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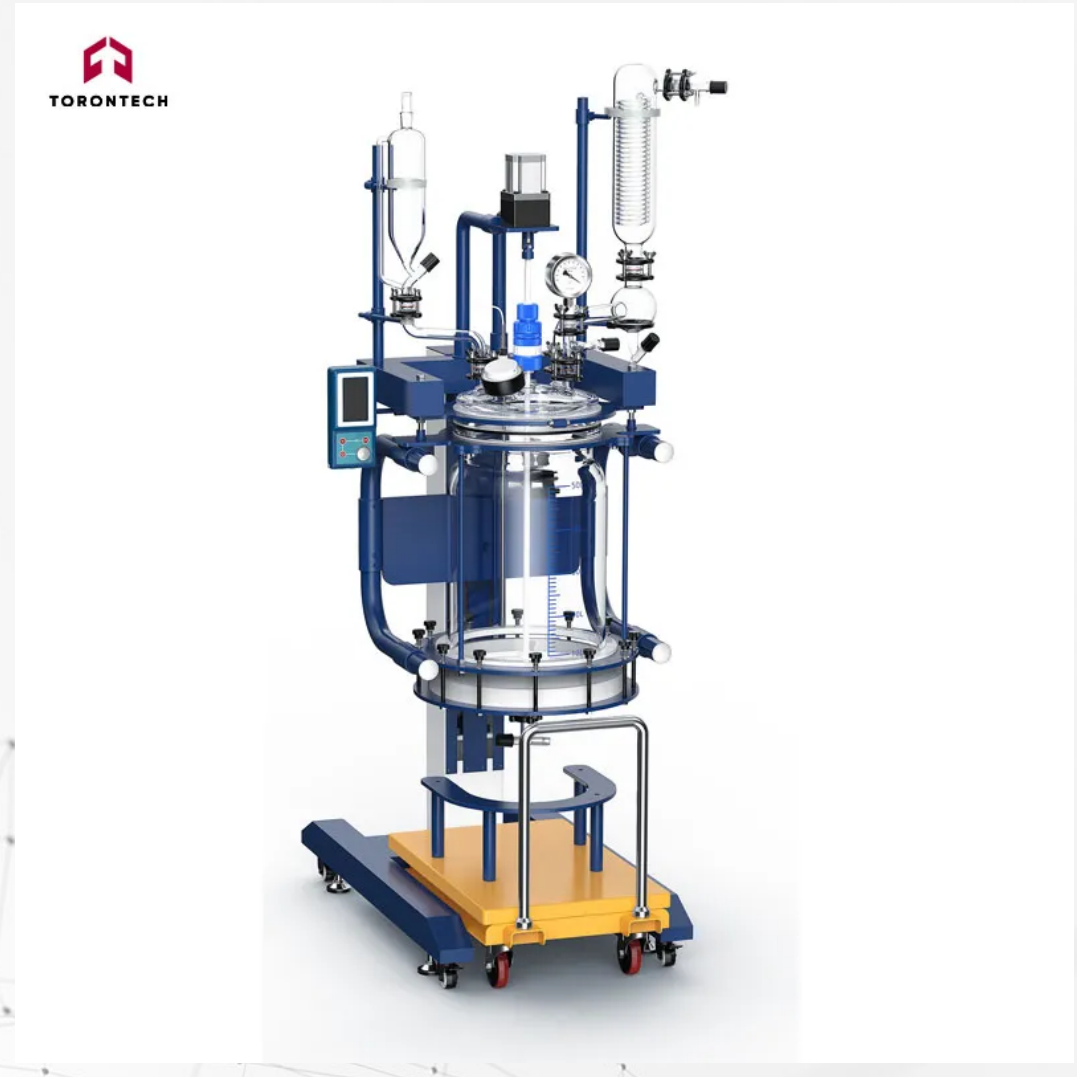

LIFTING JACKETED FILTER GLASS REACTOR

Lifting Jacketed Filter Glass Reactor combines the capabilities of a reactor and filter in a single, compact system. It is widely used for material synthesis, distillation, concentration, filtration, and various experimental applications. The jacketed glass reactor features dual layers—inner and outer—allowing precise temperature control by circulating a liquid of the desired temperature through the jacket.

APPLICATIONS

The Torontech Lifting Jacketed Filter Glass Reactor is an integrated system designed to dramatically streamline the chemical synthesis workflow. By combining a temperature-controlled reactor with an in-situ filtration unit, its primary application is to enable the entire process of reaction, crystallization, filtration, and washing to be performed in a single, contained vessel. This eliminates the need for hazardous and inefficient slurry transfers, making it an ideal solution for process intensification and optimization.

This all-in-one process capability is a critical efficiency and safety tool for:

- **Pharmaceutical & Chemical Process R&D:** For the synthesis and isolation of Active Pharmaceutical Ingredients (APIs) and chemical intermediates, allowing researchers to perform a complete crystallization workup in one vessel, which significantly reduces process time, minimizes product loss, and reduces operator exposure.
- **Contract Research & Manufacturing (CRO/CDMO):** As a highly versatile and efficient workhorse for developing and executing diverse client projects, where the ability to rapidly perform and isolate products from different reaction types in a single unit maximizes productivity and asset utilization.
- **Polymer & Materials Science:** To synthesize, wash, and isolate solid polymers, catalysts, or advanced materials, simplifying the handling of powders and viscous slurries and ensuring a more efficient and contained production process.
- **Agrochemical & Specialty Chemicals:** For the pilot-scale production and purification of solid agrochemical ingredients and other specialty chemicals, where combining reaction and filtration steps improves process safety, increases yield, and simplifies the overall manufacturing train.

FEATURES

- **Durable Construction**: Made from high-quality borosilicate glass 3.3, known for its excellent physical and chemical properties.
- **Wide Temperature Range**: Operates efficiently from -80°C to 200°C.
- **User-Friendly Design**: The glass vessel can be lifted and tilted up to 120°, ensuring convenient operation and cleaning.
- **Effortless Maintenance**: Comes with a lift truck, simplifying the process of disassembling the filter for cleaning or replacing filter paper or cloth.
- **Advanced Stirring System**: Features a brushless DC stirring motor with stepless speed control, an LED digital display for torque, stirring speed, measured speed, temperature, and runtime. Data can be transferred via an RS485 communication interface.
- **High-Precision Temperature Monitoring**: Equipped with a PT100 temperature sensor for accurate readings, housed in a PTFE-coated SUS304 tube for double-layer corrosion resistance.
- **Corrosion-Resistant Components**: Includes a stainless steel stirring shaft coated with PTFE for enhanced durability.

TECHNICAL SPECIFICATIONS

Model	GRL-20CEf	GRL-30CEf	GRL-50CEf
Glass vessel volume	20L	30L	50L
Jacket volume	9L	10L	16L
Liquid outlet/inlet	Rc 3/4’’		
Condenser heat exchanging area	About 0.245m²		About 0.42m²
Constant pressure funnel	1000ml	2000ml	
Glass parts material	High borosilicate glass 3.3		

Model		GRL-20CEf	GRL-30CEf	GRL-50CEf
Reactor lid openings	Stirring port	50# flange port		
	Temperature sensor port	24# ball milling mouth		35# flange port
	Condenser connection port	50# flange port		
	Vacuum gauge installation port	35# flange port		
	Constant pressure funnel elbow port	35# flange port		
	Solid charging port	80# flange port		
Filter parts	Material	Polypropylene/polyester		
	Filtration accuracy	1~250μm		
Material of filtration base plate		PTFE		
Working temperature range		-80~200℃ Pay attention to the Max. tolerable temperature of filter cloth		
Max. temperature difference inside/outside the vessel		ΔT≤80℃		
Operating pressure		Ordinary pressure		
Max. jacket pressure		≤+0.03 MPa		
Stirring motor power		370W		
Max. torque		5.4 N•m		
Stirring speed range		20~500 rpm		
Stirring speed display accuracy		±1 r/min		
Display window		LED		
Voltage		100-240V□ , 50/60Hz		

Model	GRL-20CEf	GRL-30CEf	GRL-50CEf
Fuse	TSD 6.3A L (Suitable for 100-120V□)		
	TSD 5A L (Suitable for 220-240V□)		
Temperature display accuracy	0.1℃		
Material of sealing parts	PTFE		
Lifting distance of glass vessel	400mm	350mm	
Ambient temperature	5~35℃		
Environment relative humidity	≦70%		
Dimensions	1100W*760D*2050H mm		

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