

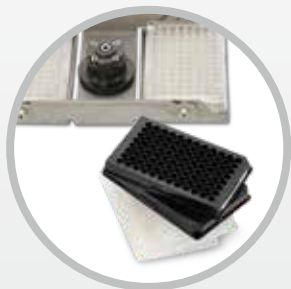
Clinical Centrifuges

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GYROZEN®

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From Research to Clinical Application “Must-have” Item for Every Laboratory

GYROZEN consistently guarantees the highest possible lab standards that you require for your daily work with industry-leading safety and quality. It is furnished with unique air flow structure and anti-vibration structure so as to keep the laboratory environment with no noise. Its ergonomic design with intuitive control panel and soft touch keys offers easiness in operation.

The bench-top model, 416 features with art of centrifugation with maximized capacity of 400 ml at a time. A large assortment of rotors with buckets and adaptors are available for application versatility.

The compact low-speed model, 406 is ideal for routine work with small sample sizes.



Compact & Simple

Advanced Safety and Robustness



Imbalance cut-off

and concurrent alarm keep the instrument protected from unsuitable operation.



Automatic lid opening

when rotor is static, for easy retrieval of samples



Very quiet operation (≤ 52 dBa)

at less than 52 dB allows for comfortable laboratory environment.



Lid drop protection scheme

allows for easiness and safety when loading and unloading.



406

4,000 rpm

2,075 xg

416

4,000 rpm

2,826 xg

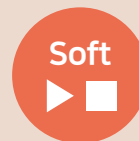


Advanced Convenience in Operation



Up to 10 programs memory

for the easiest conducting routine protocols.



Soft

Soft Start/Stop function of 416

minimizes agitation by slow run-up/down.



Automatic RPM/RCF conversion

for easy detection of g-value forced to samples.



Variable end alarm

15 times repetition alerts the completion of rotation well enough.



Glove-friendly, easy-to-input touch buttons

allows easy setting of running conditions.



A large assortment of rotors, buckets and adaptors

supports diverse applications doable with an instrument.

Maximized Capacity Clinical Centrifuge

Low-speed Centrifuge, 416

The **416** is a compact bench top centrifuge with maximized capacity of 400 ml at a time. With GRS-S-100-4 rotor and universal 100 ml buckets and diverse adaptors, you can enjoy everyday laboratory work to its fullest. The immediate separation of 32 vacutainer samples or small tubes is also feasible with unique vacutainer buckets. Additional offering of microplate rotor extends the 416's application limit.

More rotors and accessories for diverse applications are described on page 10~12.

[Applications]

- General laboratory applications including biological sample separations of cellular materials, blood, urine, sperm, etc.
- Clinical applications of PRP, PRF, lipid cell separation, stemcell isolation, etc
- Low-speed, gentle centrifugation or washing of gene chip, nanoparticle, and micorbead
- Gentle spin-down or washing of primary cells, cell lines, and sperms
- Component fractionation of foods and feeds
- Air removal of paint, ink, and injection medicines



SOFT START/STOP function is good for avoiding agitation of samples during acceleration and deceleration. The separation efficiency and recovery rate of 416 is outstanding and so it is commonly used in the fractionation of blood samples to collect PRP, PRF or PPP, and gentle precipitation of fragile cells.



- Max. 4,000 rpm with 16 x 15 ml, 4 x 100 ml, 32 vacutainer tube and 2 MTPs.
- A large assortment of rotors with buckets and adaptors to take tubes from micro to 100ml
- SOFT spin key for gentle acceleration and deceleration
- Easy-to-read LCD display with bright blue lettering on a black background
- Low noise level at <52 dB with unique airflow damping and elimination of sample heating
- Automatic recognition and alarms for imbalance, over-speed, and over-heat
- Program memory for up to 10 programs
- Time controls for timed runs up to 99 minutes or continuous operation



Compact Clinical Centrifuge

Low-speed Centrifuge, 406

The compact and robust small centrifuge **406** is ideal for routine low speed centrifugation with less than 15 ml tubes. It features with maximized simplicity in operation and the highest safety in everyday work.



- Max. 4,000 rpm with 6 x 15 ml
- Robust construction with minimized heat and noise transmission
- Program memory for up to 10 programs
- Time controls for timed runs up to 99 minutes or continuous operation
- Easy-to-read LCD display with bright blue lettering on a black background
- Supplied completely with an angle rotor including sleeves for 15 ml tubes

[Applications]

- Cell separation of mammalian cultures and tissue
- Blood fractionation (PRP, PPP, PRF, etc)
- Separation work of blood, urine, and stool
- Sperm washing

GRA-15-6A Angle Rotor and 15 ml Sleeves

- Max. 4,000 rpm / 2,075 xg
- Capacity of 6 tubes per run
- Sleeve bore (ϕ x h, mm): 17.8 x 86.5 / Radius (mm): 125
- Autoclavable and robust rotor and sleeve
- Sleeve, inner-bottom cushioned with soft rubber
- 3, 4, and 5 ml tube adaptors are available optionally.



Cat. No.

Max. RPM / RCF
Tube Type

Rotors for Our Clinical Centrifuges



GRS-S-100-4

4,000 rpm / 2,774 xg
1.5 ~ 100 ml
p. 11
Only for 416



GRS-S-50-4

4,000 rpm / 2,700 xg
15 ~ 50 ml conical
p. 11
Only for 416



GRS-S-15-6

4,000 rpm / 2,826 xg
10 ~ 15 ml conical
p. 12
Only for 416



GRA-S-15-16A

4,000 rpm / 2,700 xg
3 ~ 15 ml conical
p. 12
Only for 416



GRA-S-15-6A

4,000 rpm / 2,075 xg
3 ~ 15 ml conical
p. 12
Only for 406

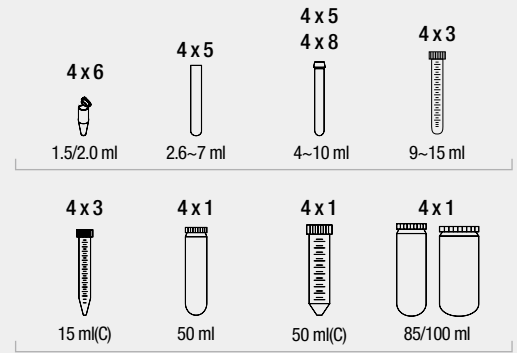


GRS-S-mw-2

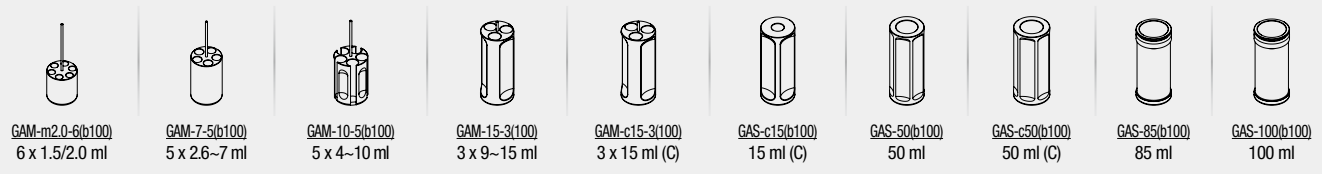
4,000 rpm / 1,986 xg
96-well microplates
p. 12
Only for 416

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

4 loadings, 90° | for 416

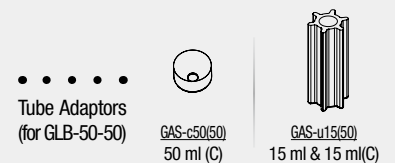
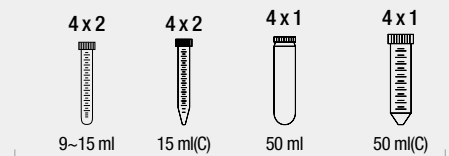


••••••••••
Tube Racks and Adaptors (for GLB-b100-100)



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

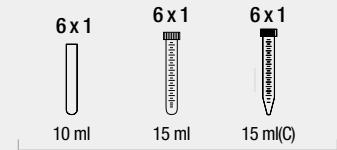
4 loadings, 90° | for 416



Swing-out Rotor, GRS-S-15-6

6 loadings, 90° | for 416

Bucket, GLB-15-15
4,000 rpm / 2,826 xg
one tube each



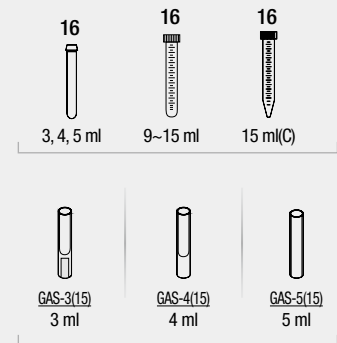
Fixed Angle Rotor, GRA-S-15-16A

16 loadings, 45° | for 416

Sleeve, GLB-15A-FA
4,000 rpm / 2,700 xg
one tube each



**Adaptors for
3 / 4 / 5 ml tubes**



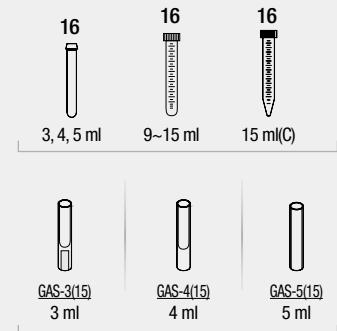
Fixed Angle Rotor, GRA-S-15-6A

6 loadings, 45° | for 406

Sleeve, GLB-15A-FA
4,000 rpm / 2,075 xg
one tube each



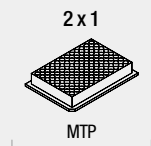
**Adaptors for
3 / 4 / 5 ml tubes**



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

2 loadings, 90° | for 416

4,000 rpm / 1,986 xg
one plate each



Micro Centrifuges

Max. 13,500~17,000 rpm / 12,300~27,237 xg

0.2~2.0 ml, Micro filter tube, Cryotube



Multi-Purpose, High-Speed Centrifuges

Angle : Max. 12,000~15,000 rpm / 15,520~25,910 xg

Swing : Max. 5,000 rpm / 5,394 xg

0.2~500 ml, MTP, DWP



Large Capacity, High-Speed Centrifuges

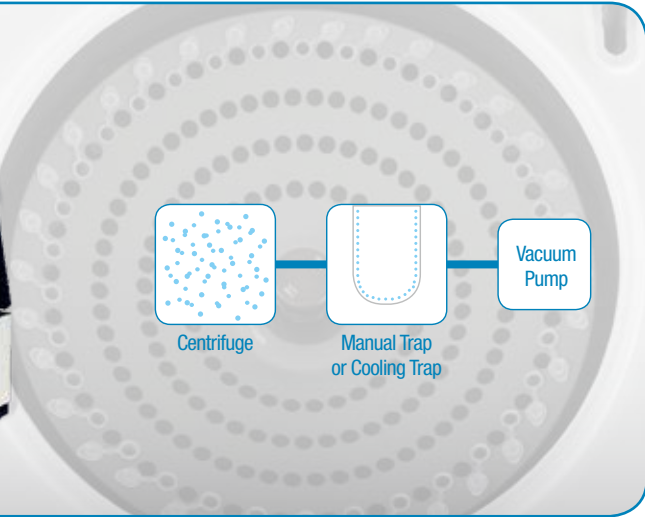
Angle : Max. 10,000~22,000 rpm / 14,981~54,111 xg

Swing : Max. 4,000~5,000 rpm / 3,134~5,324 xg

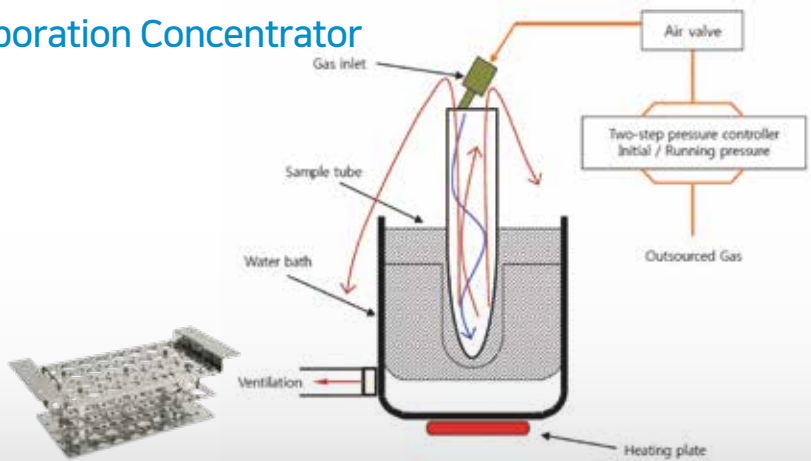
0.2~1,000 ml, Blood Bag, MTP, DWP, FTP



Centrifugal Vacuum Concentrators



Automated Dry Purging Evaporation Concentrator



Shakers



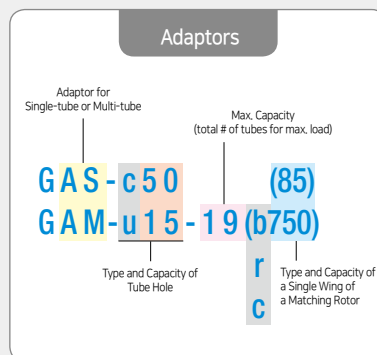
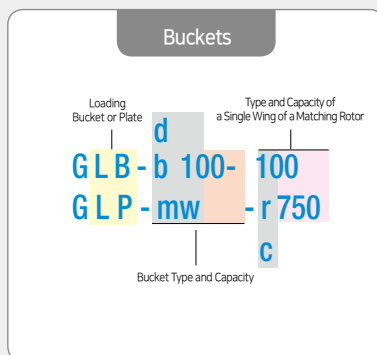
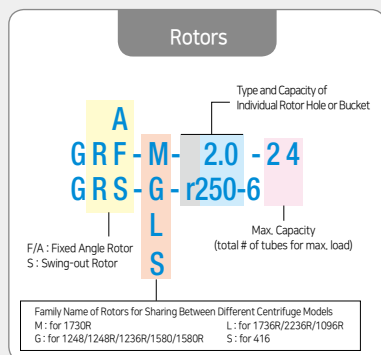
Ordering Information - Rotors and Buckets

Cat. No. & Description		Max. Capacity	Max. Speed		Bore Size (ϕ x L, mm) or (wxdh, mm) or (hole diameter, mm)	Max Height for tube fit (mm)	Radius (mm)
Rotors	Buckets & Microplate Holders		RPM	RCF (xg)			
Swing-out Rotor							
GRS-S-100-4 Four-wing 100 ml swing-out rotor <i>Only for 416</i>	GLB-b100-100 ^a 100 ml O-ring sealed bucket	4 x 100 ml	4,000	2,774	47 x 99	120 (w/cap) /130(w/o cap)	155.1
	GLB-10-8-100 8 x 10 ml vacutainer bucket	4 x 8 x 10 ml	4,000	2,774	16 x 89	125	155.1
	GLB-b50-100 50 ml O-ring sealed bucket	4 x 50 ml	4,000	2,700	30.5 x 93	120 (w/cap) /125 (w/o cap)	150.9
	GLB-bd15-100 2 x 15 ml O-ring sealed bucket	4 x 2 x 15 ml	4,000	2,700	17 x 96	123 (w/cap) /127 (w/o cap)	150.9
	GLB-bdc15-100 2 x 15 ml conical O-ring sealed bucket	4 x 2 x 15 ml conical	4,000	2,774	17 x 102.5	120 (w/cap) /125 (w/o cap)	155.1
GRS-S-50-4 Four-wing 50 ml swing-out rotor <i>Only for 416</i>	GLB-15-50 15 ml bucket	4 x 15 ml	4,000	2,700	17 x 93	130	150.9
	GLB-d15-50 2 x 15 ml bucket	4 x 2 x 15 ml	4,000	2,700	17 x 91.5	130	150.9
	GLB-c15-50 15 ml conical bucket	4 x 15 ml conical	4,000	2,700	17 x 93	130	150.9
	GLB-dc15-50 2 x 15 ml conical bucket	4 x 2 x 15 ml conical	4,000	2,700	17 x 91.5	130	151
	GLB-50-50 50 ml bucket	4 x 50 ml	4,000	2,700	30.5 x 87	125	150.9
	GLB-c50-50 50 ml conical bucket	4 x 50 ml conical	4,000	2,700	29.5 x 91.5	125	150.9
GRS-S-15-6 Six-wing 15 ml swing-out rotor <i>Only for 416</i>	GLB-15-15 15 ml bucket	6 x 15 ml	4,000	2,826	17 x 93.8	125	158.0
GRS-S-mw-2 Two-wing swing-out rotor for holding microplates <i>Only for 416</i>	-	2 MTPs	4,000	1,986	88.5 x 130.3	35	111.0
Fixed Angle Rotor							
GRA-S-15-16A Fixed angle rotor with 16 of 15 ml sleeves <i>Only for 416</i>	GLB-15A-FA ^a 15 ml sleeve for holding 15 ml round or conical tubes	16 x 15 ml	4,000	2,700	17.8 x 86.5	125 (120 for conical)	150.9
GRA-15-6A Fixed angle rotor with 6 of 15 ml sleeves <i>Only for 406</i>	GLB-15A-FA ^a 15 ml sleeve for holding 15 ml round or conical tubes	6 x 15 ml	4,000	2,075	17.8 x 86.5	125 (120 for conical)	116

^a : Tube adaptors are available.

✓ b100, b50, bd15 and bdc15 buckets work fine with O-ring sealed capping.




Catalog Numbering Rule of Rotors and Accessories





Type Symbol of Tube or Bucket

No symbol : round type
r : rectangular type
c : conical type
d : dual hole type
b : O-ring sealed bucket
u : universal for both of round & conical tube
mw : for multiwell plate

Ordering Information - Adaptors and Multi-Tube Racks

Cat. No. & Description		Applicable Bucket	Capacity	Hole Dimension (\varnothing x L, mm)
Adaptors and Multi-tube Racks	with O-ring sealed Cap			
GAS-100(b100)	Adaptor for 100 ml	GLB-b100-100 	1 x 100	44.2 x 93
GAS-85(b100)	Adaptor for 85 ml		1 x 85	38.5 x 96.4
GAS-c50(b100)	Adaptor for 50 ml conical		1 x 50 ml conical	30 x 100
GAS-50(b100)	Adaptor for 50 ml		1 x 50 ml	29.5 x 95.9
GAS-c15(b100)	Adaptor for 15 ml conical		1 x 15 ml conical	17.2 x 106.5
GAM-c15-3(100)	Multi-tube rack for 15 ml conical		3 x 15 ml conical	17.2 x 106.5
GAM-15-3(100)	Multi-tube rack for 9 ~ 15 ml		3 x 9~15 ml	17.5 x 105
GAM-10-5(b100)	Multi-tube rack for 4 ~ 10 ml		5 x 4~10 ml	16 x 60
GAM-7-5(b100)	Multi-tube rack for 2.6 ~ 7 ml		5 x 2.6 ~ 7 ml	13.5 x 60
GAM-m2.0-6(b100)	Multi-tube rack for microtube		6 x 1.5/2.0 ml	11 x 39
GAS-c50(50)	Adaptor for 50 ml conical	GLB-50-50 	1 x 50 ml conical	29.5 x 15.6
GAS-u15(50)	Adaptor for 15 ml round & conical		1 x 15 ml round & conical	17.3 x 87
GAS-3(15)	Adaptor for 3 ml	GLB-15A-FA 	1 x 3 ml	13.5 x 61
GAS-4(15)	Adaptor for 4 ml		1 x 4 ml	13.5 x 65
GAS-5(15)	Adaptor for 5 ml		1 x 5 ml	13.5 x 85

Ordering Information - Main Equipment

		416	406
Main equipment			
Cat. No.	for 220V	GZ-0416	GZ-0406 includes Angle Rotor (GRA-15-6A) & 6 of Sleeves (GLB-15A-FA)
	for 110V	GZ-0416-110	GZ-0406-110 includes Angle Rotor (GRA-15-6A) & 6 of Sleeves (GLB-15A-FA)
Max. RPM/RCF	Fixed angle	4,000/2,700 xg	4,000/2,075 xg
	Swing-out	4,000/2,826 xg	-
Max. capacity	Fixed angle	16 x 15 ml	6 x 15 ml
	Swing-out	4 x 100 ml	-
Time control		Timed < 100 min or continuous	
Noise level (dB)		≤ 52	
ACC / DEC (sec)		≤ 20 / ≤ 25	≤ 20 / ≤ 20
Program memory		10	
Imbalance cut-off		Yes	
Safety lid lock		Yes	
Automatic door release at completion		Yes	
Lid drop protection		Yes	
Power requirement		340 VA	140 kVA
Dimension (W x D x H, mm)		375 x 480 x 260	296 x 412 x 206
Weight without rotor (kg)		19.5	17.5
CE mark		Yes	