

Operation Manual



BCBHR-303

Benchtop High Speed Refrigerated Centrifuge

Thank you for Choosing Biolab products. Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation.

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Safety Notices

Dear Customer,

To prevent any potential accident, please carefully read and fully understand the following safety instruction before you operate centrifuges. If neglected, personal injury and /or instrument damage can be caused.

The safety reminders are indicated as shown below. The signal words " DANGER", "WARNING" AND " CAUTION " are indicated together with the hazard alert symbols in this manual.

DANGER: This note indicates an imminently hazardous situation, which if not strictly Observed, could result in personal severe injury.

WARNING: This note indicates a potentially hazardous situation, which if not strictly observed, could result in personal severe injury or pollution of the environment.

1. For operator safety, maintain a 30-cm "clearance envelope "around the instrument while the rotor is spinning.
2. Do not store dangerous substances capable of developing flammable or explosive vapors in the clearance envelope.
3. Do not attempt to unlock the door forcefully while the rotor is spinning.
4. Do not attempt to slow or stop the spinning rotor by hand.
5. Do not use any sample inapplicable to the rotor (including buckets), like corrode chemical material.
6. Do not incline or move the instrument while the rotor is spinning. Do not lean on the instrument.
7. Do not exceed the maximum rated speed of the rotor or buckets in use.
8. Do not use corroded, scratched or cracked rotor, buckets and assemblies. Check that the rotor, buckets and assemblies are free of such abnormalities before operation.

If abnormal sound or vibration occurs, stop the operation immediately and contact machine supplier.

9. Do not let the tube with full volume spin, the rotor allows 75% volume of tube at most.

CAUTION: This note indicates a potentially hazardous situation, which if not strictly observed, could result in personal injury or severe damage to the instrument.

1. Do not use any sample inapplicable to the tubes, the bottles, the tube racks, the micro-plates or tube/bottle caps, etc. Using such a sample could deteriorate them.

Maximum rotor speed depends on the buckets, assemblies, tubes or adapters to be used.

2. Do not exceed the allowable imbalance.
3. Use the rotor tubes and bottles within their actual capacities.
4. Mount the rotor onto the drive shaft gently and properly. Do not drop the rotor or apply excessive force to the drive shaft to avoid damage to the drive shaft. Please see the picture and video!
5. Clean the inside of the drive hole (crown hole) of the rotor and surface of the drive shaft (crown) of the centrifuge once a month.

6. If dew drops are in the rotor chamber, drain the chamber through the drain hose to prevent the sample to get mixed up with them or prevent them from leaking into the drive unit. Be sure to recap the drain hose after drainage.
7. Do not pour any solution such as water, detergent and disinfectant directly into the rotor chamber. Otherwise, the bearings of the drive unit may be corroded or deteriorated.
8. Before relocating the centrifuge, remove the rotor from the rotor chamber to avoid damaging to the drive shaft.
9. Always keep the liquid crystal panel in a visible position while the POWER switch is turned on so that you can check the current operating state (running or stopping).

"NOTE" indicates a note which has no direct bearing on personal safety.

Safety During Installation and/or Maintenance

WARNING:

1. Level the centrifuge by using the four level adjusters and secure them completely. Improper securing can cause significant movement of the centrifuge in the event of rotor disengagement.
2. When servicing the centrifuge, be sure to turn off the POWER switch, turn off the distribution board of your centrifuge room, and then wait for at least three minutes before removing covers or tables from the centrifuge to avoid electrical shock hazards.
3. It is your responsibility to sterilize or decontaminate the centrifuge, rotor or the accessory properly before returning to manufacturer authorized sales/service representative. In such cases, copy the decontamination sheet at the end of this manual and fill out the copied sheet, then attach it to the item to be returned.

Distributor may ask you about the treatment for the centrifuge, rotor or the part if the decontamination is checked and judged as insufficient by manufacturer. It is your responsibility to bear the cost of sterilization or decontamination.

Note that the engineer cannot repair or inspect the centrifuge, the rotor or the accessory unless sterilization or decontamination is completed.

CAUTION: Avoid a place exposed to ultraviolet rays for operation or storage of the centrifuge. Otherwise, the covers can be discolored and the coating can be peeled off easily. If installation in such place is unavoidable, cover the centrifuge with a cloth after operation to protect from ultraviolet rays.

1-1 Rotor Chamber

CAUTION: Do not pour any solution such as water, detergent and disinfectant directly into the rotor chamber. Otherwise, the bearings of the drive unit may be corroded or deteriorated.

(1) If the rotor chamber is found not dry, wipe moisture from the chamber with a cloth or sponge to cool the rotor efficiently. Drain condensed water from the chamber by using the drain hose.

(2) If the rotor chamber is found dirty, wipe the chamber with a cloth or sponge dampened with a diluted solution of neutral detergent.

(3) Turn off the centrifuge power and keep the door opened to dry the chamber after operation.

1-2 Drive Shaft (Crown)

CAUTION: Clean the inside of the drive hole (crown hole) of the rotor and the surface of the drive shaft (crown) of the centrifuge once a month. If the drive hole or the drive shaft is stained or any foreign matter is adhered, the rotor may be improperly installed and come off during operation.

This part is very important because the rotor is mounted on it and the crown transmits driving force to the rotor. Before mounting a rotor, wipe the outer surface of the crown with a soft cloth dampened with water sufficiently.

1-3 Cabinet

Always keep the table and the cabinet of the centrifuge clean, to prevent dust and other materials from falling into the rotor chamber. Wipe the table and the cabinet with a cloth or sponge dampened with a diluted solution of neutral detergent. If any solution that is toxic, radioactive, or pathogenic is spilt inside or outside the centrifuge, take necessary action according to your proper laboratory procedures and methods.

1-4 Rotor

(1) To prevent corrosion, take out the rotor from the rotor chamber after operation and remove the rotor cover to dry the tube holes.

(2) If any sample is spilt inside the rotor, wash and dry the rotor well, then apply silicone grease lightly to the rotor.

(3) Regularly apply lubricant grease to the thread portion of the rotor.

Electrical Safety

WARNING: Your centrifuge must be grounded properly to avoid electrical shock hazards. And this centrifuge is 220Voltage 5A.

CAUTION: Do not place containers holding liquid in the rotor chamber or on or near the instrument. If they spill, liquid may get into the instrument and damage electrical components.

Safety against Risk of Fire

WARNING: This instrument is not designed for use with materials capable of developing flammable or explosive vapors. Do not centrifuge such materials in this instrument nor handle or store them near the instrument.

Chemical and Biological Safety

WARNING: 1. Make sure to prepare necessary safety measures before using

samples that are toxic or radioactive samples or pathogenic or infectious blood samples at your own responsibility.

2. If the centrifuge, rotor or the accessory is contaminated by toxic or radioactive samples or pathogenic or infectious blood samples, be sure to decontaminate it according to good laboratory procedures and methods.

3. If there is a fear that the centrifuge, rotor or the accessory is contaminated by toxic or radioactive samples or pathogenic or infectious blood samples that impair human health, it is your responsibility to sterilize or decontaminate the centrifuge, rotor or the accessory properly.

SUMMARY:

Tabletop high speed micro refrigerated centrifuge. Ideal for Medical, Life Sciences, and Agricultural Sciences fields and so on. This machine can match different rotor types and many kinds of volumes, which support kinds of Laboratory tests and Small batch preparation requirements. Its Max speed is 16000r/min, Max. RCF is 19040×g, Max. volume 10×5ml. This centrifuge has fast cooling down function, and use brush-less frequent motor drive, microprocessor control system, soft control touch panel, digital display run parameters, adjustable acceleration & deceleration, and auto-electric lid interlock with alarm for a combined safe protection system. We assure you of "stable function, Quiet noise, Simple operation, Convenient using "

01 Main Specification and technical parameters

Max. Speed	16000 r/min
Max. Volume	10×5ml
Max. RCF	19040×g
Temperature range	-20°C ~ 40°C
Timer	1~99h 59min
Temperature Accuracy	±1°C
Speed Accuracy	±50 r/min
Noise	≤ 60dB(A)
Power supply	220V ~ 50Hz 5A
Dimension	485mm×485mm×275mm

02 Available rotors

Rotor No.	Rotor type	Speed (rpm)	Volume (ml)	RCF (×g)
No31001	Angle rotor	16000	40×0.2ml	19040
No31002	Angle rotor	16000	24×0.5ml	18480
No31003	Angle rotor	16000	12×1.5/2ml	17940
No31004	Angle rotor	16000	10×5ml	17800
No31008	Angle rotor	14000	24×1.5/2ml	17950

03 Unpacking

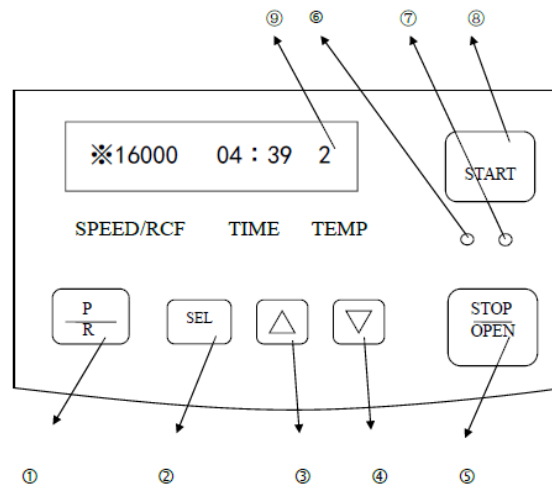
Please check whether there are serious damages on the package as soon as you received the centrifuge, if so, please contact us directly, if not, please unpacking the package, take out the instruction manual, checking the components and accessories according the packing list in the instruction manual. If you found something missing, please tell us.

04 Installation

The centrifuge should be installed on a stable working table, let its four rubber feet touch the even surface of the table. And then insert one head of the power plug into the socket which mounted on the rear of the centrifuge. Insert another head of the plug into the power supply socket. (Attention: the power supply socket must be connected with the earth in case of electric shocks).

05 Operation

- Checking whether the round nut in the rotor is loose, if so, fasten them.
- Prepare the tubes; put the test liquids into the tubes, checking whether they are in the same level with your eyes.
 - Load tubes on the tube rack symmetrically; otherwise it will be resulted in severe vibration in the process of centrifugal. And the volume of sample you need add shouldn't be beyond the 75% of total tube volume.
 - Close the lid, make sure it is locked
 - Set parameters



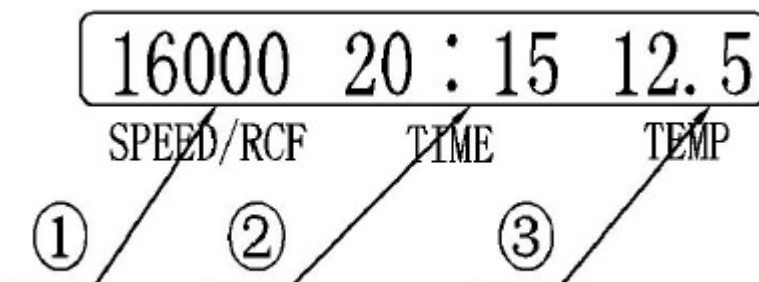
The time and speed will be showing on the panel, switches and buttons as the following figure:

Figure legend:

1 Program selection ②Timer/Speed/RCF Conversion key ③Up button ④Down button ⑤Stop/Open button ⑥Working indicator ⑦Stop indicator ⑧Start button ⑨LCD display window

6. The contents of the display window are as Picture2 shown

1) Speed area 2) Time area 3) Temperature area



1) Speed area 2) Time area 3) Temperature area

a. For Speed area, it can shows speed, RCF, Rotor No. & Program No.

b. For Time area, it can shows Time and Error codes

PS: the meaning of Error codes as the below form3 shown:

Form 3



Fault	Top lid (not close well)	Moto r (faul t)	Machin e can't stop	Temperat ure transmitt er	Generate receive error	Adjust fault	Over- speed
code	E-1	E-2	E-4	E-5	E-6	E-7	E-8



c. For Temperature area, it also shows 2 contents, Temperature and Brake system respectively.



06 The function of total 6 buttons

a) P/R button there are 10 kinds of programs for selection, including A,B,C,D,E,F,G,H,I, J1-J2-J3, what is more, J1-J2-J3 are gradient separating programs.

b) SET button you can switch the Speed, RCF, Rotor No., Time, Temperature & Brake levels freely by this button.

c)  button and  button

Touch  button not stop · the number will continuously increase · Click  button · the number will increase bit -by -bit ;

Touch  button, not stop · the number will continuously reduce · Click  button · the number will reduce bit-by-bit.

d) START button · if press it, the green indicator light will be brighten on it · the machine start working · and timer window counts down.

e) STOP/OPEN button, if the centrifuge is in running, you press this button, the red indicator light will be brighten, and the instrument will start to down until stop completely. If the centrifuge is in stop status, you press this button, the top lid will be open.

- Start the centrifuge

Press the start button, the start indicator will be brighten, the centrifuge starts to work, the speed window will show the speed; the time window begin to count down, the speed will be up to what you pre-selected within 1-2 minutes. Press the SET button again in the process of operation, the speed window will show the current RCF., 10 seconds later, it will return to show the speed.

- Stop the centrifuge

When the time window count down to 0 (or press the stop button), stop indicator will be brighten, the speed will be down to 0, then the centrifuge will stop running.

- Open the lid

Take out the tubes, centrifugal finished.

- Power off

Press the down side of the switch button, now the panel is cut off, but the whole machine is not power off, if you stop using the machine, you should take out the plug from the power supply socket.

- Trouble shooting

1. Press the up side of the switch button, the centrifuge doesn't work, please check the fuse in the socket mounted on the rear of the centrifuge, if it is damaged, please replace it with the 5A fuse. If not, then check the switch, if the above two places is in good condition, please contact us.
2. Make sure never ask the non-professional person to solve the electronic board problem.

Warranty Policy

1. We have one -year warranty on our all products
2. After the machine fixed, our professional technician will file it and keep track of the usage of the machine.
3. We will pay attention to the feedback of the customers within 24 hours.
4. We won't charge customers any money for repairing the machine in one-year warranty time.
5. We only charge for the accessories on repairing the machine beyond the one-year warranty time



BIOLAB SCIENTIFIC LTD.

3660 Midland Avenue, Suite 300, Toronto, Ontario M1V 0B8 Canada

Email: contact@biolabscientific.com Tel: +1 707 533 1445

Website: www.biolabscientific.com