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20L EX Proof Rotary Evaporator – R2002EX




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Rotary Evaporator – Model: R2002EX



Overview

20L EX Rotary Evaporator used in EX Proof Zone, is the pilot scale unit to offer vacuum tight, uniform speed of rotation, and constant temperature of heating bath, which is safe, robust, durable and user friendly.

- Capacity: 20L;
- EX Proof Rate: EXdIIBT4Gb 
- Mechanical seal, max vacuum <2 mbar;
- Heating bath, PID temperature control range: RT ~ 99°C (180 °C, Oil);
- Hand lift mechanism;
- Quality borosilicate glass 3.3 (BORO 3.3);
- Vertical triple coil condenser;
- Rotary speed: 10 – 110 rpm, LED display;
- Vacuum meter equipped;
- Teflon discharge valve for clean discharge.

Model

R

20





02

EX



Capacity (L)

EX – EX Proof

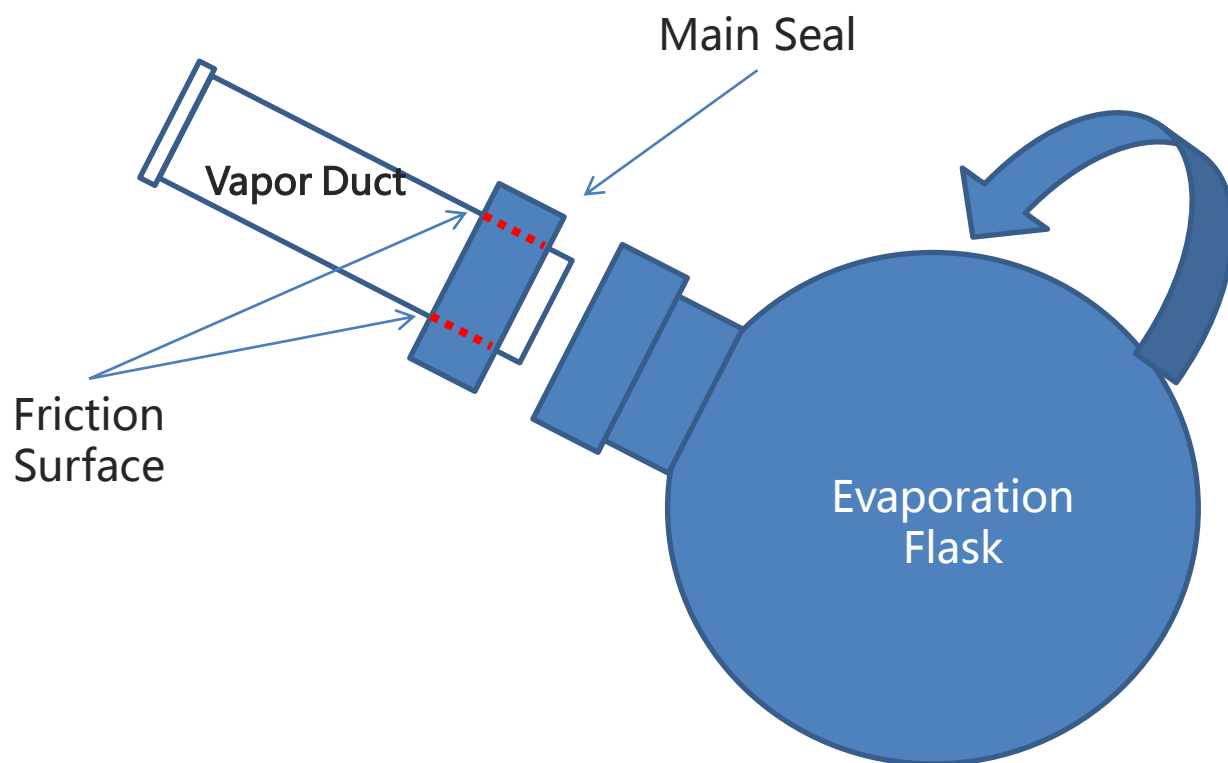
Technical Specification & Configuration

Parameter	
Model	R2002EX
Evaporating Flask (L)	20L/F95
Receiving Flask (L)	10L + 3L, Teflon Discharge Valve
Condensing Surface (m2)	1.15
Evaporation Efficiency (H2O)	> 5.0L/h
Motor Power (W)	120W (EX Motor) 
Rotary Speed (rpm)	10 – 110 (EX Speed Controller) 
Max Vacuum Level (mbar)	< 2 mbar (-0.0998MPa)
Glass Material	Borosilicate Glass 3.3 (BORO 3.3)
Heating Power (kW)	4 kW
Temp. Control Range & Accuracy (°C)	RT - 99 (180) ±1°C (EX Controller) 
Bath Size, Capacity, Material	Φ45×26H, 38L, SUS304
Height Adjustment (cm)	Hand Lift, 16cm
EX Proof Rate 	EXdIIBT4Gb
Dimensions (cm)	118 x 65 x 190H
Power Supply	220V/50Hz

Configurations

Model	R2002EX
Seal	Mechanical Seal
Speed Controller 	Variable Frequency Drive
Heating Bath 	Digital Control
LED Digital Display	Rotary Speed, Bath Temperature
Lift Mechanism	Bath Hand Lift
Vacuum Meter	Scale
Inlet Valve	Teflon Valve
Discharge Valve	Teflon Valve
Non-stop Receiving Function	Equipped
Safety Features	Over-current Protection No-spark Electronic Control
Oil Bath (180°C)	Optional

Mechanical Seal VS Traditional O-ring Seal

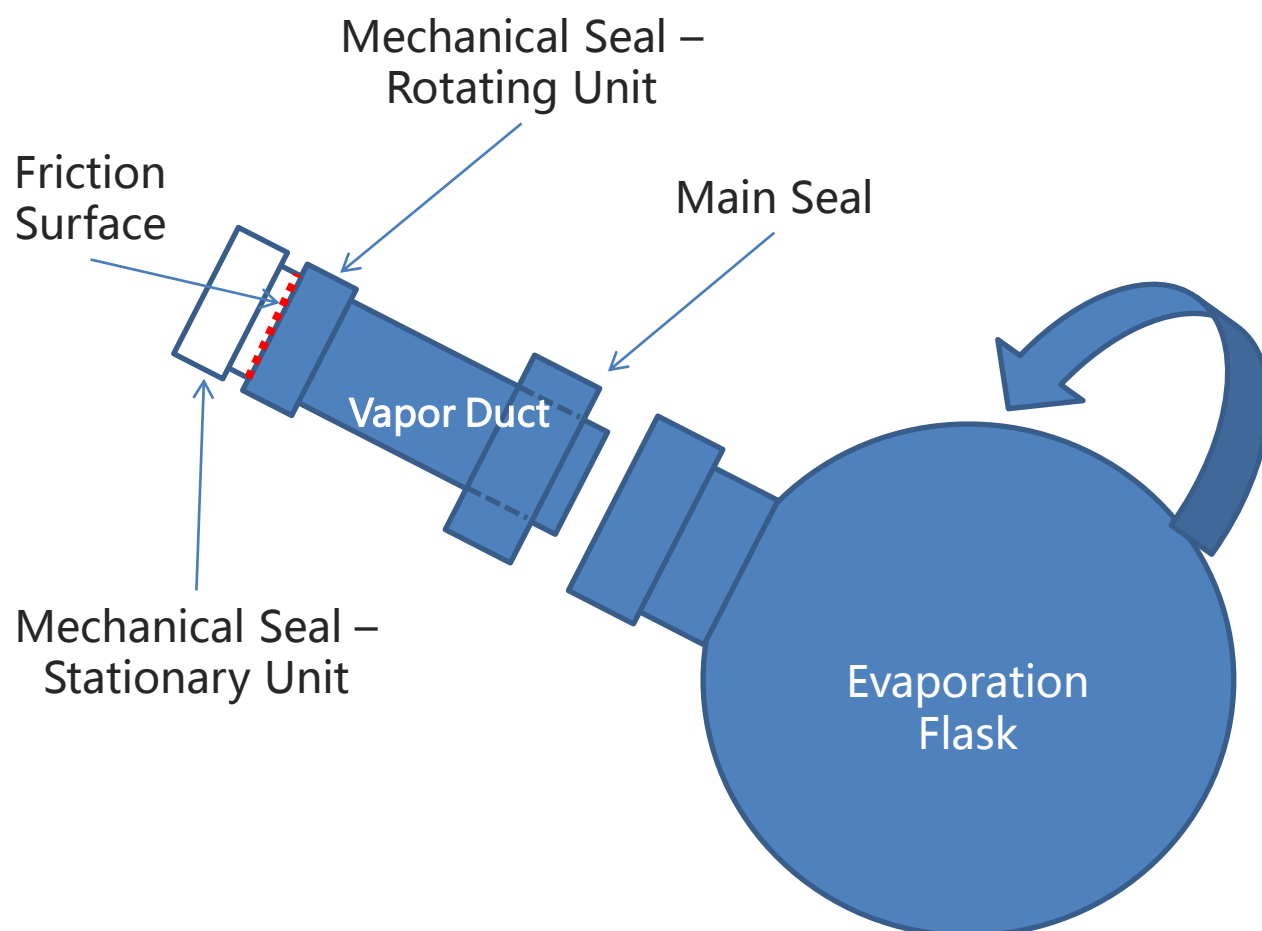


Notice : Blue - Fix Part White - Move Part

Traditional O-ring Seal

Main seal and evaporation flask are rotating but the vapor duct is fixed.

O-ring in the main seal is the key seal part between main seal and vapor duct, so O-ring is heavily prone to be worn out by friction, especially under corrosion of solvent, which requires regular operation stop, disassemble and O-ring change.



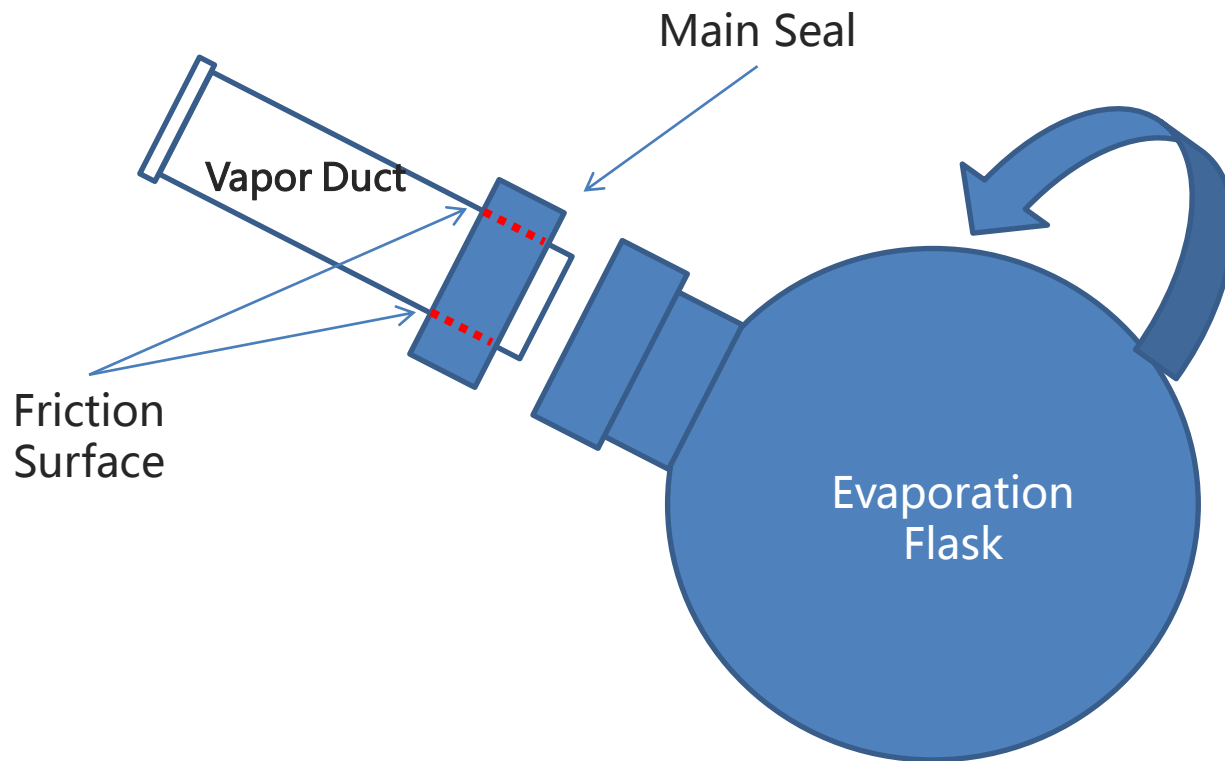
Mechanical Seal

We apply mechanical seal in rotary evaporator, whose vapor duct, main seal and evaporation flask rotating together, without moving in between.

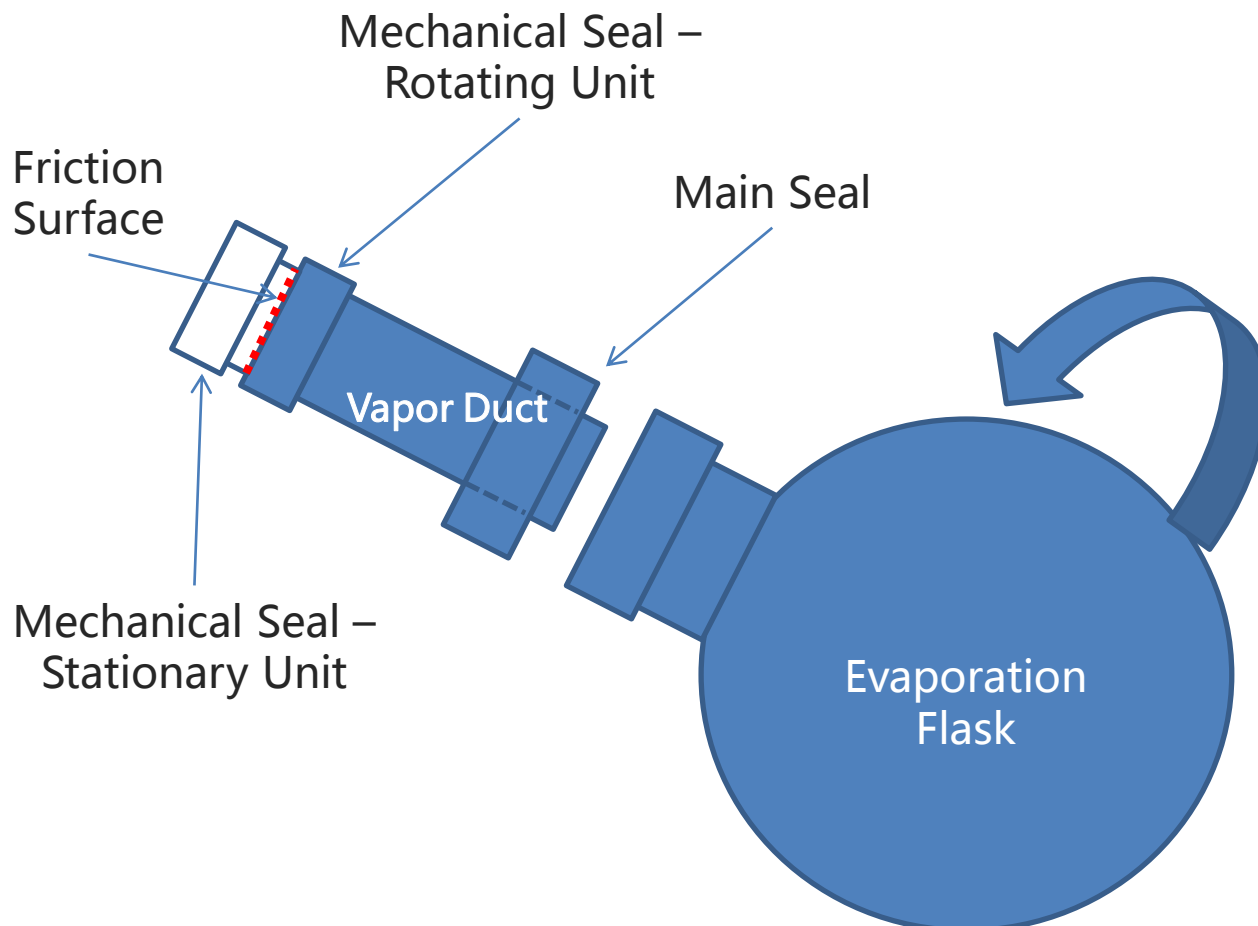
So the O-ring in main seal has no chance to be worn out and no need to change it at all.

Reinforced PTFE + SiC mechanical seal is tight, durable, long lasting and great for 24/7 operation.

Mechanical Seal VS Traditional O-ring Seal



Notice : Blue - Fix Part White - Move Part



Traditional O-ring Seal

- Violent friction between vapor duct and seal ring
- Durability of vacuum tight is <6 months on average
- Vacuum performance gets weaker monthly
- Frequent maintenance and replacement of seal is required, interrupting working schedule
- Seal is vulnerable to be worn-out because of corrosion and friction, causing shredding pollution
- Vacuum grease is required

Mechanical Seal

- No friction between vapor duct and seal ring
- Max vacuum level is over 2mbar
- Excellent durability of vacuum tight with lifespan of >5 years on average
- Consistent vacuum performance
- Maintenance free
- No shredding
- Resist to corrosion and friction
- No vacuum grease needed

Teflon/PTFE Sealing

Teflon/PTEF sealing ensures vacuum tight, max vacuum level to reach <2mbar (-0.0998MPa).

FEP O-ring is for better resistant to strong corrosive organic solvents.



Quality Borosilicate Glassware

The quality of glassware is critical! The time and efforts you spent in the reaction is far more valuable than the rotary evaporator itself, let alone the cost of the solvents. The loss of glass broken is huge.

So we provide Quality Borosilicate Glassware and give individual quality control to every unit.

Quality borosilicate glass 3.3 (BORO 3.3), having very low coefficients of thermal expansion (3×10^{-6} at 20°C), is well resistant to thermal shock and less subject to thermal stress.

Complying with ISO3585, the glassware have excellent performance against chemicals and water.



EX Proof VFD Rotary Speed Control



VFD (Variable Frequency Drive) offers continuously adjustable and precise rotary speed control between 10 – 110 rpm with LED digital display.

EX-proof rate: EXdIIBT4Gb
Protection Rate: IP55
Anticorrosion Rate: WF1



EX Proof Digital Heating Bath



Quick, precise heats water or oil and covers a wide temp. range from RT – 99 °C (180°C).

PID control with PT100 sensor offers control accuracy of 1 °C.

Continuous digital display of the actual temp. and temp. set point.

EX-proof rate: EXdIIBT4Gb
Protection Rate: IP55
Anticorrosion Rate: WF1



Bumping Tube & PTFE Inlet Valve

Distribution piece equipped with bumping tube can prevent solvents foaming and bumping into receiving flasks.

Clean feeding/extraction during evaporation process with one hand only. PTFE valve prevents pollution by vacuum grease.



Compact Triple Coil Vertical Condenser

Compact structure is an improvement of Tandem structure for condenser, which not only facilitates the installation but also enhances the vacuum tightness.

Triple coil vertical condenser has big condensing surface up to 1.15 m², significantly improving the efficiency of heat exchange.



Non-stop Receiving

PTFE valve on branching piece.

No need to stop evaporation or release vacuum if receiving flask needs discharge. Easy valve control can help to release the vacuum in receiving flask only while keep the other parts of the system still under vacuum in order to continuously evaporate.

Two receiving flasks structure is provided for collection by step.



PTFE Discharge Valve

Resistant to corrosion and no pollution by vacuum grease for clean discharge.



EX-proof

EX Proof is compulsory when rotary evaporator is stationed and operated in EX Proof Zone in which there are explosive gas or dust.

We offer highest level of EX proof upgrade on Motor, Rotary Speed Controller, Heating Bath and Wiring per user needs.

EX-proof rate: EXdIIBT4Gb
Protection Rate: IP55
Anticorrosion Rate: WF1



Rotary Evaporator Set – Pilot Scale



R2002B



R5002B



R5002B

Along with Rotary Evaporator, Shanghai Shensheng provides Vacuum Pump and Cooling Circulator which are designed for optimal use with Rotary Evaporator. We do a good job to ensure you are well equipped to have more time to focus on research.



Cooling Circulator
LX - 0700



Rotary Evaporator
R2002EX



Vacuum Pump
SHZ-95B

Cooling Circulator



Cooling supply for condenser with lowest temperature of -25°C.

Close circulation of thermal oil to prevent imbibitions from air during cooling, which ensures the purity of thermal oil to increase its lifespan.

Outstanding safety features and performance.

Parameter

Model		LX – 0700
Temp. Control Range (°C)		-25°C - RT
Temp. Control Accuracy (°C)		1°C
Flow Rate (L/min, bar)		35 L/min 1 bar
Cooling Power (kW)	20°C	6
	0°C	4
	-10°C	2.7
	-20°C	1.5
Coolant		R404A
Temperature Display		Digital Display
Close Circulation		●
Dimension (cm)		62×68×105
Power Supply		380V/50Hz

Safety Features

Model		LX - 0700
Compressor Over-temp. Protection		●
Error Alarm		●
Overload Protection		●
High Pressure Protection		●
Liquid Level Protection		●

Water Circulation Vacuum Pump

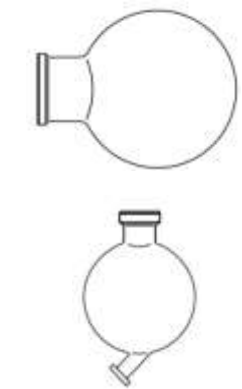


- Safe and reliable water circulation vacuum pump.
- Equipped with five independent suction nozzles for vacuum supply.
- Easy operation and maintenance.
- Can be water supply for condenser.
- Oil free and water saving.

Parameters

Model	SHZ – 95B
Type	Water Circulation
Max Vacuum Level (mbar)	20 mbar
Extraction Rate (L/min)	10L/min×5
Power (W)	380 W
Dimensions (cm)	45×35×82
Power Supply	220V/50Hz

SPARES & ACCESSORIES



Item	Description	Specification
Evaporating Flask	Flange, Round	5L/F95 10L/F95 20L/F95
Receiving Flask	Flange, Round, Bottom Discharge	10L/F50 3L/F50
Vapor Duct	Flange	Φ50
Distribution Piece	Bumping	F60/F50
Condenser	Triple Coil Condensing Surface (m ²) : 1.15m ²	Vertical
Branching Piece	Dual Branching	F50
Main Seal	PTFE	Φ95
Discharge Valve	PTFE	F36

SPARES & ACCESSORIES



Item	Description	Specification
O Ring	FKM EPDM FEP FFKM	Φ25
		Φ35
		Φ40
		Φ50
		Φ60
		Φ95
Clamp	Flange	F36
		F50
		F60

Factory Show - Shanghai Shensheng Biotech Co., Ltd.



Manufacture Plant in Shanghai



Quality Mechanical Parts



Experienced Glassware Maker



Fine Processing



Individual quality control for every unit



Pilot Scale Jacketed Glass Reactor



Pilot Scale Rotary Evaporator

Our Customer



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