



# High Speed Refrigerated Centrifuge

# 7780



Max. 22,000 rpm/52,490 xg  
Max. 4 Liters



#### Foot switch (Optional)

The lid opens automatically when the switch is pressed. A newly designed gas spring produces smooth and quick opening, while hands-free opening makes the experiments easier.

## Features

### ■ High Capacity Rotor

Aluminium Rotor of 4 x 1 Liter at 15,760 xg

### ■ Auto Interlock Lid

Lid can be opened/closed using one hand.

- To close lid  
Push slightly and the lid locks automatically by an electrical interlock system
- To open lid  
Press the lid open key and the lid opens automatically after releasing the interlock.  
A foot switch (optional) also enables hands-free lid opening.

### ■ Easy-to-use and convenient functions

- Memory flashing function for easy spin-down (Patent pending)  
Automatically memorizes the duration of spin-down operation ranging from 1 to 90 seconds. Merely pressing the key the next time starts the spin-down procedure for the memorized duration.
- Twenty (20) operation condition memory settings are available, with one-touch saving, access and operation possible.
- Equipped with a tachometer port to comply with GMP requirements. Actual rotor speed is easy to check.
- Acceleration and deceleration curve can be varied in three steps according to the type of sample and experimental conditions.
- RCF (xg)-set operation function and stepped centrifugal force function
- Integrator function that can attain optimization of centrifuging conditions. G-sec value (integrated RCF value) can be measured and the operation with this value set is possible.
- The timer can be set up to 990 minutes or seconds. During hold operation, the elapsed time of operation is displayed.
- Pre-cooling function enables the rotor to reach low temperatures before the experiments.

### AG-1K4 Fixed Angle Rotor 4 x 1 Liter

Light weight (made of Aluminium)

(30% less than AG-5006 6x500mL in weight)



64 cm width, 78 cm depth, 86 cm Height.

### ■ Safety pursued

- 7780 conforms to International safety standard IEC 61010-2-020.
- The various alarm detector sensors secure operation. When the alarm is detected, the operation stops.
- Safety is increased by a rotor setup condition sensor that detects whether or not the rotor is properly set on the driver shaft. (Patent pending)
- Automatic rotor identification. (Patented, Patent pending) Rotor type is automatically identified.

### ■ Sample temperature kept at 4°C

(At the ambient temperature of 25°C. Please refer to the rotor.)

### ■ Design incorporates friendliness to the global environment and recycling

A limited amount of plastic is used to reduce the load on the environment.

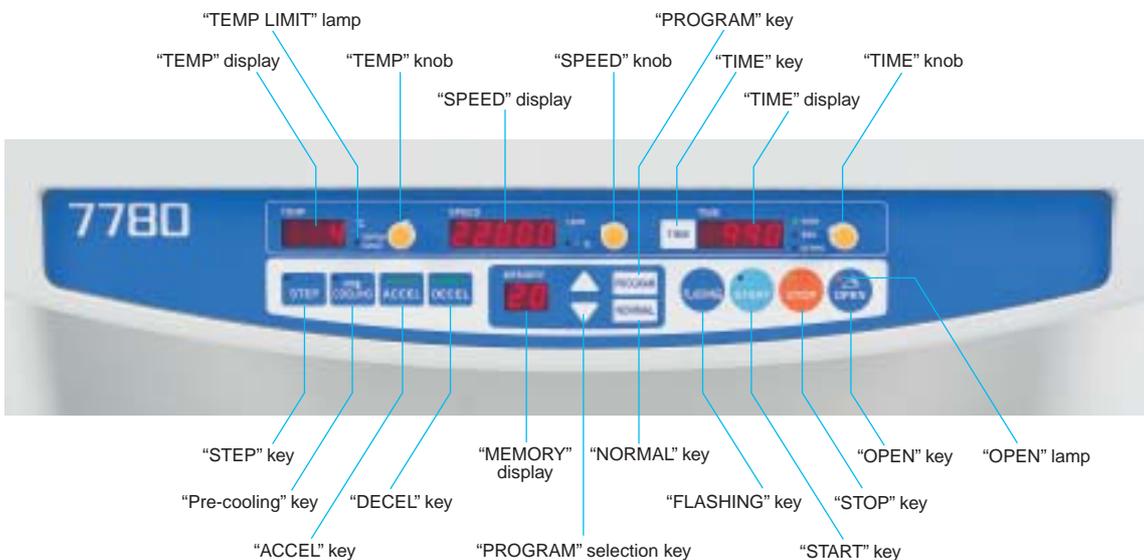
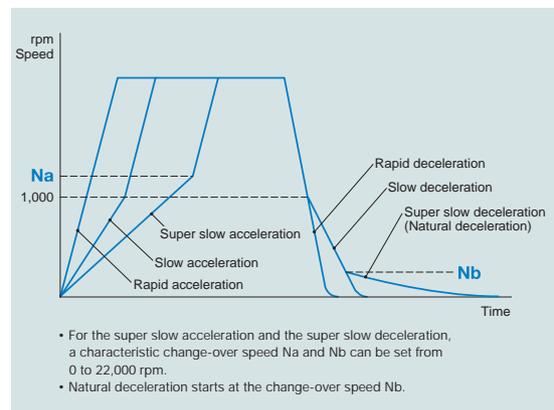
### Acceleration and deceleration characteristics

Acceleration and deceleration curves can be varied in three steps according to the type of sample and experimental conditions.

Acceleration and/or deceleration commencement speed can be selected for the sample easy to stir.

Density gradient method is also possible.

### Acceleration/deceleration characteristics graph



## High RCF 36,530 xg ~ 21,000 xg Fixed Angle Rotor

Cap support structure enables high g-force centrifugation without tube breakage. (excluding AG-6512C) (Patent pending)

High g-force enables separation of sticky protein.

Speed down or special tube is not necessary to prevent tube from breakage.



### AG-508CA

Tube size	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	At keeping 4 °C Max. Speed rpm	* Max. RCF xg
8 x 50 mL Conical tube	30x117	16,500	36,530	15,200	30,990
8 x 15 mL Conical tube *	17x121	16,500	35,920	15,200	30,480

\* Adaptor (Code No.055-1250) is necessary.

\* showing maximum speed and RCF when keeping the sample at 4°C. (At the ambient temperature 25°C)



### AG-6512C \*3

Tube size	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	At keeping 4 °C Max. Speed rpm	* Max. RCF xg
12 x 50 mL Conical tube	30x117	11,500	21,000	11,500	21,000
12 x 15 mL Conical tube	17x121	11,500	17,590	11,500	17,590

50 mL conical tube (PP) with cap of 36 mm diameter or less made by BIO-BIK, CORNING, FALCON, GREINER, IWAKI, NUNC and SARSTEAD can be accommodated. 35 mL Oak ridge conical tube (PC, PPCO) made by NALGE NUNC is acceptable. AG-508CA can accommodate 15 mL conical tubes (PP) made by BIO-BIK, CORNING, FISHER and GREINER. AG-6512C can accommodate 15 mL conical tube (PP) made by any company.

## Plate Rotor

Shield cover is useful for prevention against contamination.

Useful for DNA extraction & purification, ethanol precipitation, purification of PCR product in PCR plate, elimination of Dye-terminator.



with shield cover

### RS-751GS \*3,7

	Max. Size of Plate mm	Max. Speed rpm	Max. RCF xg
12 x microplate	86(W)x128(D)x90(H)	5,000	4,390
4 x deepwell plate			

\* Tray (Code No.055-6380) is necessary.



with shield cover

### RS-745GS \*3,7

	Max. Size of Plate mm	Max. Speed rpm	Max. RCF xg
12 x microplate	86(W)x128(D)x90(H)	4,200	3,100
4 x deepwell plate			

\* Tray (Code No.055-6380) is necessary.

### Tray Code No.055-6380 (Optional)



12x 96 well plate



4x deepwell plate



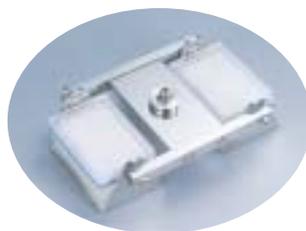
4x squarewell plate



2 deepwell plate + filter plate



2x PCR plate



### RMP-89G

	Max. Size of Plate mm	Max. Speed rpm	Max. RCF xg
8 x microplate	86(W)x130(D)x89(H)	2,400	1,080
4 x deepwell plate			

\* Tray (Code No.055-6370) is available (optional).

## 250mL~1,000mL Large Volume Fixed Angle Rotor



Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	At keeping 4 °C *	
			Max. Speed rpm	Max. RCF xg

\* showing maximum speed and RCF when keeping the sample at 4°C. (At the ambient temperature 25°C)

### AG-2506

6 x 250 mL	60 ~ 62.4x119 ~ 137	13,000	26,830	12,500	24,810
------------	---------------------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### AG-5004 \*2,3

4 x 500 mL	69 ~ 70.2x155 ~ 170.5	11,000	20,700	11,000	20,700
------------	-----------------------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### AG-5006 \*2,3

6 x 500 mL	69 ~ 70.2x155 ~ 170.5	10,000	18,890	10,000	18,890
------------	-----------------------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### AG-1K4 \*3

4 x 1,000 mL	95.5x198.5	9,000	15,760	9,000	15,760
--------------	------------	-------	--------	-------	--------

## Sealing Adaptor for Biohazard-proof



### Sealing adaptor for high speed fixed angle rotor

Available for 10 mL and 50 mL Oak ridge type tubes and 250 mL bottles.  
Autoclavable (121°C).



for 10mL Oak ridge type tube  
Code No.055-4280



for 50mL Oak ridge type tube  
Code No.055-4290



for 250mL bottle  
Code No.055-4510

High Speed Rotor  
AG-506R • AG-508R • AG-1008A •  
AG-5004 • AG-5006

Code No. *	Nominal Capacity	Tube	Tube size Dia x length mm	Rotor	Max. Speed rpm	Max. RCF xg
055-4280	10mL Oak ridge type tube	FEP 3114-0010	16.0x81.5	AG-506R	22,000	49,240
		PSF 3115-0010	16.0x82.0			
		PC 3118-0010	16.1x81.7	AG-508R	19,000	41,170
		PPCO 3119-0010	16.0x81.4			
055-4290	50mL Oak ridge type tube	FEP 3114-0050	28.8x107.7	AG-1008A	15,500	34,110
		PSF 3115-0050	29.0x107.7			
		PC 3118-0050	28.8x107.0			
		PPCO 3119-0050	28.8x106.7			
055-4510	250mL Bottle	PPCO 3120-0250	61.8x127.7	AG-5004	11,000	20,160
		PC 3122-0250	61.8x127.6	AG-5006	10,000	18,450

\* Adaptor is made of Polyethetale and the cap of acrylic  
FEP: Teflon FEP, PSF: Polysulfone, PC: Polycarbonate, PPCO: Polypropylene copolymer

## 7mL~100mL Middle Volume Fixed Angle Rotor



### AG-716 <sup>\*3</sup>

	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	At keeping 4 °C Max. Speed rpm	* Max. RCF x g
16 x 7 mL	15.9 ~ 16.4x60 ~ 64	22,000	48,700	21,000	44,370

\* showing maximum speed and RCF when keeping the sample at 4°C. (At the ambient temperature 25°C)



### AG-1212

12 x 12 mL	15.9 ~ 16.4x103 ~ 109	22,000	51,950	20,500	45,100
------------	-----------------------	--------	--------	--------	--------



### AG-1224 <sup>\*1,3</sup>

24 x 12 mL	15.9 ~ 16.4x103 ~ 105	18,500	42,860	17,000	36,190
------------	-----------------------	--------	--------	--------	--------



### AG-506R <sup>\*2</sup>

6 x 50 mL	28.7 ~ 29x103 ~ 109	22,000	52,490	19,500	41,240
-----------	---------------------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### AG-508R <sup>\*2</sup>

8 x 50 mL	28.7 ~ 29x103 ~ 109	19,000	43,590	17,000	34,900
-----------	---------------------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### AG-1008A <sup>\*2,3</sup>

8 x 100 mL	38x114	15,500	35,190	14,000	28,710
------------	--------	--------	--------	--------	--------

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



### RA-360G <sup>\*3</sup>

24 x 15 mL	16x126	3,500	2,270	3,500	2,270
------------	--------	-------	-------	-------	-------

## Micro Rotor



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>AG-224</b>					
2.4 x 2 mL	9.5 ~ 11.0x36 ~ 42	22,000	44,370		
2.4 x 0.5 mL	7.0 ~ 7.9x25 ~ 34	22,000	39,500		055-7590
2.4 x 0.4 mL	5.4 ~ 6.1x26 ~ 48	22,000	43,830		055-7580
2.4 x 0.2 mL PCR	5.9 ~ 6.3x20 ~ 24	15,000	16,100		055-0500



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RA-159G</b> *3					
7.2 x 2 mL	9.5 ~ 11.0x36 ~ 42	13,500	24,250 *1		
7.2 x 0.5 mL	7.0 ~ 7.9x25 ~ 34	13,500	24,040 *1		055-7590
7.2 x 0.4 mL	5.4 ~ 6.1x26 ~ 48	13,500	23,640 *1		055-7580
7.2 x 0.2 mL PCR	5.9 ~ 6.3x20 ~ 24	13,500	20,580 *1		055-0500



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-35G swinging bucket rotor</b> *3					
1.6 x 2 mL	9.5 ~ 11.0x36 ~ 42	15,000	18,360	053-5130	
4 x 0.5 mL	7.0 ~ 7.9x25 ~ 34	15,000	16,100	053-5130	
2.0 x 0.5 mL	7.0 ~ 7.9x25 ~ 34	15,000	16,100	053-5140	
3.6 x 0.4 mL	5.4 ~ 6.1x26 ~ 48	15,000	18,360	053-5150	
1.6 x 0.2 mL PCR	5.9 ~ 6.3x20 ~ 24	15,000	11,820	053-5130	055-0500

## Swinging Bucket Rotor



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-200G</b> *3					
4 x 50 mL	28.7 ~ 29x103 ~ 109	11,500	20,700		

Tube adaptor is available for various capacities.  
As for details, please contact your dealer.



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-410G</b> *3,4 Sealing cap is available and is biohazard-proof. Autoclavable (121°C)					
48x2mL	10.7x42	5,000	4,160	attached to rotor	S17008
48x5mL RIA tube	12.5x55 ~ 75	5,000	4,160	attached to rotor	S17006
48x7mL	12 ~ 12.5x100 ~ 112	5,000	4,160	attached to rotor	S17007
28x7mL blood collecting tube	12.5 ~ 13x75 ~ 106	5,000	4,160	attached to rotor	S17027
12x15mL Conical tube *5	16.5x120.6	5,000	4,160	attached to rotor	S17019
12x15mL Conical tube *5	16.5x120.6	5,000	4,470 *8	attached to rotor	S13130
28x10mL blood collecting tube/15mL	15.5 ~ 17x87 ~ 110	5,000	4,160	attached to rotor	S17015
4x50mL	34x110	5,000	4,160	attached to rotor	S17050
4x50mL	27 ~ 35.8x82 ~ 110	5,000	4,160	attached to rotor	055-5670
4x50mL Conical tube	29.5x117	5,000	4,160	attached to rotor	S17049
4x100mL	44 ~ 45x110	5,000	4,160	attached to rotor	S17100
4x200mL	56.5x104	5,000	4,160	attached to rotor	



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-720G</b>					
80x2mL	9.5 ~ 11x36 ~ 42	3,500	2,290 *8	053-5820	055-4800
96x6mL RIA tube	10 ~ 12.3x65 ~ 95	3,500	2,190 *8	053-5820	055-4730
80x10mL	12.5 ~ 13.8x65 ~ 95	3,500	2,260	053-5820	055-4740
48x10mL blood collecting tube/15mL	15 ~ 17.2x81 ~ 110	3,500	2,330	053-5820	055-4750
68x5/7mL blood collecting tube *9	12.5 ~ 13.7x62 ~ 110	3,500	2,300	053-5840	055-0260
68x10mL blood collecting tube/15mL	15 ~ 17.2x52 ~ 110	3,500	2,300	053-5840	
28x15mL Conical tube	17x121	3,500	2,300	053-5840	
32x15mL Conical tube	17x121	3,500	2,330	053-5820	055-4780
8x50mL	27 ~ 36.4x85 ~ 110	3,500	2,330	053-5820	055-4760
16x50mL Conical tube	30x117	3,500	2,330	053-5820	055-6070
4x100mL	38 ~ 46.5x75 ~ 120	3,500	2,330	053-5820	055-4770
4x175mL Conical tube *6,8	61x118	3,500	2,330	053-5820	055-4850
4x200mL Conical tube *6,8	61x130	3,500	2,330	053-5820	055-4850
4x225mL Conical tube *6,8	61x137	3,500	2,330	053-5820	055-4850
4x250mL	60 ~ 61.8x100 ~ 130	3,500	2,380 *8	053-5820	055-4850



	Tube size diam. x length mm	Max. Speed rpm	Max. RCF xg	Bucket Code No.	Tube Rack Adaptor Code No.
<b>RS-1400GA</b> *3					
4 x 250 / 350 mL	67 ~ 71x100 ~ 128	5,000/4,000	4,810/3,080		

\*1 The RCF figure shows RCF of the outer tube.  
As to RCF of the inside, please contact your local dealer.  
\*2 Sealing cap and sealing adaptor for bio-hazard proof are available. Please contact your dealer for details.  
\*3 Please confirm the delivery schedule with your dealer.  
\*4 RS-410G can accommodate sealing cap (Code No.S17111) (optional).  
\*5 S17019 tube rack cannot be accommodated with the sealing cap. Code No.S13130 12x15 mL conical bucket can accommodate sealing cap (Code No.S17111) (optional).

\*6 175 mL conical tube is made by Falcon (Catalog No.352076) and requires a cushion (Catalog No.352090).  
200 mL conical tube is made by Nalge Nunc (Catalog No. 376813) and requires a cushion (Catalog No.377585).  
\*7 225 mL conical tube is made by Falcon (Catalog No.352075) and requires a cushion (Catalog No.352090).  
\*8 Please check the strength of plates before using the centrifuge. The plate at the bottom may be damaged.  
\*9 As to RCF display, please refer to INSTRUCTION and Service manual.  
\*9 INSEPACK II 5/7 mL of Sekisui, VENOJECT II 5/7 mL of Terumo, NEOTUBE 5/7 mL of Nipro and VACUTAINER 5/7 mL of Beckton Dickenson can be used.

## Specifications

### Model 7780

Maximum Speed	● 22,000rpm
Maximum RCF	● 52,490xg
Maximum Capacity	● 4,000mL
Control system	● Micro-processor control (Brushless motor)
abnormality detected display	● Speed, RCF, Time, g-sec, Temperature, Acceleration & Deceleration, 20 channel memories ● Lid open, Imbalance, Over speed, Abnormally high temperature, Rotor mounting abnormality ● Function for detecting an occurrence of electrical abnormality in motor, inverter, lid interlock, speed sensor and temperature sensor.
Acceleration / Deceleration	● Three-level selectors; Rapid, Slow and Super Slow
Speed setting	● From 300 to 22,000rpm, 10rpm increments
Speed indication	● Digital display, From 0 to 22,500rpm, 10rpm increments
RCF setting	● From 10 to 52,490xg, 10xg increments
RCF indication	● Digital display, From 0 to 54,900xg, 10xg increments
Integrator setting and indication	● Digital display, From 1.00 to 9.99x10 <sup>9</sup> g-sec
Timer setting and indication	● Digital display, with Hold and Memory Flashing ● from 1 sec to 100 sec, in 1 sec increment ● from 100 sec to 990 sec, in 10 sec increments ● from 1 min to 100 min, in 1 min increment ● from 100 min to 990 min, in 10 min increments
Temperature setting and indication	● Digital display, 1°C increments, Pre-cooling ● Temperature setting range -20°C to +40°C ● Temperature indication -20°C to +43°C
Refrigerant	● R 404A
Power requirements	● Single phase AC220V±10%, 230V±10%, 50/60Hz, 30A
Rated voltage and Rated current	● 220/230V, 50/60Hz, 12A
Power consumption and Heat output	● 3500W, 13MJ/h
Dimensions, weight	● 64(W) x 78(D) x 86(H)cm* <sup>1</sup> , 235kg
Test standard	● IEC 61010-2-020 Class 1

(\*1) Those of projections are not included.

All specifications and external appearance subject to change without notice.

\* On Model 7780 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.



#### Safety Precautions

For your safe use of the equipments, 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.

## 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)

Note: This catalogue is not for distribution in the USA, Canada, Mexico and Australia as products shown are not for sale in these countries.