

# Table Top Centrifuge



**4000**

**General-purpose model**  
MAX. 6,000rpm  
MAX. 5,350xg

**4200**

**High Speed model**  
MAX. 16,000rpm  
MAX. 23,470xg

# 4000

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



The table-top centrifuge can centrifuge 68 x 15 mL tubes, 16 x 50 mL Conical tubes, or 4 x 250 mL bottles. It was developed for use as a general-purpose centrifuge.

The 4000/4200 models share these features:

- Simple design and operability
- The chamber opening is 27.5 cm high and 38 cm wide (full-open type). Samples can be easily inserted and removed.
- An automatic interlock lid is employed. (Patent pending)  
 The lid automatically locks when closed and automatically opens when rotation stops.
- The operating status lamp on top of the lid can be seen at a distance.  
 Seven lamp colors are user-selectable. (Patented)
- Five different buzzer sounds indicating the end of operation can be selected, and the volume can be adjusted.

### Main unit

A viewing port is employed so that rotation of the rotor can be observed. This can also be used during GMP inspection.

Centrifuging is possible with the samples just balanced by eye.

(Not applicable when using swinging bucket or fixed-angle rotors at 5,000 rpm or higher.)

Conditions for centrifuging can be set and displayed in two ways, i.e. g's (RCF) and rpm (speed).

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

The centrifuge comes with a function that allows a delayed start from when the samples are set.

(Patent pending)

The delayed operation start is particularly useful for serum separation.

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

When setting the timer to 5 minutes 30 seconds, for example, there is no need to convert this time interval to 330 seconds for input.

[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 other conventional company units

There is a memory flashing function for easy spin-down operation. (Patented)

The duration of the spin-down operation, from 1 to 99 seconds, is automatically memorized. At the next operation, simply pressing a convenient key will start the spin-down operation for the memorized duration.

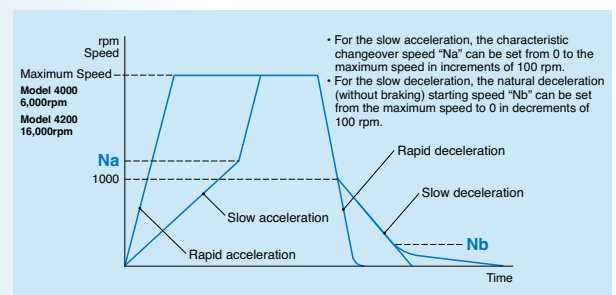
### Compact design

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



### Free run can be used for the deceleration curve according to the sample and objective.

Due to the direct drive and a brushless motor, free run (natural deceleration) applies smooth deceleration, providing a clear separation plane.



# 4200

## High speed model

**Maximum Speed — 16,000rpm**  
**Maximum RCF — 23,470xg**



**The Microtiter rotor (accommodating 24 x 2 mL tubes) is rated for 16,000 rpm/23,470 x g. A high-speed microtiter rotor can also be used.**

The 4000/4200 models share these features:

### Rotor

**A tool-less rotor is employed, for easy rotor changing.** (Excluding the RA-2724M.)

No tools are required when setting or changing applicable rotors.

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

**A tube rack (Code No.055-0880, 055-1140) has been developed to accommodate blood collecting tubes of various sizes (such as 5 mL, 7 mL, 10 mL) and 15 mL glass tubes simultaneously.** (With the ST-722M, ST-2504MS swinging bucket rotor.)

Blood collecting tubes can be centrifuged using this tube rack.

**Biohazard-proof rotor that can be autoclaved**

There is a swinging bucket rotor that can be autoclaved at 121°C, and a fixed-angle rotor that can be autoclaved at 134°C.

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

**A lightweight fixed-angle rotor AT-508C accommodating 8 x 50 mL Conical tubes has been developed.**

The RCF, which is important for separation, is as much as 5,350 x g. Compare the RCF with others.

### Environment

The design has been developed to accommodate the recycling of materials.

Parts made of resin materials are marked so that they can be easily sorted.

**An automatic interlock lid is employed.**

The lid automatically opens when rotation stops.

The lid can also be set to be opened by pressing the lid open key after rotation stops.



The unit shown in the picture is used with the combination tube rack (Code No. 055-0880) for various size of blood collection tubes.


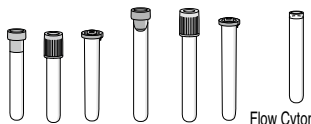








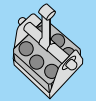



**A table with casters for mounting the centrifuge.**  
Code No.047-3830

It has 2 drawers which are convenient for storage, and can be fixed with an adjuster.

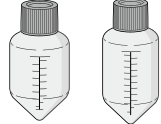




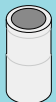
50(W) x 55(D) x 53(H) cm

# Rotor, Bucket, Tube Rack Table for Model 4000/4200

Swinging bucket rotor	Tube				 * 2 Flow Cytometer	
	Nominal Capacity	36 x 1.5/2mL	48 x 1.5/2mL	80 x 1.5/2mL	24 x 5-7mL * 1 narrow blood collecting tube	68 x 5 ~ 7mL narrow blood collecting tube
	Tube size (mm) diam. x length	9.5-11 x 36-42	9.5-11 x 36-42	9.5-11 x 36-42	12.5-13.3 x 46-110	12.5 ~ 13.7 x 62 ~ 110
	Maximum Speed rpm	3,500/4,800	3,500	3,500	3,500	3,500
	Maximum RCF x g	2,260/4,250	1,880	2,290	2,270	2,300
 <b>ST-722M</b> Max 3,500 rpm Max 2,380 x g Autoclavable * Choose either bucket.	Tube Rack, Adaptor Code No. Bucket Code No. 053-5820 Buckets are optional.		055-4800		Bucket Code No. 053-5840 Adaptor Code No. 055-0260	
	Tube Rack, Adaptor Code No. 055-1190 Bucket Code No. 053-0020 Sealing caps and O-rings Code No.055-0964 Buckets and sealing caps are optional.		055-1190			
 <b>ST-2504MS</b> Max 4,800 rpm Max 4,300 x g Autoclavable *	Tube Rack, Adaptor Code No. Sealing caps and O-rings Code No.055-0964 Buckets are equipped with rotor.					
	Tube Rack, Adaptor Code No. 055-1190 Sealing caps and O-rings Code No.055-0964 Buckets and sealing caps are optional.		055-1190			
 <b>ST-480M</b> Max 3,500 rpm Max 2,380 x g Autoclavable *	Bucket Code No.		053-5040		053-5850	
	Bucket Code No.					
 <b>ST-504M</b> Max 5,000 rpm Max 4,860 x g Autoclavable *	Bucket Code No.					
	Bucket Code No.					

\* The number of times allowed for autoclaving are limited. Please refer an instruction manual.

The maximum speed and maximum RCF of ST-722M indicated on the left in red. The maximum speed and maximum RCF of ST-2504MS indicated on the right in blue.

Swinging bucket rotor	Tube				
	Nominal Capacity	4 x 100mL (glass)	4 x 100mL (glass)	4 x 175/225mL Conical bottle	
	Tube size (mm) diam. x length	38 ~ 46.5 x 83 ~ 120	38 ~ 46.5 x 113 ~ 120	61 x 118/61 x 137	
	Maximum Speed rpm	3,500	3,500/4,800	3,500/4,800	
	Maximum RCF x g	2,330	2,260/4,250	2,260/4,250	
 <b>ST-722M</b> Max 3,500 rpm Max 2,380 x g Autoclavable * Choose either bucket.	Tube Rack, Adaptor Code No. 053-5820 Buckets are optional.	055-4770			
	Tube Rack, Adaptor Code No. 053-0020 Sealing caps and O-rings Code No.055-0964 Buckets and sealing caps are optional.			055-1200	
 <b>ST-2504MS</b> Max 4,800 rpm Max 4,300 x g Autoclavable *	Tube Rack, Adaptor Code No. Sealing caps and O-rings Code No.055-0964 Buckets are equipped with rotor.				
	Tube Rack, Adaptor Code No. 055-1200 Sealing caps are optional.		055-1200		* 9


















\* The number of times allowed for autoclaving are limited. Please refer an instruction manual.

The maximum speed and maximum RCF of ST-722M indicated on the left in red. The maximum speed and maximum RCF of ST-2504MS indicated on the right in blue.

24 x 8mL CPT cell preparation tube	24 x 10mL (glass)	80 x 10mL (glass)	32 x 10mL blood collecting tube/15mL (glass)	68 x 10mL blood collecting tube/15mL (glass)	28 x 5-10mL blood collecting tube/15mL (glass)	48 x 5-10mL blood collecting tube/15mL (glass)	16 x 15mL Conical tube	16 x 15mL Conical tube	28 x 15mL Conical tube
13.5 ~ 15.8 x 81 ~ 130	12.5 ~ 13.3 x 46 ~ 110	12.5 ~ 13.8 x 65 ~ 95	15 ~ 17.2 x 86 ~ 110	15 ~ 17.2 x 52 ~ 110	12 ~ 17.2 x 72 ~ 110	12 ~ 17.2 x 72 ~ 110	17 x 121	17 x 121	17 x 121
3,500	3,500	3,500	3,500	3,500	3,500/4,800	3,500	3,500	3,500/4,800	3,500
2,310	2,270	2,260	2,270	2,300	2,200/4,150	2,330	2,340	2,270/4,280	2,300
055-6900 * 3		055-4740 		Bucket Code No. 053-5840 		055-0880 * 4			Bucket Code No. 053-5840 
					055-1140 * 4			055-1160 	
					055-1140 * 4			055-1160 	
	053-5850 		053-7130 				053-4980 		

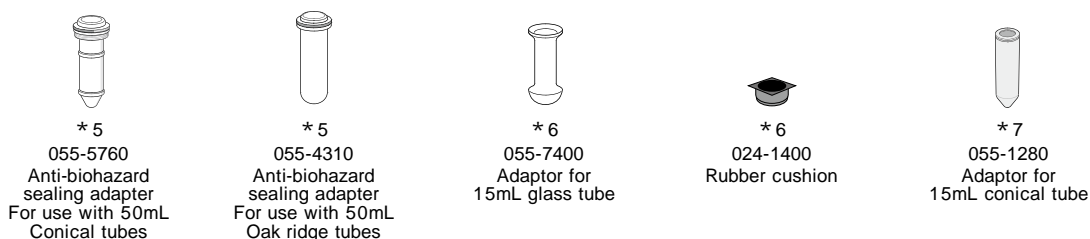
↑ ↑  
**This convenient tube rack can accommodate blood collecting tubes of various sizes (such as 5 mL, 7 mL, 10 mL), as well as 15 mL glass tubes.**

4 x 175/200/225mL Conical bottle	4 x 250mL * 11	4 x 250mL * 11	4 x Self-Standing for sputum	Self-Standing for sputum		
61 x 118/61 x 130/61 x 137	60 ~ 61.8 x 100 ~ 134.4	60 ~ 61.8 x 100 ~ 134.4	cap size 48 ~ 31	8 x cap size 48	12 x cap size 37	16 x cap size 31
3,500	3,500	3,500/4,800	3,500/4,800	3,500	3,500	3,500
2,330	2,380	2,290/4,300	2,260/4,250	2,250	2,290	2,300
055-4850 * 8 * 10	055-4850 			055-0430 	055-0440 	055-0450 
		can be used without adaptors	055-1210 			
		can be used without adaptors	055-1210 			

								
32 x 15mL Conical tube	4 x 50 mL (glass)	4 x 50 mL (glass)	8 x 50 mL (glass)	8 x 50 mL (glass)	4 x 50 mL Conical tube	4 x 50 mL Conical tube	8 x 50 mL Conical tube	16 x 50 mL Conical tube
17 x 121	27~38 x 100~110	27~36.4 x 85~110	27~36.4 x 85~110	27~38 x 100~110	30 x 117	30 x 117	30 x 117	30 x 117
3,500	3,500( 5,000 )	3,500/4,800	3,500	3,500	3,500( 5,000 )	3,500/4,800	3,500	3,500
2,330	2,270( 4,640 )	2,200/4,150	2,330	2,270	2,380( 4,860 )	2,260/4,250	2,380	2,330
055-4780 			055-4760 					055-6070 
		055-1150 				055-1170 		
		055-1150 				055-1170 		
	053-7110  *5 *6		053-7150  *6		053-5010  *7	<b>NEW</b> 053-0040  *7 *8		053-5020  *7
	053-7080  *5 *6				053-4970  *7	<b>NEW</b> 053-0050  *7 *8		

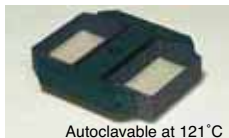
The maximum speed and maximum RCF of ST-504M indicated in the brackets ( ).

↑  
Equipped with sealing cap (patent pending)



- \*1 Maximum 16 tubes of 5-7 mL blood collecting tubes made by Terumo (Venoject II) can be used.
- \*2 5-7mL blood collecting tubes made by SEKISUI (Insepack II), Terumo (Venoject II), Nipro (Neotube), Beckton Dickinson (Vacutener) can be used. Tube for flow cytometry can also be used.
- \*3 Vacutener 8 mL blood collecting tubes for CPT cell separation (nominal 16 x 125) made by Beckton Dickinson can be used.
- \*4 5-10mL blood collecting tubes made by SEKISUI (Insepack II), Terumo (Venoject II), Nipro (Neotube), Beckton Dickinson (Vacutener) can be used. Tube for flow cytometry can also be used.
- \*5 Sealing adaptors for biohazard-proof (for 50 mL conical tube/Code No.055-5760) (for 50 mL OakRidge tube/Code No.055-4310) can be used.
- \*6 With adaptors (Code No.055-7400) and cushions (Code No.024-1400), 15mL glass tubes can be used.
- \*7 With adaptors (Code No.055-1280), 15mL conical tubes can be used.
- \*8 This is sealing-bucket and it is equipped with sealing cap and O-ring (silicone).
- \*9 175/225 mL BD Falcon tubes (Code No.352076/No.352075) require cushions (Code No.352090).
- \*10 200 mL Nunc bottles (Code No.376813) require cushions (Code No.377585).
- \*11 Nalgene and Herolab 250mL flat bottom bottles can be used.
- \*12 Various sputum tube capacities can be used. Contact our distributor for details.
- \*13 Verify plate strength before centrifuging. Plates in lower position may fracture.
- \*14 Optional tray is available (Code No.055-6370).
- \*15 Nalgene plastic tube (Code No.3110-0120, No.3117-0120).
- \*16 BD Falcon plastic tube (Code No.352006, 352018, 352059).
- \*17 Nalgene plastic tube (Code No.3110-0500, No.3110-9500, No.3117-9500).

The number of times allowed for autoclaving are limited. Please refer an instruction manual.

**Micro-plate rotor****PT-21M**

Test plates	Nominal Capacity	Plate size (mm) diam. x length	4000		4200		Bucket Code No.
			Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	
2 x PCR plate 6 x micro-plate *13	86 (W) x 128 (D) x 62 (H)	86 (W) x 128 (D) x 62 (H)	5,000	3,100	5,000	3,100	Equipped with rotor
2 x deepwell-plate *13							

**PT-89M**

Test plates	Nominal Capacity	Plate size (mm) diam. x length	4000		4200		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	
2 x PCR plate 8 x micro-plate *13	4 x deepwell-plate *13	86 (W) x 130 (D) x 89 (H)	2,400	1,080	2,400	1,080	 055-6370 *14

**Micro rotor****RA-2724M**

This rotor is not tool-less 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	
24 x 0.4mL		5.4 ~ 6.1 x 26 ~ 48			16,000	23,180	055-7580
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**

This is a bioshield rotor. Samples will not leak out from the rotor even if the tubes break. It has received accreditation from the C.A.M.R. of the UK.

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	
30 x 0.4mL		5.4 ~ 6.1 x 26 ~ 48			14,000	20,380	055-1240
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	21,040	

**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	Maximum Speed rpm	Maximum RCF x g	
8 x 12mL (plastic) *15		15.8 ~ 16.5 x 97 ~ 120	6,000	5,110	6,000	5,110	055-1120
8 x 14mL *16		17 x 100	6,000	4,990	6,000	4,990	055-0550
8 x 15mL Conical tube		17 x 121	6,000	5,270	6,000	5,270	055-1280
8 x 50mL (plastic) *17		26.4 ~ 28.7 x 98 ~ 115	6,000	4,990	6,000	4,990	055-1110
8 x 50mL Conical tube		30 x 117	6,000	5,350	6,000	5,350	
 Sartorius	Vivaspin 2 Vivaspin 6	16.7 x 129	6,000	5,270	6,000	5,270	055-1280
	Vivaspin 20	30 x 117	6,000	5,350	6,000	5,350	
 Millipore	Amicon Ultra Free-CL	16.3 x 77	6,000	4,270	6,000	4,270	055-1330
	Amicon Ultra-4	17 x 129	6,000	5,270	6,000	5,270	055-1280
	Amicon Ultra-15	30 x 121	6,000	5,350	6,000	5,350	

# Specifications

## Model 4000/4200

Maximum Speed	6,000rpm (4000) / 16,000pm (4200)
Maximum RCF	5,350xg (4000) / 23,470xg (4200)
Maximum Capacity	1,020mL
Drive system	Direct drive (Direct connection with brushless motor)
Control system	Micro-processor control (Brushless motor)
Acceleration / Deceleration	Speed, RCF, Time, Acceleration & Deceleration, 5 channel memories Acceleration : 2 level selections, Rapid and Slow Deceleration : 3 level selections, Rapid, Slow and Natural deceleration
Alarm display	Lid open, Imbalance, Over speed, Rotor mounting abnormally, Function for detecting an occurrence of electrical abnormally in motor, inverter, speed sensor
Speed setting	Digital display From 300 to 6,000rpm (4000) / 300 to 16,000rpm (4200), 10rpm increments
Speed indication	Digital display From 0 to 6,300rpm (4000) / 0 to 16,300rpm (4200), 10rpm increments
RCF setting	Digital display From 20 to 5,350xg (4000) / 20 to 23,470xg (4200), 10xg increments
RCF indication	Digital display From 0 to 5,900xg (4000) / 0 to 24,360xg (4200), 10xg increments
Timer setting and indication	Digital display with Hold from 1 sec to 99 sec, in 1 sec increment setting / indication from 1 min to 99 min, in 1 min increment setting / indication from 1 sec to 99 min 59 sec, combination setting / indication of minutes and seconds Memory flushing for spin down
Sounds for informing centrifuging stop	5 types and No Sounding (Volume : Large/Small)
Colors of lamps to inform centrifuging condition	7 types and No flashing
Rated voltage and Rated current	(Model 4000) 115V, 6.6A. 220V, 3.5A. 230V, 3.4A (Model 4200) 115V, 7.5A. 220V, 3.5A. 230V, 3.3A
Power consumption and Heat output	560W · 2.0MJ/h (4000), 550W · 2.0MJ/h (4200)
Power requirements	Single phase AC115V±10%, 50/60Hz, 15A Single phase AC220V±10%, 230V±10%, 50/60Hz, 8A
Dimensions	44(W) x 56(D) x 31(H) cm
Weight	36kg (4000) / 38kg (4000 CE marking) 38kg (4200) / 40kg (4200 CE marking)
Certificates of conformity	IEC 61010-2-020 CE Marking

All specifications and external appearance subject to change without notice.

\* On Model 4000/4200 only use KUBOTA made rotor, adapter and tube rack. Do not attempt use rotors, adapters or tube racks made by other manufacturers.

\* The rotor mentioned in the catalogue is usable on other KUBOTA centrifuge models. For details, refer to the catalogues relevant to each model.

\* Follow instructions given in the relevant Instruction & Service Manual for operating centrifuges.

**URL <http://www.centrifuge.jp>**

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

### NOTE

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



**DISCONTINUE USE INDICATIONS**

Always discontinue use if any of the conditions listed at right are evident.

- The rotor or bucket appears to be damaged or corroded.
- The defined lifetime of the rotor expires.
- The equipment emits a burnt smell.
- You receive a minor electric shock when you touch the equipment with your bare hand.
- Any other abnormality or indication of failure is noticed.

### IMPORTANT

In the event of any observed abnormality in the equipment or its parts, to prevent occurrence of functional failure or accidents, immediately turn off the power switch, disconnect the power cable plug from the mains socket and contact your local distributor or Kubota Corporation if there is no local distributor in your neighbourhood.



### Safety Precautions

For your safe use of the equipment, be sure to read the instruction manual carefully before you start operations.

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

• Spare parts for repair are typically available for a period of 10 years after production is discontinued (except when spare parts cannot be procured).

• This catalogue is not for distribution in the USA, Canada or Mexico, as the products shown are not for sale in these countries.

# KUBOTA CORPORATION

<http://www.centrifuge.jp>

29-9 Hongo 3-chome, Bunkyo-ku, Tokyo 113-0033, Japan

Tel +81 3 3815 1331 Fax +81 3 3814 2574

E-mail: [f-trade@kubotacorp.co.jp](mailto:f-trade@kubotacorp.co.jp)