

# Model YR0146-1

## Tabletop High Speed Centrifuge

### Instruction Manual

Thank you very much for purchasing our Tabletop High Speed Centrifuge Model YR0146-1.

Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a hand place for future reference.



**Warning:** Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.



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## Foreword

The manual will guide you how to install, commissioning, use and maintain the centrifuge. Please read through the manual carefully and follow the instructions before starting to use the centrifuge, so as to prevent the misoperation and win an expectant experimental result.



### Caution!

- ◇ The Centrifuge should be operated by the technical staff and maintained by professional engineer.
- ◇ Don't use and maintain the centrifuge before you read the Instruction Book.
- ◇ Please use the corresponding socket, and make sure it's in a good condition.
- ◇ When you move the machine, please keep the four corner of the base bear homogeneous power.

### Notice:

- \* Before your operation, please read the Instruction Book carefully.
- \* Only professional engineer has the right to maintain the centrifuge.
- \* The centrifuge should be controlled by the technical staff and maintained by professional engineer.
- \* The weight of sample in tube should be approximate; weight error is no more than 1.5g. For angle rotor, the sample volume should be less than 80% of the single tube



volume. As for swing rotor, the sample capacity will be no more than 90% of the single tube volume.

\* Don't use the following material:

- Flammable and explosive material;
- Poisonous and radioactive material.

### Explanation of the logo



Please pay more attention to the content with this sign above.



High-voltage danger !





## Model

Tabletop High Speed Centrifuge YR0146-1

## USE

It's mainly use in clinic, biochemistry, immunology, etc. The instrument is mainly used in lab for precipitation.

## Technical Specification

Max Speed	18500r/min
Max RCF	23797×g
Timer Range	0-99 min
Power Supply	AC220V 50Hz
Dimensions	410x490x310 mm (LxWxH)
Weight	20kg

Allocated Rotor's specification refers to Table I

Table I

Rotor No.	Rotor Capacity (ml×tube)	Max Speed (r/min)	Max RCF (×g)
1 Angle rotor	1.5/2.2 ml×12	18500	23797
2 Angle rotor	5 ml×10/12	13000	11400
3 Angle rotor	10 ml×12	12000	14800
	15ml×8	12000	14800
4 Angle rotor	50 ml×6	11000	13000
	100 ml×4	11000	13000
5 Swing rotor	10 ml×4	6000	3200
6. Micro plate rotor	2×48 well	3000	1400
7 Angle rotor	1.5/2.2ml×24	13200	16110
8 Angle rotor	0.5 ml×36/48	16000	23669

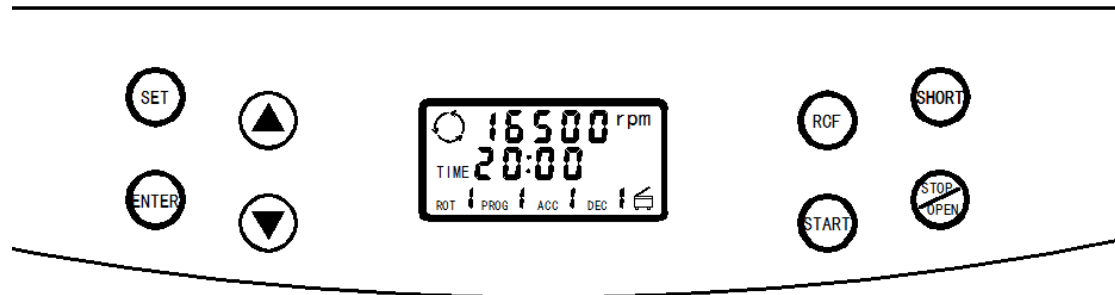
## The principle and character of Products' Work

The Product has computer controls. There are many kinds of protection functions.



Explanation of keystroke refer to table II

Table II



### Functions of key:

**SET:** Set up specification

**ENTER:** Ok / Confirmation

**▲:** Increase

**▼:** Decrease

**RCF:** Centrifugal Force

Generally, the window shows speed data normally. Please press the **RCF** button, it will show the RCF data. Press **RCF** button again, you will see speed data.

**SHORT:** Instantaneous centrifugation. (Close the lid, press the button, the machine starts working. It will stop once you release the **SHORT** button. It is mainly used in short-time centrifugation

**START:** Start to run

**STOP/OPEN:** Stop running & Lid open

**TIME:** Time input. The time will count down when it reaches the speed you set. The unit is Minutes: Seconds.

**ROT:** Rotor number

**Prog:** It refer to program number. It is fixed.

**Acc:** Acceleration ranges from 1 to 9. Level 1 is the slowest, level 9 is the



fastest.

**Dec:** Deceleration ranges from 1 to 9. Level 1 is the slowest, level 9 is the fastest.

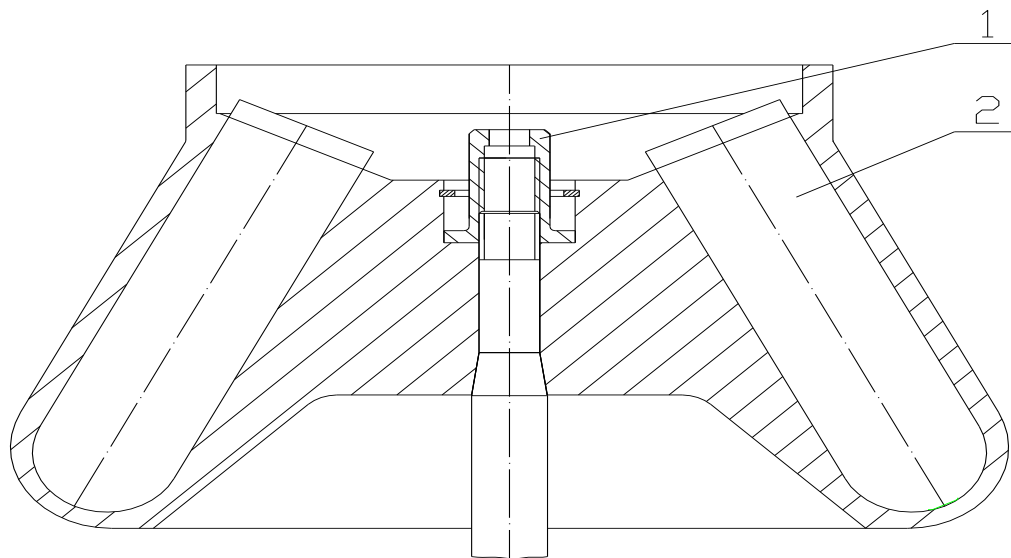
**Error:** Once the machine breaks down, it will show Error code on the display. Please refer to the following table IV.

### **Requirement of the Instrument Installation**

- 1、 The table shall be stability and solid.
- 2、 There should be 30 cm between the wall and centrifuge's back, to ensure ventilation and heat elimination.
- 3、 Room temperature had better no more than 30°C. It ensures the best performance of centrifuge.
- 4、 The instrument shall be located at where their is no disturb of magnetic field and caustic gas.
- 5、 The power shall be three phases with separate Earth wire.

### **Operating principle**

- 1、 Plug in
- 2、 Switch on power. The switch is on the right side of centrifuge.
- 3、 Open the lid
- 4、 Install the rotor: put in the tube with sample. Please note the volume should be less than the 90% of tube. The tubes shall be place in symmetry with balance. Close the lid.



### Installation of Rotor

**Table III**

1. Nut    2. Tube

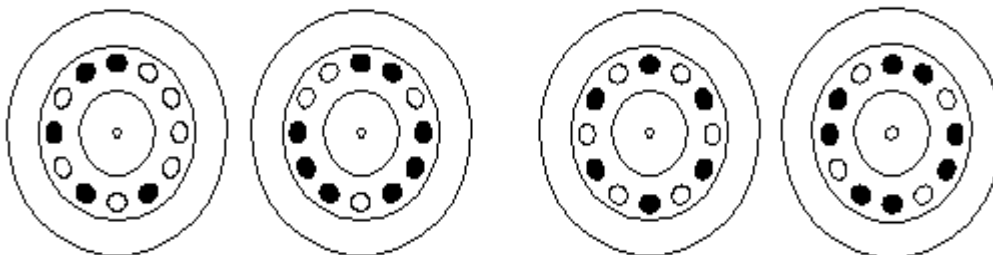
Put the rotor on the spindle vertically, please find the T-shape tool, which we pack together with machine, please tighten the rotor by the tool.

### Tube Placement

Put sample into tube, and then put the tube in rotor and close the gate. Please note that the sample amount should be less than the 90% of tube. The weight difference of each tube should be less than 2g. The tubes shall be placed in symmetry with balance.

Wrong

Right







5、 Setup the Rotor Number, the speed, the RCF and Operating Time.

For example:

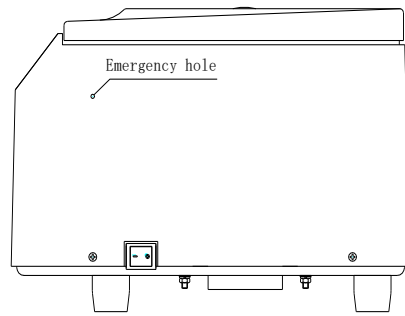
Rotor No.	speed r/min	Time (min)	Acc/Dec
1	10000	15	3

Steps of setup:

- a、 Press “SET” → press “▲” or “▼” → Adjust the speed to be 10,000rpm
  - b、 Press “SET”, the cursor shall be blinked after time →press “▲” or “▼” →set the time at 15:00
  - c、 Press “SET” →press “▲” or “▼”, make sure the rotor number is 1
  - d、 Press SET press “▲” or “▼”, make sure the Acc and Dec is 3
  - e、 Press Enter button
- 6、 SHORT. If you need instantaneous centrifuges, press “SHORT”.
- 7、 Press “**START**”, Centrifuge will start working. If you stop the Centrifuge while it is working, please press the “STOP”, centrifuge shall automatically stop working, but the lid can not be opened until the speed decreases to 0.

### Notice

1. Centrifuge has build-in electronic lock. Without plugged in, the lid could not be opened. If power is off while Centrifuge is working, or the lid can not be open for any reasons, please note the emergency lid release is available. It is on the right side of the model. Please find the Emergency pole we pack together with machine, please insert Emergency pole into the hole, the lid will be open.



2. No moving the machine when it is working.
3. Clean the rotor and locate it in drafty room if it hasn't been used for a long time.
4. Motor shaft should be coated with Albany grease or Vaseline, in order to avoid rustiness and it is easy to take out the rotor.
5. After finished, wipe the chamber and rotor; make sure they are in the state of dryness.

#### Error code

Failure	Imbalance	Over speed	Lid	Motor or PCB	Communication	System
Display	E1	E2	E3	E7	E8	E9

Table IV

#### E1、Imbalance:

- (1) The weight of sample in each tubes may have great difference. Kindly note the weight differences of each tube (with load) should be less than 2g.
- (2) Rotor is out of shape.
- (3) The spindle of motor bends.

#### E2、Over speed

- (1) Rotor number is wrong.



(2) The real voltage don't meet the demands of machine. Power supply isn't stable.

(3) Speed sensor is in trouble

### E3、Lid

(1) Lid is not closed completely.

(2) The lid safety device doesn't work.

(3) Replace lid

### E7、Motor or PCB

(1) The connectors between motor and PCB is loosen. Please re-connect it.

(2) Spin the rotor by hand, and check if the speed on display changes. If not, it is the problem of Motor. Please contact supplier to replace it.

(3) If you spin the rotor by hand, the speed on the display changes, it is the problem of PCB, please contact supplier to replace it.

### E8、Communication

The connectors between motor and PCB are loosen. Please re-connect it.

### E9、Systems

The low voltage may cause this problem.

### **Guarantee Certificate**

We guarantee the goods for 12~14 months after shipment. If the machine breaks down, please check the Error code first, and then contact supplier for maintenance service.

If you have any problems about centrifuges, please contact the supplier freely. We are always at your service.