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GLASS REACTOR

High Low Temperature Circulating Device

Introduction

The liquid circulation of the whole system of the high and low temperature series device is closed, the system has an expansion container, the expansion vessel and the liquid circulation system are adiabatic, do not participate in the liquid circulation, just a mechanical connection, regardless of the temperature of the circulating liquid, the medium in the expansion vessel is always kept at room temperature.

Since the entire liquid circulation is a closed system, there is no absorption of water vapor at low temperatures and no oil mist at high temperatures. The company can provide heat transfer oil with a wide range of operating temperatures, so the same machine and the same heat transfer medium can achieve temperature switching.

Feature

Equipped with an internal circulation groove, the volume of the internal circulation is small (the volume of the internal circulation of most equipment is only 6-10L), the effective power density is large (W/L), the rate of heating and cooling is fast, and the demand for heat transfer oil is relatively small.

The equipment adopts wavy plate heat exchanger, which has a large heat exchange area and fast heat exchange speed.

Closed entire liquid circulation: no volatilization of oil mist at high temperatures, heat transfer oil will not be oxidized or browned; At low temperatures, it will not absorb water vapor in the air, prolonging the life of the heat transfer oil and low cost of use.

Precise control of the temperature of chemical reactions is the first choice for safe control of exothermic reactions.

PID intelligent control is adopted to automatically adjust the output of power according to the chemical process process, accurately control the temperature of the reaction process, and meet the requirements of the reaction process for temperature changes.

Specially customized circulation pumps can provide maximum flow rates, generate minimum pressure and heat, achieve the highest heat exchange efficiency, minimum system resistance, minimum pump system heat, and minimum system energy consumption.

The standard type adopts PLC control, more humanized display interface (man-machine interface), simple operation, can display the setting temperature of the working process, outlet temperature, temperature change curve in the cover body, and realize the multi-stage programming of the program's temperature rise and fall.

The standard type can set the maximum temperature difference between the kettle body and the jacket according to the safety requirements provided by the reactor manufacturer, and if the temperature difference between the inside and outside reaches the safety limit value required by the manufacturer, the equipment will automatically stop working and alarm to ensure that the reactor will not break due to excessive temperature difference.

Small high and low temperature circulation device

Explosion-proof high and low temperature circulation device

New high and low temperature circulation device

Technical parameters

Parameter / Model	Power supply 50HZ 10%	Maximum input Power (KW)	Expansion tank volume (L)	Expansion tank volume (L)	Expansion tank volume(L)	Heating power(KW)	Cooling power(KW)	Circulating pumps KW/M/L	Dimensions(MM) W × D × H
5L/-10℃	1P/220V ± 10%	3.2	2	200/-10	1243-330	2	0.51	0.16/36/10	550 × 440 × 730
5L/-20℃				200/-20	1288-359				
5L/-30℃				200/-30	1415-490		0.735		
5L/-35℃		3.5		200/-35	1419-532				
5L/-40℃				200/-40	1460-501				
5L/-60℃		4.3		200/-60	1950-270		1.5		730 × 650 × 1100
5L/-80℃				200/-80	1978-240				
10L/-10℃		6.2	7.5	200/-10	1865-860	2	1.1		540 × 470 × 800
10L/-20℃				200/-20	2140-820				
10L/-30℃		6.9		200/-30	2456-840				
10L/-35℃				200/-35	2476-460				
10L/-40℃				200/-40	2588-420				
10L/-60℃		7.5		200/-60	2772-350		2.2		730 × 650 × 1100
10L/-80℃				200/-80	2940-270				
20L/-10℃		6.7		200/-10	3126-950	5	1.47	370/28/42	630 × 550 × 1100
20L/-20℃				200/-20	3163-980				
20L/-30℃		6.9		200/-30	3277-1061				
20L/-35℃				200/-35	3636-1021				
20L/-40℃				200/-40	3675-998				
20L/-60℃		8.4		200/-60	4160-550		2.94		880 × 880 × 1200
20L/-80℃				200/-80	4576-420				
30L/-10℃		6.9		200/-10	3780-1150	7.5	1.5		650 × 530 × 1080
30L/-20℃				200/-20	3960-1200				

Technical parameters

Parameter / Model	Power supply 50HZ 10%	Maximum input Power (KW)	Expansion tank volume (L)	Expansion tank volume (L)	Expansion tank volume(L)	Heating power(KW)	Cooling power(KW)	Circulating pumps KW/M/L	Dimensions(M) W×D×H
30L/-30℃	3P/380V ± 10%	11	7.5	200/-30	7803-3746	7.5	2.6	370/28/42	650×530×1080
30L/-35℃				200/-35	8954-3346				
30L/-40℃				200/-40	9931-4190				
30L/-60℃		9.78		200/-60	10438-4751		4.41		880×880×1200
30L/-80℃				200/-80	10438-4657				
50L/-10℃		7.7		200/-10	11147-5352		2.3		650×530×1380
50L/-20℃				200/-20	11156-5341				
50L/-30℃		9.1		200/-30	13695-6575		3.6		
50L/-35℃				200/-35	15714-5873				
50L/-40℃				200/-40	17430-7354				
50L/-80℃				200/-80	18437-7319				880×880×1200
100L/-20℃		19	22	200/-20	18638-6966	15	3.6		650×530×1380
100L/-30℃		20.8		200/-30	32215-7092		5.2		880×880×1200
100L/-35℃				200/-35	22841-5596				880×880×1200
100L/-40℃				200/-40	25334-4320				
100L/-60℃		25.6		200/-60	26627-12121		7.45		880×1300×1200
100L/-80℃		25.8		200/-80	26632-11987		10.3		
150L/-20℃		24	30	200/-20	22841-9157	18	5.15	1.5/24/235	880×880×1200
150L/-40℃		25.7		200/-40	42933-6057		7.35		880×1300×1200
150L/-60℃		28.7		200/-60	26627-1357		10.3		880×1300×1200
150L/-80℃		33.1		200/-80	43570-5350		14.7		880×1300×1200
200L/-20℃		26	40	200/-20	42300-12600		5.5		1300×880×1200
200L/-30℃		28		200/-30	50700-11000		8.82		1650×1250×1200
200L/-40℃				200/-40	50700-5400				1650×1250×1200
200L/-60℃		32.9		200/-60	42900-9500		17.6		1750×1450×1500
200L/-80℃		36.7		200/-80	50700-5400		17.64		1750×1450×1500
300L/-20℃		41	50	200/-20	57000-19100	30	9		1750×1250×1500
300L/-30℃		47		200/-30	85800-28200		14.7	2.2/30/315	1750×1550×1500
300L/-40℃				200/-40	85800-7500				
300L/-60℃		54.3		200/-60	60800-16300	30	22		1800×1600×1500
300L/-80℃	380V ± 10%	61.6		200/-80	80800-7500		29.4		1800×1550×1500
500L/-20℃		47.7		200/-20	77600-28200		15		1750×1400×1550
500L/-30℃		55		200/-30	90800-19000		22		1800×1400×1500
500L/-40℃				200/-40	114000-11300				
500L/-60℃		62		200/-60	99200-7500		29.4		1750×1560×1500
500L/-80℃		76.3		200/-80	114100-11300		44.1		
1000L/-20℃		86.5	100	200/-20	103000-53500	60	22.1	4.5/52/400	1700×1550×1600
1000L/-40℃		101.4		200/-40	117400-57600		37		2230×1750×1750
1000L/-60℃		108.5		200/-60	134000-15200		44.1		2500×2200×1800
1000L/-80℃		138.4		200/-80	148200-15400		74		
2000L/-20℃		131	150	200/-20	117000-75200	90	37		2450×2000×1800
2000L/-40℃		139.4		200/-40	145000-31600		45		
2000L/-60℃		168.4		200/-60	117000-28500		74		2500×2200×1800
2000L/-80℃		185	200	200/-80	145000-31000		90		

1-5L Lab Scale Jacketed Glass Reactor

1-5L double layer reactor

Principle

Acketed Glass Reactor includes a stirring motor and control panel,(explosive proof optional), condenser, reflux glass and constant pressure drop funnel, PH sensor(optional) . The reaction solvent can be placed in the inner layer for stirring reaction, the outer layer will be injected cold and heat source from extra thermostat device, The stand temperature range can achieve +300℃and -80℃, the material heating reaction is only allowed in the negative vacuum condition,which can improve evaporation efficiency (-0.098mpa), solvent vapor will be cooling (to connect the cooling chiller), can return to the kettle, but also can be recycled through the reflux elbow lower valve. After the reaction, the material can be discharged from the bottom of the kettle.

Feature

1.Glassware material is high borosilicate glass 3.3

2.Frame material: stainless steel 304

3.PTFE sealing

4.The stirring system adopts ceramic bearings and mechanical seals to prevent the mixing rod from wear and dandruff, with high temperature resistance, wear resistance and good sealing effect.

5.Customized service available

6. Explosive proof standard: ExdIIBT4

Technical parameters

Model	IGR-1 IGR-1EX	IGR-2 IGR-2EX	IGR-3 IGR-3EX	IGR-5 IGR-5EX
Material volume	1L	2L	3L	5L
Jacket volume	0.3L	0.6L	0.9L	1.5L
Motor power/EX	40W/40W	40W/40W	90W/90W	90W/90W
Constant pressure funnel	0.25L	0.25L	0.5L	0.5L
Machine size	35L×48W×135H(cm)	35L×48W×135H(cm)	40L×50W×150H(cm)	40L×50W×150H(cm)
Package size	127L×57W×48H(cm)	127L×57W×48H(cm)	1370L×570W×470H(mm)	1370L×570W×470H(mm)
Weight	40KG	45KG	50KG	55KG

Lifting /rotating Jacketed Glass Reactor

Introduction

The Kettle can be lift up and down, 120 degree tilt, which is convenient to clean, and add material.

Feature

1.Glassware material is high borosilicate glass 3.3

2.Frame material: I shape stable frame with moveable caster

3.PTFE sealing and Viton

4.The stirring system adopts ceramic bearings and mechanical seals to prevent the mixing rod from wear and dandruff, with high temperature resistance, wear resistance and good sealing effect.

5.Customized service available

6. Explosive proof standard: ExdIIBT4

7.The capacity of kettle from 10L to 200L

Technical parameters

Model	IGRZ-10	IGRZ-20	IGRZ-30	IGRZ-50
Kettle capacity	Inner diameter 230mm Outer diameter 290mm Inner length 354mm	Inner diameter 290mm Outer diameter 330mm Inner length 386mm	Inner diameter 330mm Outer diameter 365mm Inner length 481mm	Inner diameter 365mm Outer diameter 410mm Inner length 576mm
Mezzanine capacity	3L	6L	9L	15L
Voltage frequency	220V/50HZ			
Overall machine power	240W		300W	
Stirring motor power	120W		180W	
Lifting motor power	120W			
Stirring speed	0-650rpm			
Kettle temperature range	-80℃ ~ +250℃			
Temperature measurement accuracy	± 1℃			
Vacuum level	0.098Mpa			
Stirring port	ϕ50mm flange mouth			
Condensation reflux	DN25 ball grinding mouth			
Constant pressure funnel port	DN25 ball grinding mouth			
Pressure relief port	35# flange mouth			
Temperature measuring port	35# flange mouth			
Solid dosing opening	ϕ80mm flange mouth, inner diameter 60#mm			
Mix paddles	Φ15 × 700H(mm) leafing160mm		Φ17 × 900H(mm) leafing180mm	Φ17 × 1000H(mm) leafing190mm
Condenser	Φ100 × 420H(mm)Lower ϕ50mm flange mouth		Φ100 × 580H(mm)Lower ϕ50mm flange mouth	
Condensation area	0.4m²		0.5m²	
Return elbow	Lower ϕ50mm flange mouth Left 50# ball grinding mouth			
Constant pressure funnel	1L on 29# standard port with glass plug It is equipped with 35# flange mouth × 45# standard plug S-type turn The elbow is connected with the kettle cover		2L on 29# standard with glass plug It is equipped with 35# flange mouth × 45# standard plug S-type turn The elbow is connected with the kettle cover	
Relief valve	35# Standard plug valve Bleed nozzle (pagoda joint) outer diameter 12mm			
Mezzanine inlet and outlet circulation port	Φ35mm flange mouth is equipped with 6 points buffer device, external interface 6 points of filament mouth			
Discharge opening	ϕ80mm flange ϕ33mm discharge hole Oblique outlet (pagoda joint) ϕ34mm 540mm above the ground			ϕ75mm flange ϕ33mm discharge hole Oblique outlet (pagoda joint) ϕ34mm 520mm above the ground
Vacuum pumping nozzle	Pagoda joint outer diameter 12mm			
Inlet and outlet nozzle of condenser coil	Pagoda joint outer diameter 12mm			
Host lifting stroke	320mm (Remove from the lid with a stir bar.)Upper mouth 50mm subject to 50mm)		410mm (Remove from the lid with a stir bar.) Upper mouth 50mm subject to 50mm)	390mm (Remove from the lid with a stir bar.) Upper mouth 50mm subject to 50mm)
Rotation of kettle body	360° rotation			
The machine occupies space size (L×W×H)mm	1100×860×2100	1100×860×2200	1100×860×2400	1100×860×2500
Machine net weight	130KG	140KG	146KG	155KG
Package size (L×W×H)mm	1510 × 1150 × 650		1730 × 1150 × 720	
Package weight	190KG	200KG	220KG	230KG

Triple Layer Jacket Glass Reactor

10-150L triple glass reactor

Feature

1.PTFE combined sealed frequency conversion mixing

2. Domestic advanced frequency conversion speed regulation, accurate, safe and reliable

3. Solid feeding, easy cleaning of the kettle body

4. Ceramic bearings, wear-resistant and corrosion-resistant

5. The discharge valve adopts German technology and can meet the discharge requirements of liquids, crystals and granular solids.

Technical parameters

Model	IGRY-10	IGRY-20	IGRY-30	IGRY-50	IGRY-80	IGRY-100	IGRY-150
	IGRY-10EX	IGRY-20EX	IGRY-30EX	IGRY-50EX	IGRY-80EX	IGRY-100EX	IGRY-150EX
Power:W	120	180	180	180	370	370	550
Mixing speed:r/min	0–650						0–700
Max torgue:N/cm	132	200	200	273	378	378	425
Material Volume:L	10	20	30	50	80	100	150
Jack volume:L	3	6	10	16	24	30	45
Heightof discharge:mm	550						650
Dimension:mm	600*580*2000		700*580*2100	640*600*2280	700*630*2500	720*630*2700	750*660*2700
Powersourcemm	220V/50HZ						
Over all height	2300			2400	2800		3400
Weight Kg	70	125	140	150	160	170	200

New Jacketed glass reactor

Feature

1. The triple elastic design of the support frame can bear heavy load response operation and is safe to use.
2. Made of high borosilicate glass material (Gg17). Has excellent physical and chemical properties
3. Temperature range -80℃~200℃
4. The bracket is sprayed with Teflon to resist corrosion (plastic spraying is also available)
5. Variable frequency speed regulation, variable frequency controller, internal components are protected by vacuum coating and are corrosion-resistant
6. PTFE component sealing, high vacuum degree
7. The discharge valve can discharge concentrated liquid and trace solid materials
8. The jacket pressure control device is a new design for kettle body protection and is safe and reliable to use.
9. Heat transfer medium after the reaction is completed. Can be completely eliminated without effusion
10. Adjustable casters are more stable

IGSF I-5L Jacketed glass reactor

IGSF 1-5L Jacketed glass reactor(Explosion proof)

According to user needs, there are two kinds of discharge valves: (1) glass discharge valve;
(2) PTFE discharge valve; Optional.

Tray type double-layer glass reactor

Introduction

Jacketed Glass Reactor includes a stirring motor and control panel,(explosive proof optional), condenser, reflux glass and constant pressure drop funnel, PH sensor(optional) . The reaction solvent can be placed in the inner layer for stirring reaction, the outer layer will be injected cold and heat source from extra thermostat device, The stand temperature range can achieve +300℃and -80℃, the material heating reaction is only allowed in the negative vacuum condition,which can improve evaporation efficiency (-0.098mpa), solvent vapor will be cooling (to connect the cooling chiller), can return to the kettle, but also can be recycled through the reflux elbow lower valve. After the reaction, the material can be discharged from the bottom of the kettle.

Feature

1.Glassware material is high borosilicate glass 3.3
2.Frame material: I shape stable frame with moveable caster
3.PTFE sealing and Viton
4.The stirring system adopts ceramic bearings and mechanical seals to prevent the mixing rod from wear and dandruff, with high temperature resistance, wear resistance and good sealing effect.
5.Customized service available
6. Explosive proof standard: ExdIIBT4
7.The capacity of kettle from 10L to 200L

Technical parameters

Model		IGRX-10 IGRX-10EX	IGRX-20 IGRX-20EX	IGRX-30 IGRX-30EX	IGRX-50 IGRX-50EX	IGRX-100 IGRX-100EX	IGRX-150 IGRX-150EX
Constant pressure funnel L		1	1	2	2	2	5
Condensation area m^2		0.2	0.2	0.3	0.3	0.6	0.6
Receive bottle L		/	3	3	3	5	5
Foot valve height mm		350	450	450	500	500	650
Double kettle body		Made of GG-17 borosilicate glass, thickness ≥ 5mm					
Stirring motor	Speed r/min	0-650	0-650	0-650	0-650	0-650	0-650
	Explosion-proof motor power W	120	180	180	180	370	550
	Normal motor power W	120	120	200	200	200	400
Digital display speed control box		Advanced frequency conversion speed regulation, with digital display function, digital display speed and temperature					
Six-port reactor lid		① Middle: mixing port #40 flange; Mechanical seal 1 (ceramic bearing), mixing rod inner diameter stainless steel, external fully covered with PTFE anticorrosive material ② Left front: thermometer casing #24 grinding; The temperature sensor is placed in the glass thermometer casing, and the temperature digital display is displayed on the speed regulating box. The digital display thermometer is optional ③ Front: solid feeding port #95 flange; ④ left back: constant pressure funnel #40 grinding; The feeding speed can be controlled under vacuum condition ⑤ After: inlet charging valve #34 grinding; ⑥ Right back: reflux elbow #50 ball mill; Distillation condensation, reflux elbow is connected between the kettle cover and the condenser for separation, concentration and collection					
Reactor shelf		Casting spray integrated type, pallet support is firmer					
Glass discharge valve		With side material opening, removable, no dead angle design					
Machine size mm		940×1000×2200	940×1000×2250	940×1050×2300	940×1050×2450	1100×1150×2680	1200×1200×2900
The net weight of the whole machine is mm		100	113	118	124	157	187

Standard double glass reactor（Explosion-proof）

10-200L Jacketed glass reactor

Introduction

With the rapid development of chemical industry, chemistry, new drugs and new compounds, Yuhua Company keeps pace with the times and can provide reaction kettle systems ranging from simple kettles to complex process needs. This product can be used with circulating water vacuum pumps, diaphragm vacuum pumps, high Low temperature circulation device, one-stop supporting

Technical parameters

Model	IGR-10 IGR-10EX	IGR-20 IGR-20EX	IGR-30 IGR-30EX	IGR-50 IGR-50EX	IGR-100 IGR-100EX	IGR-150 IGR-150EX
Constant pressure funnel L	1	1	2	2	2	5
Condensation area m^2	0.2	0.2	0.3	0.3	0.6	0.6
Receive bottle L	/	3	3	3	5	5
Foot valve height mm	350	450	450	500	500	650
Double kettle body	Made of GG-17 borosilicate glass, thickness ≥ 5mm					
Stirring motor: Speed r/min	0-650	0-650	0-650	0-650	0-650	0-650
Stirring motor: Explosion-proof motor power W	120	180	180	180	370	550
Stirring motor: Normal motor power W	300	300	300	300	300	400
Digital display speed control box	Advanced frequency conversion speed regulation, with digital display function, digital display speed and temperature					
Six-port reactor lid	① Middle: mixing port #40 flange; Mechanical seal 1 (ceramic bearing), mixing rod inner diameter stainless steel, external fully covered with PTFE anticorrosive material					
	② Left front: thermometer casing #24 grinding; The temperature sensor is placed in the glass thermometer casing, and the temperature digital display is displayed on the speed regulating box. The digital display thermometer is optional					
	③ Front: solid feeding port #95 flange;					
	④ left back: constant pressure funnel #40 grinding; The feeding speed can be controlled under vacuum condition					
	⑤ After: inlet charging valve #34 grinding;					
	⑥ Right back: reflux elbow #50 ball mill; Distillation condensation, reflux elbow is connected between the kettle cover and the condenser for separation, concentration and collection					
Reactor shelf	Casting spray integrated type, pallet support is firmer					
Glass discharge valve	With side material opening, removable, no dead angle design					
Machine size mm	1100×860×2100	1100×860×2200	1100×860×2400	1100×860×2500	1200×800×2800	1200×800×2900
The net weight of the whole machine is kg	58	65	71	79	101	198

10-100L Single layer glass reactor

There are two types of discharge valves according to user needs:
1. Glass discharge valve 2. Tetrafluorine discharge valve; Optional

Introduction

IGRS series single-layer glass reactor is a multi-functional reactor that can carry out various biochemical synthesis reactions under constant temperature conditions, and can also do reflux or distillation at different temperatures.

- Sealing PTEE material, sealing, anti-corrosion, wear resistance
- Electronic stepless speed regulation, stable operation
- Clear display of control and data information plane, speed digital display
- Intelligent temperature sensor, digital display temperature
- Distillation reflux can be carried out at the same time
- Large diameter discharge valve, can put solid and liquid materials
- Large diameter cleaning port, easy to clean
- Double return, integrated standard port condenser
- The main structure is made of stainless steel and aluminum alloy
- High efficiency and stability, beautiful and generous, durable

Technical parameters

Technical paraeter	IGRS-10
Vacuum(Mpa)	-0.098
Reactor(L)	10
Temperature(℃)	Room temperature -200
Stirring running speed(rmp)	0-450
Stirring axis diamerer(mm)	12
Motor power(w)	90w 1/3
Bath power(kw)	3
Voltage /frequency(V/Hz)	220V 50Hz
Size(mm*mm*mm)	550*550*1200
The whole machine net weight	45kg

Technical paraeter	IGRS-20
Vacuum(Mpa)	-0.098
Reactor(L)	20
Temperature(℃)	Room temperature -200
Stirring running speed(rmp)	0-450
Stirring axis diamerer(mm)	12
Motor power(w)	90w 1/3
Bath power(kw)	5
Voltage /frequency(V/Hz)	220V 50Hz
Size(mm*mm*mm)	550*550*1300
The whole machine net weight	55kg

Technical paraeter	IGRS-30
Vacuum(Mpa)	-0.098
Reactor(L)	30
Temperature(℃)	Room temperature -200
Stirring running speed(rmp)	0-450
Stirring axis diamerer(mm)	12
Motor power(w)	120w 1/3
Bath power(kw)	6.5
Voltage /frequency(V/Hz)	220V 50Hz 380V 50Hz
Size(mm*mm*mm)	600*580*1500
The whole machine net weight	66kg

Technical paraeter	IGRS-50
Vacuum(Mpa)	-0.098
Reactor(L)	50
Temperature(℃)	Room temperature -200
Stirring running speed(rmp)	0-450
Stirring axis diamerer(mm)	12
Motor power(w)	120w 1/3
Bath power(kw)	8
Voltage /frequency(V/Hz)	220V 50Hz 380V 50Hz
Size(mm*mm*mm)	650*600*1600
The whole machine net weight	73kg

Technical paraeter	IGRS-80
Vacuum(Mpa)	-0.098
Reactor(L)	80
Temperature(℃)	Room temperature -200
Stirring running speed(rmp)	0-450
Stirring axis diamerer(mm)	12
Motor power(w)	180w 1/3
Bath power(kw)	9
Voltage /frequency(V/Hz)	380V 50Hz
Size(mm*mm*mm)	650*600*1600
The whole machine net weight	92kg