

**KUBOTA**

## Compact High Speed Refrigerated Centrifuge



**6500**

# Max. 22,000 rpm / 48,700 xg, full 3 liter capacity

## Easy-to-use Compact Design (only 50cm wide)



### Features

#### 3 Liter Capacity

6 x 500mL bottles can be centrifuged at 12,090 xg.

#### Auto Interlock Lid

- To close lid  
Push closed gently. Electrical interlock system automatically locks lid closed.
- To open lid  
Press lid open key. Lid opens automatically after interlock is released.  
Optional foot Switch enables hands-free lid opening.

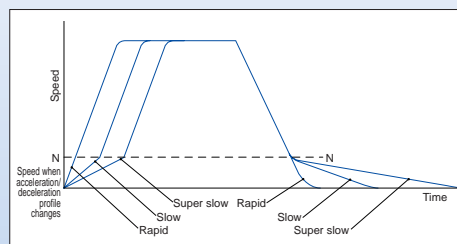
#### Easy-to-use functions maximize convenience

- Memory function for easy spin-down automatically memorizes duration of spin-down operations, from 1 to 90 seconds (patented). One key press can then start subsequent spin-down operations, using the memorized duration.
- 5 memory settings available, with one-touch saving, access, and operation.
- Equipped with a tachometer port to comply with GMP requirements. Actual rotor speed is easy to check.
- Acceleration and deceleration curves can be selected from three profiles to best match sample types and experiment requirements.
- RCF(g)-set operation function and stepped centrifugal force function.
- Actual g·sec (integrated RCF) value can be measured for centrifuging operations, in place of time duration settings.
- Timer can be set up to 990 minutes or seconds. During a hold condition, the elapsed time of operation is displayed.
- Pre-cooling function enables rotor to reach low temperature before operation.



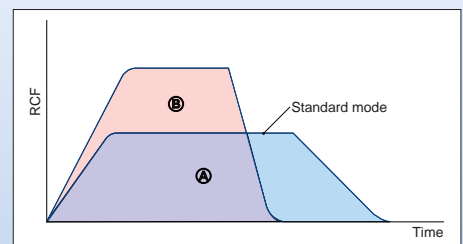
#### Foot Switch (Optional)

Lid opens automatically when the switch is depressed. A newly designed gas spring provides smooth and quick lid opening. Hands-free operation facilitates experiments.



#### Acceleration/deceleration profiles

- A super-slow acceleration and deceleration profile is ideal when centrifuging sensitive samples, to avoid resuspension.
- Suitable for centrifugation of easily resuspended samples, density gradient methods and blood cell cleaning.
- The rotational speed N when the acceleration/deceleration profile changes can be set, enabling super-slow acceleration and deceleration for especially sensitive samples.



#### Integrator function g·sec value

Identical applications of total centrifugal force are easily reproducible using the g·sec function

- The integrator function enables identical centrifugal effects to be applied. (A) = (B)

# Auto Interlock Lid

## Safety comes first

- Numerous detectors ensure safe, reliable operation. If trouble is detected, operation stops immediately.
- Rotor mounting sensor detects whether or not the rotor is properly set on the driveshaft. (Patent pending)
- Automatic rotor detection is available. (Patented and patent pending)

## Sample temperature maintained at 4°C.

(at 25°C ambient temperature. Please refer to the Rotor List.)



## Versatile Control Panel Design

Operator can view and operate the panel when lid is open or closed.

## Convenient Lid Keys

Frequently used keys are located at front edge of the lid.

Tachometer Port  
to comply with GMP

Start Key

Stop Key

“Flashing” Key (Memory Function)

Lid Open Key



## High RCF (30,190 xg – 15,880 xg) Fixed-angle Rotor (for conical tubes)

Cap support structure enables high g-force centrifugation without tube breakage. (patented)

High g-force enables separation of sticky proteins.

Tube breakage can be prevented without time-consuming slowdowns or use of special tubes.



**AG-508CA**  
8 x 50mL Conical tube  
8 x 15mL Conical tube †

† Adaptor (Code No. 055-1250) is required.



**AG-6512C**  
12 x 50mL Conical tube  
12 x 15mL Conical tube

- 50mL conical tubes (PP), 36mm diameter or less, made by Iwaki, Greiner, Corning, Sarstead, Falcon, Fisher, Labcon or Nunc can be used. With adaptor (Code No.055-0890) attached, 35mL Oak ridge conical tubes (PC, PPCO) from Nunc can be used.
- AG-508CA rotors support use of 15mL conical tubes (PP) made by Greiner, Corning, Labcon. Tubes from other makers can be used at 10,000 rpm or less.

AG-6512C rotor supports use of 15mL conical tubes of any maker.

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm *	Maximum RCF xg
AG-508CA *1	8 x 50mL Conical tube	30 x 117	15,000 (13,000)	30,190 (22,680)
AG-6512C *3	12 x 50mL Conical tube	30 x 117	10,000	15,880
	12 x 15mL Conical tube	17 x 121	10,000	13,300

\*1 Tube adaptors are available for various capacities. Contact our distributor for details.

\*3 Ask our distributor about lead time.

\* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

## 7mL-100mL Middle Volume Fixed Angle Rotor



**AG-716**  
16 x 7mL



**AG-1212**  
12 x 12mL



**AG-506R**  
6 x 50mL



**AG-508R**  
8 x 50mL



**AG-1224**  
24 x 12mL



**AG-1008A**  
8 x 100mL

- Tube adaptors are available for various capacities. Contact our distributor for details.

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AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm *	Maximum RCF xg
AG-716 *3	16 x 7mL	15.9~16.4 x 60~64	22,000 (17,000)	48,700 (29,080)
AG-1212	12 x 12mL	15.9~16.4 x 103~109	21,000 (17,000)	47,330 (31,020)
AG-1224 *3	24 x 12mL	15.9~16.4 x 103~105	17,000 (14,000)	36,190 (25,540)
AG-506R *1,2	6 x 50mL	28.7~29 x 103~109	20,000 (16,000)	43,380 (27,760)
AG-508R *1,2	8 x 50mL	28.7~29 x 103~109	17,500 (14,500)	36,980 (25,390)
AG-1008A *1,2,3	8 x 100mL	38 x 114	13,500 (12,000)	26,690 (21,090)

\*1 Tube adaptors are available for various capacities. Contact our distributor for details.

\*2 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

\*3 Ask our distributor about lead time.

\* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

## 250mL-500mL Large Volume Fixed-angle Rotor



AG-2506  
6 x 250mL

- Tube adaptors are available for various capacities. Contact our distributor for details.



AG-5004  
4 x 500mL

- Tube adaptors are available for various capacities. Contact our distributor for details.



AG-5006A  
6 x 500mL

- Tube adaptors are available for various capacities. Contact our distributor for details.

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm *	Maximum RCF xg
AG-2506 *1	6 x 250mL	60~62.4 x 119~137	11,500 (10,000)	21,000 (15,880)
AG-5004 *1,2,3	4 x 500mL	69~70.2 x 155~170.5	8,500	12,360
AG-5006A *1,2,3	6 x 500mL	69~70.2 x 155~170.5	8,000	12,090

\*1 Tube adaptors are available for various capacities. Contact our distributor for details.

\*2 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

\*3 Ask our distributor about lead time.

\* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

## Sealing Adaptor for Biohazard-proof Requirements



### High speed rotor

AG-506R • AG-508R • AG-1008A  
AG-5004 • AG-5006A

### Sealing Adaptor for High Speed Fixed-angle Rotors

Autoclavable (121°C)



for 10mL Oak Ridge  
type tube  
Code No.055-4280



for 50mL Oak Ridge  
type tube  
Code No.055-0530



for 250mL Bottle  
Code No.055-4510

Code No.	Nominal Capacity	Tube	Tube size Dia x length mm	Rotor	Max. Speed rpm	Max. RCF xg
055-4280	10mL Oak ridge type tube	FEP 3114-0010	16.0 x 81.5	AG-506R	20,000	43,380
		PSF 3115-0010	16.0 x 82.0			
		PC 3118-0010	16.1 x 81.7	AG-508R	17,500	36,980
		PPCO 3119-0010	16.0 x 81.4			
055-0530	50mL Oak ridge type tube	FEP 3114-0050	28.8 x 107.7	AG-1008A	13,500	26,690
		PSF 3115-0050	29.0 x 107.7			
		PC 3118-0050	28.8 x 107.0			
		PPCO 3119-0050	28.8 x 106.7			
055-4510	250mL Bottle	PPCO 3120-0250	61.8 x 127.7	AG-5004	8,500	12,360
		PC 3122-0250	61.8 x 127.6	AG-5006A	8,000	12,090

\* Adaptors are made of Polyethetale, with polycarbonate caps.

FEP = Teflon FEP; PSF = Polysulfone; PC = Polycarbonate; PPCO = Polypropylene Copolymer.

## Micro Rotors



AG-224  
24 x 1.5/2mL  
24 x 0.5mL  
24 x 0.4mL  
24 x 0.2mL PCR



RA-159G  
72 x 1.5/2mL  
72 x 0.5mL  
72 x 0.4mL  
72 x 0.2mL PCR

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm *	Maximum RCF xg
AG-224 *1	24 x 1.5/2mL	9.5-11 x 36-42	22,000 (19,000)	44,370 (33,090)
RA-159G *1,3	72 x 1.5/2mL	9.5-11 x 36-42	13,500	24,250

\*1 Tube adaptors are available for various capacities. Contact our distributor for details.  
\*3 Ask our distributor about lead time.

\* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

## Plate Rotors

Shield covers help prevent contamination.

These are useful for DNA extraction & purification, ethanol precipitation, purification of PCR products in PCR plates, dye-terminator removal.



RS-751GS  
12x Micro-plates  
4x Deep-well plates

with Shield Cover Tray (Code No.055-6380) required.



RS-745GS  
12x Micro-plates  
4x Deep-well plates

with Shield Cover Tray (Code No.055-6380) required.



RMP-89G  
8x Micro-plates  
4x Deep-well plates

Optional tray is available (Code No.055-6370)

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm	Maximum RCF xg
RS-751GS *3,7	12 x Micro-plates	86 (W) x 128 (D) x 90 (H)	5,000	4,390
	4 x Deep-well plates			
RS-745GS *3,7	12 x Micro-plates	86 (W) x 128 (D) x 90 (H)	4,200	3,100
	4 x Deep-well plates			
RMP-89G	8 x Micro-plates	86 (W) x 130 (D) x 89 (H)	2,400	1,080
	4 x Deep-well plates			

\*3 Ask our distributor about lead time.  
\*7 Verify plate strength before centrifuging.  
Plates in lower position may fracture.

### Trays Code No.055-6380 (optional)



12 x 96 well plate



4 x deep-well plate



4 x square-well plate



2 deep-well + filter plate



2 x PCR plate

## Swinging Bucket Rotor



**RS-200G**  
4 x 50mL

- Tube adaptors are available for various capacities. Contact our distributor for details.

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm *	Maximum RCF xg
<b>RS-200G</b> *1,2	4 x 50mL	28.7~29.3 x 101~115	11,500 (9,800)	20,700 (15,030)

\*1 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

\*2 Ask our distributor about lead time.

\* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.



**RS-410G**  
**Multi-purpose Swinging Bucket Rotor**  
Sealing caps are available.  
Autoclavable (121°C)



**RS-720G**  
**Multi-purpose Swinging Bucket Rotor**

Rotor Name	Nominal Capacity	Tube size (mm) diam. x length	Maximum Speed rpm	Maximum RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-410G</b> *4	48 x 1.5/2mL	10.7 x 42	5,000	4,160	Equipped with rotor	K17008
	48 x 5mL RIA tube	12.5 x 55~75	5,000	4,160	Equipped with rotor	K17006
	48 x 7mL	12~12.5 x 100~112	5,000	4,160	Equipped with rotor	K17007
	28 x 5-7mL blood collecting tube	12.5~13 x 75~106	5,000	4,160	Equipped with rotor	K17027
	12 x 15mL Conical tube *3	16.5 x 120.6	5,000	4,160	Equipped with rotor	K17019
	12 x 15mL Conical tube *3	16.5 x 120.6	5,000	4,470 *1	K13130	
	28 x 10mL blood collecting tube/15mL	15.5~17 x 87~110	5,000	4,160	Equipped with rotor	K17015
	4 x 50mL	27~35.8 x 82~110	5,000	4,160	Equipped with rotor	055-5670
	4 x 50mL Conical tube	29.5 x 117	5,000	4,160	Equipped with rotor	K17049
4 x 100mL	44~45 x 110	5,000	4,160	Equipped with rotor	K17100	
4 x 200mL	56.5 x 104	5,000	4,160	Equipped with rotor		
<b>RS-720G</b>	80 x 1.5/2mL	9.5~11 x 36~42	3,500	2,290 *1	053-5820	055-4800
	96 x 6mL RIA tube	10~12.3 x 65~95	3,500	2,190 *1	053-5820	055-4730
	48 x 5-7mL blood collecting tube *5	12~13.3 x 63~110	3,500	2,310	053-5820	055-4990
	24 x 8mL CPT cell preparation tube *6	13.5~15.8 x 81~130	3,500	2,310	053-5820	055-6900
	80 x 10mL	12.5~13.8 x 65~95	3,500	2,260 *1	053-5820	055-4740
	48 x 10mL blood collecting tube/15mL	15~17.2 x 81~110	3,500	2,330	053-5820	055-4750
	68 x 5-7mL blood collecting tube *5	12~13.7 x 62~110	3,500	2,300	053-5840	055-0260
	48 x 5-10mL blood collecting tube/15mL *5	12~17.2 x 72~110	3,500	2,330	053-5820	055-0880
	68 x 10mL blood collecting tube/15mL	15~17.2 x 52~110	3,500	2,300	053-5840	
	28 x 15mL Conical tube	17 x 121	3,500	2,300	053-5840	
	32 x 15mL Conical tube	17 x 121	3,500	2,330	053-5820	055-4780
	8 x 50mL	27~36.4 x 85~110	3,500	2,330	053-5820	055-4760
	16 x 50mL Conical tube	30 x 117	3,500	2,330	053-5820	055-6070
	4 x 100mL	38~46.5 x 75~120	3,500	2,330	053-5820	055-4770
	4 x 175/200/225mL Conical tube *2	61 x 118/61 x 130/61 x 137	3,500	2,330	053-5820	055-4850
4 x 250mL	60~61.8 x 100~130	3,500	2,380 *1	053-5820	055-4850	
8x/12x/16x Self-standing sputum tube *6	Cap diam. 48/ 37/ 31	3,500		*7	053-5820	*7

\*1 See instruction manual for RCF display details.

\*2 175mL/225mL conical BD Falcon tubes (Code No.352076/352075) require cushions (Code No.352090).

200mL conical Nunc tubes (Code No.376813) require cushions (Code No.377585).

\*3 The K17019 tube rack cannot be used with a sealing cap.

Code No.K13130 (Bucket for 12 x 15mL TC tubes) can use optional sealing cap (Code No.K17111).

\*4 Ask our distributor about lead time.

\*5 Blood collecting tube made by Sekisui (Insepack II), Terumo (Venoject II), Nipro (Neotube), and Beckton Dickinson (Vacutenar) can be used.

Tubes for flow cytometry can be used.

\*6 Vacutenar 8mL blood collecting tubes for CPT cell separation made by Beckton Dickinson can be used.

\*7 Various sputum tube capacities can be used. Contact our distributor for details.

## Specifications

### Model 6500

- Maximum Speed ● 22,000 rpm
- Maximum RCF ● 48,700 xg
- Maximum capacity ● 3,000 mL
- Control system ● Microprocessor control (brushless motor)  
Speed, RCF(g), Time, g·sec, Temperature, Acceleration and Deceleration, 5 memory banks
- Alarm display ● Lid open, Imbalance, Over speed, Rotor setting condition, Abnormally high temperature,  
Detected electrical abnormality in motor, inverter,  
lid interlock, speed sensor and temperature sensor
- Acceleration/Deceleration ● Three selectable rates: Rapid, Slow and Super Slow
- Speed setting ● From 300 to 22,000 rpm, 10 or 100 rpm increments
- Speed indication ● Digital display, from 0 to 22,500 rpm, 10 rpm increments
- RCF setting ● From 10 to 48,700 xg, 10 or 100 xg increments
- RCF indication ● Digital display, from 0 to 50,940 xg, 10 xg increments
- Integrator setting and indication ● Digital display, from 1.00-9.99x10<sup>9</sup> g·sec
- Timer setting and indication ● Digital display, with HOLD function (continuous operation) and flashing  
1 second to 100 seconds, 1 sec increments  
100 seconds to 990 seconds, 10 sec increments  
1 minute to 100 minutes, 1 min increments  
100 minutes to 990 minutes, 10 min increments
- Temperature setting and indication ● Digital display, -20°C to +40°C, 1°C increments, Pre-cooling
- Refrigerant ● R404A
- Power requirements ● Single phase 50/60Hz, 220V±10% 30A, 230V±10% 30A
- Rated voltage and rated current ● 220V 12A, 230V 11A
- Power consumption and heat output ● 2.0kW 7.2MJ/h
- Dimensions, weight ● 50cm x 74cm x 94cm (WxDxH) <sup>(\*)</sup>, 195kg



(\*1) Not including projections.

All specifications and external appearance are subject to change without notice.

\* Use only rotors, adaptors and tube racks made by KUBOTA. Do not attempt to use rotors, adaptors or tube racks made by other manufacturers.

\* Follow all instructions in the relevant Instruction & Service Manual when operating centrifuges.

## Kubota has acquired ISO 9001 and ISO 13485 certification.

 <b>Safety Precautions</b>	<p>For your safe use of the equipments, be sure to read the instruction manual carefully before you start its operation.</p>	<p>Parts may be adversely affected by heat, humidity and specimens or deteriorated by aging resulting in functional failures or may even lose their safety characteristic to cause accidents.</p>
 <b>DISCONTINUE USE</b>	<p>Always discontinue use when phenomena listed at right appear.</p> <ul style="list-style-type: none"> <li>•The rotor or bucket has been found to be damaged or corroded.</li> <li>•A burnt smell comes out of the equipment.</li> <li>•You receive a minor electrification when you touch the equipment body by a naked hand.</li> <li>•Some other abnormality or failure has been found occurring.</li> </ul>	<div style="background-color: yellow; padding: 5px; text-align: center;"><b>IMPORTANT</b></div> <p>To prevent occurrences of functional failures or accidents, turn off the power switch, pull out the power cable plug from the plug socket and be sure to contact your nearest Kubota Dealer, or an office of Kubota Corporation when there is no Kubota Dealer in your neighbourhood.</p>

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