BioLAB

OPERATING MANUAL

LABORATORY LOW SPEED CENTRIFUGE

BFS-205

CE ISO9001 CERTIFIED

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INDEX

1. Introduction

This centrifuge is suitable for 15ml , 5ml centrifuge, Vacuette Blood Collection tubes and 100mm glass tube for centrifuging .
Before starting up this centrifuge for the first time, please read the rest of this operations manual.

1.1 Delivery package

Low speed benchtop centrifuge 1unit
Rotor 1unit
Centrifuge tube adapter 1unit
Operations manual 1unit

1.2 Structure Description

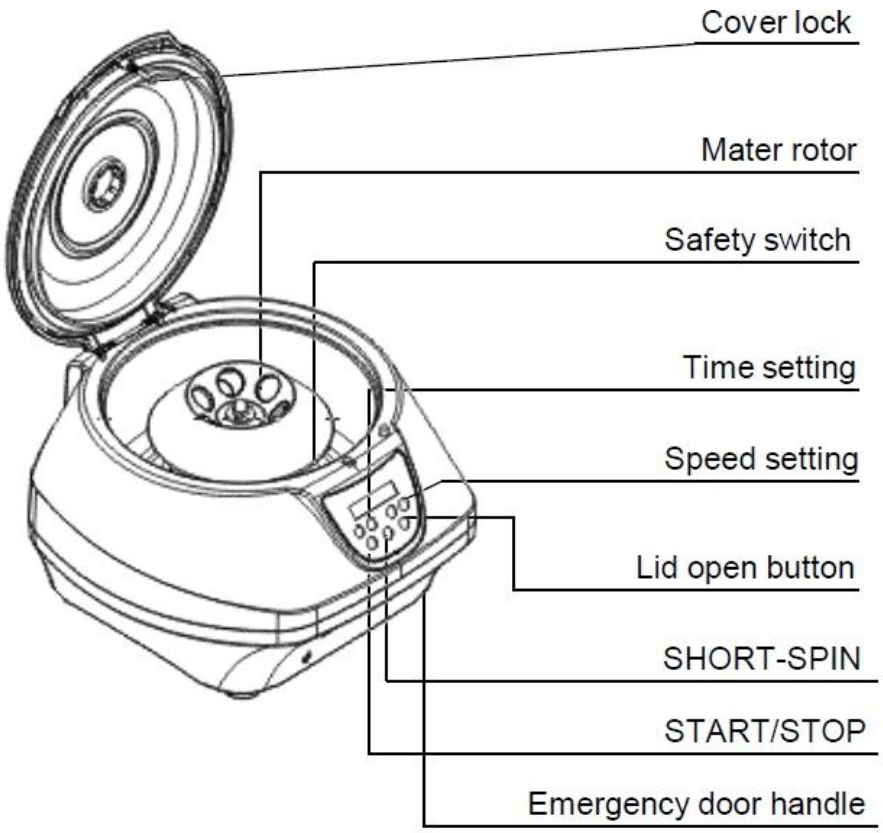


Figure 1

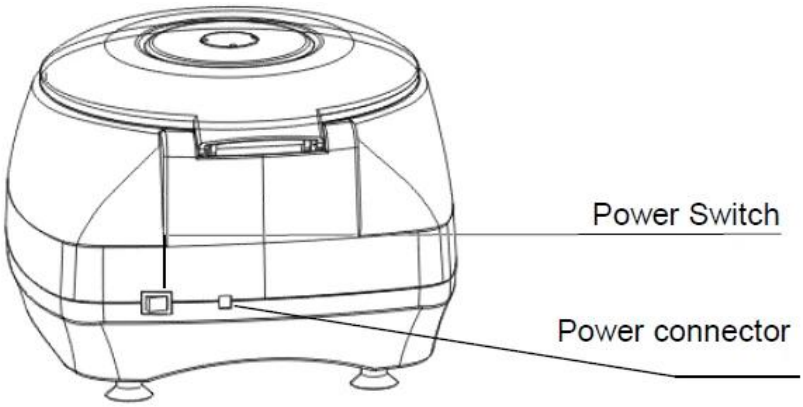
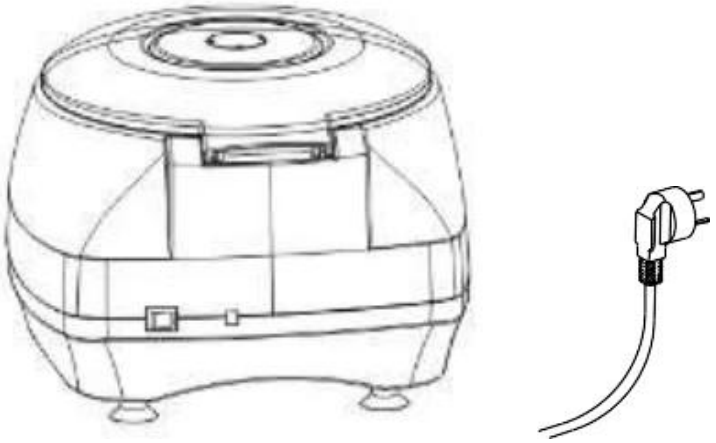


Figure 2

1.3 Installing The device

1.3.1 Place the centrifuge onto a level , horizontal surface. Make sure that the ventilation slits are not blocked.
1.3.2 Insert the column connector of the adapter to power connector of the device ,and insert another connector of the adapter to mains power supply.



220-240V
Figure 3
1.3.3 A safety distance of 30 cm should be observed around the centrifuge during operation. No objects which could cause additional damage in the event of a cen rifuge crash should be positioned in his space.
1.3.4 Power on the main switch. The centrifuge is ready to operate when the display becomes visible. Place the rotor onto the rotor axle and tighten using the rotor nut.
Before starting up the centrifuge for the first time, make sure the rotor nut is securely fastened.

2. Technical data

Model	Spin plus
Power supply	100 240 V~ 50-60Hz
Power	40W
Max. speed	5000rpm
Max. cen rifugal force	3074rcf
rpm rcf	ok
ime	10sec ~ 99min
Max. load	8x(6)15ml ubes
Max. permi ed densi y	1.2g ml
Accelera ion ime o max. speed	20-80 seconds available
Braking ime from max. speed	20-80 seconds available
Ambien temperature	5°C ~ 35°C
Dimensions(WxDxH)	35mmx40mmx32mm
Weigh (wi h ro or)	5.0kg

Table 1

3. Safe y precautions

 he ro or and he ro or lid must always be securely fastened. If the centrifuge makes unusual noises when s are red , he ro or or ro or lid is not fastened correctly. Switch the device off immediately by pressing the "S AR S OP" key.

 Do not use damaged rooms!

 Do not move the centrifuge during the run!

3.1 Place the cubes

3.1.1 A liquid densi y of 1.2g ml must not be exceeded the max speed.
3.1.2 Damaged tubes can not be centrifuged. This is because broken tubes can, in addition to sample loss, result in further damage to the centrifuge.
3.1.3 Close the tube lids before centrifuging. Open lids can be ripped off during centrifuging and damage the centrifuge.
3.1.4 Mus load he es ubes symme rically.

3.2 Main ain of ro or

3.2.1 Even slight scratches and ears of the rod can lead to serious internal material damage。
3.2.2 Avoid damage caused by aggressive chemicals, including among o hers: s rong and weak alkali, s rong acids.
3.2.3 In the event of con amina ion caused by aggressive agen s, he ro or must be cleaned immedia ely using a neu ral cleaning liquid.

4. Operation guide

4.1 Control elements

START/STOP
for start or stop centrifugation
SHORT SPIN for reduced time centrifugation
OPEN to open the lid
for setting the time and speed

4.2 Rotor insertion and removal

Fit the rotor onto the motor shaft, followed by the rotor nut.
Tighten the rotor nut by turning clockwise. To release the rotor, turn the rotor nut counterclockwise.
Before each start, check that the rotor is firmly tightened!

4.3 Loading the rotor

Rotor must always be loaded symmetrically. Minimize differences in weight between the filled sample tubes taring with a scale is recommended. This will reduce wear on the drive and
cut running noise.

4.4 Centrifugation with a preset time

4.4.1 Turn on the mains switch, pressing "OPEN" to open the lid, load the rotor symmetrically. Fasten the rotor lid and close the centrifuge lid.

4.4.2 Pressing Time's change the run time, the time can be pre selected between 20 seconds and 99minutes, and pressing speed's to change the run speed the max. speed is 5000rpm.

4.4.3 Pressing the first "START/STOP" to start the run . Pressing the second "START/STOP" to end the run prematurely. The remaining run time appears in the display. After the run , the lid lock of centrifuge opens automatically. The time setting and the rotational speed may be changed during the run. The remaining run time appears in the display.

4.5 Short spin centrifugation

4.5.1 Turn on the mains switch, pressing "OPEN" to open the lid, load the rotor symmetrically. Fasten the rotor lid and close the centrifuge lid.
4.5.2 Pressing "SHORT
SPIN". Short spin centrifugation is possible for as long as this key is held down. The maximum rpm is 5000

4.6 Switching to the rcf display

Pressing speed's simultaneously the display switches from rpm to rcf. Also pressing speed's simultaneously again, the display switches from rcf to rpm.
You can calculate with the following formula
rcf=1118 * 10-5 * n2 * rmax
n: rotational speed in 1/min
rmax = 11 cm, max. centrifuging radius in cm

4.7 Open the centrifuge in the event of a power failure

Disconnect the centrifuge from the mains supply. Wait until the rotor has come to a standstill, Then left up the device, remove the lock pole to the right , the lid lock will be opened.

Figure 4

5. Maintenance and cleaning

The ro or and he ou side of centrifuge should be cleaned regularly with a moist cloth. Disconnect the centrifuge from he mains supply, remove the rotor and clean it separately. Only neutral agents may be used for cleaning.

Please check he ro or and especially he ro or bores regularly for deposits or damage, then reinsert the rotor and tighten the rotor nut .

6. Troubleshooting

Error	Cause	Solution
No display showing	No main power connection. Power failure.	Re-connect the power or contact manufacturer service.
Lid can't be opened.	Power failure. Rotor is still spinning. Lid lock failure.	Emergency lid release . Stop centrifuge run. contact manufacturer service.
Centrifuge shakes during acceleration	Rotor or centrifuge tube not loaded symmetrically.	Re-load the rotor or Re-load centrifuge tube
Er=01	Open lock failure	Contact manufacturer service.
Er=02	Close lock failure	Contact manufacturer service.

Er=08	Motor failure	Contact manufacturer service.
Er=09	Imbalance failure, or centrifuge tube/weight not loaded symmetrically.	Re-load centrifuge tube symmetrically, keep the loading weight symmetrically. or contact manufacturer service.
Er=10	Motor failure or hall sensor failure	Re-connect hall sensor line. or contact manufacturer service
Er=11	Motor driving board failure	Re-connect driving board or contact manufacturer service

Table 3

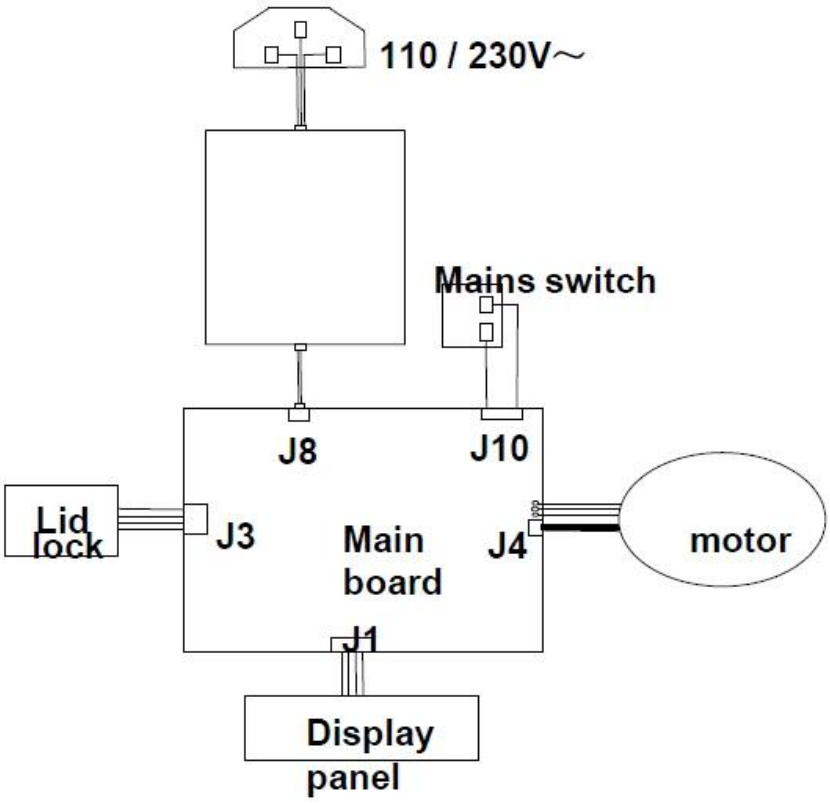


Figure 5

Packing List

No.	Item	Type	QTY
1	Low speed benchtop centrifuge	Spin Plus	1unit
2	Rotor		1unit
3	Centrifuge tube adapter		1set
4	Rotor lid		1unit
5	Operations manual		1unit

Table 4

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