KUBOTA

Multipurpose Centrifuge S700 Series

S700 Series

new design,
innovation
and
user-oriented

Benchtop Refrigerated Centrifuge

S700TR Refrigerated

220V 230V

Benchtop Centrifuge

S700T

110V 115V 220V 230V

Floor-standing Refrigerated Centrifuge

S700FR Refrigerated

110V 115V 220V 230V

new design

A New and Updated Design

Reborn with a completely new and innovative design,
the S700 Series of centrifuges features top-to-bottom coordination,
from the lime-green accent line and shape of the centrifuge itself,
to the interface unit, rotors, buckets, and tube racks.

innovation

Innovation – Taking Rotor Design to New Levels

- KUBOTA's newly designed rotors dramatically increase the number of blood collection and conical tubes you can load.
- The S700 series now accepts 250 mL conical tubes (Corning), expanding the versatility of this class of centrifuge.
- With the RS-7504M rotor, mixed loading can be performed, allowing round and plate buckets to be loaded at the same time (two each).

MiX

user-oriented

Responding to User Needs in a Multitude of Ways

- The VFD (vacuum fluorescent display), developed exclusively in Japan, provides high contrast and brightness for easy reading at a distance and at wide viewing angles.
- With three short-cut keys for centrifuge settings, the simplified, user-friendly panel unit is easy to use for routine operations.

Safety

IEC61010-2-020 the International Safety Requirements for Centrifuges

- Centrifuge rotors store large amounts of kinetic energy when spinning at high speed. All of the rotors pass strict tests for durability under maximum load but fracture during use cannot be ruled out.
- Centrifuges that meet the IEC61010-2-020 requirements ensure user safety by retaining fragments within the centrifuge if the rotor breaks during centrifugation.

A New and Updated Design

KUBOTA provides a breath of fresh air in the design of centrifuges and rotors, transcending unrefined designs by uniting overall design aspects such as the centrifuge shape and lime-green accent lines together with unparalleled new and user-friendly interfaces, provided by the panel unit and colorful rotors, buckets, shield covers, tube racks, and more.

Tube rack for
68×15 mL conical tube
055-2020 (set of 4)

Tube rack for
28×50 mL
conical tube
055-2030 (set of 4)

Tube rack for
96×5 to 10 mL
blood collection tube
055-1420 (set of 4)

Tube rack for
144×5 to 7 mL
thin blood collection tube
055-1410 (set of 4)

Just like selecting a new wardrobe,
the colors of rotors, buckets, shield covers,
and tube racks are now
coordinated for easy matching and use.

RS-1440M rotor (with buckets)
027-9240 shield cover (set of 4)

new design

Innovation –
Taking Rotor Design to New Levels

Newly developed rotor RS-7504M

- The new structure allows mixed loading using two round and two plate buckets. MiX
- Provides a dramatic increase in the number of 50 mL / 15 mL conical tubes that can be loaded compared with conventional rotors (RS-3020M). 250 mL conical tubes (Corning) can now be used.
- Strong g-force. 3,000 ×g with S700T, and 3,330 ×g with S700FR / S700TR rotors when centrifuging four 750 mL bottles (Beckman).
  Perfect for centrifuging large capacity bottles when high g-force is needed.

4 × Round bucket with shield cover

2 × Round bucket / 2 × Plate bucket

4 × Plate bucket

RS-7504M specifications

	S700T	S700FR / S700TR
28 × 50 mL conical tube	3,800 rpm / 3,080 ×g	4,000 rpm / 3,420 ×g
56 × 15 mL conical tube	3,800 rpm / 3,050 ×g	4,000 rpm / 3,380 ×g
4 × 250 mL conical tube (Corning)	3,800 rpm / 3,100 ×g	4,000 rpm / 3,430 ×g
4 × 750 mL bottle (Beckman)	3,800 rpm / 3,000 ×g	4,000 rpm / 3,330 ×g
16 × MTP	3,800 rpm / 2,710 ×g	4,000 rpm / 3,010 ×g

RS-3020M specifications (conventional rotor)

	8420 (conventional model)	5930 (conventional model)
20 × 50 mL conical tube	—	4,000 rpm / 3,420 ×g
48 × 15 mL conical tube	—	4,000 rpm / 3,400 ×g
4 × 250 mL conical tube (Corning)	—	—
4 × 750 mL bottle	—	4,000 rpm / 3,430 ×g
16 × MTP	—	—

RS-1440M: A Newly Developed Rotor

- Increases the number of blood collection tubes by 20% or more over conventional rotor (RS-3013M).
- A handle was added to the shield cover to make the removal of larger buckets even easier.
- Tube rack handles have been upgraded to make removal and carrying stress-free.
- Conical tube capacity has also been expanded, so 250 mL conical tubes (Corning) can be used.

144 × 5 to 7 mL thin blood collection tube
Equipped with shield cover

14 × 50 mL conical tube
34 × 15 mL conical tube

96 × 5 to 10 mL blood collection tube

RS-1440M specifications

	S700T	S700FR / S700TR
144 × 5 to 7 mL thin blood collection tube	3,500 rpm / 2,530 ×g	3,500 rpm / 2,530 ×g
96 × 5 to 10 mL blood collection tube	3,500 rpm / 2,530 ×g	3,500 rpm / 2,530 ×g
28 × 50 mL conical tube	3,500 rpm / 2,600 ×g	3,500 rpm / 2,600 ×g
68 × 15 mL conical tube	3,500 rpm / 2,600 ×g	3,500 rpm / 2,600 ×g
4 × 250 mL conical tube (Corning)	3,500 rpm / 2,630 ×g	3,500 rpm / 2,630 ×g

RS-3013M specifications (conventional rotor)

	8420 (conventional model)	5930 (conventional model)
80 × 5 to 7 mL thin blood collection tube	3,300 rpm / 2,280 ×g	3,300 rpm / 2,280 ×g
80 × 5 to 10 mL blood collection tube	3,300 rpm / 2,280 ×g	3,300 rpm / 2,280 ×g
24 × 50 mL conical tube	3,300 rpm / 2,280 ×g	3,300 rpm / 2,280 ×g
48 × 15 mL conical tube	3,300 rpm / 2,280 ×g	3,300 rpm / 2,280 ×g
4 × 250 mL conical tube (Corning)	—	—

innovation

Responding to User Needs in a Multitude of Ways

Equipped with a VFD luminous display

VFD | Minimum view angle of 126°

- A technology exclusive to Japan, the VFD (vacuum fluorescent display), is used.
- High contrast and brightness provide clear visibility at a distance. The visibility of an electronic display generally depends on the contrast rate of dot matrix units. In contrast, the VFD segments are self-illuminating and remain lit when other parts are turned off.
- With a minimum viewing angle of 126°, the VFD information remains easy to read from side to side.

User interface

3 direct memory-channel

- Three short-cut program keys for direct access. Larger and prominent START / STOP / OPEN buttons for simple operation. Centrifuge operation for routine work can be performed with these simple keys.
- Settings can be adjusted using the arrow keys. Menu and error displays have also been enhanced.

Error display

Motorized lid lock

- A newly developed motorized lid lock system.
- A light touch is all that is needed to activate the lid motor and lock it automatically.

Power-saving mode

eco

- S700FR / S700TR automatically stops the refrigeration unit and turns off the display. Power consumption in this mode is approximately 12 W.
- S700T automatically turns off the display. Power consumption in this mode is approximately 12 W.

user-oriented

KUBOTA's Dedication to Safety

IEC61010-2-020 : International safety requirements for centrifuges

- Centrifuge rotors store large amounts of kinetic energy when spinning at high rates. All of the rotors pass strict tests for durability under maximum load, but wear and external factors mean that rotor breakage during centrifugation cannot be entirely ruled out.
- Centrifuges that meet the IEC61010-2-020 requirements will retain fragments within the centrifuge if the rotor breaks during centrifugation, ensuring user safety.

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.

To deliver quality products to KUBOTA's customers:

- KUBOTA manufactures prototypes at the development phase and implements durability tests based on actual use conditions.
  Only products that pass the strict durability tests can proceed to the next stage.
- After durability tests, we produce additional prototypes and perform field tests in workplaces with actual users. Feedback from these users is then incorporated in the products.
- Experienced engineers perform release inspections.
  Every unit is inspected carefully by activating the centrifuge and carefully monitoring its sounds and vibrations.

System

Academic laboratory

Product / description	Quantity
Tabletop Refrigerated Centrifuge S700TR	1
Swing-rotor RS-7504M	1
Round bucket 053-0104	4
Tube rack 055-1464 (28 × 50 mL conical tube)	4
Tube rack 055-1454 (56 × 15 mL conical tube)	4
Plate bucket 053-0112 (8 × MTP)	2

Company laboratory

Product / description	Quantity
Tabletop Refrigerated Centrifuge S700TR	1
Swing-rotor RS-7504M	1
Round bucket 053-0104	4
Tube rack 055-1464 (28 × 50 mL conical tube)	4
Tube rack 055-1454 (56 × 15 mL conical tube)	4
Plate bucket 053-0112 (8 × MTP)	2

Hospital laboratory

Product / description	Quantity
Tabletop Centrifuge S700T	1
Swing rotor RS-1440M (with buckets)	1
Tube rack 055-1410 (144 × 5 to 7 mL thin blood collection tube)	4

Hospital laboratory

Product / description	Quantity
Tabletop Refrigerated Centrifuge S700TR	1
Swing rotor RS-1440M (with buckets)	1
Tube rack 055-1410 (144 × 5 to 7 mL thin blood collection tube)	4

Bacteria laboratory

Product / description	Quantity
Tabletop Refrigerated Centrifuge S700TR	1
Swing-rotor RS-7504M	1
Round bucket 053-0104	4
Tube rack 055-1464 (28 × 50 mL conical tube)	4
Tube rack 055-1454 (56 × 15 mL conical tube)	4
Shield cover 027-9254	4

Rotor specifications

RS-7504M

Tube			S700T		S700FR / S700TR		Set of 2*5				Set of 4			
Nominal capacity (mL)	Product name or code No.	Tube size: Diameter× length (mm)	Max. speed (rpm)	Max. RCF (×g)	Max. speed (rpm)	Max. RCF (×g)	Number of tubes	Bucket code No.	Tube rack code No.	Shield cover code No.	Number of tubes	Bucket code No.	Tube rack code No.	Shield cover code No.
5 to 7	5 to 7 mL thin blood collection tube	ϕ 12 to 13.2 ×108 CAP ϕ 17 or less*1	3,800	2,870	4,000	3,180	46	053-0102	055-1432	027-9252	92	053-0104	055-01434	027-9254
5 to 10	5 to 10 mL blood collection tube	ϕ 12 to 17×110 CAP ϕ 18 or less*2	3,800	2,940	4,000	3,260	42		055-1442		84		055-1444	
15	15 mL conical tube (Falcon, etc.)	ϕ 17 × 121 CAP ϕ 23 or less	3,800	3,050	4,000	3,380	28		055-1452		56		055-1454	
50	50 mL conical tube (Falcon, etc.)	ϕ 30 × 117 CAP ϕ 36 or less	3,800	3,080	4,000	3,420	14		055-1462		28		055-1464	
250	250 mL bottle (Nalgene 3120-0250, etc.)	ϕ 61.8 × 134.4 or less	3,800	3,100	4,000	3,430	2		055-1472		4		055-1474	
250	250 mL conical tube (Corning 430776)	ϕ 60.2×161 CAP ϕ 35.2	3,800	3,100	4,000	3,430	2		055-1482	—	4		055-1484	—
750	750 mL bottle (Herolab 253580, 253581)	ϕ 98×154 CAP ϕ 60	3,800	3,100	4,000	3,430	2		—	—	4		—	—
750	750 mL bottle (Beckman 356855, 358299)	ϕ 97×135 CAP ϕ 69	3,800	3,000	4,000	3,330	2		Beckman bottle sleeve 349846	027-9252	4		Beckman bottle sleeve 349846	027-9254
Microplate	MTP*3	86 (W)×128(D)×52(H)	3,800	2,710	4,000	3,010	8	053-0112	—	—	16	053-0114	—	—
	DWP		3,800	2,710	4,000	3,010	2				4			

Tube racks for 50 mL, 100 mL, and 350 mL glass tubes are available.
For more details, please contact us.

RS-1440M (with buckets)

Tube				S700T / S700FR / S700TR		Bucket code No.	Tube rack code No.	Shield cover code No.
Nominal capacity (mL)	Number of tubes	Product name or code No.	Tube size: Diameter × length (mm)	Max. speed (rpm)	Max. RCF (×g)			
5 to 7	144	5 to 7 mL thin blood collection tube	ϕ 12 to 13.2 ×108 CAP ϕ 17 or less*1	3,500	2,530	Attachment to a rotor	055-1410	027-9240
5 to 10	96	5 to 10 mL blood collection tube	ϕ 12 to 17×110 CAP ϕ 18 or less*2	3,500	2,530		055-1420	
15	96	15 mL glass tube (052-6330, etc.)	ϕ 12 to 17×110 or less	3,500	2,530		055-1420	
15	68	15 mL conical tube (Falcon, etc.)	ϕ 17 × 121 CAP ϕ 23 or less	3,500	2,600		055-2020	
50	28	50 mL conical tube (Falcon, etc.)	ϕ 30 × 117 CAP ϕ 36 or less	3,500	2,600		055-2030	
250	4	250 mL conical tube (Corning 430776)	ϕ 60.2×161 CAP ϕ 35.2	3,500	2,630		055-1520*4	—
750	4	750 mL bottle (Herolab 253580, 253581)	ϕ 98×154 CAP ϕ 60	3,500	2,630		055-1520	—
750	4	750 mL bottle (Beckman (356855, 358299)	ϕ 97×135 CAP ϕ 69	3,500	2,630		055-1520	027-9240

AT-508C

Tube				S700T / S700FR / S700TR	
Nominal capacity (mL)	Number of tubes	Product name or code No.	Tube size: Diameter × length (mm)	Max. speed (rpm)	Max. RCF (×g)
50	8	50 mL conical tube (Falcon, etc.)	ϕ 30 × 117 CAP ϕ 36 or less	6,000	5,350

RA-2724M

Tube				S700T		S700FR / S700TR	
Nominal capacity (mL)	Number of tubes	Product name or code No.	Tube size: Diameter × length (mm)	Max. speed (rpm)	Max. RCF (×g)	Max. speed (rpm)	Max. RCF (×g)
2	24	1.5 / 2 mL Microtube	ϕ 11 × 42	—	—	12,000	13,200

*1: 5 to 7 mL thin blood collection tubes with a length of 60 mm or longer under the tube cap can be used: Insepack II (Sekisui), Neo-tube (Nipro), Vacutainer (Becton, Dickinson, etc.)
*2: 5 to 10 mL blood collection tubes with a length of 60 mm or longer under the tube cap can be used: Insepack II (Sekisui), Venoject II (Termo), Neo-tube (Nipro), Vacutainer (Becton, Dickinson, etc.)
*3: Please use only after performing a plate strength test before centrifugation. In some cases, the lower plate may deform.
*4: Adapter No.055-1530 for 250 mL conical tubes is required.
*5: Rotor requires four buckets.

S700FR

Product name	Floor-standing Refrigerated Centrifuge
Swing-rotor	
Max. capacity	4 × 750 mL
Max. speed (rpm)	4,000 rpm (RS-7504M)
Max. RCF (×g)	3,430 ×g (RS-7504M)
Angle rotor	
Max. capacity	8 × 50 mL (AT-508C)
Max. speed (rpm)	12,000 rpm (RA-2724M)
Max. RCF (×g)	13,200 ×g (RA-2724M)
Size	54(W) × 63(D) × 84 (H) cm Height when the lid is open: 136 cm
Weight	118 kg
Power consumption: calorific value	110V 950W, 115V 950W, 3.4MJ/h 220V 910W, 230V 910W, 3.3MJ/h (Power-saving mode: Approx 12W)
Power requirements	Single phase AC 110V ± 10%, AC 115V ± 10%, 50/60 Hz, 15A Single phase AC 220V ± 10%, AC 230V ± 10%, 50/60 Hz, 10A
Rated voltage, rated current	110V 9.8A, 115V 9.8A, 220V 5.9A, 230V 5.9A
Use environment	Temperature: 10 to 35 ℃
	Humidity: 30 to 85%
	Air pressure: 70 to 106 kPa (700 to 1,060 mbar)
Conforming standard	IEC61010-2-020
Speed setting range	200 rpm to 12,000 rpm
	10 or 100 rpm increments
Timer setting range	59 min. 59 sec. / 1 sec. increments
	99 hours, 59 min. / 1 min. increments
	HOLD (∞)
Temperature setting range	Standard specifications: −10 ℃ to 40 ℃ / 1 ℃ increments
Refrigerant	R134a 340 g
Program memory	99 items (including 3 items for short-cut keys on the panel)
Acceleration / Deceleration	9 steps

S700TR

Product name	Benchtop Refrigerated Centrifuge
Swing-rotor	
Max. capacity	4 × 750 mL
Max. speed (rpm)	4,000 rpm (RS-7504M)
Max. RCF (×g)	3,430 ×g (RS-7504M)
Angle rotor	
Max. capacity	8 × 50 mL (AT-508C)
Max. speed (rpm)	12,000 rpm (RA-2724M)
Max. RCF (×g)	13,200 ×g (RA-2724M)
Size	77 (W) × 63 (D) × 40 (H) cm Height when the lid is open: 93 cm
Weight	103 kg
Power consumption: calorific value	220V 900W, 230V 900W, 3.2MJ/h (Power-saving mode: Approx 12W)
Power requirements	Single phase AC 220V ± 10%, AC 230V ± 10%, 50/60 Hz, 10A
Rated voltage, rated current	220V 5.5A, 230V 5.2A
Use environment	Temperature: 10 to 35 ℃
	Humidity: 30 to 85%
	Air pressure: 70 to 106 kPa (700 to 1,060 mbar)
Conforming standard	CE Marking
Speed setting range	200 rpm to 12,000 rpm
	10 or 100 rpm increments
Timer setting range	59 min. 59 sec. / 1 sec. increments
	99 hours, 59 min. / 1 min. increments
	HOLD (∞)
Temperature setting range	Standard specifications: −10 ℃ to 40 ℃ / 1 ℃ increments
Refrigerant	R134a 340 g
Program memory	99 items (including 3 items for short-cut keys on the panel)
Acceleration / Deceleration	9 steps

S700T

Product name	Benchtop Centrifuge
Swing-rotor	
Max. capacity	4 × 750 mL
Max. speed (rpm)	3,800 rpm (RS-7504M)
Max. RCF (×g)	3,100 ×g (RS-7504M)
Angle rotor	
Max. capacity	8 × 50 mL (AT-508C)
Max. speed (rpm)	6,000 rpm (AT-508C)
Max. RCF (×g)	5,350 ×g (AT-508C)
Size	54 (W) × 63 (D) × 38 (H) cm Height when the lid is open: 91 cm
Weight	59 kg
Power consumption: calorific value	110V 570W, 115V 570W, 2.1MJ/h 220V 600W, 2.2MJ/h, 230V 590W, 2.1MJ/h (Power-saving mode: Approx 12W)
Power requirements	Single phase AC 110V ± 10%, AC 115V ± 10%, 50/60 Hz, 15A Single phase AC 220V ± 10%, AC 230V ± 10%, 50/60 Hz, 8A
Rated voltage, rated current	110V 6.9A, 115V 6.9A, 220V 3.7A, 230V 3.6A
Use environment	Temperature: 10 to 35 ℃
	Humidity: 30 to 85%
	Air pressure: 70 to 106 kPa (700 to 1,060 mbar)
Conforming standard	IEC61010-2-020: 110V, 115V model CE Marking: 220V, 230V model
Speed setting range	200 rpm to 6,000 rpm
	10 or 100 rpm increments
Timer setting range	59 min. 59 sec. / 1 sec. increments
	99 hours, 59 min. / 1 min. increments
	HOLD (∞)
Program memory	99 items (including 3 items for short-cut keys on the panel)
Acceleration / Deceleration	9 steps

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

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