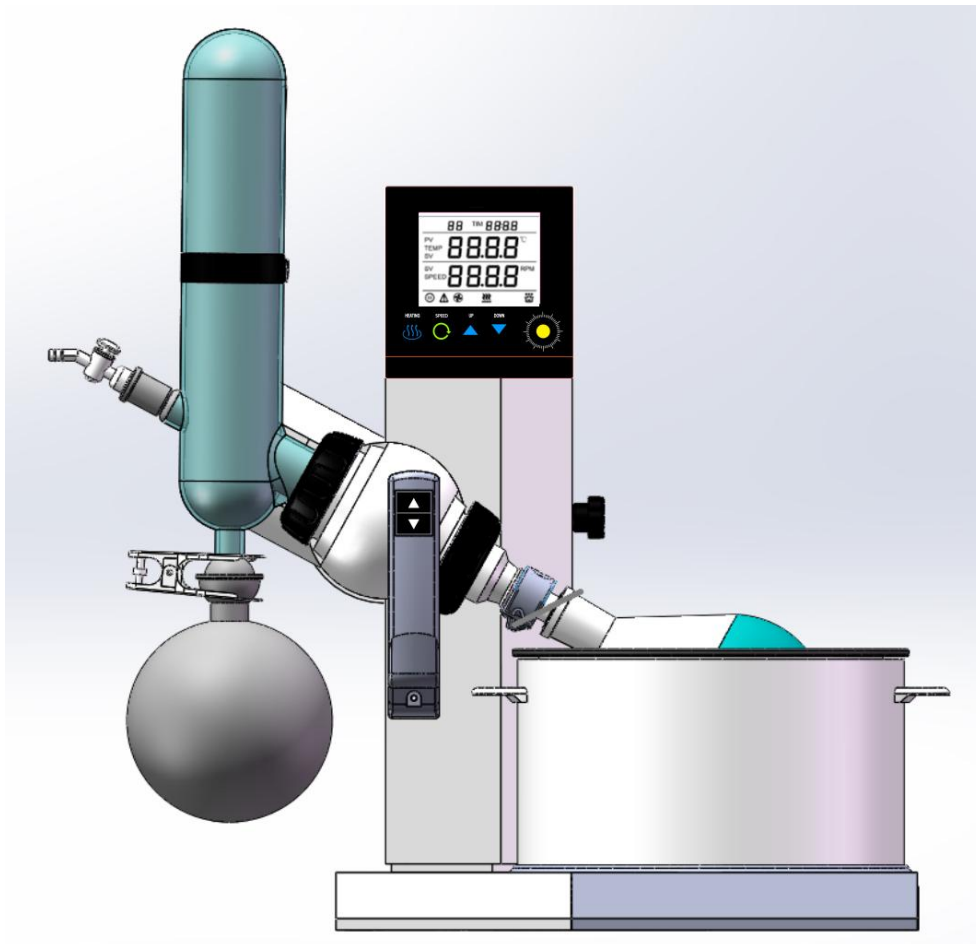


DW-RE-5000A Rotary Evaporator

Installation manual

A Model Ball mill type



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1. Usage introduction

Rotary evaporator is specially used for standard distillation, crystallization, product concentration, powder drying and separation of one or more solvents. It can also be used for sample pretreatment during gas, liquid and mass spectrometry analysis. Rotary evaporator is an ideal and necessary basic instrument for manufacturing and analytical testing in the chemical industry, medical industry, universities and scientific research laboratories, such as concentration, drying, and recovery.

2. Structural features

0.1 Large LCD screen display, menu type interface, knob type switch operation.
0.2 Heating bath, teflon coating, easy to clean, corrosion resistance, high temperature resistance.
0.3 Unmanned safe operation function, automatic standby at the end of the experiment.
0.4 Dedicated bottle ejection knob design, easy and convenient to unload the bottle.
0.5 Sealing parts: imported PTFE+special process mold production.
0.6 Touch type + handle type double automatic lifting, safer lifting.
0.7 Rotating DC motor power: 70W, stable start.
0.8 The condenser tube is designed with dripping point and anti-backflow device.
0.9 Intermittent timing forward and reverse can be set, suitable for drying process.
10. Optional vacuum system, can be set to control any vacuum degree.
11. The heating bath is designed with a safety handle, and the shell is insulated to prevent burns.
12. Equipped with protective cover, heat preservation and energy saving, splash and explosion proof.

3. Main technical parameters

Model	DW-RE-5000A rotary evaporator
Rotation speed	LCD color screen display 0~200~310rpm/min
Evaporation capacity	Max.43ml/min (H ₂ O)
Temperature adjustment range	Water bath: RT-99℃±0.5℃
Bath bath material	One-time molded Teflon composite bath, the heating bath is equipped with a safety handle, the shell is insulated to prevent scalding, the volume is moderate, and the temperature rises quickly.
Bath size	φ29×17cm
Sample bottle	Intermittent left and right rotation, the intermittent time can be adjusted from 0 to 60s, and it can be used for drying powdered samples.
Lifting stroke	Touch type + handle type double automatic balance lifting (lifting stroke 150mm), The falling end point has a fixed safety distance of 60mm to prevent collision.
Temperature control	Microcomputer PID controller, digital display.
Temperature setting	Rotary encoder, rotary type input setting, large LCD screen display, convenient and quick.
Safety performance	Timing function (0-999min): After reaching the predetermined time, the device automatically stops working, returns to the standby state, and provides early warning protection.
Heating bath	Totally enclosed heater power 1.8KW

Sample bottle capacity range	0.25--5L
Sealing parts	Imported PTFE and special synthetic materials are selected, and the mold synthesis is processed by special process technology to enhance sealing, anti-corrosion and abrasion resistance.
Condenser	Vertical, three-layer ball-milling serpentine condenser tube has large condensation area, dripping point and anti-backflow design. (Effectively improve work efficiency).
Condensation area	0.31 m ²
Operating environment temperature	5°C~40°C
Factory configuration	Sample bottle: 29# Eggplant bottle 1L*1 F50 Flange mouth bottle 5L*1 Recycling bottle: S35 Ball mill mouth collection bottle 3L*1
Input power	AC220V/60HZ
Size and weight	Package dimensions 78×69×85cm Instrument size 74×44×96cm Gross weight: 40kg

4. Precautions for use

- 1) Users should read this manual first.
- 2) For precious solutions, a simulation process experiment should be done first, and when it is determined that the equipment can meet the experimental requirements, then it can be transferred to normal use.
- 3) The water temperature of the water bath is digital displayed, which is automatically controlled. Please measure the precise water temperature directly with a mercury thermometer.
- 4) For fuse replacement, the power supply should be cut off before opening the seat cover to replace the fuse.
- 5) When the water bath is during heating, do not touch it with your hands to avoid scalding.
- 6) Can not be used in flammable, explosive, anesthetic gas environment.
- 7) This product generally does not make specific requirements for disinfection.

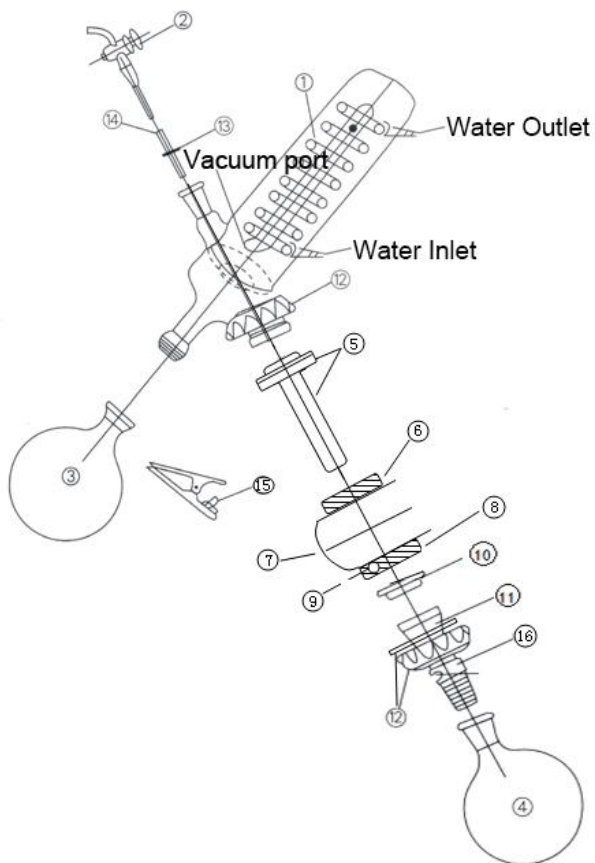
5. Installation Notes

Preparation: The user counts the parts according to the packing list, wipes, washes, and dries. The water bath on the right side, the main body on the left side. (Please refer to the legend for the product comparison chart).

Installation drawing number:

1	Ball mill mouth \ standard mouth condenser tube	9	Stop hole (loading and unloading rotating bottle)
2	Valve type feeder	10	Rotating bottle seal parts
3	Ball mill mouth \ standard mouth collection bottle	11	Threaded interface
4	Evaporating flask	12	Lock nut, spring lock / fixed ring
5	Glass conduit tube + sealing assembly	13	Water retaining washer

6	Condenser pipe seal connection port	14	PTFE feed tube
7	Host head (rotating body)	15	Ball mill clamp / (plastic clamp)
8	Rotating bottle sealing connection port	16	Bottle unloader tool



Note: A/B/C/D type condenser tube is different, the installation method is the same.

First step

A: Put the ⑤ glass conduit + sealing assembly into the sealing connection port ⑥ of the condensing tube, and pay attention to the anti-rotation hole on the sealing assembly ⑥ corresponding to the anti-rotation pin inside .

B: ⑩ All internal crossings need to be coated with vacuum grease to cover the ⑧ cold rotating bottle sealing connection port, and connected to the ⑤ glass conduit tube.

C: Before the condenser tube is formally connected, apply vacuum grease to the ground surface to improve the sealing performance.

D: Screw the locking nut ⑫ together with the condenser tube ① on the screw on the left side of the host head ⑥ and fix it. During operation, insert it carefully and tighten it gently, and do not use excessive force.

Second step

E: In turn (first) tighten the nut (then) fix the ring (12) into the thread interface (11); then tighten the lock nut (12) and ⑧ to fix the screw, install (16) the bottle ejector on (11); Put the ④ evaporating flask into the (11) gently tighten the bottle ejector to fix the ④ evaporating flask (apply vacuum grease to the ground surface before connecting to improve the tightness).

Third step

F: Fluoroplastic feeding tube ⑭ sleeved in ② valve-type feeding tube (sometimes it is already set at the factory).

G: The water-retaining gasket ⑬ is inserted into ⑭ when inserting the condenser ①, adjust ⑭ to the best position. Before the formal insertion, apply vacuum grease to the positive and negative mouths to improve the sealing performance.

H: The collection bottle ③ is sleeved in the ① ball mill condenser tube and clamped with a clamp.

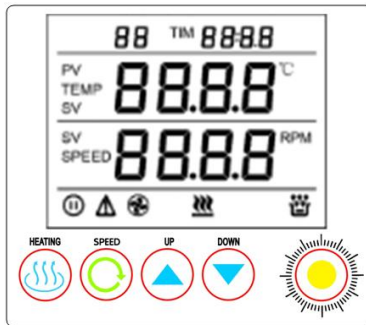
Fourth step

J: The water inlet and outlet are connected and discharged by leather pipes.

K: The vacuum port is connected to the vacuum pump with a leather tube, and the SHZ-III circulating water vacuum pump of TOPTION can be purchased.

6. Operating steps

- 1) Plug the power cord into the main body control box and plug the other end into the mains 220V/50Hz.
- 2) Press the power switch and the light is on (below the power cord), the LCD screen of the control panel is on.
- 3) Operation of the control panel:



Heating Motor

Temperature control on Heating or motor running

Button definition:

“Knob”: press key to enter settings and modify data; “Heating button”: press key,

Start/stop heating: “Motor”: press key, Start/stop rotating motor;

“Lifting up”: press \triangle key, ascending motor operation; “Down”: press ∇ key, Descent motor running.

1) When the controller is powered on, the temperature display window displays the upper temperature limit, and the speed display window displays the lower temperature limit. After about 3 seconds, it enters the running state.

2). Click the knob in the standard interface to set the temperature, speed, and running time in sequence (the character flashes, you can rotate and set the required parameters).

3). In the temperature setting state, if there is no operation within 1 minute, the controller will automatically return to the normal display state.

4). When \triangle there is temperature and speed alarm, the identifier lights up, the fault code is displayed in the upper left corner, and the buzzer sounds. When the buzzer sounds, you can press any key to silence it.

5). If the controller temperature display window shows “oooo”, indicates that the temperature sensor or the controller itself is faulty. Please check the temperature sensor and its wiring carefully.

6). Speed box display in stop state “End”, temperature control running motor stop speed box display “OFF”, display the speed when the motor is running.

- Handle rocker keys (for the convenience of the user's hobby, the handle lifting style is reserved), the user can operate the handle buttons to press the upper part of the rocker to rise, and vice versa, or on the control panel: press \triangle/∇ key host rise, press ∇ key host drop, When you reach the right height, stop when you leave the position.

- After installing the glass, fill the sink with water, plug in the heating wire, and set the temperature number, Press the heating switch automatic heating control. (Dry burning is not allowed) .

- Correct the angle of the host. Loosen the knob on the right side of the column first, turn the main unit head to reach a suitable angle, and then tighten it.

- After completing the test run, turn off the power and unplug the power plug.

7. Maintenance

- 1) Regularly clean and replace the sealing ring according to production needs (see installation instructions for the operation method).
- 2) Glassware: When it is heavily soiled, it can be cleaned with dilute hydrochloric acid.
- 3) Main pipe: regular cleaning and add vacuum grease.
- 4) The clean water in the water bath should be changed and cleaned frequently.

8. System self-tuning (User skipped)

When the temperature control effect is not ideal, the system can be self-tuning. During the auto-tuning process, the temperature will have a large overshoot. The user should fully consider this factor before performing system auto-tuning.

Long press the knob to enter the internal parameter 1, set AT to 1 to enter the auto-tuning state, the running indicator flashes, and the positive setting ends and stops flashing.

In the process of system self-tuning, if there is an upper deviation over-temperature alarm, the alarm identifier will not light up, and the buzzer will not sound.

9. System internal parameter setting (User skipped)

In the non-setting state, long press the "**Knob**" key for 3 seconds, the temperature measurement display window will display the password prompt "**Lk**", and the temperature setting display window will display the password value. Use the knob to modify the required password value. Click the "**knob**" button, if the password value is incorrect, the controller will automatically return to the normal display state, if the password value is correct, it will enter the internal parameter setting state, and then click the "**set**" button to modify each parameter in turn. Long press the "**set**" button for 3 seconds to exit this state, and the parameter value is automatically saved.

10. Motor forward and reverse setting

When leaving the factory, the device is set to single-cycle forward rotation, enter the parameter setting Lk-0, and set the forward and reverse time to be non-zero to turn on the forward and reverse function. The parameter dIF sets the initial direction, when the forward and reverse function is turned off, dIF sets the motor rotation direction. (Example: cyclic rotation; forward rotation for 60 seconds-stop for 3 seconds-reverse rotation for 60 seconds, set the parameters cct=60; nct=60; sot=3).

Internal parameter table -0

Parameter indication	Parameter name	Parameter function description	(Range) Factory value
Lk	Password	When "Lk=0" you can view and modify parameter values.	0

cct	Forward time	Forward rotation time, set to 0 to cancel the forward and reverse function.	(0-9999)s 0
nct	Reversal time	Forward rotation time, set to 0 to cancel the forward and reverse function.	(0-9999)s 0
sot	Stop time	Stop time. Stop time for forward and reverse switching.	(0-9999)s 0
dIF	Starting direction	The starting direction of the motor starts, forward and reverse.	(0-1)1

If the fault cannot be eliminated according to the above method, it is not advisable to do it yourself. Please fax/telephone 0086-29-88763980 to TOPTION for the fault phenomenon.

11. Fault analysis and troubleshooting

Phenomenon	Check (reason)	Approach
No power (indicator does not light)	1. Power plug loose 2. Check whether the fuse is open	1. Plug in the power plug tightly 2. Replace the fuse
The host does not work	Same as above	Same as above
The host will not rise or fall	1. Same as above method check 2. Check whether the lifting wire under the base of the main body is too loose	1. Same as above method check. 2. Tighten the lifting screws by hand
Water bath is not heating	1. Check 15A fuse 2. Whether the heating plug is loose	1. Replace 15A fuse 2. Insert the heating plug tightly
Vacuum can't go up	1. Whether the sealing ring is worn 2. Check the performance of the vacuum pump, whether the joints are tight (block the vacuum pump outlet and observe the instructions of the vacuum gauge). 3. Check the performance of the vacuum pump, whether the joints are tight (block the vacuum pump outlet and observe the instructions of the vacuum gauge). 4. Check whether the glassware is broken or cold burst. Check whether the glassware interface is coated with vacuum grease.	1. Replace the sealing ring. 2. Tighten the joint or change the vacuum pump. 3. Replace broken appliances. 4. Reapply the vacuum grease.

12. Storage and transportation

The packaged instrument should be stored at a temperature of -10 to 40°C, a relative humidity of not more than 90%, no corrosive gas, and a well-ventilated room. It should be protected from moisture

No.	Name	Quantity
1	Mainframe (including: control box, mainframe head, column, base)	1 set
2	Water bath (including: Teflon composite pot, fully enclosed electric heater, shell, base)	1set
3	Power cord, electric heating cord	Per 1pcs
4	Condensing tube (packed according to the following models) A Type Ball Mill Condensation Tube	1pcs
5	Collection bottle (packed according to the following model) A Type Ball mill mouth 3000ml	1pcs
6	Evaporating flask (packed according to the following models) A Type Flange mouth rotating bottle 5000ml 29# Eggplant bottle 1000ml	Per 1pcs
7	29# Threaded joint	1pcs
8	Square nut with ring	1pcs
9	Clamp for ball milling mouth	1pcs
11	Bracket rod	1
12	Active block	1
13	Condenser tube bracket	1
15	Manual, warranty card, certificate of conformity	Per 1pcs
17	Phillips screwdriver 1pcs, 15A and 10A fuse each 1pcs	Per 1pcs

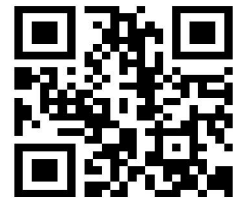
during transportation and handled with care.

13. After-sales service

After the equipment is packaged, under the condition of complying with the storage and use specifications, the warranty period is one year from the date of delivery (glass parts/wearable parts are not covered by the warranty). The supplier will repair and replace parts caused by quality reasons free Damage.

14. Packing List

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