



Benchtop High Speed Refrigerated Centrifuge

M500TR F-gas free



new design,
innovation
and
user-oriented

➤ Intuitive Operational Design

A centrifuge required for all types of experiments and research. The thinking was focused on providing centrifugation results to researchers as soon as possible. For this purpose, two features were incorporated.

The first was the use of a knob to change centrifugation conditions. This was to allow intuitive operations and to allow quick adjustments to get the desired rotational speed/centrifugal force and time.

The second was a rotor that can be used with laboratory tubes containing volumes of 2 mL or less without needing to change the rotor. This was to reduce the laborious effort of replacing rotors and to eliminate the time taken for replacements.

The M500TR instrument is a centrifuge packed with KUBOTA's sentiments towards researchers.



Benchtop High Speed Refrigerated Centrifuge

M500TR

Refrigerated

IEC61010-2-020

F-gas free*

* F-gas free models use the same rotor, bucket and other accessories and offer the same maximum speed, RCF and capacity as conventional models.

Intuitive
Operational
Design

➤ Innovation

Three types of newly developed rotors

Two types of micro-rotors, AF-2024/AF-2524, and a 50 mL conical tube rotor, AF-5006C, for the laboratory were newly added to the lineup. Please refer to pages 3 and 4 for details.



AF-2024
24×2mL



AF-2524
24×2mL
10×0.5mL
2×0.2mL 8-well PCR
16×0.2mL PCR



AF-5006C
6×50mL conical tubes

Mixed Loading **MIX**

KUBOTA achieved Mixed Loading where two different types of buckets or tube racks can be centrifuged at the same time.

Moreover, frequently used combinations of buckets are offered as a set as standard so that the accessories become more affordable.

Available swing rotors:

SF-724, SF-2504S, SF-5004



SF-724
16×15mL conical tubes;
8×50mL conical tubes



SF-2504S
8×15mL conical tubes;
2×50mL conical tubes



SF-5004
14×15mL conical tubes;
6×50mL conical tubes



Fail-Safe Function Early detection of Imbalance

(Only AF-5004CH, AF-5006C, AF-5008C, SF-724, SF-2504S, SF-5004)

A big imbalance usually causes contact between bucket and chamber and breakage. The impact can damage both the motor and shaft.

Fixing this damage requires high costs and the centrifuge cannot be used during repair. KUBOTA prevents damage to centrifugal tubes and loss of time by the fail-safe function, as well as providing a centrifuge that can be used comfortably.



Check the door lock sensors



Results will be displayed

The functionality for self-checks to support with daily inspections of centrifuges

Merely by operating the centrifuge according to the centrifuge display, the working status of various sensors and door lock functions can be easily checked during daily inspections. This is a new functionality that was developed to ensure safer and more reliable use of the centrifuge.

The self-check functionality checks the following items to aid with determining the pass/fail status.

Door lock sensors, rotor sensors, imbalance sensors, temperature sensors, rotation sensors, inverters, operational tests, displays of rotor usage frequency.

Innovation

➤ Innovation—Three types of newly developed rotors

A newly developed 5-in-1 rotor. This one rotor is sufficient for use with various microtubes.

- Can handle tubes containing volumes ≤ 2 mL used in the lab, including 2.0 mL, 1.5 mL, 0.5 mL, 0.2 mL PCR and 0.2 mL 8-strip PCR tubes.



AF-2524
24×2mL 2×0.2mL 8-well PCR
10×0.5mL 16×0.2mL PCR



- If spin columns/filtration tubes are centrifuged, the cap of the microtube can be left open and centrifuged. The AF-2524 rotor is designed to support the tube cap to reduce the risk of tube cap breakage.

(Use at a maximum rotational speed of 13,000 rpm or less in such instances)



- 0.2 mL 8-strip PCR tubes can be placed in one row on each side (on the left and right) and, if 8-strip tubes are not used, 0.2 mL PCR tubes can be inserted and used.



- Tube slots are numbered for 2 mL tubes and tube slots are consecutive for 0.5 mL and 0.2 mL tubes, making the setting of tubes easy with the point symmetry design.



- 24 screw-cap type microtainers used in medical facilities can be utilized at the same time.

(Please inquire about the number of screw-cap type microtubes for laboratory use that can be used since cap diameters differ across manufacturers)

Standard rotor for 24 microtubes. Maximum rotational speed: 15,300 rpm, maximum centrifugal force: 22,250 x g.

- Accelerates to 15,300 rpm in approximately 23 seconds.
- Considering the pipetting to be performed after centrifugation, the centrifuge tube angle was designed to be 45°.
- With an (optional) adapter, 0.5 mL and 0.2 mL PCR tubes can be used.
- With the tube slots being numbered, tubes can be easily set with the point symmetry design.



AF-2024
24×2mL



- 12 screw-cap type microtainers used in medical facilities can be utilized at the same time.

(Please inquire about the number of screw-cap type microtubes for laboratory use that can be used since cap diameters differ across manufacturers)

Innovation

50 mL conical tubes can be centrifuged at a maximum centrifugal force of 18,710 x g.

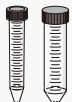
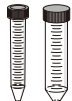
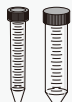
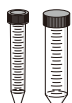
- Employing a mechanism to keep caps down, six 50 mL conical tubes can be centrifuged simultaneously at a maximum centrifugal force of 18,710 x g.
- An adaptor for 15 mL conical tubes can be used.
- Available dedicated tool for convenient rotor removal ^{*3} (optional)
- The centrifuge tube angle was designed to be 30°.



AF-5006C
6 × 50mL conical tubes

Rotor specifications for 50mL Conical tube

The numbers in parentheses () show rotational speed and centrifugal force at which samples at temperatures not higher than 4°C can be centrifuged.

アングルロータ	Rotor image	Tube	Nominal capacity	Number of tube	Tube size:Diameter × Length(mm)	Max. speed (rpm)	Max. RCF (×g)	Adaptor Code No.
AF-5004CH ^{*3}	 Autoclavable*		50mL Conical tube ^{*1}	4	30×117	15,000	22,140	—
			15mL Conical tube	4	17×121	15,000	21,130	055-1250(Set of 4)
AF-5004CS	 BS Autoclavable*		50mL Conical tube ^{*1}	4	30×117	12,000	14,970	—
			15mL Conical tube	4	17×121	12,000	14,490	055-1250(Set of 4) 055-1280(Set of 2)
AF-5006C ^{*3}	 Autoclavable*		50mL Conical tube ^{*1}	6	30×117.2	13,000 (12,500)	18,710 (17,290)	—
			15mL Conical tube	6	17×122	13,000 (12,500)	18,140 (16,770)	055-1250(Set of 4) 055-1280(Set of 2) ^{*2}
AF-5008C ^{*3}			50mL Conical tube ^{*1}	8	30×117	10,000 (9,500)	13,420 (12,110)	—
			15mL Conical tube	8	17×121	10,000 (9,500)	13,190 (11,910)	055-1250(Set of 4) 055-1280(Set of 2)

Rotors have life cycles and service lives. Please contact us for more details.

※The number of cycles allowed for autoclaving and temperature limited. For more details, please contact us.

*1 Cap diameters of up to 36 mm can be used for products manufactured by Iwaki, Greiner, Corning, Sarstedt, Sumilon, Violamo, Falcon, Fisher, Labcon and Nunc.

*2 When using 055-1280, use this at a maximum rotational speed of 11,000 rpm or less.

*3 Dedicated (optional) tools are available for the three rotors: AF-5004CH (Code No. 028-0627), AF-5006C (Code No. 028-0639), and AF-5008C (Code No. 028-0631).

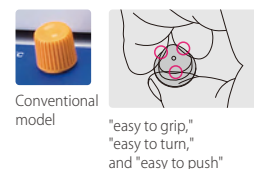
For micro/medium capacity angle rotors, multi-rotors, plate rotors, and swing rotors, please refer to pages 7 to 10.

Innovation

➤ Responding to User Needs in a Multitude of Ways

User Interface

- To allow quick adjustments to the desired centrifugation conditions set and to allow fine adjustments, a knob was adopted to change the rotational speed/centrifugal force and time.
With particular focus placed on this being "easy to grip," "easy to turn," and "easy to push" due to use being on a daily basis, we arrived at a unique, rounded, triangular shape for the knob.
Effort to make this easy to grip with three fingers and easy to turn
- Three Short-Cut Program Keys for Direct Access.



Equipped with self-luminous display (VFD)



- Equipped with technology unique to Japan, VFD (Vacuum fluorescent display)
- Visibility of display generally depends on the contrast ratio of dots in the display. VFD dots are self-luminous and other parts are blacked-out. Therefore, the contrast ratio is large and displays can be identified clearly from a distance.
- With a minimum viewing angle of 126°, the wide viewing angle allows you to see the display even from an angle.



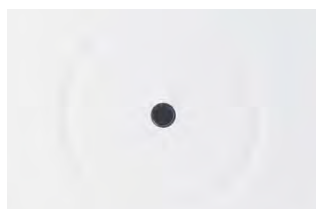
Equipped with a key lock function



- Changes to centrifugation conditions and operations during centrifugation are controlled with passwords. Since this functionality prevents erroneous operations and changes to centrifugation conditions by third parties, this is suitable for both routine operations such as the centrifugation of important samples and routine centrifugation under the same conditions.



When the key lock function is enabled, the key mark on the display lights up to the left of the display for time.



Viewport



- It responds to speed measurement for inspections by using a tachometer.

Power-saving mode



- M500TR automatically stops the refrigeration process and turns off the display.
Power consumption in this mode is approximately 9 W.



Motorized lid lock

- Electric door locks are used for the door locks. A mere light press of the door activates the motor for the automatic lock.
- Doors are made of lightweight materials and a free fall stopping mechanism is used so that open doors do not suddenly fall. Doors can also be stopped at the open position.

user-oriented

➤ New Value

F-gas Free Models MSOOTR

Centrifuges using a truly eco-friendly refrigerant: New refrigerant R1234yf with Global Warming Potential (GWP) of less than 1, and zero Ozone Depletion Potential (ODP).



F-gas free

F gas denotes fluorinated greenhouse gas. KUBOTA's F-gas free models are built without using any F gas. In the interest of environmental protection, the EU has adopted Regulation No 517/2014 that restricts the use of F gas to reduce its emission.

	R1234yf *2	R134a
Global Warming Potential (GWP)*1	<1	1,300
Ozone Depletion Potential (ODP)	0	0

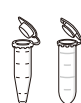
*1 Source: IPCC Fifth Assessment Report (AR5)

*2 Also used in car aircons and vending machines

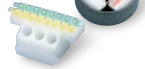
New Value

Rotor specifications

The numbers in parentheses () show rotational speed and centrifugal force at which samples at temperatures not higher than 4°C can be centrifuged.

Angle rotor	Rotor image	Tube	Nominal capacity	Number of tube	Tube size:Diameter ×Length(mm)	Max. speed (rpm)	Max. RCF (×g)	Adaptor Code No.
AF-2024* ¹	 Autoclavable*		1.5/2mL Micro tube	24	9.5~11×36~42	15,300 (14,700)	22,250 (20,540)	—
			0.5mL Micro tube	24	7~7.9×25~34	15,300 (14,700)	19,890 (18,360)	055-7590 (Set of 2)
AF-2524	 Autoclavable*		1.5/2mL Micro tube	24	9.5~11×36~42	15,000 (14,000)	21,880 (19,060)	—
			Spin column tube/filtration tube	24	9.5 ~ 11×36 ~ 60.3	13,000	16,440	—
			0.5mL Micro tube	10	7~7.9×25~34	15,000 (14,000)	17,360 (15,120)	—
			0.2mL 8-well PCR	2	5.9 ~ 6.3×20 ~ 24	15,000 (14,000)	11,570 (10,080)	Adaptor is equipped with rotor.
			0.2mL PCR tube	16	5.9~6.3×20~24	15,000 (14,000)	11,570 (10,080)	Adaptor is equipped with rotor.
AF-2730	 BS Autoclavable*		1.5/2mL Micro tube	30	9.5~11×36~42	14,000	20,820	—
			0.5mL Micro tube	14	7 ~ 7.9×25~34	14,000	17,530	—
			0.2mL PCR tube	14	5.9~6.3×20~24	14,000	16,430	—
AF-2236	 Autoclavable*		1.5/2mL Micro tube	36	9.5~11×36~42	15,000 (14,000)	21,880 (19,060)	—
			0.5mL Micro tube	36	7 ~ 7.9×25~34	15,000 (14,000)	19,620 (17,090)	055-7590 (Set of 2)
			0.2mL PCR tube	12	5.9~6.3×20~24	15,000 (14,000)	15,340 (13,370)	—
AF-2048A* ¹	 Autoclavable*		1.5/2mL Micro tube	48	9.5~11×36~42	12,000 (11,000)	15,780 (13,260)	—
			0.5mL Micro tube	48	7 ~ 7.9×25~34	12,000 (11,000)	14,330 (12,040)	055-7590 (Set of 2)
AF-512	 Autoclavable*		5mL Micro tube	12	15×59	15,000	20,880	—
AF-1408A	 Autoclavable*		14mL tube	8	17×75~100	12,000	14,330	—
AF-3806A	 Autoclavable*		38mL tube	6	25~25.6×87~103	15,000 (14,500)	21,880 (20,450)	—
AF-5004RA	 Autoclavable*		50mL tube	4	28.5~29×102~115	15,000 (14,000)	21,880 (19,060)	—
			12mL tube	4	15.8~16.4×103~110	15,000 (14,000)	20,630 (17,970)	055-7410 (Set of 2)
			10mL tube	4	16~16.3×79~92	15,000 (14,000)	20,630 (17,970)	055-4280 (Set of 2)

Rotor specifications

Multi rotor	Bucket Code No.	Tube	Nominal capacity	Number of tube	Tube size: Diameter × Length (mm)	Max. speed (rpm)	Max. RCF (×g)	Adaptor Code No.
 MF-2236A	053-5860 		1.5/2mL Micro tube	24	9.5~11×36~42	15,000	18,360	—
			0.5mL Micro tube	24	7~7.9×25~34	15,000	15,090	055-7590 (Set of 2)
			0.2mL PCR tube	24	5.9~6.3×20~24	15,000	11,820	055-0500 (Set of 2)
	053-2000 		1.5/2mL Micro tube	24	9.5~11×36~42	15,000	18,870	—
			0.5mL Micro tube	24	7~7.9×25~34	15,000	16,100	055-7590 (Set of 2)
			0.2mL PCR tube	24	5.9~6.3×20~24	15,000	13,330	055-0500 (Set of 2)
	053-0060 		1.5/2mL Micro tube	12	9.5~11×36~42	15,000	15,600	—
			0.5mL Micro tube	12	7~7.9×25~34	15,000	13,330	055-7590 (Set of 2)
			0.2mL PCR tube	12	5.9~6.3×20~24	15,000	11,320	055-0500 (Set of 2)
			0.2mL 8-well PCR	8	5.9~6.3×20~24	15,000	17,860	—

● Adaptor for 0.2mL PCR tube
Code No. 055-0500
(Set of 2)

● Adaptor for 0.5mL Micro tube
Code No. 055-7590
(Set of 2)

● Adaptor for 12mL tube
Code No. 055-7410
(Set of 2)

● Sealing Adaptor for High speed angle rotor
Code No. 055-4280
(Set of 2)

● Adaptor for 15mL conical tube
Code No. 055-1250
(Set of 4)

● Adaptor for 15mL conical tube
Code No. 055-1280
(Set of 2)

Swinging bucket rotor	Rotor image	Plate	Plate	Number of plate	Plate size (mm)	Max. speed (rpm)	Max. RCF (×g)	Adaptor Code No.
PF-206	 Autoclavable*	 	PCR Plate	2	86 (W) × 128 (D) × 52 (H)	4,000	1,790	—
			Micro plate	6				
			Deep-well plate	2				
PF-745S	 Shield bucket	 	PCR Plate	2	86 (W) × 128 (D) × 90 (H)	4,200	3,100	055-6380 (Set of 2)
			Micro plate	12				
			Deep-well plate	4				

Tray (optional)
Code No. 055-6380
(Set of 2)



12×96-well plate



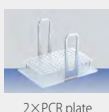
4×deep-well plate



4×square-well plate



2×filter plate + deep-well plate



2×PCR plate

Rotors have life cycles and service lives. Please contact us for more details.
※The number of cycles allowed for autoclaving and temperature limited. For more details, please contact us.

- *1 0.2 mL PCR tubes can be used by using an adaptor for 2 mL tube slots, Code No. 055-0500.
- *2 Bio-bik 5 mL sampling tubes and Watson 5 mL megatubes can be used.
- *3 Test the strength of plates before centrifugation. Plates on lower levels may collapse.

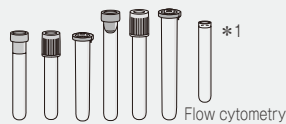
Rotor durability

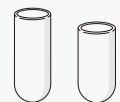
- The rotating parts of the centrifuge, its rotors and buckets, are made of metal, such as stainless steel and aluminum.
- If a metal plate is bent and straightened over and over, it will eventually break due to metal fatigue.

- Rotors and buckets undergo repeated “bending and straightening” during spin-up and spin-down. After a specified period of use or number of operations is reached, these parts may break due to metal fatigue.
- To use KUBOTA's products safely, we ask that you replace any rotor that has reached the end of its life time. We appreciate your understanding and cooperation.

Please refer to page 4 for 50 mL conical tube rotors.

Rotor specifications

Swing rotor	Tube				 Flow cytometry			 *2	
	Nominal capacity	1.5/2mL×36	1.5/2mL×72	1.5/2mL×80	5-7mL thin blood collection tube×68			8mL CPT cell preparation tube×24	10mL glass tube ×80
	Tube size:Diameter x length(mm)	9.5~11×36~42			12~13.7×62~110			13.5~15.8×81~130	12~13.8×65~95
	Max. speed(rpm)	4,800	4,000	3,500	3,500			3,500	3,500
Swing rotor	Max. RCF(x g)	4,250	3,040	2,290	2,300			2,310	2,080
	SF-724	Code No.			055-4800			055-6900	055-4740
	 Autoclavable* Max 3,500rpm Max 2,380×g	 Bucket 053-5820 (Set of 4) Buckets are optional.				 *4			
	SF-2504S	Code No.			055-1190			—	—
Swing rotor	 Autoclavable* Max 4,800rpm Max 4,300×g	 Sealing caps 055-0964 (Set of 4) Buckets are equipped with rotor. Sealing caps are optional.				—			—
	SF-5004	Code No.			055-0770			—	—
	 Autoclavable* Max 4,000rpm Max 3,080×g	 Buckets and sealing caps are equipped with rotor.				—			—

Swing rotor	Tube				 *10				
	Nominal capacity	50mL conical tube×4	50mL conical tube×2	50mL conical tube×16	15mL conical tube×16 50mL conical tube×8	15mL conical tube×8 50mL conical tube×2	15mL conical tube×14 50mL conical tube×6	100mL glass tube ×4	
	Tube size:Diameter x length(mm)	30×117			17×121/30×117			38~46.5×83~120	38~46.5×113~120
	Max. speed(rpm)	4,800	4,000	3,500	3,500	4,800	4,000	3,500	4,800
Swing rotor	Max. RCF(x g)	4,250	3,040	2,330	2,330	4,280/4,250	3,060/3,040	2,330	4,250
	SF-724	Code No.			055-6070			055-4770	—
	 Autoclavable* Max 3,500rpm Max 2,380×g	 Bucket 053-5820 (Set of 4) Buckets are optional.			 *14	 *11 *14	—		—
	SF-2504S	Code No.			055-1170			055-1200	—
Swing rotor	 Autoclavable* Max 4,800rpm Max 4,300×g	 Sealing caps 055-0964 (Set of 4) Buckets are equipped with rotor. Sealing caps are optional.				 *12			
	SF-5004	Code No.			055-0760			055-1180	—
	 Autoclavable* Max 4,000rpm Max 3,080×g	 Buckets and sealing caps are equipped with rotor.				 *13			

*1 Thin 5 to 7 mL blood collection tubes, such as Sekisui Insepack II, Terumo Venoject II, Nipro Neotubes, and Becton Dickinson Vacutainer tubes, can be used. Flowsight tubes can also be used.

*2 This tube is an 8 mL CPT mononuclear cell separation vacutainer tube (nominal ϕ 16 x 125) manufactured by Becton Dickinson.

*3 Thin and thick 5 to 10 mL blood collection tubes, such as Sekisui Insepack II, Terumo Venoject II, Nipro Neotubes, and Becton Dickinson Vacutainer tubes, can be used. Flowsight tubes can also be used.

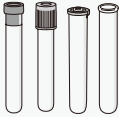
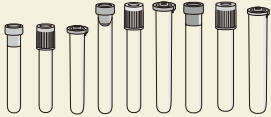
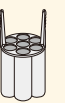
*4 When using a Code No. 053-5840 bucket, a Code No. 053-5820 bucket cannot be used with the same rotor. Glass blood collection tubes (tapered tubes) cannot be used with a Code No. 053-5840 bucket.

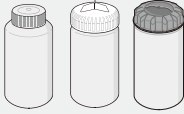
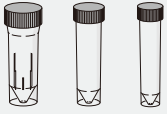
*5 175 mL conical tubes from Falcon (Catalog No. 352076) can be centrifuged using a cushion (Catalog No. 352090).

*6 200 mL conical tubes from Nunc (Catalog No. 376813) can be centrifuged using a cushion (Catalog No. 377585). 225 mL conical tubes from Falcon (Catalog No. 352075) can also be centrifuged using a cushion (Catalog No. 352090).

This tube racks are convenient and available for 5mL, 7mL, and 10mL blood collection tubes and 15mL glass tubes.

⚠ Rotors have life cycles and service lives. Please contact us for more details.
※The number of cycles allowed for autoclaving and temperature limited.
For more details, please contact us.

	 *3 Flow cytometry									
10mL blood collection tube/15mL glass tube×68	5-10mL blood collection tube/15mL glass tube×28	5-10mL blood collection tube/15mL glass tube×48	5-10mL blood collection tube/15mL glass tube×48	15mL conical tube×16	15mL conical tube×28	15mL conical tube×28	15mL conical tube×32	50mL glass tube×4	50mL glass tube×8	50mL glass tube×12
15~17.2×52~110	12~17.2×72~110		12~16.8×72~110	17×121				27~36.4×85~110		
3,500	4,800	4,000	3,500	4,800	3,500	4,000	3,500	4,800	3,500	4,000
2,300	4,150	2,970	2,300	4,280	2,300	3,060	2,330	4,150	2,330	2,990
Bucket Code No. 053-5840  *4	—	—	055-0880 	—	バケットコードNo. 053-5840  *4	—	055-4780  *14	—	055-4760 	—
—	055-1140 	—	—	055-1160 	—	—	—	055-1150 	—	—
—	—	055-0730 	—	—	—	055-0750 	—	—	—	055-0740 

		 *8			 *9					
175mL conical tube×4	175/200/225mL conical tube	250mL ×4			500mL ×4	Self-standing aptum tube×4	Self-standing aptum tube×8	Self-standing aptum tube		
61×118	61×118/60×137/61×137	60~62×100~134.4			85×135	φ48 cap diam. φ35 tube diam.	φ37 cap diam. φ31 tube diam.	φ48 cap diam. φ35 tube diam.	φ37 cap diam. φ31 tube diam.	φ31 cap diam. φ28 tube diam.
4,800	3,500	4,000	3,500	4,800	4,000	4,800	4,000	3,500		
4,250	2,330	3,080	2,380	4,300	3,080	4,250	3,020	2,250	2,290	2,300
—	055-4850  *5 *6	—	055-4850 	—	—	—	—	055-0430 	055-0440 	055-0450 
*5	—	—	—	can be used without adaptors	—	055-1210 	—	—		
—	—	055-0780  *5 *6 *7	—	—	055-0780 	can be used without adaptors	055-0800 	—		

*7 Sealing caps cannot be used when centrifuging 200/225 mL conical tubes.
*8 Nalgene, Herolab, and Corning flat bottomed 250 mL bottles can be used.
*9 500 mL bottles (Code No. K15501C/polypropylene) can be used.
*10 MiX sets used for SF-724, SF-2504S, and SF-5004 can be used with the M500TR instrument.
These cannot be used with the 6200 instrument.
*11 This tube rack (055-1600) is sold as a set of two Code No. 055-4780 and two Code No. 055-6070 units.

*12 This tube rack (055-1610) is sold as a set of two Code No. 055-1160 and two Code No. 055-1170 units.
*13 This tube rack (055-1620) is sold as a set of two Code No. 055-0750 and two Code No. 055-0760 units.
*14 055-4780 (15 mL conical tubes) and 055-6070 (50 mL conical tubes) have 2 tube slots through which 1.5/2 mL tubes can be used. Up to eight 1.5/2 mL tubes may be centrifuged at 1,860 x g using 055-4780 and at 1,900 x g using 055-6070.

Product name	Benchtop High Speed Refrigerated Centrifuge
Swing rotor	
Max. capacity	500mL×4(SF-5004)
Max. speed	4,800rpm(SF-2504S)
Max. RCF	4,300×g(SF-2504S)
Angle rotor	
Max. capacity	500mL×8(AF-5008C)
Max. speed	15,300rpm(AF-2024)
Max. RCF	22,250×g(AF-2024)
Size	70(W)×63(D)×36(H) cm Height with opened lid: 88.3 cm*
Weight	85 kg
Power consumption and Heat out put	710W, 2.6MJ/h About 9W(power consumption in power saving mode)
Power requirements	Single phase 110 ± 10 % V 50/60Hz, 15A Single phase 220 ± 10 % V 50/60Hz, 10A Single phase 230 ± 10 % V 50/60Hz, 10A
Rated voltage and Rated current	110 V , 50 / 60 Hz : 8.6A 220 V , 50 / 60 Hz : 3.8A 230 V , 50 / 60 Hz : 3.7A
Operation environment	For indoor use only Altitude: 2000m or less Temperature: 10℃ to 35℃ Relative humidity: Maximum relative humidity 80% at 10℃ to 31℃ , decreasing linearly to 50% relative humidity at 40℃ at above 31℃ . Overvoltage category: II Pollution degree: 2
Test standard	IEC61010-2-020
Control system	Inverter Microprocessor control, Rotation speed, RCF, Time, acceleration / deceleration, Number of memories: 99 channels at the maximum (3 for direct invocation using the panel button)
Error and user message display	Lid open , Imbalance , Over speed , Motor , Speed sensor , temperature sensor , Lid rock , inverter , Abnormal temperature , Imbalance sensor.
Speed setting	Digital, 10 or 100 rpm step, 200 rpm-15300 rpm
RCF setting	Digital, 10 or 100 × g step, 10 ×g-22250 ×g The centrifugal force is calculated based upon the rotor rotation radius and the speed setting.
Timer setting	Digital display, with Hold From 1 sec. to 99 hour 59 min 59 sec, in 1sec. increment setting
Temperature force setting	Digital 1 ℃ step・indication Setting range : From -10 ℃ to 40 ℃ in 1 ℃ increments Indication : From -11 ℃ to 43 ℃ in 1 ℃ increments
Refrigerant	R134a (CFC free) Quantity : 0.24 kg GWP : 1430 R1234yf (HFO) Quantity : 0.27 kg GWP : 4 Contains fluorinated greenhouse gases in a hermetically sealed system.
Acceleration /Deceleration	3 ways of switching

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.