

TDZ4WS

Operation Instruction



Please read this manual carefully before use.
Subject to change without notice!

CHANGSHA KETHINK S&T CO.,LTD.

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Precautions & Security Warnings

Precautions:

- 1) Please read the operation instruction handbook before use.
- 2) To avoid instrument failure, DO NOT keep it in damp, high temperature or dusty place.
- 3) DO NOT move or open its door when instrument is running.
- 4) Instrument should be put in solid & flat desktop, four rubber feet should be in contact with the desktop with uniform stress.
- 5) Keep liquid volume in centrifuge tubes the same by visual inspection.

A large vibration will occur if liquid volume is uneven. Instrument must be stopped immediately, check liquid volume to make sure they are the same, centrifuge tubes must be placed symmetrically in even numbers.

- 6) After each use, please take out the rotor inside the instrument to prevent the rotor from being rusted in the instrument; and clean the inner cavity of the instrument. The power supply of the instrument must have a reliable grounding wire.
- 7) Do not violently bump, vibrate or throw the instrument to avoid damage to the mechanical or electrical parts of the instrument, resulting in irreparable consequences.
- 8) Do not use the instrument in humid or high-temperature places, so as to avoid large-scale damage to the instrument due to damage to the internal electrical parts of the instrument.

1. Working Principle & Application Range

TDZ4WS bench top low speed centrifuge (hereinafter referred to as the instrument) adopts the principle of centrifugal sedimentation of solution density of different particles separation, enrichment and purification. It is widely used in clinical medicine, biochemistry, genetic engineering, radiation immunology, etc, is an ideal instrument for scientific research institutes, hospitals, the ideal experimental instrument.

2. Main Technical Parameters

Model	TDZ4WS (LED)
Max Speed	4000rpm
Max RCF	2480×g
Max Capacity	4*50ml
Speed Accuracy	±10rpm
Timer Range	1~99min
Display mode	LED
Motor	Brushless DC
Noise	≤55dB(A)
Power	110W
Power Supply	AC220V 50HZ 0.5A
Net Weight	18Kg
Machine Dimensions	400*330*255mm (L*D*H)

3. Structure Features

The instrument adopts brushless DC motor, no spark, carbon dust pollution & low noise during running, perfectly meet the requirements of the laboratory work.

Adopt shock absorption system.

Adopt microcomputer control system, high speed control precision, touch panel helps user to set operation parameters conveniently & accurately; can modify parameters during operation & check the corresponding centrifugal force under current speed.

This machine is composed of instrument and optional rotors, suitable rotors and technical parameters are shown in the following table.

Table 1: rotor parameters

NO	Item	MAX Speed (r/min)	MAX RCF (×g)	Capacity (ml)	Tube Size (mm)
No.1	Angle rotor	4000r/min	2280xg	12*5/7ml	Φ 13*95
No.2	Angle rotor	4000r/min	2480xg	12*10ml(adapt 5ml)	Φ 16*120
No.3	Angle rotor	4000r/min	2480xg	18*7/10ml(adapt5ml)	Φ 16*120
No.4	Angle rotor	4000r/min	2480xg	24*7/10ml(adapt5ml)	Φ 16*120
No.5	Angle rotor	4000r/min	2280xg	8*10/15ml(adapt5/7ml)	Φ 16*120
No.6	Angle rotor	4000r/min	2480xg	12*10/15ml(adapt5/7ml)	Φ 16*120
No.7	Angle rotor	4000r/min	2480xg	12*20ml	Φ 20*120
No.8	Angle rotor	4000r/min	2480xg	4*50ml	Φ 29*105

4. Installation

The power supply of this machine is single-phase AC 220V, 50Hz 0.5A.

The power supply should have a safe ground wire and a safe power supply for power supply. It is strictly forbidden to replace the ground wire with a neutral wire, and it is not allowed to arbitrarily pull and modify the wires of the machine. C. The place where the machine is installed is free of corrosive gas and the relative humidity should not be greater than 85%, and there should be no other strong vibration sources.

The table on which the machine is placed should have enough rigidity and hardness to support the instrument, and the table should be flat without any inclined surface, so that the four rubber feet of the machine can keep stable contact with the table.

5. Operation

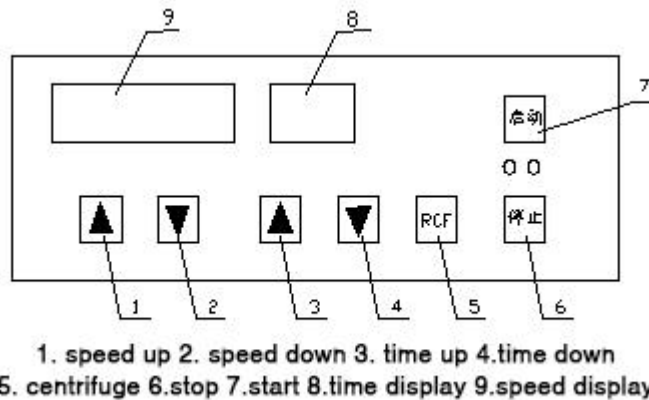
1) Place the centrifuge on a flat table or table. The four rubber feet should be firmly in contact with the flat surface. Visually check to balance them. Gently shake the centrifuge by hand to check whether the centrifuge is placed smoothly.

2) Open the door and put the centrifuge tube into the test tube hole of the rotor. The centrifuge tube must be placed in even-numbered symmetry (the test solution of the centrifuge tube of the high-speed centrifuge should be weighed and added). Pay attention to tighten the

rotor cover and recheck whether the test tube is Put in symmetrically and whether the screws are tightened.

3) Close the door cover, be sure to lock the door cover, and check whether the door cover is closed tightly afterwards. Plug in the power outlet and press the power switch.

4) Set the speed, centrifugal force, time: (the operation panel diagram is as follows)



5) Open the door cover, install the rotor, and turn the screw.

6) Put the centrifuge tube after adding liquid into the rotor, and the centrifuge tube must be placed in an even symmetry. After the centrifuge tube is placed in an even number, gently rotate the rotor body by hand to make the centrifuge hanging cup or tube rack operate flexibly.

7) Close the door cover, pay attention to lock the door cover, check whether the door cover is closed tightly by hand after finishing, otherwise it will not operate.

8) Plug in the power socket and press the power switch (the power

switch is on the back of the centrifuge and above the power base).

9) Set the speed and time:

(1) Set the speed: press the "▲" or "▼" key to determine the speed of the centrifuge at this time (the maximum speed is 4000r/min), when the speed reaches the speed required for this experiment, release the button. After the speed number flashes for 3 seconds, the parameters set this time are automatically confirmed.

(2) Setting time: press the "▲" key to set the speed upwards, press the "▼" speed to set downwards, after the setting is completed, the display flashes twice to indicate the setting is successful, and then press the "▲" or "▼" key to confirm. The working time of the centrifuge this time (the longest time is 99 minutes), the time is countdown.

(3) After the above two steps are completed, press the "confirm" button to confirm the speed and time set above, and then press the "start" button to start the centrifuge. After the centrifuge starts to run, the speed and remaining centrifuge time will be displayed on the control panel.

(4) When the centrifuge time counts down to "0", the centrifuge will automatically stop. When the speed is equal to 0, the buzzer will sound; press the "Stop" button during operation, the centrifuge will stop running, and the buzzer will not sound.

(5) During operation, if you want to convert the centrifugal force, press the "start" button (RCF light is on), the centrifugal force at the current speed will be displayed, and it will automatically return to the running state after 3 seconds.

(6) When the rotor stops, press the "stop/door" button to open the door and take out the centrifuge tube.

(7) Turn off the power switch after use.

6. Warning

1) The table surface where the centrifuge is placed should be flat, and the four rubber feet should be in contact with the table surface and be evenly stressed to avoid vibration.

2) The centrifuge tube should be weighed and balanced when adding liquid. If the difference in addition is too large, large vibration will occur during operation. At this time, stop the machine and check to make the addition meet the requirements. The centrifuge tube must be placed in an even number and symmetrically.

3) If the centrifugal test tube ruptures during operation, it will cause greater vibration and should be stopped immediately.

4) After pressing the "Start" button, if the instrument cannot be started, check whether the door cover is closed.

5) The time interval between restarting after each shutdown shall not

be less than 5 minutes to avoid damage to the compressor due to blocking.

6) After each centrifugation is completed, the rotor must be taken out (unscrew the rotor cover and screw it into the center hole of the rotor with a T-shaped handle to lift it out). Otherwise, it may be rusted to the shaft for a long time, and the rotor will not be removed. The whole centrifuge was scrapped.

7) The service life of the main machine of this machine is 10 years, the service life of the rotor is five years, and the rotor should be replaced when it expires. All rotors cannot exceed their maximum speed.

8) This instrument implements the industry standard of "General Technical Requirements for Medical Centrifuge".

7. Warranty

The quality guarantee period of all centrifuges in our company is one year.

Within one year from the date of purchase, if there is a failure caused by non-human damage, the company will repair it free of charge.

If the warranty period exceeds one year, if the product fails, the company will charge a certain cost and maintenance fee for maintenance.

8.Troubleshooting

Common faults and troubleshooting methods:

Faults	Possible Reasons	Suggested Solution
After the power switch is turned on, The display window is not bright	NO 220V power	check power supply
	Fuse burnt	Check & replace
	The transformer power plug-in and the control board are loose	Plug in
Press the start button, the rotor does not run	The door is not closed properly	Close properly
	The wiring plug-in and the circuit board are loose	Plug in
	Power supply transformer is damaged	replace
	When the motor is energized but does not rotate, the motor or the motor module is damaged	Replace motor / module

	The circuit board is damaged	Contact manufacturer
Centrifuge vibration is large	Centrifuge tubes in the rotor are not placed symmetrically	Check & adjust
	Centrifuge tube broken	Check & replace
	The rotor is not rotating	check

Certificate of Conformity

Product Name: Table low-speed Centrifuge

Product Model: TDZ4WS

MAX Speed: 4000 rpm

MAX RCF: 2480 × g

This product has been tested and proved to be qualified for delivery in conformity with technical standard.

Inspector:



Date: May,24th, 2021

TDZ4WS BENCH TOP LOW SPEED CENTRIFUGE**PACKING LIST**

NO	ITEM	SPECIFICATION	QUANTITY	REMARKS
1	Bench top low speed centrifuge		1 set	wooden box
2	rotor		1 set	
3	sample tubes			
4	tool			
5	user manual		1pcs	
6	certificate of conformity		1pcs	
7	packing list		1pcs	
8	Power cord		1pcs	

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