

Table-top Centrifuge

Model **5420**

Inverter control with
brush-less motor



KUBOTA

ISO
9001
CERTIFIED
KUBOTA MFG. CORP.

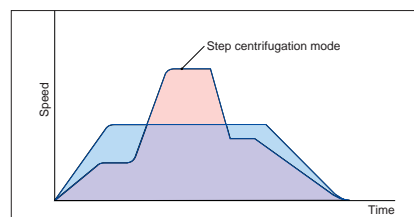
▶ Newly employs a tool-less rotor that is easy to set up.

▶ A tabletop machine that can centrifuge 68 x 15mL tubes.

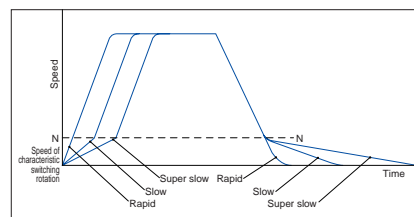
▶ Safety at the international level. Conforms to the international safety standard IEC 61010-2-020.

▶ The rotor ST-410M accepts anti-biohazard sealing caps.

- The tool-less rotors can be set or changed without using a tool. (except angle rotors)
- Convenient functions that will make you realize the ease of use.
 - Five operation condition memory settings that can be saved, evoked and run.
 - Acceleration and deceleration curves that can be varied in three steps according to the sample and purpose.
 - Comes with the preset RCF (xg) running function and stepped RCF function.
 - Can be run with a preset g-sec value (time integral of RCF), which brings about the optimization of centrifuging conditions.
- Designed with safety in mind and in conformance with the international safety standard IEC 61010-2-020.
 - It is designed so that no fragments will be ejected from the centrifuge even if the rotor is broken.
 - The lid lock is interlocked, and a twin lock system of 2 right and left hooks is employed. The interlock is protected against shocks and employs an electrical double protection circuit.
 - There is no air inlet on the upper face of the chamber lid. This prevents accidents due to foreign matter suction.
- Equipped with various sensors for higher safety. Stops at occurrence of an abnormality.
 - Comes with automatic rotor identification function (patented). Rotor type is automatically identified and overspeed detection is enabled when a rotor is simply placed on the drive shaft.
 - Comes with a rotor setup condition sensor that detects whether or not the rotor is properly set on the drive shaft. (Patent pending)
 - Comes with imbalance detection, abnormally high temperature detection, abnormality detection of spin sensor and temperature sensor, and a circuit breaker.
- Optional swing rotor buckets and tube racks are available according to the sample and purpose. The swinging bucket rotor ST-410M accepts sealing caps and is used for anti-biohazard applications. It can be used for centrifugal separation of acid-fast bacteria.
- Centrifuging is possible with the samples balanced by eye measure. In addition, the running noise is smooth and calm.
- Precise condition setting is possible by the rotary encoder.
- Designed considering friendliness to the global environment and recycling. On the main unit, only a small amount of plastic is used to reduce the load on the environment.

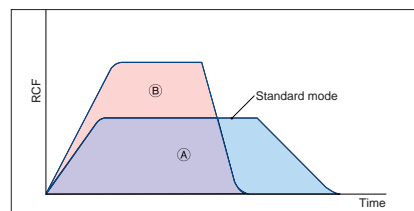


Step centrifuging function



Acceleration and deceleration characteristics

- Very slow acceleration and deceleration are suitable for centrifuging of samples that are sensitive to stirring.
- Suitable for the density gradient method and for blood washing or other centrifuging operations of samples that are apt to stir.
- For very slow acceleration and deceleration, a characteristic changeover speed N can be set.



Integrator function
g · sec value

- The integrator function can reproduce the same centrifugal effect. $A = B$



ST-720M
Swinging bucket rotor



ST-410M
Swinging bucket rotor
Photographed with sealing caps put on.



Sealing cap
Code No. S17111 (optional)



ST-480M
Swinging bucket rotor



PT-20M/21M
Plate rotor
6 x microtiter plates
With the PT-21, ethanol precipitation is possible at 3,100 xg.

Rotor, Bucket, Tube Rack Table for model 5420

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	Maximum Speed rpm	Maximum RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
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Swinging Bucket Rotors

ST-720M	80 x 2mL	9.5-11 x 36-42	3,500	2,290	053-5820	055-4800
	96 x RIA tube	10-12.3 x 65-95	3,500	2,190	053-5820	055-4730
	48 x 5/7mL narrow blood collecting tube *7	12-13.3 x 63-110	3,500	2,310	053-5820	055-4990
	24 x 8mL CPT cell preparation tube *8	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	053-5820	055-4740
	48 x 10mL Vacutainer tube/15mL	15-17.2 x 81-110	3,500	2,330	053-5820	055-4750
	68 x 5/7mL narrow blood collecting tube *7	12.5-13.7 x 62-110	3,500	2,300	053-5840	055-0260
	68 x 10mL Vacutainer 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 175mL Conical tube *1	61 x 118	3,500	2,330	053-5820	055-4850
	4 x 200mL Conical tube *1	61 x 130	3,500	2,330	053-5820	055-4850
	4 x 225mL Conical tube *1	61 x 137	3,500	2,330	053-5820	055-4850
4 x 250mL	60-61.8 x 100-130	3,500	2,380	053-5820	055-4850	
ST-410M	48 x 2mL	10.7 x 42	4,000	2,670	attached to rotor	S17008
	48 x 5mL	12.5 x 75	4,000	2,670	attached to rotor	S17006
	48 x 7mL	12-12.5 x 100-112	4,000	2,670	attached to rotor	S17007
	28 x 7mL Vacutainer tube	12.5-13 x 75-106	4,000	2,670	attached to rotor	S17027
	12 x 15mL Conical tube *2	16.5 x 120.6	4,000	2,670	attached to rotor	S17019
	12 x 15mL Conical tube *2	16.5 x 120.6	4,000	2,860	S13130	—
	28 x 10mL Vacutainer tube/15mL	15.5-17 x 90-110	4,000	2,670	attached to rotor	S17015
	4 x 50mL	34 x 110	4,000	2,670	attached to rotor	S17050
	4 x 50mL	27-36.5 x 75-110	4,000	2,670	attached to rotor	055-5670
	4 x 50mL Conical tube	29.5 x 117	4,000	2,670	attached to rotor	S17049
	4 x 100mL	44-45 x 110	4,000	2,670	attached to rotor	S17100
	4 x 200mL	56.5 x 104	4,000	2,670	attached to rotor	—
ST-480M	64 x 2mL	9.5-11 x 36-42	3,000	1,570	053-7030	—
	48 x 10mL	12-13.3 x 46-110	3,000	1,600	053-7190	—
	32 x 10mL Vacutainer tube/15mL	15-17.2 x 86-110	3,500	2,270	053-7130	—
	4 x 50mL *3 *4	27-38 x 100-110	5,000	4,640	053-7110	—
	8 x 50mL *4	27-38 x 100-110	3,500	2,270	053-7150	—
	16 x 15mL Conical tube	17 x 121	3,000	1,770	053-7300	—
	4 x 50mL Conical tube *5	30 x 117	5,000	4,640	053-5010	—
	8 x 50mL Conical tube *5	30 x 117	3,500	2,270	053-5020	—

Swinging Bucket Rotors for micro plates

PT-20M	6 x Micro plates *6	86 (W) x 128 (D) x 52 (H)	4,000	1,790	attached to rotor	—
	2 x Deep well plate *6					
PT-21M	6 x Micro plates *6	86 (W) x 130 (D) x 62 (H)	5,000	3,100	attached to rotor	—
	2 x Deep well plate *6					
PT-89M	8 x Micro plates *6	86 (W) x 130 (D) x 89 (H)	2,400	1,080	attached to rotor	055-6370
	4 x Deep well plate *6					

Angle Rotors

RA-288M3	24 x 12mL	15.9-16.5 x 97-120	6,000	4,830	—	—
RA-410M3	8 x 15mL Conical tube	17 x 121	6,000	4,750	—	055-1280
	8 x 50mL Conical tube	30 x 117	6,000	4,830	—	—
RA-500M3	10 x 50mL	26.4-29.2 x 98-121	6,000	4,830	—	—
AT-360M	24 x 15mL	15-17.2 x 95-130	3,500	2,270	—	—

*1 Conical (culture) tubes 175 mL, 200 mL, and 225 mL can be centrifuged by using supporters.

The 175 mL conical tube is made by Falcon (code No. 2076) and needs a cushion (code No. 2090).

The 200 mL conical tube is made by Nalge Nunc (code No. 376813) and needs a cushion adapter (code No. 377585).

The 225 mL conical tube is made by Falcon (code No. 2075) and needs a cushion (code No. 2090).

*2 sealing cap cannot be used on this tube rack. sealing cap (code no. S17111) can be used on a 12 x 15 mL conical (culture) tubes with code No. S13130.

*3 sealing adapter against biohazard for 50 mL conical (culture) tube (code no. 055-5760) and for 15 mL conical (culture) tube (code no. 055-5750) can be used.

*4 15 mL glass tubes can be used if an adapter (code no. 055-7400) is added and need a rubber cushion (code no. 024-1400) sold separately.

*5 15 mL conical (culture) tubes can be used if an adapter (code no. 055-1280) is added.

*6 If micro plates are used, it is possible to stack them in double or more on each bucket. However, be sure to test the strength of those plates prior to centrifugation. The micro plate at the bottom may be crushed.

*7 5/7 mL narrow blood collecting tube made by Sekisui (Insepack II), Termo (Venject II), Nipro (Neotube) and Becton Dickinson (Vacutener) can be used.

*8 The CPT cell preparation tube is made by Becton Dickinson (Vacutener 8 mL for CPT cell separation).



PT-89M
Plate rotor

Can centrifuge 8 microtiter plates or a filter plate + 2 deep-well plates.
Can centrifuge a plate up to 89 mm in height.



RA-288M3
Fixed-angle rotor
24 x 12mL



RA-410M3
Fixed-angle rotor

Can centrifuge 8 x 50mL/15mL Conical tube.



RA-500M3
Fixed-angle rotor
10 x 50mL



AT-360M
Fixed-angle rotor
24 x 15mL

Specifications

Model 5420

- Maximum Speed ● 6000 rpm
- Maximum RCF ● 4830 xg
- Maximum Capacity ● 1020 ml
- Control system ● Micro-processor control (Brushless motor)
Speed, RCF, Time, Acceleration & Deceleration, 5 channel memories
- Alarm display ● Lid open, Imbalance, Over speed,
Function for detecting an occurrence of electrical abnormality in motor, inverter,
lid interlock and speed sensor.
- Acceleration / Deceleration ● Three-level selectors; Rapid, Slow and Super Slow
- Speed setting ● From 200 to 6000 rpm, 10 rpm increments
- Speed indication ● Digital display, From 0 to 6400 rpm, 10 rpm increments
- RCF setting ● From 10 to 4830 xg, 10 xg increments
- RCF indication ● Digital display, From 0 to 5550 xg, 10 xg increments
- Integrator setting and indication ● Digital display, From 1.00 to 9.99 x10³ g · sec
- Timer setting and indication ● Digital display, with Hold and Electric buzzer
from 1 sec. to 100 sec., in 1 sec. increment setting
from 100 sec. to 990 sec., in 10 sec increments setting
from 1 min. to 100 min., in 1 min. increment setting
from 100 min. to 990 min., in 10 min. increments setting
- Power requirements ● Single phase AC115V±10%, 50/60Hz, 15A
Single phase AC220V±10%, 230V±10%, 50/60Hz, 8A
- Rated voltage and Rated current ● 115V, 7.4A 220/230V, 3.1A
- Power consumption and Heat output ● 115V, 470W · 1.7MJ/h 230V, 500W · 1.8MJ/h
- Dimensions, weight ● 43(W) x 55(D) x 36(H)cm*, 47kg
- Test standard ● Manufactured and tested in accordance with IEC 61010-2-020

(* 1) Those of projections are not included.

All specifications and external appearance subject to change without notice.

* On Model 5420 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.



Centrifuge table (Code No. 047-3810)

Convenient table to mount the 5420 model on.
The space underneath is for storage.
Dimensions: 550 (W) x 600 (D) x 460 (H) in mm.



Safety Precautions

• For your safe use of this equipment, be sure to read the instruction manual carefully before you start its operation.

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.



DISCONTINUE USE

Always discontinue use when phenomena listed at right appear.

- The rotor or bucket has been found to be damaged or corroded.
- A burnt smell comes out of the equipment.
- You receive a minor electrification when you touch the equipment body by a naked hand.
- Some other abnormality or failure has been found occurring.

IMPORTANT

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.

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