OPERATING MANUAL



BENCHTOP LOW SPEED CENTRIFUGE

BCBL-401

CE ISO9001 CERTIFIED

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1. PREFACE

Thanks for choosing low speed centrifuge. This operation manual describes functions and operation of the instrument. In order to use the instrument properly, please read this manual carefully before operating the Instrument.

2. Introduction

his centrifuge is suitable for tubes 5ml, 7ml, 10ml, 15ml or 50ml, widely used in laboratories in life science, medical science and chemical industry. Read this manual carefully before operating the Instrument.

2.1 Unit Kit

Item	Quantity
Low Speed Centrifuge	One Set
Power Line	One Line
Operation Manual	One Piece

Table 1

2.2 Structure

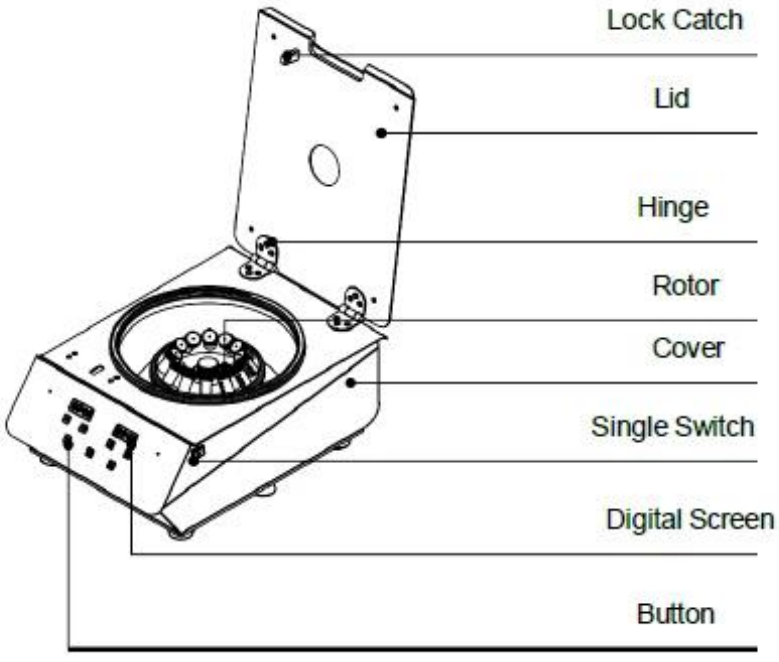


Figure 1

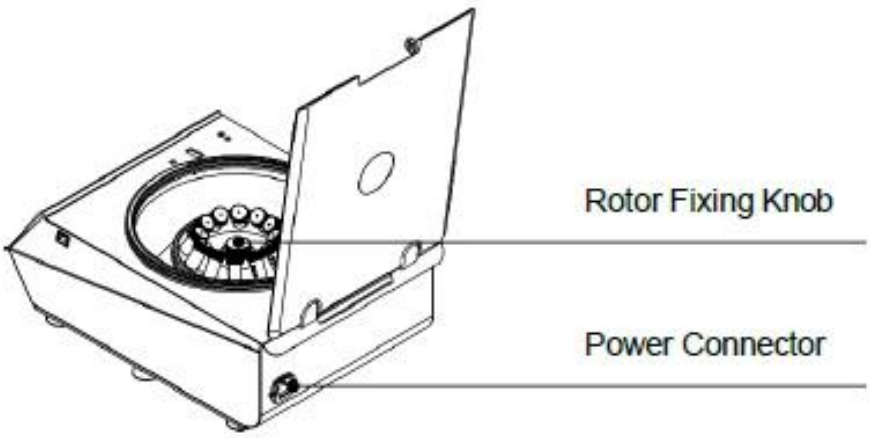


Figure 2

2.3 Installation

2.3.1 Put the instrument on a horizontal and even working table. Make the suction feet hold the table.
2.3.2 Connect power as below figure. DC socket is on the rear of the instrument. Voltage should be AC110V or 220V,50Hz/60Hz.
2.3.3 Make sure there is no harm materials (or potential harm materials) in 30mm around the instrument.
2.3.4 Power on and open the cover, put the rotor in the motor shaft. Use the rotor fixing knob to fix the rotor tightly. If the rotor already put on the motor shaft, check and make sure it is fixed tightly.
IMPORTANT!
Make sure the rotor is fixed tightly before operation whenever you need to use the instrument.

3. Parameters

Type	BCBL-401
Voltage	110-240V ~ 50-60Hz
Power	120W
Max. Speed	300~4500rpm
Max. RCF	2700 X g
Speed Accuracy	±20 rpm
Timing Range	30s~99m:59s/continuous working
Rotor Capacity	16x7ml/5ml, 12x15ml/10ml, 6x50ml tubes
Safety	Self-lock, Over speed protection, Status diagnosis system
Noise	≤ 56 dB
Increase/decrease speed	20s ↑ 20s ↓
Other Functions	Speed/accelerated speed switch function, short operation, operating status display,alert
Dimension(WxDxH)	300mmX431mmX178mm

Net Weight(include rotor)	17kgs

Table 2

4. Safety Warnings

 Forbidden using rotor with crack or damage.

 Forbidden moving the instrument when it is in operation.

4.1 Sample and Tube Placement.

4.1.1 Density of sample in the tube should less than max. allowed density.
4.1.2 Check the condition of the centrifugal tubes before place them into the rotor. Do not use tube with crack or damage.
4.1.3 Make sure the tube lid is well closed before putting it into the rotor. In case the liquid damage the rotor and machine.
4.1.4 Place the centrifugal tubes symmetrically in order to make centrifugate stable.

4. 2 Rotor Cleaning and Maintenance

4.2.1 Any slight crack or damage will lead potential safety hazard. Properly use the rotor and take care of it.
4.2.2 Do not use corrosive to touch the rotor.
4.2.3 If fluid spilled out during operating, put out the rotor and clean it with non-corrosive cleansing fluid (PH=7±1) immediately.

5. Operation Guide

5.1 Operation Key

START/STOP ------ Start or stop operation
SHORT-SPIN ------ Short operation key. Keep press to spin
LID OPEN ---------- Unlock the cover
+/ ---------- Set time or speed value. Keep press +/- to adjust value fast.

5.2 Rotor Installation and Uninstallation

Fix the rotor to the motor shaft. Hold the rotor, screw the rotor fixing knob to the Rotor Fixing Shaft to clockwise rotate the knob tightly. No any loosen or relative slip between rotor and the Rotor Fixing Shaft when the knob fixed correctly.
To uninstall the rotor, hold the rotor, anticlockwise rotate the rotor fixing Knob. Screw off the knob and uninstall the rotor.
IMPORTANT!! Make sure rotor in good condition, correctly and tightly fixed before operation every time.

5.3 Sample loading

The tubes must be placed evenly into the rotor. It also requests sample in the tubes basically the same (including volume and density). Balanced placement of sample makes the operation less wearing on the motor shaft and reduces operation noise.

5.4 Setting Time and Speed

5.4.1 Power on, press "Lid Open" key to open the cover. Check if the rotor is in good condition and correctly tightly fixed.
5.4.2 Press + or - of Time key to set timing value. Time range is 30 seconds to 99 minutes. Press + or - of Speed key to set speed. Max. speed is 4500rpm.
5.4.3 Place evenly centrifugal tubes in the rotor, close the rotor safety cover and protection cover. Press "Start/Stop" key to start operating. Press it again to stop operating.
When machine starts working, timing starts and displays remnant time. After time ends, the centrifuge stops operating and unlock the cover automatically.

5.5 Short Operation

5.5.1 Power on, press "Lid Open" key to open the cover. Check the rotor is in good condition and correctly tightly fixed.
5.5.2 Place centrifugal tubes evenly in the rotor, close the rotor.
5.5.3 Keep press "SHORT-SPIN" key, it spins at the max. speed (4500rpm), release "SHORT-SPIN", operation stop accordingly.

5.6 How to open the lid when power off

When power is off, the lid can not be open. First pull out the power line, press the shaft in the left hole on the machine, the lid switch will be open.

6. Maintenance

 Regularly clean the outer shell and the rotor (including holes) separately with diluent alcohol after power line disconnected. Do not dip the instrument into fluid or water it.

 After cleaning finish, check the rotor condition - whether there is any crack or damage. Make sure the rotor is in good condition then fix the rotor correctly and tightly to the motor shaft with the knob for rotor fixing.

7. Error Analysis and Trouble Shooting

Phenomenon	Possible Causes	Processing Procedure
no operation when power on	Power line problem	Check the power line
	No power	Check the power
cannot open the lid	Power off	Power on
	Rotor is spinning	Stop device operation
	Lid Key broken	Contact the seller
Instrument shaking during operation	Rotor not fixed correctly	Fix the rotor correctly and tightly
	Tubes are not balanced	Place the tubes in balanced holes
Display Er=01	Unlock circuit broken	Contact the seller
Display Er=02	Lock circuit broken	Contact the seller
Display Er=03	Motor control circuit broken	Contact the seller

Table 3

Appendix A:Wiring Diagram of BCBL-401

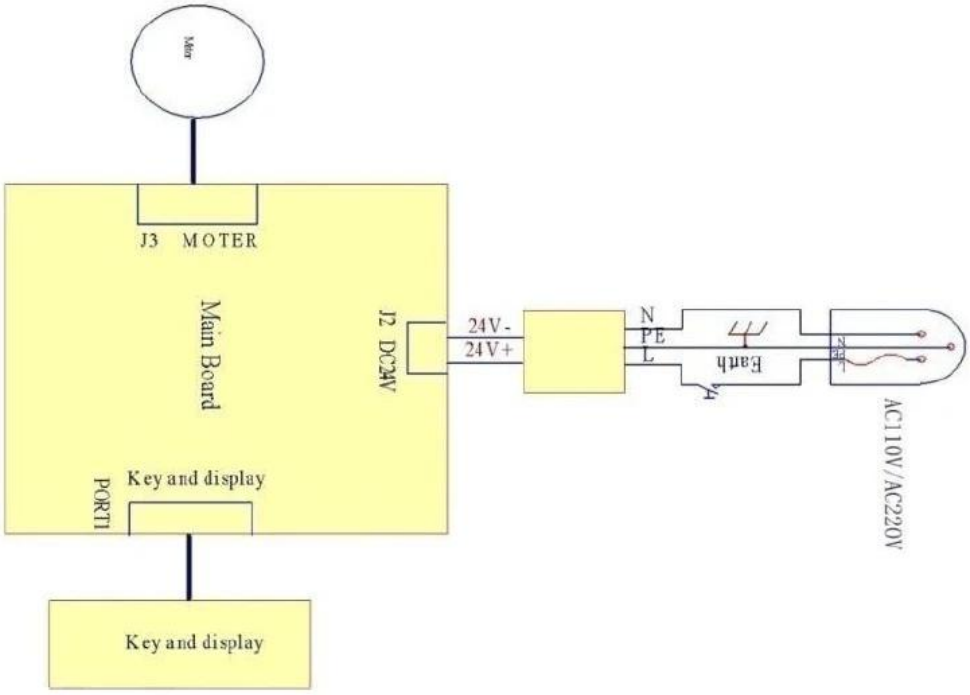


Figure 3

8. Warranty

Warranty Description
Within one month of delivery, the company is responsible for exchange for breakdown caused by material or manufacture. Within 12 months of delivery, the company is responsible for free repair for breakdown caused by material or manufacture. Proven with defect under warranty, the company will exchange the instrument or free repair it alternatively.
Warranty Coverage
Breakdown due to improper use, operation in inappropriate conditions, maintain or refitting without authorization are not in warranty coverage. Repair after warranty will be charged reasonable cost.

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