Jacketed Reactor

Characteristic:

The GR series jacketed glass reactor is a multi-functional reactor. It have stirring paddle, the interlayer can be heated/cooled by cold and heat sources (such as coolant, water or silicone oil).At the set temperature, under normal pressure or negative pressure stirring, reaction, and can control the evaporation and reflux of the reaction liquid.

- The whole set of glass components are made of GG17 high borosilicate glass material, which has excellent physical and chemical properties.
- It can be used in the temperature range from -120°C to 200°C.
- Stirring paddle can be optional propeller type, propulsion type or anchor type.
- It can work under normal and negative pressure conditions, and the maximum vacuum degree can reach 0.095MPa.
- Glass accessories support custom, such as PH drops, etc.
- The cooling or heating solution of the interlayer can be completely removed after the reaction.
- For IlB explosive environment, electrical equipment adopts EXdIIBT4 grade flameproof products to meet the requirements of safe use.
- Teflon +FV rubber cock or discharge valve; "O" ring with tetrafluoroethylene protective coating.
- For explosive atmospheres of type IIB, the equipment adopts EXd II BT4 grade explosion-proof products, which meet the requirements for safe use.

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Advantages and Precautions

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EX control box

For explosive atmospheres of type IIB, ExdIIBT4 explosion-proof products can be selected.

Optional EX motor

The explosion-proof grade is EX-dIIBT4 to protect motor damage and reduce maintenance cost.

Stirring paddle

Made of PTFE wrapped stainless steel material,Optional propeller type, anchor type.

Clamp flange

Using triangular quick flange, easy to connect the components between the glass.

Insulation jacket

Used to wrap jacketed glass reactor body for heat preservation, reduce heat exchange, improve reaction efficiency.

SS insulation pipe

Suitable for temperature range -130° C ~280° C, can be used for heating chiller liquid pipe-

Quality assurance

After the acceptance of the equipment to provide 18 months of quality assurance (except glass parts).

Note:

Max operating temp.: standard reactor max operating temperature is 200°C, the maximum allowable temperature deviation inside and outside the reactor is 80°C.

When heating or cooling the reactor, it is recommended to continuously monitor the temperature inside and outside the reactor and gradually warm up to avoid accidents.

GR series

Characteristic:

Jacketed glass reactor is mainly used for material synthesis, distillation, concentration and other experiments. The structure of the vessel body is double layer.According to the need, the reactor can be equipped with a vacuum pump to achieve the negative pressure state, to meet the experimental conditions.

- Frequency conversion mixing system +PTFE sealing bearing system.
- The reactor body can be equipped with thermal insulation jacket (used for thermal insulation of glass vessel body to improve reaction efficiency).
- Stirring paddle can be optional propeller type, propulsion type or anchor type.
- The reactor lid has 6 necks, the large neck design is easy to clean, Standard neck can optionally assemble reflux, distillation synthesis unit.
- The pressure range that reactor can withstand: -0.1MPa~0MPa.
- It can be used in the temperature range from -120°C to 200°C.
- It can work under normal and negative pressure conditions, and the maximum vacuum degree can reach 0.095MPa.

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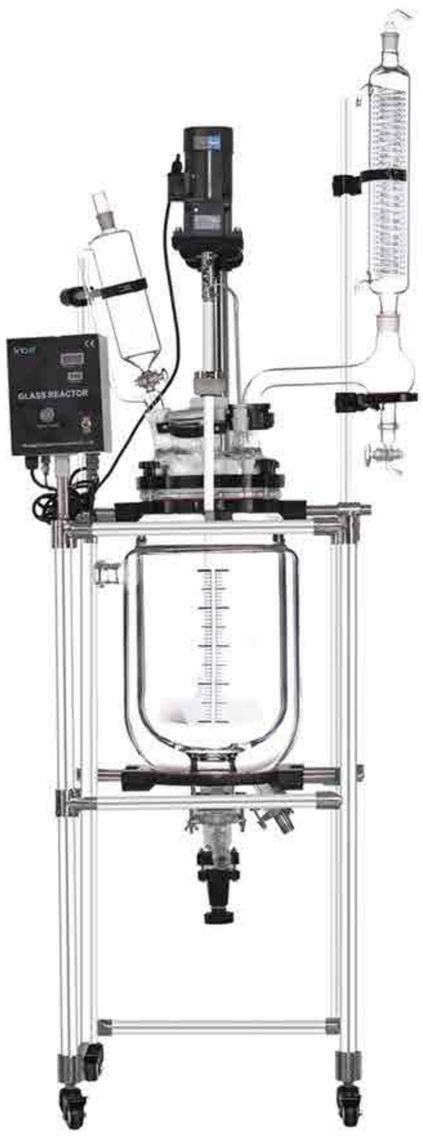

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GR series jacketed reactor

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Characteristic:

Jacketed glass reactor is mainly used for material synthesis, distillation, concentration and other experiments. The structure of the vessel body is double layer.According to the need, the reactor can be equipped with a vacuum pump to achieve the negative pressure state, to meet the experimental conditions. By adjusting the constant pressure funnel or the control valve on the feeding bottle to control the uniform drip of materials.The heat exchange function of condenser was used to recover the reaction product by distillation.

- Used high borosilicate glass, which has excellent physical and chemical properties.
- It can be used in the temperature range from -120°C to 200°C.
- It can work under normal and negative pressure conditions, and the maximum vacuum degree can reach 0.095MPa.
- The lid can be customized PTFE.
- Glass accessories support custom, such as PH drops, etc.
- The reactor body can be equipped with thermal insulation jacket (used for thermal insulation of glass kettle body to improve reaction efficiency).
- Teflon +FV rubber cock or discharge valve; "O" ring with tetrafluoroethylene protective coating.
- Equipped with clamp valves for easy connection to glass interface components.

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Jacketed reactor

Characteristic:

Jacketed glass reactor is mainly used for material synthesis, distillation, concentration and other experiments. The structure of the vessel body is double layer.According to the need, the reactor can be equipped with a vacuum pump to achieve the negative pressure state, to meet the experimental conditions.

- It can be used in the temperature range from -120°C to 200°C.
- Teflon +FV rubber cock or discharge valve; "O" ring with tetrafluoroethylene protective coating.
- It can work under normal and negative pressure conditions, and the maximum vacuum degree can reach 0.095MPa.
- Used 3.3 high borosilicate glass, acid and alkali resistant, can be used for a long time.
- Stirring paddle can be optional propeller type, propulsion type or anchor type.
- The lid can be customized PTFE; Glass accessories support custom, such as PH drops, etc.
- The reactor body can be equipped with thermal insulation jacket (used for thermal insulation of glass vessel body to improve reaction efficiency).
- For IlB explosive environment, electrical equipment adopts EXdIIBT4 grade flameproof products to meet the requirements of safe use.
- Support PLC customization.

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Technical Parameters

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Model	GR-5L	GR-10L	GR-20L	GR-50L	GR-100L	GR-150L	GR-200L
Temp. range (°C)	-120°C～300°C;±0.1						
Power supply	220V/110V，50/60Hz						
Effective volume in reactor (L)	5	10	20	50	100	150	200
Jacket volume (L)	2	3	6	16	30	50	60
Condenser heat exchange area (m^2)	N/A	0.6	0.7	0.8	1.1	N/A	
Feeding bottle volume (L)	0.5	1	1	2	2	2	2
Recovered bottle volume (L)	3	5	5	10	20	10	10
Stirring insertion hole	50#Flange				60#Flange		
Thermometer socket	40#Flange						
Condenser return port	50#Standard Ball						
Spare port	34#Standard ground						
Constant pressure funnel connection	40#Standard ground						
Solid feed port	N/A	80#Flange				120#Flange	
Glass assembly	High borosilicate glass 3.3						
Body frame	SUS304						
Stirring paddle	Paddle type impeller, stainless steel inside, PTFE outside, titanium						
Motor	For viscous materials, high power motors are available						
Temp. difference limit (°C)	⩽60						
Tank pressure (MPa)	-0.1～0.1						
Jacket withstand pressure (MPa)	⩽0.1						
Vacuum system boost rate	⩽2kPa/h						
Stirring motor power (W)	120W/180W-EX				200W/370W-EX	400W/750W-EX	750W/750W-EX
Range of rotation(rpm)	Frequency/0~600						
Temp. sensor Type	Pt100						
Insulation pipe interface	4 points external thread			6 points external thread			
Seal material	PTFE						
Discharge valve height (mm)	≈205	≈450				≈330	≈330
Overall size (mm)	520*500*1510	600*570*2050	660*620*2400	660*620D*2400	800*710*2600	1240*1140*3100	1240*1140*3100
Weight (kg)	60	70	82	97	128	175	190

LBGR operating system:

Characteristics:

The integrated reactor system can integrate the operation interface of the existing laboratory equipment, use PLC to control the operation of the basic functions of all equipment, and integrate all equipment operations into one touch screen through the communication interface. It can realize the material temperature control and speed control of the touch screen operation reactor. This operating system can also record the operation of the equipment, and support the USB Flash Disk to export the equipment operation data of the entire production process, and the data collection is once a minute.

1. One screen can control high and low temperature, reactor and vacuum pump (multiple sets of equipment can be selected according to the on-site control situation)

2. The operation process is traceable and support data export.

3. Free the operator and realize remote monitoring.

4. Perfect alarm function, real-time feedback.

5. Modular customization, the system can be customized according to the site conditions and process flow.

Common chemical table

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Name	PTFE	PVDF	PP	PPS	FPM	FFPM	SS
CH_3COOH (100%)	A	A	A	B	C	A	C
CH_3COOH (65%)	A	A	C	-	C	A	B
Cl	A	A	A	C	A	A	C
H_2S	A	A	A	-	A	A	B
HCl (10%)	A	A	A	A	A	A	C
HCl (35%)	A	A	A	B	A	A	C
H_2O_2	A	A	A	A	A	A	A
CH_3OH	A	A	A	A	C	A	A
HNO_3 (65%)	A	A	C	C	C	A	A
HNO_3 (10%)	A	A	A	C	A	A	A
H_2SO_4 (60%)	A	A	A	B	A	A	C
H_2SO_4 (95%)	A	A	A	B	A	A	A
H_2SO_4 (10%)	A	A	A	A	A	A	C
NaOH	A	C	C	A	C	A	B
NH_3	A	A	A	A	C	A	A
Hg	A	A	A	-	A	A	B
CH_3COOH	A	A	A	B	C	A	A
HCOOH	A	A	A	A	B	B	B