vortex mixer

Versatile multi vortex mixer for efficient mixing in tubes up to 1.5ml, with the facility to mix individual tubes up to 15ml.

Adjustable speed control: 500 to 3000rpm

'Continuous' or 'touch' operation

Supplied with single tube platform head and universal platform for 0.5, 1.5 and 2ml tubes



The 32-socket universal platform PV-32 and single tube platform PL-1 included as standard:

- PV-32 for three tubes sizes (16 x 1.5ml, 8 x 0.5ml, 8 x 0.2ml)
- PL-1 for mixing individual tubes up to 15ml
- Optional 6 x 10ml platform available separately.

Compact rugged design with powerful motor delivering consistent performance and quiet operation - fits neatly and unobtrusively into the workspace.

Easy operation - select 'continuous' or 'touch' operation and dial to control speed from 500rpm to 3000rpm.

Rubber suction pads hold tight to the work surface and prevent the unit from 'walking' they also absorb vibration and prevent transmission to the workbench.

Low voltage cord easily fits through door gaskets, allowing use in incubators, refrigerators and workstations.

Applications

- Life-sciences - deproteinisation of DNA/protein complexes, mixing of immunostained human cells, purification of low-molecular DNA/RNA fragments in PCR-diagnostic
- Industrial - de-airing adhesive
- General - mixing and dispersion of particle suspensions
- Biopharm - solubilising powders

PV-1

Personal vortex mixer

Compact personal vortex mixer with a low profile and small footprint for gentle mixing through to vigorous re-suspension of cell or chemical pellets in up to 50ml tubes.

Adjustable speed control: 750 to 3000rpm

'Continuous' or 'touch' operation

For tubes up to 28.5mm diameter - 50ml






Applications

- Gentle mixing through to vigorous resuspension of cells and biological and chemical liquid components.









Vortex mixers

Technical specifications

				
		PV-1	V-32	MSV-3500
		Personal vortex mixer	Multi vortex mixer	Multi speed vortex mixer
Dimensions	h x d x w mm	80 x 150 x 90	100 x 180 x 120	145 x 170 x 180
Ambient temperature range	°C	+ 4 to 40		
Orbit ø	mm	4	2	4
Speed (max speed depends on load)	rpm	500 to 3000	500 to 3000	300 to 3500
Timer		-	-	0-60 min / non-stop (increment 1 min)
Capacity	ml tube	0.2 up to 50	16 x 1.5, 8 x 0.5 and 8 x 0.2	0.2 up to 50
Maximum tube diameter	mm	28.5*	15	30
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V		
Power consumption	W	3.8 (0.32A)	12 (1A)	
Input voltage	V dc	12		
Weight	kg	0.8	1.5	2.6

Vortex mixers

Options and accessories

			PV-1*	V-32	MSV-3500
PV6-10		6-socket platform for 10ml tubes (maximum tube ø 15mm)	-	•	-
PV-32		Replacement platform (16 x 1.5ml, 8 x 0.5ml and 8 x 0.2ml)	-	•	-
PV-48		Platform for 6-8 x 0.2ml strips or 48 tubes of 0.2ml	-	•	-
MSV-3500 4P		MSV-3500 with 4 additional accessory platforms shown below:	-	-	•
SV-4/30		Platform for 4 x 50ml (ø 30mm) tubes	-	-	•
SV-10/10		Platform for 10 x 10 ml (ø 12mm) tubes	-	-	•
SV-16/8		Platform with 16/8/8 sockets for 1.5/0.5/0.2 ml microtest tubes, ø 11/8/6 mm	-	-	•
SV-8/15		Platform for 8 x 15 ml (ø 16mm) tubes	-	-	•

* The PV-1 takes conical tubes up to 50ml.

MMS-3000

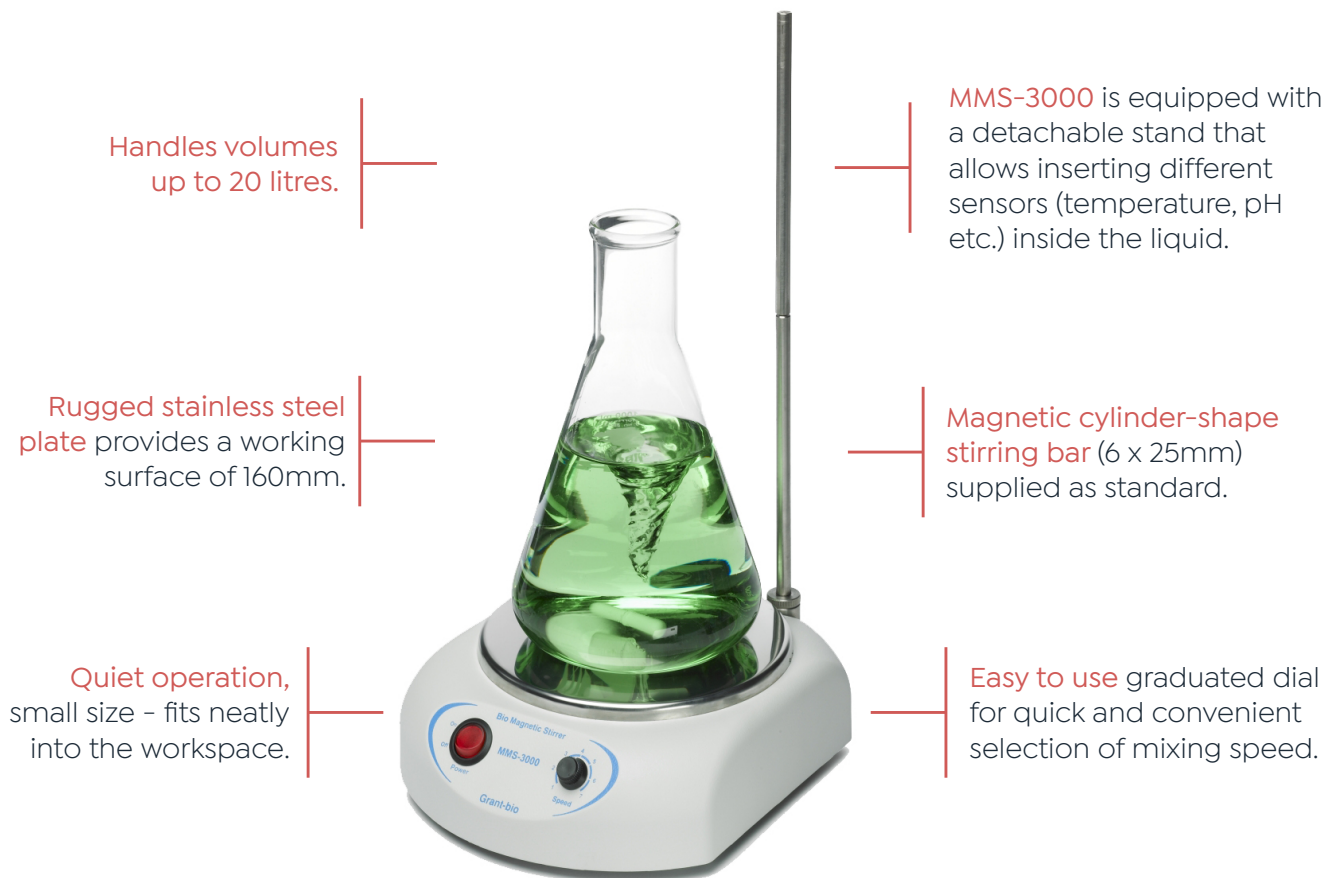
Mini magnetic stirrer

Compact manual mini magnetic stirrer for routine laboratory procedures. Features quiet operation, detachable stand and stirring bar to easily insert different sensors.

Adjustable speed control: 0 to 3000rpm

Maximum stirring volume: 20 litres

Supplied with detachable stand and stirring bar



Applications

- PH metering, extraction and dialysing with small quantities of substances
- Any requirement for stirring solutions up to 20 litres

MSH-300i

Digital magnetic hotplate stirrer

Digital magnetic stirrer with heating. The MSH-300i features the intelli-stirrer, designed for laboratories with more demanding requirements. The stirrer offers digital setting and control of temperature and rotation speed. A powerful magnet allows mixing solutions with glycerine viscosity level. Maximum volume of stirred liquid is 20 litres.

Adjustable speed control: 0 to 3000rpm

Maximum stirring volume: 20 litres

Supplied with detachable stand and stirring bar

Maximum stirring volume: 20 litres

Stirrer bar and retort stand included as standard



* Optional, please order separately

Applications

- Healthcare - thawing/heating/stirring samples
- Pharmaceutical - Heating and stirring samples
- Science education in schools/universities - practical science demonstration and experimentation
- Industrial - QC testing, sample preparation

Magnetic stirrers

Technical specifications



		MMS-3000	MSH-300i
		Mini magnetic stirrer	Digital magnetic hotplate stirrer
Dimensions	h x d x w mm	75 x 230 x 185	100 x 270 x 190
Ambient temperature range	°C	+4 to 40	+30 to 330
Uniformity (on the plate)	±°C	-	3
Speed	rpm	0 to 3000	100 to 1250 (10 rpm increment)
Capacity (stirring volume)	L	20	
Liquid stirring viscosity	mPa	up to 1170	
Working plate heating time to 330°C		-	11 minutes
Working plate size	mm	ø 160	
Retort stand height	mm	320	
Plate material		stainless steel	aluminium alloy
Max. length of magnetic stirring element	mm	70	20-70
Heating power	W	-	550
External power supply		Input AC 100-240V, 50/60Hz output DC 12V	N/A
Power consumption	W	3 (0.3A)	550 (2.4A) or 550 (4.6A)
Input voltage	V	DC 12	AC 230V, 50Hz or 120V, 60Hz
Weight	kg	1.5	3.2

Magnetic stirrers

Options and accessories

		MMS-3000	MSH-300i
DPMD	Boss clamp	-	•
MSH-EP	External temperature probe	-	•
SKM2	Clamp	-	•

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