

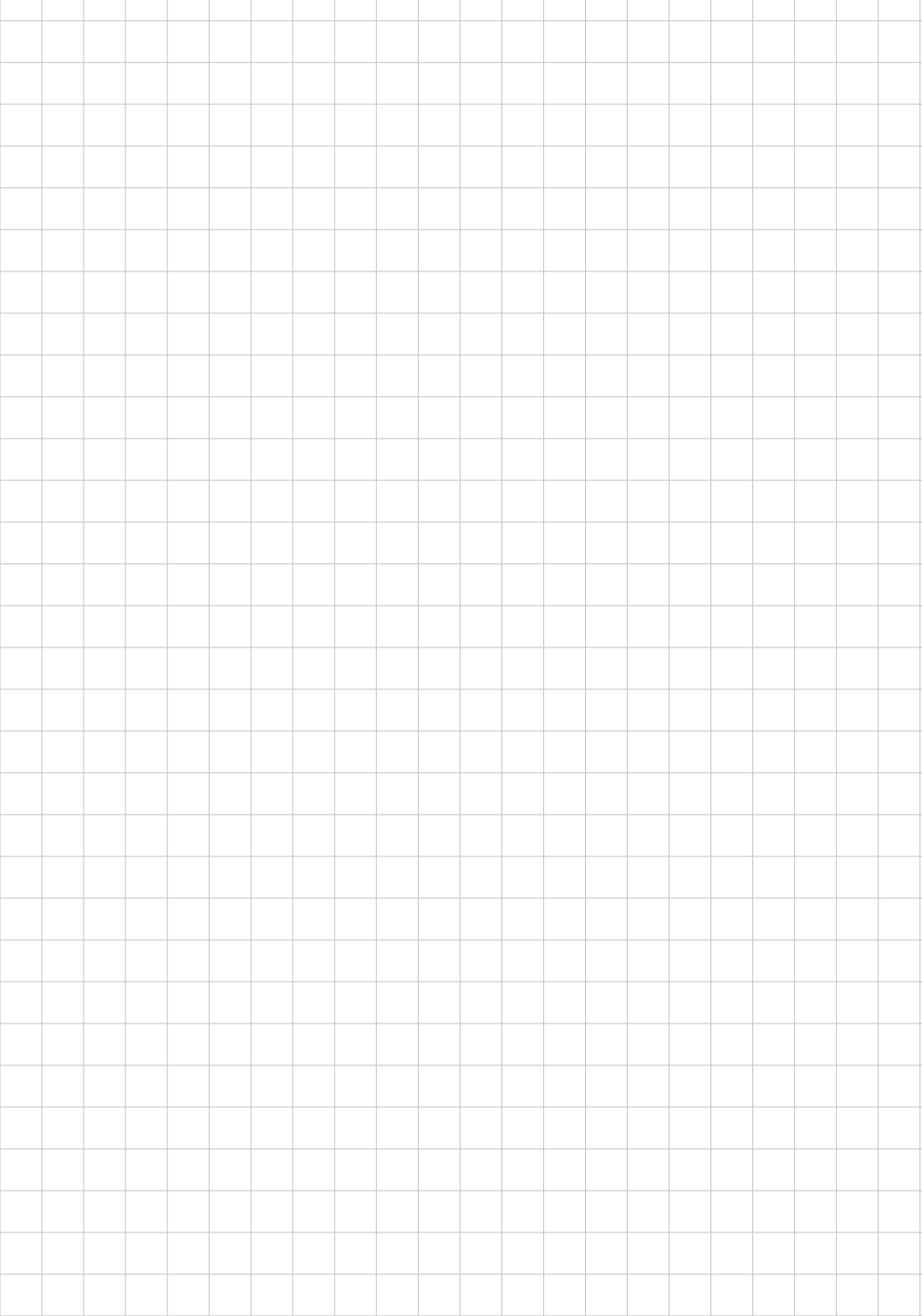
# LABQUEST

BY **BOROSIL**<sup>®</sup>

MCF 08VT

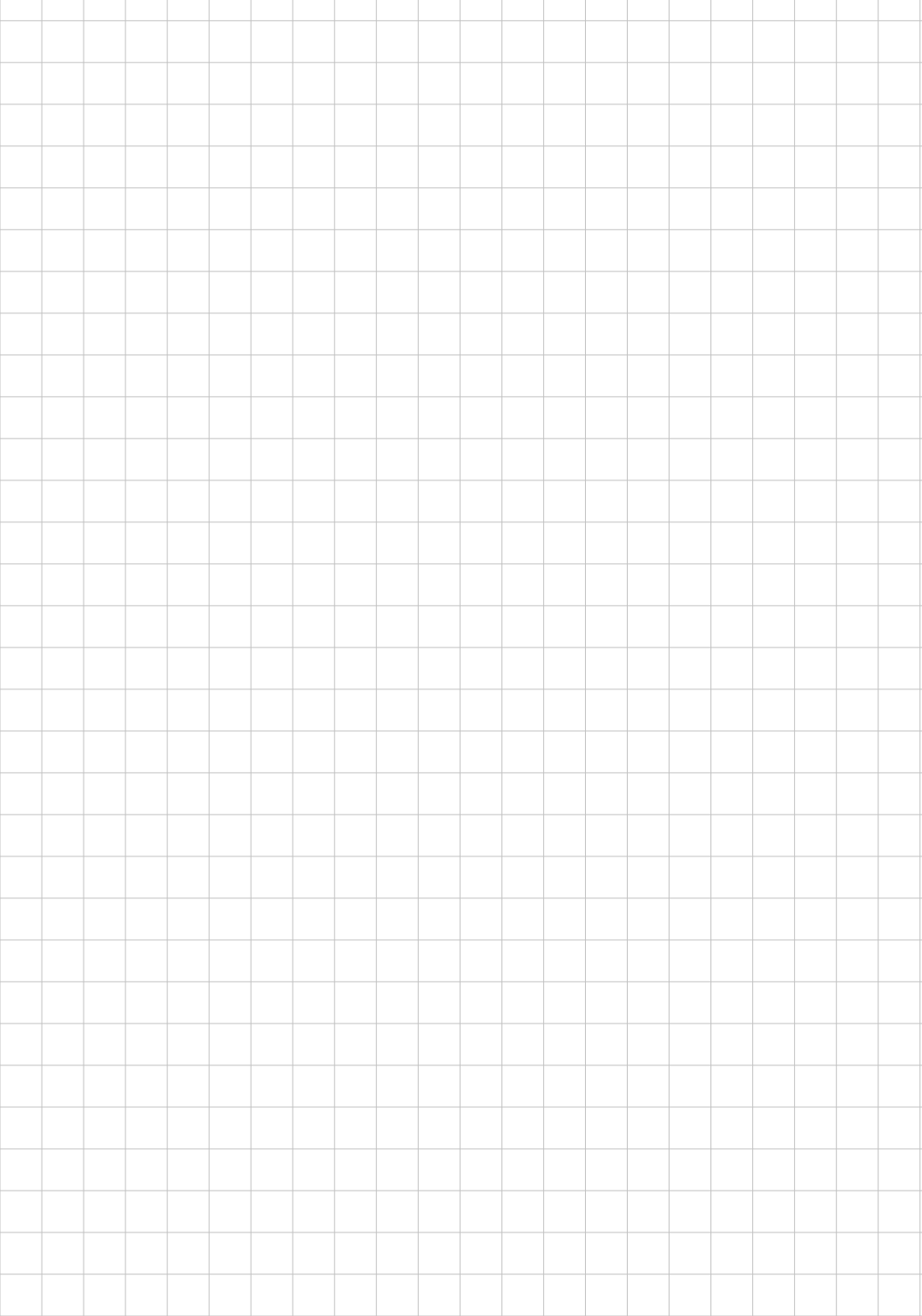


PRODUCT USER MANUAL



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# 1. INTRODUCTION

This Micro Centrifuge offers versatility, simplicity, safety, and ease of usage in a single package. This product has been designed after studying centrifuges and its usage in numerous scenarios of the lab environment.

This Micro centrifuge is specially suitable for microfiltration, cell separations, centrifugal tube sedimentation, and spin down applications. Please read this manual thoroughly before operating the centrifuge.

# 2. INTENDED USE

This is used in various laboratories to separate particles from suspension or even macromolecules from solutions according to their density. The different biological substances that are usually separated by centrifugation are microbial cells, organelles, proteins, DNA, and RNA.

**Note :** This user guide is intended to assist with the operation and care of the unit only and not for its repair. The customer should not attempt to service or repair the unit. If repairs are required, please contact the supplier.

For your reference, make a note of the serial number, date of purchase and supplier here.

Serial No.

Purchase Date

Supplier

### 3. FEATURES

- 8 position closed microtube rotor
- Electronic safety brake on lid opening for user safety
- Digital display
- Starts and stops in seconds
- Easy access of the on/off switch
- Lid safety interlock
- Smooth and silent, discreet running
- User calibration feature
- Small footprint; can fit easily on to a crowded countertop
- Interchangeable rotors
- Low voltage power consumption

### 4. TECHNICAL SPECIFICATIONS

MAXIMUM SPEED	6000 RPM
SPEED TYPE	Variable speed 6000 RPM
MAX RCF	2000 x g
SPEED ACCURACY	±100 RPM
TIME	0 To 25 mins & infinite
SIZE (L x W x H)	162 x 154 x 116 mm
WEIGHT	1.1 Kg
INPUT VOLTAGE	100 - 240 VAC, 50/ 60 Hz
OUTPUT VOLTAGE	24VDC, 1.5A
POWER CONSUMPTION	15 W
OPERATING CONDITIONS	Works in 80% humidity and in temperature of 40°C

## 5. STANDARD ACCESSORIES

- 1.5/2ml closed rotor
- PCR strip rotor
- Allen wrench
- Individual adaptor for 0.4/0.5 ml tubes, pack of 8
- Individual adaptor for 0.2 ml tubes, pack of 8
- External power adaptor
- Product User Manual, Warranty Card and Declaration Conformity

## 6. SAFETY PRECAUTIONS

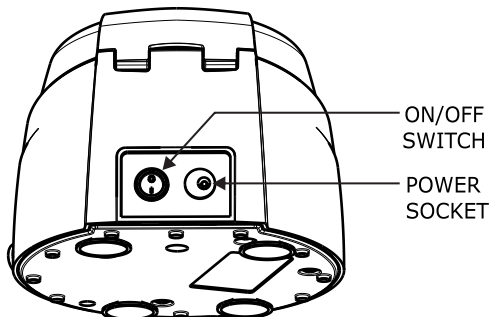
The personal micro centrifuge is designed to be safe under the following conditions when operated with necessary precautions mentioned below :

- Indoor use only.
- Ambient temperature of 4°C to 65°C.
- Main supply voltage fluctuations not to exceed +/- 10% of the nominal voltage.
- Position at least 20 cm from walls, 20 cm from ceiling and 20 cm between other products.
- Make sure to always install the centrifuge on stable flat surfaces only & place it near the electrical outlet.
- Always load the rotor symmetrically. Each tube should be counterbalanced by another tube.
- Make sure to always use only specified micro centrifuge tubes made from plastic and designed to withstand centrifugal forces of at least 2000 g.

- Do not operate the centrifuge without the rotor being properly attached to the shaft. Re-check by trying to pull it up manually, especially after the rotor has been changed or re-assembled.
- Do not move the centrifuge while it's under operation.
- Do not fill the tubes while they are in the rotor. Liquid spillage may harm the unit.
- Do not put hands in the rotor chamber unless the rotor has completely stopped.
- Do not centrifuge flammable, explosive or corrosive materials.
- Do not use solvents or flammable media near this or other electrical equipment.
- In case the unit is dropped from the table, please check the casing for any cracks/damage.
- The centrifuge and its components are non autocleavable.
- Do not use the centrifuge in any manner not specified in these instructions.



## 7. INSTALLATION



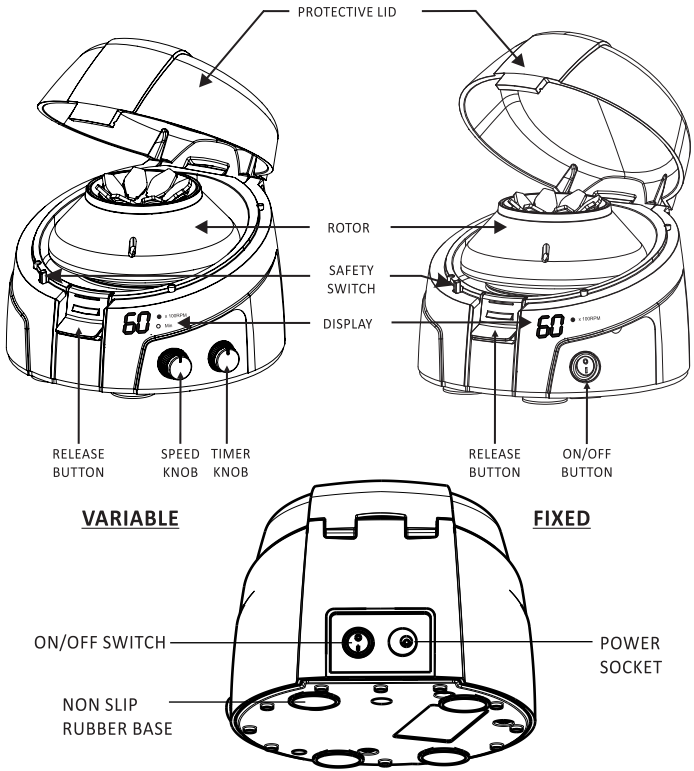
This micro centrifuge is supplied in a packaging box. Open the box, then gently remove the centrifuge from the box and plug in the power adaptor pin before connecting to the main power source. The instruction manual and the accessories should be kept with the centrifuge. Please keep all packaging in safe storage for at least 2 years for warranty purposes.

Make sure the rotor is tight to avoid any accident. Load the rotor with the micro tubes for centrifugation. Place the ON/OFF switch to “o”, rear, set the desired speed and time, and close the lid to start centrifugation.

For more clarification refer to the RCF chart below:-

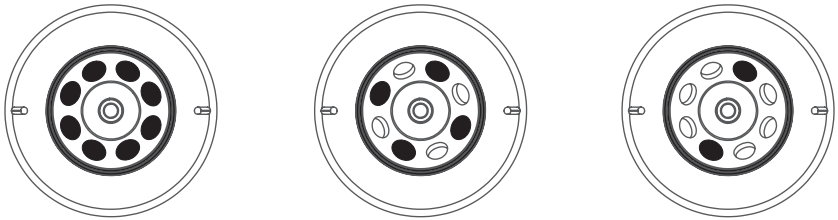
RCF CHART (VARIABLE)					
RPM	ROUND ROTOR				PCR STRIP
	0.2 ml	0.5 ml	1.5 ml	2 ml	0.2 ml
1000	35.5	47	52	54	52
2000	142	188	208	217	208
3000	319	424	468	488	467
4000	567	753	832	868	830
4500	718	953	1053	1098	1050
5000	886	1177	1300	1356	1297
<b>6000</b>	<b>1276</b>	<b>1695</b>	<b>1872</b>	<b>1952</b>	<b>1868</b>

# 8. STANDARD PARTS LISTING



# 9. ROTOR BALANCING

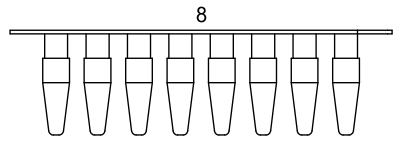
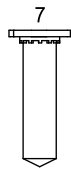
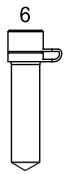
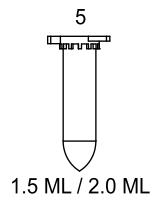
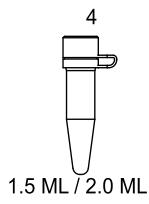
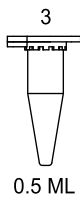
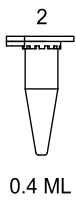
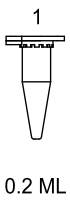
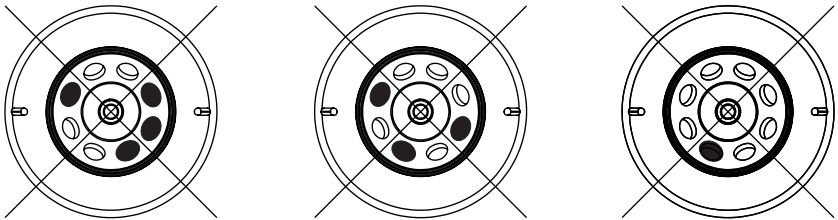
1. Always balance the rotor before centrifugation. The following are symmetrical loadings of centrifuge tubes to the rotor.



2. Ensure that the samples in the tubes are of equal volume.
3. Symmetrical loading of tubes in the rotor is necessary, otherwise

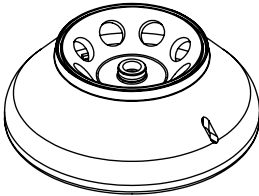
vibration can occur which can cause serious damage to the centrifuge.

- 4. The following are the incorrect methods of loading tubes in the centrifuge the rotor.
- 5. The following are the incorrect methods of loading tubes in the centrifuge the rotor.

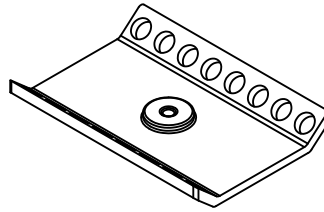


8 Different types of test tubes can be centrifuged by using two interchangeable rotors

## 10. INTERCHANGEABLE ROTOR



**ROTOR\_8 SLOT**  
8 x 0.2,0.4,0.5,1.5,2 ml

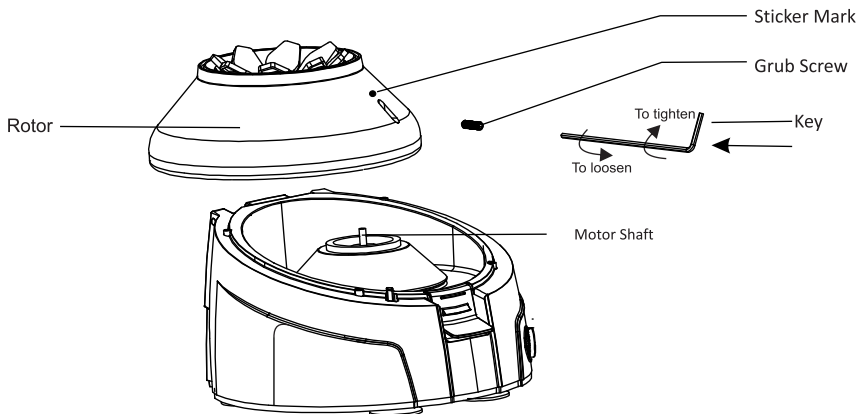


**PCR ROTOR**  
16 x 0.2 ml

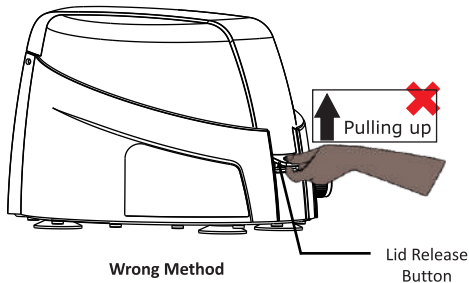
## 11. CHANGING THE ROTOR

Insert the hexagonal allen key into the marked hole provided on the side of the rotor. The grub screw is located at the bottom of the rotor on the marked side. To remove the rotor, turn counter - clockwise to loosen the screw and then gently pull the rotor up vertically. Insert the new rotor from the top onto the motor shaft and tighten the screw again. Turn clockwise to tighten the screw which is located under the bottom of rotor. Please check that the rotor is tight enough to avoid any accidents.

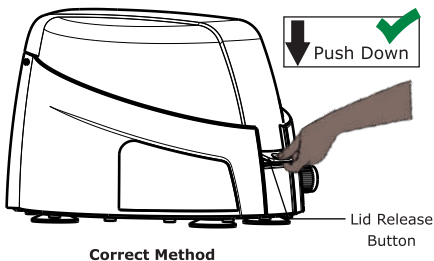
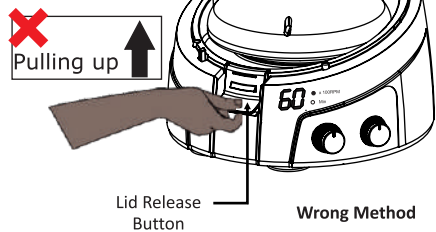
**Note:** Tightening the screw will be in clockwise direction and the loosening will be in counter - clockwise direction



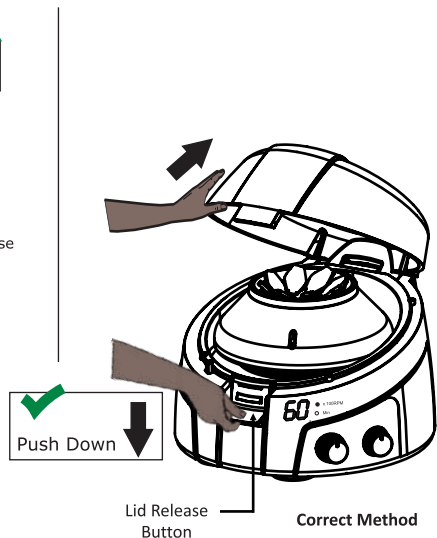
## 12. OPENING CENTRIFUGE LID



Trying to open the centrifuge lid by pulling the “Lid Release” button up is the wrong method of opening the lid. Pulling the “Lid Release” button up will break the button or damage the button.



To open the centrifuge lid, press the “Lid Release” button down.



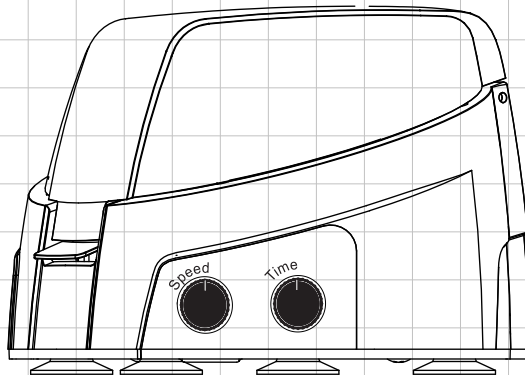
## 13. OPERATION

To operate this personal Micro Centrifuge below steps should be followed:-

1. Connect the power adaptor & Switch 'On' the centrifuge from rear side so that display will show you the readings.
2. Symbol 'dS' on the centrifuge display indicates that Imbalance Detection features is not enabled. To enable the Imbalance Detection, long press the Timer Knob. Symbol 'En' will be shown indicating that Imbalance Detection feature is enabled.
3. Load the Rotor symmetrically to avoid accident and damage of centrifuge.
4. Close the lid to start centrifugation. Use the Speed knob to set the speed and the Timer knob to set the run time.
5. Once the centrifugation is completed either use speed knob or use timer knob to bring the display value to zero. This will gradually stop the rotor.
6. After the rotor has stopped, press the lid release button and open lid with your thumb in front and fingers on the top - simply lift the lid back on the hinge.
7. If you want to stop the centrifuge quickly, push the lid release button and the rotor will stop within few seconds.

In the following pages the routine centrifuge operation procedures are explained in brief.

## 14. TIME & SPEED SETTINGS AND DISPLAY

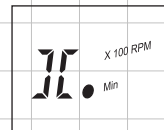


## 15. TIME CONTROL, SPEED CONTROL AND DISPLAY

The unit is equipped with a 0-25 minutes timer. By operating the timer knob one can set the desired time cycle. The time increments/decrements will be in minutes and will show on display and indicator.



time indicator display

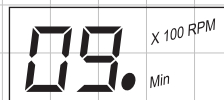


infinite time display

The timer can be set from 00 to 25 minutes. If the user needs to operate without time control he can change it to next position after 25, here it will be set to infinite time '∞'. The timer used is a count down timer and can be reset or adjusted in between the runs. 00, actually means stop position of centrifuge.



Speed indicator



Time indicator

During the running of centrifuge the time and speed will be displayed alternatively accompanied by speed indicator and time indicator

respectively.

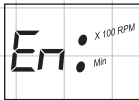
**Quick spin function** : By keeping the timer to 'H' position and speed set to any desired setting, one can open and close the lid to operate the centrifuge in quick spin function mode.

**Speed control** : Speed is set by rotating the speed control knob. While adjusting the speed, the speed indicator comes on. The minimum increment or decrement will be to the order of 100 RPM. The speed indicator must be read with a multiplication factor of 100 to get the actual rpm.

**Rcf value** : Based on the speed and rotor the actual RCF value will vary. One can refer to the table (given on the installation page of this booklet) to get the actual RCF of different rotors at certain given speed values.

## 16. IMBALANCE DETECTION ACTIVATION/DE-ACTIVATION (VARIABLE)

When you switch 'On' the centrifuge either it shows



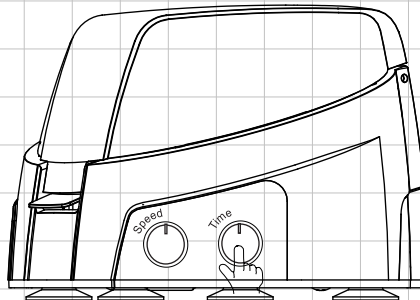
Imbalance activated display



Imbalance de-activated display

If the display shows 'En' that means the imbalance detection is activated

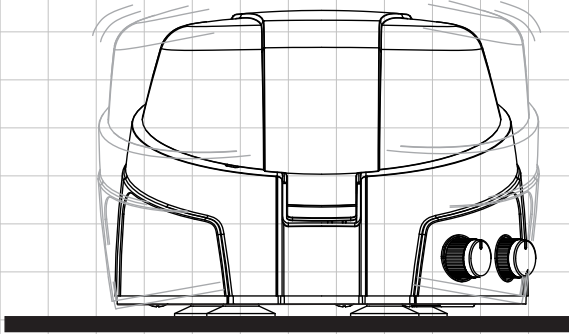
If the display shows 'dS' it means the imbalance detection is de-activated





User can activate and deactivate the unbalance detection function by long pressing the timer knob as shown in above picture. The display will change to show  $\epsilon_n$  or  $d5$  to show active status.

## 17. UNBALANCE DETECTION AND CUT OFF (VARIABLE)



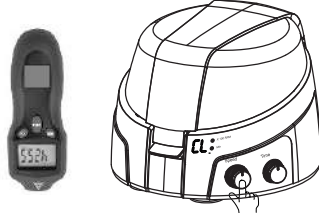
When imbalance detection is activated ' $\epsilon_n$ ' & if centrifuge is running with an unbalanced rotor, (by not placing the weights on the rotor equally and symmetrically) it may lead to excessive vibrations resulting in damage to the centrifuge. This centrifuge has a unique patented feature to protect the centrifuge, its user & the surroundings against such as accidental run. When such an event occurs, the sensor build inside the centrifuge will trigger the shut down of the centrifuge and will also indicate the event by flashing ' $\epsilon_b$ ' :

### **User action :**

Open the lid of centrifuge, correct the unbalanced load by various methods described in the balancing the rotor part of this manual. Then close the lid and 'reset the centrifuge'. Resetting is done by switching 'Off' and again switching 'On' the centrifuge by using the On/Off switch located on the rear side of the centrifuge.

## 18. CALIBRATION (VARIABLE)

The unit comes with factory calibrated. However, if the user wishes to calibrate for specific loads, the rotor with any given load can be calibrated by following the below procedure.



Long press the speed knob to allow the centrifuge to go into calibration mode. CL will be indicated on display. Run the centrifuge at the pre-set speed and check the rpm of rotor with the help of an external calibration. If there is any difference in the set speed & tachometer reading, adjust the speed by rotating the speed knob to match the set speed with tachometer reading. Once the rpm is set, gently long press the speed knob again to save the settings. This changed setting will remain active till the centrifuge is switch OFF. **Upon re-setting, the default speed setting will take effect.**

## 19. CARE & MAINTENANCE

This personal centrifuge and its rotor should be cleaned periodically. Ensure that while cleaning the unit, it is not plugged in to the main power supply. To clean the Oxford centrifuge, use a damp cloth and a mild, noncorrosive detergent (ph < 8). Do not immerse the centrifuge in liquid or pour liquid over it. Excessive amounts of liquid should be avoided, liquid should not come into contact with the motor. After cleaning, ensure all parts are dried thoroughly before attempting to operate the unit.

Should a spill of infectious materials occur within the rotor or rotor chamber, the unit should be disinfected. This should be performed by

qualified personnel with proper protective equipment. Do not use any cleaning or decontamination methods except those recommended by the manufacturer. Check with the manufacturer that the proposed method will not damage the equipment.

## 20. SERVICE AND REPAIR INFORMATION

**WARNING :** Repairs performed by unauthorized personnel may void the warranty. Any required service should be performed by authorized, qualified personnel only.

In event of repairing/warranty claims - before sending the personal centrifuge unit for repairs/warranty claims, obtain a service request number based on your product serial number from either Borosil Lab Products or through the authorized supplier. When returning a unit to Borosil Lab Products for service, it should be sent in the original packaging. If this is not possible, be sure that the unit is sufficiently packed. Any damage resulting from improper packaging is the responsibility of the customer. Obtain a service request number and send the unit along with the service request number. A written explanation/repair requirement note should accompany the unit along with the service request number.

## 21. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of two (2) years from date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions :

- This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.
- The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the products must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

**Note:** Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

- The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

Products received without proper authorization will not be processed

for warranty or service. All items returned for service should be sent with postage prepaid in the original packaging or other suitable packaging, padded to avoid damage. We will not be responsible for damage incurred by improper packaging.

**Note:** This warranty is valid only if the warranty is registered with the supplier within 30 days from the date of purchase.

## 22. PRODUCT DISPOSAL

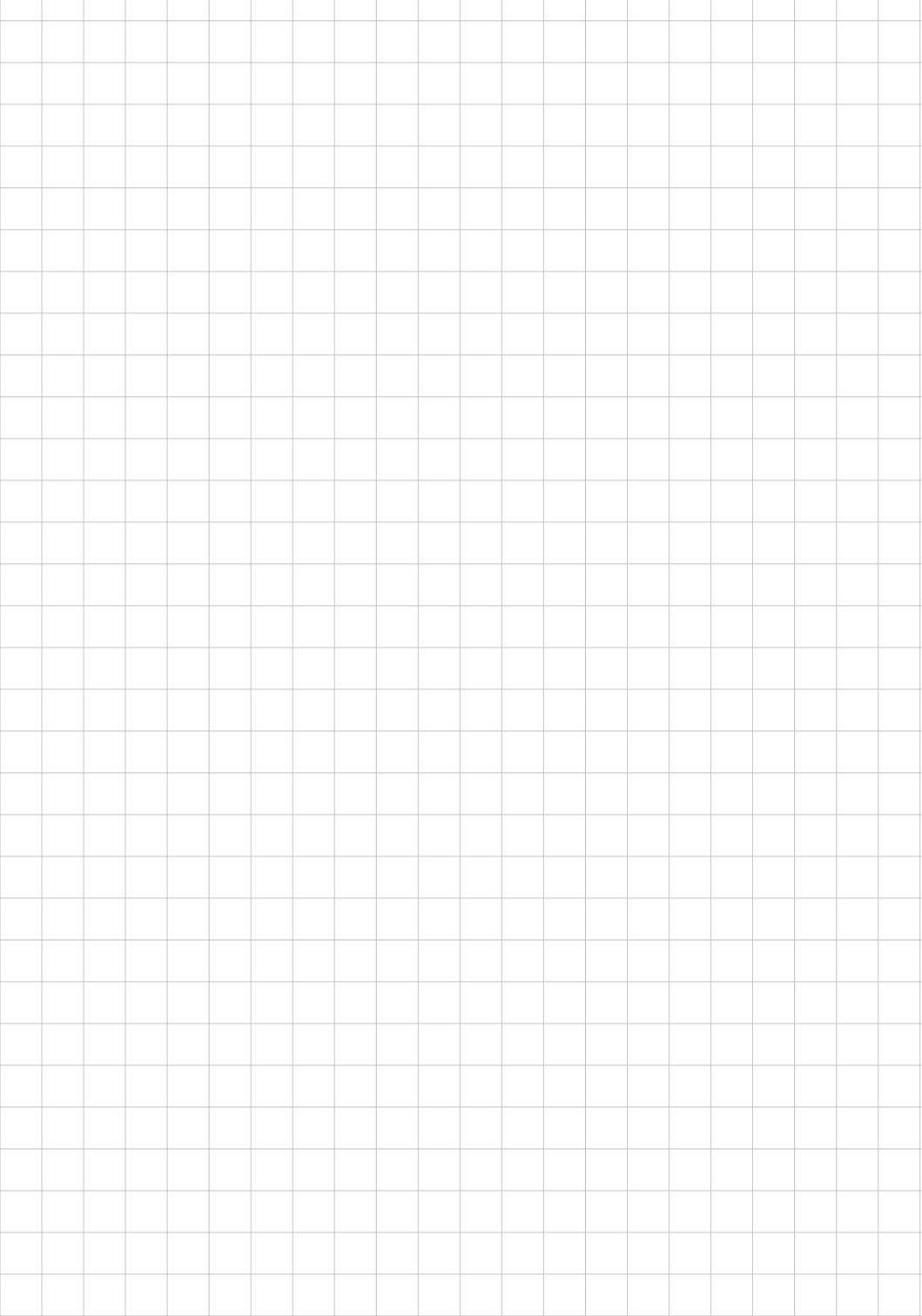
In case the product is to be disposed of, the relevant legal regulations are to be observed.

### **Information on the disposal of electrical and electronic devices in the European Community**

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to business sphere, to which this product is assigned, may no longer be disposed off in municipal or domestic waste. They are marked with the following symbol to indicate this.



As disposal regulations within the EU may vary from country to country, please contact your supplier if necessary.



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