

Thanks for purchasing our centrifuge! Before using this centrifuge, carefully read through this instruction manual to ensure fast, efficient and safe operation. Keep this instruction manual handy.

Our duty is at your service!

Our pursuit is satisfying you!

Our motto:

Credit based

Quality first

**Thank you!**

## Safety Notices

Dear Customer,

To prevent any potential accident, please read carefully and understand the following safety instruction before you operate centrifuges. If neglected, personal injury and /or instrument damage can be caused.

The safety reminders are indicated as shown below. The signal words “ **DANGER**”, “**WARNING**” AND “ **CAUTION** ” are indicated together with the hazard alert symbols in this manual.



**DANGER:** This note indicates an imminently hazardous situation, which if not strictly observed, could result in personal severe injury.



**WARNING:** This note indicates a potentially hazardous situation, which if not strictly observed, could result in personal severe injury or pollution of the environment.

1. For operator’s safety, maintain a 30-cm “clearance envelope “around the instrument while the rotor is spinning.
2. Do not store dangerous substances capable of developing flammable or explosive vapors in the clearance envelope.
3. Do not attempt to unlock the door forcefully while the rotor is spinning.
4. Do not attempt to slow or stop the spinning rotor by hand.
5. Do not use any sample inapplicable to the rotor (including buckets), like corrode chemical material.
6. Do not incline or move the instrument while the rotor is spinning. Do not lean on the instrument.
7. Do not exceed the maximum rated speed of the rotor or buckets in use.
8. Do not use corroded, scratched or cracked rotor, buckets and assemblies. Check the rotor, buckets and assemblies are free of such abnormalities before operation.

If abnormal sound or vibration occurs, stop the operation immediately and contact machine supplier.



**CAUTION:** This note indicates a potentially hazardous situation, which if not strictly observed, could result in personal injury or severe damage to the instrument.

1. Do not use any sample inapplicable to the tubes, the bottles, the tube racks, the micro-plates or tube/bottle caps, etc. Using such a sample could deteriorate them.

Maximum rotor speed depends on the buckets, assemblies, tubes or adapters to be used.

2. Do not exceed the allowable imbalance.
3. Use the rotor tubes and bottles within their actual capacities.
4. Mount the rotor onto the drive shaft gently and properly. Do not drop the rotor or apply excessive force to the drive shaft to avoid damage to the drive shaft. Please see the picture and video!
5. Clean the inside of the drive hole (crown hole) of the rotor and surface of the drive shaft (crown) of the centrifuge once a month.
6. If dew drops are in the rotor chamber, drain the chamber through the drain hose to prevent the sample to get mixed up with them or prevent them from leaking into the drive unit. Be sure to recap the drain hose after drainage.
7. Do not pour any solution such as water, detergent and disinfectant directly into the rotor chamber. Otherwise, the bearings of the drive unit may be corroded or deteriorated.
8. Before relocating the centrifuge, remove the rotor from the rotor chamber to avoid damaging to the drive shaft.
9. Always keep the liquid crystal panel in a visible position while the POWER switch is turned on so that you can check the current operating state (running or stopping).

“NOTE” indicates a note which has no direct bearing on personal safety

### **Safety During Installation and/or Maintenance**



**WARNING:** 1. Level the centrifuge by using the four level adjusters and secure them completely. Improper securing can cause significant movement of the centrifuge in the event of rotor disengagement.

2. When servicing the centrifuge, be sure to turn off the POWER switch, turn off the distribution board of your centrifuge room, and then wait for at least three minutes before removing covers or tables from the centrifuge to avoid electrical shock hazards.



**CAUTION:** Avoid a place exposed to ultraviolet rays for operation or storage of the centrifuge. Otherwise, the covers can be discolored and



the coating can be peeled off easily. If installation in such place is unavoidable, cover the centrifuge with a cloth after operation to protect from ultraviolet rays.

### **Electrical Safety**



**WARNING:** Your centrifuge must be grounded properly to avoid electrical shock hazards. And this centrifuge is 110Voltage.



**CAUTION:** Do not place containers holding liquid in the rotor chamber or on or near the instrument. If they spill, liquid may get into the instrument and damage electrical components.

### **Safety against Risk of Fire**



**WARNING:** This instrument is not designed for use with materials capable of developing flammable or explosive vapors. Do not centrifuge such materials in this instrument nor handle or store them near the instrument.

### **Chemical and Biological Safety**



**WARNING:** 1. Make sure to prepare necessary safety measures before using samples that are toxic or radioactive samples or pathogenic or infectious blood samples at your own responsibility.

2. If the centrifuge, rotor or the accessory is contaminated by toxic or radioactive samples or pathogenic or infectious blood samples, be sure to decontaminate it according to good laboratory procedures and methods.

3. If there is a fear that the centrifuge, rotor or the accessory is contaminated

by toxic or radioactive samples or pathogenic or infectious blood samples that impair human health, it is your responsibility to sterilize or decontaminate the centrifuge, rotor or the accessory properly.

**Summarization of TD5 Centrifuge**

This centrifuge is table top low speed centrifuge, it is high performance, low noise and less vibration equipment. The maximum speed is 4000r/min, the maximum RCF is 2950×g, and the maximum volume is 4×30ml.

**The features of TD5 Centrifuge as below shown:**

- It uses brushless frequency motor drive which in great torque.
- Microprocessor control system & soft touch control panel.
- Digital display which indicates run parameters.
- Safe lid interlock with alarm.
- There are 10 kinds of acceleration and deceleration for your choice.
- It is produced as per the International Standard IEC61010-2-20:1992, and State Standard GB4793.7-2001.

**Main specification and technical parameters:**

Form1

The Max.speed	4000 r/min
The Max.volume	4×30 ml
The Max.RCF	2950×g
Timer	0~99min
Speed Accuracy	±20 r/min
Noise	≤55dB (A)
Power supply	110V 60Hz 5A
Product dimension	528mm×370 mm×280mm

**Unpacking:**

Please check whether there are serious damages on the package as soon as you received the centrifuge. If so, please take its photo and contact us directly. If not, please unpacking the package take out the instruction manual, checking the components and accessories. If you found something missing, please tell us.

**Installation:**

The centrifuge should be installed in a stable working table, let its four rubber feet touch the even surface of the table. And then insert one head of the power plug into the socket which mounted on the rear of the centrifuge. Insert another head of the plug into the power supply socket. (Attention: the power supply socket must be connected with the earth in case of electric shocks)

**Operation:**

Power on

Power switch is located on the right bottom corner of control panel. Turn it to "I" position, the centrifuge is power on (while it turns to "O" position, the centrifuge is power off).

1. Checking whether the round nut in the rotor is loose or not, if so, fasten them.
2. Prepare the tubes; put the test liquids into the tubes, checking whether they are in the same level with your eyes.
3. Load the tubes on the tube rack symmetrically; Otherwise it will be resulted in severe vibration in the process of centrifugal or cause accident.
4. Close the lid, make sure it is locked.
5. Set parameters

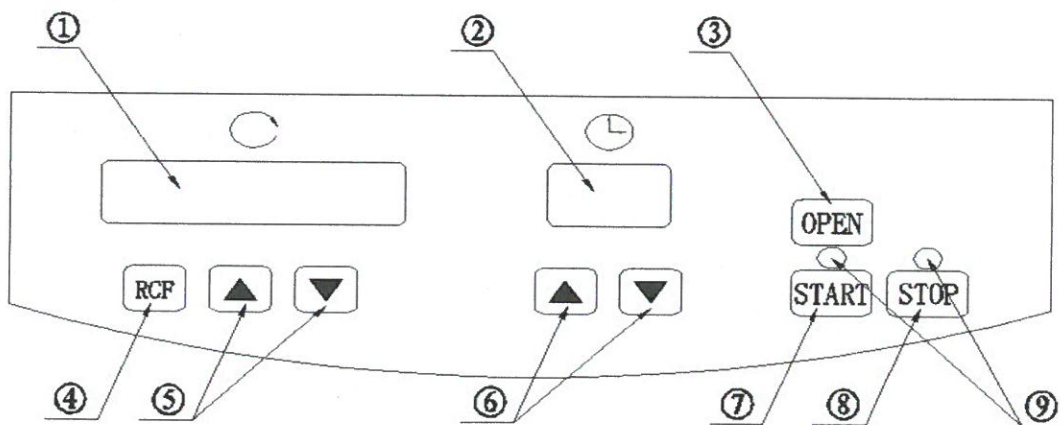


Chart1



- ① Speed/RCF/Rotor No. screen    ② Timer screen    ③ open the lid  
 ④ RCF    ⑤ +/- key for speed    ⑥ +/- key for run time    ⑦ Start the centrifuge  
 ⑧ Stop the centrifuge    ⑨ start light and stop light  
 In "①" Rotor No./Speed/RCF conversion window

You can **circularly press** the button RCF will respectively display rotor no., speed and centrifugal force (RCF).

**Note:** Speed screen: usually "rpm" is shown as a default set in this screen done in the factory.

**(1) Set the speed**

As shown in Chart 1, pressing button ⑤  $\Delta$ , speed range from 0rpm to maximum 4000rpm; pressing button ⑤  $\nabla$ , speed will be down. Set the speed you prefer, after the digital tube flashes twice, then the setting speed will store automatically.

**(2) Set RCF**

As shown in Chart 1, Pressing ④ RCF button, the display window ① will show the RCF; pressing button ⑤  $\Delta$ , the RCF range from 0 to maximum. Pressing button ⑤  $\nabla$ , the RCF will be down. Set the RCF you prefer, after the digital tube flashes twice, then the setting RCF will storage automatically.

**(3) Select Rotor NO.**

It shows the parameters of rotors. It will display the last 2 number of the rotor. For example: 4×30ml swing out rotor no.31278, it was set no. 78. If you need use this rotor, please select no.78

**(4) Set the time**

As shown in Chart 1, pressing time button ⑥  $\Delta$ , the time range from 0 minute to 99 minutes, then pressing time button ⑥  $\nabla$ , the time will be down. Set the speed and time you prefer, after the digital tube flashes twice, then the setting speed will storage automatically.

**(5) Set deceleration and acceleration.**

It will be done as b4 or b5 default in factory. Different solution test has different requirement for the deceleration and acceleration rate, so we can set the corresponding deceleration and acceleration. When power on, long time pressing Stop key, instrument has a sound with "di", time screen display 68. Press  $\Delta, \nabla$  under time screen to select suitable deceleration and acceleration rate. After setting the parameter, no need to press any key, parameters can be stored automatically. 5 seconds later, change to time

display automatically. There are 10 grades can be chosen (0-9), the larger of the No, the quicker of the deceleration and acceleration rate.

**Start the centrifuge**

Press the “start” button, the green light of the “start” button will be brighten, the instrument start to run, the speed window display speed; 1-2 minutes later, the speed will rise to the setting speed. When the time counts down to zero, the centrifugation is over. And the red light will be brighten. When the speed counts down to zero, and the rotor is stopping running, the lid can be open.

**Stop the centrifuge**

It will cut off the electricity automatically in the process of operation when the centrifugal time is 0, the red light will be on, it will be decelerating according the parameters you set, when you hear the buzz sound, the rotors will stop, the instrument also will stop running.

**Open the lid**

Press the button③, the lock will be unlocked, when you hear the “buzz” sound, pull the lid in upward direction, the gas spring will help you open the lid, then take out the sample, all the centrifugation process finished. For your safety, the lid only can be open when the speed turns to 0 rpm.

**All kinds of break down shows in table below**

E1	E2	E3	E5	E6	E7	E8
Cover unclosed	Break down	Parameters setting error	Sending error	Receiving error	ECC Error	Over speed



**Trouble shooting service**

<b>Trouble</b>	<b>Cause</b>	<b>Removal</b>
The display window is not working when power is connected	No 110V power supply	Check the power supply
	Fuse is broken	Check and replace fuse
The rotor doesn't run when Start key is pressed	The connector to circuit board	connect it properly
	The power transformer is broken.	Replace the transformer
	The motor is powered on, but it doesn't work. The motor is damaged.	Replace the motor
Abnormal vibration of the centrifuge	The tube in the rotor is not arranged symmetrically.	Check and rearrange Properly.
	The test tube is broken.	Check and replace the broken tube
	The rotor is not turned tightly.	Check
	The shock absorber is damaged	Replace the damaged shocking absorber

**Warranty Policy**

1. We have one –year warranty on our all products
2. After the machine fixed, our professional technician will file it and keep track of the usage of the machine.
3. We will pay attention to the feedback of the customers within 24 hours.
4. We won't charge customers any money for repairing the machine in one-year warranty time.
5. We only charge for the accessories on repairing the machine beyond the one-year warranty time.

**Please kindly pay attention: If operator doesn't operate as the instruction to lead the damager of the centrifuge, we won't be responsible for it.**