

DW-ORE-2000A Rotary Evaporator

Instruction manual



Thank you for choosing DRAWELL DW-RE-2000 Rotary Evaporator, our mission: make your research more accurate and efficient.

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1. Application introduction:

The 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. It is an ideal and necessary basic instrument for manufacturing and analytical experiments in the chemical industry, medical industry, universities and scientific research laboratories, such as concentration, drying, and recovery.

2. Structure features:

- 1) Large LCD screen display, menu-type interface, knob switch operation.
- 2) Safe operation function in unmanned mode, automatic standby at the end of the experiment.
- 3) Heating bath: Teflon coating, easy to clean, corrosion resistance, high temperature resistance.
- 4) Dedicated bottle withdrawal knob design, easy and convenient to return the bottle.
- 5) Sealing parts: imported PTFE + special process mold synthesis.
- 6) Double automatic safe lifting: Touch type + handle type.
- 7) Rotating DC motor power: 70W, stable to start.
- 8) The condenser tube is designed with dripping point and anti-backflow device.
- 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 pot is designed with a safety handle, and the shell is insulated to prevent burns.
- 12) Equipped with a protective cover, heat preservation, energy saving, and splash proof.

3. Main technical parameters:

Technical parameters	DW-ORE-2000A
Rotation speed	LCD display / 0-310 rmp/min
Evaporation capacity	Max.25ml/min (H2O)
Temperature adjustment range	Automatic temperature control Room temperature -210 ° C, temperature control accuracy: ± 2 ° C
Bath pot material	One-time molded Teflon composite pot, equipped with safety handles. The outer shell is insulated to prevent scalding, the volume is moderate, and the temperature rises quickly.
Bath size	φ23×13cm
Sample bottle	Intermittent left and right rotation, and the can be adjusted from 0- 60s, which can be used for drying powder 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 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 pot	Fully enclosed heater power 1.5KW
Sample bottle capacity range	0.25--2L
Sealing parts	Imported PTFE and special synthetic materials are selected, and the mold synthesis is processed by special 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	0.18 m ²
Ambient temperature	5°C~40°C
Factory standard configuration	Sample bottle: 29# eggplant-shaped bottle 1L*1 29 to 29 port splash ball *1 Recycling bottle: S35 ball mill mouth collection bottle 1L*1
Dimension&Weight	Packing size 71×64.5×51cm / Instrument size 66×42×83cm

	Gross weight: 30kg
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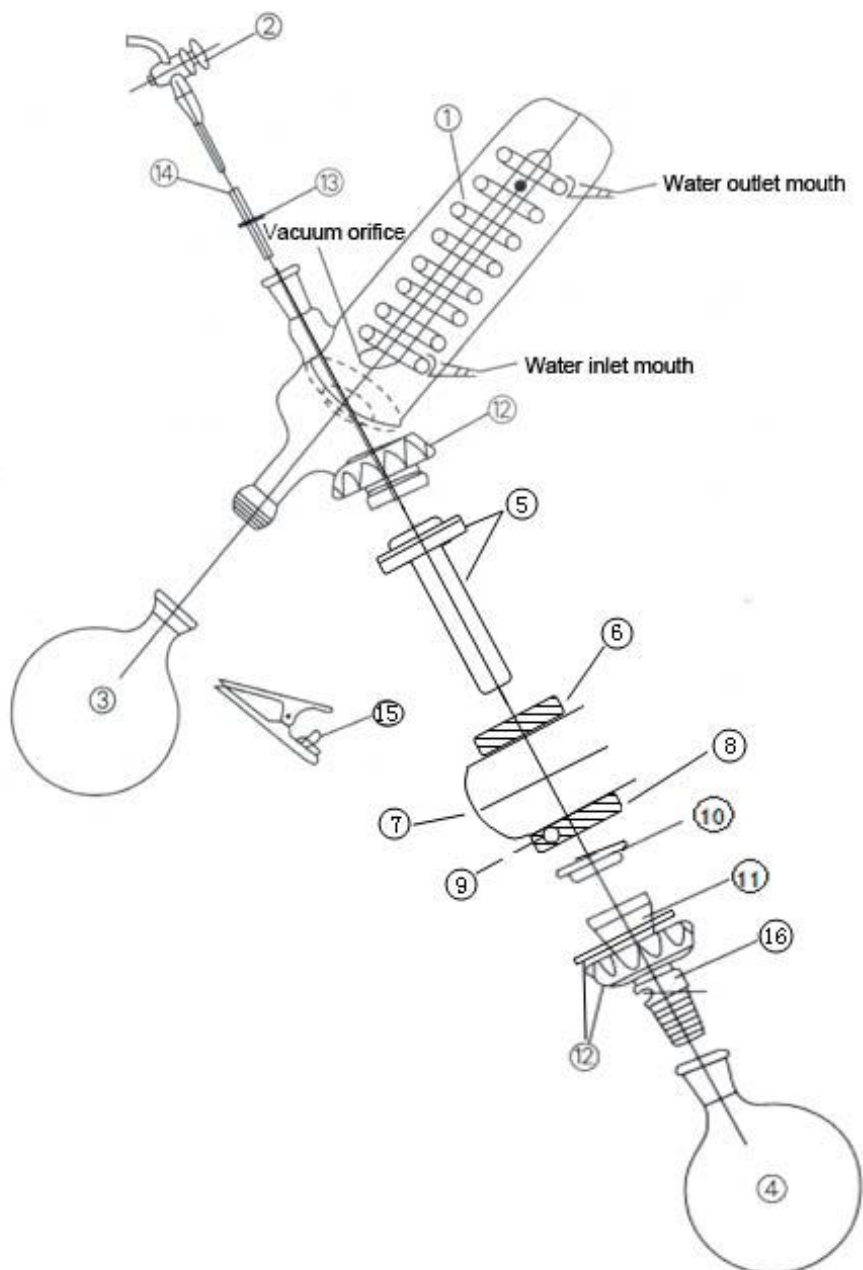
4. Matters need attention of operation

- 1) Users should read DW-ORE-2000 specification and instruction manual first before operating.
- 2) As 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 tank is automatically controlled by the temperature digital display. 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 sink pot is reheating, 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. Instruction manual

According to the packing list, users need to clean and dry glass parts, place them according to installation picture, main engine is at left and water bath is at right.

- ① Ball-milling mouth / Standard grinding mouth condenser.
- ② Valve type material charging device.
- ③ Ball-milling mouth / Standard grinding mouth collection bottle.
- ④ Evaporation bottle.
- ⑤ Glass guide tube and sealing parts.
- ⑥ Condenser tube sealing connect mouth.
- ⑦ Main engine head (rotary body).
- ⑧ Rotating bottle sealing connect Mouth.
- ⑨ Locking hole (load and unload rotary bottle).
- ⑩ Rotating bottle sealing part.
- ⑪ Close nipple.
- ⑫ Lock nut, spring lock, fixing ring.
- ⑬ Retaining water gasket.
- ⑭ PTFE material charging tube.
- ⑮ Ball-milling mouth clamp, plastic clamp.
- ⑯ Unload bottle device.



Note: A/B/C/D different type condenser has different install method.

First step:

- 1) Insert part ⑤ in ⑥, please note the locking hole need to match with locking taw.
- 2) Paint vacuum grease on ⑩ and insert it in ⑧, then connect with ⑤.
- 3) Before connect condenser tube, please paint vacuum grease on milling mouth surface, improve its sealing performance.
- 4) Lock nut (12) and ① condenser tube, fixed on ⑥, please slowly operate.

Second step:

5) First lock nut, then is fixed circle (12), connect with (11) close nipple, then fixed (12) and ⑧ together, install (16) on (11), then connect ④ evaporating bottle on (11), tightening unload bottle device to fix ④ evaporation bottle (before connect please paint vacuum grease on milling mouth surface, improve its sealing performance).

Third step:

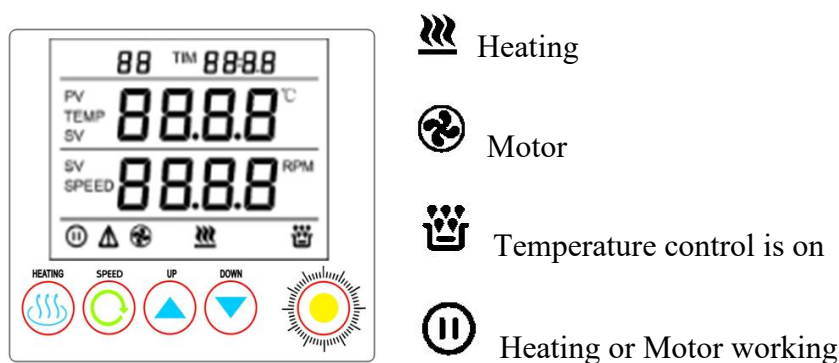
- 6) Insert (14) PTFE material charging tube in ② Valve type material charging device.
- 7) Insert (13) in (14), when insert ① condenser tube, please adjust (14) at right position, please paint vacuum grease to improve sealing performance.
- 8) Connet ③ with ①, use clamp to fix.

Forth step:




- 9) Water inlet use leather tube to connect and discharging.
- 10) Vacuum orifice use leather tube connect vacuum pump,could equip with SHB-III vacuum pump.

6. Operation

- 1) Connect power: 220v/50Hz.
- 2) Press power switch to connect it, green light display, rotating speed governing botton, motor will rotate.
- 3) Operation of the control panel:




Explanation of each button:


-  setting & adjust parameters
-  turn on/off heating
-  turn on/off rotating motor

△ ▽ Ascending/descending motor operation

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

② Click  in the standard interface to set the temperature, speed, and running time in sequence (when 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 there is a temperature and speed alarm , the identifier lights up. The fault code is displayed in the upper left corner, and the buzzer buzzes. When the buzzer buzzes, you can press any key to silence it.

⑤ If the temperature display window of the controller shows "oooo", it means that the temperature sensor or the controller itself is faulty. Please check the temperature sensor and its wiring carefully.

⑥ The speed frame of the stop state displays "**End**", the temperature control running motor stop speed frame displays "**OFF**", and the motor rotates when it is running.

4) Handle rocker button (for the convenience of users' hobby, the handle lift style is reserved), the user can operate the handle button to press the upper part of the rocker. The host rises, vice versa, or on the control panel: press the \triangle/∇ key, the host rises, press the ∇ key, the host descends, and reaches a proper height, and it stops when the hand is removed.

5) After installing the glassware, fill the water tank with water, plug in the heating wire, set the temperature number, and press the heating switch to automatically control the heating. (Dry burning is not allowed).

6) Adjust 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.

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

7. Maintenance

- 1) Cleaning according actual needs, change sealing ring.
- 2) Glass parts: for serious dirt, can use dilute sulphuric acid cleaning.
- 3) Main tube need periodic cleaning, add vacuum grease.
- 4) The water in water bath need often to change and need often to clean the water bath.

8. 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 not 0 to turn on the forward and reverse function. The parameter dIF sets the initial direction. When the forward/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)

Parameter	Parameter Name	Parameter Description	(Range) Factory default
Lk	Password	“Lk=0” the parameter value can be viewed and	0
cct	Forward time	Set 0 to cancel forward and reverse function	(0-9999)s 0
nct	Reversal time	Set 0 to cancel forward and reverse function	(0-9999)s 0
sot	Stop time	Stop time for forward and reverse switching.	(0-9999)s 0
dIF	Starting	Starting direction of the motor, forward and reverse.	(0-1)1

Phenomena	Check (causes)	Handling method
No power supply (indicator light does not work)	1.Check whether the power plug is loose. 2.Check whether the fuse is disconnected.	1.Insert the power plug tight. 2.Replace the fuse.
Principal machine does not rotate	Ditto	Ditto
Water tank can not be ascended or descended	1.Check ditto (refers to RE-5000) 2.Check whether the hand wheel screw is fastened.	1.Handle ditto (refer to RE-5000) . 2.Screw the hanging screw tightly with hands.
Water tank can not be heated	1.Check the 15A fuse. 2.Check whether the heating plug is loose	1.Replace the 15A fuse. 2.Insert the heating plug tightly.
Insufficient vacuum	1. Check whether the seal ring is worn. 2.Check the performance of vacuum pump, and whether each connector is tightened (block the air outlet of vacuum pump to observe the indicators on vacuum table). 3.Check whether the glass appliances are defected or cracked for coldness. 4.Check whether the interface of glass appliance is coated with vacuum grease.	1. Replace the seal ring. 2.Screw the connectors tightly or replace the vacuum pump. 3.Replace the damaged appliances. 4.Recoat with vacuum grease.

In case of troubleshooting according to above methods, please fax the failure phenomenon to DRAWELL (sales05@drawell.com.cn 24/7days service) , instead of operating by yourselves.

9. Storage and transportation

Instruments packed should be stored inside the room, with the temperature within the range of -10 ~ 40 °C, relative temperature not exceeding 90%, non-corrosive gases and well-ventilated condition. In the process of transportation, they should be free of moisture, and handled with care.

10. After-sale service

The warranty period for this product is one year commencing from the leaving the factory after being packed well. Under the premise of using it according to the norms for storage and usage, if the product can not work normally, we will provide the service of repair or replacement free of charge. (Glass pieces are beyond the scope of warranty).

11. Packing list

No.	Name	Qua.
1	Principal machine (including: head, control box, lifting column, bottom case)	1set
2	Water bath (include teflon recombination bath, whole closed electric heater, shelf, bottom case)	1set
3	Power wire, power heater wire	Each 1pc
4	Condenser (package according to different type) A type Ball-milling mouth condenser	1pc
5	Collection bottle A type Ball-milling mouth 1000ml	1pc
6	Evaporating bottle A type 29# standard mouth 1000ml	1pc Each
7	29# screwed nipple	1pc
8	Square nut with circle	1pc
9	Ball-milling mouth clamp (or standard mouth plastic clamp)	1pc
10	Movable block	1pc
11	Condenser support shelf	1pc
12	Phillips screwdriver, 15A, 10A fuse	1pc Each
13	Warranty card , product certification	1pc Each
14	Specification	1pc

12. User feedback forms

Our company provides users with one year warranty, lifetime maintenance and free technical support. In the process of working, such as faults and anomalies found should be timely feedback to us in order to improve and correct in time.

User Feedback Form

Company name			
Equipment name	DW-ORE-2000 Rotary Evaporator	Delivery date	
Your feedback about our instrument			
Contact information			

Product Quality Certificate

Name: Rotary Evaporator

Model: DW-ORE-2000

Code:

Inspector:

Inspection date:

The delivery date:

Qualified product after inspection.

Warranty Points to Note

1. Implement three guarantees with this certificate.
2. Receive the goods and open the package and check at once, if defective goods found, please notice us in 1 month and our company is not liable for overdue.
3. In the course of inspection and normal use and the acceptance and normal use process, on product quality problem- warranty for 1 year from the date of delivery.