



High Speed Refrigerated Centrifuge

7780



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



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.

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.

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.

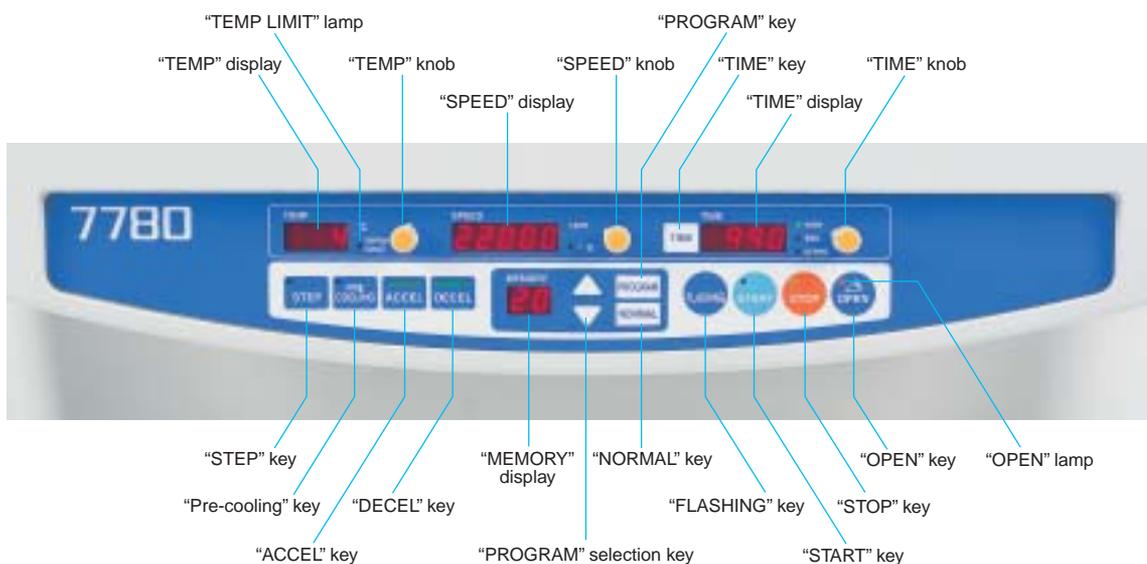
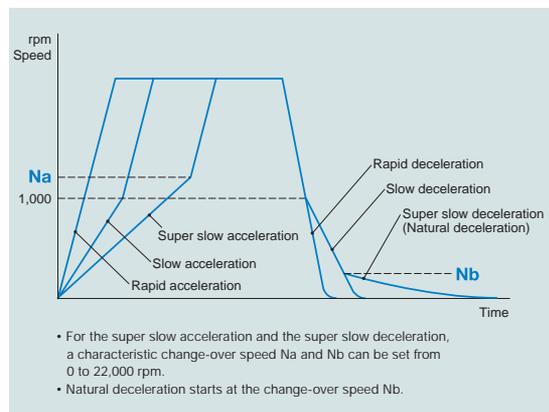
Acceleration and deceleration characteristics

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.



| 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-508CA

| | | | | | |
|--------------------------|--------|--------|--------|--------|--------|
| 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.



AG-6512C *3

| | | | | | |
|-------------------------|--------|--------|--------|--------|--------|
| 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, POCO) 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.

| | Max. Size of Plate mm | Max. Speed rpm | Max. RCF xg |
|--|--------------------------|-------------------|----------------|
|--|--------------------------|-------------------|----------------|



with shield cover

RS-751GS *3,7

| | | | |
|--------------------|--------------------|-------|-------|
| 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

| | | | |
|--------------------|--------------------|-------|-------|
| 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



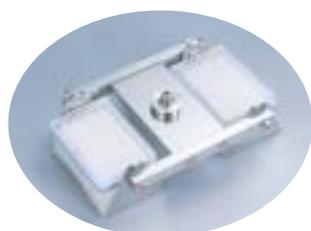
4x squarewell plate



2 deepwell plate +
filter plate



2x PCR plate



RMP-89G

| | | | |
|--------------------|--------------------|-------|-------|
| 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 |
|----------------|--------------------------------|-------------------|----------------|--------------------------------------|---------------------|
| AG-2506 | | | | | |
| 6 x 250 mL | 60 ~ 62.4x119 ~ 137 | 13,000 | 26,830 | 12,500 | 24,810 |

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

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 | At keeping 4 °C Max. Speed rpm | * Max. RCF xg |
|---------------------|--------------------------------|-------------------|----------------|--------------------------------------|---------------------|
| 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.



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



| | Tube size diam. x length mm | Max. Speed rpm | Max. RCF xg | At keeping 4 °C Max. Speed rpm | * Max. RCF xg |
|------------------|--------------------------------|-------------------|----------------|--------------------------------------|---------------------|
| 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 ^{*3}

| | Tube size diam. x length mm | Max. Speed rpm | Max. RCF xg | At keeping 4 Max. Speed rpm | * Max. RCF xg |
|-----------|--------------------------------|-------------------|----------------|-----------------------------------|---------------------|
| 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 ^{*1,3}

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



AG-506R ^{*2}

| | | | | | |
|-----------|---------------------|--------|--------|--------|--------|
| 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 ^{*2}

| | | | | | |
|-----------|---------------------|--------|--------|--------|--------|
| 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 ^{*2,3}

| | | | | | |
|------------|--------|--------|--------|--------|--------|
| 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 ^{*3}

| | | | | | |
|------------|--------|-------|-------|-------|-------|
| 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. |
|------------------|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| AG-224 | | | | | |
| 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. |
|-------------------|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RA-159G *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. |
|--|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RS-35G swinging bucket rotor *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. |
|-------------------|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RS-200G *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. |
|---|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RS-410G *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 | 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. |
|------------------------------------|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RS-720G | | | | | |
| 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. |
|---------------------|--------------------------------|-------------------|----------------|--------------------|----------------------------------|
| RS-1400GA *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).

225 mL conical tube is made by Falcon (Catalog No.352075) and requires a cushion (Catalog No.352090).

*7 Please check the strength of plates before using the centrifuge. The plate at the bottom may be damaged.

*8 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 ³ 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*1, 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. <ul style="list-style-type: none"> •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. | <div style="background-color: yellow; padding: 5px; text-align: center;">IMPORTANT</div> 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

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