

Tabletop Centrifuge



4000
4200

4000

General-purpose model
Maximum Speed — 6,000rpm
Maximum RCF — 5,350xg



Model 4000/4200 can centrifuge 68 x 15 mL tubes, 16 x 50 mL conical tubes and 4 x 250 mL bottles. They were developed to be used as general-purpose centrifuges.

Model 4000/4200 share these features:

- **Simple design and operation**
- **The large volume of a chamber with diameter of 38cm and a depth of 27.5cm. Samples can be easily inserted and retrieved.**
- **Motorized lid lock. (Patented)**
The lid is automatically locked when closed and automatically opens when rotation stops.
- **The operating status lamp on top of the lid can be seen at a distance. 7 colors of lamp are user-selectable. (Patented)**
- **5 kinds of buzzer indicating the end of operation are also user-selectable, and the volume can be adjusted.**

Main unit

Equipped with tachometer port to comply with GMP requirements. Actual rotor speed is easy to check.

Sample balance can be measured by the naked eye. (for rotors at 5,000 rpm or less)

Conditions for centrifugation can be set and displayed in two ways, RCF or rpm.

Settings for the rotation radius can also be changed, which helps obtain a precise RCF indication.

The centrifuges come with functions that allow a delay starting from the set time.

This function is really useful for serum separation.

The timer can be easily set to the desired combination of minutes and seconds.

For example: when you want to set the timer to 5 minutes and 30 seconds, it does not need to be changed to 330 seconds.

[For example]

	To set 3 minutes 30 seconds	To set 5 minutes 40 seconds
Conventional setting method*	210 seconds	340 seconds
New setting method*	3 minutes 30 seconds	5 minutes 40 seconds

* Compared to conventional model

Flashing memory function for easy spin-down operation.

Spin-down time from 1 to 99 seconds is memorized. The flashing key enables to call up the memorized spinning time.

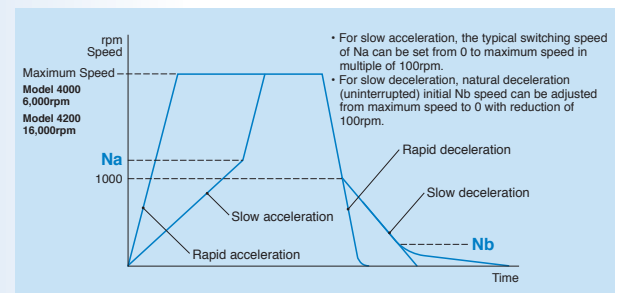
Compact design

Since the centrifuge cabinet has a shorter depth, there are more options for device location.



Free running can be used for the deceleration curves depending on the sample and objective.

Due to direct drives and a brushless motor, free running (natural deceleration) applies smooth deceleration, providing a clear separation.



4200

High speed model
Maximum Speed — 16,000rpm
Maximum RCF — 23,470xg



The micro rotor (accommodating 24 x 2 mL tubes) can spin up to 16,000 rpm/23,470 x g. A high-speed plate rotor can also be used.

Model 4000/4200 share these features:

Rotor

Set rotors without tools. (except RA-2724M)

Rotors can be set and changed without using tools.

Micro rotor RA-2724M can be operated at 16,000 rpm. (Model 4200.)

Tube racks (Code No.055-0880, 055-1140) have been developed to accommodate blood collecting tubes of various sizes (such as 5 mL, 7 mL and 10 mL) and 15 mL glass tubes simultaneously. (With the ST-722M and ST-2504MS swinging bucket rotors.)

Blood Collection tubes can be centrifuged by using these tube racks.

Biohazard-proof rotor that can be autoclaved

Swinging bucket rotors can be autoclaved at 121°C, and a fixed-angle rotors can be autoclaved at 134°C.

Biohazard-proof swinging bucket rotor ST-2504MS can spin up to 4,800 rpm/4,300 x g. Sealing caps (optional) can be used for separation of acid-fast bacteria.

A lightweight fixed-angle rotor AT-508C which accommodates 8 x 50 mL conical tubes is available.

Environment

The design has been developed to accommodate material recycling.

Parts made of resin materials are marked for easy sorting.

Automatic motorized lid lock is applied.

The lid automatically opens when centrifugation finishes. The lid can also be set to be opened by pressing the open key after centrifugation stops.




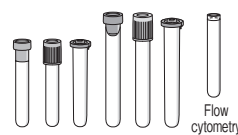



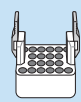



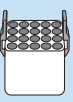


Image of the tube racks (code No.055-0880) for 5-10mL blood collection tubes.


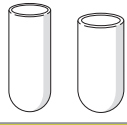
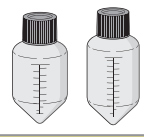

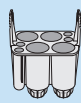


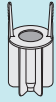



Table for centrifuge Code No.047-3830

It has 2 drawers which are convenient for storage, and the table can be fixed, set and adjusted.
50(W) x 55(D) x 53(H) cm

Table of Rotors, Buckets and Tube Racks for Model 4000/4200

Tube						
	Nominal Capacity	36 x 1.5/2mL	80 x 1.5/2mL	68 x 5~7mL thin blood collection tube	24 x 8mL CPT cell preparation tube	80 x 10mL (glass)
Tube size (mm) diam. x length	9.5~11 x 36~42		12~13.7 x 62~110		13.5~15.8 x 81~130	12~13.8 x 65~95
Maximum Speed rpm	4,800	3,500	3,500		3,500	3,500
Maximum RCF xg	4,250	2,290	2,300		2,310	2,080
Swinging Bucket Rotor  ST-722M Max 3,500 rpm Max 2,380 xg Autoclavable*	Tube Rack, Adaptor Code No. —	055-4800 	Bucket Code No. 053-5840 	Adaptor Code No. 055-0260  *1	055-6900  *2	055-4740 
	 ST-2504MS Max 4,800 rpm Max 4,300 xg Autoclavable*	Tube Rack, Adaptor Code No. 055-1190 	—	—	—	—

Tube					
	Nominal Capacity	4 x 50mL conical tube	16 x 50mL conical tube	4 x 100mL (glass)	4 x 175/225mL conical tube
Tube size (mm) diam. x length	30 x 117		38~46.5 x 83~120	38~46.5 x 113~120	61 x 118/ 61 x 137
Maximum Speed rpm	4,800	3,500	3,500	4,800	4,800
Maximum RCF xg	4,250	2,330	2,330	4,250	4,250
Swinging Bucket Rotor  ST-722M Max 3,500 rpm Max 2,380 xg Autoclavable*	Tube Rack, Adaptor Code No. —	055-6070 	055-4770 	—	—
	 ST-2504MS Max 4,800 rpm Max 4,300 xg Autoclavable*	Tube Rack, Adaptor Code No. 055-1170 	—	—	055-1200 

⚠ Rotor has prescribed operating life cycle and years of operation, after that the rotor must be replaced. For more details, please contact us.

* The number of times allowed for autoclaving is limited. For more details, please contact us.

68 x 10mL blood collection tube/15mL	28 x 5~10mL blood collection tube/15mL	48 x 5~10mL blood collection tube/15mL	16 x 15mL conical tube	28 x 15mL conical tube	32 x 15mL conical tube	4 x 50mL (glass)	8 x 50mL (glass)
15~17.2x52~110	12~17.2x72~110	12~16.8x72~110	17x121			27~36.4x85~110	
3,500	4,800	3,500	4,800	3,500	3,500	4,800	3,500
2,300	4,150	2,300	4,280	2,300	2,330	4,150	2,330
Bucket Code No. 053-5840		055-0880		Bucket Code No. 053-5840	055-4780		055-4760
	—		—			—	
	055-1140		055-1160			055-1150	
—		—		—	—		—


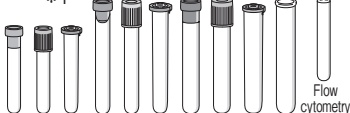
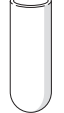









This convenient tube rack can accommodate various sizes (such as 5 mL, 7 mL and 10 mL) of blood collection tubes, and also 15 mL glass tubes.

- *1 5-7mL blood collection tubes which can be used are insepack II and ST series by SEKISUI, Venoject II by TERUMO, Neo tube by NIPRO and Vacutainer by BD. The tubes for flow cytometry can be used.
- *2 The blood collection tubes which can be used are Vacutainer 8mL CPT by BD.
- *3 5-10mL blood collection tubes which can be used are insepack II and ST series by SEKISUI, Venoject II by TERUMO, Neo tube by NIPRO and Vacutainer by BD. The tubes for flow cytometry can be used.

4 x 175/200/225mL conical tube	4 x 250mL *7	4 x 250mL *7	4 x Self-Standing sputum tube	Self-Standing sputum tube		
61x118/61x130/61x137	60~62x100~134.4		cap diam. φ48	8 x cap diam. φ48	12 x cap diam. φ37	16 x cap diam. φ31
3,500	3,500	4,800	4,800	3,500		
2,330	2,380	4,300	4,250	2,250	2,290	2,300
055-4850	055-4850			055-0430	055-0440	055-0450
		—	—			
		can be used without adaptors	055-1210			
—	—			—		


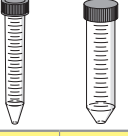

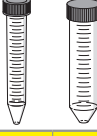











*4 175/225 mL conical BD Falcon tubes (Catalogue No.352076/No.352075) require cushions (Catalogue No.352090). Sealing cap cannot be used with 225mL conical tubes.
 *5 175/225 mL conical BD Falcon tubes (Catalogue No.352076/No.352075) require cushions (Catalogue No.352090).
 *6 200 mL Nalgene tubes (Code No.376813) require cushions (Code No.377585). Sealing cap cannot be used with 200mL conical tubes.
 *7 Nalgene, Helolab, and Corning 250mL flat bottom bottles can be used.

Table of Rotors, Buckets and Tube Racks for Model 4000/4200

	Micro tube	Blood collection tube, glass tube					50mL bottle				
		*1 					*2 				
Tube		Flow cytometry									
Nominal Capacity	48 x 1.5/2mL	16 x 5~10mL blood collection tube		16 x 15mL (glass)		4 x 7~10mL blood collection tube/15mL	8 x 7~10mL blood collection tube/15mL	32 x 7~10mL blood collection tube/15mL	4 x 50mL (glass)	8 x 50mL (glass)	
Tube size (mm) diam. x length	9.5~11 x 36~42	12~17 x 65~105					12~17.2 x 86~110			27~38 x 100~110	
Maximum Speed rpm	3,500	3,500		3,500 (5,000)		3,500	3,500		3,500 (5,000)	3,500	
Maximum RCF xg	1,880	2,220		2,230 (4,560)		2,230	2,270		2,270 (4,640)	2,270	
Swinging Bucket Rotor		Bucket Code No. 053-5040		053-4930		053-7110	053-7150	053-7130	053-7110	053-7150	
	ST-480M Max 3,500rpm Max 2,380 xg Autoclavable *										
	ST-504M Max 5,000rpm Max 4,860 xg Autoclavable *	—		—		053-7080	—	—	053-7080	—	
Adaptor Code No.	ST-480M · ST-504M		—		—	055-7400	055-7400	—	—	—	
Cushion Code No.	—		—		—	*3 024-1400	*3 024-1400	—	—	—	

Choose optional buckets, adaptors and cushions.

The maximum speed and RCF of ST-504M are indicated in the brackets ().

	Micro tube	conical tube					conical tube for biohazard-proof			
		16 x 15mL conical tube	4 x 15mL conical tube	4 x 50mL conical tube	8 x 15mL conical tube	8 x 50mL conical tube	4 x 50mL (Oak Ridge)	4 x 15mL conical tube	4 x 50mL conical tube	
Tube										
Nominal Capacity	48 x 1.5/2mL	16 x 15mL conical tube	4 x 15mL conical tube	4 x 50mL conical tube	8 x 15mL conical tube	8 x 50mL conical tube	4 x 50mL (Oak Ridge)	4 x 15mL conical tube	4 x 50mL conical tube	
Tube size (mm) diam. x length	9.5~11 x 36~42	17 x 121	17 x 121	30 x 117	17 x 121	30 x 117	27~29 x 100~108	17 x 121	30 x 117	
Maximum Speed rpm	3,500	3,500 (5,000)	3,500 (5,000)	3,500	3,500	3,500 (5,000)	3,500 (5,000)	3,500 (5,000)	3,500 (5,000)	
Maximum RCF xg	1,880	2,340	2,370 (4,840)	2,380 (4,860)	2,370	2,380	2,180 (4,440)	2,370 (4,840)	2,380 (4,860)	
Swinging Bucket Rotor		Bucket Code No. 053-4980		053-5010		053-5020		053-7110	053-0040	
	ST-480M Max 3,500rpm Max 2,380 xg Autoclavable *								 *4	
	ST-504M Max 5,000rpm Max 4,860 xg Autoclavable *	—		053-4970		—		053-7080	 *4	
Adaptor Code No.	ST-480M · ST-504M		055-1280		055-1280		—		055-1280	
	—						—			

⚠ Rotor has prescribed operating life cycle, after that the rotor must be replaced. For more details, please contact us.

* The number of times allowed for autoclaving is limited. For more details, please contact us.

*1 5-7mL blood collection tubes made by SEKISUI (Insepack II), Termo (Venoject II), Nipro (Neotube), Becton Dickinson (Vacutener) can be used. Tube for flow cytometry can also be used.

*2 7-10 mL blood collection tubes made by SEKISUI (Insepack II), Termo (Venoject II), Nipro (Neotube), Becton Dickinson (Vacutener) can be used.

*3 Optional cushions (Code No.024-1400) are required.

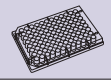
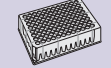
*4 Sealing caps and O-rings (silicone) are equipped with buckets.

Plate rotor


PT-21M

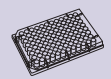

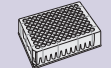


Autoclavable at 121°C

Test plates	Nominal Capacity	Plate size (mm)	Maximum Speed rpm	Maximum RCF x g	Bucket Code No.
	2 x PCR plate *1 6 x MTP	86 (W) x 130 (D) x 62 (H)	5,000	3,100	Equipped with rotor
	2 x DWP *1				

PT-89M



Test plates	Nominal Capacity	Plate size (mm)	Maximum Speed rpm	Maximum RCF x g	Adaptor Code No.
	2 x PCR plate *1 8 x MTP	86 (W) x 130 (D) x 89 (H)	2,400	1,080	 055-6370 *2
	4 x DWP *1				

Micro rotor




RA-2724M

Lid is equipped with rotor.



Autoclavable at 134°C

This rotor is not a toolless rotor

Tube	Nominal Capacity	Tube size (mm) diam. x length	4000		4200		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	
	12 x 0.2mL PCR	5.9~6.3 x 20~24	—	—	16,000	16,890	—
	12 x 0.5mL	7~7.9 x 25~34	—	—	16,000	19,180	—
	24 x 1.5/2mL	9.5~11 x 36~42	—	—	16,000	23,470	—




AT-2730M

Lid is equipped with rotor.



Autoclavable at 134°C














This is a biosealed rotor. Samples will not leak out from the rotor even if the tubes get broken. The anti-biohazard rotor is accredited by the CAMR standards.

Tube	Nominal Capacity	Tube size (mm) diam. x length	4000		4200		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	
	14 x 0.2mL PCR	5.9~6.3 x 20~24	—	—	14,000	16,430	—
	14 x 0.5mL	7~7.9 x 25~34	—	—	14,000	17,530	—
	30 x 1.5/2mL	9.5~11 x 36~42	—	—	14,000	20,820	—

Fixed angle rotor

AT-508C



Tube	Nominal Capacity	Tube size (mm) diam. x length	4000/4200		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF x g	
	8 x 12mL (plastic) *3	15.7~16.4 x 102~105	6,000	5,110	 055-1120
	8 x 14mL *4	17 x 100	6,000	4,990	 055-0550
	8 x 15mL Conical tube	17 x 121	6,000	5,270	 055-1280
	8 x 50mL (plastic) *5	26.4~28.7 x 98~115	6,000	4,990	 055-1110
	8 x 50mL Conical tube	30 x 117	6,000	5,350	—
	① Vivaspin 2 ② Vivaspin 6	16.7 x 129	6,000	5,270	 055-1280
	③ Vivaspin 15R/20	30 x 117	6,000	5,350	—
	④ Amicon Ultra-4	17.3 x 124	6,000	5,270	 055-1280
	⑤ Amicon Ultra-15	29.7 x 121	5,800	5,000	—

⚠ Rotor has prescribed operating life cycle, after that the rotor must be replaced. For more details, please contact us.

* The number of times allowed for autoclaving is limited. For more details, please contact us.

*1 Test the strength of plates before centrifuging. The bottom and lower plate might be damaged.

*2 Optional tray is applicable.

*3 This tube is a Nalgene's tube (catalogue no.3110-0120/PPCO, 3117-0120/PC).

*4 This tube is a Falcon tube (catalogue no.352006, 352018, 352059).

*5 This tube is a Nalgene's tube (catalogue no.3110-0500/PPCO, 3110-9500/PC, 3117-9500/PC).

Specifications

Model 4000/4200

- Maximum Speed ● 6,000rpm (4000) / 16,000rpm (4200)
- Maximum RCF ● 5,350xg (4000) / 23,470xg (4200)
- Maximum Capacity ● 1,020mL
- Control system ● inverter microprocessor control, speed, RCF, time, acceleration / deceleration, 5 memories
- Alarm display ● Lid open, imbalance, over speed, function for detecting an occurrence of electrical abnormality in motor, inverter, speed sensor, rotor set state, lid interlock
- Acceleration/Deceleration ● Acc: rapid, slow / Dec: rapid, slow, free running
- Speed setting and indication ● Digital display, 10rpm steps
- RCF setting and indication ● Digital display, 10xg steps
- Timer setting and indication ● Digital display, with hold and memory flashing
1 sec. to 99 min. / 1 sec. increments
- Power requirements ● Single phase 110/115±10% V, 50/60Hz, 15A
Single phase 220/230±10% V, 50/60Hz, 10A
- Rated voltage and rated current ● 110V 7.2A, 115V 6.6A, 220V 3.5A, 230V 3.4A (4000)
110V 7.2A, 115V 7.5A, 220V 3.5A, 230V 3.3A (4200)
- Power consumption and heat output ● 110/115V 540W, 1.9MJ/h 220/230V 560W, 2.0MJ/h (4000)
110/115V 540W, 1.9MJ/h 220/230V 550W, 2.0MJ/h (4200)
- Dimensions, weight ● 44(W) x 56(D) x 31(H) cm, height when the lid is open:75cm^{*1}
110/115V 36kg, 220/230V 38kg (4000)
110/115V 38kg, 220/230V 40kg (4200)
- Conforming standard ● IEC 61010-2-020
CE Marking (AC220V and 230V version)

(*1) Not including projections.

All specifications and external appearance 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 instructions given in the relevant Instruction & Service Manual for operating centrifuges.

Kubota has acquired ISO 9001 and ISO 13485 certification.

Precautions for use

Products in this catalogue are designed for use only by people who have the requisite technical knowledge, and must always be used with considerable care and only for their intended purpose. People who do not have adequate technical knowledge or training should only use the products under appropriate supervision by someone with expert knowledge, or else accidents are likely to occur.



Prohibited

Please immediately stop using the products in any of the cases listed on the right.

- The rotor or buckets appear to be damaged or corroded.
- When the replacement period (years of operation, operating lifetime) of a rotor has passed.
- The equipment emits a burning smell or becomes abnormally hot.
- You receive a weak electric shock when you touch the equipment with your bare hands.
- When any other abnormality or indication of failure is noticed.

IMPORTANT

If any of the cases listed at the left occurs, immediately turn off the power, disconnect the power cable plug or connecting terminals from the main power outlet, place a "Do not use" sign on the unit, and contact the nearest branch of Kubota Corporation.



Safety Precautions

To use the equipment safely, be sure to read the instruction manual carefully before you start operations.

Do not misplace the instruction manual. Keep the instruction manual nearby so that you can refer to it whenever necessary.

- The term of supplying spare parts for repair is 7 years after discontinuation of production (except spare parts which we are unable to procure).
- This catalogue is not for distribution in the USA, Canada and Mexico as products shown are not for sale in these countries.

KUBOTA CORPORATION

29-9 Hongo 3-chome, Bunkyo-ku, Tokyo 113-0033, Japan
Tel +81 3 3815 1331 Fax +81 3 3814 2574