

Operation Manual



BCBHR-103

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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01 Use

It's mainly use in physic, life sciences, agriculture, etc. Many kinds of rotors can be used. It has digital display, over speed and over temperature protection devices. Moreover it is furnished with the electronic lock, which will make the operation course safe and reliable.

02 Technical Specification

Table I

| | |
|----------------|---------------------|
| Max Speed | 20000r/min |
| Max volume | 100mlx4 |
| Max RCF | 27800xg |
| Temp. range | -20°C~+40°C |
| Timer | 0~99min |
| Speed accuracy | ±50r/min |
| Noise | ≤65dB (A) |
| Power | 220V 50Hz |
| Dimensions | 600x470x330 (LxWxH) |

03 Rotors

Rotor's specification refer to Table II

Table II

| NO. | Capacity (mlxtubes) | Max Speed (r/min) | Max RCF (xg) |
|---------------------|------------------------|----------------------|-----------------|
| 1 Angle rotor | 1.5/2.2mlx12 | 20000 r/min | 27800 |
| 2 Angle rotor | 1.5/2.2mlx24 | 16000 r/min | 23755 |
| 3 Angle rotor | 5mlx10 | 16000 r/min | 17280 |
| 4 Micro plate rotor | 2x48 hole | 3000 r/min | 1400 |
| 5 Angle rotor | 10mlx12 | 13000 r/min | 16760 |
| 6 Angle rotor | 100mlx4/50mlx6 | 12000 r/min | 13000 |

| | | | |
|---------------|--------|------------|------|
| 7 Swing rotor | 10mlx4 | 6000 r/min | 3200 |
|---------------|--------|------------|------|

04 Requirement of the instrument installment

1. Rotor install: put the rotor on the spindle and screw it with cap.
2. The tubes shall be place in symmetry with balance.
3. The table shall be stability.
4. The power shall be 220V and single-phase with separate Earth wire without creepage.
5. The instrument shall be placed at where their is no disturb of magnetic field and caustic gas.
6. The back of machine shall be 15cm from the wall for aeration.
7. Use power line we supplied.

05 Working and using

Before use the machine, please read the book carefully at first, Check the Power and operate according to the instruction book.

Table III

1 Explanation of key:

ROTOR: Number of Rotor

SPEED: Speed volume

TIME: Time input

TEMP: Temp. volume input

ACC/DEC: Speed up/down

SET : Setup

RCF: Centrifugal force volume

ENTER: OK

START: Start

STOP: STOP/ Open door

▲: Up

▼: Down

VI. Operation

a The display of rotor No.: only one bit display, "1" refer to 1.5/2.2 mlx12, "2" refer to, 1.5/2.2 mlx24, "3" refer to 5mlx10, "4" refer to 2x48, "5" refer to 10mlx12,"6" refer to 100mlx4 or 50mlx6, "7" refer to 10mlx4.

B The display of Speed: four bits display. The display number multiply ten equal to the real volume. If the fourth bit have one point at the bottom corner, it represents RCF, if no, it is SPEED figure.

C The display of time: Two bits display. The time shall be counted down when it gets to the speed you set.

D the display of TEMP: three bits display. If it display numbers only, it means Temp..If it display as following Table IV, the machine have some faults:

Table IV

| | | | | | | | |
|-----------|------------|--------------------------|------------------------|-------------|--------------|-------------|---------------|
| Imbalance | Over speed | Temperature Sensor error | Electronic plate error | Motor error | Poor contact | Setup error | Tran sfor mer |
| E1 | E2 | E3 | E4 | E5 | E7 | E8 | E9 |

E The display of Speed up/down: only bit display. The acceleration is Max. when it display "0", "9" means Min. (One point at right corner means speed down.)

2 Rotor Install

a Check the rotor, if it have any flaw or spot of eroded.

B Put some lubricating oil on spindle, install the rotor, screw the nut.

C The tubes shall be place in symmetry with balance. The error must be less than 1.5g.

D Screw cap.

3 lock the door.

4 Plug in

Before plug in, check the machine carefully. The meaning of key refer to Table III. When Power is "On", the compressor start to work. Pleas setup the parameter of centrifuge as the example of Table V.

Table V

| rotor No. | speed | time | temp. | speed on | speed down |
|-----------|-------|-------|-------|----------|------------|
| 2 | 16000 | 30min | 4°C | 3 | 3 |

A Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital displayer where under "ROTOR" →chose No. 2→press ENTER

B Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital displayer where under "SPEED" →chose 1600→press ENTER

C Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital displayer where under "TIME" →chose 30→press ENTER

D Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital

displayer where under "TEMP" → chose 4 → press ENTER

E Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital displayer where under "ACC" → 3 → press ENTER

F Setup the rotor No.: Press "SET" → press "▲" or "▼", the cursor shall be blinked in the digital displayer where under "DEC" → chose 3 → press ENTER

5. If press the "START", machine is working as setup.

6. Stop the working

When time counts down to "0", the speed will reduced. When the speed get down to 0, please open the door and draw out the tubes.

06 Function

In normal, it is display the speed. If you press the "RCF" first, then press the "ENTER", it displays the Centrifugal force volume. Press the "ENTER" again, it displays the speed volume.

07 Fault analysis and obviating

1 Not "Start"

a Not plug in plug in

b Door is not locked lock it

c Wrong setup setup again

2 stop working with shake

a no poise $\leq 1.5g$ The error of opposite samples' weight must be less than 1.5g.

B acclivitous adjust the balance

c spindle is bend contact us

3 stop working as over speed

a computer control error contact us

b speed meter is not tighten screw it

c sensor is in trouble contact us

4 Fault of refrigeration system contact us

5 Temp test trouble

thermometer is in trouble contact us

6 No display

Switch is wrong replace it

7 can not setup contact us

08 Maintain by user

- 1 Put some vaseline or lubricating oil on the spindle. Easy to put out the rotor.
- 2 If tubes is broken or liquid overflow, please clean the hole of rotor.
- 3 Check the rotor, if it have any flaw or the spot of eroded.
- 4 Please replace the tube in time.
- 5 Clean the rotor in time and locate it in drafty room
- 6 If the machine is not work in a long time, please plug out.

09 Maintain Certificate

The guarantee period is twelve months after ex-work. We shall provide the best service in guarantee period on the basis that operation complies with instruction book.

Note :

Centrifuge has electronic lock. If power was cut when Centrifuge is working, or in any other reasons, the door can not be open, please put the special tools into the hole where is in the left (right) side of machine and open the door.



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