

***LC-06C TABLETOP***

***LOW SPEED CENTRIFUGE***

***OPERATION    MANUAL MAINTENANCE    INSTRUCTIONS***

## 1. GENERAL

The frame of this instrument is made of high strength plastic. Its model is beautiful, and it has the advantages of small cubage, low weight, large capacity, low noise, high efficiency and so on. It can be used in hospitals and biochemical labs for qualitative analysis of serum, urea and plasma.

## 2. PECULIARITY

- 2.1 Rotor imbalance protection device.
- 2.2 Speed choice in advance & acceleration accurate gradually.
- 2.3 Door switch and mechanical safety lock.

## 3. PRINCIPLE OF OPERATION

Put tubes with sample that can be balance into a angle rotor symmetrically, the rotor will spin on axis after you start the machine, and the relative centrifuge force (RCF) comes into being while rotating, It will make the composition at different weight density separate from solution.

The formula of calculating RCF is as follows:

$$RCF = 1.118 \times 10^{-5} n^2 r$$

n----- rotating speed

r----- radius of rotating

The formula of calculating separation time is as follows:

$$\frac{27.4(\log_e R_{\max} - \log_e R_{\min})\mu}{n^2 r^2 (Q - \rho)} \quad (\text{min})$$

$\rho$ ----- density of mixed liquid (g/cm<sup>3</sup>)

$\mu$ ----- glutinousness of mixed liquid (p)

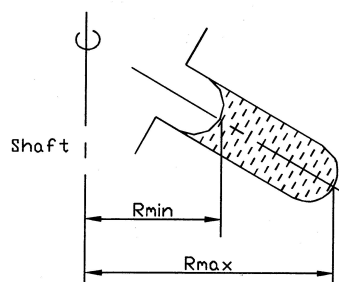
n----- rotating speed

r----- radius of particle (cm)

Q----- density of particle (g/cm<sup>3</sup>)

$R_{\max}$ ----- The horizontal distance from the bottom of solution to the center of the rotating axis (cm)

$R_{\min}$ ----- The horizontal distance from the surface of solution to the center of the rotating axis (cm)



#### 4. SPECIFICATION

Max. speed: 6000r/min

Max. RCF:  $5200 \times g$

Capacity:  $12 \times 20\text{ml}$

Time range: 0-99 min

Power source: 220V 50Hz ☐

110V 60Hz ☐

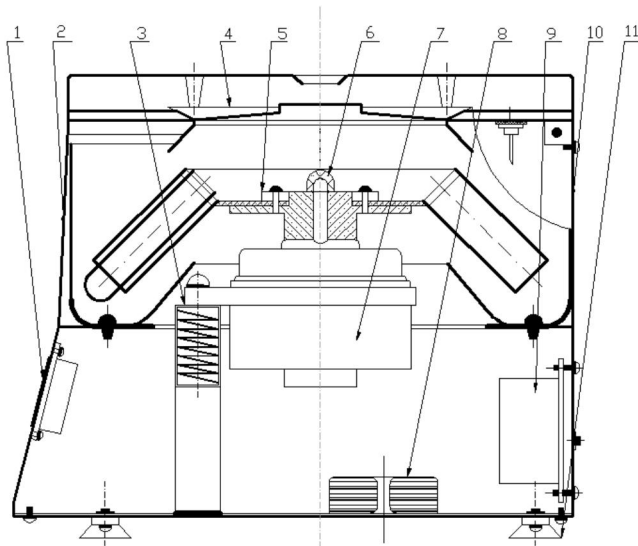
Power supply: 160W

Dimension:  $280 \times 310 \times 265$  ( L\*W\*H )mm

Net weight: 10Kg

Noise: <70dB

#### 5. PARTS IDENTIFICATION



1. Control panel   2. Frame work   3. Damping system  
4. Cover            5. Rotor            6. Nut   7. Motor  
8. Toroidal transformer   9. Electric controlling system  
10. Centrifugal chamber   11. Rubber foot

PS: there are two buttons on the right side.

The green button is power button and another one is safety lock.

#### 6. USING CONDITIONS

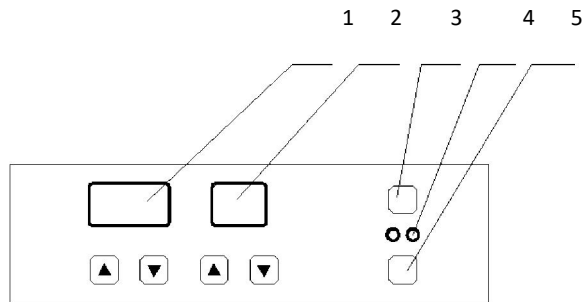
6.1 Ambient temperature:  $0 \sim 30^{\circ}\text{C}$

6.2 Relative moisture: <80%

6.3 No electro conductive dust, explosive and corrosive gas in the surrounding air.

## 7. OPERATION PROCEDURE

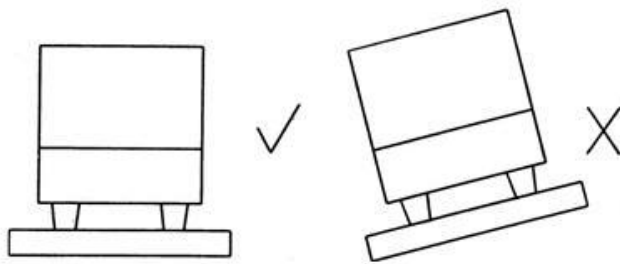
### 7.1 Control panel (see the following fig )



1. Speed display      2. Time display      3. Power ON  
4. Power indicator    5. Power OFF

### 7.2 Preparation

- ① Put the centrifuge on a steady table, and the centrifuge must be 10cm distance from the wall.



- ② Set tubes with sample that can be balance, and put them into holes within the rotor.

### 7.3 Operation Steps:

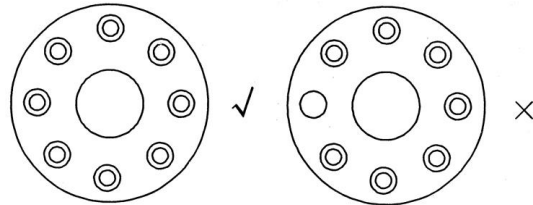
- ① Shut the cover, connect the power. Press the power button on the right first, then press “speed” key to set your needed speed; press “time” key to set your needed time.
- ② Turn on the power ON, the machine starts to run, at this time, time starts reckon by time when the speed up to your setting speed; when time up to your setting time, machine stop running.

If the machine is working, do not open the cover.

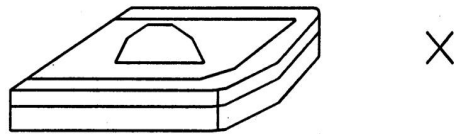
- ③ Turn off power OFF, press the safety lock and take out test tubes.

## 8. MAINTAIN

- 8.1 Please read the manual book before operation.
- 8.2 If you found test tubes were aging or corroded before using it, please replace them in time.
- 8.3 The power should have reliable grounding.
- 8.4 The test tube must be set with sample that can be balance and put into the rotor symmetrically so as to keep balance.



- 8.5 You should cut off the power as soon as hearing abnormal noise.
- 8.6 Don't remove the machine while it is running.
- 8.7 Don't put any goods on the machine cover.



- 8.8 If the sample density is more than 1.2 g/cm<sup>3</sup>, you must calculate Max. speed(N) in the following formula:

$$N = N_{\max} \sqrt{1.2/\rho}$$

$N_{\max}$ ----- the limit speed

$\rho$  ----- sample density

## 9. GUARANTEE: 6 months.

## 10. COMMON TROUBLE & RESOLUTION

No.	Common trouble	Reason	Solution
1	Connect the power, but the indicator and nixie tube don't light	No 220V power	Check the power
		Blown fuse	Replace
		Power switch doesn't turn on	Turn on power switch
2	Set speed with actual speed are different	Voltage is on the high side or low side	Contact with electric department
3	Door locker can not lock during run.	Door lock	Check and Replace
4	There is noise after starting on the machine	Tube with liquid not equaling sample or rotor nut loosen	Make the tube with equaling sample, tighten the nut
5	Machine didn't work according to adjusted value	Forget to press Ok key to confirm	Reset value you needed and press Ok key to confirm
6	Time/Trouble window show	E2 Over the max speed of rotor	The voltage is over, close the machine
		E7 5 seconds after starting, the motor doesn't running	Check up the line between the motor and the PCB
		E8 Control model has no communication with the display model	Maybe the line of communication is loosen

## 11. CIRCUIT DIAGRAM

