XINSHENG Pharmaceutical Instrument Co.,Ltd

Rotary evaporator
User manual

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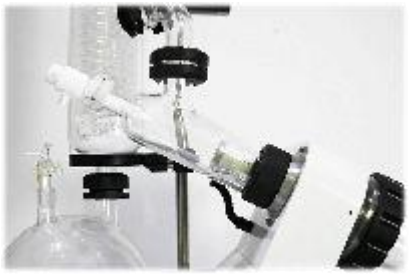

CREATE VALUE FOR CUSTOMERS

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Catalogue

Preface

Rotary evaporator's working principle is to rotate the glass flask filled with materials under constant temperature heating, and the system connect to the negative pressure to low the boiling point, then liquid forms a film and evaporates, at last it recovers the menstruum by the glass coil condenser and receiving flask. It is particularly applicable for the concentration, crystallization, separation and menstruum recovery of heat sensitive materials.

1) Instrument Features

1.1 Adopt advanced and well-known frequency converter to ensure the stable working of motor and improve the evaporation and recovery speed.

1.2 Automatic bath lift and vacuum feeding can help to reduce the breakage of rotary flask.

1.3 Receiving flask use square port for connection to ensure the high sealing, it also can be removed easily.

1.4 Use high temperature resistant, corrosion resistant and long-acting precision seals to ensure the gas tightness under high temperature, high negative pressure and strong corroding condition s when it is under dynamic sealing.

1.5 Using AC induction motor can work effectively for a long time with variable speed, no brush and no spark.

1.6 The chassis cold-rolled sheet spraying plastics and the bath pot, main bar, shaft are made of high qualified stainless steel. Appearance is attractive and anti-corrosive.

1.7 Intelligent temperature controller, can work with both water and oil bath, more widely used. Temperature fluctuation is only ±0.02 ℃. Evaporation is more stable and material cannot be washed easily.

1.8 The series modular design on the whole set makes it extensible and easy to install, and more convenient to maintain.

Rotary Evaporator

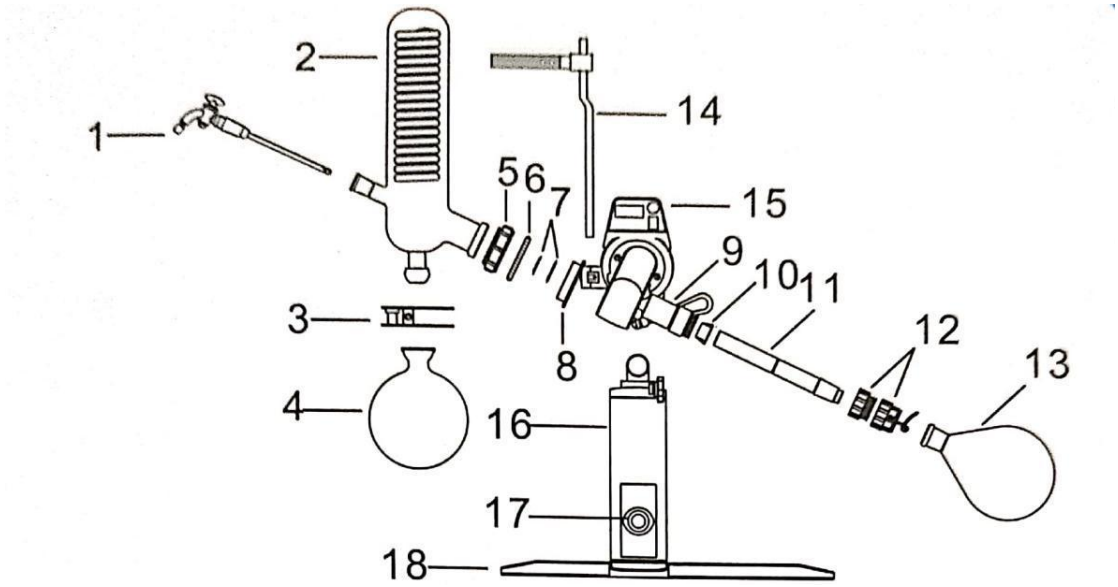
STAINLESS STEEL HEAD WITH PTFE SEAL

FREQUENCY CONVERSION CONTROL BOX

PTFE FEEDING VALVE,NO POLLUTION OF GREASE

Product Model	Description
Evaporation Flask	5L/50#
Receiving Flask	2L/3L
Motor Power	90W
Bath Power	2KW
Vacuum Degree	0.096MPA
Rotation Speed	10-90RPM
Evaporation Speed(H_2O)	2L/H
Power	220V
Dimension	55*35*110CM

2) Configuration



1. **Glass feeding valve**
2. **Glass condenser**
3. **Receiving flask clamp**
4. **Receiving flask**
5. **Condenser locknut**
6. **Spring ring**
7. **Vacuum sealing ring**
8. **Bearing end cap**
9. **Stainless steel rotation axis**
10. **Tapered sleeve**
11. **Glass rotation axis**
12. **Evaporating flask quick-release nut**
13. **Evaporating flask**
14. **Condenser support+Rubber bracket**
15. **Motor shield**
16. **Lifting column**
17. **Lifting handle**
18. **Base**

3) Precautions

3.1 Please read the contents of this manual carefully before installation and use to ensure correct operation.

3.2 The power supply voltage must be the same as specified in this product. Please refer to the instrument nameplate for special equipment.

3.3 The life of the electrical part is greatly affected by ambient temperature, humidity and corrosive gases.

3.4 Operational errors can cause accidents, shorten the life of the instrument and reduce its performance.

3.5 Before starting the machine, you must first confirm that the stopper pin is not in the stop hole, and you cannot insert the stopper pin during operation.

3.6 When working, pay attention to the damage of the glass caused by hard objects (such as watches, rings, etc.) on the body.

3.7 Keep this manual in a fixed place and store it as far as possible in the hands of the operator.

4) Instrument Installation

The rotary evaporator consists of a main part, a glass part, and a constant temperature bath. It is packed in large modules before leaving the factory, so the assembly is convenient. The installation method is as follows:

4.1 PR209、PR205、PR202、PR201 series (as shown)

4.1.1 Place the rack close to the water source. On a firm and stable workbench, if there is unevenness, it should be adjusted first to avoid accidents.

4.1.2 Mount the motor on the frame and adjust it to a 30° tilt position and tighten the set screws.

4.1.3 Take out the rotating shaft and put the small nut into the rotating shaft, then take out the tight ring from the spare part package and insert it into the rotating shaft and get it into the groove of the rotating shaft. Then, insert the shaft from the right side of the main unit and tighten the small nut to connect the shaft with the shaft. Motor is fixed (to complete this procedure, the brake pin must be inserted into the motor gear and the bottom stop hole to lock the motor)

4.1.4 Put the sealing ring (applying vacuum grease) into the rotating shaft from the left side of the motor

4.1.5 Put the large nut on the 50° flange and fit into the buckle (send the 01 model directly to the large nut and the buckle in the condenser 50#flange), and align the 50mm housing cover on the left side of the motor.

Into the sealing ring, tighten the large nut, insert the condenser into the standard port on the four-way bottle and fix it with stainless steel hoop (PR201 directly fix the condenser on the motor through the large nut). Adjust the position of the four-way bottle and condenser to ensure that the condenser is vertical.

4.1.6 Insert the feeding tube into the standard port on the left side of the four-way bottle (PR201 type is directly inserted into the condenser)

4.1.7 The collection bottle is placed on the bottom of the four-way bottle and fixed with stainless steel clamps (the PR201 collection bottle is directly fixed at the standard port on the bottom of the condenser and fixed with a standard port clamp)

4.1.8 Insert the rotating bottle into the standard port of the rotating shaft and secure it with the standard port clamp. Place the bath under the rotating bottle.

4.1.9 Fix the electrical box and tighten the screws and insert the seven-pin plug.

4.2 PR301, PR502, PR509 series (as shown)

4.2.1 Place the rack on a stable and stable workbench close to the water source. If there is any unevenness, adjust it first to avoid accidents.

4.2.2 Mount the motor on the frame and adjust it to a 30° tilt position and tighten the screws.

4.2.3 Insert the rotating shaft from the left side of the motor, place the large nut on the 50# flange of the four-way bottle and insert it into the buckle. Align the 50mm housing cover on the left side of the motor and fit it into the sealing ring. Tighten the large screw to four. The bottle is fixed, and the condenser is inserted into the standard port on the four-way bottle and fixed by the hoop. The entire four-way bottle and condenser position is used to ensure that the condenser is vertical.

4.2.4 Insert the feeding tube into the standard port on the left side of the four-way bottle.

4.2.5 Place the collection bottle (the bottom of the PR301 type is not equipped with the discharge valve) on the bottom of the four-way bottle and fix it with a stainless steel clamp.

4.2.6 Put the sealing ring (vacuum grease) on the rotating shaft from the right side of the motor. Take out the rotating bottle and insert the large nut into the flange and then insert it into the buckle. Align the 50mm shell cover on the right side of the motor into the sealing ring and tighten the large screw molybdenum. (The brake pin must be inserted into the motor when completing this procedure. Inside the stop hole in the gearbox to lock the motor).

4.2.7 Fix the electrical box and tighten the screws, and insert the seven-pin plug.

4.3 PR1002, PR2002, PR2006, PR5002 series

4.3.1 Place the rack on a flat, dry floor (or build a platform 25CM--35CM off the ground). If there is any unevenness, adjust it first to avoid accidents.

4.3.2 Mount the motor on the frame and adjust it to a 30° tilt position and tighten the set screws.

4.3.3 Insert the rotating shaft from the left side of the motor and place the 50# gasket (vacuum grease) on the flange of the left side of the rotating shaft. Place the nut nut on the flange of the air cylinder 50# and insert the retaining ring. Align the 50mm housing cover on the left side of the motor with the sealing ring, and tighten the middle nut to fix the gas cylinder.

4.3.4 Insert the condenser tray into the slider hole in the middle of the left stainless steel pole and tighten the bolt. Place the condenser vertically on the stainless steel tray. The adjustment position is the side of the condenser. 60#Flange mouthpiece. Align the ports, place the 60# gasket in the middle of the two flanges and match them, and fix the two flanges with stainless steel connectors. Insert the condenser hoop into the slider hole above the pole and tighten the bolt to secure the condenser.

4.3.5 Insert the feed piston into the flange on the left side of the gas cylinder and tighten the screws.

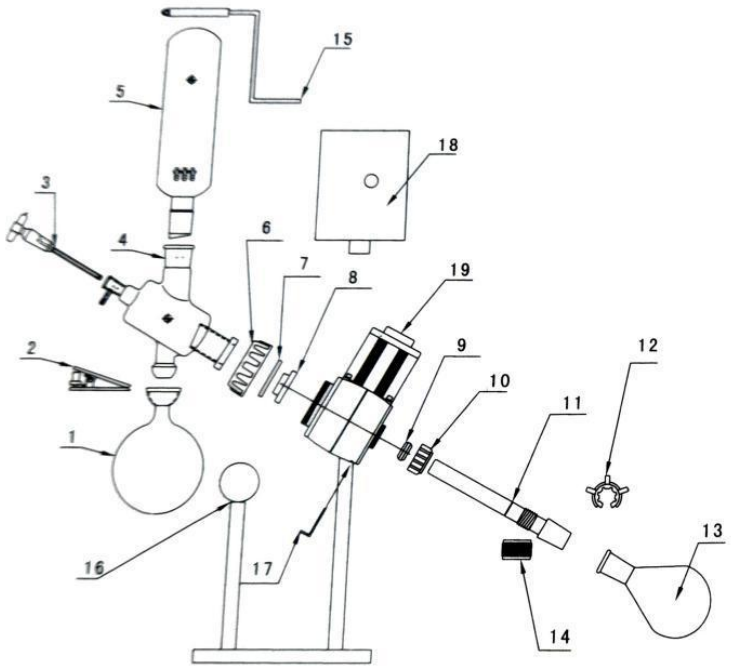
4.3.6 Put the upper 50# flange of the diverter valve (with switch) on the gasket and connect it to the flange of the bottom of the condenser and fix it with the connector.

Place the upper flange of the collection bottle (bottom with the discharge valve) on the gasket and connect it to the bottom flange of the diverter valve and fix it with the connector. Then place the stainless steel on the bottom of the collection bottle.

4.3.7 and tighten the bolts.

4.3.8 Put the main sealing ring (vacuum grease) on the rotating shaft from the right side of the motor. Take out the rotating bottle and insert the large nut into the flange and then insert it into the buckle. Align the right side cover of the motor into the sealing ring and tighten the large nut. (To complete this procedure, the brake pin must be inserted into the upper part of the motor. Inside the moving hole to lock the motor).

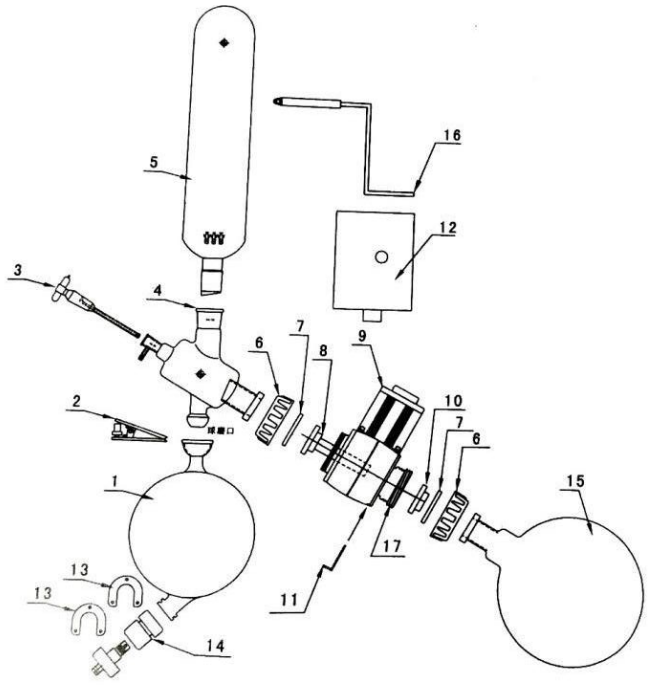
4.3.9 Fix the inverter and tighten the screws and insert the aviation plug.



Part name

1. Receiving Flask
2. Stainless steel ball mill clip
3. Feeding tube
4. Four-way bottle
5. Condenser
6. Big nut
7. Buckle
8. Seal ring
9. Tight circle
10. Small nut
11. Rotary axis
12. Standard mouth clamp
13. Rotating bottle
14. Bottle retreat
15. Stainless steel hoop
16. Vacuum gauge
17. Stop port
18. Electrical box
19. Motor

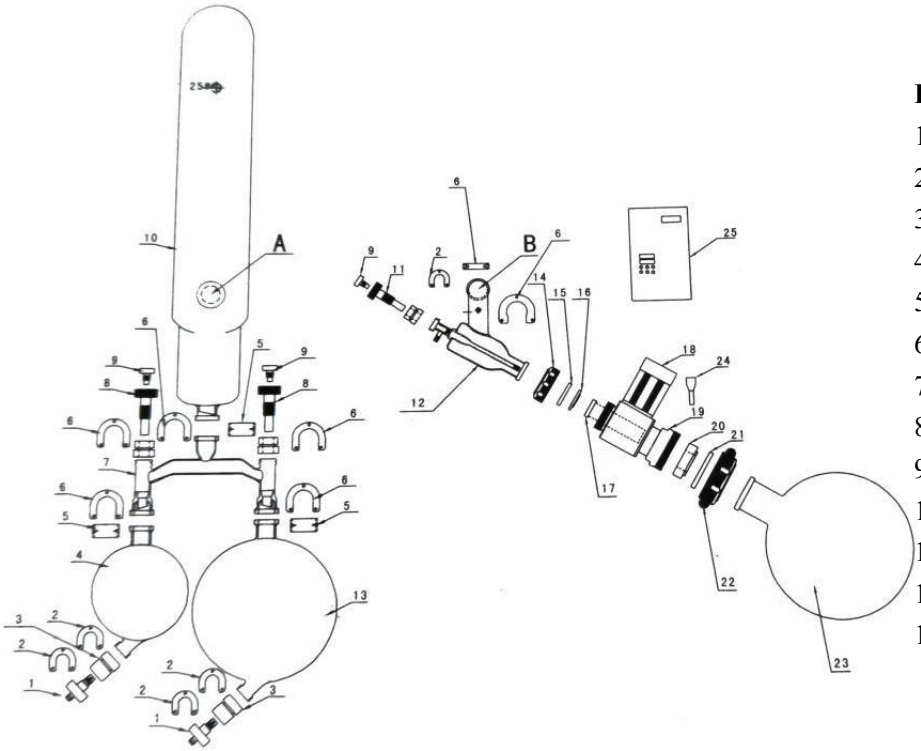
PR2 PR2A Installation diagram



Part name

1. Receiving Flask
2. Stainless steel ball mill clip
3. Feeding tube
4. Four-way bottle
5. Condenser
6. Big nut
7. Buckle
8. Rotary axis
9. Motor
10. Seal ring
11. Stop port
12. Electrical box
13. PP connector
14. Feeding valve
15. Rotary bottle
16. Stainless steel hoop
17. Bottle picker

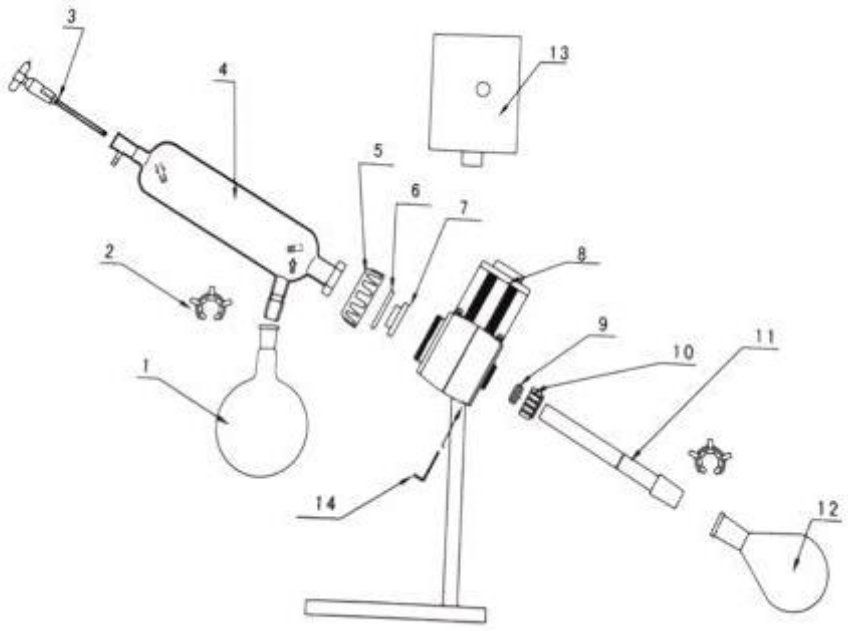
PR-3 PR-5 PR-5A Installation



Part name

1. Discharge valve
2. Connector
3. 36# seal
4. Secondary collection bottle
5. 50# seal
6. 50# connector
7. Diverter valve
8. Shunt valve
9. Air release switch
10. Condenser
11. Feed switch
12. Gas cylinder
13. Main collection bottle
14. Medium nut
15. Buckle
16. 60#Gasket
17. Rotary axis
18. Motor
19. Stainless steel end cap
20. Main seal
21. Large buckle
22. Big nut
23. Rotary bottle
24. Stop port
25. Electrical box

PR-10 PR-20 PR-50 Installation diagram.
Remark:PR-10 is single receiving bottle.
A and B are connected.



Part name

1. Receiving flask
2. Standard mouth clamp
3. Feeding tube
4. Condenser
5. Big nut
6. Buckle
7. Seal ring
8. Motor
9. Tight circle
10. Small nut
11. Rotary axis
12. Rotary bottle
13. Electrical box
14. Stop port

PR201 Installation diagram

5) Maintenance instructions

5.1 Carefully inspect the instrument before use, all glass fittings are damaged, sand holes, cracks.

5.2 Do not allow the rotating bottle with solvent to have no buoyancy for a long time, or lift the bath in the state where the rotating bottle is empty. Excessive buoyancy will damage the glass and cause the rotating wheel in the motor to wear on one side.

5.3 All PTFE switches should not be tightened too much. It should be light and easy. Improper use will damage the PTFE material, which will affect the sealing performance of the instrument and shorten the service life of the PTFE switch.

5.4 Periodically remove the seal and clean it, remove the dirt on the rotating shaft, apply vacuum grease to lubricate the rotating shaft, and then reuse it.

5.5 Do not allow water to enter the electrical part. Do not expose to moisture. Do not directly contact various corrosive organic solvents.

5.6 The original authentic accessories must be purchased. Any use of other accessories may cause damage to the instrument.

5.7 Every time you use it, you must clean all kinds of stains, solvents, etc. left on the surface of the machine with a soft cloth.

6) Simple troubleshooting

Malfunction	Reason
Turn on the power switch, the indicator light is off.	The external power supply is not connected or has poor contact.
	Fuse short circuit
The power indicator is on but not rotating	Rotary bearing rust
	Motor electrical box failure
Unstable speed, fast and slow	Gear wear
	Electrical box, speed ring failure
Motor temperature is too high (motor housing exceeds 90 ℃)	Voltage does not meet regulations or overload operation
	Ambient temperature is too high
There is a vacuum, but the vacuum is not high, there is a leak	The seal or rotating shaft is dirty or worn
	Switch has leakage, vacuum gauge failure, vacuum tube aging
Vacuum suddenly disappears or no vacuum	Glass or switch is broken, vacuum gauge is broken