

explosion-proof pilot scale rotary evaporator

Explosion-proof pilot scale rotary evaporator is a pilot scale organic solvent recovery, purification and concentration of precision equipment designed for the flammable and explosive, toxic volatile solvent processing environment.

Explosion-Proof Pilot Scale Rotary Evaporator

Main Features

1. High-quality glass: All glass components use 3.3 borosilicate—resistant to heat shock, corrosion, acids, alkalis, and organic solvents.
2. Dual condensing system: Main and sub-condensing three-stage reflux structure—large condensing area for high recovery, minimal solvent loss.
3. Explosion-proof core components: Motor, heater, sensors, and control box are flameproof (Ex marking, Grade Gb, Temp T4, 135°C+)—safe for explosive gas environments.
4. Intuitive control: LCD display with encoder—easy temperature and speed adjustments.
5. Electric/manual dual-mode bath lift: Liquid level sensing and anti-dry burn protection for safe, convenient operation.



6. PTFE drain valve: Corrosion-resistant, non-polluting discharge system.
7. Flange interface: Easy to disassemble, maintain, and clean.
8. Locking brake casters: Freely movable and stable positioning.
9. Reliable sealing: PTFE + Viton double sealing—excellent airtightness, prevents vacuum leaks.

Working Principle

- Reduced pressure distillation: Rotary flask heats and evaporates material; volatile solvents quickly condense and recover for efficient separation/concentration.
- Continuous surface renewal: Rotation enlarges evaporation area, prevents overheating and foam overflow.
- Safe heating: Stable bath heat with liquid level/dry burn protection.
- Three-stage condensation: Main, sub, and buffer bottle ensure full vapor condensation and efficient collection.
- Continuous discharge: PTFE system allows ongoing condensate removal during operation—maximizes efficiency.

Application Areas

1. Fine chemicals: Separation/recovery of volatile solvents (aromatics, ketones, ethers).
2. Pharmaceuticals: Raw material concentration, extract production, solvent recovery.
3. Natural products: Essential oil extraction, low-temp concentration/drying of bioactives.
4. New materials: Polymerization, monomer purification.
5. Pilot platforms: Scale-up/synthetic optimization in academic and industrial labs.
6. Hazardous areas: Suitable for organic solvent recovery and flammable gas environments.

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Model	R-05Ex	R-10Ex	R-20Ex	R-50Ex
External dimensions	1490Wx670Dx1140H mm	1690Wx730Dx1800H mm	1210Wx740Dx2040H mm	1995Wx920Dx2230H mm
Weight includes glass	118kg	143kg	190kg	258kg
Power supply	220-240Vac, 50Hz, 60Hz		380Vac, 50Hz, 3 phase	

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Model	R-05Ex	R-10Ex	R-20Ex	R-50Ex
Rotary motor power	60W	180W	370W	
Overall power	3100W	4800W	4500W	6300W
protection class	IP20			
contamination level	2			
Speed range	20rpm to 140rpm	20rpm to 130rpm	20rpm to 130rpm	20rpm to 110rpm
Bath temperature control range	ambient+5°C to 95°C			
Nominal adjustment accuracy	±1.5°C			
Bath liquid	deionized water			
System seal leakage	≤0.03kPa per minute			

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Model	R-05Ex	R-10Ex	R-20Ex	R-50Ex
rotary control	Electronic			
Heating rated power	3000W	4000W	4500W	6000W
Bath Temperature Sensors	PT100, three lines			
Maximum evaporation capacity, water	2L per hour	3.2L per hour	5L per hour	9L per hour
Condensing area	about 0.278 square meters	Primary 0.39, Secondary 0.253 square meters	Primary 0.948, Secondary 0.358 square meters	Primary 1.15, Secondary 0.4 square meters
Rotary Bottle Volume	5L	10L	20L	50L
Rotary Bottle	flanged diameter 125mm			

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Model	R-05Ex	R-10Ex	R-20Ex	R-50Ex
diameter	50mm			
Collection bottle volume	3L	5L	10L	20L
Collection bottle diameter	flanged diameter 40mm	flanged diameter 50mm	flanged diameter 60mm	
Rotation speed display method	LED			
Temperature display mode	LED			
environmental temperature	5°C to 35°C			
Environmental relative humidity	≤70%			

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Model	R-05Ex	R-10Ex	R-20Ex	R-50Ex
Bath size	diameter 300mmx170mm	diameter 370mmx220mm	diameter 450mmx260mm	diameter 550mmx320mm
glass	3.3 Borosilicate Glass			
contact with material	3.3 Borosilicate glass, PTFE			
bath cover	Optional			