

KUBOTA

High Speed Refrigerated Centrifuge



7780

Max. 22,000 rpm/52,490 xg

Max. 4 Liters



Foot Switch (Optional)

Lid opens automatically when the switch is depressed. A newly designed gas spring provides smooth and quick lid opening. Hands-free operation facilitates experiments.

Features

High Capacity Rotor

AG-1K4 rotor handles 4 x 1,000mL at 15,760 xg.

Auto Interlock Lid

- To close lid
Push closed gently. Electrical interlock system automatically locks lid closed.
- To open lid
Press lid open key. Lid opens automatically after interlock is released.
Optional foot Switch enables hands-free lid opening.

Easy-to-use functions maximize convenience

- Memory function for easy spin-down automatically memorizes duration of spin-down operations, from 1 to 90 seconds (patented). One key press can then start subsequent spin-down operations, using the memorized duration.
- 20 memory settings available, with one-touch saving, access, and operation.
- Equipped with a tachometer port to comply with GMP requirements. Actual rotor speed is easy to check.
- Acceleration and deceleration curves can be selected from three profiles to best match sample types and experiment requirements.
- RCF(g)-set operation function and stepped centrifugal force function.
- Actual g·sec (integrated RCF) value can be measured for centrifuging operations, in place of time duration settings.
- Timer can be set up to 990 minutes or seconds. During a hold condition, the elapsed time of operation is displayed.
- Pre-cooling function enables rotor to reach low temperature before operation.

AG-1K4 Fixed Angle Rotor

4 x 1,000mL

Light weight (made of Aluminium)

- 1,000mL liquid can be filled sufficiently into the bottle as equipped with sealing cap.
- Because the weight is 30% less than AG-5006 rotor (6x 500mL),
 - Rapid acceleration/deceleration are available
 - Easy to attach/detach
- Wide-mouth bottles enable to take out sediments easily.



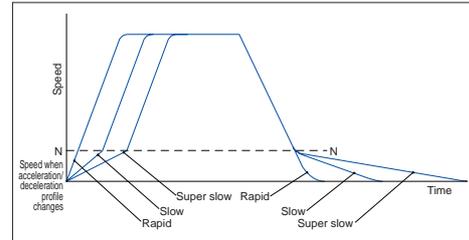
Compact size: 64cm x 78cm x 86cm (WxDxH)

Safety comes first

- Conforms to International Safety Standard IEC 61010-2-020.
- Numerous detectors ensure safe, reliable operation. If trouble is detected, operation stops immediately.
- Rotor mounting sensor detects whether or not the rotor is properly set on the driveshaft. (Patent pending)
- Automatic rotor detection is available. (Patented and patent pending)

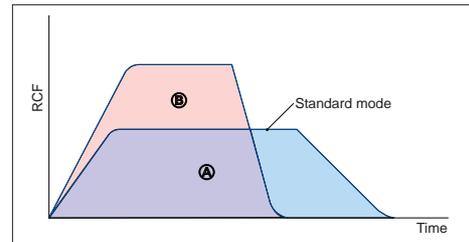
Sample temperature maintained at 4°C.

(at 25°C ambient temperature. Please refer to the Rotor List.)



Acceleration/deceleration profiles

- A super-slow acceleration and deceleration profile is ideal when centrifuging sensitive samples, to avoid resuspension.
- Suitable for centrifugation of easily resuspended samples, density gradient methods and blood cell cleaning.
- The rotational speed N when the acceleration/deceleration profile changes can be set, enabling super-slow acceleration and deceleration for especially sensitive samples.

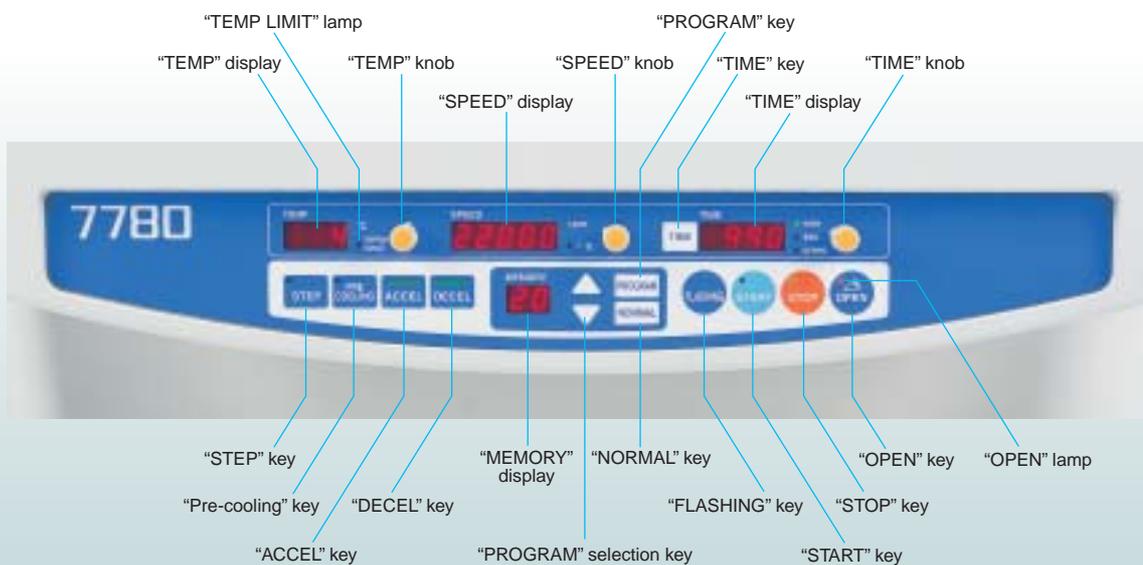


Integrator function g·sec value

Identical applications of total centrifugal force are easily reproducible using the g·sec function

- The integrator function enables identical centrifugal effects to be applied. (A) = (B)

Operation Panel



High RCF (36,530 xg – 21,000 xg) Fixed-angle Rotor (for conical tubes)

Cap support structure enables high g-force centrifugation without tube breakage. (patented)

High g-force enables separation of sticky proteins.

Tube breakage can be prevented without time-consuming slowdowns or use of special tubes.



AG-508CA
8 x 50mL Conical tube
8 x 15mL Conical tube †

† Adaptor (Code No. 055-1250) is required.



AG-6512C
12 x 50mL Conical tube
12 x 15mL Conical tube

- 50mL conical tubes (PP), 36mm diameter or less, made by Iwaki, Greiner, Corning, Sarstead, Falcon, Fisher, Labcon or Nunc can be used. With adaptor (Code No.055-0890) attached, 35mL Oak ridge conical tubes (PC, PPCO) from Nunc can be used.
- AG-508CA rotors support use of 15mL conical tubes (PP) made by Greiner, Corning, Labcon. Tubes from other makers can be used at 10,000 rpm or less.

AG-6512C rotor supports use of 15mL conical tubes of any maker.

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|-------------|------------------------|-------------------------------|-------------------|----------------|
| AG-508CA *1 | 8 x 50mL Conical tube | 30 x 117 | 16,500 * | 36,530 |
| AG-6512C *3 | 12 x 50mL Conical tube | 30 x 117 | 11,500 | 21,000 |
| | 12 x 15mL Conical tube | 17 x 121 | 11,500 | 17,590 |

*1 Tube adaptors are available for various capacities. Contact our distributor for details.

*3 Ask our distributor about lead time.

* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

7mL-100mL Middle Volume Fixed Angle Rotor



AG-716
16 x 7mL



AG-1212
12 x 12mL



AG-506R
6 x 50mL



AG-508R
8 x 50mL



AG-1224
24 x 12mL



AG-1008A
8 x 100mL

- Tube adaptors are available for various capacities. Contact our distributor for details.

• Tube adaptors are available for various capacities. Contact our distributor for details.

• Tube adaptors are available for various capacities. Contact our distributor for details.

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|-----------------|------------------|-------------------------------|-------------------|----------------|
| AG-716 *3 | 16 x 7mL | 15.9~16.4 x 60~64 | 22,000 * | 48,700 |
| AG-1212 | 12 x 12mL | 15.9~16.4 x 103~109 | 22,000 * | 51,950 |
| AG-1224 *3 | 24 x 12mL | 15.9~16.4 x 103~105 | 18,500 * | 42,860 |
| AG-506R *1,2 | 6 x 50mL | 28.7~29 x 103~109 | 22,000 * | 52,490 |
| AG-508R *1,2 | 8 x 50mL | 28.7~29 x 103~109 | 19,000 * | 43,590 |
| AG-1008A *1,2,3 | 8 x 100mL | 38 x 114 | 15,500 * | 35,190 |

*1 Tube adaptors are available for various capacities. Contact our distributor for details.

*2 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

*3 Ask our distributor about lead time.

* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

250mL-1,000mL Large Volume Fixed-angle Rotor



AG-2506
6 x 250mL

• Tube adaptors are available for various capacities. Contact our distributor for details.



AG-5004
4 x 500mL

• Tube adaptors are available for various capacities. Contact our distributor for details.



AG-5006A
6 x 500mL

• Tube adaptors are available for various capacities. Contact our distributor for details.



AG-1K4
4 x 1,000mL

Light weight (made of Aluminium) 1,000mL liquid can be filled sufficiently into the bottle as equipped with sealing cap. The weight is 30% less than AG-5006 rotor (6 x 500mL).

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|-----------------|------------------|----------------------------------|----------------------|-------------------|
| AG-2506 *1 | 6 x 250mL | 60~62.4 x 119~137 | 13,000 * | 26,830 |
| AG-5004 *1,2,3 | 4 x 500mL | 69~70.2 x 155~170.5 | 11,000 | 20,700 |
| AG-5006A *1,2,3 | 6 x 500mL | 69~70.2 x 155~170.5 | 10,000 | 18,890 |
| AG-1K4 *1,3 | 4 x 1,000mL | 95.5 x 198.5 | 9,000 | 15,760 |

*1 Tube adaptors are available for various capacities. Contact our distributor for details.

*2 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

*3 Ask our distributor about lead time.

* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

Sealing Adaptor for Biohazard-proof Requirements



High speed rotor

AG-506R • AG-508R • AG-1008A
AG-5004 • AG-5006A

Sealing Adaptor for High Speed Fixed-angle Rotors

Autoclavable (121°C)



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



for 50mL Oak Ridge
type tube
Code No.055-0530



for 250mL Bottle
Code No.055-4510

| 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 | 16.0 x 81.5 | AG-506R | 22,000 | 49,240 |
| | | PSF 3115-0010 | 16.0 x 82.0 | | | |
| | | PC 3118-0010 | 16.1 x 81.7 | AG-508R | 19,000 | 41,170 |
| | | PPCO 3119-0010 | 16.0 x 81.4 | | | |
| 055-0530 | 50mL Oak ridge type tube | FEP 3114-0050 | 28.8 x 107.7 | AG-1008A | 15,500 | 34,110 |
| | | PSF 3115-0050 | 29.0 x 107.7 | | | |
| | | PC 3118-0050 | 28.8 x 107.0 | | | |
| | | PPCO 3119-0050 | 28.8 x 106.7 | | | |
| 055-4510 | 250mL Bottle | PPCO 3120-0250 | 61.8 x 127.7 | AG-5004 | 11,000 | 20,160 |
| | | PC 3122-0250 | 61.8 x 127.6 | AG-5006A | 10,000 | 18,450 |

* Adaptors are made of Polyethetale, with polycarbonate caps.

FEP = Teflon FEP; PSF = Polysulfone; PC = Polycarbonate; PPCO = Polypropylene Copolymer.

Micro Rotors



AG-224
24 x 1.5/2mL
24 x 0.5mL
24 x 0.4mL
24 x 0.2mL PCR



RA-159G
72 x 1.5/2mL
72 x 0.5mL
72 x 0.4mL
72 x 0.2mL PCR

AG-type rotors incorporate an "Anti-loosening rotor cover", which keeps rotor covers secure. (Patent pending)

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|--------------|------------------|-------------------------------|-------------------|----------------|
| AG-224 *1 | 24 x 1.5/2mL | 9.5-11 x 36-42 | 22,000 | 44,370 |
| RA-159G *1,3 | 72 x 1.5/2mL | 9.5-11 x 36-42 | 13,500 | 24,250 |

*1 Tube adaptors are available for various capacities. Contact our distributor for details.
*3 Ask our distributor about lead time.

* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.

Plate Rotors

Shield covers help prevent contamination.

These are useful for DNA extraction & purification, ethanol precipitation, purification of PCR products in PCR plates, dye-terminator removal.



RS-751GS
12x Micro-plates
4x Deep-well plates
with Shield Cover Tray (Code No.055-6380) required.



RS-745GS
12x Micro-plates
4x Deep-well plates
with Shield Cover Tray (Code No.055-6380) required.



RMP-89G
8x Micro-plates
4x Deep-well plates
Optional tray is available (Code No.055-6370)

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|---------------|----------------------|-------------------------------|-------------------|----------------|
| RS-751GS *3,7 | 12 x Micro-plates | 86 (W) x 128 (D) x 90 (H) | 5,000 | 4,390 |
| | 4 x Deep-well plates | | | |
| RS-745GS *3,7 | 12 x Micro-plates | 86 (W) x 128 (D) x 90 (H) | 4,200 | 3,100 |
| | 4 x Deep-well plates | | | |
| RMP-89G | 8 x Micro-plates | 86 (W) x 130 (D) x 89 (H) | 2,400 | 1,080 |
| | 4 x Deep-well plates | | | |

*3 Ask our distributor about lead time.
*7 Verify plate strength before centrifuging. Plates in lower position may fracture.

Trays Code No.055-6380 (optional)



12 x 96 well plate



4 x deep-well plate



4 x square-well plate



2 deep-well + filter plate



2 x PCR plate

Continues Rotor



RC-850
850mL

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|------------|------------------|-------------------------------|-------------------|----------------|
| RC-850 *3 | 850mL | | 17,000 | 25,850 |

*3 Ask our distributor about lead time.

Swinging Bucket Rotor



RS-200G
4 x 50mL

- Tube adaptors are available for various capacities. Contact our distributor for details.

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg |
|--------------|------------------|----------------------------------|----------------------|-------------------|
| RS-200G *1,2 | 4 x 50mL | 28.7~29.3 x 101~115 | 11,500 | 20,700 |

*1 Sealing adaptors for biohazard-proof requirements are available. Contact our distributor.

*2 Ask our distributor about lead time.

* Samples can be refrigerated to as low as 4°C (20°C or below at 25°C ambient temperature). Values in parentheses indicate maximum speed and RCF when samples are refrigerated to 4°C.



RS-410G
**Multi-purpose Swinging
Bucket Rotor**
Sealing caps are available.
Autoclavable (121°C)



RS-720G
**Multi-purpose Swinging
Bucket Rotor**

| Rotor Name | Nominal Capacity | Tube size (mm) diam. x length | Maximum Speed rpm | Maximum RCF xg | Bucket Code No. | Tube Rack Adaptor Code No. |
|---|---|----------------------------------|----------------------|---------------------|---------------------|----------------------------------|
| RS-410G *4 | 48 x 1.5/2mL | 10.7 x 42 | 5,000 | 4,160 | Equipped with rotor | K17008 |
| | 48 x 5mL RIA tube | 12.5 x 55~75 | 5,000 | 4,160 | Equipped with rotor | K17006 |
| | 48 x 7mL | 12~12.5 x 100~112 | 5,000 | 4,160 | Equipped with rotor | K17007 |
| | 28 x 5-7mL blood collecting tube | 12.5~13 x 75~106 | 5,000 | 4,160 | Equipped with rotor | K17027 |
| | 12 x 15mL Conical tube *3 | 16.5 x 120.6 | 5,000 | 4,160 | Equipped with rotor | K17019 |
| | 12 x 15mL Conical tube *3 | 16.5 x 120.6 | 5,000 | 4,470 *1 | K13130 | |
| | 28 x 10mL blood collecting tube/15mL | 15.5~17 x 87~110 | 5,000 | 4,160 | Equipped with rotor | K17015 |
| | 4 x 50mL | 27~35.8 x 82~110 | 5,000 | 4,160 | Equipped with rotor | 055-5670 |
| | 4 x 50mL Conical tube | 29.5 x 117 | 5,000 | 4,160 | Equipped with rotor | K17049 |
| 4 x 100mL | 44~45 x 110 | 5,000 | 4,160 | Equipped with rotor | K17100 | |
| 4 x 200mL | 56.5 x 104 | 5,000 | 4,160 | Equipped with rotor | | |
| RS-720G | 80 x 1.5/2mL | 9.5~11 x 36~42 | 3,500 | 2,290 *1 | 053-5820 | 055-4800 |
| | 80 x 10mL | 12.5~13.8 x 65~95 | 3,500 | 2,260 *1 | 053-5820 | 055-4740 |
| | 68 x 5-7mL blood collecting tube *5 | 12~13.7 x 62~110 | 3,500 | 2,300 | 053-5840 | 055-0260 |
| | 48 x 5-10mL blood collecting tube/15mL *5 | 12~17.2 x 72~110 | 3,500 | 2,330 | 053-5820 | 055-0880 |
| | 68 x 10mL blood collecting 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 175/200/225mL Conical tube *2 | 61 x 118/61 x 130/61 x 137 | 3,500 | 2,330 | 053-5820 | 055-4850 |
| | 4 x 250mL | 60~61.8 x 100~130 | 3,500 | 2,380 *1 | 053-5820 | 055-4850 |
| 8x/12x/16x Self-standing sputum tube *6 | Cap diam. 48/ 37/ 31 | 3,500 | | *6 | 053-5820 | *6 |

*1 See instruction manual for RCF display details.

*2 175mL/225mL conical BD Falcon tubes (Code No.352076/352075) require cushions (Code No.352090).
200mL conical Nunc tubes (Code No.376813) require cushions (Code No.377585).

*3 The K17019 tube rack cannot be used with a sealing cap.
Code No.K13130 (Bucket for 12 x 15mL TC tubes) can use optional sealing cap (Code No.K17111).

*4 Ask our distributor about lead time.

*5 Blood collecting tube made by Sekisui (Insepac II), Termo (Venoject II), Nipro (Neotube), and Beckton Dickinson (Vacutener) can be used.
Tubes for flow cytometry can be used.

*6 Various sputum tube capacities can be used. Contact our distributor for details.

Specifications

Model 7780

| | |
|------------------------------------|---|
| Maximum Speed | ● 22,000 rpm |
| Maximum RCF | ● 52,490 xg |
| Maximum capacity | ● 4,000 mL |
| Control system | ● Microprocessor control (brushless motor) Speed, RCF(g), Time, g-sec, Temperature, Acceleration and Deceleration, 20 memory banks |
| Alarm display | ● Lid open, Imbalance, Over speed, Rotor setting condition, Abnormally high temperature, Detected electrical abnormality in motor, inverter, lid interlock, speed sensor and temperature sensor |
| Acceleration/Deceleration | ● Three selectable rates: Rapid, Slow and Super Slow |
| Speed setting | ● From 300 to 22,000 rpm, 10 or 100 rpm increments |
| Speed indication | ● Digital display, from 0 to 22,500 rpm, 10 rpm increments |
| RCF setting | ● From 10 to 52,490 xg, 10 or 100 xg increments |
| RCF indication | ● Digital display, from 0 to 54,900 xg, 10 xg increments |
| Integrator setting and indication | ● Digital display, from 1.00-9.99x10 ⁹ g·sec |
| Timer setting and indication | ● Digital display, with HOLD function (continuous operation) and flashing 1 second to 100 seconds, 1 sec increments 100 seconds to 990 seconds, 10 sec increments 1 minute to 100 minutes, 1 min increments 100 minutes to 990 minutes, 10 min increments |
| Temperature setting and indication | ● Digital display, -20°C to +40°C, 1°C increments, Pre-cooling |
| Refrigerant | ● R404A |
| Power requirements | ● Single phase 50/60Hz, 220V±10% 30A, 230V±10% 30A |
| Rated voltage and rated current | ● 220V/230V 16.3A |
| Power consumption and heat output | ● 3.0kW 11MJ/h |
| Dimensions, weight | ● 64cm x 78cm x 86cm (WxDxH) ^(*) , 249kg |
| Certificates of conformity | ● IEC 61010-2-020 CE Marking (AC 220V and 230V versions) |

(*1) Not including projections.

All specifications and external appearance are subject to change without notice.

* Use only rotors, adaptors and tube racks made by KUBOTA. Do not attempt to use rotors, adaptors or tube racks made by other manufacturers.

* Follow all instructions in the relevant Instruction & Service Manual when operating centrifuges.

Kubota has acquired ISO 9001 and ISO 13485 certification.

| | | |
|--|--|--|
|  Safety Precautions | <p>For your safe use of the equipments, be sure to read the instruction manual carefully before you start its operation.</p> | <p>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.</p> |
|  DISCONTINUE USE | <p>Always discontinue use when phenomena listed at right appear.</p> <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. |  IMPORTANT <p>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.</p> |

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