

# GYROZEN

## 2021/22 PRODUCT CATALOG

### **Experts in Laboratory Equipment**

Centrifuge

Concentrator & Freeze Dryer

Mixer & Shaker

CO<sub>2</sub> Incubator

GYROZEN



GYROZEN

# ABOUT US

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Since its founding year in 2007, GYROZEN has been the leading supplier of centrifuges and other laboratory equipment based in South Korean

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## QUALITY OF THE PRODUCTS

Gyrozen is one of the few centrifuge companies in the world that still fabricates all of its own rotors in-house, and this is how we can assure the same high quality result every time.

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## PRODUCTS WITH SOUL

All of the Gyrozen products are hand made and assembled at the Gimpo facility with passion and pride, where the rotors are being cut, and the motors are being hand wired.





# KEY POINTS FOR USER'S SATISFACTION

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## STABLE QUALITY



- Manufactured and tested to IEC standards
- Steady and soft deceleration with dynamic brake technology
- Anti-vibration and air-cooling system to minimize noise and heat dissipation
- Eco-friendly Compressor-off function to minimize unnecessary cooling and frosting when lid is open
- Fast cooling function allowing a temperature drop to 4°C within 5 minutes for quick start of cooled samples
- Fine control of time counting by a selection of "At Set Speed" or "From Starting"
- CE IVD-certified centrifuge versions for medical purpose

## SAFETY AND ROBUSTNESS



- Sturdy structured, two to three layered lid for noise reduction and safe operation
- Lid drop protection for easiness and safety for loading or unloading sample
- Emergency lid-lock release for power blackout or sudden stoppage
- Key lock function to prevent unintentional parameter modification during operation
- Automatic rotor detection and warning for imbalance, excess speed and over-heating
- Autoclavable and corrosion-free rotors
- Imbalance detection and counting of imbalance error

## EASY CUSTOMIZATION



- In house customization upon specific requirement for rotors, sample containers and adaptors
  - High flexibility of structural & functional modifications
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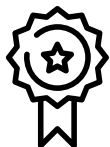
## CONVENIENCE IN OPERATION



- Windows CE based 7" LCD Touch Screen and simultaneous display of all parameters
- Intuitive control interface with numeric input buttons displaying graphic pictograms for the setting and editing of running conditions
- Reversible parameters during operation
- Program memory up to 100 (or 10) programs
- Time control functions of pulse for quick spin
- Automatic RPM/RCF conversion
- "Easy-Lock" lid allowing easy and convenient lid opening and closure (Micro rotors)
- Automatic lid release and vivid end alarm at spinning completion
- Easy observation of actual rotation through the viewing window on the lid
- Large assortment of rotors, buckets and adaptors for diverse applications
- Floor standing centrifuges equipped with 4 casters allowing easy movement and user's convenience
- Multipurpose centrifuge with high capacity buckets up to 1,000mL

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## CERTIFICATE AND REGISTRATIONS



- Accredited with ISO 9001, ISO 13485, and KGMP
  - Comply with CE conformity
  - Approved as Class IIa medical devices (IVD)
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# NEW PRODUCTS



## 1848R Table-top High-speed Centrifuge

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1848R is the fastest refrigerated micro-centrifuge and one of its kind to hold 50mL conical tubes. With nine fixed angle rotors, 1848R can hold a various type and size of tubes for molecular and cellular biology works. Sample safety is assured by tightly sealed rotors with two V-shape rubber rings preventing any leakage. 1848R is a very quiet and efficient tool thanks to its adapted inverter compressor.

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## mini 6 / mini 6 RC Microcentrifuges

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The mini 6 table-top centrifuge runs up to 6,500 rpm with fast acceleration and deceleration, 4 seconds and 2 seconds respectively. It starts to spin when the lid is closed and stops when the lid is open. Simple action of "Lid Open Button" makes its operation much easier. The magnetic sensor, located between the lid and the body, recognizes the status of the lid therefore keeping a safe operation.

p.28



## Bio-safe Easy Lock Rotor for Micro centrifuges

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The bio-safe easy lock rotor is a fully enclosed rotor equipped with two v-rings and one o-ring, which have the ability to prevent any leakage of internal liquids or gases. This rotor has been certified by the Public Health England Porton Down.

The micro centrifuge rotors GREB-m2.0-24 & GREB-M-m2.0-24 together with buckets GLBB-b100-100 & GLBB-bdc15-100 for low speed and GLBB-b100-100, GLBB-bdc15-100 for multi-purpose centrifuges have all been certified by the Public Health England Porton Down.



## P170 CO<sub>2</sub> Incubator

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The P170 by ARA is a simple yet highly advanced CO<sub>2</sub> Incubator, with intuitive touch screen control that displays real time graphical data. As for the heating, instead of forced air circulation, fan-less system was applied. This technology was developed through thermally active surface in creating passive air circulation. This method eliminates the risk of contamination in the chamber and minimizes the exposure of electronic parts in the enclosed environment. It is simple, yet complex.

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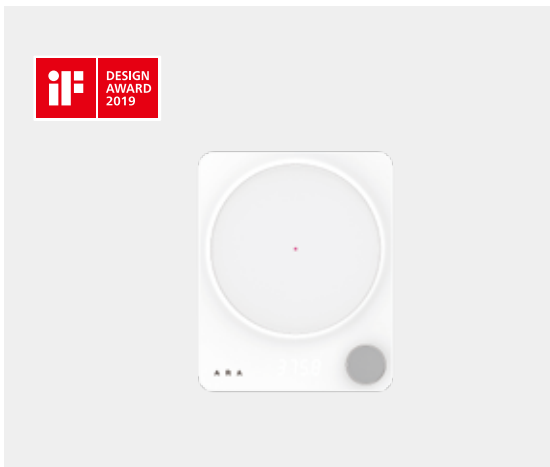


## D-RT6 / D-R8 Roller Mixers

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The D-R series by ARA offer a group of laboratory roller mixer for smooth rolling and rocking mixing action. D-R8 has 8 rollers while D-RT6 has 6; both can run up to 80 rpm. The D-RT6 is 6 rollers which allows mixing of blood collection tubes and can be run up to 80 rpm.

p.172, 173



## D-MS2 Magnetic Stirrer

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The D-MS2 by ARA offers solutions for multiple mixing and shaking tasks with liquid volumes ranging from 800 mL to 3,000 mL. The D-MS2 runs at speeds ranging from 0 to 2,500 rpm and stirs volumes of up to 3,000 mL.

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## 02. Concentrator

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## 03. Mixer & Shaker

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### Magnetic Stirrer

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### Shaker

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### Roller Mixer

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## 04. CO<sub>2</sub> Incubator

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# 01. Centrifuge





# Product Selection Guide by Max. Speed & Sample Container

	Micro					Table-top, High-speed	
	mini 6 / mini 6 RC p. 30	mini p. 32	1536 p. 35	1730R p. 38	1848R p. 43	1248 p. 52	1248R p. 52
Max. RPM / Fixed angle	6,500 rpm	13,500 rpm	15,000 rpm	17,000 rpm	18,000 rpm	12,000 rpm	12,000 rpm
Max. RPM / Swing-out	-	-	-	13,000 rpm	13,000 rpm	5,000 rpm	5,000 rpm
Max. RCF / Fixed angle	2,234 xg	12,300 xg	21,583 xg	27,237 xg	30,536 xg	16,582 xg	16,582 xg
Max. RCF / Swing-out	-	-	-	16,343 xg	16,438 xg	5,394 xg	5,394 xg
Max. Capacity / Fixed angle	6 x 1.5/2.0 mL 2 PCR strips	12 x 1.5/2.0 mL 4 PCR strips	36 x 1.5/2.0 mL 10 x 5.0 mL 4 PCR strips	36 x 1.5/2.0 mL 12 x 5.0 mL 8 PCR strips	8 x c50 mL 20 x 5.0 mL 48 x 2.0 mL	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL
Max. Capacity / Swing-out	-	-	-	4 x 4 x 1.5/2.0 mL	6 x 4 x 2.0 mL 2 x 2 MTPs	4 x 250 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs
Rotors Available*	2 (F)	4 (F)	4 (F)	6 (F) / 2 (S)	7 (F) / 2 (S)	7 (F) / 3 (S)	8 (F) / 3 (S)
Temperature Control Range (°C)		-	-	-20°C to 40°C	-12°C to 40°C	-	-20°C to 40°C
Power Requirement (VA)	110 VA	110 VA	450 VA	2 KVA	2 KVA	900 VA	2.5 kVA
Dimension (W x D x H, mm)	150 x 150 x 90	208 x 245 x 145	240 x 378 x 240	310 x 620 x 290	380 x 654 x 312	475 x 561 x 330	655 x 620 x 357
Net Weight	650 g	4.4 kg	11.9 kg	43 kg	53.5 kg	40 kg	78 kg
Cat. No.	AC-mini 6	mini(GZ-1312)	GZ-1536	GZ-1730R	GZ-1848R	GZ-1248	GZ-1248R

Micro Tube	PCR strip (8-tube)	F	F	F	F	F	F	F
	1.5/2.0 mL	F	F	F	F / S	F / S	F / S	F / S
	Micro filter tube	-	-	F	F	F	-	-
	1.8 mL cryotube	-	F	-	-	-	-	-
	2.0 mL screw cap	F	F	F	F / S	F / S	F / S	F / S
	5.0 mL	-	-	F	F	F	F / S	F / S
Tube	2 ~ 4 mL (VT)	-	-	-	-	-	F / S	F / S
	4 ~ 7 mL (VT)	-	-	-	-	-	F / S	F / S
	8 ~ 10 mL (VT)	-	-	-	-	-	F / S	F / S
	10 mL	-	-	-	-	-	-	-
	14 mL	-	-	-	-	F	F / S	F / S
	15 mL	-	-	-	-	-	F / S	F / S
	15 mL conical	-	-	-	-	F	F / S	F / S
	15 mL glass / opentop tube	-	-	-	-	-	S	S
	25 mL conical (CAP)	-	-	-	-	F	F / S	F / S
	25 mL conical (snap CAP)	-	-	-	-	F	F / S	F / S
	30 mL	-	-	-	-	F	F / S	F / S
	50 mL	-	-	-	-	F	F / S	F / S
	50 mL conical	-	-	-	-	F	F / S	F / S
	50 mL skirted conical	-	-	-	-	F	S	S
	85 mL	-	-	-	-	-	F / S	F / S
100 mL	-	-	-	-	-	S	S	
Bottle	250 mL	-	-	-	-	-	S	S
	250 mL conical	-	-	-	-	-	S	S
	500 mL	-	-	-	-	-	-	-
	500 mL conical	-	-	-	-	-	-	-
	750 mL	-	-	-	-	-	-	-
1,000 mL	-	-	-	-	-	-	-	
Plate	PCR plate / MTP	-	-	-	-	S	S	S
	Deep-well plate	-	-	-	-	-	S	S
	Filter set plate	-	-	-	-	-	-	-
Syringe	10/20 mL	-	-	-	-	-	S	S
	60 mL	-	-	-	-	-	S	S

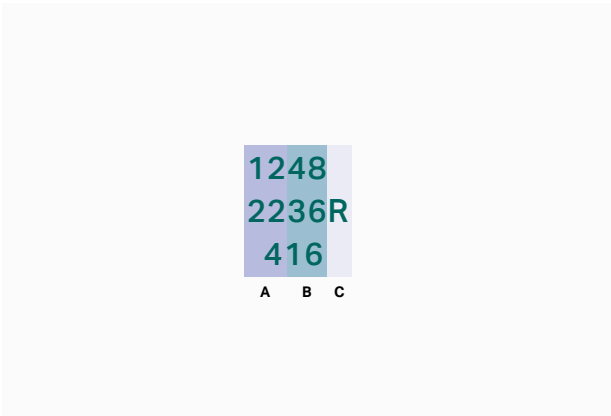
Table-top, High-speed			Floor Standing, High-speed			Low-speed		
1580 p. 52	1580R p. 52	1696R p. 71	1236R p. 96	1736R p. 96	2236R p. 96	406 p. 116	416 p. 118	624R p. 129
15,000 rpm	15,000 rpm	16,000 rpm	12,000 rpm	17,000 rpm	22,000 rpm	4,000 rpm	4,000 rpm	6,000 rpm
5,000 rpm	5,000 rpm	5,000 rpm	5,000 rpm	5,000 rpm	5,000 rpm	-	4,000 rpm	4,800 rpm
24,249 xg	25,910 xg	27,590 xg	16,582 xg	32,310 xg	54,111 xg	2,075 xg	2,700 xg	3,960 xg
5,394 xg	5,394 xg	5,394 xg	5,394 xg	5,394 xg	5,394 xg	-	2,826 xg	3,888 xg
6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x (250 & 15) mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 250 & 15 mL, 8 x c50 mL, 20 x 5.0 mL, 48 x 1.5/2.0 mL	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 500 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 1,000 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	12 x 15 mL	10 x 50/c50 mL 16 x 15 mL	10 x 50/c50 mL, 24 x 2.0 mL
4 x 750 mL, 4 x 5 x c50 mL, 4 x 20 x 15 mL, 4 x 4 MTPs	4 x 750 mL, 4 x 5 x c50 mL, 4 x 20 x 15 mL, 4 x 4 MTPs	4 x 1,000 mL, 4 x 750 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 48 x 15 mL, 16 MTPs	4 x 250 mL, 4 x 3 x c50 mL, 4 x 12 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 4 x 3 x c50 mL, 4 x 12 x 15 mL, 4 x 4 MTPs	-	4 x 100 mL, 32 vacutainer tubes, 2 x 2 MTPs	4 x 100 mL, 32 vacutainer tubes, 2 x 2 MTPs
7 (F) / 5(S)	9 (F) / 5 (S)	10 (F) / 6 (S)	8 (F) / 3 (S)	10 (F) / 2 (S)	12 (F) / 2 (S)	2 (F)	3 (F) / 4 (S)	6 (F) / 4 (S)
-	-20°C to 40°C	-11°C to 40°C	-20°C to 40°C	-20°C to 40°C	-20°C to 40°C	-	-	-10°C to 40°C
1.5 kVA	2.5 kVA	2 kVA	2.5 kVA	2.5 kVA	4 kVA	140 VA	340 VA	900 VA
540 x 650 x 380	770 x 650 x 390	775 x 695 x 395	473 x 620 x 830	473 x 620 x 830	824 x 634 x 1,049	296 x 412 x 206	375 x 480 x 260	584 x 535 x 317
57 kg	93 kg	116 kg	110 kg	110 kg	240 kg	17.5 kg	23 kg	65 kg
GZ-1580	GZ-1580R	GZ-1696R	GZ-1236R	GZ-1730R	GZ-2236R	GZ-0406	GZ-0416	GZ-624R

F	F	F	F	F	F	-	-	-
F/S	F/S	F/S	F/S	F/S	F/S	-	S	F/S
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
F/S	F/S	F/S	F/S	F/S	F/S	-	S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	F	F/S	F/S
F/S	F/S	S	F/S	S	S	F	F/S	F/S
F/S	F/S	S	F/S	S	S	F	F/S	F/S
F/S	F/S	S	F/S	S	S	F	F/S	F/S
-	-	-	-	-	-	-	-	-
F/S	F/S	S	F/S	S	S	F	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	F	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	F	F/S	F/S
S	S	S	S	-	-	-	S	S
F/S	F/S	F/S	F/S	F/S	F/S	-	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	-	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	-	F/S	F/S
F/S	F/S	S	F/S	F/S	F/S	-	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	-	F/S	F/S
S	S	S	F/S	S	S	-	F/S	F/S
F/S	F/S	F/S	F/S	F/S	F/S	-	S	S
S	S	S	S	S	S	-	S	S
S	F/S	F/S	F/S	F/S	F/S	-	-	-
S	S	S	S	S	S	-	-	-
S	S	S	-	F	F	-	-	-
S	S	S	-	-	-	-	-	-
S	S	S	-	-	-	-	-	-
-	-	S	-	-	F	-	-	-
S	S	S	S	S	S	-	S	S
S	S	S	S	S	S	-	-	-
-	-	-	-	-	-	-	-	-
S	S	-	S	-	-	-	-	-
S	S	-	S	-	-	-	-	-

# Catalog Numbering Rule of Centrifuge and Accessories

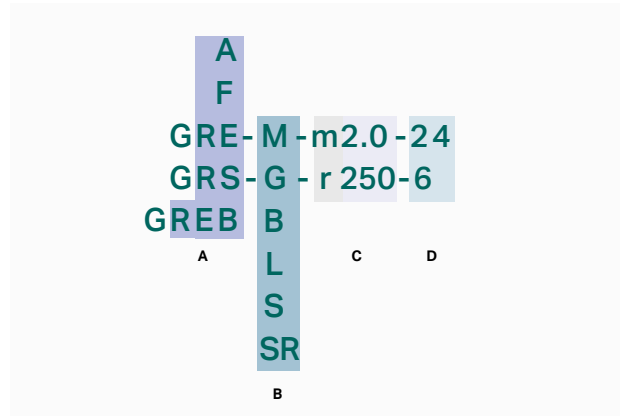
No symbol	round type
r	rectangular type
c	conical type
d	dual hole type

m	for micro tube
b	for bioseal application
u	universal for both round & conical tube
mw	for multiwell plate



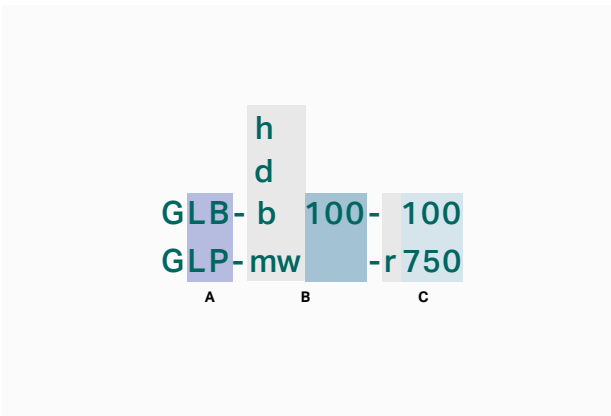
Catalog Numbering of Main Body

<b>A</b>	Max. Speed (x 1,000 rpm)
<b>B</b>	Max. Capacity (total # of tubes for max. load)
<b>C</b>	R for Refrigerated Model



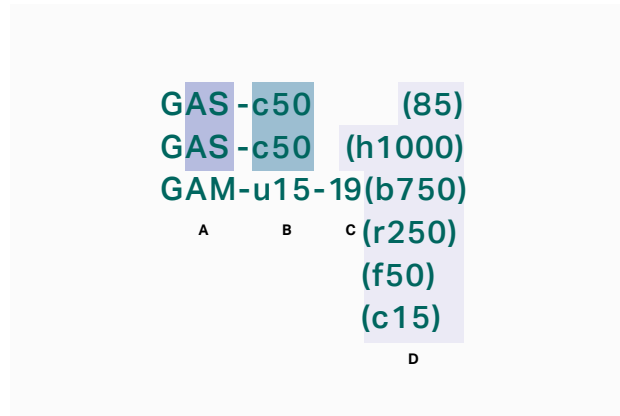
Catalog Numbering of Rotors

<b>A</b>	F/A : Fixed Angle, S : Swing-Out, E : Easy Lock, B : Bio-Safe
<b>B</b>	Family Name of Rotors b/w Different Models
	M : 1730R G : 1248/1248R/1236R/1580/1580R S : 416 B : 1696R L : 1736R/2236R SR : 624R
<b>C</b>	Type and Capacity of Individual Rotor Hole or Bucket
<b>D</b>	Max. Capacity (total # of tubes for max. load)



Catalog Numbering of Buckets

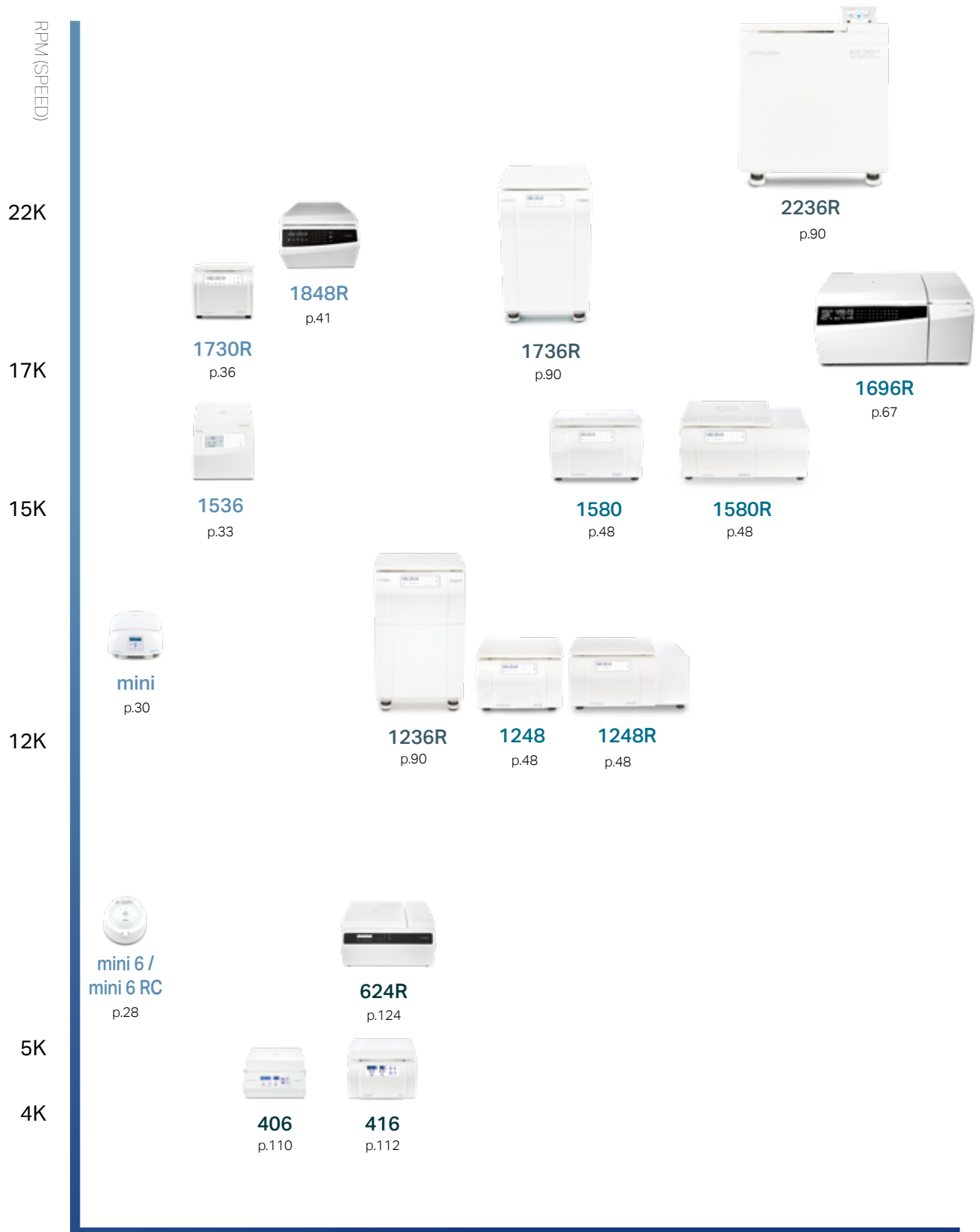
<b>A</b>	Loaded Bucket or Plate
<b>B</b>	Bucket Type and Capacity
<b>C</b>	Type and Capacity of a Single Wing of a Matching Rotor



Catalog Numbering of Adaptors & Multi-Tube Racks

<b>A</b>	Adaptor for Single-Tube or Multi-Tube
<b>B</b>	Type and Capacity of Tube Hole
<b>C</b>	Max. Capacity (total # of tubes for max. load)
<b>D</b>	Type and Capacity of a Single Wing of a Matching Rotor

# Product Range









CAPACITY





# Rotor Selection Guide









- Bio-Safe Manufacturer Validated
- Bio-Safe Porton Down Certified
- Adaptors available for smaller tubes










## Micro

<b>mini 6 / mini 6 RC</b> p. 28	Rotor Cat. No.	GRA-m2.0-6	GRA-s0.2-16
	Max. Capacity	6 x 2.0 mL	16 x 0.2 mL
	Product		
	Max. RPM/RCF	6,500/2,234	6,500 / 1,850
	Hole Diameter (mm)	11.1	6.5
	Max. Height for Tube fit (mm)	39	10

<b>mini</b> p. 30	Rotor Cat. No.	GRA-s0.2-32	GRF-m1.8-10	GRF-m2.0-12b	GRF-m2.0-12
	Max. Capacity	32 x 0.2 mL	10 x 1.8 mL cryotube	12 x 2.0 mL	12 x 2.0 mL
	Product				
	Max. RPM/RCF	6,000/ Inner 1,554 Outer 1,850	13,500/12,300	13,500/12,300	13,500/12,300
	Hole Diameter (mm)	6.5	12.8	11.1	11.1
	Max. Height for Tube fit (mm)	10	50	50	50

<b>1536</b> p. 33	Rotor Cat. No.	GREB-s0.2-32	GREB-m2.0-24	GRE-m2.0-36	GRE-m5.0-10
	Max. Capacity	32 x 0.2 mL	24 x 2.0 mL	36 x 2.0 mL	10 x 5.0 mL
	Product				
	Max. RPM/RCF	15,000/14,187	15,000/21,206	15,000/ inner 17,835 outer 21,206	15,000/21,583
	Hole Diameter (mm)	6.7	11.1	11.1	17
	Max. Height for Tube fit (mm)	25	52	52	68




<b>1730R</b> p. 36	Rotor Cat. No.	GRE-M-s0.2-64	GRE-M-m2.0-18	GREB-M-m2.0-24	GREB-M-m2.0-30	GRE-M-m2.0-36	GRE-M-m5.0-12	GRD-M-m2.0-8	GRD-M-m2.0-16
	Max. Capacity	64 x 0.2 mL	18 x 2.0 mL	24 x 2.0 mL	30 x 2.0 mL	36 x 2.0 mL	12 x 5.0 mL	8 x 2.0 mL	16 x 2.0 mL
	Product								
	Max. RPM/RCF	12,500/ inner 10,237 outer 11,722	15,000/18,891	17,000/27,237	15,000 / 24,249	15,000 / inner 17,835 outer 21,206	15,000/22,967	13,000/16,343	13,000/15,682
	Hole Diameter (mm)	6.5	11.1	11.1	11.1	11.1	17	11.1 X 39	11.1 X 19
	Max. Height for Tube fit (mm)	25	65	52	52	52	68	48	50






















<b>1848R</b> p. 41	Rotor Cat. No.	GRE-M-s0.2-64	GREB-M-m2.0-24	GRE-M-m2.0-48	GRE-M-m5.0-20	GRF-M-c15-12	GRF-M-c50-8	GRF-M-50/ c15-4-4	GRD-M-m2.0-24	GRD-M-mw-2
	Max. Capacity	64 x 0.2 mL	24 x 2.0 mL	48 x 2.0 mL	20 x 5.0 mL	12 x 15 mL	8 x 50 mL conical	4 x 50 mL/ 4 x 15 mL conical	24 x 2.0 mL	2 x 2 MTPs
	Product									
	Max. RPM/RCF	12,500/ inner 10,237 outer 11,722	18,000/30,536	13,000/ inner 15,928 outer 18,479	13,000/20,595	8,500/8,611	8,000/8,893	8,500 9,144 (50) 8,293 (15)	13,000/16,438	5,750/3,050
	Hole Diameter (mm)	6.5	11.1	11.1	17	17.2	29.8	29.8(50)17.2(15)	11.1 x 19	86.5 x 128.5
	Max. Height for Tube fit (mm)	25	52	52	68	125	123	123	50	36

- The fixed angle rotors are supplied with rotor lid (exc. PCR strip rotors).
- The open style angle rotors are supplied with tube sleeves.
- The swing-out rotor may be ordered together with compatible buckets and adaptors
- The colors of the rotors, buckets and adaptors may be different and changeable without notification.

- Bio-Safe Manufacturer Validated
- Bio-Safe Porton Down Certified
- Adaptors available for smaller tubes

**Low-speed**

<b>406</b> p. 110 	Rotor Cat. No.	GRA-15-6A	GRA-15/10-12A
	Bucket Cat. No.	GLB-15/10A	GLB-15/10A
	Max. Capacity	6 x 15 mL	6 x 15 mL 12 x 10 mL
	Product		
	Max. RPM/RCF	4,000/2,075	4,000/2,057
	Hole Diameter (mm)	18	18
	Max. Height for Tube fit (mm)	125	125

<b>416</b> p. 112 	Rotor Cat. No.	GRA-S-15-16A	GRA-S-50-10	GRA-S-c50-10	GRS-S-mw-2	GRS-S-15-6		GRS-S-50-4			
	Bucket Cat. No.	GLB-15/10A	GLB-50s-50A	GLB-c50s-50A	-	GLB-d15-15	GLB-15-15	GLB-50-50	GLB-c50-50	GLB-15-50	GLB-c15-50
	Max. Capacity	16 x 15 mL	10 x 50 mL	10 x 50 mL conical	2 x 2 MTPs	6 x 2 x 15 mL open top tube	6 x 15 mL	4 x 50 mL	4 x 50 mL conical	4 x 15 mL	4 x 15 mL conical
	Product										
	Max. RPM/RCF	4,000/2,700	4,000/2,549	4,000/2,508	4,000/2,000	4,000/2,737	4,000/2,826	4,000/2,700	4,000/2,700	4,000/2,700	4,000/2,700
	Hole Diameter (mm)	18	30	31	86.5 x 128.5	17	17	30.5	29.5	17	17
	Max. Height for Tube fit (mm)	125	130	130	35	122	125	125	125	125	125
	Rotor Cat. No.	GRS-S-50-4			GRS-S-100-4						
	Bucket Cat. No.	GLB-d15-50	GLB-dc15-50	GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-15-8-100	GLB-bd15-100	GLBB-bdc15-100		
	Max. Capacity	4 x 2 x 15 mL	4 x 2 x 15 mL conical	4 x 100 mL	4 x 50 mL	4 x 2 x 50 mL conical	4 x 8 x 15 mL open top tube	4 x 2 x 15 mL	4 x 2 x 15 mL conical		
	Product										
Max. RPM/RCF	4,000/2,700	4,000/2,700	4,000/2,774	4,000/2,700	4,000/2,774	4,000/2,719	4,000/2,700	4,000/2,774			
Hole Diameter (mm)	17	17	47	30.5	30	17	17	17			
Max. Height for Tube fit (mm)	125	120	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115	123 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)			

<b>624R</b> p. 124 	Rotor Cat. No.	GRF-SR-m2.0-24	GRF-SR-50-6	GRF-SR-c50-6	GRA-SR-15-24A	GRA-SR-50-10	GRA-SR-c50-10	GRS-S-mw-2	GRS-SR-15-6		GRS-SR-50-4	
	Bucket Cat. No.	-	-	-	GLB-15A	GLB-50s-50A	GLB-c50s-50A	GLP-mw	GLB-d15-15	GLB-15-15	GLB-50-50	GLB-c50-50
	Max. Capacity	24 x 2.0 mL	6 x 50 mL	6 x 50 mL conical	24 x 15 mL	10 x 50 mL	10 x 50 mL conical	2 x 2 MTPs	6 x 2 x 15 mL open top tube	6 x 15 mL	4 x 50 mL	4 x 50 mL conical
	Product											
	Max. RPM/RCF	6,000/3,393	6,000/3,824	6,000/3,960	4,000/inner 2,469 outer 2,773	4,000/2,549	4,000/2,508	4,000/2,000	4,400/3,312	4,400/3,420	4,800/3,888	4,800/3,888
	Hole Diameter (mm)	11.1	29.5	30	18	30	31	86.5 x 128.5	17	17	30.5	29.5
	Max. Height for Tube fit (mm)	52	120	125	125	130	130	35	122	125	125	125
	Rotor Cat. No.	GRS-SR-50-4				GRS-SR-100-4						
	Bucket Cat. No.	GLB-15-50	GLB-c15-50	GLB-d15-50	GLB-dc15-50	GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-15-8-100	GLB-bd15-100	GLBB-bdc15-100	
	Max. Capacity	4 x 15 mL	4 x 15 mL conical	4 x 2 x 15 mL	4 x 2 x 15 mL conical	4 x 100 mL	4 x 50 mL	4 x 2 x 50 mL conical	4 x 8 x 15 mL vacutainer	4 x 2 x 15 mL	4 x 2 x 15 mL conical	
	Product											
Max. RPM/RCF	4,800/3,888	4,800/3,888	4,800/3,888	4,800/3,888	4,200/3,059	4,200/2,976	4,200/3,059	4,200/2,998	4,200/2,976	4,200/3,059		
Hole Diameter (mm)	17	17	17	17	47	30.5	30	17	17	17		
Max. Height for Tube fit (mm)	125	125	125	120	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115	123 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)		

# Rotor Selection Guide

- Bio-Safe Manufacturer Validated
- Bio-Safe Porton Down Certified
- Adaptors available for smaller tubes

## Table-top, High-speed

1248 / 1248R p. 48	Rotor Cat. No.	GRF-G-s0.2-64	GRF-G-m2.0-30	GRF-G-c15-12	GRF-G-15-24	GRF-G-50-8	GRF-G-c50-8
	Bucket Cat. No.	-	-	-	-	-	-
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	12 x 15 mL conical	24 x 15 mL	8 x 50 mL	8 x 50 mL conical
	Product						
	Max. RPM/RCF	12,000/ inner 9,434 outer 10,803	12,000/15,520	12,000/16,582	8,000/ inner 7,370 outer 8,872	12,000/16,582	10,000 / 12,298
	Hole Diameter (mm)	6.5	11.1	17.2	17.1	29.5	29.8
	Max. Height for Tube fit (mm)	25	52	125	120	120	130

1580 / 1580R p. 48	Rotor Cat. No.	GRF-G-s0.2-64	GRF-G-m2.0-30	GRF-G-c15-12	GRF-G-15-24	GRF-G-50-8	GRF-G-c50-8
	Bucket Cat. No.	-	-	-	-	-	-
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	12 x 15 mL conical	24 x 15 mL	8 x 50 mL	8 x 50 mL conical
	Product						
	Max. RPM/RCF	12,000/ inner 9,434 outer 10,803	15,000/24,249	15,000/25,910 12,000/16,582	8,000/ inner 7,370 outer 8,872	15,000/25,910 12,000/16,582	13,000 / 20,784 10,000 / 12,298
	Hole Diameter (mm)	6.5	11.1	17.2	17.1	29.5	29.8
	Max. Height for Tube fit (mm)	25	52	125	120	120	130

1696R p. 67	Rotor Cat. No.	GRF-B-s0.2-64	GRF-B-m2.0-30	GRF-B-m2.0-48	GRF-B-m5.0-20	GRF-B-c15-12	GRF-B-15-24
	Bucket Cat. No.	-	-	-	-	-	-
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	48 x 2.0 mL	20 x 5.0 mL	12 x 15 mL	24 x 15 mL
	Product						
	Max. RPM/RCF	12,000/ inner 9,434 outer 10,803	16,000/27,590	15,000/ inner 21,206 outer 24,602	13,500/22,209	15,000/25,910	8,000 inner 7,370 outer 8,872
	Hole Diameter (mm)	6.5	11.1	11.1	17	17.2	17.1
	Max. Height for Tube fit (mm)	25	52	52	68	125	120

	Rotor Cat. No.	GRS-B-1000-4		
	Bucket Cat. No.	GLB-h1000-1000	GLB-b1000-1000	GLB-r1000-1000
	Max. Capacity	4 x 1,000 mL	4 x 1,000 mL	4 x 1,000 mL
	Product			
	Max. RPM/RCF	3,700/3,092	3,700/3,337	3,700/3,084
	Hole Diameter (mm)	110 x 168.7	99	97 x 134
	Max. Height for Tube fit (mm)	160	155 (w/ cap) 170 (w/o cap)	125 (w/ cap) 143 (w/o cap)

GRF-G-85-6	GRA-G-15-24A	GRS-G-100-6						GRS-G-250-4		GRS-G-r250-4		
	GLB-15/10A	GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-15-8-100	GLB-bd15-100	GLBB-bdc15-100	GLB-250-250	GLB-60-250	GLB-d20/10-250	GLB-r250-250	GLP-mw-r250
6 x 85 mL	24 x 15 mL	6 x 100 mL	6 x 50 mL	6 x 2 x 50 mL conical	6 x 8 x 15 mL open top tube	6 x 2 x 15 mL	6 x 2 x 15 mL conical	4 x 250 mL	4 x 60 mL	4 x 2 x 20 & 10 mL	4 x 250 mL	4 x 4 MTPs
10,000/12,298	4,000/3,134	4,000/3,105	4,000/3,032	4,000/3,105	4,000/3,059	4,000/3,032	4,000/3,105	5,000/5,394	5,000/5,394	5,000/ 4,752 (20) 4,472 (10)	4,000/3,134	4,000/2,737
38.5	18	47	30.5	30	17	17	17	62	31.9	22.5 (20)/16 (10)	86 x 70.3	86.5 x 128.5
122	125	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115	115 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)	153	162	132 (20) 125 (10)	130	80

GRF-G-85-6	GRF-G-250-6	GRA-G-15-24A	GRS-G-100-6						GRS-G-250-4		GRS-G-r250-4		GRS-G-r750-4		GRS-G-750-4				
		GLB-15/10A	GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-15-8-100	GLB-bd15-100	GLBB-bdc15-100	GLB-250-250	GLB-60-250	GLB-d20/10-250	GLB-r250-250	GLP-mw-r250	GLB-r750-750	GLB-500-r750	GLP-mw-r750	GLBB-b750-750	GLB-500-750	GLP-mw-750
6 x 85 mL	6 x (250 & 15 mL)	24 x 15 mL	6 x 100 mL	6 x 50 mL	6 x 2 x 50 mL conical	6 x 8 x 15 mL open top tube	6 x 2 x 15 mL	6 x 2 x 15 mL conical	4 x 250 mL	4 x 60 mL	4 x 2 x 20 & 10 mL	4 x 250 mL	4 x 4 MTPs	4 x 750 mL	4 x 500 mL	4 x 4 MTPs	4 x 750 mL	4 x 500 mL	4 x 4 MTPs
12,000/17,709 10,000/12,298	8,000/ 9,588 (250) 9,395 (15)	4,000/3,134	4,000/3,105	4,000/3,032	4,000/3,105	4,000/3,059	4,000/3,032	4,000/3,105	5,000/5,394	5,000/5,394	5,000/ 4,752 (20) 4,472 (10)	4,000/3,134	4,000/2,737	3,600/2,898	3,600/3,159	3,600/2,485	4,000/3,667	4,000/3,900	4,000/3,068
38.5	62 (250)/17.1 (15)	18	47	30.5	30	17	17	17	62	31.9	22.5 (20)/16 (10)	86 x 70.3	86.5 x 128.5	99 x 99	70	86.5 x 128.5	99	70	86.5 x 128.5
122	130 (250) 120 (15)	125	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115	115 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)	153	162	132 (20) 125 (10)	130	80	165	172	80	140 (w/ cap) 165 (w/o cap)	172	80

GRF-B-50-8	GRF-B-c50-8	GRF-B-85-6	GRF-B-250-6	GRS-B-100-6						GRS-B-250-4		GRS-B-r250-4		GRS-B-r750-4		GRS-B-750-4		
				GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-bd15-100	GLBB-bdc15-100	GLB-15-8-100	GLB-250-250	GLB-r250-250	GLP-mw-r250	GLB-r750-r750	GLB-500-r750	GLP-mw-r750	GLB-b750-750B	GLB-500-750B	GLB-mw-750B
8 x 50 mL	8 x 50 mL conical	6 x 85 mL	6 x (250 & 15 mL)	6 x 100 mL	6 x 50 mL	6 x 2 x 50 mL conical	6 x 2 x 15 mL	6 x 2 x 15 mL conical	6 x 8 x 15 mL open top tube	4 x 250 mL	4 x 250 mL	4 x 4 MTPs	4 x 750 mL	4 x 500 mL	4 x 4 MTPs	4 x 750 mL	4 x 500 mL	4 x 4 MTPs
15,000/25,910	13,000/20,784	12,000/16,019	8,000/ 9,588 (250) 9,395 (15)	4,200/3,424	4,200/3,343	4,200/3,424	4,200/3,343	4,200/3,424	4,200/3,372	5,000/5,394	4,000/3,134	4,000/2,737	3,600/2,898	3,600/3,159	3,600/2,485	4,600/4,850	4,600/5,157	4,600/4,033
29.5	29.8	38.5	62 (250)/17.1 (15)	47	30.5	30	17	17	17	62	86 x 70.3	86.5 x 128.5	99 x 99	70	86.5 x 128.5	99	70	86.5 x 128.5
120	130	125	130 (250) 120 (15)	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)	115	153	130	80	165	172	80	140 (w/ cap) 165 (w/o cap)	172	63 (w/ cap) 110 (w/o cap)



# Rotor Selection Guide

- Bio-Safe Manufacturer Validated
- Bio-Safe Porton Down Certified
- Adaptors available for smaller tubes

## Floor Standing, High-speed

<b>1236R</b> p. 90 	Rotor Cat. No.	GRF-G-s0.2-64	GRF-G-m2.0-30	GRF-G-c15-12	GRF-G-15-24	GRF-G-50-8	GRF-G-c50-8	GRF-G-85-6	GRA-G-15-24	GRS-G-100-6					
	Bucket Cat. No.	-	-	-	-	-	-	-	GLB-15/10A	GLBB-b100-100	GLB-b50-100	GLB-dc50-100	GLB-15-8-100	GLB-bd15-100	GLBB-bdc15-100
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	12 x 15 mL conical	24 x 15 mL	8 x 50 mL	8 x 50 mL conical	6 x 85 mL	24 x 15 mL	6 x 100 mL	6 x 50 mL	6 x 2 x 50 mL conical	6 x 8 x 15 mL open top tube	6 x 2 x 15 mL	6 x 2 x 15 mL conical
	Product														
	Max. RPM/RCF	12,000/ inner 9,434 outer 10,803	12,000/15,520	12,000/16,582	8,000/ inner 7,370 outer 8,872	12,000/16,582	10,000 / 12,298	10,000/12,298	4,000/3,134	4,000/3,105	4,000/3,032	4,000/3,105	4,000/3,059	4,000/3,032	4,000/3,105
	Hole Diameter (mm)	6.5	11.1	17.2	17.1	29.5	29.8	38.5	18	47	30.5	30	17	17	17
	Max. Height for Tube fit (mm)	25	52	125	120	120	130	122	125	120 (w/ cap) 130 (w/o cap)	120 (w/ cap) 125 (w/o cap)	125	115	115 (w/ cap) 127 (w/o cap)	120 (w/ cap) 125 (w/o cap)
	Rotor Cat. No.	GRS-G-250-4			GRS-G-r250-4										
	Bucket Cat. No.	GLB-250-250	GLB-60-250	GLB-d20/10-250	GLB-r250-250	GLP-mw-r250									
	Max. Capacity	4 x 250 mL	4 x 60 mL	4 x 2 x (20 & 10 mL)	4 x 250 mL	4 x 4 MTPs									
Shape															
Max. RPM/RCF	5,000/5,394	5,000/5,394	5,000/ 4,752 (20) 4,472 (10)	4,000/3,134	4,000/2,737										
Hole Diameter (mm)	62	31.9	22.5 (20)/16 (10)	86 x 70.3	86.5 x 128.5										
Max. Height for Tube fit (mm)	153	162	132 (20) 125 (10)	130	80										
<b>1736R</b> p. 90 	Rotor Cat. No.	GRF-L-s0.2-64	GRF-L-m2.0-30	GRF-L-c15-12	GRF-L-50-6	GRF-L-c50-8	GRF-L-50-8	GRF-L-85-6	GRF-L-250-6	GRF-L-500-6	GRS-L-250-4	GRS-L-r250-4			
	Bucket Cat. No.	-	-	-	-	-	-	-	-	-	GLB-250-250	GLB-r250-250	GLB-mw-r250		
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	12 x 15 mL conical	6 x 50 mL	8 x 50 mL conical	8 x 50 mL	6 x 85 mL	6 x (250 & 15 mL)	6 x 500 mL	4 x 250 mL	4 x 250 mL	4 x 4 MTPs		
	Product														
	Max. RPM/RCF	12,000/ 9,434 (inner) 10,803 (outer)	17,000/31,147	15,000/25,910	17,000/32,310	15,000/27,671	15,000/25,910	15,000/25,029	10,000/ 14,981(250) 14,679 (15)	8,000/11,305	5,000/5,394	4,000/3,134	4,000/2,737		
	Hole Diameter (mm)	6.5	11.1	17.2	29.5	29.8	29.5	38.5	62 (250)/17.1 (15)	70	62	86 x 70.3	86.5 x 128.5		
	Max. Height for Tube fit (mm)	25	52	125	113	130	120	125	130 (250)/120 (15)	170	153	130	80		
<b>2236R</b> p. 90 	Rotor Cat. No.	GRF-L-s0.2-64	GRF-L-m2.0-30	GRF-L-c15-12	GRF-L-50-6	GRF-L-c50-8	GRF-L-50-8	GRF-L-85-6	GRF-L-250-6	GRF-L-500-6	GRF-L-1000-4	GRF-L-1000-6	GRS-L-250-4	GRS-L-r250-4	
	Bucket Cat. No.	-	-	-	-	-	-	-	-	-	-	-	GLB-250-250	GLB-r250-250	GLB-mw-r250
	Max. Capacity	64 x 0.2 mL	30 x 2.0 mL	12 x 15 mL conical	6 x 50 mL	8 x 50 mL conical	8 x 50 mL	6 x 85 mL	6 x (250 & 15 mL)	6 x 500 mL	4 x 1,000 mL	6 x 1,000 mL	4 x 250 mL	4 x 250 mL	4 x 4 MTPs
	Product														
	Max. RPM/RCF	12,000/ inner 9,434 outer 10,803	22,000/52,163	20,000/46,062	22,000/54,111	17,000 / 35,541	20,000/46,062	20,000/44,496	13,000/ 25,318 (250) 24,808 (15)	10,000/17,664	8,000/12,071	7,000/10,825	5,000/5,394	4,000/3,134	4,000/2,737
	Hole Diameter (mm)	6.5	11.1	17.2	29.5	29.8	29.5	38.5	62 (250)/17.1 (15)	70	98	98	62	86 x 70.3	86.5 x 128.5
Max. Height for Tube fit (mm)	25	52	125	113	130	120	125	130 (250)/120 (15)	170	175	175	153	130	80	

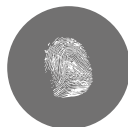
# Function Icons



**Automatic RPM/RCF Conversion**  
for easy detection of g-value to be applied on samples



**Fast Cooling**  
Cooling down to 4°C within 5 minutes



**Rotor ID**  
Automatic rotor identification for safe operation



**Imbalance Cut-Off**  
Sound warning keep the instrument protected from unsuitable operation.



**Up to 100 or 10 Program Memory**  
for convenient operation of the routine protocols



**Motorized Lid Mechanics**  
Only a gentle touch is sufficient to close and open the lid.



**Short Spin (Pulse)**  
One-touch key for quick spin



**Lid Drop Protection Design**  
allows operator's convenience and safety.



**Selectable Time Mode of "At Set Speed"**  
for counting running time starting when is reached the set speed



**Automatic Lid Release**  
at the completion of the operation (only for non refrigerated model)



**ACC/DEC Rate Control**  
Setting run-up (9 steps) / down (10 steps) rates



**Bio-Safe Rotors Available**



**Soft Start/Stop Function**  
to achieve gentle run-up and down (416 only)



**A Large Assortment of Rotors, Buckets and Adaptors**  
support diverse applications doable with one instrument.



**Glove-Friendly, Soft Touch Buttons**  
allows easy setting of running conditions / Finger print loss



**User ID and Password Function**  
ideal for core laboratory or multi-user environments (2236R only)

# Micro Centrifuges

## Technical Specifications

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**mini 6 / mini 6 RC**

p. 28



**mini**

p. 30

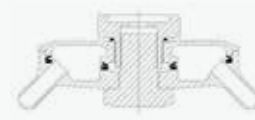
<b>Max. RPM / Fixed angle</b>	6,500 rpm	13,500 rpm
<b>Max. RPM / Swing-out</b>	-	-
<b>Max. RCF / Fixed angle</b>	2,234 xg (1.5/2.0 mL tube) 1,850 xg (PCR strip)	12,300 xg
<b>Max. RCF / Swing-out</b>	-	-
<b>Max. capacity / Fixed angle</b>	6 x 1.5/2.0 mL 2 PCR strips	12 x 1.5/2.0 mL 4 PCR strips
<b>Max. capacity / Swing-out</b>	-	-
<b>RCF/RPM conversion</b>	-	Yes
<b>Temperature range</b>	-	-
<b>FAST cool button</b>	-	-
<b>CE mark</b>	-	Yes
<b>Cat. No.</b>	AC-mini6 / AC-mini6-RC	GZ-1312

## Function Features



### Pulse Key

Time control functions of pulse for quick spin



### Easy-Lock rotor with a set of V-rings

Tightly sealed rotor with two V-rings and an O-ring

**Bio-Safe** Manufacturer Validated

**Bio-Safe** Porton Down Certified



### Bio-safe & Easy Rock Rotor

Containment of samples provided by a combination of physical seals and a design to prevent any sample leakage within the rotor.



### Fast Cooling System

Fast cooling allows a temperature drop to 4°C within 5minutes; function for quick start of cooled samples



### 1536

p. 33



### 1730R

p. 36



### 1848R

p. 41

15,000 rpm	17,000 rpm	18,000 rpm
-	13,000 rpm	13,000 rpm
21,583 xg	27,237 xg	30,356 xg
-	16,343 xg	16,438 xg
10 x 5.0 mL 36 x 1.5/2.0 mL 4 PCR strips	12 x 5.0 mL 36 x 1.5/2.0 mL 8 PCR strips	8 x c50 mL 20 x 5.0 mL 48 x 2.0 mL
-	4 x 4 x 1.5/2.0 mL	6 x 4 x 2.0 mL 2 x 2 MTPs
Yes	Yes	Yes
-	-20°C to 40°C	-12°C to 40°C
-	Yes	Yes
Yes	Yes	Yes
GZ-1536	GZ-1730R	GZ-1848R

# mini 6 / mini 6 RC

## Micro Centrifuge



### Features

- Speed : 6,500 rpm (2,234 xg ; 1,850 xg (PCR))
- Capacity : 6 x 1.5/2.0 mL; 2 x 8 PCR strips
- Selectable operation models between short spin and continuous 15 minutes
- One spin action simply by closing the lid
- Safety stop when lid is promptly opened
- Interchangeable rotors for 6 micro tubes and 2 PCR strips
- Electro sensitive lid sensor
- Useful when there are not enough power lines in BSCs, refrigerators incubators, Etc by running on rechargeable Li-battery. (M6-RC only)
- Can be used immediately for outdoor or on-site experiments. (M6-RC only)

### Technical Specifications







<b>Max. RPM/PCF for Fixed Angle</b>	6,500 rpm / 2,234 xg
<b>Max. Capacity for Fixed Angle</b>	6 x 1.5/2.0 mL, 2 x 8 tube PCR strips
<b>Acc. Time to Max. Speed</b>	≤3 sec
<b>Dec. Time from Max. Speed</b>	≤4 sec
<b>Noise Level (dependent on rotor)</b>	≤50 dB
<b>Power Supply (V/Hz)</b>	100~240 V, 50/60 Hz

<b>Power input</b>	OUTPUT DC 12V 2A ,INPUT AC100~240V, 50/60Hz; (110V optional)
<b>Power Requirement</b>	7 W
<b>Dimension (W x D x H)</b>	150 x 150 x 90 mm
<b>Net Weight</b>	mini 6 : 650 g / mini 6 RC : 790 g
<b>Cat. No.</b>	AC-mini6 / AC-mini6-RC

## Fixed Angle Rotor, GRA-m2.0-6

- Capacity : 6 x 1.5/2.0 mL
- Max. RPM / RCF : 6,500 / 2,234
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 11.1 x 3
- Hole bottom type : Open
- Max. height for tube fit (Up) : 13
- Max. height for tube fit (Down) : 39





				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	29.2	36.2	47.3	47.3
Max. RCF (g-force)*	1,379	1,710	2,234	2,234

## Fixed Angle Rotor, GRA-s0.2-16

- Capacity : 2 x 8-Tube PCR strips, 16 x 0.2 mL
- Max. RPM / RCF : 6,500 / 1,850
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 6.5 x 3
- Hole bottom type : Open
- Max. height for tube fit (Up) : 10
- Max. height for tube fit (Down) : 15



		
Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\varnothing \times L, \text{mm}$ )	6 x 8	6 x 8
Max. radius (mm)	29.9	29.9
Max. RCF (g-force)	1,412	1,412

# mini Micro Centrifuge



## Features

- Speed : 13,500 rpm (12,300 xg) ; 6,000 rpm (1,850 xg)
- Capacity : 12 x 1.5/2.0 mL ; 10 x 18 mL cryotube, 4 x 8 PCR strips
- Patented anti-vibration system and air-cooling to minimize noise and heat generation
- Very quiet operation at less than 56 dB
- "PULSE" key available for quick spin
- Autoclavable rotor, lid and adaptors







## Technical Specifications

<b>Max. RPM/PCF for Fixed Angle</b>	13,500 rpm / 12,300 x g	<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Max. Capacity for Fixed Angle</b>	12 x 1.5/2.0 mL, 4 PCR strips	<b>Power Requirement</b>	110 VA
<b>Time Control</b>	Pulse, timed < 30 min or continuous	<b>Dimension (W x D x H)</b>	208 x 245 x 145 mm
<b>RCF/RPM Conversion</b>	Yes	<b>Net Weight</b>	4.4 kg
<b>Acc. Time to Max. Speed</b>	≤12 sec	<b>CE MARK</b>	Yes
<b>Dec. Time from Max. Speed</b>	≤16 sec	<b>Cat No.</b>	GZ-1312
<b>Noise Level (dependent on rotor)</b>	≤56 dB		

## Fixed Angle Rotor, GRF-m2.0-12

- Capacity : 12 x 1.5/2.0 mL
- Max. RPM / RCF : 13,500 / 12,300
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 50
- Supplied with a plastic snap fit lid, No ID ring









				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	43.5	50.5	60.4	60.4
Max. RCF (g-force)*	8,863	10,290	12,300	12,300

## Fixed Angle Rotor, GRF-m2.0-12-b

- Capacity : 12 x 1.5/2.0 mL
- Max. RPM / RCF : 13,500 / 12,300
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 50
- Supplied with a anodized aluminum lid and two O-rings inserted, No ID ring



				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	43.5	50.5	60.4	60.4
Max. RCF (g-force)*	8,863	10,290	12,300	12,300



## Fixed Angle Rotor, GRF-m1.8-10

- Capacity : 10 x 1.8 mL Cryotube
- Max. RPM / RCF : 13,500 / 12,300
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 12.8 x 32
- Hole bottom type : Flat
- Max. height for tube fit (mm) : 50
- Supplied with a plastic snap fit lid, No ID ring



Tube

Tube capacity (mL)	1.8 mL cryotube
Tube dimension ( $\Phi \times L, \text{mm}$ )	12.5 x 45
Max. radius (mm)	60.4
Max. RCF (g-force)	12,300

## Fixed Angle Rotor, GRA-s0.2-32

- Capacity : 4 x 8-Tube PCR strips, 32 x 0.2 mL
- Max. RPM / RCF : 6,000 / 1,850
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 6.5 x 3
- Hole bottom type : Open
- Max. height for tube fit (Up) : 10
- Max. height for tube fit (Down) : 12



Tube

Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\Phi \times L, \text{mm}$ )	6 x 8	6 x 8
Max. radius (mm)	Inner : 36.8 Outer : 46	Inner : 36.8 Outer : 46
Max. RCF (g-force)	Inner : 1,554 / Outer : 1,850	Inner : 1,554 / Outer : 1,850

# 1536 Micro Centrifuge



## Features

- Speed : 15,000 rpm (21,583 xg)
- Capacity : 10 x 5.0 mL conical ; 36 x 1.5/2.0 mL; 4 x 8 PCR strips
- Selectable time mode of "from starting" and "At Set SPEED" to enable time counting when set speed is reached
- "PULSE" key available for quick spin
- Simultaneous display of all parameters : set and actual values
- 9 steps of ACC (15 sec) & 10 steps of DEC (15 sec)

## Technical Specifications



<b>Max. RPM/RCF for Fixed Angle</b>	15,000 rpm / 21,583 xg
<b>Max. Capacity for Fixed Angle</b>	36 x 1.5/2.0 mL, 10 x 5.0 mL, 4 PCR strips
<b>Acc. Time to Max. Speed</b>	≤15 sec
<b>Dec. Time from Max. Speed</b>	≤15 sec
<b>Time Control</b>	Pulse, timed <100 min or continuous
<b>Time Counting Range</b>	Selectable, at set speed or from starting
<b>RCF/RPM Conversion</b>	Yes
<b>Noise Level (dependent on rotor)</b>	≤60 dB

<b>ACC/DEC Ramps</b>	9/10
<b>Program Memory</b>	100
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Power Requirement</b>	450 VA
<b>Dimension (W x D x H)</b>	240 x 378 x 240 mm
<b>Net Weight</b>	11.9 kg
<b>CE MARK</b>	Yes
<b>Cat No.</b>	GZ-1536

## Fixed Angle Rotor, GRE-m5.0-10

- Capacity : 10 x 5.0 mL
- Max. RPM / RCF : 15,000 / 21,583
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\Phi \times L$ ,mm) : 17 x 53
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 68
- Supplied with a lid and two V-rings inserted, No ID ring











Tube		
Tube capacity (mL)	5.0	5.0
Tube Dimension ( $\Phi \times L$ ,mm)	16 x 59	16 x 67
Max. radius (mm)	85.8	85.8
Max. RCF (g-force)	21,583	21,583

## Fixed Angle Rotor, GRE-m2.0-36

- Capacity : 36 x 1.5/2.0 mL (24 outer, 12 inner) plus 12 x 0.2 mL (inner)
- Max. RPM / RCF : 15,000 / 21,206
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\Phi \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted, No ID ring



Tube						
Tube capacity (mL)	0.2	0.2	0.5	1.5/2.0	2.0 mL filter tube	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	6 x 8	8 x 30	11 x 38	11 x 38	10.1 x 46
Adapter	None			None	None	None
Cat No.	-	GAS-m0.2(2)	GAS-m0.5(2)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	-	6.5 x 23	8 x 31	-	-	-
Adaptor hole bottom type	-	Open	Open	-	-	-
Max. radius (mm)*	Inner 58.2	Inner 53.5 Outer 67	Inner 60.5 Outer 73	Inner 70.9 Outer 84.3	Inner 70.9	Inner 70.9 Outer 84.3
Max. RCF (g-force)*	Inner 14,640	Inner 13,458 Outer 16,854	Inner 15,219 Outer 18,363	Inner 17,835 Outer 21,206	Inner 17,835	Inner 17,835 Outer 21,206







## Fixed Angle Rotor, GREB-m2.0-24

Bio-Safe

Porton Down Certified

- Capacity : 24 x 1.5/2.0 mL
- Max. RPM / RCF : 15,000 / 21,206
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted, No ID ring



Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	67	73	84.3	84.3
Max. RCF (g-force)*	16,854	18,363	21,206	21,206



## Fixed Angle Rotor, GREB-s0.2-32

Bio-Safe

Manufacturer Validated

- Capacity : 4 x 8-Tube PCR strips, 32 x 0.2 mL
- Max. RPM / RCF : 15,000 / 14,187
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid and two V-rings inserted, No ID ring



Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\varnothing \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	56.4	56.4
Max. RCF (g-force)	14,187	14,187

# 1730R Micro Centrifuge



## Features

- Speed : 17,000 rpm (27,237 xg)
- Capacity : 12 x c5.0 mL; 36 x 1.5/2.0 mL; 8 x 8 PCR strips
- Fast cooling function for cooled samples
- Selectable time mode of "from starting" and "At Set SPEED"
- "PULSE" key for quick spin
- Time & Temperature can be modified during operation : Key lock function
- All Rotors equipped with "Easy-Lock" Lid
- Swing-out rotor for 1.5/2.0 mL extends application

## Technical Specifications



<b>Max. RPM/PCF for Fixed Angle</b>	17,000 rpm / 27,237 xg
<b>Max. RPM/PCF for Swing-out</b>	13,000 rpm / 16,343 xg
<b>Max. Capacity for Fixed Angle</b>	36 x 1.5/2.0 mL, 12 x 5.0 mL, 8 PCR strips
<b>Max. Capacity for Swing-out</b>	4 x 4 x 1.5/2.0 mL
<b>Temp. Range (°C)</b>	-20°C to 40°C
<b>Fast Cool Button</b>	Yes
<b>Time Control</b>	Pulse, timed <100 min or continuous
<b>Time Counting Range</b>	Selectable, at set speed or from starting
<b>Noise Level (dependent on rotor)</b>	≤56 dB

<b>RCF/RPM Conversion</b>	Yes
<b>ACC/DEC Ramps</b>	9/10
<b>Program Memory</b>	100
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Power Requirement</b>	2.0 kVA
<b>Dimension (W x D x H)</b>	310 x 620 x 265 mm
<b>Net Weight</b>	43 kg
<b>CE MARK</b>	Yes
<b>Cat No.</b>	GZ-1730R

## Fixed Angle Rotor, GRE-M-m5.0-12

- Capacity : 12 x 5.0 mL
- Max. RPM / RCF : 15,000 / 22,967
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 17 x 53
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 68
- Supplied with a lid and two V-rings inserted











Tube		
Tube capacity (mL)	5.0	5.0
Tube Dimension ( $\Phi \times L$ ,mm)	16 x 59	16 x 67
Max. radius (mm)	91.3	91.3
Max. RCF (g-force)	22,967	22,967

## Fixed Angle Rotor, GRE-M-m2.0-36

- Capacity : 36 x 1.5/2.0 mL (24 outer, 12 inner) plus 12 x 0.2 mL(inner)
- Max. RPM / RCF : 15,000 / 21,206
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted



Tube						
Tube capacity (mL)	0.2	0.2	0.5	1.5/2.0	2.0 mL filter tube	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	6 x 8	8 x 30	11 x 38	11 x 38	10.1 x 46
Adapter	None			None	None	None
Cat No.	-	GAS-m0.2(2)	GAS-m0.5(2)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	-	6.5 x 23	8 x 31	-	-	-
Adaptor hole bottom type	-	Open	Open	-	-	-
Max. radius (mm)*	Inner 58.2	Inner 53.5 Outer 67	Inner 60.5 Outer 73	Inner 70.9 Outer 84.3	70.9	Inner 70.9 Outer 84.3
Max. RCF (g-force)*	Inner 14,640	Inner 13,458 Outer 16,854	Inner 15,219 Outer 18,363	Inner 17,835 Outer 21,206	17,835	Inner 17,835 Outer 21,206







## Fixed Angle Rotor, GREB-M-m2.0-30

Bio-Safe

Manufacturer Validated

- Capacity : 30 x 1.5/2.0 mL
- Max. RPM / RCF : 15,000 / 24,249
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted



				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	79	86	96.4	96.4
Max. RCF (g-force)*	19,872	21,633	24,249	24,249







## Fixed Angle Rotor, GREB-M-m2.0-24

Bio-Safe

Porton Down Certified

- Capacity : 24 x 1.5/2.0 mL
- Max. RPM / RCF : 17,000 / 27,237
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted










				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	67	73	84.3	84.3
Max. RCF (g-force)*	21,648	23,910	27,237	27,237

## Fixed Angle Rotor, GRE-M-m2.0-18

- Capacity : 18 x 1.5/2.0 mL
- Max. RPM / RCF : 15,000 / 18,891
- Hole angle from axis during rotation :  $\angle 40^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 65
- Supplied with a lid and two V-rings inserted





					
Tube					
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL filter tube	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	11 x 38	10.1 x 46
Adapter			None	None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-	-
Adaptor hole bottom type	Open	Open	-	-	-
Max. radius (mm)*	57.8	63.8	75.1	75.1	75.1
Max. RCF (g-force)*	14,540	16,049	18,891	18,891	18,891

## Fixed Angle Rotor, GRE-M-s0.2-64

- Capacity : 8 x 8-Tube PCR strips, 64 x 0.2 mL
- Max. RPM / RCF : 12,500 / 11,722
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid and two V-rings inserted

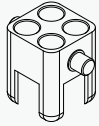


		
Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\Phi \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	Inner 58.6 Outer 67.1	Inner 58.6 Outer 67.1
Max. RCF (g-force)	Inner 10,237 Outer 11,722	Inner 10,237 Outer 11,722









## Windshield Swing-out Rotor, GRD-M-m2.0-16

- 4 loadings | Capacity : 16 x 1.5/2.0 mL
- Max. RPM / RCF : 13,000 / 15,682 | Hole angle from axis during rotation :  $\angle 90^\circ$
- Supplied with two V-rings inserted incl. four buckets and a lid



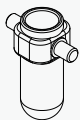
Microtube 1.5/2.0 mL  
Quaduple Bucket  
**GLB-m2.0-4(16)**

Hole dimension (Ø x L,mm) : 11.1 x 19  
Hole bottom type : Open  
Max. height for tube fit (mm) : 50  
Bucket material : Aluminum alloy, anodized, autoclavable

Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension (Φ x L, mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension (Φ x L,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	66	74	83	83
Max. RCF (g-force)*	12,470	13,982	15,682	15,682







## Windshield Swing-out Rotor, GRD-M-m2.0-8

- Capacity : 8 x 1.5/2.0 mL | Max. RPM / RCF : 13,000 / 16,343
- Hole angle from axis during rotation :  $\angle 90^\circ$
- Autoclavable & Easy-Lock type, Rotor ID ring underneath the rotor body
- Supplied with two V-rings inserted incl. eight buckets and a lid



Microtube 1.5/2.0 mL Bucket  
**GLB-m2.0(8)**

Hole dimension (Ø x L,mm) : 11.1 x 39  
Hole bottom type : Round  
Max. height for tube fit (mm) : 48

Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension (Φ x L, mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension (Φ x L,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	68.5	76.5	86.5	86.5
Max. RCF (g-force)*	12,943	14,454	16,343	16,343

# 1848R Micro Centrifuge



## Features

- Speed : 18,000 rpm (30,536 xg); 13,000 rpm (16,438 xg)
- Capacity / Swing-out : 6 x 4 x 2.0 mL; 2 x 2 MTPs
- Capacity / Fixed Angle : 8 x c50 mL; 20 x 5.0 mL; 48 x 1.5/2.0 mL
- Highly visible display screen, numeric keys with integrated touch buttons for easy operation and quick setting
- "PULSE" key for quick spin
- Fast cooling for cooled samples
- Key lock function

## Technical Specifications

<b>Max. RPM/PCF for Fixed Angle</b>	18,000 rpm / 30,536 xg	<b>ACC/DEC Ramps</b>	9/10
<b>Max. RPM/PCF for Swing-out</b>	13,000 rpm / 16,438 xg	<b>Program Memory</b>	100
<b>Max. Capacity for Fixed Angle</b>	8 x c50 mL, 20 x 5.0 mL, 48 x 2.0 mL	<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Max. Capacity for Swing-out</b>	6 x 4 x 2.0 mL, 2 x 2 MTPs	<b>Power Requirement</b>	2.0 kVA
<b>Temp. Range (°C)</b>	-12°C to 40°C	<b>Dimension (W x D x H)</b>	380 x 654 x 312 mm
<b>Fast Cool Button</b>	Yes	<b>Net Weight</b>	53.5kg
<b>Time Control</b>	Timed < 10 hr or Continuous	<b>CE MARK</b>	Yes
<b>Time Counting Range</b>	Selectable, at set speed or from starting	<b>Cat No.</b>	GZ-1848R
<b>Noise Level (dependent on rotor)</b>	< 60dB		

## Fixed Angle Rotor, GRF-M-c50-8

- Capacity : 8 x 50 mL Conical | Max. RPM / RCF : 8,500 / 8,893
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.8 x 94 | Hole bottom type : Conical
- Max. height for tube fit (mm) : 123
- Supplied with a lid and an O-ring inserted



Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)*	106.9	93.4	93.4	106.4	107.1	110.1
Max. RCF (g-force)*	8,635	7,544	7,544	8,595	8,651	8,893

## Fixed Angle Rotor, GRF-M-50/c15-4/4

- Capacity : 4 x 50 mL plus 4 x 15 mL Conical
- Max. RPM / RCF 8,500 / (9,144; 8,293)
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.8 x 93.5 / 17.2 x 93.5
- Hole bottom type : Flat for 50 mL / Conical for 15 mL
- Max. height for tube fit (mm) : 123
- Supplied with a lid and an O-ring inserted










Tube										
Tube capacity (mL)	5	5	14 mL	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (skirted)
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67	15.7 x 96	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118
Adapter				None						None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-50(f50)	GAS-c50(f50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	14.8 x 20	14.8 x 20	16 x 7.8	-	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 14	29.5 x 17.5	-
Adaptor hole bottom type	Conical	Conical	Round	-	Conical	Conical	Round	Round	Conical	-
Max. radius (mm)*	80.1	80.1	92.5	102	88.9	88.9	103.3	104	104	113.2
Max. RCF (g-force)*	6,470	6,470	7,472	8,239	7,181	7,181	8,344	8,401	8,401	9,144

## Fixed Angle Rotor, GRF-M-c15-12

- Capacity : 12 x 15 mL Conical | Max. RPM / RCF : 8,500 / 8,611
- Hole angle from axis during rotation :  $\angle 30^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 17.2 x 96.5
- Hole bottom type : Conical | Max. height for tube fit (mm) : 125
- Supplied with a lid and an O-ring inserted





Tube				
Tube capacity (mL)	5	5	14 mL	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)*	84.7	84.7	97.1	106.6
Max. RCF (g-force)*	6,842	6,842	7,843	8,611

## Fixed Angle Rotor, GRE-M-m5.0-20

- Capacity : 20 x 5.0 mL | Max. RPM / RCF : 13,000 / 20,595
- Hole angle from axis during rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 17 x 53
- Hole bottom type : Conical | Max. height for tube fit (mm) : 68
- Supplied with a lid and two V-rings inserted










Tube		
Tube capacity (mL)	5	5
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67
Max. radius (mm)	109	109
Max. RCF (g-force)	20,595	20,595

## Fixed Angle Rotor, GRE-M-m2.0-48

- Capacity : 48 x 1.5/2.0 mL (24 outer, 24 inner) | Max. RPM / RCF : 13,000 / 18,479
- Hole angle from axis during rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round | Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted



Tube					
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL filter tube	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	11 x 38	10.1 x 46
Adapter			None	None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	6.5 x 23	8 x 31	-	-	-
Adaptor hole bottom type	Open	Open	-	-	-
Max. radius (mm)*	Inner : 67 Outer : 80.5	Inner : 73 Outer : 87.5	Inner : 84.3 Outer : 97.8	Inner : 84.3	Inner : 84.3 Outer : 97.8
Max. RCF (g-force)*	Inner : 12,659 Outer : 15,210	Inner : 13,793 Outer : 16,532	Inner : 15,928 Outer : 18,479	Inner : 15,928	Inner : 15,928 Outer : 18,479







## Fixed Angle Rotor, GREB-M-m2.0-24

Bio-Safe

Porton Down Certified

- Capacity : 24 x 1.5/2.0 mL
- Max. RPM / RCF : 18,000 / 30,536
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted





				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)*	67	73	84.3	84.3
Max. RCF (g-force)*	24,270	26,443	30,536	30,536

## Fixed Angle Rotor, GRE-M-s0.2-64

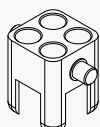
- Capacity : 8 x8-Tube PCR strips, 64 x 0.2 mL
- Max. RPM / RCF : 12,500 / 11,722
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid and two V-rings inserted



		
Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\varnothing \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	Inner 58.6 Outer 67.1	Inner 58.6 Outer 67.1
Max. RCF (g-force)	Inner 10,237 Outer 11,722	Inner 10,237 Outer 11,722







## Windshield Swing-out Rotor, GRD-M-m2.0-24

- 6 loadings | Max. Capacity : 6 x 4 x 1.5/2.0 mL
- Max. RPM / RCF : 13,000 / 16,438
- Hole angle from axis during rotation :  $\angle 90^\circ$
- Supplied with two V-rings inserted six buckets and a lid included



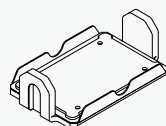
Microtube 1.5/2.0 mL  
Quadruple Bucket  
**GLB-m2.0-4(16)**

Max. Capacity : 4 x 1.5/2.0 mL  
Max. RPM / RCF : 13,000 / 16,438  
Hole dimension ( $\varnothing \times L$ ,mm) : 11.1 x 19  
Hole bottom type : Open  
Max. height for tube fit (mm) : 50

Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	70	78	87	87
Max. RCF (g-force)	13,226	14,737	16,438	16,438


## Windshield Swing-out Rotor, GRD-M-mw-2

- 2 loadings | Capacity : 2 MTP
- Max. RPM / RCF : 5,750 / 3,050
- Angle from axis during rotation :  $\angle 90^\circ$
- Two plate holders and a lid



Microplate Holder Bucket  
**GLP-mw(mw-2)**

Max. RPM / RCF : 5,750 / 3,050  
Max. Radius (mm) : 82.5  
Hole dimension (w x d x h, mm) : 86.5 x 128.5  
Max. height for tube fit (mm) : 36

Tube	
Tube capacity (mL)	MTP
Tube Dimension ( $\Phi \times L$ ,mm)	86 x 128 x 15
Bucket capacity (ea / 2)	2 / 4
Max. radius (mm)	82.5
Max. RCF (g-force)	3,050

# Table-top Multi Purpos High-speed Centrifuges

## Technical Specifications



**1248**

p. 48



**1248R**

p. 48

<b>Max. RPM / Fixed angle</b>	12,000 rpm	12,000 rpm
<b>Max. RPM / Swing-out</b>	5,000 rpm	5,000 rpm
<b>Max. RCF / Fixed angle</b>	16,582 xg	16,582 xg
<b>Max. RCF / Swing-out</b>	5,394 xg	5,394 xg
<b>Max. capacity / Fixed angle</b>	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL
<b>Max. capacity / Swing-out</b>	4 x 250 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs
<b>Temperature range</b>	-	-20°C to 40°C
<b>FAST cool button</b>	-	Yes
<b>Time control</b>	Pulse, Timed < 100 min or Continuous	Pulse, Timed < 10 hr, or Continuous
<b>CE mark</b>	Yes	Yes
<b>Cat. No.</b>	GZ-1248	GZ-1248R

## Function Features



### Fingerprint-less

Soft glove-friendly easy-to-input touch buttons



### G-family

Cost-efficient solution for Multi-purpose centrifuges sharing the same rotors, buckets and accessories. (Also compatible with 1236R) p. 90

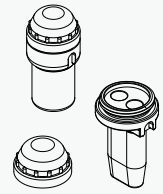


### Motorized Lid

with motorized lid mechanics, only a gentle touch is sufficient to close and open the lid

### NEW Bucket, GLBB Model

Containment of samples provided by a combination of physical seals and a design to prevent any sample leakage within the buckets.



- GLBB-b100-100 / GLBB-bdc15-100
- GLBB-750-750



### 1580

p. 48



### 1580R

p. 48



### 1696R

p. 67

15,000 rpm	15,000 rpm	16,000 rpm
5,000 rpm	5,000 rpm	5,000 rpm
24,249 xg	25,910 xg	27,590 xg
5,394 xg	5,394 xg	5,394 xg
6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x (250 & 15) mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 250 & 15 mL 8 x c50 mL, 20 x 5.0 mL, 48 x 1.5/2.0 mL
4 x 750 mL, 4 x 5 x c50 mL, 4 x 20 x 15 mL, 4 x 4 MTPs	4 x 750 mL, 4 x 5 x c50 mL, 4 x 20 x 15 mL, 4 x 4 MTPs	4 x 1,000 mL, 4 x 750 mL, 6 x 2 x c50 mL, 6 x 8 x 15 mL, 4 x 4 MTPs
-	-20°C to 40°C	-11°C ~ 40°C
Yes	Yes	Yes
Pulse, Timed < 10 hr, or Continuous	Pulse, Timed < 10 hr, Continuous	Pulse, Timed < 10 hr, or Continuous
Yes	Yes	Yes
GZ-1580	GZ-1580R	GZ-1696R



# 1248, 1248R, 1580, 1580R

Table-top, High-speed Centrifuges



Bio



R model



1248 / 1580

## Features

- Max. speed of 12,000 rpm or 15,000 rpm with high capacity and a large assortment of rotors
- Intuitive control interface with numeric input buttons allowing easy setting and editing of running conditions.
- Selectable time mode of "at set SPEED" for counting running time only when reached the set speed.
- A separate "PULSE" key for quick spin
- Parameters can be changed during operation.
- The compressor's off-function when the lid is open minimizes unnecessary cooling and frosting. (only for "R" models).
- Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples (only for "R" models).
- Key lock function helps the set parameters secured during operation.
- With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.
- Lid drop protection design allows easiness and safety when loading or unloading samples.

## Technical Specifications



	1248	1248R	1580	1580R
<b>Max. RPM/PCF for Fixed Angle</b>	12,000 rpm / 16,582 xg	12,000 rpm / 16,582 xg	15,000 rpm / 24,249 xg	15,000 rpm / 25,910 xg
<b>Max. RPM/PCF for Swing-out</b>	5,000 rpm / 5,394 xg	5,000 rpm / 5,394 xg	5,000 rpm / 5,394 xg	5,000 rpm / 5,394 xg
<b>Max. Capacity for Fixed Angle</b>	6 x 85 mL, 30 x 1.5/2.0 mL	6 x 85 mL, 30 x 1.5/2.0 mL	6 x 85 mL, 30 x 1.5/2.0 mL	6 x (250 & 15) mL, 30 x 1.5/2.0 mL
<b>Max. Capacity for Swing-out</b>	4 x 250 mL, 48 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 48 x 15 mL, 4 x 4 MTPs	4 x 750 mL, 80 x 15 mL, 4 x 4 MTPs	4 x 750 mL, 80 x 15 mL, 4 x 4 MTPs
<b>Temp. Range (°C)</b>	-	-20°C to 40°C	-	-20°C to 40°C
<b>Fast Cool Button</b>	-	Yes	-	Yes
<b>Time Control</b>	Pulse, timed <100 min or continuous	Pulse, timed <10 min or continuous	Pulse, timed <100 min or continuous	Pulse, timed <10 hr or continuous
<b>Time Counting Range</b>	Selectable, at set speed or from starting			
<b>RCF/RPM Conversion</b>	Yes			
<b>Noise Level (dependent on rotor)</b>	≤60 dB			
<b>ACC/DEC Ramps</b>	9/10			
<b>Program Memory</b>	100			
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)			
<b>Power Requirement</b>	900 VA	2.5 kVA	1.5 kVA	2.5 kVA
<b>Dimension (W x D x H)</b>	475 x 561 x 330 mm	655 x 620 x 357 mm	540 x 650 x 380 mm	770 x 650 x 390 mm
<b>Net Weight</b>	40 kg	78 kg	57 kg	93 kg
<b>CE MARK</b>	Yes			
<b>Cat No.</b>	GZ-1248	GZ-1248R	GZ-1580	GZ-1580R

## Fixed Angle Rotor, GRF-G-250-6

- Capacity : 6 x 250 mL + 6 x 15 mL
- Max. RPM / RCF : 8,000 (9,588; 9,395)
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 62 x 100 (250 mL) / 17.1 x 94 (15 mL)
- Hole bottom type : Flat (250 mL) / Round (15 mL)
- Max. height for tube fit (mm) : 130 (250 mL) / 120 (15 mL)
- Supplied with a lid


















\* Only for 1580R

Tube		
Tube capacity (mL)	15	250
Tube Dimension ( $\Phi \times L$ , mm)	16 x 120	61.5 x 128
Max. radius (mm)	131.3	134
Max. RCF (g-force)	9,395	9,588

## Fixed Angle Rotor, GRF-G-85-6

- Capacity : 6 x 85 mL
- Max. RPM / RCF (1580R) : 12,000 / 17,709
- Max. RPM / RCF (1248 / 1248R / 1580) : 10,000 / 12,298
- Hole angle from axis during rotation :  $\angle 34^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 38.5 x 100
- Hole bottom type : Round | Max. height for tube fit (mm) : 122
- Supplied with a lid










Tube								
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	85 mL
Tube Dimension ( $\Phi \times L$ , mm)	16 x 120	17 x 120	28.8x83	28.8x78.5	25.7 x 101.4	29 x 108	29.5 x 118	38 x 106
Adapter								None
Cat No.	GAS-15(85)	GAS-c15(85)	GAS-c25(85)	GAS-c25(85)	GAS-30(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 94	17 x 98	29.5 x 62.5	29.5 x 62.5	26 x 85.4	29 x 95	29.5 x 98	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	Round	Conical	-
Max. radius (mm)	103	101	87	87	102.5	104	102	110
Max. RPM (1580R)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Max. RCF (g-force)	16,582	16,260	14,006	14,006	16,502	16,743	16,421	17,709
Max. RPM (1248 / 1248R / 1580)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Max. RCF (g-force)	11,515	11,292	9,727	9,727	11,460	11,627	11,404	12,298

## Fixed Angle Rotor, GRF-G-50-8

- Capacity : 8 x 50 mL | Max. RPM / RCF (1580R) : 15,000 / 25,910
- Max. RPM / RCF (1248 / 1248R / 1580) : 12,000 / 16,582
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.5 x 93.2
- Hole bottom type : Round | Max. height for tube fit (mm) : 120
- Supplied with a lid and O-ring inserted














Tube				
Tube capacity (mL)	15	15 mL conical	30	50
Tube Dimension ( $\Phi \times L$ , mm)	16 x 120	17 x 120	25.7 x 101.4	29 x 108
Adapter				None
Cat No.	GAS-15(50)	GAS-c15(50)	GAS-30(50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 94	17 x 105	26 x 83.8	-
Adaptor hole bottom type	Round	Conical	Round	-
Max. radius (mm)	93.5	96	96.4	103
Max. RPM (1580R)	15,000	15,000	15,000	15,000
Max. RCF (g-force)	23,520	24,149	24,249	25,910
Max. RPM (1248 / 1248R / 1580)	12,000	12,000	12,000	12,000
Max. RCF (g-force)	15,053	15,455	15,520	16,582

## Fixed Angle Rotor, GRF-G-c50-8

- Capacity : 8 x 50 mL Conical | Max. RPM / RCF (1580R) : 13,000 / 20,784
- Max. RPM / RCF (1248 / 1248R / 1580) : 10,000 / 12,298
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.8 x 108.6
- Hole bottom type : Conical | Max. height for tube fit (mm) : 130
- Supplied with a lid and O-ring inserted




Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	105.2	94.1	94.1	106.4	107.3	110
Max. RPM (1580R)	13,000	13,000	13,000	13,000	13,000	13,000
Max. RCF (g-force)	19,877	17,779	17,779	20,103	20,273	20,784
Max. RPM (1248 / 1248R / 1580)	10,000	10,000	10,000	10,000	10,000	10,000
Max. RCF (g-force)	11,761	10,520	10,520	11,896	11,996	12,298

## Fixed Angle Rotor, GRF-G-15-24

- Capacity : 24 x 15 mL
- Max. RPM / RCF : 8,000 / 8,872
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\Phi \times L, \text{mm}$ ) : 17.1 x 94
- Hole bottom type : Round
- Max. height for tube fit (mm) : 120
- Supplied with a lid and O-ring inserted








\* Only for R model

Tube	
Tube capacity (mL)	15
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 120
Max. radius (mm)	Inner 103 / Outer 124
Max. RCF (g-force)	Inner 7,370 / Outer 8,872

## Fixed Angle Rotor, GRF-G-c15-12

- Capacity : 12 x 15 mL Conical
- Max. RPM / RCF (1580R) : 15,000 / 25,910
- Max. RPM / RCF (1248 / 1248R / 1580) : 12,000 / 16,582
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\Phi \times L, \text{mm}$ ) : 17.2 x 107.2
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 125
- Supplied with a lid and O-ring inserted









Tube			
Tube capacity (mL)	5 mL conical	5 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 59	16 x 67	17 x 120
Adapter			None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	14.8 x 20	14.8 x 20	-
Adaptor hole bottom type	Conical	Conical	-
Max. radius (mm)	75.8	75.8	103
Max. RPM (1580R)	15,000	15,000	15,000
Max. RCF (g-force)	19,067	19,067	25,910
Max. RPM (1248 / 1248R / 1580)	12,000	12,000	12,000
Max. RCF (g-force)	12,203	12,203	16,582

## Fixed Angle Rotor, GRF-G-m2.0-30

- Capacity : 30 x 1.5/2.0 mL
- Max. RPM / RCF (1580, 1580R) : 15,000 / 24,249
- Max. RPM / RCF (1248, 1248R) : 12,000 / 15,520
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid and two V-rings inserted





				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\varnothing \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	79	86	96.4	96.4
Max. RPM (1580R / 1580)	15,000	15,000	15,000	15,000
Max. RCF (g-force)	19,872	21,633	24,249	24,249
Max. RPM (1248 / 1248R)	12,000	12,000	12,000	12,000
Max. RCF (g-force)	12,718	13,835	15,520	15,520

## Fixed Angle Rotor, GRF-G-s0.2-64

- Capacity : 8 x 8-Tube PCR strips, 64 x 0.2 mL
- Max. RPM / RCF : 12,000 / 10,803
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid



		
Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube Dimension ( $\varnothing \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	Inner 58.6 Outer 67.1	Inner 58.6 Outer 67.1
Max. RPM	12,000	12,000
Max. RCF (g-force)	Inner 9,434 Outer 10,803	Inner 9,434 Outer 10,803














## Angle Rotor, GRA-G-15-24A

- Capacity : 24 x 15 mL
- Max. RPM / RCF : 4,000 / 3,134
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\Phi \times L$ , mm) : 20.4 x 14
- Supplied with 24 sleeves



15 mL Sleeve  
GLB-15/10A

Hole dimension ( $\Phi \times L$ , mm) : 18 x 87  
 Max. height for tube fit (mm) : 125 (120 for conical / wider cap)  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with 3.0 mm thick NBR pad

Tube								
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 120	17 x 120
Adapter						None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-10(f15)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	13.5 x 61	13.5x85	14 x 20	14 x 20	16.5 x 7	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-
Max. radius (mm)*	155.2	167.2	139.9	139.9	161.1	175.2	175.2	175.2
Max. RCF (g-force)*	2,776	2,990	2,503	2,503	2,882	3,134	3,134	3,134

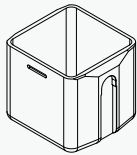


## Swing Rotor, GRS-G-r750-4

- 4 loadings
- Max. RPM : 3,600
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant





































\* Only for 1580 / 1580R

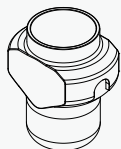


750 mL Rectangular Bucket  
GLB-r750-r750

Max. RPM / RCF : 3,600 / 2,898  
Max. Radius (mm) : 175.2  
Hole dimension (w x d x h, mm) : 99 x 99 x 98  
Max. height for tube fit (mm) : 165  
Hole bottom type : Flat

Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	5 mL conical	5 mL conical	15 mL conical	50
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	16 x 59	16 x 67	17 x 120	29 x 108
Adapter									
Cat. No.	GAM-5-30(r750)	GAM-5-30(r750)	GAM-15-20(r750)	GAM-15-20(r750)	GAM-15-20(r750)	GAM-c15-16(r750)	GAM-c15-16(r750)	GAM-c15-16(r750)	GAM-50-8(r750)
Rack capacity (ea / 4)	30 / 120	30 / 120	8 / 32	20 / 80	20 / 80	16 / 64	16 / 64	16 / 64	8 / 32
Rack hole dimension (Φ x L, mm)	13 x 56.5	13 x 85	17.2 x 57	17.2 x 85	17.2 x 85	17.5 x 32	17.5 x 32	17.5 x 85	29.5 x 85
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Conical	Conical	Round
Max. height tube fit (mm)	136	136	136	136	136	139	139	139	136
Max. radius (mm)*	197	197	197	197	197	200	200	200	197
Max. RCF (g-force)*	2,894	2,894	2,894	2,894	2,894	2,898	2,898	2,898	2,854
Tube									
Tube capacity (mL)	25 mL conical	25 mL conical	50 mL conical	50 mL conical (skirted)	250 mL	250 mL conical	500 mL conical	500	
Tube Dimension (Φ x L, mm)	28.5 x 83	28.5 x 78.5	29.5 x 118	29.5 x 118	29.5 x 118	60 x 163	96.2 x 147	73.5 x 142	
Adapter									
Cat. No.	GAM-c50-5(r750)	GAM-c50-5(r750)	GAM-c50-5(r750)	GAM-c50-5(r750) with GAS-sc50(c50)	GAS-250 (r750)	GAS-c250 (r750)	GAS-c500 (r750)	GAS-500 (r750)	
Rack capacity (ea / 4)	5 / 20	5 / 20	5 / 20	5 / 20	1 / 4	1 / 4	1 / 4	1 / 4	
Rack hole dimension (Φ x L, mm)	29.5 x 58.5	29.5 x 58.5	29.5 x 85	29.5 x 67.5	62.5 x 87	61 x 93	98 x 94	74.1 x 92.5	
Rack hole bottom type	Conical	Conical	Conical	Flat	Flat	Conical	Conical	Flat	
Max. height tube fit (mm)	139	139	139	147.5	147	165	165	155	
Max. radius (mm)*	200	200	200	151.6	197	200	200	196.5	
Max. RCF (g-force)*	2,898	2,898	2,898	2,712	2,854	2,898	2,898	2,847	





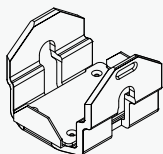
500 mL Round Bucket  
**GLB-500-r750**

Max. RPM / RCF : 3,600 / 3,159  
 Max. Radius (mm) : 218  
 Hole dimension (Ø x L,mm) : 70 x 135  
 Max. height for tube fit (mm) : 172  
 Hole bottom type : Flat



Tube

Tube capacity (mL)	500
Tube Dimension (Φ x L,mm)	69.5 x 170.2



Microplate Holder Bucket  
**GLP-mw-r750**

Max. RPM / RCF : 3,600 / 2,485  
 Max. Radius (mm) : 171.5  
 Hole dimension (w x d x h,mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad



Tube

Tube capacity (mL)	MTP	DWP
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Bucket capacity(ea / 4)	4 / 16	1 / 4

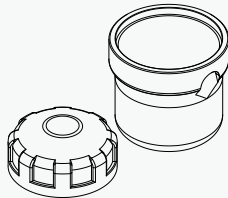
## Swing Rotor, GRS-G-750-4

- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant



**Bio-Safe** Manufacturer Validated

\* Only for 1580 / 1580R



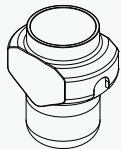
750 mL Round Bucket  
**GLB-750-750 /**  
**GLBB-b750-750 (with a cap)**

Max. RPM / RCF : 4,000 / 3,667  
 Max. Radius (mm) : 205  
 Hole dimension ( $\varnothing \times L$ , mm) : 99 x 107  
 Max. height for tube fit (mm) : 140 (w / cap), 165 (w / o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT	14 mL	15	5 mL conical	5 mL conical	15 mL conical	50
Tube Dimension ( $\varnothing \times L$ , mm)	13 x 75	13 x 100	16 x 100	15.7 x 96	16 x 120	16 x 59	16 x 67	17 x 120	29 x 108
Adapter									
Cat. No.	GAM-5-24(750)	GAM-5-24(750)	GAM-10-21(750)	GAM-15-19(750)	GAM-15-19(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-50-7(750)
Rack capacity (ea / 4)	24 / 96	24 / 96	21 / 84	7 / 28	19 / 76	10 / 40	10 / 40	14 / 56	7 / 28
Rack hole dimension ( $\varnothing \times L$ , mm)	13.2 x 58	13.2 x 85	16 x 85	17.2 x 59	17.2 x 85	17 x 37	17 x 37	17 x 85	29.2 x 87
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Conical	Conical	Round
Max. height tube fit (mm)	136	136	136	136	136	140	140	140	136
Max. radius (mm)*	201	201	201	201	201	205	205	205	201
Max. RCF (g-force)*	3,595	3,595	3,595	3,595	3,595	3,667	3,667	3,667	3,595

Tube							
Tube capacity (mL)	50 mL conical	50 mL conical (skirted)	250	250 mL conical	500 mL conical	500	750
Tube Dimension ( $\varnothing \times L$ , mm)	29.5 x 118	29.5 x 118	61.5 x 128	60 x 163	96.2 x 147	73.5 x 142	97 x 152
Adapter							None
Cat. No.	GAM-c50-5(750)	GAM-c50-5(750)	GAS-250(750)	GAS-c250(750)	GAS-c500(750)	GAS-500(750)	-
Rack capacity (ea / 4)	5 / 20	5 / 20	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\varnothing \times L$ , mm)	29.2 x 88	29.2 x 70	62.3 x 87	60.5 x 125	95.6 x 58	75.5 x 98.7	-
Rack hole bottom type	Conical	Flat	Flat	Conical	Conical	Flat	-
Max. height tube fit (mm)	140	122	136	165	165	155	165
Max. radius (mm)*	205	190.7	201	205	205	201.5	205
Max. RCF (g-force)*	3,667	3,411	3,595	3,667	3,667	3,604	3,667

\* Depending on the size of cap, there is a possibility of not fit-in.

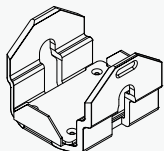


500 mL Round Bucket  
**GLB-500-750**

Max. RPM / RCF : 4,000 / 3,900  
 Max. Radius (mm) : 218  
 Hole dimension (Ø x L, mm) : 70 x 135  
 Max. height for tube fit (mm) : 172  
 Hole bottom type : Flat



Tube	
Tube capacity (mL)	500
Tube Dimension (Φ x L,mm)	69.5 x 170.2



Microplate Holder Bucket  
**GLP-mw-r750**

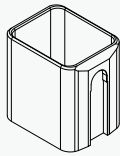
Max. RPM / RCF : 4,000 / 3,068  
 Max. Radius (mm) : 171.5  
 Hole dimension (w x d x h, mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad



Tube		
Tube capacity (mL)	MTP	DWP
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Bucket capacity(ea / 4)	4 / 16	1 / 4






























## Swing Rotor, GRS-G-r250-4

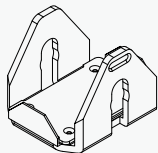
- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant



250 mL Rectangular Bucket  
GLB-r250-r250



Max. RPM / RCF : 4,000 / 3,134  
Max. Radius (mm) : 175.2  
Hole dimension (w x d x h, mm) : 86 x 70.3 x 98.5  
Max. height for tube fit (mm) : 130  
Hole bottom type : Flat

Tube								
Tube capacity (mL)	1.5/2.0	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	15 mL conical	50
Tube Dimension (Φ x L, mm)	11 x 38	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	17 x 120	29 x 108
Adapter								
Cat. No.	GAM-m2.0- 20(r250)	GAM-5- 12(r250)	GAM-5- 12(r250)	GAM-15- 12(r250)	GAM-15- 12(r250)	GAM-15- 12(r250)	GAM-c15- 9(r250)	GAM-50- 4(r250)
Rack capacity (ea / 4)	20 / 80	12 / 48	12 / 48	12 / 48	12 / 48	12 / 48	9 / 36	4 / 16
Rack hole dimension (Φ x L,mm)	11.3 x 39	13.5 x 58	13.5 x 80	17.5 x 59	17.5 x 90	17.5 x 90	17.5 x 90	30.2 x 90
Rack hole bottom type	Round	Round	Round	Round	Round	Round	Conical	Round
Max. height tube fit (mm)	115	120	120	120	120	120	120	120
Max. radius (mm)*	170	173.2	173.2	173.2	173.2	173.2	175.2	173.2
Max. RCF (g-force)*	3,041	3,095	3,095	3,095	3,095	3,095	3,134	3,095
Tube								
Tube capacity (mL)	25mL conical	25mL conical	50 mL conical	50 mL conical (skirted)	15	85	250 mL	
Tube Dimension (Φ x L, mm)	28.5 x 83	28.5 x 78.5	29.5 x 118	29.5 x 118	16 x 120	38 x 106	61.5 x 128	
Adapter								
Cat. No.	GAM-c50- 3(r250)	GAM-c50- 3(r250)	GAM-c50- 3(r250)	GAM- sc50(r250)	GAM-85-2(r250)		GAS- 250(r250)	
Rack capacity (ea / 4)	3 / 12	3 / 12	3 / 12	4/16	2 / 8		1 / 4	
Rack hole dimension (Φ x L,mm)	30.5 x 60	30.5 x 60	30.5 x 90	29.8 x 93.5	17 x 86.5	38.5 x 86.5	62.5 x 87	
Rack hole bottom type	Conical	Conical	Conical	Flat	Round		Flat	
Max. height tube fit (mm)	120	120	120	126	120		130	
Max. radius (mm)*	175.2	175.2	175.2	172	172.5		173	
Max. RCF (g-force)*	3,134	3,134	3,134	3,077	3,086		3,095	



Microplate Holder Bucket  
**GLP-mw-r250**

Max. RPM / RCF : 4,000 / 2,737  
 Max. Radius (mm) : 153  
 Hole dimension (w x d x h,mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad

Tube		
Tube capacity (mL)	MTP	DWP
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Bucket capacity(ea / 4)	4 / 16	1 / 4



## Swing Rotor, GRS-G-250-4

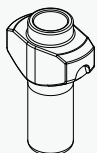
- 4 loadings
- Max. RPM : 5,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant



250 mL Round Bucket  
GLB-250-250




Max. RPM / RCF : 5,000 / 5,394  
Max. Radius (mm) : 193  
Hole dimension ( $\Phi \times L$ , mm) : 62 x 109  
Max. height for tube fit (mm) : 153  
Hole bottom type : Flat

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	4 ~ 7 mL VT	8 ~ 10 mL VT	15	15 mL conical	25 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	28.5 x 83
Adapter									
Cat. No.	GAM-m2.0-9(250)	GAM-m2.0-9(250)	GAM-c5-4(250)	GAM-c5-4(250)	GAM-7-8(250)	GAM-10-7(250)	GAM-15-4(250)	GAM-c15-4(250)	GAS-c25(250)
Rack capacity (ea / 4)	9 / 36	9 / 36	4/16	4/16	8 / 32	7 / 28	4 / 16	4 / 16	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 80	17.5 x 103.5	17.2 x 106.5	29.5 x 61.5
Rack hole bottom type	Round	Round	Conical	Conical	Round	Round	Round	Conical	Conical
Max. height tube fit (mm)	150	150	153	153	150	150	150	153	153
Max. radius (mm)*	190	190	193	193	190	190	190	193	193
Max. RCF (g-force)*	5,311	5,311	5,394	5,394	5,311	5,311	5,311	5,394	5,394
Tube									
Tube capacity (mL)	25mL conical	30	50	50 mL conical	50mL conical (Skirted)	85	100	250 mL conical	250
Tube Dimension ( $\Phi \times L$ , mm)	28.5 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115	60 x 163	61.5 x 128
Adapter									None
Cat. No.	GAS-c25(250)	GAM-30-3(250)	GAM-50-2(250)	GAS-c50(250)	GAS-sc50(250)	GAS-85(250)	GAS-100(250)	GAS-c250(250)	-
Rack capacity (ea / 4)	1 / 4	3 / 12	2 / 8	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	29.5 x 61.5	26 x 85	29.5 x 90	29.8 x 98	29.8 x 93	38.5 x 96	44.2 x 93	61.5 x 44.5	-
Rack hole bottom type	Conical	Round	Round	Conical	Flat	Round	Round	Conical	-
Max. height tube fit (mm)	153	148	148	153	148	148	148	153	153
Max. radius (mm)*	193	188	188	193	188	188	188	193	193
Max. RCF (g-force)*	5,394	5,255	5,255	5,394	5,255	5,255	5,255	5,394	5,394






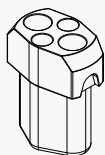
**60 mL Syringe Bucket**  
**GLB-60-250**

Max. RPM / RCF : 5,000 / 5,394  
 Max. Radius (mm) : 193  
 Hole dimension (Ø x L,mm) : 31.9 x 130.2  
 Max. height for tube fit (mm) : 162  
 Hole bottom type : Flat

Tube			
Tube capacity (mL)	10 mL syringe	20 mL syringe	60 mL syringe
Tube Dimension (Φ x L, mm)	16.5 x 108	21.5 x 112	29.6x160



  

Adapter			
Cat No.	GAS-10s(60)	GAS-20s(60)	GAS-60s(60)
Adaptor hole dimension (Φ x L, mm)	16.7 x 84	21.8 x 92	31.6 x 29.1
Adaptor hole bottom type	Conical / Flat	Conical / Flat	Conical / Open
Max. radius (mm)	167.2	169.9	193
Max. RCF (g-force)	4,673	4,749	5,394





**10 mL / 20 mL Dual Syringe Bucket**  
**GLB-d20/10-250**

Max. RPM / RCF : 5,000 / 4,752 / 4,472  
 Max. Radius (mm) : 170 (20 mL) / 160 (10 mL)  
 Hole dimension (Ø x L, mm) : 22.5 x 100 (20 mL) / 16 x 90 (10 mL)  
 Max. height for tube fit (mm) : 132 (20 mL) / 125 (10 mL)  
 Hole bottom type : Flat

Tube		
Tube capacity (mL)	10 mL syringe	20 mL syringe
Tube Dimension (Φ x L,mm)	16.5 x 108	21.5 x 112

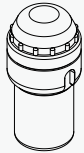
Adapter		
Cat No.	GAS-10s(10)	GAS-20s(20)
Adaptor hole dimension (Φ x L, mm)	16.5 x 13.6	22 x 16.6
Adaptor hole bottom type	Conical / Open	Conical / Open
Max. radius (mm)	160	170
Max. RCF (g-force)	4,472	4,752

# Swing Rotor, GRS-G-100-6

- 6 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant



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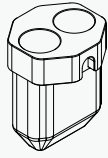


100 mL Bucket with a Cap  
**GLBB-b100-100**

Max. RPM / RCF : 4,000 / 3,105  
 Max. Radius (mm) : 173.6  
 Hole dimension ( $\varnothing$  x L, mm) : 47 x 99  
 Max. height for tube fit (mm) : 120 (w/ cap) / 130 (w/o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	2.6 ~ 7	4 ~ 10	15	15 mL conical	15 mL conical
Tube Dimension ( $\Phi$ x L, mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	17 x 120
Adapter									
Cat. No.	GAM-m2.0-6 (b100)	GAM-m2.0-6 (b100)	GAM-c5-3(b100)	GAM-c5-3(b100)	GAM-7-5(b100)	GAM-10-5(b100)	GAM-15-3 (b100)	GAM-c15-3 (b100)	GAS-c15(b100)
Rack capacity (ea / 6)	6 / 36	6 / 36	3 / 18	3 / 18	5 / 30	5 / 30	3 / 18	3 / 18	1 / 6
Rack hole dimension ( $\Phi$ x L,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5
Rack hole bottom type	Round	Round	Conical	Conical	Flat	Flat	Flat	Conical	Conical
Max. height tube fit (mm)	115	115	75	75	115	115	120	120	120
Max. radius (mm)*	168.6	168.6	110.1	110.1	168.6	168.6	170.6	173.6	173.6
Max. RCF (g-force)*	3,016	3,016	1,969	1,969	3,016	3,016	3,052	3,105	3,105
Tube									
Tube capacity (mL)	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100	
Tube Dimension ( $\Phi$ x L, mm)	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115	
Adapter									
Cat. No.	GAS-c25(b100)	GAS-c25(b100)	GAS-30(b100)	GAS-50(b100)	GAS-c50(b100)	GAS-sc50(b100)	GAS-85(b100)	GAS-100(b100)	
Rack capacity (ea / 6)	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	
Rack hole dimension ( $\Phi$ x L,mm)	17.2x52	17.2x52	26x86	29.5 x 95.9	30 x 100	29.8x100	38.5 x 96.4	44.2 x 93	
Rack hole bottom type	Conical	Conical	Round	Conical	Conical	Flat	Round	Round	
Max. height tube fit (mm)	118	118	118	118	120	120	118	118	
Max. radius (mm)*	172.1	172.1	172.1	171.6	171.6	171.6	172.1	168.6	
Max. RCF (g-force)*	3,079	3,079	3,079	2,737	2,737	2,737	3,079	3,016	

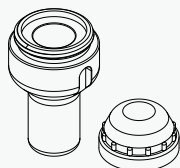




50 mL Conical Bucket  
GLB-dc50-100

Max. RPM / RCF : 4,000 / 3,105  
 Max. Radius (mm) : 173.6  
 Hole dimension (Ø x L, mm) : 30 x 89  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

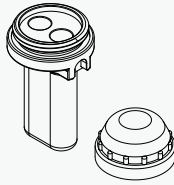
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Bucket capacity(ea / 6)	2/12	2/12	2/12	2/12	2/12	2/12
Adaptor hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	171	137	137	162.4	162.6	173.6
Max. RCF (g-force)	3,059	2,451	2,451	2,905	2,909	3,105



50 mL Bucket with a Cap  
GLB-b50-100




Max. RPM / RCF with : 4,000 / 3,032  
 Max. Radius (mm) : 169.5  
 Hole dimension (Ø x L, mm) : 30.5 x 97  
 Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension (Φ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension (Φ x L,mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)*	169.5	169.5	169.5	135.7	135.7	160.7	169.5	169.5	169.5
Max. RCF (g-force)*	3,032	3,032	3,032	2,427	2,427	2,875	3,032	3,032	3,032

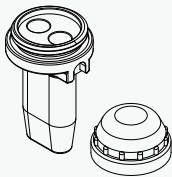


15 mL Dual Round Bucket  
with a Cap  
**GLB-bd15-100**

Max. RPM / RCF : 4,000 / 3,032  
Max. Radius (mm) : 169.5  
Hole dimension (Ø x L, mm) : 17 x 87  
Max. height for tube fit (mm) : 115 (w/ cap) / 127 (w/o cap)  
Hole bottom type : Round  
Supplied with a cap and O-ring








Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	16 x 100	16 x 114	16 x 120
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12
Max. height tube fit (mm)	115	115	115
Max. radius (mm)	169.5	169.5	169.5
Max. RCF (g-force)	3,032	3,032	3,032

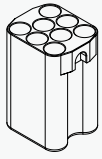
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15 mL Dual Conical Bucket  
with a Cap  
**GLBB-bdc15-100**















Max. RPM / RCF : 4,000 / 3,105  
Max. Radius (mm) : 173.6  
Hole dimension (Ø x L, mm) : 17 x 97.5  
Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
Hole bottom type : Conical  
Supplied with a cap and O-ring, No cap version is available

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12	2 / 12
Adaptor hole dimension (Φ x L, mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	120.5	120.5	156.5	173.6
Max. RCF (g-force)	2,156	2,156	2,799	3,105



Vacutainer 10 mL Bucket  
GLB-15-8-100

Max. RPM / RCF : 4,000 / 3,059  
 Max. Radius (mm) : 171  
 Hole dimension (Ø x L, mm) : 17 x 86  
 Hole bottom type : Flat with rubber pad  
 Max. height for tube fit (mm) : 115  
 Supplied with 3.0 mm thick NBR rubber pad

									
Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 100	16 x 114	16 x 120
Adapter						None	None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-	-
Bucket capacity (ea / 6)	8 / 48	8 / 48	4 / 24	4 / 24	4 / 24	8 / 48	8 / 48	8 / 48	2 / 12
Adaptor hole dimension (Φ x L, mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-	-
Max. height tube fit (mm)	88	115	75	75	103.5	115	115	115	125(center)
Max. radius (mm)*	144	171	130	130	159.5	171	171	171	171
Max. RCF (g-force)*	2,576	3,059	2,325	2,325	2,853	3,059	3,059	3,059	3,059

# 1696R Table-top High-speed Centrifuge



## Features

- Speed : 16,000 rpm (27,590 xg); 5,000 rpm (5,374 xg)
- Motorized lid mechanics enabling a gentle touch for the lid's opening and closure
- Single action fastening of fixed angel rotor to motor shaft with lid coupling.
- Highly visible display screen and numeric keys with integrated soft touch buttons for easy maintenance and quick setting
- Fast cooling allowing a temperature drop to 4°C within 5 minutes : function for quick start of cooled samples
- Equipped with a side tool box



## Technical Specifications

<b>Max. RPM/PCF for Fixed Angle</b>	16,000 rpm / 27,590 xg	<b>RCF/RPM Conversion</b>	Yes
<b>Max. RPM/PCF for Swing-out</b>	5,000 rpm / 5,394 xg	<b>ACC/DEC Ramps</b>	9/10
<b>Max. Capacity for Fixed Angle</b>	6 x 250 mL, 24 x 15 mL, 48 x 1.5/2.0 mL, 20 x 5.0 mL	<b>Program Memory</b>	100, 4 easy program save/call
<b>Max. Capacity for Swing-out</b>	4 x 1,000 mL, 4 x 2 x 250 mL, 4 x 29 x 15 mL	<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Temp. Range (°C)</b>	-11°C to 40°C	<b>Power Requirement</b>	2.0 kVA
<b>Fast Cool Button</b>	Yes	<b>Dimension (W x D x H)</b>	775 x 695 x 395 mm
<b>Time Control</b>	Pulse, timed <10 hr or continuous	<b>Net Weight</b>	116 kg
<b>Time Counting Range</b>	Selectable, at set speed or from starting	<b>CE MARK</b>	Yes
<b>Noise Level (dependent on rotor)</b>	≤60 dB (GRS-B-750-4 : ≤70 dB)	<b>Cat No.</b>	GZ-1696R

## Fixed Angle Rotor, GRF-B-250-6

- Capacity : 6 x 250 mL plus 6 x 15 mL
- Max. RPM / RCF 8.500 / (9,144; 8,293)
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 62 x 100 (250 mL) / 17.1 x 94 (15 mL)
- Hole bottom type : Flat (250 mL) / Round (15 mL)
- Max. height for tube fit (mm) : 130 (250 mL) / 120 (15 mL)
- Supplied with a lid with protruding screw for coupling into motor shaft


















Tube		
Tube capacity (mL)	15	250
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 120	61.5 x 128
Max. radius (mm)	131.3	134
Max. RCF (g-force)	9,395	9,588

## Fixed Angle Rotor, GRF-B-85-6

- Capacity : 6 x 85 mL
- Max. RPM / RCF : 12,000 / 16,019
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 38.5 x 100
- Hole bottom type : Round
- Max. height for tube fit (mm) : 125
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted














Tube								
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	85 mL
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	38 x 106
Adapter								None
Cat No.	GAS-15(85)	GAS-c15(85)	GAS-c25(85)	GAS-c25(85)	GAS-30(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 94	17 x 98	29.5 x 62.5	29.5 x 62.5	26 x 85.4	29 x 95	29.5 x 98	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	Round	Conical	-
Max. radius (mm)*	92.5	90.5	80.9	80.9	92.2	93.5	91.5	99.5
Max. RCF (g-force)*	14,843	14,570	13,024	13,024	14,843	15,053	14,731	16,019

## Fixed Angle Rotor, GRF-B-50-8

- Capacity : 8 x 50 mL
- Max. RPM / RCF : 15,000 / 25,910
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.5 x 93.2
- Hole bottom type : Round
- Max. height for tube fit (mm) : 120
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted














Tube						
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50
Tube Dimension ( $\varnothing \times L$ , mm)	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108
Adapter						None
Cat No.	GAS-15(50)	GAS-c15(50)	GAS-c25(50)	GAS-c25(50)	GAS-30(50)	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	17 x 94	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	-
Max. radius (mm)	93.5	96	81	81	96.5	103
Max. RCF (g-force)	23,520	24,149	20,376	20,376	24,275	25,910

## Fixed Angle Rotor, GRF-B-c50-8

- Capacity : 8 x 50 mL Conical
- Max. RPM / RCF : 13,000 / 20,784
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.8 x 108.6
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 130
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted




Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	Round
Max. radius (mm)	105.2	94.1	94.1	106.4	107.3	110
Max. RCF (g-force)	19,877	17,779	17,779	20,103	20,273	20,784

## Fixed Angle Rotor, GRF-B-15-24

- Capacity : 24 x 15 mL
- Max. RPM / RCF : 8,000 / 8,872
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17.1 x 94
- Hole bottom type : Round
- Max. height for tube fit (mm) : 120
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted








Tube	
Tube capacity (mL)	15
Tube Dimension ( $\Phi \times L$ ,mm)	16 x 120
Max. radius (mm)	Inner 103 / Outer 124
Max. RCF (g-force)	Inner 7,370 / Outer 8,872

## Fixed Angle Rotor, GRF-B-c15-12

- Capacity : 12 x 15 mL Conical
- Max. RPM / RCF : 15,000 / 25,910
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17.2 x 107.2
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 125
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted





Tube			
Tube capacity (mL)	5 mL conical	5 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67	17 x 120
Adapter			None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	14.8 x 20	14.8 x 20	-
Adaptor hole bottom type	Conical	Conical	-
Max. radius (mm)	75.8	75.8	103
Max. RCF (g-force)	19,067	19,067	25,910

## Fixed Angle Rotor, GRF-B-m5.0-20

- Capacity : 20 x 5.0 mL
- Max. RPM / RCF : 13,500 / 22,209
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17 x 53
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 68
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted










Tube		
Tube capacity (mL)	5.0	5.0
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67
Max. radius (mm)	109	109
Max. RCF (g-force)	22,209	22,209

## Fixed Angle Rotor, GRF-B-m2.0-48

- Capacity : 48 x 1.5/2.0 mL (24 outer, 24 inner)
- Max. RPM / RCF : 15,000 / 24,602
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted









Tube					
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL filter tube	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	11 x 38	10.1 x 46
Adapter			None	None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	6.5 x 23	8 x 31	8 x 31	-	-
Adaptor hole bottom type	Open	Open	Open	-	-
Max. radius (mm)*	Inner : 67 Outer : 80.5	Inner : 74 Outer : 87.5	Inner : 84.3 Outer : 97.8	Inner : 84.3	Inner : 84.3 Outer : 97.8
Max. RCF (g-force)*	Inner : 16,854 Outer : 20,250	Inner : 18,615 Outer : 22,011	Inner : 21,206 Outer : 24,602	Inner : 21,206	Inner : 21,206 Outer : 24,602



## Fixed Angle Rotor, GRF-B-m2.0-30

- Capacity : 30 x 1.5/2.0 mL
- Max. RPM / RCF : 16,000 / 27,590
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round
- Max. height for tube fit (mm) : 52
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted





Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	79	86	96.4	96.4
Max. RCF (g-force)	22,610	24,614	27,590	27,590

## Fixed Angle Rotor, GRF-B-s0.2-64

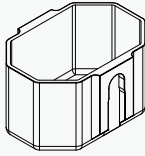
- Capacity : 8 x 8-Tube PCR strips, 64 x 0.2 mL
- Max. RPM / RCF : 12,000 / 10,803
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid



Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	Inner 58.6 Outer 67.1	Inner 58.6 Outer 67.1
Max. RPM	12,000	12,000
Max. RCF (g-force)	Inner 9,434 Outer 10,803	Inner 9,434 Outer 10,803















## Swing Rotor, GRS-B-1000-4







- 4 loadings
- Max. RPM : 3,700
- Angle from axis during rotation :  $\angle 90^\circ$
- Rotor dimension / weight ( $\varnothing \times L$ , mm / g) : 337 x 83 / 5,120
- Supplied with a lubricant

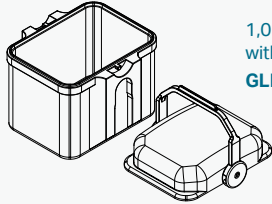


1,000 mL Hi-capacity Bucket,  
GLB-h1000-1000

Max. RPM / RCF : 3,700 / 3,092  
 Max. Radius (mm) : 202  
 Hole dimension (w x d x h, mm) : 110 x 168.7 x 95  
 Max. height for tube fit (mm) : 160  
 Hole bottom type : Flat















Tube							
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT	14 mL	15	15 mL conical	50
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	16 x 100	15.7 x 96	16 x 120	17 x 120	29 x 108
Adapter							
Cat. No.	GAM-5-48(h1000)	GAM-5-48(h1000)	GAM-10-38(h1000)	GAM-10-38(h1000)	GAM-15-29(h1000)	GAM-c15-29(h1000)	GAM-50-13(h1000)
Rack capacity (ea / 4)	48 / 192	48 / 192	38 / 152	18 / 72	29 / 116	29 / 116	13 / 52
Rack hole dimension ( $\Phi \times L$ , mm)	13.2 x 50	13.2 x 85	16 x 85	16 x 40	17.2 x 85	17 x 90	29.2 x 87
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Round
Max. height tube fit (mm)	125	125	125	125	130	130	130
Max. radius (mm)*	192	192	192	192	198	202	198
Max. RCF (g-force)*	2,939	2,939	2,939	2,939	3,030	3,092	3,030







Tube			
Tube capacity (mL)	50 mL conical	50 mL conical (skirted)	250
Tube Dimension ( $\Phi \times L$ , mm)	29.5 x 118	29.5 x 118	61.5 x 128
Adapter		 with GAS-sc50(c50)	
Cat. No.	GAM-c50-13(h1000)	GAM-c50-13(h1000)	GAM-250-2(h1000)
Rack capacity (ea / 4)	13 / 52	9 / 36	2 / 8
Rack hole dimension ( $\Phi \times L$ , mm)	29.5 x 92.5	29.5 x 78	62 x 87
Rack hole bottom type	Conical	Flat	Flat
Max. height tube fit (mm)	130	143	155
Max. radius (mm)*	202	184.5	198
Max. RCF (g-force)*	3,092	2,824	3,030

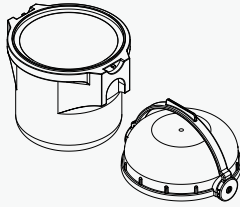


1,000 mL Rectangular Bucket  
with a Click seal cap  
**GLB- br1000-1000**

Max. RPM / RCF : 3,700 / 3,084  
 Max. Radius (mm) : 201.5  
 Hole dimension (w x d x h, mm) : 97 x 134 x 98  
 Max. height for tube fit (mm) : 125 (w / cap), 143 (w / o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring. No cap version is also available



















Tube							
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT	15	15 mL conical	50	50 mL conical
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 100	16 x 120	17 x 120	29 x 108	29.5 x 118
Adapter							
Cat. No.	GAM-5-40(r1000)	GAM-5-40(r1000)	GAM-10-35(r1000)	GAM-15-28(r1000)	GAM-c15-22(r1000)	GAM-50-11(r1000)	GAM-c50-10(r1000)
Rack capacity (ea / 4)	40 / 160	40 / 160	35 / 140	28 / 112	22 / 88	11 / 44	10 / 40
Rack hole dimension (Φ x L,mm)	13.2 x 55	13.2 x 80	16 x 80	17.2 x 85	17 x 90	29.2 x 87	29.5 x 92.5
Rack hole bottom type	Round	Round	Round	Round	Conical	Round	Conical
Max. height tube fit (mm)	116	116	118	120	120	118	120
Max. radius (mm)*	193	193	198.5	198.5	201.5	198.5	201.5
Max. RCF (g-force)*	2,954	2,954	3,038	3,038	3,084	3,038	3,084















Tube			
Tube capacity (mL)	50 mL conical (skirted)	MTP	DWP
Tube Dimension (Φ x L, mm)	29.5 x 118	86 x 128 x 15	86 x 128 x 60
Adapter	 with GAS-sc50(c50)		
Cat. No.	GAM-c50-10(r1000)	GLP-mw-r1000	GLP-mw-r1000
Rack capacity (ea / 4)	10 / 40	6 / 24	1 / 4
Rack hole dimension (Φ x L,mm)	29.5 x 75	86 x 128.5	86 x 128.5
Rack hole bottom type	Flat	Flat	Flat
Max. height tube fit (mm)	120	92	92
Max. radius (mm)*	184	196.5	196.5
Max. RCF (g-force)*	2,816	3,008	3,008



1,000 mL Round Bucket  
with a Click seal cap  
**GLB-b1000-1000**

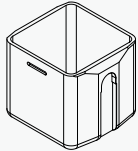
Max. RPM / RCF : 3,700 / 3,337  
Max. Radius (mm) : 218  
Hole dimension (Ø x L, mm) : 99 x 120  
Max. height for tube fit (mm) : 155 (w / cap), 170 (w / o cap)  
Hole bottom type : Flat  
Supplied with a cap and O-ring, No cap version is also available

Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT	14 mL	15	5 mL conical	5 mL conical	15 mL conical	50
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 100	15.7 x 96	16 x 120	16 x 59	16 x 67	17 x 120	29 x 108
Adapter									
Cat. No.	GAM-5-24(750)	GAM-5-24(750)	GAM-10-21(750)	GAM-15-19(750)	GAM-15-19(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-50-7(750)
Rack capacity (ea / 4)	24 / 96	24 / 96	21 / 84	7 / 28	19 / 76	10 / 40	10 / 40	14 / 56	7 / 28
Rack hole dimension (Φ x L, mm)	13.2 x 58	13.2 x 85	16 x 85	17.2 x 59	17.2 x 85	17 x 37	17 x 37	17 x 85	29.2 x 87
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Conical	Conical	Round
Max. height tube fit (mm)	144	144	144	144	144	148	148	148	144
Max. radius (mm)*	214	214	214	214	214	218	218	218	214
Max. RCF (g-force)*	3,275	3,275	3,275	3,275	3,275	3,337	3,337	3,337	3,275

Tube								
Tube capacity (mL)	50 mL conical	50 mL conical (skirted)	250	250 mL conical	500 mL conical	500	750	1000
Tube Dimension (Φ x L, mm)	29.5 x 118	29.5 x 118	61.5 x 128	60 x 163	96.2 x 147	73.5 x 142	97 x 152	97 x 168
Adapter		 with GAS-sc50(c50)					None	None
Cat. No.	GAM-c50-5(750)	GAM-c50-5(750)	GAS-250(750)	GAS-c250(750)	GAS-c500(750)	GAS-500(750)	-	-
Rack capacity (ea / 4)	5 / 20	5 / 20	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension (Φ x L, mm)	29.2 x 88	29.2 x 70	62.3 x 87	60.5 x 125	95.6 x 58	75.5 x 98.7	-	-
Rack hole bottom type	Conical	Flat	Flat	Conical	Conical	Flat	-	-
Max. height tube fit (mm)	148	122	155	170	170	160	170	170
Max. radius (mm)*	218	190.7	214	218	218	214.5	218	218
Max. RCF (g-force)*	3,337	2,919	3,275	3,337	3,337	3,283	3,337	3,337



















## Swing Rotor, GRS-B-r750-4
















- 4 loadings
- Max. RPM : 3,600
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant

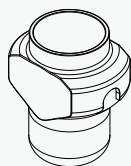


750 mL Rectangular Bucket  
GLB-r750-r750

Max. RPM / RCF : 3,600 / 2,898  
 Max. Radius (mm) : 175.2  
 Hole dimension (w x d x h, mm) : 99 x 99 x 98  
 Max. height for tube fit (mm) : 165  
 Hole bottom type : Flat

Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	5 mL conical	5 mL conical	15 mL conical	50
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	16 x 59	16 x 67	17 x 120	29 x 108
Adapter									
Cat. No.	GAM-5-30(r750)	GAM-5-30(r750)	GAM-15-20(r750)	GAM-15-20(r750)	GAM-15-20(r750)	GAM-c15-16(r750)	GAM-c15-16(r750)	GAM-c15-16(r750)	GAM-50-8(r750)
Rack capacity (ea / 4)	30 / 120	30 / 120	8 / 32	20 / 80	20 / 80	16 / 64	16 / 64	16 / 64	8 / 32
Rack hole dimension (Φ x L, mm)	13 x 56.5	13 x 85	17.2 x 57	17.2 x 85	17.2 x 85	17.5 x 32	17.5 x 32	17.5 x 85	29.5 x 85
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Conical	Conical	Round
Max. height tube fit (mm)	136	136	136	136	136	139	139	139	136
Max. radius (mm)*	197	197	197	197	197	200	200	200	197
Max. RCF (g-force)*	2,854	2,854	2,854	2,854	2,854	2,898	2,898	2,898	2,854

Tube								
Tube capacity (mL)	25 mL conical	25 mL conical	50 mL conical	50 mL conical (skirted)	250	250 mL conical	500 mL conical	500
Tube Dimension (Φ x L, mm)	28.5 x 83	28.5 x 78.5	29.5 x 118	29.5 x 118	61.5 x 128	60 x 163	96.2 x 147	73.5 x 142
Adapter				 with GAS-sc50(c50)				None
Cat. No.	GAM-c50-5(r750)	GAM-c50-5(r750)	GAM-c50-5(r750)	GAM-c50-5(r750)	GAS-250(r750)	GAS-c250(r750)	GAS-c500(r750)	GAS-500(r750)
Rack capacity (ea / 4)	5 / 20	5 / 20	5 / 20	5 / 20	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension (Φ x L, mm)	29.5 x 58.5	29.5 x 58.5	29.5 x 85	29.5 x 67.5	62.5 x 87	61 x 93	98 x 94	74.1 x 92.5
Rack hole bottom type	Conical	Conical	Conical	Flat	Flat	Conical	Conical	Flat
Max. height tube fit (mm)	139	139	139	147.5	147	165	165	155
Max. radius (mm)*	200	200	200	151.6	197	200	200	196.5
Max. RCF (g-force)*	2,898	2,898	2,898	2,712	2,854	2,898	2,898	2,847



500 mL Round Bucket  
GLB-500-r750

Max. RPM / RCF : 3,600 / 3,159  
 Max. Radius (mm) : 218  
 Hole dimension (Ø x L, mm) : 70 x 135  
 Max. height for tube fit (mm) : 172  
 Hole bottom type : Flat

Tube

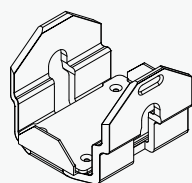


Tube capacity (mL)

500

Tube Dimension (Φ x L,mm)

69.5 x 170.2



Microplate Holder Bucket,  
GLP-mw-r750

Max. RPM / RCF : 3,600 / 2,485  
 Max. Radius (mm) : 171.5  
 Hole dimension (w x d x h, mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad

Tube



Tube capacity (mL)

MTP

DWP

Tube Dimension (Φ x L,mm)

86 x 128 x 15

86 x 128 x 60

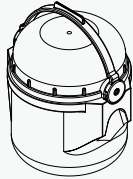
Bucket capacity (ea / 4)

4 / 16

1 / 4



















## Swing Rotor, GRS-B-750-4














- 4 loadings
- Max. RPM : 4,600
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant

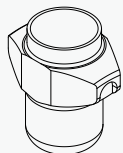


750 mL Round Bucket  
with a Click seal cap  
**GLB-b750-750B**

Max. RPM / RCF : 4,600 / 4,850  
 Max. Radius (mm) : 205  
 Hole dimension ( $\Phi \times L$ , mm) : 99 x 107  
 Max. height for tube fit (mm) : 140 (w / cap), 165 (w / o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring, No cap version is also available


Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	5 mL conical	5 mL conical	15 mL conical	50
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	16 x 59	16 x 67	17 x 120	29 x 108
Adapter									
Cat. No.	GAM-5-24(750)	GAM-5-24(750)	GAM-10-21(750)	GAM-10-21(750)	GAM-15-19(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-c15-14(750)	GAM-50-7(750)
Rack capacity (ea / 4)	24 / 96	24 / 96	7 / 28	21 / 84	19 / 76	10 / 40	10 / 40	14 / 56	7 / 28
Rack hole dimension ( $\Phi \times L$ ,mm)	13.2 x 58	13.2 x 85	17.2 x 59	16 x 85	17.2 x 85	17 x 37	17 x 37	17 x 85	29.2 x 87
Rack hole bottom type	Round	Round	Round	Round	Round	Conical	Conical	Conical	Round
Max. height tube fit (mm)	129	129	129	129	129	133	133	133	129
Max. radius (mm)*	201	201	201	201	201	205	205	205	201
Max. RCF (g-force)*	4,755	4,755	4,755	4,755	4,755	4,850	4,850	4,850	4,755

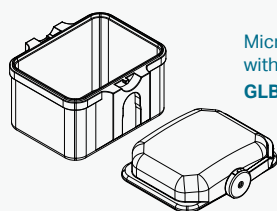
Tube							
Tube capacity (mL)	50 mL conical	50 mL conical (skirted)	250	250 mL conical	500 mL conical	500	750
Tube Dimension ( $\Phi \times L$ , mm)	29.5 x 118	29.5 x 118	61.5 x 128	60 x 163	96.2 x 147	73.5 x 142	97 x 152
Adapter		 with GAS-sc50(c50)					None
Cat. No.	GAM-c50-5(750)	GAM-c50-5(750)	GAS-250(750)	GAS-c250(750)	GAS-c500(750)	GAS-500(750)	-
Rack capacity (ea / 4)	5 / 20	5 / 20	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	29.2 x 88	29.2 x 70	62.3 x 87	60.5 x 125	95.6 x 58	75.5 x 98.7	-
Rack hole bottom type	Conical	Flat	Flat	Conical	Conical	Flat	-
Max. height tube fit (mm)	133	122	136	165	165	155	165
Max. radius (mm)*	205	190.7	201	205	205	201.5	205
Max. RCF (g-force)*	4,850	4,511	4,755	4,850	4,850	4,767	4,850



500 mL Round Bucket  
**GLB-500-750B**





Max. RPM / RCF : 4,600 / 5,157  
Max. Radius (mm) : 218  
Hole dimension (Ø x L, mm) : 70 x 135  
Max. height for tube fit (mm) : 172  
Hole bottom type : Flat

Tube	
Tube capacity (mL)	500
Tube Dimension (Φ x L,mm)	69.5 x 170.2



Microplate Holder Bucket  
with a Click seal cap  
**GLB-mw-750B**

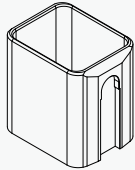
Max. RPM / RCF : 4,600 / 4,033  
Max. Radius (mm) : 170.5  
Hole dimension (w x d x h ,mm) : 86.5 x 128.5 x 63  
Max. height for tube fit (mm) : 63(w / cap), 110(w / o cap)  
Hole bottom type : Flat  
Supplied with a cap and an O-ring. No cap version is also available

Tube		
Tube capacity (mL)	MTP	DWP
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Plate Holder		
Cat. No.	GLP-mw-r750B	GLP-mw-r750B
Holder capacity (ea / 4)	4 / 16	1 / 4
Holder dimension (w x d x h, mm)	86.5 x 128.5	86.5 x 128.5
Rack hole bottom type	Flat	Flat
Max. height tube fit (mm)	63 w/cap(100 w/o cap)	63 w/cap(100 w/o cap)
Max. radius (mm)*	170.5	170.5
Max. RCF (g-force)*	4,033	4,033



## Swing Rotor, GRS-B-r250-4

- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant

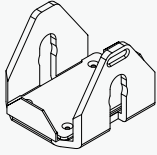


250 mL Rectangular Bucket  
GLB-r250-r250

Max. RPM / RCF : 4,000 / 3,134  
 Max. Radius (mm) : 175.2  
 Hole dimension (w x d x h, mm) : 86 x 70.3 x 98.5  
 Max. height for tube fit (mm) : 130  
 Hole bottom type : Flat



Tube								
Tube capacity (mL)	1.5/2.0	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	15 mL conical	50
Tube Dimension (Φ x L, mm)	11 x 38	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	17 x 120	29 x 108
Adapter								
Cat. No.	GAM-m2.0-20(r250)	GAM-5-12(r250)	GAM-5-12(r250)	GAM-15-12(r250)	GAM-15-12(r250)	GAM-15-12(r250)	GAM-c15-9(r250)	GAM-50-4(r250)
Rack capacity (ea / 4)	20 / 80	12 / 48	12 / 48	12 / 48	12 / 48	12 / 48	9 / 36	4 / 16
Rack hole dimension (Φ x L,mm)	11.3 x 39	13.5 x 58	13.5 x 80	17.5 x 59	17.5 x 90	17.5 x 90	17.5 x 90	30.2 x 90
Rack hole bottom type	Round	Round	Round	Round	Round	Round	Conical	Round
Max. height tube fit (mm)	115	120	120	120	120	120	120	120
Max. radius (mm)	170	173.2	173.2	173.2	173.2	173.2	175.2	173.2
Max. RCF (g-force)	3,041	3,095	3,095	3,095	3,095	3,095	3,134	3,095

Tube							
Tube capacity (mL)	25mL conical	25mL conical	50 mL conical	50 mL conical (skirted)	15	85	250 mL
Tube Dimension (Φ x L, mm)	28.5 x 83	28.5 x 78.5	29.5 x 118	29.5 x 118	16 x 120	38 x 106	61.5 x 128
Adapter							
Cat. No.	GAM-c50-3(r250)	GAM-c50-3(r250)	GAM-c50-3(r250)	GAM-sc50(r250)	GAM-85-2(r250)		GAS-250(r250)
Rack capacity (ea / 4)	3 / 12	3 / 12	3 / 12	4/16	2 / 8		1 / 4
Rack hole dimension (Φ x L,mm)	30.5 x 60	30.5 x 60	30.5 x 90	29.8 x 93.5	17 x 86.5	38.5 x 86.5	62.5 x 87
Rack hole bottom type	Conical	Conical	Conical	Flat	Round		Flat
Max. height tube fit (mm)	120	120	120	126	120		130
Max. radius (mm)	175.2	175.2	175.2	172	172.5		173
Max. RCF (g-force)	3,134	3,134	3,134	3,077	3,086		3,095



Microplate Holder Bucket  
GLP-mw-r250

Max. RPM / RCF : 4,000 / 2,737  
 Max. Radius (mm) : 153  
 Hole dimension (w x d x h, mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad

Tube		
Tube capacity (mL)	MTP	DWP
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Bucket capacity(ea / 4)	4 / 16	1 / 4

## Swing Rotor, GRS-B-250-4

- 4 loadings
- Max. RPM : 5,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant



250 mL Round Bucket  
GLB-250-250

Max. RPM / RCF : 5,000 / 5,394  
 Max. Radius (mm) : 193  
 Hole dimension ( $\Phi \times L$ , mm) : 62 x 109  
 Max. height for tube fit (mm) : 153  
 Hole bottom type : Flat

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	4 ~ 7 mL VT	8 ~ 10 mL VT	15	15 mL conical	25 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	28.5 x 83
Adapter									
Cat. No.	GAM-m2.0-9(250)	GAM-m2.0-9(250)	GAM-c5-4(250)	GAM-c5-4(250)	GAM-7-8(250)	GAM-10-7(250)	GAM-15-4(250)	GAM-c15-4(250)	GAS-c25(250)
Rack capacity (ea / 4)	9 / 36	9 / 36	4/16	4/16	8 / 32	7 / 28	4 / 16	4 / 16	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 80	17.5 x 103.5	17.2 x 106.5	29.5 x 61.5
Rack hole bottom type	Round	Round	Conical	Conical	Round	Round	Round	Conical	Conical
Max. height tube fit (mm)	150	150	153	153	150	150	150	153	153
Max. radius (mm)*	190	190	193	193	190	190	190	193	193
Max. RCF (g-force)*	5,311	5,311	5,394	5,394	5,311	5,311	5,311	5,394	5,394

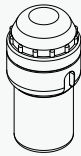
Tube									
Tube capacity (mL)	25mL conical	30	50	50 mL conical	50mL conical (Skirted)	85	100	250 mL conical	250
Tube Dimension ( $\Phi \times L$ , mm)	28.5 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115	60 x 163	61.5 x 128
Adapter									None
Cat. No.	GAS-c25(250)	GAM-30-3(250)	GAM-50-2(250)	GAS-c50(250)	GAS-sc50(250)	GAS-85(250)	GAS-100(250)	GAS-c250(250)	-
Rack capacity (ea / 4)	1 / 4	3 / 12	2 / 8	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	29.5 x 61.5	26 x 85	29.5 x 90	29.8 x 98	29.8 x 93	38.5 x 96	44.2 x 93	61.5 x 44.5	-
Rack hole bottom type	Conical	Round	Round	Conical	Flat	Round	Round	Conical	-
Max. height tube fit (mm)	153	148	148	153	148	148	148	153	153
Max. radius (mm)*	193	188	188	193	188	188	188	193	193
Max. RCF (g-force)*	5,394	5,255	5,255	5,394	5,255	5,255	5,255	5,394	5,394

## Swing Rotor, GRS-B-100-6

- 6 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant



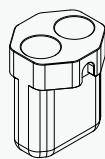
**Bio-Safe** Porton Down Certified



100 mL Bucket with a Cap  
**GLBB-b100-100**

Max. RPM / RCF : 4,200 / 3,424  
 Max. Radius (mm) : 173.6  
 Hole dimension ( $\varnothing \times L$ , mm) : 47 x 99  
 Max. height for tube fit (mm) : 120 (w/ cap) / 130 (w/o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring, No cap version is also available

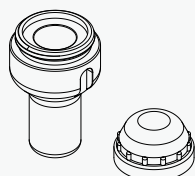
Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	2.6 ~ 7	4 ~ 10	15	15 mL conical	15 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	17 x 120
Adapter									
Cat. No.	GAM-m2.0-6 (b100)	GAM-m2.0-6 (b100)	GAM-c5-3(b100)	GAM-c5-3(b100)	GAM-7-5(b100)	GAM-10-5(b100)	GAM-15-3 (b100)	GAM-c15-3 (b100)	GAS-c15(b100)
Rack capacity (ea / 4)	6 / 36	6 / 36	3 / 18	3 / 18	5 / 30	5 / 30	3 / 18	3 / 18	1 / 6
Rack hole dimension ( $\varnothing \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5
Rack hole bottom type	Round	Round	Conical	Conical	Round	Flat	Flat	Conical	Conical
Max. height tube fit (mm)	115	115	75	75	115	115	120	120	120
Max. radius (mm)*	168.6	168.6	110.1	110.1	168.6	168.6	170.6	173.6	173.6
Max. RCF (g-force)*	3,325	3,325	2,171	2,171	3,325	3,325	3,364	3,424	3,424
Tube									
Tube capacity (mL)	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100	
Tube Dimension ( $\varnothing \times L$ , mm)	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115	
Adapter									
Cat. No.	GAS-c25(b100)	GAS-c25(b100)	GAS-30(b100)	GAS-50(b100)	GAS-c50(b100)	GAS-sc50(b100)	GAS-85(b100)	GAS-100(b100)	
Rack capacity (ea / 4)	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	
Rack hole dimension ( $\varnothing \times L$ ,mm)	17.2 x 52	17.2 x 52	26 x 86	29.5 x 95.9	30 x 100	29.8x100	38.5 x 96.4	44.2 x 93	
Rack hole bottom type	Conical	Conical	Round	Round	Conical	Flat	Round	Round	
Max. height tube fit (mm)	118	118	118	118	120	120	118	118	
Max. radius (mm)*	172.1	172.1	172.1	171.6	171.6	171.6	172.1	168.6	
Max. RCF (g-force)*	3,394	3,394	3,394	3,384	3,384	3,384	3,394	3,325	



**50 mL Conical Bucket**  
**GLB-dc50-100**

Max. RPM / RCF : 4,200 / 3,424  
 Max. Radius (mm) : 173.6  
 Hole dimension (Ø x L, mm) : 30 x 89  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

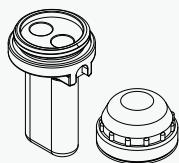
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Bucket capacity (ea / 6)	2/12	2/12	2/12	2/12	2/12	2/12
Adaptor hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	171	137	137	162.4	162.6	173.6
Max. RCF (g-force)	3,372	2,702	2,702	3,203	3,207	3,424



**50 mL Bucket with a Cap**  
**GLB-b50-100**




Max. RPM / RCF : 4,200 / 3,343  
 Max. Radius (mm) : 169.5  
 Hole dimension (Ø x L, mm) : 30.5 x 87  
 Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with a cap and O-ring, No cap version is also available

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension (Φ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension (Φ x L,mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)	169.5	169.5	169.5	135.7	135.7	160.7	169.5	169.5	169.5
Max. RCF (g-force)	3,343	3,343	3,343	2,676	2,676	3,169	3,343	3,343	3,343

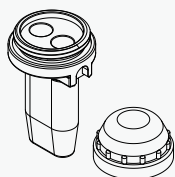


15 mL Dual Round Bucket  
with a Cap  
**GLB-bd15-100**

Max. RPM / RCF : 4,200 / 3,343  
Max. Radius (mm) : 169.5  
Hole dimension (Ø x L,mm) : 17 x 87  
Max. height for tube fit (mm) : 115 (w/ cap) / 127 (w/o cap)  
Hole bottom type : Round  
Supplied with a cap and O-ring








Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12
Max. height tube fit (mm)	115	115	115
Max. radius (mm)	169.5	169.5	169.5
Max. RCF (g-force)	3,343	3,343	3,343

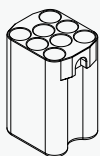
**Bio-Safe** Porton Down Certified



15 mL Dual Conical Bucket  
with a Cap  
**GLBB-bdc15-100**















Max. RPM / RCF : 4,200 / 3,424  
Max. Radius (mm) : 173.6  
Hole dimension (Ø x L,mm) : 17 x 97.5  
Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
Hole bottom type : Conical  
Supplied with a cap and O-ring, No cap version is also available

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12	2 / 12
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)*	120.5	120.5	156.5	173.6
Max. RCF (g-force)*	2,376	2,376	3,086	3,424



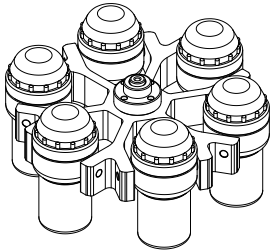
Vacutainer 10 mL Bucket  
GLB-15-8-100

Max. RPM / RCF : 4,200 / 3,372  
 Max. Radius (mm) : 171  
 Hole dimension (Ø x L, mm) : 17 x 86  
 Hole bottom type : Flat with rubber pad  
 Max. height for tube fit (mm) : 115  
 Supplied with 3.0 mm thick NBR rubber pad

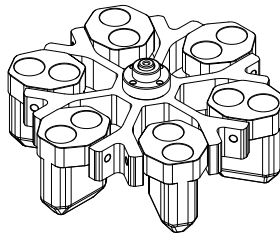
									
Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 100	16 x 114	16 x 120
Adapter						None	None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-	-
Bucket capacity (ea / 6)	8 / 48	8 / 48	4 / 24	4 / 24	4 / 24	8 / 48	8 / 48	8 / 48	2 / 12
Adaptor hole dimension (Φ x L, mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-	-
Max. height tube fit (mm)	88	115	75	75	103.5	115	115	115	125(center)
Max. radius (mm)*	144	171	130	130	159.5	171	171	171	171
Max. RCF (g-force)*	2,840	3,372	2,546	2,546	3,146	3,372	3,372	3,372	3,372

\* Depending on the size of cap, there is a possibility of not fit-in.

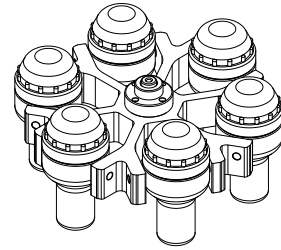
### Adaptable Buckets of Rotor, GRS-B-100-6



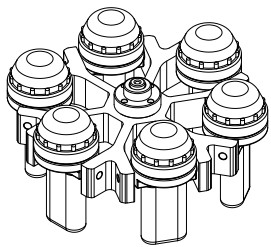
GLBB-b100-100



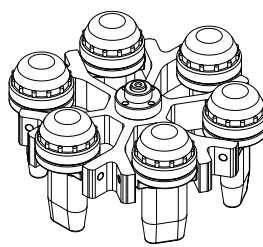
GLB-dc50-100



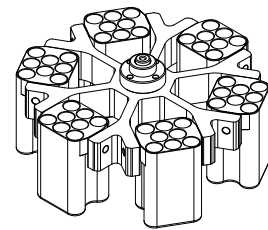
GLB-b50-100



GLB-bd15-100



GLBB-bdc15-100



GLB-15-8-100





# Floor Standing, High-speed Centrifuges

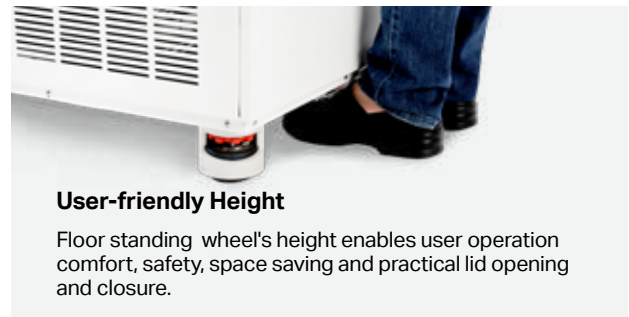
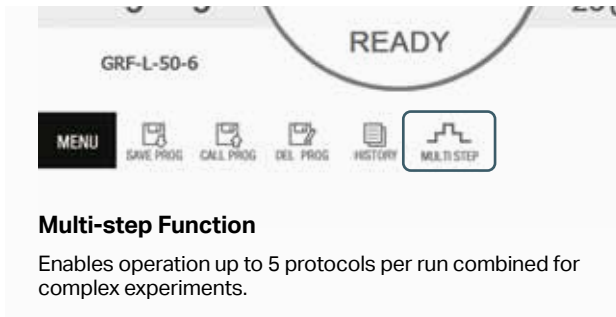


**1236R**

p. 90

<b>Max. RPM / Fixed angle</b>	12,000 rpm
<b>Max. RPM / Swing-out</b>	5,000 rpm
<b>Max. RCF / Fixed angle</b>	16,582 xg
<b>Max. RCF / Swing-out</b>	5,394 xg
<b>Max. capacity / Fixed angle</b>	6 x 85 mL, 8 x c50 mL, 30 x 1.5/2.0 mL
<b>Max. capacity / Swing-out</b>	4 x 250 mL, 48 x 15 mL, 16 MTPs
<b>RCF/RPM conversion</b>	Yes
<b>Temperature range</b>	-20°C to 40°C
<b>FAST cool button</b>	Yes
<b>Time control</b>	Pulse, Timed < 10 hr, or Continuous
<b>CE mark</b>	Yes
<b>Cat. No.</b>	GZ-1236R

## Function Features



**1736R**  
p. 90



**2236R**  
p. 90

17,000 rpm	22,000 rpm
5,000 rpm	5,000 rpm
32,310 xg	54,111 xg
5,394 xg	5,394 xg
6 x 500 mL, 8 x c50 mL, 30 x 1.5/2.0 mL	6 x 1,000 mL, 8 x c50 mL, 30 x 1.5/2.0 mL
4 x 250 mL, 4 x 3 x c50 mL, 4 x 12 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 4 x 3 x c50 mL, 4 x 12 x 15 mL, 4 x 4 MTPs
Yes	Yes
-20°C to 40°C	-20°C to 40°C
Yes	Yes
Pulse, Timed < 10 hr, or Continuous	Timed < 100 hr, or Continuous
Yes	Yes
GZ-1736R	GZ-2236R

# 1236R, 1736R, 2236R

Floor Standing, High-speed Centrifuges



**Bio**  
(1236R)

**Lock**  
(2236R)

## Features

- For up to 22,000 rpm (54,111 xg) with 6 x 50 mL tubes and 7,000 rpm (10,825 xg) with 6 x 1 L bottles (2236R)
- Instrument lock/unlock by password control and protocol management by user ID is ideal for core lab facility or multi-user environment (2236R)
- A large assortment of rotors, buckets and adaptors support diverse applications doable with one instrument.
- Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples
- The compressor-off function when lid is open minimizes unnecessary cooling and frosting
- With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid
- Lid drop protection design allows easiness and safety when loading or unloading samples
- Intuitive control interface with numeric input buttons and graphic pictograms for easy setting and editing of running conditions

## Technical Specifications






	1236R	1736R	2236R
<b>Max. RPM/PCF for Fixed Angle</b>	12,000 rpm / 16,582 xg	17,000 rpm / 32,310 xg	22,000 rpm / 54,111 xg
<b>Max. RPM/PCF for Swing-out</b>	5,000 rpm / 5,394 xg	5,000 rpm / 5,394 xg	5,000 rpm / 5,394 xg
<b>Max. Capacity for Fixed Angle</b>	6 x 85 mL, 30 x 1.5/2.0 mL	6 x 500 mL, 30 x 1.5/2.0 mL	6 x 1,000 mL, 30 x 1.5/2.0 mL
<b>Max. Capacity for Swing-out</b>	4 x 250 mL, 4 x 12 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 4 x 12 x 15 mL, 4 x 4 MTPs	4 x 250 mL, 4 x 12 x 15 mL, 4 x 4 MTPs
<b>Temp. range (°C)</b>	-20°C to 40°C		
<b>FAST cool button</b>	Yes	Yes	Yes
<b>Time control</b>	Pulse, timed <10 hr or continuous	Pulse, timed <10 hr or continuous	Pulse, timed <100 hr or continuous
<b>Time counting range</b>	Selectable, at set speed or from starting		
<b>Noise level (dependent on rotor)</b>	≤60 dB	≤56 dB	≤56 dB
<b>RCF/RPM conversion</b>	Yes		
<b>ACC/DEC Ramps</b>	9/10		
<b>Program Memory</b>	100		
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)		
<b>Power Requirement</b>	2.5 kVA	2.5 kVA	2.5 kVA
<b>Dimension (W x D x H)</b>	473 x 620 x 830 mm	473 x 620 x 830 mm	824 x 634 x 1,049 mm
<b>Net Weight</b>	110 kg	110 kg	240 kg
<b>CE MARK</b>	Yes	Yes	Yes
<b>Cat No.</b>	GZ-1236R	GZ-1736R	GZ-2236R

## Fixed Angle Rotor, GRF-L-1000-6

- Capacity : 6 x 1,000 mL
- Max. RPM / RCF : 7,000 / 10,825
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 98 x 144
- Max. height for tube fit (mm) : 175
- Hole bottom type : Flat
- Supplied with a lid



\* Only for 2236R






Tube			
Tube capacity (mL)	250	500	1000
Tube Dimension ( $\Phi \times L$ , mm)	61.5 x 128	69 x 168	97 x 168
Adapter			None
Cat No.	GAS-250(1000)	GAS-500(1000)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	62 x 109	69 x 149	-
Adaptor hole bottom type	Flat	Flat	-
Max. radius (mm)	164.1	183.4	197.6
Max. RCF (g-force)	8,990	10,047	10,825

## Fixed Angle Rotor, GRF-L-1000-4

- Capacity : 4 x 1,000 mL
- Max. RPM / RCF : 8,000 / 12,071
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 98 x 144
- Max. height for tube fit (mm) : 175
- Hole bottom type : Flat
- Supplied with a lid



\* Only for 2236R




Tube			
Tube capacity (mL)	250	500	1000
Tube Dimension ( $\Phi \times L$ , mm)	61.5 x 128	69 x 168	97 x 168
Adapter			None
Cat No.	GAS-250(1000)	GAS-500(1000)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	62 x 109	69 x 149	-
Adaptor hole bottom type	Flat	Flat	-
Max. radius (mm)	135.2	154.5	168.7
Max. RCF (g-force)	9,674	11,055	12,071

## Fixed Angle Rotor, GRF-L-500-6

- Capacity : 6 x 500 mL
- Max. RPM / RCF (1736R) : 8,000 / 11,305; (2236R) : 10,000 / 17,664
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 70 x 137
- Max. height for tube fit (mm) : 170
- Hole bottom type : Flat
- Supplied with a lid



\* Applicable 1736R / 2236R



Tube		
Tube capacity (mL)	250	500
Tube Dimension ( $\Phi \times L$ , mm)	61.5 x 128	69 x 168
Adapter		None
Cat No.	GAS-250(500)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	62 x 100	-
Adaptor hole bottom type	Flat	-
Max. radius (mm)	138.3	158
Max. RCF (g-force)(1736R/2236R)	9,869/15,462	11,305/17,664

## Fixed Angle Rotor, GRF-L-250-6

- Capacity : 6 x 250 mL + 6 x 15 mL
- Max. RPM / RCF (1736R) : 10,000 / 14,981; (2236R) : 13,000 / 25,318
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 62 x 100 (250 mL) / 17.1 x 94 (15 mL)
- Hole bottom type : Flat (250 mL) / Round (15 mL)
- Max. height for tube fit (mm) : 130 (250 mL) / 120 (15 mL)
- Supplied with a lid



\* Applicable 1736R / 2236R
















Tube		
Tube capacity (mL)	15	250
Tube Dimension ( $\Phi \times L$ , mm)	16 x 120	61.5 x 128
Max. radius (mm)	131.3	134
Max. RCF (g-force)(1736R/2236R)	14,679/24,808	14,981/25,318

## Fixed Angle Rotor, GRF-L-85-6

- Capacity : 6 x 85 mL
- Max. RPM / RCF (1736R) : 15,000 / 25,029; (2236R) : 20,000 / 44,496
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 38.5 x 100
- Hole bottom type : Round | Max. height for tube fit (mm) : 125
- Supplied with a lid and O-ring inserted



\* Applicable 1736R / 2236R
















Tube								
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	85 mL
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	38 x 106
Adapter								None
Cat No.	GAS-15(85)	GAS-c15(85)	GAS-c25(85)	GAS-c25(85)	GAS-30(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	17 x 94	17 x 98	29.5 x 62.5	29.5 x 62.5	26 x 85.4	29 x 95	29.5 x 98	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	Round	Conical	-
Max. radius (mm)	92.5	90.5	80.9	80.9	92.2	93.5	91.5	99.5
Max. RCF (g-force) (1736R/2236R)	23,268/ 41,366	22,765/ 40,472	20,350/ 36,178	20,350/ 36,178	21,193/ 41,232	23,520/ 41,813	23,017/ 40,919	25,029/ 44,496

## Fixed Angle Rotor, GRF-G-85-6

- Capacity : 6 x 85 mL
- Max. RPM / RCF : 10,000 / 12,298
- Hole angle from axis during rotation :  $\angle 34^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 38.5 x 100
- Hole bottom type : Round | Max. height for tube fit (mm) : 122
- Supplied with a lid and O-ring inserted



\* Only for 1236R












Tube								
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	85 mL
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	38 x 106
Adapter								None
Cat No.	GAS-15(85)	GAS-c15(85)	GAS-c25(85)	GAS-c25(85)	GAS-30(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	17 x 94	17 x 98	29.5 x 62.5	29.5 x 62.5	26 x 85.4	29 x 95	29.5 x 98	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	Round	Conical	-
Max. radius (mm)*	103	101	87	87	102.5	104	102	110
Max. RCF (g-force)*	11,515	11,292	9,727	9,727	11,460	11,627	11,404	12,298

## Fixed Angle Rotor, GRF-L-50-8

- Capacity : 8 x 50 mL
- Max. RPM / RCF (1736R) : 15,000 / 25,910; (2236R) : 20,000 / 46,062
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 29.5 x 93.2
- Hole bottom type : Round | Max. height for tube fit (mm) : 120
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted



\* Applicable 1736R / 2236R








Tube						
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108
Adapter						None
Cat No.	GAS-15(50)	GAS-c15(50)	GAS-c25(50)	GAS-c25(50)	GAS-30(50)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 94	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	-
Max. radius (mm)	93.5	96	81	81	96.5	103
Max. RCF (g-force)(1736R/2236R)	23,520/41,813	24,149/42,931	20,376/36,223	20,376/36,223	24,275/43,155	25,910/46,062

## Fixed Angle Rotor, GRF-G-50-8

- Capacity : 8 x 50 mL
- Max. RPM / RCF : 12,000 / 16,582
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 29.5 x 93.2
- Hole bottom type : Round | Max. height for tube fit (mm) : 120
- Supplied with a lid and O-ring inserted



\* Only for 1236R

Tube				
Tube capacity (mL)	15	15 mL conical	30	50
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 120	17 x 120	25.7 x 101.4	29 x 108
Adapter				None
Cat No.	GAS-15(50)	GAS-c15(50)	GAS-30(50)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 94	17 x 105	26 x 83.8	-
Adaptor hole bottom type	Round	Conical	Round	-
Max. radius (mm)	93.5	96	96.4	103
Max. RCF (g-force)	15,053	15,455	15,520	16,582














## Fixed Angle Rotor, GRF-L-c50-8

- Capacity : 8 x 50 mL Conical
- Max. RPM / RCF (1736R) : 15,000 / 27,671; (2236R) : 17,000 / 35,541
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 29.8 x 108.6
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 130
- Supplied with a lid with protruding screw for coupling into motor shaft
- Two rubber O-rings inserted



\* Applicable 1736R / 2236R












Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	105.2	94.1	94.1	106.4	107.3	110
Max. RCF (g-force)(1736R / 2236R)	26,463/33,990	23,671/30,404	23,671/30,404	26,765/34,378	26,991/34,669	27,671/35,541

## Fixed Angle Rotor, GRF-G-c50-8

- Capacity : 8 x 50 mL Conical
- Max. RPM / RCF : 10,000 / 12,298
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 29.8 x 108.6
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 130
- Supplied with a lid and O-ring inserted



\* Only for 1236R




Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	105.2	94.1	94.1	106.4	107.3	110
Max. RPM	10,000	10,000	10,000	10,000	10,000	10,000
Max. RCF (g-force)	11,761	10,520	10,520	11,896	11,996	12,298

## Fixed Angle Rotor, GRF-L-50-6

- Capacity : 6 x 50 mL
- Max. RPM / RCF : (1736R) : 17,000 / 32,310; (2236R) : 22,000 / 54,111
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ ,mm) : 29.5 x 92.2
- Hole bottom type : Round
- Supplied with a lid and O-ring inserted



\* Applicable 1736R / 2236R


Tube		
Tube capacity (mL)	30	50
Tube Dimension ( $\Phi \times L$ , mm)	25.7 x 101.4	29 x 108
Adapter		None
Cat No.	GAS-30(50)	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	26 x 83.8	-
Adaptor hole bottom type	Round	-
Max. radius (mm)	96.7	100
Max. RCF (g-force) (1736R/2236R)	31,244/52,326	32,310/54,111

## Fixed Angle Rotor, GRF-G-15-24

- Capacity : 24 x 15 mL
- Max. RPM / RCF : 8,000 / 8,872
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17.1 x 94
- Hole bottom type : Round
- Max. height for tube fit (mm) : 120
- Supplied with a lid and O-ring inserted



\* Only for 1236R






Tube	
Tube capacity (mL)	15
Tube Dimension ( $\Phi \times L$ ,mm)	16 x 120
Max. radius (mm)	Inner 103 / Outer 124
Max. RCF (g-force)	Inner 7,370 / Outer 8,872

## Fixed Angle Rotor, GRF-L-c15-12

- Capacity : 12 x 15 mL Conical
- Max. RPM / RCF (1736R) : 15,000 / 25,910; (2236R) : 20,000 / 46,062
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17.2 x 107.2
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 125
- Supplied with a lid and O-ring inserted



\* Applicable 1736R / 2236R






Tube			
Tube capacity (mL)	5 mL conical	5 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67	17 x 120
Adapter			None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	14.8 x 20	14.8 x 20	-
Adaptor hole bottom type	Conical	Conical	-
Max. radius (mm)	75.8	75.8	103
Max. RCF (g-force) (1736R/2236R)	19,067/33,898	19,067/33,898	25,910/46,062

## Fixed Angle Rotor, GRF-G-c15-12

- Capacity : 12 x 15 mL Conical
- Max. RPM / RCF : 12,000 / 16,582
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 17.2 x 107.2
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 125
- Supplied with a lid and O-ring inserted



\* Only for 1236R







Tube			
Tube capacity (mL)	5 mL conical	5 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	16 x 59	16 x 67	17 x 120
Adapter			None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	14.8 x 20	14.8 x 20	-
Adaptor hole bottom type	Conical	Conical	-
Max. radius (mm)	75.8	75.8	103
Max. RCF (g-force)	12,203	12,203	16,582

## Fixed Angle Rotor, GRF-L-m2.0-30

- Capacity : 30 x 1.5/2.0 mL
- Max. RPM / RCF(1736R) :17,000 / 31,147; (2236R) : 22,000 / 52,163
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round I Max. height for tube fit (mm) : 52
- Supplied with a lid



\* Applicable 1736R / 2236R







				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	79	86	96.4	96.4
Max. RCF (g-force) (1736R/2236R)	25,525/42,748	27,787/46,536	31,147/52,163	31,147/52,163

## Fixed Angle Rotor, GRF-G-m2.0-30

- Capacity : 30 x 1.5/2.0 mL
- Max. RPM / RCF : 12,000 / 15,520
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round I Max. height for tube fit (mm) : 52
- Supplied with a lid





\* Only for 1236R

				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	79	86	96.4	96.4
Max. RCF (g-force)	12,718	13,835	15,520	15,520

## Fixed Angle Rotor, GRF-L-s0.2-64 / GRF-G-s0.2-64

- Capacity : 8x8-Tube PCR strips, 64 x 0.2 mL
- Max. RPM / RCF : 12,000 / 10,803
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 6.5 x 16
- Hole bottom type : Round
- Max. height for tube fit (mm) : 25
- Supplied with a lid



Tube		
Tube capacity (mL)	0.2	8-Strip tube
Tube dimension ( $\Phi \times L$ , mm)	6 x 8	6 x 8
Max. radius (mm)	Inner 58.6 Outer 67.1	Inner 58.6 Outer 67.1
Max. RCF (g-force)	Inner 9,434 Outer 10,803	Inner 9,434 Outer 10,803

## Angle Rotor, GRA-G-15-24A

- Capacity : 24 x 15 mL
- Max. RPM / RCF : 4,000 / 3,134
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 20.4 x 14
- Supplied with 24 sleeves
















\* Only for 1236R



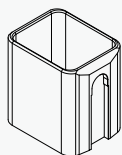
15 mL Sleeve  
**GLB-15/10A**

Hole dimension ( $\varnothing \times L$ , mm) : 18 x 87  
 Max. height for tube fit (mm) : 125 (120 for conical / wider cap)  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with 3.0 mm thick NBR pad

Tube								
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 120	17 x 120
Adapter						None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-10(f15)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-
Max. radius (mm)*	155.2	167.2	139.9	139.9	161.1	175.2	175.2	175.2
Max. RCF (g-force)*	2,776	2,990	2,503	2,503	2,882	3,134	3,134	3,134

## Swing Rotor, GRS-L-r250-4 / GRS-G-r250-4

- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with lubricant

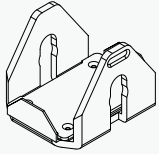


250 mL Rectangular Bucket  
GLB-r250-r250

Max. RPM / RCF : 4,000 / 3,134  
Max. Radius (mm) : 175.2  
Hole dimension (w x d x h, mm) : 86 x 70.3 x 98.5  
Max. height for tube fit (mm) : 130  
Hole bottom type : Flat

Tube								
Tube capacity (mL)	1.5/2.0	2.0 ~ 4 mL VT	4 ~ 7 mL VT	14 mL	8 ~ 10 mL VT	15	15 mL conical	50
Tube Dimension (Φ x L, mm)	11 x 38	13 x 75	13 x 100	15.7 x 96	16 x 100	16 x 120	17 x 120	29 x 108
Adapter								
Cat. No.	GAM-m2.0-20(r250)	GAM-5-12(r250)	GAM-5-12(r250)	GAM-15-12(r250)	GAM-15-12(r250)	GAM-15-12(r250)	GAM-c15-9(r250)	GAM-50-4(r250)
Rack capacity (ea / 4)	20 / 80	12 / 48	12 / 48	12 / 48	12 / 48	12 / 48	9 / 36	4 / 16
Rack hole dimension (Φ x L, mm)	11.3 x 39	13.5 x 58	13.5 x 80	17.5 x 59	17.5 x 90	17.5 x 90	17.5 x 90	30.2 x 90
Rack hole bottom type	Round	Round	Round	Round	Round	Round	Conical	Round
Max. height tube fit (mm)	115	120	120	120	120	120	120	120
Max. radius (mm)*	170	173.2	173.2	173.2	173.2	173.2	175.2	173.2
Max. RCF (g-force)*	3,041	3,095	3,095	3,095	3,095	3,095	3,134	3,095

Tube							
Tube capacity (mL)	25mL conical	25mL conical	50 mL conical	50 mL conical (skirted)	15	85	250 mL
Tube Dimension (Φ x L, mm)	28.5 x 83	28.5 x 78.5	29.5 x 118	29.5 x 118	16 x 120	38 x 106	61.5 x 128
Adapter							
Cat. No.	GAM-c50-3(r250)	GAM-c50-3(r250)	GAM-c50-3(r250)	GAM-sc50(r250)	GAM-85-2(r250)		GAS-250(r250)
Rack capacity (ea / 4)	3 / 12	3 / 12	3 / 12	4/16	2 / 8		1 / 4
Rack hole dimension (Φ x L, mm)	30.5 x 60	30.5 x 60	30.5 x 90	29.8 x 93.5	17 x 86.5	38.5 x 86.5	62.5 x 87
Rack hole bottom type	Conical	Conical	Conical	Flat	Round		Flat
Max. height tube fit (mm)	120	120	120	126	120		130
Max. radius (mm)*	175.2	175.2	175.2	172	172.5		173
Max. RCF (g-force)*	3,134	3,134	3,134	3,077	3,086		3,095



Microplate Holder Bucket  
**GLP-mw-r250**

Max. RPM / RCF : 4,000 / 2,737  
 Max. Radius (mm) : 153  
 Hole dimension (w x d x h, mm) : 86.5 x 128.5 x 80  
 Max. height for tube fit (mm) : 80  
 Hole bottom type : Flat bottom with Stainless steel & ABS pad



Tube

	MTP	DWP
Tube capacity (mL)		
Tube Dimension (Φ x L,mm)	86 x 128 x 15	86 x 128 x 60
Bucket capacity(lea / 4)	4 / 16	1 / 4



## Swing Rotor, GRS-L-250-4 / GRS-G-250-4

- 4 loadings
- Max. RPM : 5,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant



250 mL Round Bucket  
**GLB-250-250**

Max. RPM / RCF : 5,000 / 5,394  
Max. Radius (mm) : 193  
Hole dimension ( $\Phi \times L$ , mm) : 62 x 109  
Max. height for tube fit (mm) : 153  
Hole bottom type : Flat

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	4 ~ 7 mL VT	8 ~ 10 mL VT	15	15 mL conical	25 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	28.5 x 83
Adapter									
Cat. No.	GAM-m2.0-9(250)	GAM-m2.0-9(250)	GAM-c5-4(250)	GAM-c5-4(250)	GAM-7-8(250)	GAM-10-7(250)	GAM-15-4(250)	GAM-c15-4(250)	GAS-c25(250)
Rack capacity (ea / 4)	9 / 36	9 / 36	4/16	4/16	8 / 32	7 / 28	4 / 16	4 / 16	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 80	17.5 x 103.5	17.2 x 106.5	29.5 x 61
Rack hole bottom type	Round	Round	Conical	Conical	Round	Round	Round	Conical	Conical
Max. height tube fit (mm)	150	150	153	153	150	150	150	153	153
Max. radius (mm)*	190	190	193	193	190	190	190	193	193
Max. RCF (g-force)*	5,311	5,311	5,394	5,394	5,311	5,311	5,311	5,394	5,394
Tube									
Tube capacity (mL)	25mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100	250 mL conical	250
Tube Dimension ( $\Phi \times L$ , mm)	28.5 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115	60 x 163	61.5 x 128
Adapter									None
Cat. No.	GAS-c25(250)	GAM-30-3(250)	GAM-50-2(250)	GAS-c50(250)	GAS-sc50(250)	GAS-85(250)	GAS-100(250)	GAS-c250(250)	-
Rack capacity (ea / 4)	1 / 4	3 / 12	2 / 8	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	29.5 x 61	26 x 85	29.5 x 90	29.8 x 98	29.8 x 93	38.5 x 96	44.2 x 93	61.5 x 44.5	-
Rack hole bottom type	Conical	Round	Round	Conical	Flat	Round	Round	Conical	-
Max. height tube fit (mm)	153	148	148	153	148	148	148	153	153
Max. radius (mm)*	193	188	188	193	188	188	188	193	193
Max. RCF (g-force)*	5,394	5,255	5,255	5,394	5,255	5,255	5,255	5,394	5,394



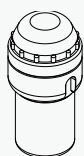
# Swing Rotor, GRS-G-100-6

- 6 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant



**Bio-Safe** Porton Down Certified

\* Only for 1236R

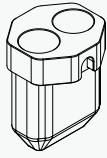


100 mL Bucket with a Cap  
**GLBB-b100-100**

Max. RPM / RCF : 4,000 / 3,105  
 Max. Radius (mm) : 173.6  
 Hole dimension ( $\varnothing \times L$ , mm) : 47 x 99  
 Max. height for tube fit (mm) : 120 (w/ cap) / 130 (w/o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	2.6 ~ 7	4 ~ 10	15	15 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	17 x 120
Adapter									
Cat. No.	GAM-m2.0-6 (b100)	GAM-m2.0-6 (b100)	GAM-c5-3(b100)	GAM-c5-3(b100)	GAM-7-5(b100)	GAM-10-5(b100)	GAM-15-3 (b100)	GAM-c15-3 (b100)	GAS-c15(b100)
Rack capacity (ea / 4)	6 / 36	6 / 36	3 / 18	3 / 18	5 / 30	5 / 30	3 / 18	3 / 18	1 / 6
Rack hole dimension ( $\Phi \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5
Rack hole bottom type	Round	Round	Conical	Conical	Flat	Flat	Flat	Conical	Conical
Max. height tube fit (mm)	115	115	75	75	115	115	120	120	120
Max. radius (mm)*	168.6	168.6	110.1	110.1	168.6	168.6	170.6	173.6	173.6
Max. RCF (g-force)*	3,016	3,016	1,969	1,969	3,016	3,016	3,052	3,105	3,105

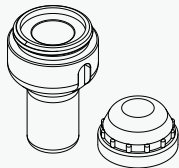
Tube								
Tube capacity (mL)	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100
Tube Dimension ( $\Phi \times L$ , mm)	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115
Adapter								
Cat. No.	GAS-c25(b100)	GAS-c25(b100)	GAS-30(b100)	GAS-50(b100)	GAS-c50(b100)	GAS-sc50(b100)	GAS-85(b100)	GAS-100(b100)
Rack capacity (ea / 4)	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6	1 / 6
Rack hole dimension ( $\Phi \times L$ ,mm)	17.2x52	17.2x52	26x86	29.5 x 95.9	30 x 100	29.8x100	38.5 x 96.4	44.2 x 93
Rack hole bottom type	Conical	Conical	Round	Round	Conical	Flat	Round	Round
Max. height tube fit (mm)	118	118	118	118	120	120	118	118
Max. radius (mm)*	172.1	172.1	172.1	171.6	171.6	171.6	172.1	168.6
Max. RCF (g-force)*	3,079	3,079	3,079	2,737	2,737	2,737	3,079	3,016



50 mL Conical Bucket  
GLB-dc50-100

Max. RPM / RCF : 4,000 / 3,105  
Max. Radius (mm) : 173.6  
Hole dimension (Ø x L, mm) : 30 x 89  
Max. height for tube fit (mm) : 125  
Hole bottom type : Conical

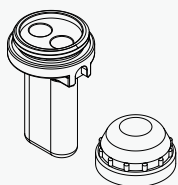
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Bucket capacity(ea / 6)	2/12	2/12	2/12	2/12	2/12	2/12
Adaptor hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	171	137	137	162.4	162.6	173.6
Max. RCF (g-force)	3,059	2,451	2,451	2,905	2,909	3,105



50 mL Bucket with a Cap  
GLB-b50-100




Max. RPM / RCF with : 4,000 / 3,032  
Max. Radius (mm) : 169.5  
Hole dimension (Ø x L, mm) : 30.5 x 97  
Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
Hole bottom type : Flat bottom with rubber pad  
Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension (Φ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension (Φ x L,mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)*	169.5	169.5	169.5	135.7	135.7	160.7	169.5	169.5	169.5
Max. RCF (g-force)*	3,032	3,032	3,032	2,427	2,427	2,875	3,032	3,032	3,032



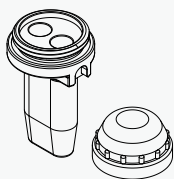
15 mL Dual Round Bucket  
with a Cap  
**GLB-bd15-100**

Max. RPM / RCF : 4,000 / 3,032  
Max. Radius (mm) : 169.5  
Hole dimension (Ø x L, mm) : 17 x 87  
Max. height for tube fit (mm) : 115 (w/ cap) / 127 (w/o cap)  
Hole bottom type : Round  
Supplied with a cap and O-ring

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12
Max. height tube fit (mm)	115	115	115
Max. radius (mm)	169.5	169.5	169.5
Max. RCF (g-force)	3,032	3,032	3,032








**Bio-Safe**

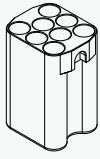
Porton Down Certified



15 mL Dual Conical Bucket  
with a Cap  
**GLBB-bdc15-100**















Max. RPM / RCF : 4,000 / 3,105  
Max. Radius (mm) : 173.6  
Hole dimension (Ø x L, mm) : 17 x 97.5  
Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
Hole bottom type : Conical  
Supplied with a cap and O-ring, No cap version is available

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Bucket capacity (ea / 6)	2 / 12	2 / 12	2 / 12	2 / 12
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	120.5	120.5	156.5	173.6
Max. RCF (g-force)	2,156	2,156	2,799	3,105



Vacutainer 10 mL Bucket,  
**GLB-15-8-100**

Max. RPM / RCF : 4,000 / 3,059 | Max. Radius (mm) : 171  
 Hole dimension (Ø x L, mm) : 17 x 86  
 Hole bottom type : Flat with rubber pad  
 Max. height for tube fit (mm) : 115  
 Supplied with 3.0 mm thick NBR rubber pad

									
Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 100	16 x 114	16 x 120
Adapter						None	None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-	-
Bucket capacity (ea / 6)	8 / 48	8 / 48	4 / 24	4 / 24	4 / 24	8 / 48	8 / 48	8 / 48	2 / 12
Adaptor hole dimension (Φ x L, mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-	-
Max. height tube fit (mm)	88	115	75	75	103.5	115	115	115	125(center)
Max. radius (mm)*	144	171	130	130	159.5	171	171	171	171
Max. RCF (g-force)*	2,576	3,059	2,325	2,325	2,853	3,059	3,059	3,059	3,059

# Low-speed Centrifuges

## Technical Specifications

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**406**

p. 110

Max. RPM / Fixed angle	4,000 rpm
Max. RPM / Swing-out	-
Max. RCF / Fixed angle	2,075 x g
Max. RCF / Swing-out	-
Max. capacity / Fixed angle	12 x 15 mL
Max. capacity / Swing-out	-
RCF/RPM conversion	Yes
Temperature range	-
FAST cool button	-
Time control	Timed < 100 min, or Continuous
CE mark	Yes
Cat. No.	GZ-0406

## Function Features

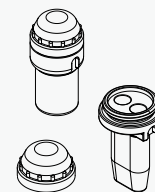


### Pulse Key

Time control functions of pulse for quick spin

### NEW Bucket, GLBB Model

Containment of samples provided by a combination of physical seals and a design to prevent any sample leakage within the buckets.



- GLBB-b100-100 / GLBB-bdc15-100
- GLBB-750-750



### SOFT / START / STOP Function, 416

The "SOFT START/STOP" function enables gentle acceleration and deceleration, which is effective for vibration-sensitive sample separation such as blood fractionation



### Low-speed Refrigerated Benchtop Model, 624R

It suits for general laboratory and clinical applications including sample separations of cellular materials, blood, urine and sperm. 624R also applies for molecular biology work, clinical preparations, PRP, PRF and stem cell isolation and industrial applications.



### 416

p. 112



### 624R

p. 124

4,000 rpm	6,000 rpm
4,000 rpm	4,800 rpm
2,700 x g	3,960 x g
2,826 x g	3,888 x g
10 x 50 mL / c50 mL 16 x 15 mL	10 x 50 mL / c50 mL, 24 x 2.0 mL
4 x 100 mL, 4 x 8 vacutainer tubes, 2 x 2 MTPs	4 x 100 mL, 4 x 8 vacutainer tubes, 2 x 2 MTPs
Yes	Yes
-	-10°C to 40°C
-	Yes
Timed < 100 min, or Continuous	Pulse, Timed < 10 hr, or Continuous
Yes	Yes
GZ-0416	GZ-0624R

# 406 Low-speed Centrifuge



## Features

- Capacity : 6 x 15 mL or 12 x 10 mL (all on a 12 x 15 mL rotor) Speed : 4,000 rpm (2,075 xg)
- Automatic lid release and vivid end alarm allows easy retrieval of sample
- Optional tube adaptors for 3 mL and 5 mL tubes are available for easy separation of the small tubes including vacutainers
- Very quiet operation at less than 56 dB allowing a comfortable laboratory environment
- CE IVD -certified version, MD406 is also available (on request)

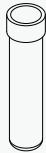
## Technical Specifications

<b>Max. RPM/PCF for Fixed Angle</b>	4,000 rpm / 2,075 xg
<b>Max. Capacity for Fixed Angle</b>	6 x 15 mL, 12 x 10 mL
<b>Time control</b>	Timed <100 min or continuous
<b>RCF/RPM conversion</b>	Yes
<b>Acc. time to Max. Speed</b>	≤20 sec
<b>Dec. time from Max. Speed</b>	≤25 sec
<b>Noise level (dependent on rotor)</b>	≤52 dB

<b>Program Memory</b>	10
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Power Requirement</b>	140 VA
<b>Dimension (W x D x H)</b>	296 x 412 x 206 mm
<b>Net Weight</b>	17.6 kg
<b>CE MARK</b>	Yes
<b>Cat No.</b>	GZ-0406

# Angle Rotor, GRA-15/10-12A, GRA-15-6A

- Capacity : 6 x 15 mL or 12 x 10 mL / 6 X 15 mL
- Max. RPM / RCF : 4,000 / 2,075
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 20.4 x 10.1
- Supplied with 12 sleeves, No ID ring



15 mL Sleeve  
**GLB-15/10A**

Max. Capacity : 15 mL  
 Max RPM / RCF : 4,000 / 2,075  
 Hole dimension ( $\varnothing \times L$ , mm) : 18 x 87  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with 4.0 mm thick NBR pad inserted

Tube								
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 120	17 x 120
Adapter						None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-
Max. radius (mm)*	95.5	111	81.5	81.5	104.5	116	116	116
Max. RCF (g-force)*	1,708	1,986	1,458	1,458	1,869	2,075	2,075	2,075





# 416 Low-speed Centrifuge



## Features

- Speed : 4,000 rpm (2,549 xg) ; 4,000 rpm (2,700 xg)
- Capacity : 10 x 50 mL /c50 mL ; 16 x 15 mL
- Very quiet operation at less than 56 dB allowing a comfortable laboratory environment
- Lid drop protection allows easiness and safety when loading or unloading samples
- Automatic lid release and vivid end alarm allows easy retrieval of sample
- Unique vacutainer buckets for separation of 32 vacutainer samples
- Large assortment of accessories for micro tubes and all sizes of tubes up to 100 mL

## Technical Specifications



















<b>Max. RPM/PCF for Fixed Angle</b>	4,000 rpm / 2,700 xg
<b>Max. RPM/PCF for Swing-out</b>	4,000 rpm / 2,826 xg
<b>Max. Capacity for Fixed Angle</b>	16 x 15 mL, 10 x 50 mL
<b>Max. Capacity for Swing-out</b>	4 x 100 mL, 4 x 8 vacutainer tube, 2 x 2 MTPs
<b>Time control</b>	Timed <100 min or continuous
<b>Acc. time to Max. Speed</b>	≤20 sec
<b>Dec. time from Max. Speed</b>	≤25 sec
<b>RCF/RPM conversion</b>	Yes
<b>Noise level (dependent on rotor)</b>	≤52 dB

<b>RCF/RPM conversion</b>	Yes
<b>Program Memory</b>	10
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Power Requirement</b>	340 VA
<b>Dimension (W x D x H)</b>	375 x 480 x 260 mm
<b>Net Weight</b>	19.5 kg
<b>CE MARK</b>	Yes
<b>Cat No.</b>	GZ-0416

## Angle Rotor, GRA-S-50-10

- Capacity : 10 x 50 mL or 50 mL Conical | Max. RPM / RCF : 4,000 / 2,549
- Hole angle rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 32.2 x 13.5
- Supplied with 10 sleeves, No ID ring

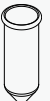














	<b>50 mL Sleeve GLB-50s-50A</b>									Max. RMP / RCF : 4,000 / 2,549 Hole dimension ( $\varnothing \times L$ , mm) : 30 x 99 Hole bottom type : Flat bottom with rubber pad Max. height for tube fit (mm) : 130 Supplied with 3.5 mm thick NBR pad
										
Tube										
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50	
Tube Dimension ( $\varnothing \times L$ , mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108	
Adapter								None	None	
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-	
Adaptor hole dimension ( $\varnothing \times L$ , mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-	
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-	
Max. radius (mm)	141.9	141.9	141.9	115	115	135	135.5	142.5	142.5	
Max. RCF (g-force)	2,538	2,538	2,538	2,057	2,057	2,415	2,424	2,549	2,549	

## Fixed Angle Rotor, GRA-S-c50-10

- Capacity : 10 x 50 mL or 50 mL Conical | Max. RPM / RCF : 4,000 / 2,508
- Hole angle rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 32.2 x 13.5
- Supplied with 10 sleeves, No ID ring



	<b>50 mL Sleeve GLB-c50s-50A</b>						Max. RPM / RCF : 4,000 / 2,508 Hole dimension ( $\varnothing \times L$ , mm) : 31 x 99 Hole bottom type : Conical Max. height for tube fit (mm) : 130
							
Tube							
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	
Tube Dimension ( $\varnothing \times L$ , mm)	17 x 120	28.8x83	28.8x78.5	25.7 x 101.4	29 x 108	29.5 x 118	
Adapter						None	
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-	
Adaptor hole dimension ( $\varnothing \times L$ , mm)	17 x 105	27.1x14.1	27.1x14.1	26x83.8	27.9 x 11	-	
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-	
Max. radius (mm)	139.6	115	115	135.5	136.1	140	
Max. RCF (g-force)	2,497	2,057	2,057	2,424	2,435	2,508	














## Angle Rotor, GRA-S-15-16A

- Capacity : 16 x 15 mL
- Max. RPM / RCF : 4,000 / 2,700
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 20.4 x 10.5
- Supplied with 16 sleeves, No ID ring



15 mL Sleeve  
**GLB-15/10A**

Max. RPM / RCF : 4,000 / 2,700  
 Hole dimension ( $\varnothing \times L$ , mm) : 18 x 87  
 Hole bottom type : Flat bottom with rubber pad  
 Max. height for tube fit (mm) : 125 (120 for conical / wider cap)  
 Supplied with 4.0 mm thick NBR pad

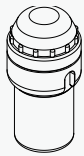
Tube								
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 120	17 x 120
Adapter						None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-
Max. radius (mm)*	134	146	118.5	118.5	139.4	150.9	150.9	150.9
Max. RCF (g-force)*	2,397	2,612	2,120	2,120	2,494	2,700	2,700	2,700

## Swing Rotor, GRS-S-100-4

- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Supplied with a lubricant, No ID ring



**Bio-Safe** Porton Down Certified

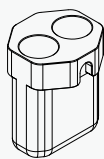


100 mL Bucket with a Cap  
**GLBB-b100-100**

Max. RPM / RCF : 4,000 / 2,774  
 Max. Radius (mm) : 155.1  
 Hole dimension ( $\Phi \times L$ , mm) : 47 x 99  
 Max. height for tube fit (mm) : 120 (w/ cap) / 130 (w/o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and an O-ring, No cap version is available

Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	2.6 ~ 7	4 ~ 10	15	15 mL conical	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	11 x 38	10.1x46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	17 x 120
Adapter									
Cat. No.	GAM-m2.0-6(b100)	GAM-m2.0-6(b100)	GAM-c5-3(b100)	GAM-c5-3(b100)	GAM-7-5(b100)	GAM-10-5(b100)	GAM-15-3(b100)	GAM-c15-3(b100)	GAS-c15(b100)
Rack capacity (ea / 4)	6 / 24	6 / 24	3/12	3/12	5 / 20	5 / 20	3 / 12	3 / 12	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5
Rack hole bottom type	Round	Round	Conical	Conical	Round	Flat	Flat	Conical	Conical
Max. height tube fit (mm)	115	115	75	75	115	115	120	120	120
Max. radius (mm)*	150.1	150.1	110.1	110.1	150.1	150.1	152.1	155.1	155.1
Max. RCF (g-force)*	2,685	2,685	1,969	1,969	2,685	2,685	2,721	2,774	2,774

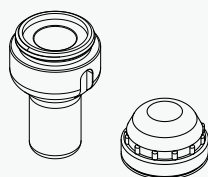
Tube								
Tube capacity (mL)	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100
Tube Dimension ( $\Phi \times L$ , mm)	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115
Adapter								
Cat. No.	GAS-c25(b100)	GAS-c25(b100)	GAS-30(b100)	GAS-50(b100)	GAS-c50(b100)	GAS-sc50(b100)	GAS-85(b100)	GAS-100(b100)
Rack capacity (ea / 4)	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\Phi \times L$ ,mm)	17.2 x 52	17.2 x 52	26 x 86	29.5 x 95.9	30 x 100	29.8 x 100	38.5 x 96.4	44.2 x 93
Rack hole bottom type	Conical	Conical	Round	Round	Conical	Flat	Round	Round
Max. height tube fit (mm)	118	118	118	118	120	120	118	118
Max. radius (mm)*	153.5	153.5	153.5	153	153	153	153.5	150.1
Max. RCF (g-force)*	2,746	2,746	2,746	2,737	2,737	2,737	2,746	2,685



50 mL Conical Bucket  
**GLB-dc50-100**

Max. RPM / RCF : 4,000 / 2,774  
 Max. Radius (mm) : 155.1  
 Hole dimension (Ø x L, mm) : 30 x 89  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

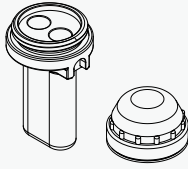
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Bucket capacity(ea / 6)	2 / 8	2 / 8	2 / 8	2 / 8	2 / 8	2 / 8
Adaptor hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	152.5	118.5	118.5	143.9	144.1	155.1
Max. RCF (g-force)	2,728	2,120	2,120	2,574	2,578	2,774



50 mL Bucket with a Cap  
**GLB-b50-100**




Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 30.5 x 97  
 Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with a cap and O-ring, No cap version is available

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension (Φ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension (Φ x L,mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)	150.9	150.9	150.9	117.1	117.1	142.1	142	150.9	150.9
Max. RCF (g-force)	2,700	2,700	2,700	2,095	2,095	2,542	2,540	2,700	2,700

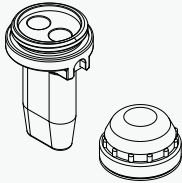


15 mL Dual Round Bucket with a Cap  
**GLB-bd15-100**

Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 17 x 87  
 Max. height for tube fit (mm) : 115 (w/ cap) / 127 (w/o cap)  
 Hole bottom type : Round  
 Supplied with a cap and O-ring








Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Bucket capacity (ea / 6)	2 / 8	2 / 8	2 / 8
Max. height tube fit (mm)	115	115	115
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	2,700	2,700	2,700

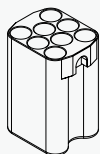
**Bio-Safe** Porton Down Certified



15 mL Dual Conical Bucket with a Cap  
**GLBB-bdc15-100**

Max. RPM / RCF : 4,000 / 2,774  
 Max. Radius (mm) : 155.1  
 Hole dimension (Ø x L,mm) : 17 x 97.5  
 Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
 Hole bottom type : Conical  
 Supplied with a cap and O-ring, No cap version is available

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Bucket capacity (ea / 6)	2 / 8	2 / 8	2 / 8	2 / 8
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	102	102	115.1	155.1
Max. RCF (g-force)	1,826	1,826	2,059	2,774



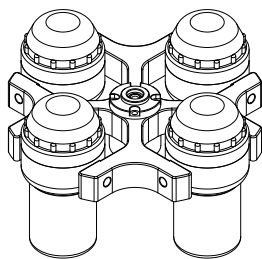
Vacutainer 10 mL Bucket  
**GLB-15-8-100**

Max. RPM / RCF : 4,000 / 2,719  
 Max. Radius (mm) : 152  
 Hole dimension (Ø x L, mm) : 17 x 86  
 Hole bottom type : Flat  
 Max. height for tube fit (mm) : 115  
 Supplied with 3.0 mm thick NBR rubber pad

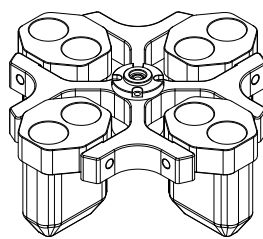
Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 100	16 x 114	16 x 120
Adapter						None	None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-	-
Bucket capacity (ea / 6)	8 / 32	8 / 32	4 / 16	4 / 16	4 / 16	8 / 32	8 / 32	8 / 32	2 / 8
Adaptor hole dimension (Φ x L, mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-	-
Max. height tube fit (mm)	88	115	75	75	103.5	115	115	115	125(center)
Max. radius (mm)*	125	156.6	112	112	140.5	152	152	152	152
Max. RCF (g-force)*	2,236	2,719	2,003	2,003	2,513	2,719	2,719	2,719	2,719

\* Depending on the size of cap, there is a possibility of not fit-in.

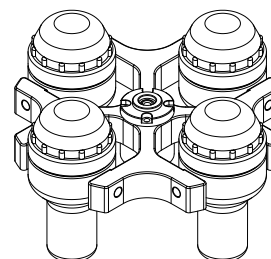
### Adaptable Buckets of Rotor, GRS-S-100-4



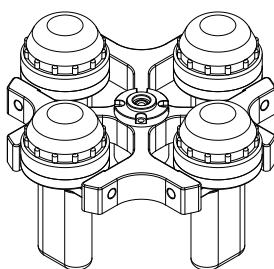
GLBB-b100-100



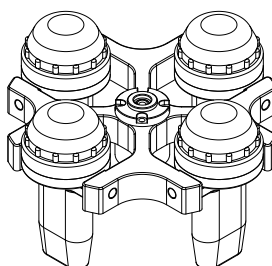
GLB-dc50-100



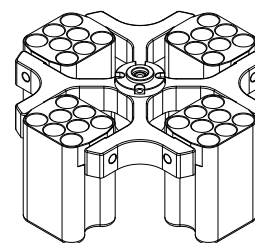
GLB-b50-100



GLB-bd15-100



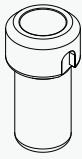
GLBB-bdc15-100



GLB-15-8-100

















## Swing Rotor, GRS-S-50-4

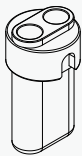
- 4 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with a lubricant
- No ID ring



50 mL Bucket  
**GLB-50-50**




Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension ( $\varnothing$  x L, mm) : 30.5 x 91  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Flat  
 Supplied with 4.0 mm thick NBR pad

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension ( $\varnothing$ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension ( $\varnothing$ x L, mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)	150.9	150.9	150.9	117.1	117.1	142.1	142	150.9	150.9
Max. RCF (g-force)	2,700	2,700	2,700	2,095	2,095	2,542	2,540	2,700	2,700

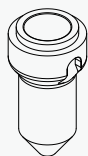


15 mL Dual Round Bucket  
**GLB-d15-50**

Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension ( $\varnothing$  x L, mm) : 17 x 91.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension ( $\varnothing$ x L, mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	125	125	125
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	2,700	2,700	2,700

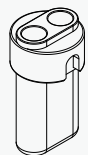




50 mL Bucket  
**GLB-c50-50**

Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L,mm) : 29.5 x 91.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

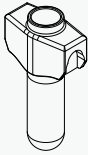
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat. No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Rack hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Rack hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	150.9	119.9	119.9	145.3	145.5	150.9
Max. RCF (g-force)	2,700	2,145	2,145	2,599	2,578	2,700



15 mL Dual Conical Bucket  
**GLB-dc15-50**




Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L,mm) : 17 x 91.5  
 Max. height for tube fit (mm) : 120  
 Hole bottom type : Conical

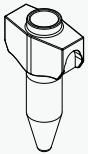
Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	98.6	98.6	131.6	150.9
Max. RCF (g-force)	1,826	1,826	2,354	2,700



**15 mL Round Bucket**  
**GLB-15-50**








Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 17 x 93  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	125	125	125
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	2,700	2,700	2,700



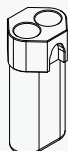
**15 mL Conical Bucket**  
**GLB-c15-50**

Max. RPM / RCF : 4,000 / 2,700  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 17 x 92.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	99.8	99.8	132.8	150.9
Max. RCF (g-force)	1,785	1,785	2,376	2,700






# Swing Rotor, GRS-S-15-6

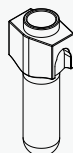
- 6 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Rotor dimension / weight ( $\varnothing \times L$ , mm / g) : 198.2 x 44 / 573
- Supplied with a lubricant, No ID ring



15 mL Dual Round Bucket  
**GLB-d15-15**




Max. RPM / RCF : 4,000 / 2,737  
 Max. Radius (mm) : 153  
 Hole dimension ( $\varnothing \times L$ , mm) : 17 x 88  
 Max. height for tube fit (mm) : 122  
 Hole bottom type : Flat with rubber pad  
 Supplied with 3.0 mm thick NBR rubber pad

			
Tube			
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT
Tube Dimension ( $\varnothing \times L$ , mm)	13 x 75	13 x 100	16 x 100
Adapter			None
Cat No.	GAS-3(f15)	GAS-5(f15)	-
Bucket capacity (ea / 4)	2 / 12	2 / 12	2 / 12
Adaptor hole dimension ( $\varnothing \times L$ , mm)	13.5 x 61	13.5 x 85	-
Adaptor hole bottom type	Round	Open	-
Max. height tube fit (mm)	95	123	123
Max. radius (mm)	126	153	153
Max. RCF (g-force)	2,164	2,737	2,737



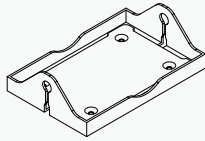
15 mL Round Bucket  
**GLB-15-15**

Max. RPM / RCF : 4,000 / 2,826  
 Max. Radius (mm) : 158  
 Hole dimension ( $\varnothing \times L$ , mm) : 17 x 93  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

			
Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension ( $\varnothing \times L$ , mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	120	120	120
Max. radius (mm)	158	158	158
Max. RCF (g-force)	2,826	2,826	2,826

## Swing Rotor, GRS-S-mw-2

- 2 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with microplate holder, No ID ring



Microplate Bucket  
**GLP-mw**

Max. RPM / RCF : 4,000 / 2,000  
 Max. Radius (mm) : 111.8  
 Hole dimension (w x d, mm) : 86.5 x 128.5  
 Max. height for tube fit (mm) : 35  
 Supplied with 3.0 mm thick ABS pad



Tube

Tube capacity (mL)	MTP
Tube Dimension ( $\Phi$ x L,mm)	86 x 128 x15
Bucket capacity (ea / 2)	2 / 4

# 624R Low-speed Centrifuge



## Features

- Speed : 6,000 rpm (3,960 xg); 4,800 rpm (3,888 xg)
- Capacity : 10 x 50 mL / c50 mL ; 24 x 15 mL ; 24 x 2.0 mL
- Fast cooling allows a temperature drop to 4°C within 5 minutes : function for quick start of cooled samples
- Compressor-off function : minimizes unnecessary cooling and frosting when lid is open
- Intuitive control interface with numeric input buttons allows easy setting and editing of running conditions
- Selectable time mode of "from starting" and "At Set SPEED" which is meant to start counting the running time when set speed is reached

## Technical Specifications












<b>Max. RPM/PCF for Fixed Angle</b>	6,000 rpm / 3,960 xg
<b>Max. RPM/PCF for Swing-out</b>	4,800 rpm / 3,888 xg
<b>Max. Capacity for Fixed Angle</b>	6 x 50 mL
<b>Max. Capacity for Swing-out</b>	4 x 100 mL, 4 x 8 vacutainer tube, 2 x 2 MTPs
<b>Temp. range (°C)</b>	-10°C to 40°C
<b>FAST cool button</b>	Yes
<b>Time control</b>	Pulsed, timed <10 hr or continuous
<b>Time counting range</b>	Selectable, at set speed or from starting
<b>Noise level (dependent on rotor)</b>	≤60 dB

<b>RCF/RPM conversion</b>	Yes
<b>ACC/DEC Ramps</b>	9/10
<b>Program Memory</b>	100
<b>Power Supply</b>	AC 230V, 50Hz (AC 220-230V, 60/50Hz; 110V optional)
<b>Power Requirement</b>	900 VA
<b>Dimension (W x D x H)</b>	584 x 535 x 317 mm
<b>Net Weight</b>	65 kg
<b>CE MARK</b>	Yes
<b>Cat No.</b>	GZ-0624R

## Fixed Angle Rotor, GRF-SR-50-6

- Capacity : 6 x 50 mL
- Max. RPM / RCF : 6,000 / 3,824
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 29.5 x 95.4
- Hole bottom type : Round
- Max. height for tube fit (mm) : 120
- Supplied with a lid and an O-ring inserted














Tube						
Tube capacity (mL)	15	15 mL conical	25 mL conical	25 mL conical	30	50
Tube Dimension ( $\Phi \times L$ , mm)	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108
Adapter						None
Cat No.	GAS-15(50)	GAS-c15(50)	GAS-c25(50)	GAS-c25(50)	GAS-30(50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 94	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	-
Adaptor hole bottom type	Round	Conical	Conical	Conical	Round	-
Max. radius (mm)	88.9	91	78.9	78.9	91.8	95
Max. RCF (g-force)	3,578	3,663	3,188	3,188	3,695	3,824

## Fixed Angle Rotor, GRF-SR-c50-6

- Capacity : 6 x 50 mL conical
- Max. RPM / RCF : 6,000 / 3,960
- Hole angle from axis during rotation :  $\angle 25^\circ$
- Hole dimension ( $\varnothing \times L$ , mm) : 30 x 108.6
- Hole bottom type : Conical
- Max. height for tube fit (mm) : 125
- Supplied with a lid and an O-ring inserted









Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	93.6	82.5	82.5	94.8	95.8	98.4
Max. RCF (g-force)	3,767	3,320	3,320	3,816	3,856	3,960

## Fixed Angle Rotor, GRF-SR-m2.0-24

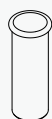
- Capacity : 24 x 1.5/2.0 mL | Max. RPM / RCF : 6,000 / 3,393
- Hole angle from axis during rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 11.1 x 39
- Hole bottom type : Round | Max. height for tube fit (mm) : 52
- Supplied with a lid and O-ring inserted



Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ , mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-
Max. radius (mm)	67	73	84.3	84.3
Max. RCF (g-force)	2,697	2,938	3,393	3,393

















## Angle Rotor, GRA-SR-50-10

- Capacity : 10 x 50 mL or 50 mL Conical | Max. RPM / RCF : 4,000 / 2,508
- Hole angle rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 32.2 x 13.5
- Supplied with 10 sleeves, No ID ring



50 mL Sleeve  
**GLB-50s-50A**


Max. RPM / RCF : 4,000 / 2,549  
 Hole dimension ( $\varnothing \times L$ , mm) : 30 x 99  
 Max. height for tube fit (mm) : 130  
 Hole bottom type : Flat bottom with rubber pad  
 Supplied with 3.5 mm thick NBR pad












Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirt)
Tube Dimension ( $\Phi \times L$ , mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118
Adapter							None		None
Cat. No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	-	GAS-c50(f50)	-
Rack hole dimension ( $\Phi \times L$ , mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	-	29.5 x 17.5	-
Rack hole bottom type	Open	Open	Open	Conical	Conical	Round	-	Conical	-
Max. radius (mm)	141.9	141.9	141.9	115	115	135	142.5	142.5	142.5
Max. RCF (g-force)	2,538	2,538	2,538	2,057	2,057	2,415	2,549	2,549	2,549

## Angle Rotor, GRA-SR-c50-10

- Capacity : 10 x 50 mL or 50 mL Conical | Max. RPM / RCF : 4,000 / 2,508
- Hole angle rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 32.2 x 13.5
- Supplied with 10 sleeves, No ID ring



	<b>50 mL Sleeve GLB-c50s-50A</b>	Hole dimension ( $\varnothing \times L$ , mm) : 31 x 99 Max. height for tube fit (mm) : 130 Hole bottom type : Conical
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Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	17 x 120	28.8x83	28.8x78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	139.6	115	115	135.5	136.1	140
Max. RCF (g-force)	2,497	2,057	2,057	2,424	2,435	2,508

## Angle Rotor, GRA-SR-15-24A

- Capacity : 24 x 15 mL (12 outer, 12 inner)
- Max. RPM / RCF : 4,000 / 2,773
- Hole angle rotation :  $\angle 45^\circ$  | Hole dimension ( $\varnothing \times L$ , mm) : 20.4 x 10
- Supplied with 24 sleeves | Rotor ID ring underneath the rotor body



	<b>15 mL Sleeve GLB-15/10A</b>	Hole dimension ( $\varnothing \times L$ , mm) : 18 x 87 Max. height for tube fit (mm) : 125 (120 for conical / wider cap) Hole bottom type : Flat bottom with rubber pad Supplied with 3.0 mm thick NBR pad
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Tube								
Tube capacity (mL)	2.0~4 mL VT	4~7 mL VT	5 mL conical	5 mL conical	14 mL	8~10 mL VT	15	15 mL conical
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 120	17 x 120
Adapter						None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-
Max. radius (mm)*	inner 116.3 outer 132.3	inner 136.8 outer 152.8	inner 105.3 outer 121.3	inner 105.3 outer 121.3	inner 126.5 outer 142.5	inner 138 outer 155	inner 138 outer 155	inner 138 outer 155
Max. RCF (g-force)*	inner 2,080 outer 2,367	inner 2,447 outer 2,733	inner 1,884 outer 2,170	inner 1,884 outer 2,170	inner 2,263 outer 2,549	inner 2,469 outer 2,773	inner 2,469 outer 2,773	inner 2,469 outer 2,773

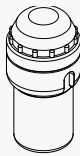


# Swing Rotor, GRS-SR-100-4

- 4 loadings
- Max. RPM : 4,200
- Angle from axis during rotation :  $\angle 90^\circ$
- Rotor dimension / weight ( $\varnothing \times L$ , mm / g) : 206.3 x 53.5 / 860
- Supplied with a lubricant, No ID ring



**Bio-Safe** Porton Down Certified

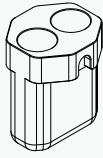


100 mL Bucket with a Cap  
**GLBB-b100-100**

Max. RPM / RCF : 4,200 / 3,059  
 Max. Radius (mm) : 155.1  
 Hole dimension ( $\varnothing \times L$ , mm) : 47 x 99  
 Max. height for tube fit (mm) : 120 (w/ cap) / 130 (w/o cap)  
 Hole bottom type : Flat  
 Supplied with a cap and an O-ring, No cap version is available












Tube									
Tube capacity (mL)	1.5 ~ 2.0	2.0 mL screw cap	5 mL conical	5 mL conical	2.6 ~ 7	4 ~ 10	15	15 mL conical	15 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	11 x 38	10.1 x 46	16 x 59	16 x 67	13 x 75	16 x 100	16 x 120	17 x 120	17 x 120
Adapter									
Cat. No.	GAM-m2.0-6(b100)	GAM-m2.0-6(b100)	GAM-c5-3(b100)	GAM-c5-3(b100)	GAM-7-5(b100)	GAM-10-5(b100)	GAM-15-3(b100)	GAM-c15-3(b100)	GAS-c15(b100)
Rack capacity (ea / 4)	6 / 24	6 / 24	3/12	3/12	5 / 20	5 / 20	3 / 12	3 / 12	3 / 4
Rack hole dimension ( $\varnothing \times L$ , mm)	11 x 39	11 x 39	17.2 x 52	17.2 x 52	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5
Rack hole bottom type	Round	Round	Conical	Conical	Round	Flat	Flat	Conical	Conical
Max. height tube fit (mm)	115	115	75	75	115	115	120	120	120
Max. radius (mm)*	150.1	150.1	110.1	110.1	150.1	150.1	152.1	155.1	155.1
Max. RCF (g-force)*	2,960	2,960	2,171	2,171	2,960	2,960	3,000	3,059	3,059

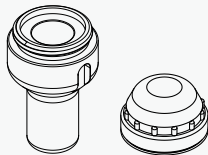
Tube								
Tube capacity (mL)	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirted)	85	100
Tube Dimension ( $\varnothing \times L$ , mm)	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	38 x 106	44 x 115
Adapter								
Cat. No.	GAS-c25(b100)	GAS-c25(b100)	GAS-30(b100)	GAS-50(b100)	GAS-c50(b100)	GAS-sc50(b100)	GAS-85(b100)	GAS-100(b100)
Rack capacity (ea / 4)	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
Rack hole dimension ( $\varnothing \times L$ , mm)	17.2 x 52	17.2 x 52	26 x 86	29.5 x 95.9	30 x 100	29.8 x 100	38.5 x 96.4	44.2 x 93
Rack hole bottom type	Conical	Conical	Round	Round	Conical	Flat	Round	Round
Max. height tube fit (mm)	118	118	118	118	120	120	118	118
Max. radius (mm)*	153.5	153.5	153.5	153	153	153	153.5	150.1
Max. RCF (g-force)*	3,027	3,027	3,027	3,017	3,017	3,017	3,027	2,960



50 mL Conical Bucket  
**GLB-dc50-100**

















Max. RPM / RCF : 4,200 / 3,059  
Max. Radius (mm) : 155.1  
Hole dimension (Ø x L, mm) : 30 x 89  
Max. height for tube fit (mm) : 125  
Hole bottom type : Conical

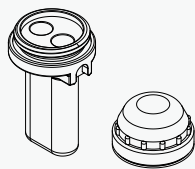
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension (Φ x L, mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Bucket capacity(ea / 6)	2 / 8	2 / 8	2 / 8	2 / 8	2 / 8	2 / 8
Adaptor hole dimension (Φ x L,mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	152.5	118.5	118.5	143.9	144.1	155.1
Max. RCF (g-force)	3,008	2,337	2,337	2,838	2,842	3,059



50 mL Bucket with a Cap  
**GLB-b50-100**




Max. RPM / RCF : 4,200 / 2,976  
Max. Radius (mm) : 150.9  
Hole dimension (Ø x L, mm) : 30.5 x 97  
Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
Supplied with 4.0 mm thick NBR pad, an O-ring, and a cap  
No cap version is available

Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension (Φ x L, mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension (Φ x L,mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)	150.9	150.9	150.9	117.1	117.1	142.1	150.9	150.9	142
Max. RCF (g-force)	2,976	2,976	2,976	2,309	2,309	2,802	2,976	2,976	2,976



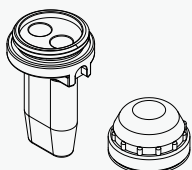
15 mL Dual Round Bucket  
with a Cap  
**GLB-bd15-100**

Max. RPM / RCF : 4,200 / 2,976  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L,mm) : 17 x 98  
 Max. height for tube fit (mm) : 115 (w/ cap) / 127 (w/o cap)  
 Hole bottom type : Round  
 Supplied with a cap and O-ring, No cap version is available

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Bucket capacity (ea / 6)	2 / 8	2 / 8	2 / 8
Max. height tube fit (mm)	115	115	115
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	2,976	2,976	2,976








**Bio-Safe**

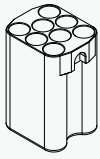
Porton Down Certified



15 mL Dual Conical Bucket  
with a Cap  
**GLBB-bdc15-100**

Max. RPM / RCF with : 4,200 / 3,059  
 Max. Radius (mm) : 155.1  
 Hole dimension (Ø x L, mm) : 17 x 97.5  
 Max. height for tube fit (mm) : 120 (w/ cap) / 125 (w/o cap)  
 Hole bottom type : Conical  
 Supplied with a cap and O-ring, No cap version is available

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Bucket capacity (ea / 6)	2 / 8	2 / 8	2 / 8	2 / 8
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	102	102	115.1	155.1
Max. RCF (g-force)	2,012	2,012	2,279	3,059

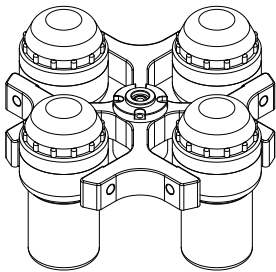


Vacutainer 10 mL Bucket  
**GLB-15-8-100**

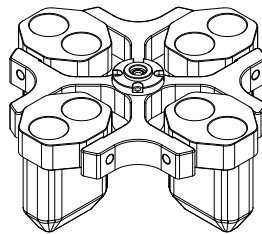
Max. RPM / RCF : 4,200 / 2,998  
 Max. Radius (mm) : 152  
 Hole dimension (Ø x L, mm) : 17 x 86  
 Hole bottom type : Flat with rubber pad  
 Max. height for tube fit (mm) : 115  
 Supplied with 3.0 mm thick NBR rubber pad

Tube									
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	5 mL conical	5 mL conical	14 mL	8 ~ 10 mL VT	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L, mm)	13 x 75	13 x 100	16 x 59	16 x 67	15.7 x 96	16 x 100	16 x 100	16 x 114	16 x 120
Adapter						None	None	None	None
Cat No.	GAS-3(f15)	GAS-5(f15)	GAS-c5(f15)	GAS-c5(f15)	GAS-14(f15)	-	-	-	-
Bucket capacity (ea / 6)	8 / 32	8 / 32	4 / 16	4 / 16	4 / 16	8 / 32	8 / 32	8 / 32	2 / 8
Adaptor hole dimension (Φ x L, mm)	13.5 x 61	13.5 x 85	14 x 20	14 x 20	16.5 x 7	-	-	-	-
Adaptor hole bottom type	Round	Open	Conical	Conical	Round	-	-	-	-
Max. height tube fit (mm)	88	115	75	75	103.5	115	115	115	125(center)
Max. radius (mm)*	125	152	112	112	140.5	152	152	152	152
Max. RCF (g-force)*	2,465	2,998	2,209	2,209	2,771	2,998	2,998	2,998	2,998

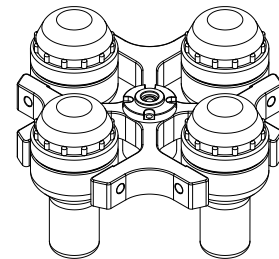
### Adaptable Buckets of Rotor, GRS-SR-100-4



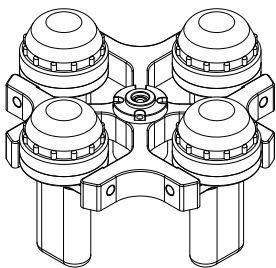
GLBB-b100-100



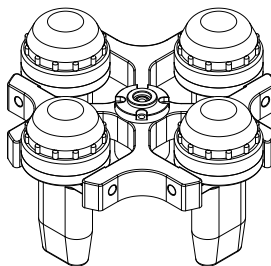
GLB-dc50-100



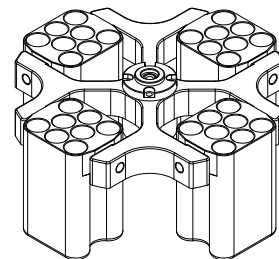
GLB-b50-100



GLB-bd15-100



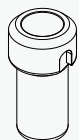
GLBB-bdc15-100



GLB-15-8-100

















## Swing Rotor, GRS-SR-50-4

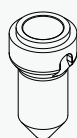
- 4 loadings | Max. RPM : 4,800
- Angle from axis during rotation:  $\angle 90^\circ$
- Rotor ID ring underneath the rotor body
- Supplied with a lubricant



50 mL Bucket  
**GLB-50-50**












Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension ( $\varnothing \times L$ , mm) : 30.5 x 91  
 Max. height for tube fit (mm) : 125  
 Supplied with 4.0 mm thick NBR pad

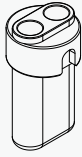
Tube									
Tube capacity (mL)	14 mL	15	15 mL conical	25 mL conical	25 mL conical	30	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension ( $\varnothing \times L$ , mm)	15.7 x 96	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29.5 x 118	29.5 x 118	29 x 108
Adapter								None	None
Cat. No.	GAS-u14(f50)	GAS-u15(f50)	GAS-u15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension ( $\varnothing \times L$ , mm)	17.2 x 75	17.2 x 87	17.2 x 87	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 17.5	-	-
Adaptor hole bottom type	Open	Open	Open	Conical	Conical	Round	Conical	-	-
Max. radius (mm)	150.9	150.9	150.9	117.1	117.1	142.1	150.9	150.9	142
Max. RCF (g-force)	3,888	3,888	3,888	3,055	3,055	3,699	3,699	3,888	3,888



50 mL Bucket  
**GLB-c50-50**








Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension ( $\varnothing \times L$ , mm) : 29.5 x 91.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

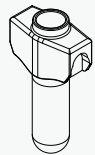
Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\varnothing \times L$ , mm)	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat. No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Rack hole dimension ( $\varnothing \times L$ , mm)	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Rack hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. radius (mm)	150.9	119.9	119.9	145.3	145.5	150.9
Max. RCF (g-force)	3,887	3,088	3,088	3,743	3,748	3,888



15 mL Dual Conical Bucket  
**GLB-dc15-50**




Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 17 x 91.5  
 Max. height for tube fit (mm) : 120  
 Hole bottom type : Conical

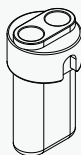
Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	98.6	98.6	131.6	150.9
Max. RCF (g-force)	2,540	2,540	3,390	3,888



15 mL Round Bucket  
**GLB-15-50**




Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L, mm) : 17 x 93  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

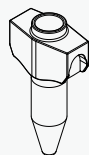
Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	125	125	125
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	3,888	3,888	3,888



15 mL Dual Round Bucket  
**GLB-d15-50**








Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L,mm) : 17 x 91.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension (Φ x L,mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	125	125	125
Max. radius (mm)	150.9	150.9	150.9
Max. RCF (g-force)	3,888	3,888	3,888



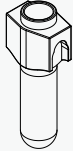
15 mL Conical Bucket  
**GLB-c15-50**

Max. RPM / RCF : 4,800 / 3,888  
 Max. Radius (mm) : 150.9  
 Hole dimension (Ø x L,mm) : 17 x 92.5  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Conical

Tube				
Tube capacity (mL)	5 mL conical	5 mL conical	14 mL	15 mL conical
Tube Dimension (Φ x L, mm)	16 x 59	16 x 67	15.7 x 96	17 x 120
Adapter				None
Cat No.	GAS-c5(c15)	GAS-c5(c15)	GAS-14(c15)	-
Adaptor hole dimension (Φ x L,mm)	14.8 x 20	14.8 x 20	16 x 7.8	-
Adaptor hole bottom type	Conical	Conical	Round	-
Max. radius (mm)	99.8	99.8	132.8	150.9
Max. RCF (g-force)	2,571	2,571	3,421	3,888




## Swing Rotor, GRS-SR-15-6

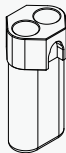
- 6 loadings
- Max. RPM : 4,400
- Angle from axis during rotation:  $\angle 90^\circ$
- Rotor ID ring underneath the rotor body
- Supplied with a lubricant



**15 mL Round Bucket  
GLB-15-15**








Max. RPM / RCF with GRS-SR-15-6 : 4,400 / 3,420  
 Max. Radius (mm) with GRS-SR-15-6 : 158  
 Hole dimension ( $\varnothing \times L$ ,mm) : 17 x 93.8  
 Max. height for tube fit (mm) : 125  
 Hole bottom type : Round

Tube			
Tube capacity (mL)	15 mL glass	15 mL open top	15
Tube Dimension ( $\Phi \times L$ ,mm)	16 x 100	16 x 114	16 x 120
Max. height tube fit (mm)	120	120	120
Max. radius (mm)*	158	158	158
Max. RCF (g-force)*	3,420	3,420	3,420



**15 mL Dual Round Bucket  
GLB-d15-15**

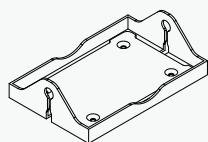
Max. RPM / RCF : 4,400 / 3,312  
 Max. Radius (mm) : 153  
 Hole dimension ( $\varnothing \times L$ ,mm) : 17 x 88  
 Max. height for tube fit (mm) : 122  
 Supplied with 3.0 mm thick NBR rubber pad

Tube					
Tube capacity (mL)	2.0 ~ 4 mL VT	4 ~ 7 mL VT	8 ~ 10 mL VT	15 mL glass	15 mL open top
Tube Dimension ( $\Phi \times L$ , mm)	13 x 75	13 x 100	16 x 100	16 x 100	16 x 114
Adapter			None	None	None
Cat No.	GAS 3(f15)	GAS-5(f15)	-	-	-
Bucket capacity (ea / 6)	2/12	2/12	2/12	2/12	2/12
Adaptor hole dimension ( $\Phi \times L$ ,mm)	13.5 x 61	13.5 x 85	-	-	-
Adaptor hole bottom type	Round	Open	-	-	-
Max. height tube fit (mm)	95	123	123	123	123
Max. radius (mm)*	126	153	153	153	153
Max. RCF (g-force)*	2,727	3,312	3,312	3,312	3,312



## Swing Rotor, GRS-SR-mw-2

- 2 loadings
- Max. RPM : 4,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Supplied with microplate holder, No ID ring



Microplate Bucket  
**GLP-mw**

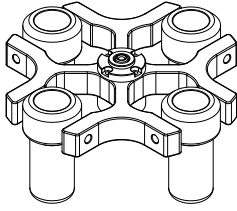
Max. RPM / RCF : 4,000 / 2,000  
 Max. Radius (mm) : 111.8  
 Hole dimension (w x d, mm) : 86.5 x 128.5  
 Max. height for tube fit (mm) : 35  
 Supplied with 3.0 mm thick ABS pad



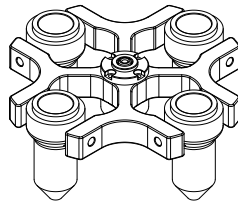
Tube

Tube capacity (mL)	MTP
Tube Dimension (Φ x L,mm)	86 x 128 x15
Bucket capacity (ea / 2)	2 / 4

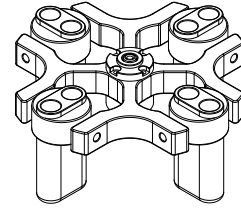
### Adaptable Buckets of Rotor, GRS-SR-50-4



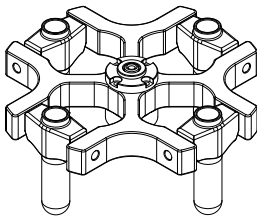
GLB-50-50



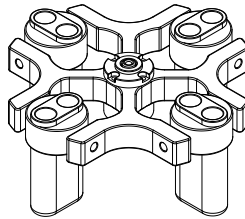
GLB-c50-50



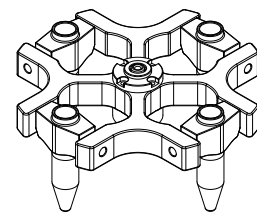
GLB-dc15-50



GLB-15-50



GLB-d15-50



GLB-c15-50



# 02. Concentrator



# HyperVAC™ Centrifugal Vacuum Concentrator



## Features

- Modular configurations of centrifugal part, cold trapping, and vacuum pump for versatile applications
- Available for volatile chemical solvents by accommodating with water pump, diaphragm pump or oil pump
- Accommodate a wide range of sample containers : 0.5, 2.0, 15, 50 mL tubes and microplates
- Automatic control and digital reading of TIME, TEMP and VAC
- Efficient Concentration of diverse samples through selectable system combination of Drip Catcher (Ice temperature) or Hyper Cool Cold trap (-55°C, -110°C)

## Applications

- Nucleic acids (DNA/RNA) concentration
- HPLC, PCR, gel extraction, isolation, purification and concentration from solid phase extraction to solvent removal
- Combinatorial chemistry

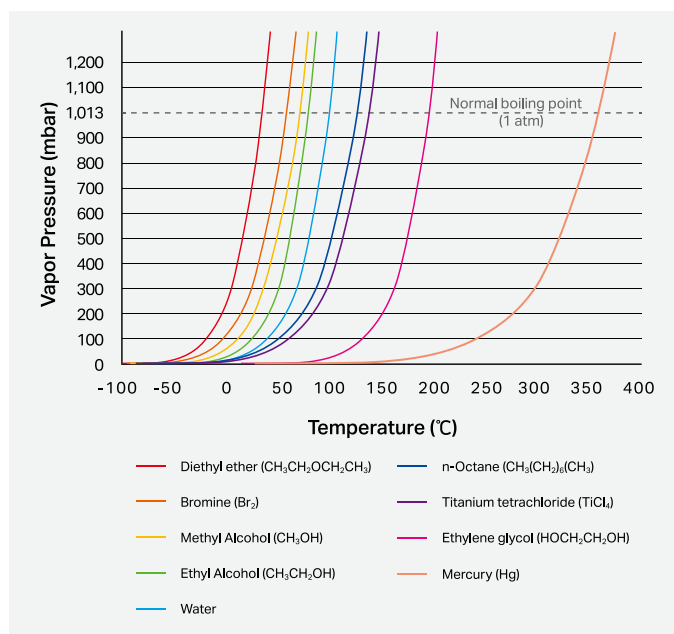
## Centrifugal Vacuum Concentration

The solvent removal is an essential process for the wide range of applications in genomics, proteomics, biochemistry, pharmaceutical study and analytical chemistry.

The energy, as heat is applied during solvent removal process, so that the liquid is evaporated to gas.

The boiling point of solvent can be decreased by applying vacuum pressure, which enables liquid vaporization at lower temperature than its boiling temperature. Also decreased boiling points and centrifugal force give benefit to minimize boiling and bumping of solvents, and prevent cross contamination and sample loss.

HyperVac generates heat up to 80°C, accommodating with vacuum pump and cold traps provides enhanced evaporation of solvent and improved sample purity.



Vapor Pressure Diagram

### Vapor Pressure Lowering

$$P = X P^{\circ}$$

P = Vapor pressure of the solution

X = Mole fraction of the solvent

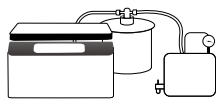
P<sup>°</sup> = Vapor pressure of the pure solvent

### Technical Specifications

	HyperVAC-LITE	HyperVAC-MAX
<b>Max. RPM</b>	2,000	
<b>Max. Capacity</b>	120 x 1.5/2.0 mL microtubes or 48 x 1.5/2.0 mL + 76 x 0.5 mL microtubes, 6 x 50 mL	200 x 1.5/2.0 mL microtubes 12 x 50 mL
	<b>Fixed Angle</b>	
	<b>Swing-out</b>	2 loadings of MTP
<b>Auto Start / Stop of Vacuum</b>	Yes	
<b>Chamber Heating Temp. Range</b>	R.T ~ 80°C	
<b>Vacuum Pressure (mbar)</b>	1 ~ 1,013	
<b>Operating Time</b>	< 23 hr 59 min or continuous, Default value: 0 h 0 m (continuous)	
<b>Weight (kg)</b>	22.5 (without rotor)	37 (without rotor)
<b>Power Requirement</b>	700 VA (W/O pump 350 VA)	1,000 VA (W/O pump 700VA)
<b>Power supply</b>	AC 230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)	
<b>Centrifuge Dimension (w x d x h, mm)</b>	375 x 445 x 252	475 x 560 x 350
<b>Cat. No.</b>	Hyper-VC2124	Hyper-VC2200



### HyperVAC Centrifugal Vacuum Concentration System Configuration



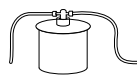
Ice temperature  
HyperVAC System  
(VAC-LITE / VAC-MAX)



HyperVAC  
(VAC-LITE / VAC-MAX)



Rotor



Drip Catcher



Water Pump ①



Diaphragm  
Pump ②



-55°C / -110°C HyperVAC System  
(VAC-LITE / VAC-MAX)



HyperVAC  
(VAC-LITE / VAC-MAX)



Rotor



HyperCOOL Cold Trap  
(-55°C / -110°C)



Rotary Vane  
Vacuum Pump  
③ ④

Configuration p.158

#### Rotors for HyperVAC-LITE p.143 ~

**GRV-50-6**  
Incl. 6 ea x GLBV-50  
6 x 50 mL (conical)



**GRV-15-12**  
Incl. 12 ea x  
GLV-15/10A  
12 x 15 mL



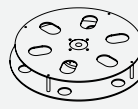
**GRV-m2.0-120**  
120 x 1.5/2.0 mL



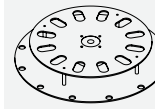
**GRV-m0.5/2.0-124**  
48 x 1.5/2.0 mL  
+ 76 x 0.5 mL



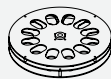
**GRV-50c-6**  
6 x 50 mL conical



**GRV-15c-12**  
12 x 15 mL conical



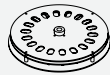
**GRV-20-12**  
12 x 20 mL vial tube



**GRV-10-32**  
32 x 10 mL



**GRV-10-18**  
18 x 10 mL vial tube

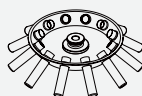


**GRV-mw-2**  
2 loadings of MTP



#### Rotors for HyperVAC-MAX p.148 ~

**GRV-50-12**  
Incl. 12 ea x GLBV-50  
12 x 50 mL (conical)



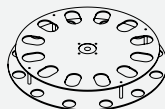
**GRV-15-48**  
Incl. 48 ea x  
GLV-15/10A  
48 x 15 mL



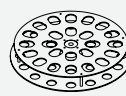
**GRV-m2.0-200**  
200 x 1.5/2.0 mL



**GRV-50c-12**  
12 x 50 mL conical



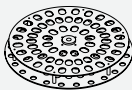
**GRV-30-24**  
24 x 30 mL vial tube



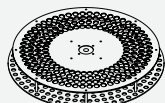
**GRV-15c-24**  
24 x 15 mL conical



**GRV-8-60**  
60 x 8 mL vial tube



**GRV-5-192**  
192 x 5 mL



**GRV-mw-4**  
4 loadings of MTP/DWP



## Rotors for HyperVAC-LITE

## Angle Rotor, GRV-50-6 / GRV-c50-6

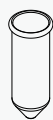
- Capacity : 12 x 50 mL or 50 mL Conical
- Max. RPM : 2,000
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 32 x 6



50 mL Sleeve  
GLBV-50

Max. RMP : 2,000  
Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 30 x 99  
Hole bottom type : Flat bottom with rubber pad  
Max. height for tube fit (mm) : 130

Tube										
Tube capacity (mL)	8 ~ 10 mL VT	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension ( $\Phi \times L, \text{mm}$ )	16 x 100	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	29 x 108
Adapter									None	None
Cat No.	GAS-10(f50)	GAS-15(f50)	GAS-c15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-50(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17.1 x 83	17.1 x 99.5	17.2 x 103	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 14	29.5 x 17.5	-	-
Adaptor hole bottom type	Round	Round	Conical	Conical	Conical	Round	Round	Conical	-	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000



50 mL Conical Sleeve  
GLBV-c50

Max. RPM : 2,000  
Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 30.4 x 101  
Hole bottom type : Conical  
Max. height for tube fit (mm) : 130

Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000












## Angle Rotor, GRV-15-12

- Capacity : 12 x 15 mL
- Max. RPM : 2,000
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 20.4 x 6



15 mL Sleeve  
GLB-15/10A







Max. RPM : 2,000  
 Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 18 x 87  
 Hole bottom type : Flat bottom with rubber pad  
 Max. height for tube fit (mm) : 125(120 for conical / wider cap)  
 Sleeve dimension / weight (net,  $\varnothing \times L, \text{mm} / \text{g}$ ) : 22.6 x 88.5 / 15Slee

						
Tube						
Tube capacity (mL)	1.6 ~ 5	5 mL conical	5 mL conical	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	13 x 75	16 x 59	16 x 67	16 x 100	16 x 120	17 x 120
Adapter				None	None	None
Cat No.	GAS-3(f15)	GAS-c5(f15)	GAS-c5(f15)	-	-	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	13.5 x 61	14 x 20	14 x 20	-	-	-
Adaptor hole bottom type	Round	Conical	Conical	-	-	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000

## Angle Rotor, GRV-m2.0-120

- Capacity : 120 x 1.5 / 2.0 mL
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 11.1 x 2
- Hole bottom type : Open
- Max. height for tube fit (mm) : 60









				
Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L, \text{mm}$ )	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-

## Angle Rotor, GRV-m0.5/2.0-124

- Capacity : 48 x 1.5 / 2.0 mL + 76 x 0.5 mL
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 30^\circ$
- Hole dimension ( $\Phi \times L$ ,mm) : 11.1 x 2
- Hole bottom type : Open
- Max. height for tube fit (mm) : 60




Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L$ , mm)	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L$ ,mm)	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-

## Angle Rotor, GRV-c50-6

- Capacity : 6 x 50 mL conical
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 40^\circ$
- Hole dimension (W x D x L,mm) : 30 x 49.5 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 125
- Min. height for tube fit (mm) : 91



Tube/Plate type	
Tube capacity (mL)	50 mL conical
Tube dimension ( $\Phi \times L$ ,mm)	29.5 x 118

## Angle Rotor, GRV-20-12

- Capacity : 12 x 20 mL vial
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension (W x D x L,mm) : 29 x 42.5 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 70
- Min. height for tube fit (mm) : 40



Tube/Plate type	
Tube capacity (mL)	20 mL vial
Tube Dimension (Φ x L,mm)	27.5 x 58

## Angle Rotor, GRV-c15-12

- Capacity : 12 x 15 mL conical
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 40^\circ$
- Hole dimension (W x D x L,mm) : 15 x 22 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 125
- Min. height for tube fit (mm) : 84



Tube/Plate type	
Tube capacity (mL)	15 mL conical
Tube Dimension (Φ x L,mm)	17 x 120

## Angle Rotor, GRV-10-32

- Capacity : 32 x 10 mL
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension (W x D x L,mm) : 18 x 30 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 105
- Min. height for tube fit (mm) : 71



Tube/Plate type	
Tube capacity (mL)	10 mL
Tube Dimension (Φ x L,mm)	13 x 99

## Angle Rotor, GRV-10-18

- Capacity : 18 x 10 mL vial
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension (W x D x L,mm) : 15.5 x 25 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 60
- Min. height for tube fit (mm) : 37



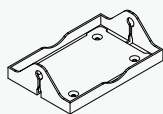
Tube/Plate type



Tube capacity (mL)	10 vial
Tube Dimension (Φ x L,mm)	15 x 45

## Angle Rotor, GRV-mw-2

- 2 loadings
- Max. RPM : 2,000
- Angle from axis during rotation :  $\angle 90^\circ$
- Rotor dimension / weight (W x D x L, mm / g) : 188 x 156.5 x 67.4 / 735



Microplate Bucket  
GLP-mw

Max. RPM : 2,000  
Hole dimension (w x d ,mm) : 88.5 x 130.3  
Max. height for tube fit (mm) : 35  
Hole bottom type : Flat bottom

Tube/Plate type

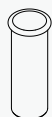


Tube capacity (mL)	MTP
Tube Dimension (Φ x L,mm)	88 x 130x15
Bucket capacity(ea / 2)	2/4

## Rotors for HyperVAC-MAX



















### Angle Rotor, GRV-50-12 / GRV-c50-12

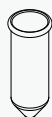
- Capacity : 12 x 50 mL or 50 mL Conical
- Max. RPM : 2,000
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 32 x 6
- Rotor dimension / weight (net,  $\varnothing \times L, \text{mm} / \text{g}$ ) : 259 x 78 / 995



50 mL Sleeve  
**GLBV-50**












Max. RPM : 2,000  
Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 30 x 99  
Hole bottom type : Flat bottom with rubber pad  
Max. height for tube fit (mm) : 130

Tube										
Tube capacity (mL)	8 ~ 10 mL VT	15	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical	50 mL conical (Skirt)	50
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	16 x 100	16 x 120	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118	29.5 x 118	29 x 108
Adapter									None	None
Cat No.	GAS-10(f50)	GAS-15(f50)	GAS-c15(f50)	GAS-c25(f50)	GAS-c25(f50)	GAS-30(f50)	GAS-50(f50)	GAS-c50(f50)	-	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	17.1 x 83	17.1 x 99.5	17.2 x 103	27.1 x 14.1	27.1 x 14.1	26 x 86.5	29.5 x 14	29.5 x 17.5	-	-
Adaptor hole bottom type	Round	Round	Conical	Conical	Conical	Round	Round	Conical	-	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000



50 mL Conical Sleeve  
**GLBV-c50**

Max. RPM : 2,000  
Hole dimension ( $\varnothing \times L, \text{mm}$ ) : 30.4 x 101  
Hole bottom type : Conical  
Max. height for tube fit (mm) : 130

Tube						
Tube capacity (mL)	15 mL conical	25 mL conical	25 mL conical	30	50	50 mL conical
Tube Dimension ( $\varnothing \times L, \text{mm}$ )	17 x 120	28.8 x 83	28.8 x 78.5	25.7 x 101.4	29 x 108	29.5 x 118
Adapter						None
Cat No.	GAS-c15(c50)	GAS-c25(c50)	GAS-c25(c50)	GAS-30(c50)	GAS-50(c50)	-
Adaptor hole dimension ( $\varnothing \times L, \text{mm}$ )	17 x 105	27.1 x 14.1	27.1 x 14.1	26 x 83.8	27.9 x 11	-
Adaptor hole bottom type	Conical	Conical	Conical	Round	Round	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000










## Angle Rotor, GRV-15-48

- Capacity : 48 x 15 mL
- Max. RPM : 2,000
- Hole angle rotation :  $\angle 45^\circ$
- Hole dimension ( $\emptyset \times L, \text{mm}$ ) : 20.4 x 6
- Rotor dimension / weight (net,  $\emptyset \times L, \text{mm} / \text{g}$ ) : 266 x 80 / 975



15 mL Sleeve  
GLB-15/10A







Capacity : 15 mL  
Max. RPM : 2,000  
Hole dimension ( $\emptyset \times L, \text{mm}$ ) : 18 x 87  
Hole bottom type : Flat bottom with rubber pad  
Max. height for tube fit (mm) : 125(120 for conical / wider cap)

Tube						
Tube capacity (mL)	1.6 ~ 5	5 mL conical	5 mL conical	8 ~ 10 mL VT	15	15 mL conical
Tube Dimension ( $\Phi \times L, \text{mm}$ )	13 x 75	16 x 59	16 x 67	16 x 100	16 x 120	17 x 120
Adapter				None	None	None
Cat No.	GAS-3(f15)	GAS-c5(f15)	GAS-c5(f15)	-	-	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	13.5 x 61	14 x 20	14 x 20	-	-	-
Adaptor hole bottom type	Round	Conical	Conical	-	-	-
Max. RPM	2,000	2,000	2,000	2,000	2,000	2,000

## Angle Rotor, GRV-m2.0-200

- Capacity : 200 x 1.5 / 2.0 mL
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 23.5^\circ$
- Hole dimension ( $\emptyset \times L, \text{mm}$ ) : 11.1 x 2
- Hole bottom type : Open
- Max. height for tube fit (mm) : 60
- Rotor dimension / weight (net,  $\emptyset \times L, \text{mm} / \text{g}$ ) : 362 x 84 / 640



Tube				
Tube capacity (mL)	0.2	0.5	1.5/2.0	2.0 mL screw cap
Tube Dimension ( $\Phi \times L, \text{mm}$ )	6 x 8	8 x 30	11 x 38	10.1 x 46
Adapter			None	None
Cat No.	GAS-m0.2(2)	GAS-m0.5(2)	-	-
Adaptor hole dimension ( $\Phi \times L, \text{mm}$ )	6.5 x 23	8 x 31	-	-
Adaptor hole bottom type	Open	Open	-	-

## Angle Rotor, GRV-c50-12

- Capacity : 12 x 50 mL conical
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension (W x D x L,mm) : 30 x 45 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 125
- Min. height for tube fit (mm) : 83



Tube/Plate type	
Tube capacity (mL)	50 mL conical
Tube Dimension (Φ x L,mm)	29.5 x 118

## Angle Rotor, GRV-30-24

- Capacity : 24 x 30 mL vial
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 50^\circ$
- Hole dimension (W x D x L,mm) : 28 x 40 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 90
- Min. height for tube fit (mm) : 61



Tube/Plate type	
Tube capacity (mL)	30 mL vial
Tube Dimension (Φ x L,mm)	27 x 72

## Angle Rotor, GRV-c15-24

- Capacity : 12 x 24 mL conical
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 45^\circ$
- Hole dimension (W x D x L,mm) : 18 x 27 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 125
- Min. height for tube fit (mm) : 77



Tube/Plate type	
Tube capacity (mL)	15 mL conical
Tube Dimension (Φ x L,mm)	17 x 120

## Angle Rotor, GRV-8-60

- Capacity : 60 x 8 mL vial
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 50^\circ$
- Hole dimension (W x D x L,mm) : 18 x 25.5 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 70
- Min. height for tube fit (mm) : 52



Tube/Plate type



Tube capacity (mL)	8 mL vial
Tube Dimension ( $\Phi$ x L,mm)	16.5 x 60.5

## Angle Rotor, GRV-5-192

- Capacity : 192 x 5 mL
- Max. RPM : 2,000
- Hole angle from axis during rotation :  $\angle 55^\circ$
- Hole dimension (W x D x L,mm) : 15.5 x 25 x 2.5
- Hole bottom type : Open
- Max. height for tube fit (mm) : 75
- Min. height for tube fit (mm) : 55



Tube/Plate type



Tube capacity (mL)	5 mL
Tube Dimension ( $\Phi$ x L,mm)	11 x 66

## Angle Rotor, GRV-mw-4

- 4 loadings
- Max. RPM : 2,000
- Angle from axis during rotation:  $\angle 90^\circ$
- Rotor dimension / weight( $\Phi$  x L,mm / g) : 315 x 63.5 / 96.8



Microplate Bucket,  
GLP-mw

Max. RPM : 2,000  
Hole dimension (w x d ,mm) : 88.5 x 130.3  
Max. height for tube fit (mm) : 35  
Hole bottom type : Flat bottom

Tube/Plate type



Tube capacity (mL)	MTP	DWP
Tube Dimension ( $\Phi$ x L,mm)	88 x 130x15	87 x 128 x 60
Bucket capacity(ea / 2)	2/4	1 / 4



# HyperCOOL™ Freeze Dryer



## Features

- Provides wide solvent coverage by dropping temperature down to  $-55^{\circ}\text{C}$ ,  $80^{\circ}\text{C}$ ,  $-110^{\circ}\text{C}$
- HyperCOOL by itself, when equipped with manifolds or chambers, becomes a versatile freeze dryer
- The compatible vacuum rotary vane pump generates vacuum down inside the chamber
- Defrost Function available (Hot-gas)
- Magnet embedded front cover of the condenser for very convenient cleaning
- Extended applications for concentrating wider range or larger volume of solvents
- Basic Model : 0 ~ 760 Torr (Vacuum value below "0" is not displayed)
- Optional Pirani Sensor to display precise vacuum value below 1 Torr (0.001~760 Torr).

## Applications

- Pharmaceutical study and production
- Research and production of vaccine and antidote
- Drying and preservation of plants, food and etc.
- Archaeological study

## Freeze Drying

The freeze drying, also known as lyophilization is a dehydration technique through sublimation process, the shift from the solid directly into the gas without passing through liquid phase. The materials must be frozen completely to remain as solid state during sublimation process. Additionally, applying vacuum enables to lower the pressure below triple point, which to avoid the liquid phase. The freeze drying technique is used in various applications in food industry, pharmaceutical and biotechnology field and other industrial areas. HyperCOOL system allows complete removal of residual moisture.

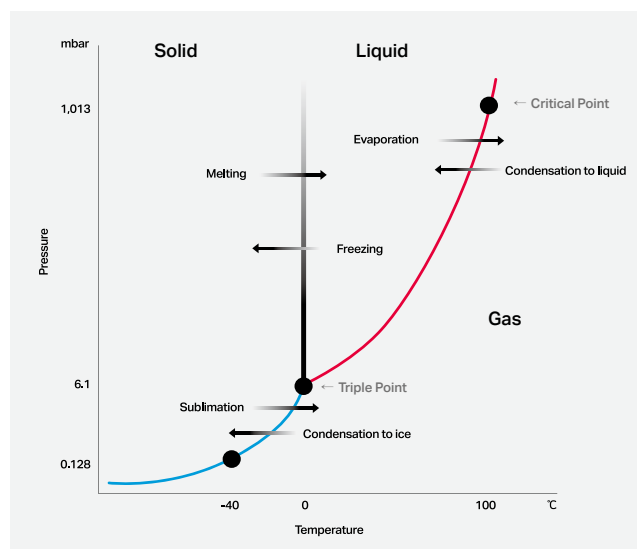
### Freezing Point Depression

$$\Delta T = iK_f m$$

$\Delta T$  = Decrease in solution freezing point

$K_f$  = Freezing point depression constant for the solvent

$m$  = Molality

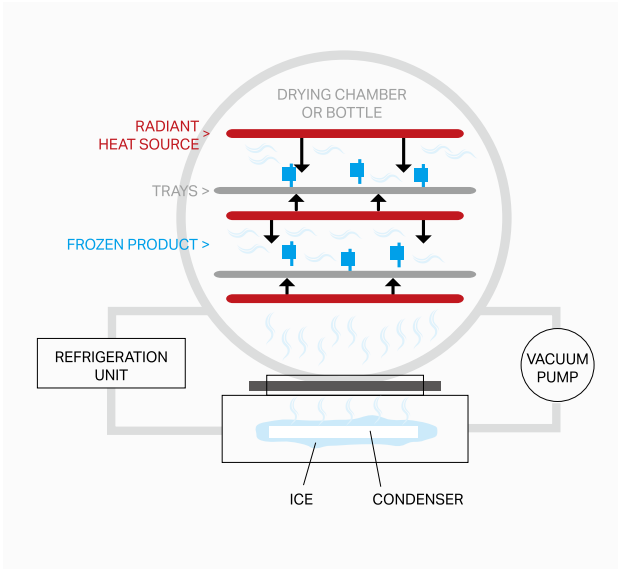


Typical Phase Diagram of Water

### Technical Specifications

	HyperCOOL HC3055	HyperCOOL HC3110	HyperCOOL HC8080
Ultimate Chamber Temp (at RT) (°C)	-55	-110	-80
Chamber Volume (L)		4	25
Trap (Chamber) Size (Ø x L)		165 x 202	305 x 355
ICE Condensing Capacity (kg)		3	8
Ice condensing performance (kg/day)		2.5	3
Digital Readout	Time, Temperature, Vacuum Pressure		
Function	KEYLOCK, DEFROST, VACUUM, TIME		DEFROST, VACUUM, TIME
Built in Vacuum Pump	No		Yes
Power supply	AC 230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)		
Power Requirement (KVA)	2 KVA	2.5 KVA	5 KVA
Dimension (W x D x H, mm)	400 x 660 x 570		710 x 610 x 960
Weight (kg)	58	72	195
Cat. No.	Hyper-HC3055	Hyper-HC3110	Hyper-HC8080
CE Mark	Yes	Yes	Yes





Fully Teflon coated condenser chamber and top plate provides consistent resistance against aggressive solvents and acids.



Hot-gas de-ice function of chamber heating makes fast ice removal.



Diverse sample containers can be used both in the chamber plate and flasks through manifold tree with 3/4 inch rubber valves.

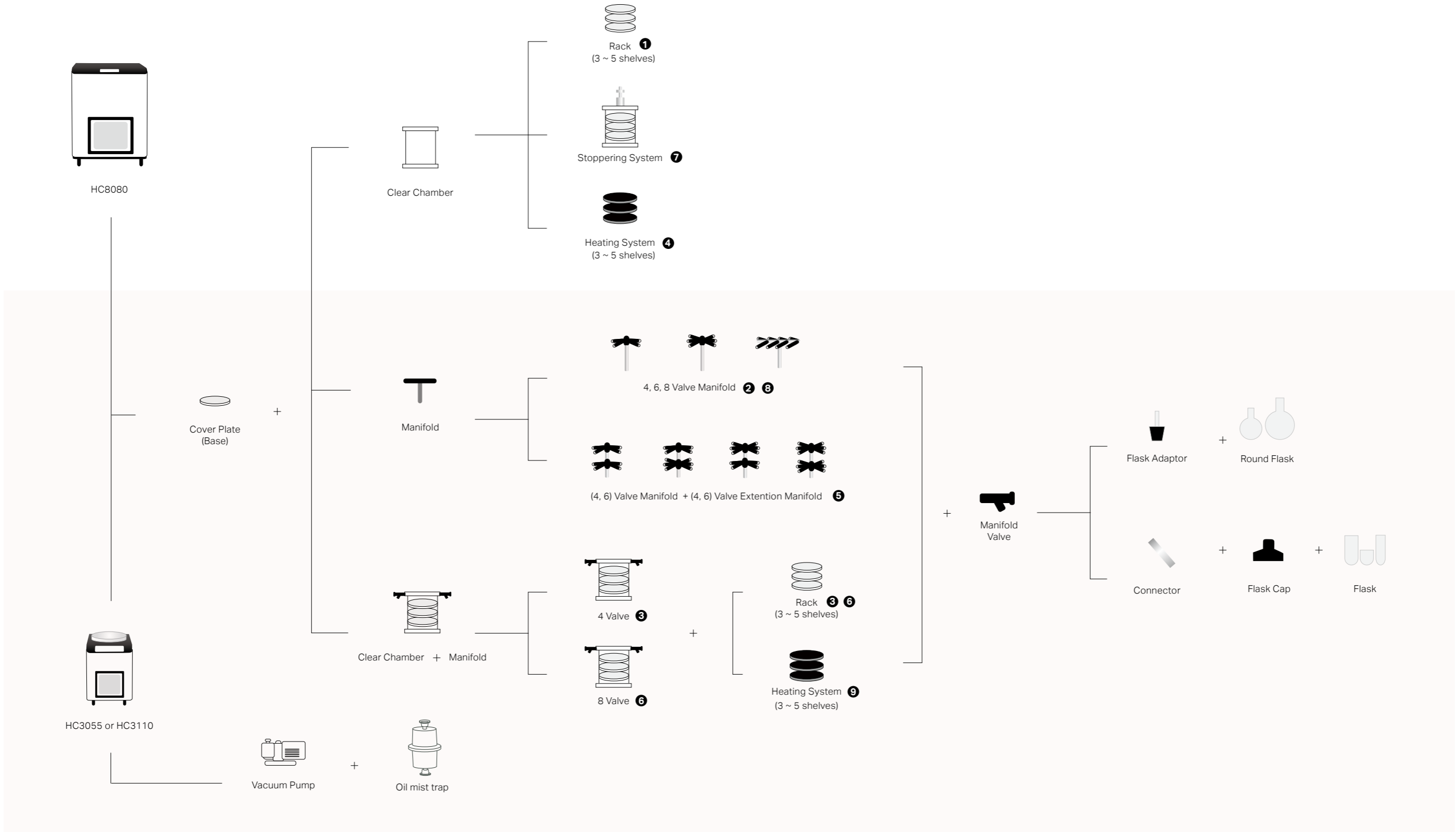


Front installed condenser pins are easily de-dusted by detaching a magnet door.



A screw capped drainage in the front body for easy and quick cleaning.

HyperCool Freeze Dry System Configuration



Can be configured with HyperVAc (Lite / Max) for multi-purpose (Cold trap freeze drying)

## HyperCool (Freeze Drying) Configuration

HyperCool (3055, 3110) needs to be configured with Rotary Vane Pump (GVP-W2V20)

**1** Basic Chamber

HyperCool (3055, 3110, 8080) + Acrylic Base + Stainless Steel Rack (3~5 shelves) + Acrylic Chamber

**2** Basic Manifold (4,6)

HyperCool (3055, 3110, 8080) + Acrylic Base + Basic Manifold (4,6)

**3** Acrylic Chamber with Rubber Valve (4)

HyperCool (3055, 3110, 8080) + Acrylic Base + Acrylic Chamber with Rubber Valve (4) + Stainless Steel Rack (3~5 shelves)

**4** Heating Chamber

HyperCool (3055, 3110, 8080) + Heating Rack (Base included) (3~5 shelves) + Acrylic Chamber

**5** 2 Step Manifold

HyperCool (3055, 3110, 8080) + Acrylic Base + Basic Manifold (4, 6) valve extendable with (4, 6) valve regardless of basic Manifold

**6** Acrylic Chamber with Rubber Valve (8)

HyperCool (3055, 3110, 8080) + Acrylic Base + Acrylic Chamber with Rubber Valve (8) + Stainless Steel Rack (3~5 shelves)

**7** Stoppering Chamber

HyperCool (3055, 3110, 8080) + Acrylic Base + Stoppering Rack + Stoppering Acrylic Chamber

**8** Basic Manifold (8)

HyperCool (3055, 3110, 8080) + Acrylic Base + Basic Manifold (8)

**9** Acrylic Chamber with Rubber Valve (4, 8) (Heating)

HyperCool (3055, 3110, 8080) + Acrylic Chamber with Rubber Valve (4, 8) + Heating Rack (3~5 shelves)

### HyperVAC (Centrifugal Concentration) Configuration



① Drip Catcher (Ice Temperature), Water Pump

HyperVAC (LITE, MAX) + Drip Catcher + Water Pump



② Drip Catcher (Ice Temperature), Diaphragm pump

HyperVAC (LITE, MAX) + Drip Catcher + Diaphragm Pump



③ Cold Trap (-55°C, -110°C), Rotary Vane Pump, Table A

HyperVAC (LITE, MAX) + HyperCool (-55°C, -110°C) + Acrylic Base + Vacuum hose + Rotary Vane Pump. Table A (HyperCool underneath, Vacuum pump in the back)



④ Cold Trap (-55°C, -110°C), Rotary Vane Pump, Table B

HyperVAC (LITE, MAX) + HyperCool (-55°C, -110°C) + Acrylic Base + Vacuum hose + Rotary Vane Pump. Table B (HyperCool side, Vacuum Pump underneath)

### Multi-Purpose Configuration (Centrifugal Concentration + Freeze Drying)

Only HyperCool (3055, 3110) applicable to Multi-Purpose Configuration\*



Centrifugal Concentration + Freeze Drying (Manifold)

HyperVAC (LITE, MAX) + configuration (p.157 2, 5, 8) + Table B + Vacuum hose



Centrifugal Concentration + Freeze Drying (Acrylic Chamber + Rubber Valve + Stainless Steel Rack / Heating Rack)

HyperVAC (LITE, MAX) + configuration (p.157 3, 6, 9) + Table B + Vacuum hose

## Rotary Vane Pump

Configured with Hyper Cool (3055, 3110), the ultimate pressure of the Rotary Vane Pump keeps the solvents frozen during lyophilization (freeze drying) at  $1.3 \times 10^{-1}$  Pa. Low noise and low vibration offers a comfortable working environment. Simple structure, Easy to use and maintain.

Rotary Vane Pump (GVP-W2V20) needs to be purchased with oil mist trap GVP-WOF150



<b>CAT. NO.</b>	GVP-W2V20	
<b>Pumping Speed</b>	200 L/min	
<b>Ultimate Pressure (Torr)</b>	Gas Ballast Close	$\leq 1 \times 10^{-3}$ ( $1.3 \times 10^{-1}$ Pa)
	Gas Ballast Open	$5 \times 10^{-2}$ (6.7 Pa)
<b>Motor Speed</b>	1,700 rpm	
<b>Oil Capacity</b>	600 cc (0.6 L)	
<b>Weight</b>	23.3 kg	
<b>Overall Dimension (W x L x H)</b>	150 mm X 423 mm X 250 mm	

## Diaphragm Pump

Configured with Hyper VAC (Max, LITE) All parts in contact with the sample are made of aluminum and selected plastics allowing a wide range of applications for non-corrosive gases. The highly flexible fabric-reinforced double diaphragm made of FKM extends the lifespan of the pump.



<b>CAT. NO.</b>	GVP-MP001	
<b>Pumping Speed</b>	40 L/min	
<b>Ultimate Pressure (Torr)</b>	5.2	
<b>Motor Speed ( min-1)</b>	1800	
<b>Weight</b>	11 kg	
<b>Overall Dimension (W x L x H)</b>	243 mm x 239 mm x 198 mm	







## Water Pump

Configured with Hyper VAC (MAX, LITE). The parts in contact with the sample solvent during concentration are made of polypropylene with excellent chemical resistance. Ideal for chemical concentration.








<b>CAT. NO.</b>	GVP-VE11	
<b>Pumping Speed</b>	18L / min x 2EA	
<b>Ultimate Pressure (Torr)</b>	748.56	
<b>Motor Speed</b>	150W	
<b>Weight</b>	5.7 kg	
<b>Overall Dimension (W x L x H)</b>	330 mm x 265 mm x 390 mm	





Cover Plates for HyperCOOL

<p><b>HHC-CPP</b> HC3055, HC3110 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator</p> 	<p><b>HHC-CPB</b> HC3055, HC3110 Acrylic Base for Manifold or Chamber</p> 	<p><b>HHC-CPM</b> HC3055, HC3110 Acrylic Base for HHC-MFB-8V</p> 	<p><b>HHC-CPP(8)</b> HC8080 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator</p> 	<p><b>HHC-CPB(8)</b> HC8080 Acrylic Base for Manifold or Chamber</p> 	<p><b>HHC-CPM(8)</b> HC8080 Acrylic Base for HHC-MFB-8V</p> 
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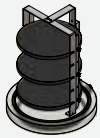

Manifolds for HyperCOOL

<p><b>HHC-MFB-4V</b> Incl. 4 rubber valves on a stainless steel bar, 30 cm</p> 	<p><b>HHC-MFB-6V</b> Incl. 6 rubber valves on a stainless steel bar, 30 cm</p> 	<p><b>HHC-MFE-4V for extension</b> Incl. 4 rubber valves on a stainless steel bar, 20 cm</p> 	<p><b>HHC-MFE-6V for extension</b> Incl. 6 rubber valves on a stainless steel bar, 20 cm</p> 	<p><b>HHC-MFB-8V</b> Incl. 8 rubber valves on a stainless steel bar, 30 cm</p> 
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Chambers for HyperCOOL

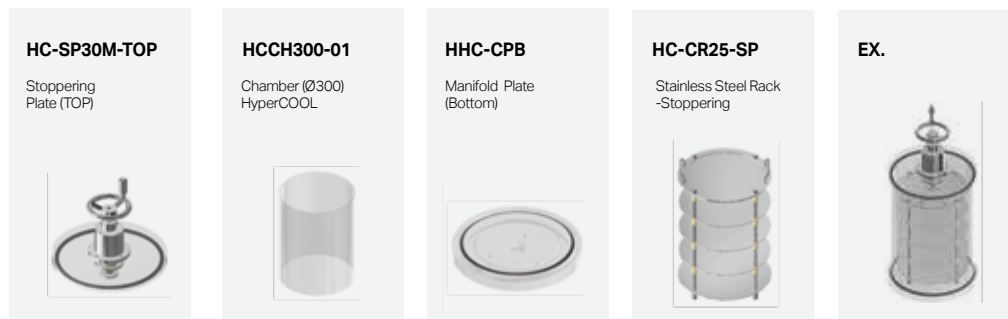
<p><b>HHC-CH30P</b> Acrylic Chamber Trunk and Plain Top, ø30 cm, height 40 cm</p> 	<p><b>HHC-CH30-4V</b> Acrylic Chamber Trunk and Top with 4 rubber valves, ø30 cm, height 40 cm</p> 	<p><b>HHC-CH30-8V</b> Acrylic Chamber Trunk and Top with 8 Rubber Valves, ø30 cm, height 40 cm</p> 	<p><b>Stoppering Assembly</b></p> 
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Racks For HyperCOOL

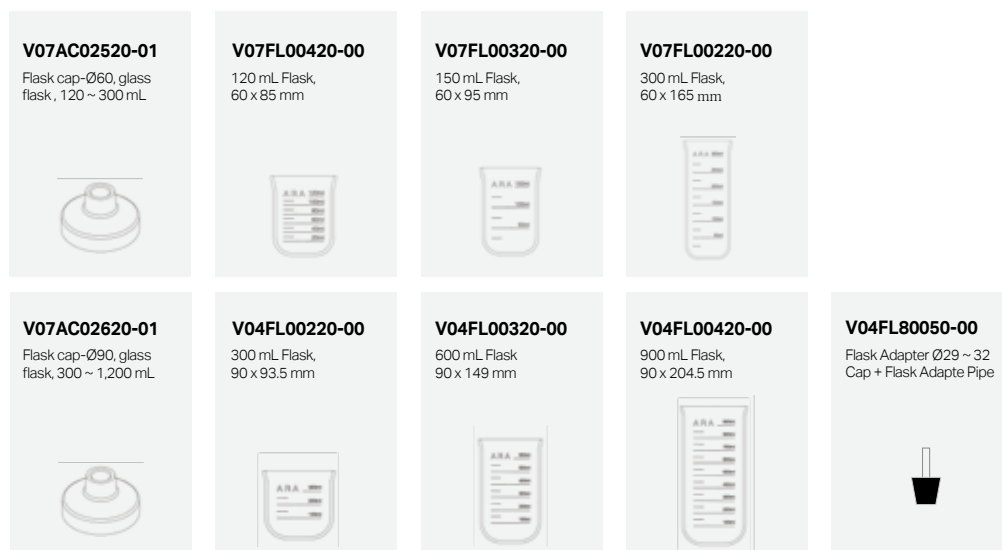
<p><b>HHC-CR25</b> Stainless Steel Rack with 3 sets of shelves and trays, ø25cm (Trays can be inserted up to 5)</p> 	<p><b>HHC-CR-TS</b> A Set of a Tray and a Shelf</p> 	<p><b>HC-HP6003</b> Heating Plate (basic 3 shelves)</p> 	<p><b>HC-HP6005</b> Heating Plate (5 shelves)</p> 	<p><b>HC-HPS</b> Heating Plate (1shelf for additional order)</p> 
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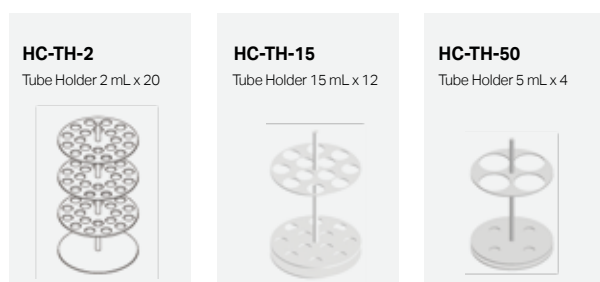
## Stoppering Assembly



## FD Glass Flasks



## Tube Holder for 900, 1,200 mL Flasks



## Ordering Infomation of ARA Glass Flasks

HC-AGF120	120 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 60 mm)
HC-AGF150	150 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 60 mm)
HC-AGF300	300 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 60 mm)
HC-AGF300W	300 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 90 mm)
HC-AGF600	600 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 90 mm)
HC-AGF900	900 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 90 mm)
HC-AGF1200	1,200 mL Flask+ Rubber Lid + Stainless Adaptor (Diameter 90 mm)
V04FL80050-00	Flask Adapter Ø29 ~ 32 Cap + Flask Adapter Pipe

# HyperVAP™

## Gas Purging Evaporation Concentrator



### Features

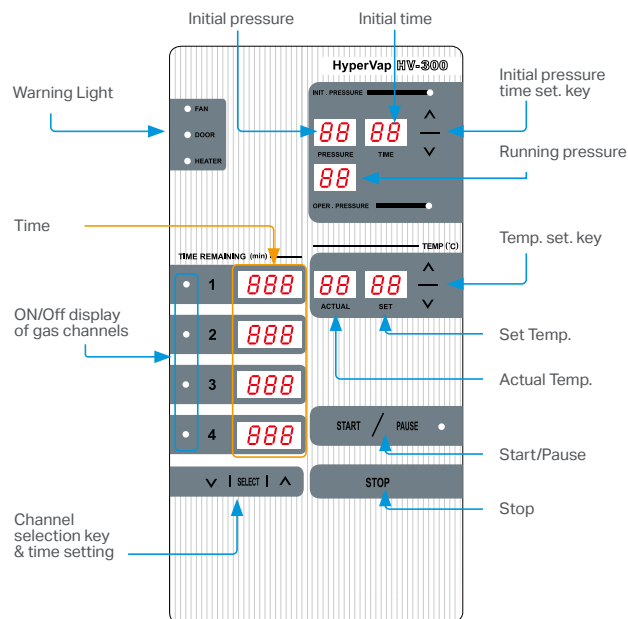
- Accelerated evaporation performance by gas purging mechanism
- Automated, programmable and reproducible
- Proprietary semi-helical gas flow mechanism to achieve the highest evaporation rate
- Diverse dimensions of nozzles and tube racks can be tailored upon customer needs
- Four independent timer settings for different solvents
- Dual-step control of gas pressure and time to prevent “bumping” of the sample on startup
- Differentiated monitoring functions: 3-side transparent glass panels, blue backlight (on/off switchable) and traffic lights
- Optimized for evaporating organic solvents including sample preparations for chromatography
- Safety features: tempered glass panels, automatic gas shutoff function, traffic lights (fan, door, heater)

### Applications

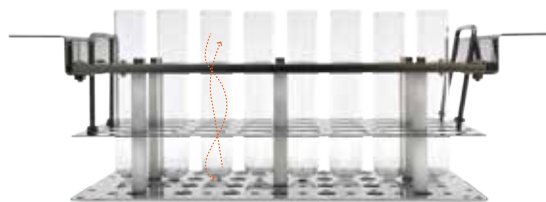
Evaporation of solvents after solid phase extraction clean-up for;

- Pharmaceutical biotech compounds
- Clinical samples
- Environmental samples
- Forensic and crime samples
- Drugs of abuse samples
- Food and beverage analysis
- Agrochemical samples

## Control Panel

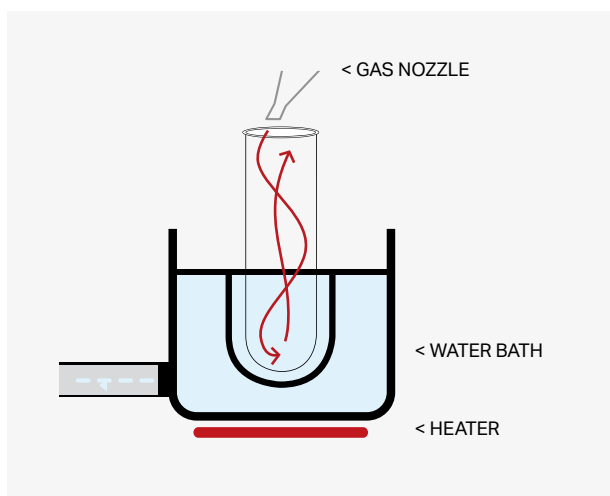


## Maximizing Efficiency



Proprietary semi-helical gas flow mechanism to achieve the highest evaporation rate.

## System Diagram



Gas purging accelerates the evaporation of a liquid by decreasing the partial vapor pressure of the solvent just above the liquid interface. Proprietary semi-helical gas flow mechanism to achieve the highest evaporation rate.

	40 psi	30 psi	20 psi
Hexane	1:50	2:10	3:20
Methanol	5:50	6:30	9:50
Acetonitrile	5:45	7:10	11:40
Ethanol	6:10	8:30	15:30

\* Experimental Conditions (min:sec)  
 · Sample volume : 5 mL in 20 mL tube  
 · Temperature : 40°C  
 · Gas : nitrogen gas

## Technical Specifications

<b>Number of Samples</b>	6 ~ 32
<b>Sample Volume (mL)</b>	5 ~ 300 mL
<b>Gas</b>	Compressed air, Nitrogen, etc.
<b>Operating Gas Pressure (psi)</b>	Max 50 psi
<b>Pressure Control</b>	Automated dual-step control (initial & running pressure)
<b>Max Time for Initial Pressure</b>	~ 999 min
<b>Max Time Control</b>	~ 999 min (4 independent channels)
<b>Individual Time Setting for Each Channel</b>	Yes

<b>Light On/Off</b>	Yes
<b>Water Bath Temperature</b>	~ 99°C
<b>Forced Vapor Evacuation</b>	Yes (by fan)
<b>Power Supply</b>	AC 230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)
<b>Power Requirement</b>	800 VA
<b>Dimension (w x d x h)</b>	594 x 340 x 320 mm
<b>Weight</b>	26.5 kg
<b>Cat No.</b>	Hyper-HV300 (Hyper-HV300-110)

03.

Mixer & Shaker



# D-MS2 Stirrer



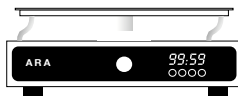
## Features

- Constant speed control proportional to the medium or capacity
- Resistant to corrosion in organic solvents by black
- Stable weight and durability for size

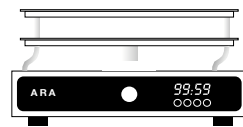
## Technical Specifications

<b>Speed Range</b>	200 ~ 2,500 rpm
<b>Max. Stirring Capacity</b>	3,000 mL
<b>Protection Class acc. to DIN EN 60529</b>	IP 54
<b>Dimensions of Working Area</b>	Φ 130 mm
<b>Power Supply</b>	AC/DC Adaptor : 100~240V, 50/60Hz
<b>Power Requirement</b>	3.5W
<b>Dimensions (W x D x H)</b>	150 x 185 x 51 mm
<b>Net. Weight</b>	440 g

# D-SD Laboratory Shaker



1-layer



2-layer

## Features

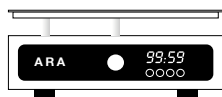
- 30 x 30 cm platform with an "anti-slip" robust shaker
- Max. load 3 kg
- Adjustable up to 140 rpm with tilting up to 15°
- Supplied with extra set of silicon pillar
- Optional non-slip spiked mats for 50 mL and 15 mL tubes
- Optional rubber bands for fixing containers

## Technical Specifications

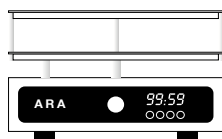
<b>Speed Range</b>	0 ~ 140 rpm
<b>Shaking Angle</b>	0 ~ 15°
<b>Max. Load</b>	3.0 kg
<b>Platform Area (W X D)</b>	295 x 295
<b>Time Control</b>	99 (h) : 59 (m), continuous

<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Requirement</b>	30 VA
<b>Dimensions (W X D X H)</b>	360 x 360 x 257
<b>Weight</b>	8.2 kg

# D-ST Laboratory Shaker



1-layer



2-layer

## Features

- 27 x 18 cm platform with an “anti-slip” robust shaker
  - Max. load 2 kg
  - Adjustable up to 60 rpm
  - Time control of <100 hr or continuous
  - Digital display of SET, RUN and remaining TIME
  - Optional non-slip spiked mats for 50 mL and 15 mL tubes
  - Optional rubber bands for fixing containers.
- The digital control with the display of SET, RUN and remaining TIME enables exact time control.

## Technical Specifications

<b>Speed Range</b>	0 ~ 60 rpm
<b>Shaking Angle</b>	± 11°
<b>Max. Load</b>	2.0 kg
<b>Platform Area (W X D)</b>	270 x 176 mm

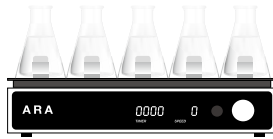
<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Requirement</b>	30AV
<b>Dimensions (W X D X H)</b>	300 x 250 x 154 mm
<b>Weight</b>	5.8 kg



# D-SR Laboratory Shaker



SR1



SR2

## Features

- Reciprocal type
- Brushless DC motor with low noise (30 dB)
- Strong beltless drum without belt
- Stable working on 10 rpm and 999 hr integration timer
- Trustworthy safety device
- Easy to use various size

## Technical Specifications

	D-SR1	D-SR2	D-SR3
<b>Max. Speed</b>		250 rpm (10 rpm/min)	
<b>Max. Capacity</b>	100 mL x 16, 250 mL x 9, 500 mL x 9, 1,000 mL x 4, 2,000 mL x 2	100 mL x 36, 250 mL x 25, 500 mL x 16, 1,000 mL x 9, 2,000 mL x 4	100 mL x 60, 250 mL x 40 500 mL x 24, 1,000 mL x 15, 2,000 mL x 8
<b>Display</b>		Digital LED Display	
<b>Integral Timer</b>		999.9 hr	
<b>Drive and Motor</b>		Beltless Direct Drive, Brushless DC Motor	
<b>Plate Size</b>	350 x 320 mm	450 x 450 mm	760 x 470 mm
<b>Dimension (W x D x H)</b>	360 x 360 x 110 mm	470 x 490 x 115 mm	745 x 490 x 115 mm
<b>Weight</b>	20 kg	28 kg	40 kg
<b>Power Supply</b>		AC 100~240V, 50/60Hz	
<b>Power Requirement</b>		30VA	

# D-SO Laboratory Shaker



S01



S02

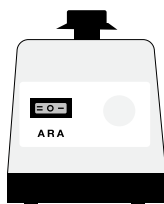
## Features

- Orbital type
- Brushless DC motor with low noise (30 dB)
- Strong beltless drum without belt
- Stable working on 10 rpm and 999 hr integration timer
- Trustworthy safety device
- Easy to use various size

## Technical Specifications

	D-SO1	D-SO2	D-SO3
<b>Max. Speed</b>		350 rpm (10 rpm/min)	
<b>Max. Capacity</b>	100 mL x 16, 250 mL x 9, 500 mL x 9, 1,000 mL x 4, 2,000 mL x 2	100 mL x 36, 250 mL x 25, 500 mL x 16, 1,000 mL x 9, 2,000 mL x 4	100 mL x 60, 250 mL x 40, 500 mL x 24, 1,000 mL x 15, 2,000 mL x 8
<b>Display</b>		Digital LED Display	
<b>Integral Timer</b>		999.9 hr	
<b>Drive and Motor</b>		Beltless Direct Drive, Brushless DC Motor	
<b>Plate Size</b>	350 x 320 mm	450 x 450 mm	760 x 470 mm
<b>Dimension (W x D x H)</b>	360 x 360 x 110 mm	470 x 490 x 115 mm	745 x 490 x 115 mm
<b>Weight</b>	20 kg	28 kg	40 kg
<b>Power Supply</b>		AC 100~240V, 50/60Hz	
<b>Power Requirement</b>		30VA	

# D-VM2 Vortex Mixer



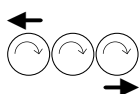
## Features

- Available manual working mode (Touch on Mode)
- Available automatic working mode (Constant Mode)
- Adjustable speed up to 3,000 rpm
- Various kinds of accessories
- High quality and safety design

## Technical Specifications

<b>Max. Speed</b>	3,000 rpm
<b>Operation Mode</b>	Touch On & Continuous On
<b>Head</b>	Mixing Cup Head
<b>Dimensions (W x D x H)</b>	130 x 155 x 155 mm
<b>Net. Weight</b>	3 kg
<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Requirement</b>	20 W

# D-R8 Roller Mixer



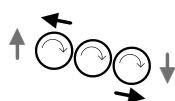
## Features

- Constant speed control proportional to the medium or capacity
- Resistant to corrosion in organic solvents by black SUS 304 body
- Stable weight and durability for size

## Technical Specifications

<b>Number of Tube Rollers</b>	8 rollers
<b>Maximum Capacity</b>	14 x 50 mL Tubes
<b>Speed</b>	Variable, 3 to 80 rpm
<b>Speed Accuracy</b>	±5
<b>Speed Steps</b>	1 rpm
<b>Rolling Angle &amp; Tilting Angle</b>	Rolling : ±3°
<b>Time Control</b>	Timed < 100 hour or Continuous
<b>Dimension (W x D x H)</b>	334 x 420 x 103.5 mm
<b>Weight</b>	6.1kg
<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Requirement</b>	9W

# D-RT6 Roller Mixer



## Features

- Constant speed control proportional to the medium or capacity
- Resistant to corrosion in organic solvents by black SUS 304 body
- Stable weight and durability for size

## Technical Specifications

<b>Number of Tube Rollers</b>	6 rollers
<b>Maximum Capacity</b>	10 x 50 mL Tubes
<b>Speed</b>	Variable, 3 to 80 rpm
<b>Speed Accuracy</b>	±5
<b>Speed Steps</b>	1 rpm
<b>Rolling Angle &amp; Tilting Angle</b>	Rolling : ±3°, Tilting : ±5°
<b>Time Control</b>	Timed < 100 hour or Continuous
<b>Dimension (W x D x H)</b>	300 x 326.5 x 135 mm
<b>Weight</b>	7.5kg
<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Requirement</b>	9W

# 04. CO<sub>2</sub> Incubator



# P170 CO<sub>2</sub> Incubator



## Features

- Direct heating, air jacketed CO<sub>2</sub> incubator
- Internal max. capacity 150 L
- No fan, no vibration, no maintenance of HEPA filter, no spread-out of contamination
- Maximized inner space by no fan structure
- Dual beam NDIR CO<sub>2</sub> sensor
- Intuitive 7" control screen and informative display
- Optional two or three divided inner doors
- Easy-to-clean structure
- 120°C sterilization
- Reversible exterior door open (right / left)
- Stackable CO<sub>2</sub> Incubator
- Supplied with three perforated stainless steel shelves
- 6-side heating system
- Stainless steel chamber
- Electrical requirement : 220/230 V, 50/60



## Technical Specifications

<b>Inner Capacity</b>	170 L
<b>Shelves Number</b>	3 standard, 8 maximum
<b>Shelve Area Dimension</b>	522 x 426 mm
<b>Shelve Material</b>	Stainless steel
<b>Display</b>	7" LCD, touchscreen
<b>Data Tracking</b>	240 hours continuous
<b>Door Left/Right</b>	Can be set on site
<b>Decontamination</b>	120°C Dry
<b>Fan</b>	No
<b>External dimension (w x d x h)</b>	720 x 639 x 908 mm
<b>Chamber dimension (w x d x h)</b>	547 x 479 x 647 mm
<b>Net Weight</b>	91 kg
<b>Power Supply</b>	AC 220V 50 / 60 Hz
<b>Power Requirement</b>	1.1 KW

<b>rH system</b>	
<b>Humidity method</b>	Water pan
<b>Humidity range, %RH</b>	92 ~ 98%
<b>Temperature</b>	
<b>Control system</b>	Microprocessor PID
<b>Range</b>	Amb. +5 ~ 50°C
<b>Accuracy</b>	± 0.2°C
<b>Uniformity</b>	± 0.3°C
<b>Recovery time</b>	<10 min
<b>CO<sub>2</sub> Control</b>	
<b>Control system</b>	Microprocessor PID
<b>Sensor</b>	NDIR
<b>Control range</b>	0 ~ 20%
<b>Control accuracy</b>	± 0.1
<b>Recovery rate</b>	< 7 min



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