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## 50L Rotary Evaporator – R5002B



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# Rotary Evaporator – Model: R5002B

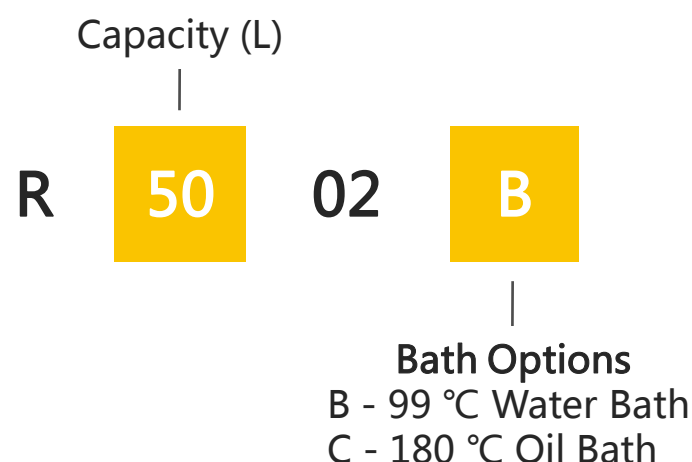


## Overview

50L Rotary Evaporator is the pilot scale unit to offer vacuum tight, uniform speed of rotation, and constant temperature of heating bath, which is robust, durable and user friendly.

- Capacity: 50L;
- Mechanical seal, max vacuum <2 mbar;
- Heating bath, PID temperature control range: RT ~ 99°C (180 °C, Oil);
- Motorized 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




# Technical Specification & Configuration

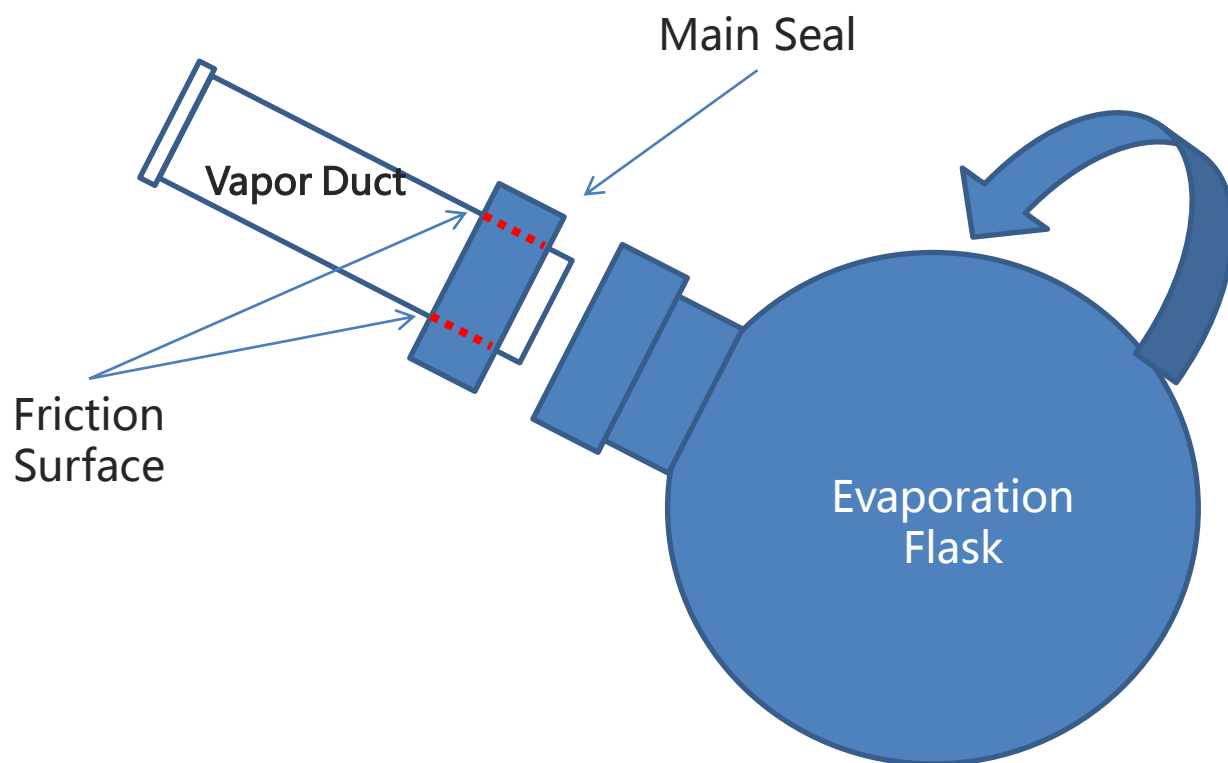
## Parameter

Model	R5002B
Evaporating Flask (L)	50L/F125
Receiving Flask (L)	20L+5L, Teflon Discharge Valve
Condensing Surface (m2)	1.65
Evaporation Efficiency (H2O)	> 9.0L/h
Motor Power (W)	180W
Rotary Speed (rpm)	10 – 110
Max Vacuum Level (mbar)	< 2 mbar (-0.0998MPa)
Glass Material	Borosilicate Glass 3.3 (BORO 3.3)
Heating Power (kW)	6 kW
Temp. Control Range & Accuracy (°C)	RT - 99 (180) ±1°C
Bath Size, Capacity, Material	Φ55×35H, 76L, SUS304
Height Adjustment (cm)	Motorized Lift, 18cm
Dimensions (cm)	130 x 80 x 230H
Power Supply	220V/380V/50Hz

## Configurations

Model	R5002B
Seal	Mechanical Seal
Speed Controller	Variable Frequency Drive
Heating Bath	Digital Control
LED Digital Display	Rotary Speed, Bath Temperature
Lift Mechanism	Bath Motorized 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
EX Proof – EXdIIBT4Gb 	Optional

# Mechanical Seal VS Traditional O-ring Seal

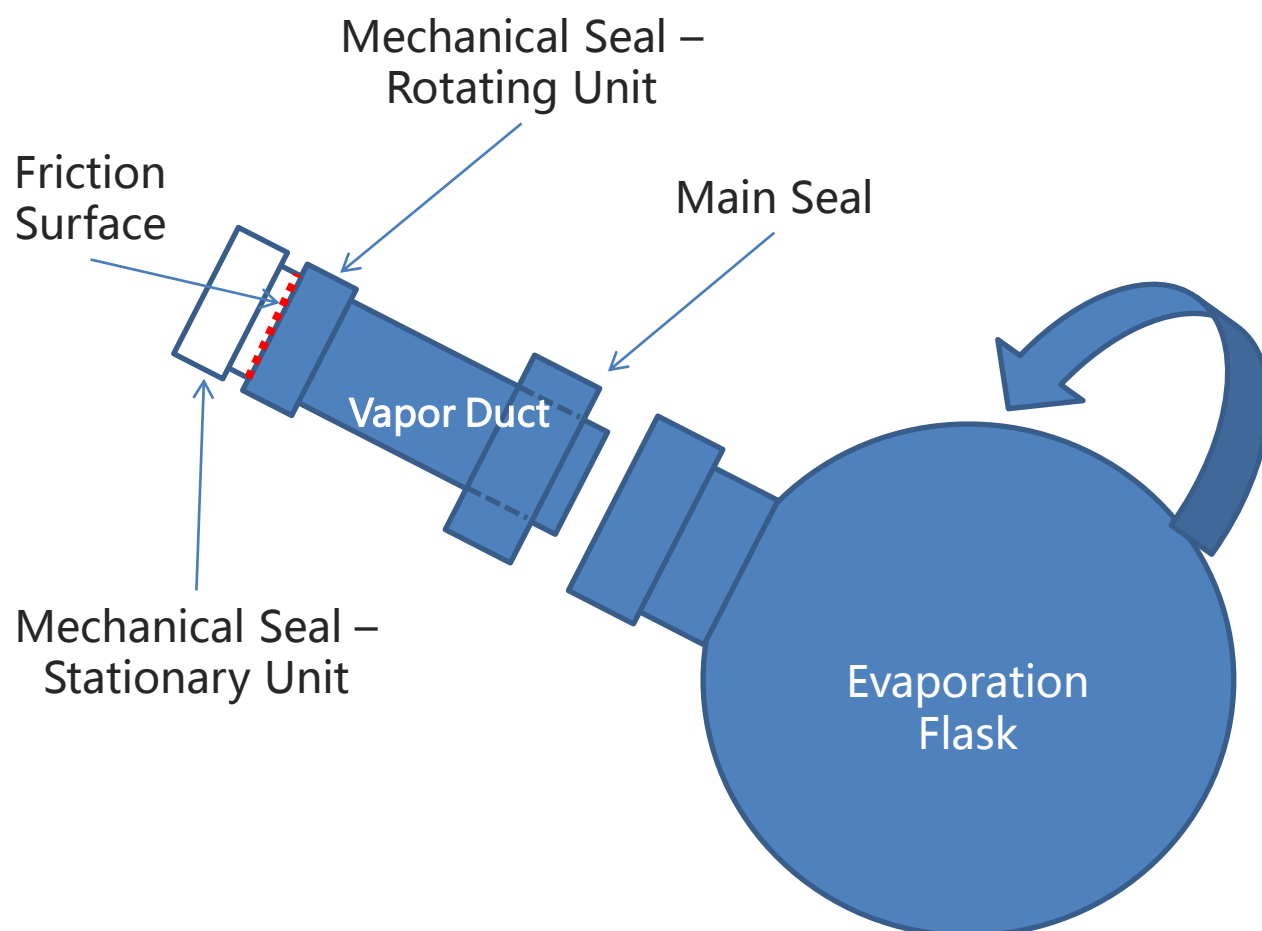


Notice : Blue - Fix Part    White - Move Part

## 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.



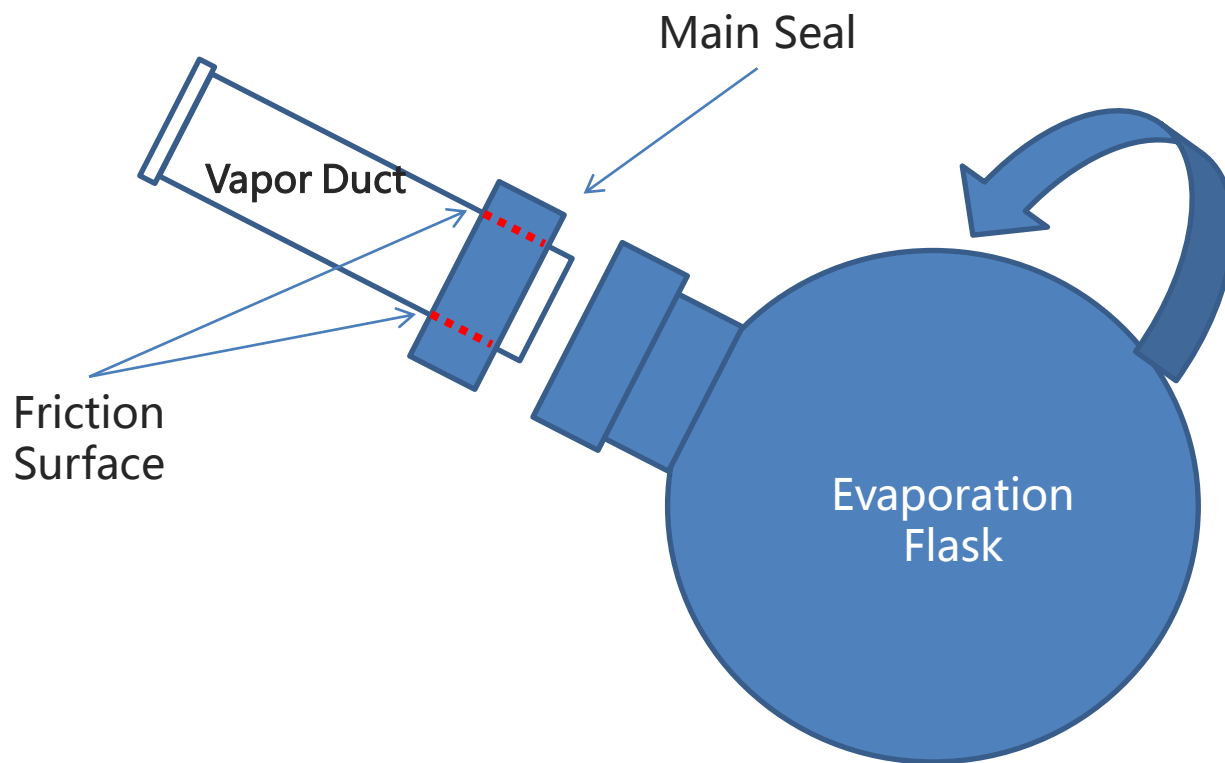
## Mechanical Seal

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

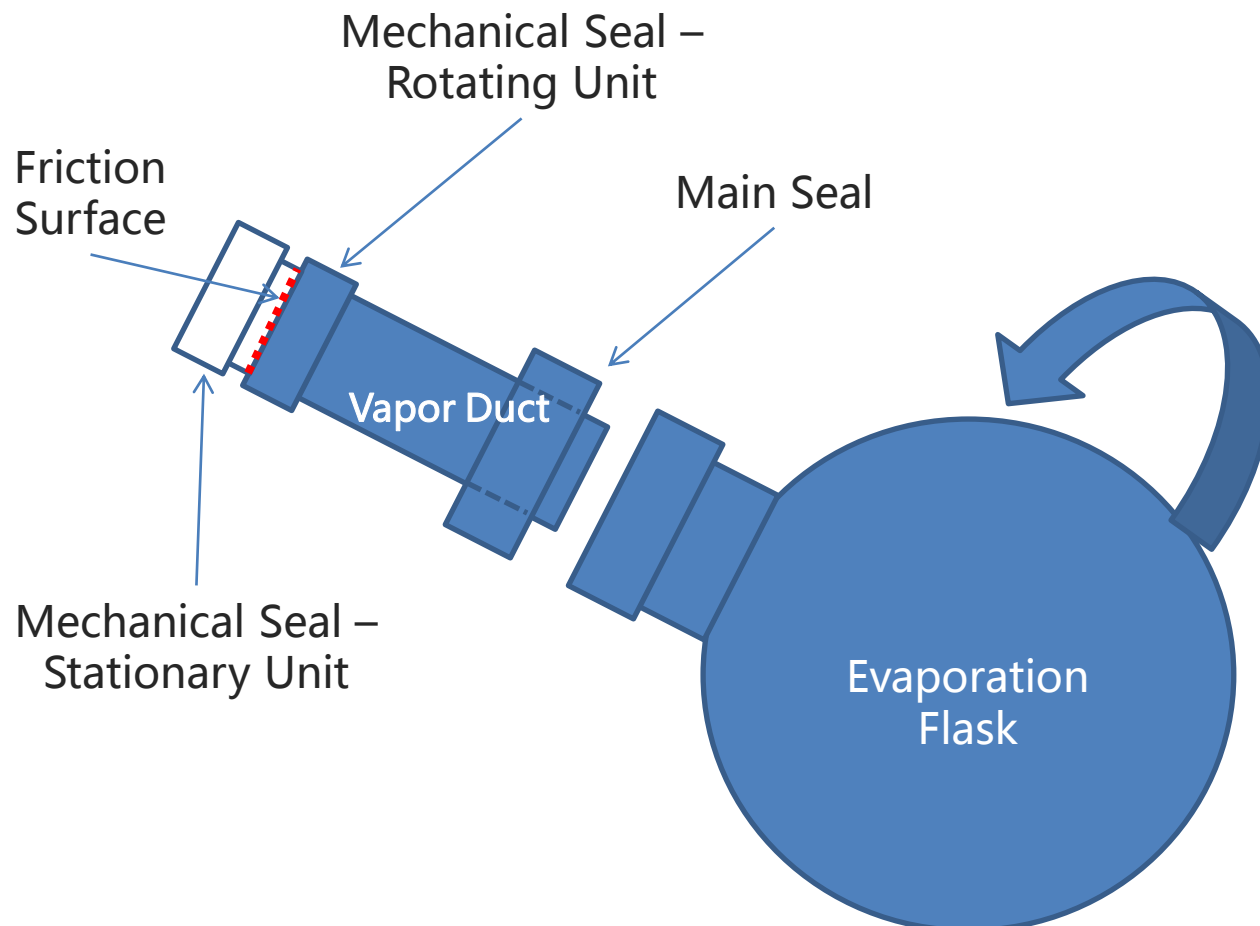
So the O-ring in main seal has no chance to be worn out and no need to change it at all.

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

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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

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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 ( $3 \times 10^{-6}$  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.



## VFD Rotary Speed Control

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

EX proof upgrade is optional. 



## Motorized Lifting Heating Bath

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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.

One button now to free you from manually lifting the heating bath (>80KG with water/oil filled).

EX proof upgrade is optional. 



## Bumping Tube & PTFE Inlet Valve

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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

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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 1.65 m<sup>2</sup>, significantly improving the efficiency of heat exchange.





## Non-stop Receiving

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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

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



## (Optional) EX-proof

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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



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 - 1000

Rotary Evaporator  
R5002B

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 – 1000
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	7.5
	0°C	7.5
	-10°C	6.3
	-20°C	3.5
Coolant		R404A
Temperature Display		Digital Display
Close Circulation		●
Dimension (cm)		50×68×135
Power Supply		380V/50Hz

## Safety Features

Model		LX - 1000
Compressor Over-temp. Protection		●
Error Alarm		●
Overload Protection		●
High Pressure Protection		●
Liquid Level Protection		●

# Water Circulation Vacuum Pump



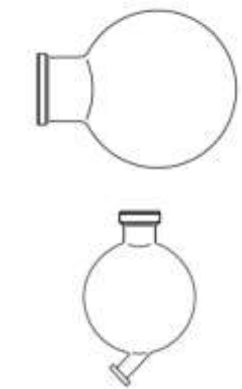
- Safe and reliable water circulation vacuum pump.
- Equipped with five independent suction nozzles for vacuum supply.
- Easy operation and maintenance.
- Can be water supply for condenser.
- Oil free and water saving.

**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	10L/F125 20L/F125 30L/F125 50L/F125
Receiving Flask	Flange, Round, Bottom Discharge	20L/F50 5L/F50
Vapor Duct	Flange	Φ50
Distribution Piece	Bumping	F70/F50
Condenser	Triple Coil Condensing Surface (m <sup>2</sup> ) : 1.65m <sup>2</sup>	Vertical
Branching Piece	Dual Branching	F50
Main Seal	PTFE	Φ125
Discharge Valve	PTFE	F36

# SPARES & ACCESSORIES



Item	Description	Specification
O Ring	FKM EPDM FEP FFKM	Φ25
		Φ35
		Φ40
		Φ50
		Φ70
		Φ125
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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