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50L Multifunctional Glass Reactor - Glass Heating Reactor - MR-S50



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50L Glass Heating Reactor – Model: MR-S50



Overview

Pilot scale glass heating reactor is the single layer glass reactor. Durable, excellent resistance to chemicals corrosion, vacuum tight, constant stirring speed and temperature. Widely used in R&D.

- Capacity: 50L;
- Mechanical sealing, resist to chemicals and durable, max vacuum <2 mbar;
- Gear motor with VFD controller, large torque, constant stirring speed;
- Stirring speed range: 20 - 600 rpm;
- Quality borosilicate glass 3.3 (BORO3.3);
- Heating bath, temperature control range: RT ~ 99°C (180 °C, Oil);
- SS304 stirring shaft covered with PTFE;
- PTFE drain valve, no dead space and no leakage, clean discharge.

Model


Capacity (L)

MR - S

50

Technical Specification & Configuration

Parameter	
Model	MR-S50
Capacity (L)	50L
Diameter of Vessel (mm)	180 mm
Nozzle Size & No. on Top	5 (NS24×2+NS34+F50+F60)
Max Vacuum Level(mbar)	< 2 mbar (-0.0998MPa)
Stirring Power (W)	180W
Rotary Speed (rpm)	20 – 600
Heating Power (kW)	6 kW
Temp. Control Range & Accuracy (°C)	RT - 99 (180, Oil) ±1°C
Bath Size, Capacity, Material	Φ55×35H, 76L, SUS304
Glass Material	Borosilicate Glass 3.3 (BORO 3.3)
Frame Material	SUS304
Stirring Shaft Material	SUS304 Covered with PTFE
Agitator	Propeller + Turbine, PTFE
Bottom Drain Valve	PTFE Flush Drain Valve, DN25
Dimension (cm)	70×90×190H
Power Supply	380V/220V/50Hz

Configuration	
Model	MR-S50
Seal	Mechanical Sealing
Stirring Speed Controller	VFD – Variable Frequency Drive
Reactor Lid	Glass Lid with 3 Nozzles
Digital Display	Stirring Speed, Bath Temp.
Agitator Type	Propeller+Turbine
Thermometer	Thermowell
Reflux Condenser	0.60 sqm condensing area
Pressure Equalizing Funnel	2000ml
Liquid Feeding Valve	NS24
Solid Feeding	Optional
Cooling Coil of Bath	Optional
Distillation Receiving	Optional, 20L Receiving Flask
EX Proof 	Optional – EXdIIBT4Gb

Features

Durable Mechanical Sealing for Vacuum Tight



Mechanical Seal with Lifespan >10years, Vacuum Tight up to <2mbar. Durable and well resistant to chemicals.

Nozzles on top (Customizable per request)

- Liquid feeding valve – For liquid feeding and vacuum release
- Thermowell – For temperature measure
- Condenser – Optional Distillation Piece or Distillation Separation Receiving
- Pressure Equalizing Funnel – Control liquid feeding speed and volume
- (Optional) Solid feeding nozzle

Bottom Discharge Valve




PTFE Flush Drain Valve

No dead space and no leakage.
Recommended for discharge of solid material. Drift diameter reaches 25mm.

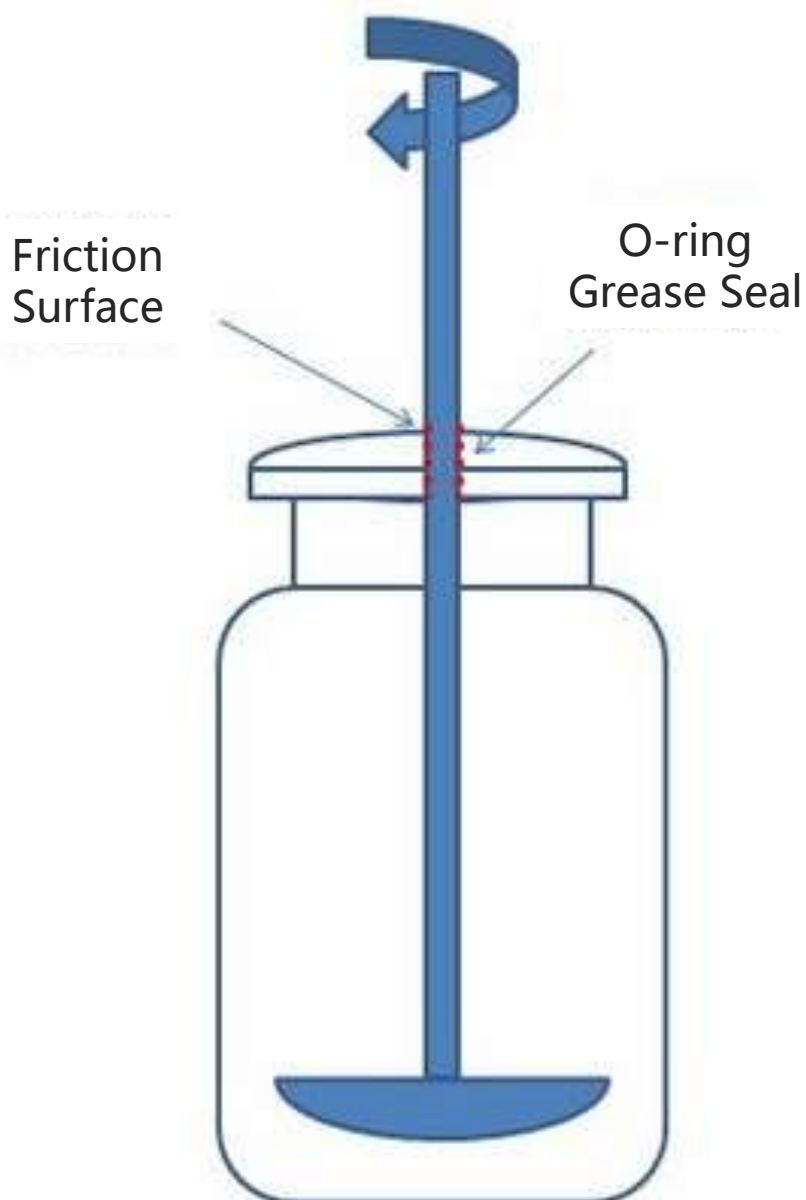
Large Torque + High Precision



Motor with Gearbox & VFD Speed Controller

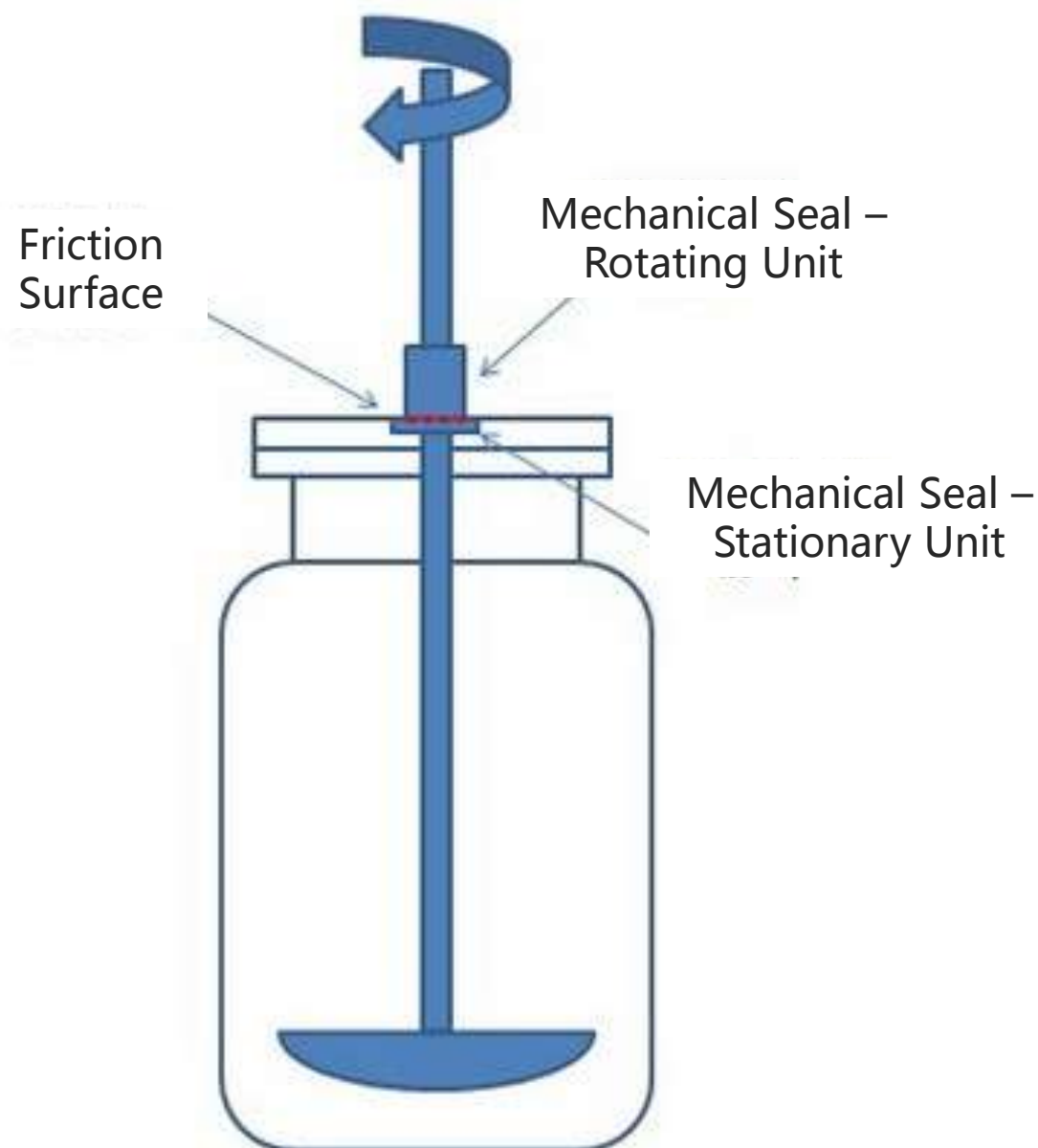
Provides precise speed control, large torque with constant speed and maximum speed of 600 rpm. (EX proof is optional )

Mechanical Seal VS Traditional Seal



Traditional Seal – Seal on Axis

O-ring or Grease Seal is known as seal on axis to be used between stirring shaft and vessel lid, but is heavily prone to be worn out by friction, especially under corrosion of solvent and high temperature, which requires regular operation stop, disassemble and O-ring change.



Mechanical Seal - Seal on Surface

Mechanical Seal is the seal on surface between its rotating part and stationary part. It is made of SiC and reinforced PTFE, which is vacuum tight, durable, long lasting and great for 24/7 operation.

With PTFE vessel lid, stirring can be very stable so that mechanical seal can ensure <2mbar vacuum level.

Features



A SUS304 stirring shaft covered with PTFE/Teflon ensures strong stirring and resistant to chemicals;


B **Reaction Flask and Lid**
Configured: mixing, reflux condensing, funnel feeding, extraction, and temp. measuring.
Optional: distilling, rectifying, dripping, bubbling, separating, sampling, etc.

The quality of glassware is critical! The time and efforts you spent in the reaction is far more valuable than the jacketed glass reactor 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 (BORO3.3), 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.

C **Digital Heating Bath**, quick, precise heats water or oil and covers a wide temp. range from $0 - 99^\circ\text{C}$ (180°C , oil bath). Digital display and setting of temp. (EX proof is optional )

D **Condensing Function**
- Reflux condenser;
- Distillation Receiving for large volume distillation;
- Distillation Separation Receiving for reflux, separation, distillation.

Optional Configuration: Solid Feeding



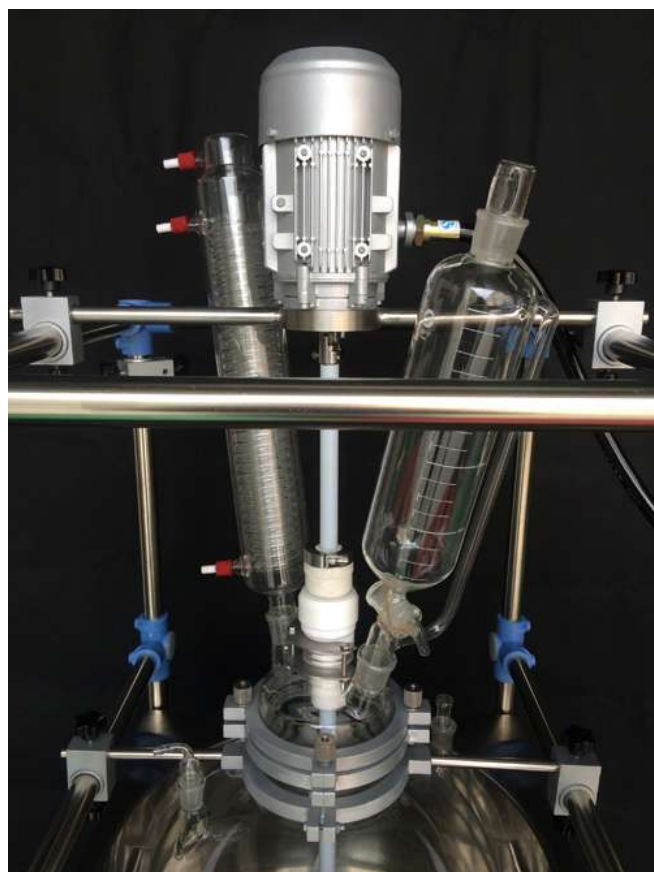
Big size nozzle up to 110mm for solid feeding.
Easy flange clamp is for quick open and close.

Optional Configuration: Cooling Coil of Bath




Cooling coil is available for option for heating bath. With cooling source input, it can quickly cool down.

Optional Configuration: EX-proof Upgrade



EX Proof is compulsory when jacketed glass reactor is stationed and operated in EX Proof Zone in which there are explosive gas or dust.

We offer highest level of optional 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



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

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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