
OPERATING INSTRUCTIONS

*Table-Type Low-Speed
Self-Balance
Centrifuge*

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I Structural Principle

By making use of the principle of centrifugal settling, the TD4 table-top low-speed centrifuge is used for separating, concentrating and purifying the particles with different densities in solution.

It consists of main frame and accessories, of which the constituents of main frame include shell, centrifugal chamber, driving system, control system and operating display unit. In addition, rotor and centrifugal tube are its accessories.

- 1、 Lid lock
- 2、 Lid
- 3、 Seal ring
- 4、 Spindle
- 5、 Centrifugal chamber
- 6、 Cabinet
- 7、 Control display pane

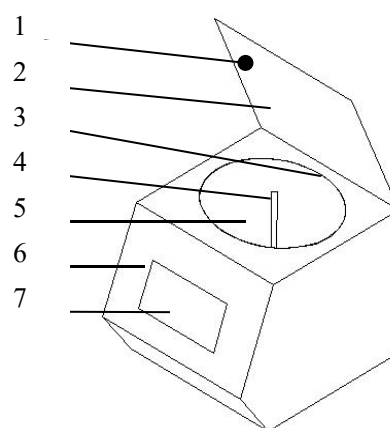


Figure 1
Structural Diagram of Product

II Technical Characteristic

This machine adopts brushless motor drive, microcomputer control, protection of lid, realize the convenient operation. It is applied to separate the particles with different densities in various scientific research labs and production companies, such as the biochemical study, radio immunity and environmental protection.

III Basic Parameter

1. Max speed: 4000r/min
2. Max Capacity: 400ml
3. Max RCF: 2200×g

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4. Timing range: 0~99min
 5. Noise: $\leq 65\text{dB}$
 6. Power: 220V 50Hz 3A

IV Installation

1. Requirements to installing site
 - a). The installing table should be solid. Keep the indoor dry and clean and avoid direct sunlight.
 - b). There should be independent earth wire indoors so as to ensure the safety of power utilization.
2. Installation of main frame
 - a). Install the main frame on the solid table and ensure the four feet are connected to it.
 - b). The gap between centrifuge and wall should be more than 0.1m so as to ensure the fine ventilation.
 - c). Power supply: AC220V, 50Hz, 3A. The section area of wire should be not less than 2.5 mm^2 , and socket capacity should be not less than 3A. The protective earthing wire must be connected firmly.

V Normal Running Condition

- a). Environmental temperature: $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$
- b). Relative humidity: $\leq 85\%$
- c). There should be no conductive dust, explosive and corrosive gas indoors.
- d). Power supply: AC220V 50Hz 10A

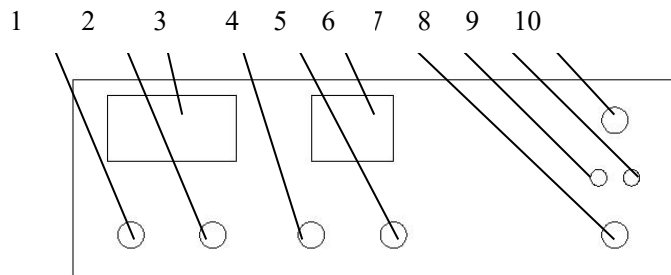
VI Using Method

1. Rotor installation

Wipe the Spindle inside centrifugal chamber and holes in rotor with clean soft cloth. Horizontally hold up rotor with two hands so as to make the slot aligned to the Spindle pin, and then put it into vertically to ensure the rotor slot is set to the Spindle pin. Mount a gasket which should be lightly tightened with spanner. (Please don't over-screw down so as not to damage rotor.)

2. Centrifuge installation

Inject separating medium into centrifugal tube, and then symmetrically put it into the holes of rotor after the solution in tube is visualized to be about equal.



3. Pre selection

1: Speed rising key, 2: Speed falling key, 3: Speed window, 4: Time rising key, 5: Time falling key, 6: Time window, 7: Stop key, 8: Stop indication lamp, 9: Start indication lamp, 10: Start key

Control Display Panel:

a) Speed Setting: Connect power supply, and then according to Table 1 and separating rate required by solution, press “▲”, “▼” keys to set the required centrifugal speed on the speed window. Note: The set speed cannot exceed the maximum speed of the rotor.

b) Time setting: On the time window, press “▲”, “▼” keys to set the required time according to the time required by centrifuging.

4. Start and Operation

a) Check whether the “speed setting” and “centrifugal time” are correct or not.

b) After pressing “Start Key”, the green indication lamp is light. The speed is rising, and then changed to be constant rate running after reaching the pre selected speed.

c) When it is required to change the separation parameters (speed, time) in operating, press “▲”, “▼” keys which is below the speed window to change the speed parameter, and the “▲”, “▼” keys are used for changing the time parameter. After changing, the instrument will automatically run according to the changed parameters.

d) When the time is “0”, the centrifuge will automatically cut off the power supply of driving motor, and then the speed will be falling. When the speed is “0”, the yellow indication lamp is light while the running indication lamp is extinct, and the instrument produces buming sound automatically for informing operators.

e) When it is needed to stop machine during running process, press stop button, and then the centrifuge will automatically cut off the power supply of driving motor.

VII Safety Requirement

1. Set strictly according to the allowed speed of rotor.
2. Strictly prohibit running under the circumstance of over rated speed of rotor.
3. Strictly prohibit using the abrasive or cracked rotor and centrifugal tube.
4. The earthing of indoor socket must be connected reliably, and the earth wire must be independent wire.
5. To open the lid is strictly forbidden when the centrifuge is running. Don't move the Cabinet when the centrifuge is running.
6. After the rotor is stopped to use for 3 months, it is necessary to run 10min under low speed before running according to the maximum speed of rotor.
7. Don't mix the rotors from other companies so as not to cause

damages to instrument and personnel safety.

VIII Maintenance

1. After the centrifuging work is end, please wipe off the dirt of centrifugal chamber, rotor and centrifugal tube with clean soft cloth if it does not be used again at that day.
2. Regularly check whether the rotor and centrifugal tube is cracked or not.
3. If it is needed to stop using the instrument for more than 1 month, please take out the rotor from centrifugal chamber. The central hole of rotor and principal axis of centrifuge is painted with grease lubricant, and the rotor is required to be stored in a dry place.

IX Fault Diagnosis and Clearance

1. Without power supply indication after starting up:
 - a) Check if the power of indoor network is supplied normally.
 - b) Check if the plug and socket is connected well.
 - c) Check whether the fuse is burned out or not
2. Large vibration after starting up
 - a) Check whether the weight difference of separating medium which is put into symmetrically in rotor is over weight or not. The weight of test tube should be equal.
 - a) Check whether the rotor is fixed on the spindle well or not.

X Quality Guarantee

For the quality problems (caused by the factory's reason) when operating, the instrument can be replaced within 3 months after sales, repaired free of charge within 1 year. We can provide fittings and services for long.

Table-Type Low-Speed Self-Balance Centrifuge

Q C

Certificate

Max. Speed : 4000rpm

Max. RCF: 2200×g

Max. Capacity: 6×50ml

Product No: 220846

Table-Type Low-Speed Self-Balance Centrifuge

Packing List

Item	Description	Unit	Quant
1	(Angle rotor6×50ml)	set	1
2	Operating Instructions	set	1
3	power cable	set	1
4	Qc Certificate	piece	1