

Progress through modular design

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.

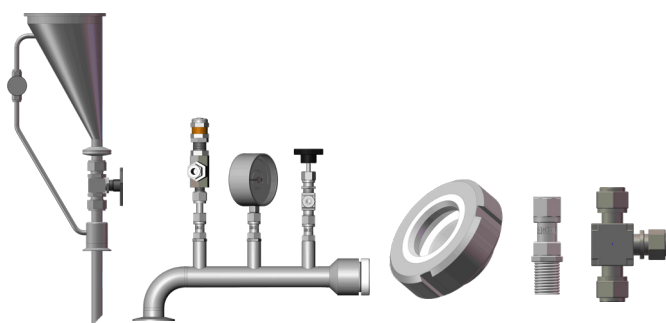
With the various interchangeable connecting components (such as Liebig condensers, tube condensers and various pipe systems), it is economically feasible not only to create the initial reaction vessel, but also to extend, modify or upgrade it. In most cases, quick and inexpensive delivery of the required parts is possible due to our wide range of standard components. Of course, any special requests are realised on arrangement.

Contact us!

Individual reaction vessel construction for pressure and vacuum (-1~5bar)

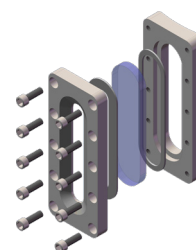
Distillation Units

- Tube and shell condenser
- Liebig condenser



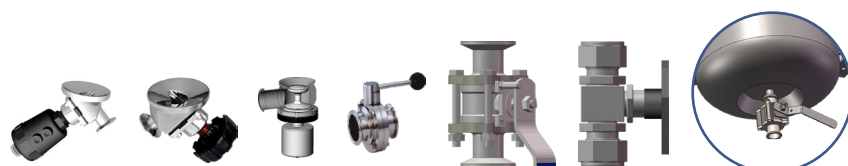
Lid ports

- Feeding funnels
- pressure safety kits (Pressure gauge, Rupture disc, pressure relief valve, exhaust valve)
- Sight glass or illumination
- Tube fittings (for fix valves, thermometer and pH meter)
- Multifold for expansion
- Thermometer sockets



Sight glasses

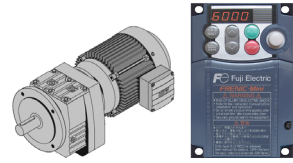
- Round
- Lateral



Different kinds of Bottom Valves



DC motor with remotely controllable ultra high torque-high speed stirrer



Heavy duty motor



Magnetic coupling bearing
0.5L to 200L



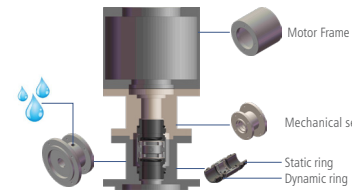
Double mechanical seal
0.5L to 5L



Single mechanical seal



Jacketed double mechanical seal
10L to 200L



Burgmann double mechanical seal



Impellers

- Propeller stirrer
- Anchor Impeller
- Sloped anchor stirrer
- Turbine Impeller

Locking systems



Quick release clamps
0.5L to 5L



Pressure clamps
10L to 200L



Stand with base plate H-shape
0.5L to 2L



Electric lifting stand
5L to 50L



Operating platform
100L to 200L

Stainless Steel Reactors

Research, development, production and the laboratory always need reaction vessels from 0.1 to 100 litres capacity, capable of working under vacuum or pressures up to 200 Bar, at temperatures ranging from -80 °C to 400 °C .

The single Description Chemtron brings together design and manufacture know-how, reasonable prices, and long-term reliability.

Its skills and years of experience in making reaction vessels and their accessories can bring your ideas to reality.

We specialise in the production of vessels of 0.5 to 2000L capacity working at

- Vacuum: 10^{-3} mbar
- Pressure: 200 bar
- Temperatures: -80 °C to 400 °C

The major components of a system comprise:

- **Reaction vessels and accessories**

Stirrerheads, stirrers, connections and drains

- **Auxiliary equipment**

Stirrer drive motors, lifting stand, feeders, and condensers

- **Heating and cooling**

JULABO Recirculating thermostats, heat exchangers, valves and controllers.

All these and a standard range of reaction vessels from 0.5 to 200 litres are described in this catalogue.

The company is licensed to manufacture pressure vessels in various materials.

We are experienced in the manufacture of vessels complying with GMP (Good Manufacturing Practice) for use in the food and pharmaceutical industries.

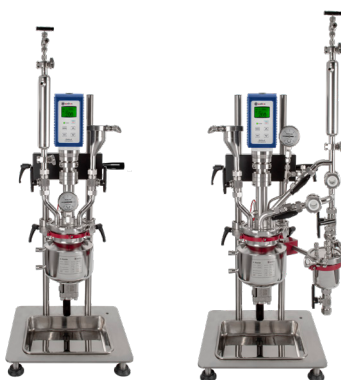
Skill and
Longstanding
Experience

Custom Design
and
Manufacture

Assured
Quality
and
Professional
Advice

Bench Top Reactor

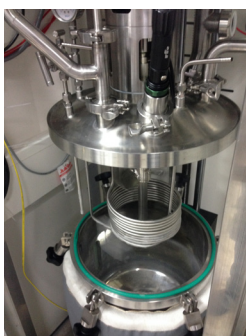
0.5L to 5L



Pilot Plants

10L to 200L



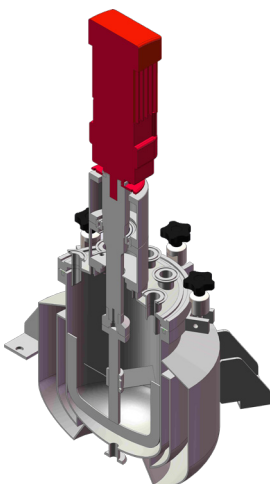
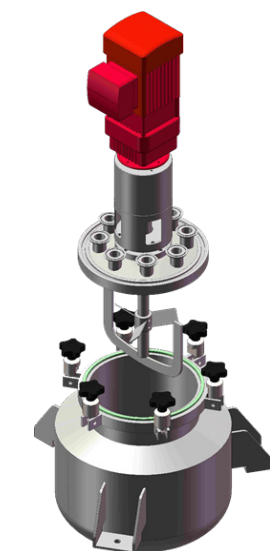


Reaction Vessels without Jacket 0.5L~50L

Manufacturing and inspection comply with the manufacturing technology requirements of GB150 steel pressure vessel and HG20584 steel chemical vessel.

- When hazardous and toxic substances are operated, the stainless steel reactor can ensure the safety of the experiment.
- Avoid the danger of breaking the glass.
- Mechanical stability can ensure the long service life.
- Select the appropriate gasket materials, the maximum temperature of the reactor can reach 300°C .
- The surface of the reaction vessel is polished. Our standard roughness is 8 μ m. These high quality surfaces mean that the reactor is easy to clean.
- The center of the vessel lid is connected with the stirring motor, and can be connected with various types of stirring motor.
- There are many different openings around the center opening, can choose the vessel Lidwith a mirror, illuminationand hand.
- The other nozzle is connected with the adapter of the sleeve, and can be connected with the standard conical joint. All the adapters are connected to the vessel Lidthrough the sleeve or chuck connection, easy to replace.

Volume[L]	Vessel I.D.mm	Height mm	Drain valve
0.5	89	100	19mm Fittings Ball Valve
1	102	150	19mm Fittings Ball Valve
2	133	180	19mm Fittings Ball Valve
5	159	300	19mm 3-Pieces Ball Valve
10	250	300	19mm 3-Pieces Ball Valve
20	300	350	25mm 3-Pieces Ball Valve
30	350	350	25mm 3-Pieces Ball Valve
50	400	450	25mm 3-Pieces Ball Valve



Reaction vessels with Jacket 0.5L~200L

For Chemtron stainless steel reaction vessel, we provide standard bracket and lifting bracket, can fixed vessel body and vessel cover. Tank bottom valve installed in the flange which without dead volume.

The vessel lid is sealed with a gasket and a spare part is provided .

Bearing and agitation mounted in the center of the vessel lid. In order to avoid the damage caused by the mixing unit in the course of transportation, it should be split off before transportation.

Other openings in the vessel cover are arranged in a circle around the center opening.

The vessel lid is provided with sight glass, illumination, vacuum pressure gauge and pressure relief valve on the basis of the use requirement.

On the assembly drawing of the reaction vessel, the connecting piece can be seen. All the parts of the vessel lid are installed at the respective openings.

An nozzle is provided with a plug.

Volume [L]	Centre Nozzle	Height H1 (mm)	I.D.	D1(mm)	Height H2(mm)	O.D.	D2(mm)	Flange Clamp
0.5	M38×1.5 x 1.5	102	89	89	175	140	140	Ferrule Clamp
1	M38×1.5 x 1.5	145	102	102	192	168	168	Ferrule Clamp
2	M38×1.5x 1.5	183	133	133	205	219	219	Ferrule Clamp
5	M50×1.5 x 1.5	320	159	159	344	254	254	Ferrule Clamp
10	M50×1.5 x 1.5	312	250	250	380	400	400	6
20	Ø 133mm	375	300	300	413	450	450	6
30	Ø 133mm	438	350	350	425	500	500	8
50	Ø 133mm	500	400	400	438	550	550	8
100	Ø 133mm	625	500	500	663	650	650	12
200	Ø 133mm	663	650	650	800	800	800	12

Volume	Pressure	Weight	Volume of Jacketed	Pressure of Jacketed	Inlet & Outlet
[litr]	[bar]	[kg]	[litr]	[bar]	
0.5	≤5	10	0.30	≤3	2-M16*1
1	≤5	13.6	0.35	≤3	2-M16*1
2	≤5	16.5	0.5	≤3	2-M16*1
5	≤5	36	1.5	≤3	2-12.7 Ferrule
10	≤5	50	3	≤3	2-12.7 Ferrule
20	≤5	62	7	≤3	2-12.7 Ferrule
30	≤5	82	7	≤3	2-19 Ferrule
50	≤5	108	10	≤3	2-19 Ferrule

Reaction vessels for vacuum and pressure

Safety

- When handling poisonous or dangerous substances, our stainless steel reaction vessels can guarantee the safety of the experiment.
- This guarantee the vessel up to the maximum pressure range.

Resistance

Stainless steel 316L (1.4571) is suitable for temperatures up to 350°C and is resistant to many reagents. For further details, consult the corrosion tables at the end of this catalogue.

Chemical resistance of fluoroplastics against gases

	TFM	PFA	FEP	ECTFE	PVDF	FPM FKM	FFPM FAKM
Aldehydes	A	A	A	A	A	D	A
Alcohols	A	A	A	A	A	A/B	A
Amines	A	A	A	A	B	C	A
Bases/alkalis	A	A	A	A	A	B	A
Esters	A	A	A	A	B	D	A
Ethers	A	A	A	B	B	C	A
Glycols	A	A	A	A	A	A	A
Ketones	A	A	A	B	B	D	A
Hydrocarbons, aliphatic	A	A	A	A	A	A	A
Hydrocarbons, aromatic	A	A	A	A	A	A/B	A
Hydrocarbons, halogenated	A	A	A	A	A	B/C	B
Mineral oils	A	A	A	A	A	A	A
Oxidants, strong	A	A	A	B	A	A	A
Vegetable oils	A	A	A	A	A	A	A
Acids, inorganic	A	A	A	B	A	A	A
Acids, organic	A	A	A	B	A	A/B	A/B
Lubricants	A	A	A	B	A	A	A

Chemical resistance of fluoroplastics

	PTFE	TFM	PFA	FEP	ECTFE	PVDF	FPM FKM	FFPM FAKM
O ₂	A	A	A	A	A	A	A	A
CO/CO ₂							A	A
H ₂	A	A	A	A	A	A	A	A
CH ₄	A	A	A	A	A	B	C	A
Supercritical CO ₂							D	

A = good resistance (virtually no or only slight attack)

B = limited resistance (moderate attack)

C = no resistance (strong attack)

D = partially dissolved (partially swollen or dissolved)

Applicability

- Almost all fittings and adaptors are installed by quick redase clamps and can be easily changed. This means that the vessel can be used for all applications. The welded-on heating jacket allows the contents to be evenly heated up to the maximum temperature.
- The large selection of accessories enables the reaction vessels to be used in all branches of process technology.

Custom vessels

- Customized vessels are our speciality. We manufacture vessels with capacities between 0.5 and 2000 litres.
- If needed, they can be manufactured to the GMP (Good Manufacturing Practice) standard. After discussion and generate system the working drawings, we manufacture the required vessel or a complete pilot plant.

JULABO Thermostats

For heating and cooling the vessel and condenser, we offer these products as below:



Refrigerated and heating circulators

CORIO, TopTech, HighTech

Refrigerated and heating circulators made by JULABO are used worldwide. Whether in research, material testing or in technical systems – the well proven and reliable technology is valued by users in all industries worldwide. Focused on your requirements, JULABO circulators have set the benchmark for temperature control technology for decades.

The JULABO range of circulators offers the functional solution for your day-to-day work, whether it is a routine task or highly demanding: CORIO, TopTech and HighTech – three model series for every requirement and every budget.

Highly dynamic temperature control systems

PRESTO, FORTE HT

Highly dynamic temperature control systems solve even difficult temperature control tasks within no time. With their extremely short heat-up and cool-down times, large working temperature ranges without changing the bath fluid, and high output data, they are ideal for compensating temperature differences in external applications extremely quickly. Opposite to conventional circulators, the bath fluid can be used in an extended temperature range and for a significantly longer time.

Recirculating coolers and chillers

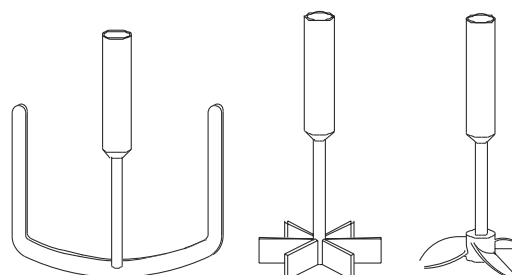
F, FL, FC Series, SemiChiller

JULABO recirculating coolers can handle virtually any cooling requirements in laboratories or industrial environments. Their efficiency makes them an environmentally-friendly and economical alternative to cooling with tap water.

Compact models from JULABO are ideal for placement on or underneath a lab bench. JULABO offers several Powerful models with up to 20 kW of cooling capacity for applications in industrial environments.

Stirrers

- Mixing motor with different shapes and sizes.
- The various stirrer drives provide the suitable stirring for different process .
- Stirrer heads of different models and sizes.
- From the simplest mechanically sealed models to totally statically sealed magnetically coupled models.



S.S. Bench Top Reactor

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.



Specification

VR-500 VR-1000 VR-2000		VR-500	VR-1000	VR-2000	VR-5000
Model		VR-500	VR-1000	VR-2000	VR-5000
Performance and Material	Material	316L S.S.	316L S.S.	316L S.S.	316L S.S.
	Max. Temperature	300°C	300°C	300°C	300°C
	Max. Pressure	≤5bar	≤5bar	≤5bar	≤5bar
Jacketed vessel	Volume	500ml	1000ml	2000ml	5000ml
	Flange	DN89	DN102	DN133	DN153
	Inner Dia.	83mm	96mm	127mm	147mm
	Inner Height	80mm	120mm	150mm	280mm
O-ring	Material	PTFE (Viton, FFKM for optional)			
	Size	89mm	102mm	133mm	153mm
Lids	Flange	DN89	DN102	DN133	DN153
	Center Ports	M38X2	M38X2	M38X2	M38X1.5
Heating unit (Optional)	Other ports	1/4" and 1/2" NPT			
	JULABO unit	Yes			
Stir	Type of sealling	Double mechanical seal			
	Motor	Overhead stirring motor			
	Speed	20~1800rpm(Other model for optional)			
Frame	Type	SS Frame			
	Size	600*360/700mm(L*W*H)			
	Liquid receiving tray	Stainless steel			

Stainless Steel Reactor

VR-1000 designed to work at atmosphere pressure or under vacuum

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.

Bench top reactors are ideally suitable for small experimental runs. This series reactor is available in stainless steel, with or without jacket.

The VR-1000 reactor is notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, FKM, or FFKM. The appropriate fitting inserts are available in stainless steel.



Features

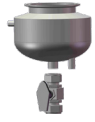








- 1000 ml / 5 bar / 200°C
- With or without jacket, with or without bottom outlet
- Quick closure chain design
- O-seal ring made of PTFE, Viton or FFKM
- Heating by electrical or thermostated mantle
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil

Specification

Model	VR-1000	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	1000ml
	Flange	DN102
	Inner Dia.	96mm
	Inner Height	120mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	102mm
Lids	Flange	DN102
	Center Ports	M38X2
	Other ports	1/4" and 1/2" NPT
Heating unit (Optional)	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Size	600*360/700mm(L*W*H)
	Liquid receiving tray	Stainless steel

Standard packages

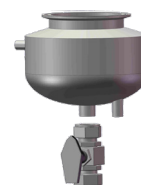
Order No.	Description
7815050C-M1	1000ml Low pressure reaction system, without bottom valve and jacket The basic reactor set 7815050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000, Reactor controller TCSS-1
7815050C-M2	1000ml Low pressure reaction system, without bottom valve and jacket, with Distillation unit The basic reactor set 7815050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000 and Distillation unit, Reactor controller TCSS-1
7815050C-M3	1000ml Low pressure reaction system, without bottom valve and jacket, with Rectification & Distillation unit The basic reactor set 7815050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000 and Rectification & Distillation unit, Reactor controller TCSS-1
7815055C-M1	1000ml Low pressure reaction system, with bottom valve, without jacket The basic reactor set 7815055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000, Reactor controller TCSS-1
7815055C-M2	1000ml Low pressure reaction system, with bottom valve, without jacket, with Distillation unit The basic reactor set 7815055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000 and Distillation unit, Reactor controller TCSS-1
7815055C-M3	1000ml Low pressure reaction system, with bottom valve, without jacket, with Rectification & Distillation unit The basic reactor set 7815055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-1000 and Rectification & Distillation unit, Reactor controller TCSS-1
7815060C-M1	1000ml Low pressure reaction system, without bottom valve, with jacket The basic reactor set 7815060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7815060C-M2	1000ml Low pressure reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7815060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7815060C-M3	1000ml Low pressure reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7815060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7815065C-M1	1000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7815065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7815065C-M2	1000ml Low pressure reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7815065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7815065C-M3	1000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7815065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Temperature control system		Stirring unit			Lift system with or without Distillation unit / Rectification unit		
	Basic reactor set	CHM-1000	TCCS-1	RVE-100	WB20C	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
									
7815050C-M1	●	●	●	●	●	●	●		
7815050C-M2	●	●	●	●	●	●		●	
7815050C-M3	●	●	●	●	●	●			●
7815055C-M1	●	●	●	●	●	●	●		
7815055C-M2	●	●	●	●	●	●		●	
7815055C-M3	●	●	●	●	●	●			●
7815060C-M1	●			●	●	●	●		
7815060C-M2	●			●	●	●		●	
7815060C-M3	●			●	●	●			●
7815065C-M1	●			●	●	●	●		
7815065C-M2	●			●	●	●		●	
7815065C-M3	●			●	●	●			●

Accessories

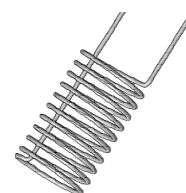
Basic reactor sets

Order No.	Description
7815050C	VR-1000 reactor set, designed for electrical heating CHM
7815060C	VR-1000 reactor set with double walled jacket, designed for heating with thermal liquid
7815055C	VR-1000 reactor set, designed for electrical heating CHM, for usage with bottom drain valve
7815065C	VR-1000 reactor set with double walled jacket, for the usage with bottom drain valve



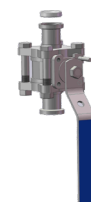
Cooling coil

Order No.	Description
7745412C	VR-1000 cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
7815211C	Bottom valve, 55bar, 232°C
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



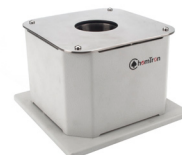
Temperature Measurement

Order No.	Description
7797250C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 250 mm, with cable
7777250C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 250 mm, with cable



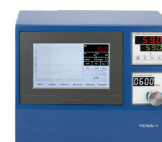
Electrical Heating

Order No.	Description
7757269C	CHM-1000, electrical heating jacket for VR-1000
7781625C	Insulating plate, made of PTFE, for reactors without bottom drain valve



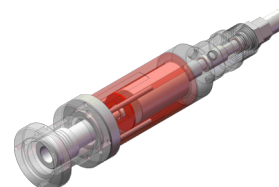
Controller

Order No.	Description
TCSS-1	Program controller for temperature and stirring, matching with heating-stirring mantle
9700160	Temperature controller LC6



Stirring

Order No.	Description
5727090C	RVE-100 mechanical clutch, made of stainless steel
5727090	RV-100 magnetic clutch, made of stainless steel 316 Ti, max torque 100 Ncm
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7815030C	VR-1000 paddle stirrer, made of stainless steel
7781620C	VR-1000 paddle stirrer, made of PTFE
7815032C	VR-1000 gas entrainment stirrer, made of stainless steel
7815033C	VR-1000 gas entrainment stirrer, PTFE



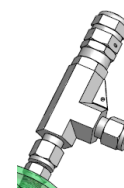
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7757031	VR-1000 sampling tube, made of stainless steel
7716724	VR-1000 sampling tube, made of PTFE
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE
5735575	External gas fitting panel, for installation of up to 4 additional gas fittings with 8 mm tube connection, including panel, T-connections with tubings and flexible high pressure tubing L 1 m for connection to reactor lid



Pressure relief valve

Order No.	Description
10000471	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel
5797219	Spring for pressure relief valve p/n 10000471, blue, 3.4 - 24.1 bar
5797215	Spring for pressure relief valve p/n 10000471, yellow, 24.1- 51.7 bar



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001221-10C	Reactor Lift for VR-1000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-11C	Reactor Lift for VR-1000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-12C	Reactor Lift for VR-1000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001222-10C	Reactor Lift for VR-1000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-11C	Reactor Lift for VR-1000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-12C	Reactor Lift for VR-1000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism



Accessories/Consumables

Order No.	Description
5701017	Exhaust hose for rupture disc holder, L 2.5 m, G3/8" male
5701077	High pressure gas hose, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
7725625C	Stand for VR-1000 reactor lid, for storage of the reactor lid
5900776C	O-ring for VR-1000, FKM, Viton
10000406C	O-ring for VR-1000, PTFE
10000407C	O-ring for VR-1000, FKM/FEP
5901564C	O-ring for VR-1000, FFKM
5751455	Rupture disc 25 bar, made of monel, D 24 mm, with certificate and PFA protection foil
5900768	Sealing G3/8" for exaust tubing p/n 5701017, made of PTFE



Stainless Steel Reactor

VR-2000 designed to work at atmosphere pressure or under vacuum

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.

Bench top reactors are ideally suitable for small experimental runs. This series reactor is available in stainless steel, with or without jacket.

The VR-2000 reactor is notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, FKM, or FFKM. The appropriate fitting inserts are available in stainless steel.



Features










- 2000 ml / 5 bar / 200°C
- With or without jacket, with or without bottom outlet
- Quick closure chain design
- O-seal ring made of PTFE, Viton or FFKM
- Heating by electrical or thermostated mantle
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil

Specification

Model	VR-2000	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	2000ml
	Flange	DN133
	Inner Dia.	127mm
	Inner Height	150mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	133mm
Lids	Flange	DN133
	Center Ports	M38X2
	Other ports	1/4" and 1/2" NPT
Heating unit (Optional)	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Size	600*360/700mm(L*W*H)
	Liquid receiving tray	Stainless steel

Standard packages

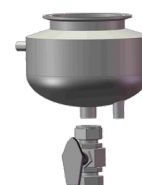
Order No.	Description
7830050C-M1	2000ml Low pressure reaction system, without bottom valve and jacket The basic reactor set 7830050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000, Reactor controller TCSS-1
7830050C-M2	2000ml Low pressure reaction system, without bottom valve and jacket, with Distillation unit The basic reactor set 7830050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000 and Distillation unit, Reactor controller TCSS-1
7830050C-M3	2000ml Low pressure reaction system, without bottom valve and jacket, with Rectification & Distillation unit The basic reactor set 7830050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000 and Rectification & Distillation unit, Reactor controller TCSS-1
7830055C-M1	2000ml Low pressure reaction system, with bottom valve, without jacket The basic reactor set 7830055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000, Reactor controller TCSS-1
7830055C-M2	2000ml Low pressure reaction system, with bottom valve, without jacket, with Distillation unit The basic reactor set 7830055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000 and Distillation unit, Reactor controller TCSS-1
7830055C-M3	2000ml Low pressure reaction system, with bottom valve, without jacket, with Rectification & Distillation unit The basic reactor set 7830055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-2000 and Rectification & Distillation unit, Reactor controller TCSS-1
7830060C-M1	2000ml Low pressure reaction system, without bottom valve, with jacket The basic reactor set 7830060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7830060C-M2	2000ml Low pressure reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7830060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7830060C-M3	2000ml Low pressure reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7830060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7830065C-M1	2000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7830065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7830065C-M2	2000ml Low pressure reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7830065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7830065C-M3	2000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7830065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Temperature control system		Stirring unit			Lift system with or without Distillation unit / Rectification unit		
	Basic reactor set	CHM-2000	TCSS-1	RVE-100	WB20C	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
									
7830050C-M1	●	●	●	●	●	●	●		
7830050C-M2	●	●	●	●	●	●		●	
7830050C-M3	●	●	●	●	●	●			●
7830055C-M1	●	●	●	●	●	●	●		
7830055C-M2	●	●	●	●	●	●		●	
7830055C-M3	●	●	●	●	●	●			●
7830060C-M1	●			●	●	●	●		
7830060C-M2	●			●	●	●		●	
7830060C-M3	●			●	●	●			●
7830065C-M1	●			●	●	●	●		
7830065C-M2	●			●	●	●		●	
7830065C-M3	●			●	●	●			●

Accessories

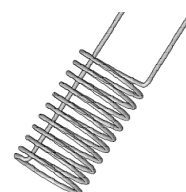
Basic reactor sets

Order No.	Description
7830050C	VR-2000 reactor set, designed for electrical heating CHM
7830060C	VR-2000 reactor set with double walled jacket, designed for heating with thermal liquid
7830055C	VR-2000 reactor set, designed for electrical heating CHM, for usage with bottom drain valve
7830065C	VR-2000 reactor set with double walled jacket, for the usage with bottom drain valve



Cooling coil

Order No.	Description
7745412C	VR-2000 cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
7815211C	Bottom valve, 55bar, 232°C
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



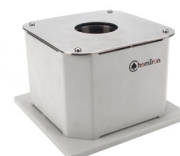
Temperature Measurement

Order No.	Description
7797350C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 250 mm, with cable
7777157C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 250 mm, with cable



Electrical Heating

Order No.	Description
7757269C	CHM-2000, electrical heating jacket for VR-2000
7781625C	Insulating plate, made of PTFE, for reactors without bottom drain valve



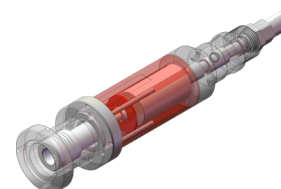
Controller

Order No.	Description
TCSS-1	Program controller for temperature and stirring, matching with heating-stirring mantle
9700160	Temperature controller LC6



Stirring

Order No.	Description
5727090C	RVE-100 mechanical clutch, made of stainless steel
5727090	RV-100 magnetic clutch, made of stainless steel 316 Ti, max torque 100 Ncm
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7830030C	VR-2000 paddle stirrer, made of stainless steel
7830031C	VR-2000 paddle stirrer, made of PTFE
7830032C	VR-2000 gas entrainment stirrer, made of stainless steel
7830033C	VR-2000 gas entrainment stirrer, made of PTFE



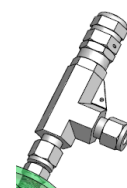
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7728033	VR-2000 sampling tube, made of stainless steel
7728029	VR-2000 sampling tube, made of PTFE
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE
5735575	External gas fitting panel, for installation of up to 4 additional gas fittings with 8 mm tube connection, including panel, T-connections with tubings and flexible high pressure tubing L 1 m for connection to reactor lid



Pressure relief valve

Order No.	Description
10000471	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel
5797219	Spring for pressure relief valve p/n 10000471, blue, 3.4 - 24.1 bar
5797215	Spring for pressure relief valve p/n 10000471, yellow, 24.1- 51.7 bar



pressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001221-20C	Reactor Lift for VR-2000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-21C	Reactor Lift for VR-2000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-22C	Reactor Lift for VR-2000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001222-20C	Reactor Lift for VR-2000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-21C	Reactor Lift for VR-2000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-22C	Reactor Lift for VR-2000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism



Accessories/Consumables

Order No.	Description
5701017	Exhaust hose for rupture disc holder, L 2.5 m, G3/8" male
5701077	High pressure gas hose, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
7725625C	Stand for VR-2000 reactor lid, for storage of the reactor lid
5900776C	O-ring for VR-2000, FKM, Viton
10000406C	O-ring for VR-2000, PTFE
10000407C	O-ring for VR-2000, FKM/FEP
5901564C	O-ring for VR-2000, FFKM
5751455	Rupture disc 25 bar, made of monel, D 24 mm, with certificate and PFA protection foil
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Stainless Steel Reactor

VR-5000 designed to work at atmosphere pressure or under vacuum

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.

Bench top reactors are ideally suitable for small experimental runs. Equipped with rectification and distillation units. This series reactor is available in stainless steel, with or without jacket.

The VR-5000 reactor are notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, FKM, or FFKM. The appropriate fitting inserts are available in stainless steel.



Features










- 5000 ml / 5 bar / 200°C
- With or without jacket, with or without bottom outlet
- Quick closure chain design
- O-seal ring made of PTFE, Viton or FFKM
- Heating by electrical or thermostated mantle
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil
- With rectification and distillation unit
- The stand for VR-5000 is mounted directly on the ground.

Specification

Model	VR-5000	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	5000ml
	Flange	DN153
	Inner Dia.	147mm
	Inner Height	280mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	153mm
Lids	Flange	DN153
	Center Ports	M38X1.5
	Other ports	1/4" and 1/2" NPT
Heating unit (Optional)	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Size	600*360/700mm(L*W*H)
	Liquid receiving tray	Stainless steel

Standard packages

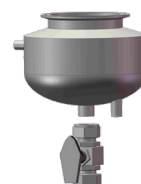
Order No.	Description
7860050C-M1	5000ml Low pressure reaction system, without bottom valve and jacket The basic reactor set 7860050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000, Reactor controller TCSS-1
7860050C-M2	5000ml Low pressure reaction system, without bottom valve and jacket, with Distillation unit The basic reactor set 7860050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000 and Distillation unit, Reactor controller TCSS-1
7860050C-M3	5000ml Low pressure reaction system, without bottom valve and jacket, with Rectification & Distillation unit The basic reactor set 7860050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000 and Rectification & Distillation unit, Reactor controller TCSS-1
7860055C-M1	5000ml Low pressure reaction system, with bottom valve, without jacket The basic reactor set 7860055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000, Reactor controller TCSS-1
7860055C-M2	5000ml Low pressure reaction system, with bottom valve, without jacket, with Distillation unit The basic reactor set 7860055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000 and Distillation unit, Reactor controller TCSS-1
7860055C-M3	5000ml Low pressure reaction system, with bottom valve, without jacket, with Rectification & Distillation unit The basic reactor set 7860055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-5000 and Rectification & Distillation unit, Reactor controller TCSS-1
7860060C-M1	5000ml Low pressure reaction system, without bottom valve, with jacket The basic reactor set 7860060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7860060C-M2	5000ml Low pressure reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7860060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7860060C-M3	5000ml Low pressure reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7860060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7860065C-M1	5000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7860065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7860065C-M2	5000ml Low pressure reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7860065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7860065C-M3	5000ml Low pressure reaction system, with bottom valve and jacket The basic reactor set 7860065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Temperature control system		Stirring unit			Lift system with or without Distillation unit / Rectification unit		
	Basic reactor set	CHM-5000	TCSS-1	RVE-100	WB20C	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
									
7860050C-M1	●	●	●	●	●	●	●		
7860050C-M2	●	●	●	●	●	●		●	
7860050C-M3	●	●	●	●	●	●			●
7860055C-M1	●	●	●	●	●	●	●		
7860055C-M2	●	●	●	●	●	●		●	
7860055C-M3	●	●	●	●	●	●			●
7860060C-M1	●			●	●	●	●		
7860060C-M2	●			●	●	●		●	
7860060C-M3	●			●	●	●			●
7860065C-M1	●			●	●	●	●		
7860065C-M2	●			●	●	●		●	
7860065C-M3	●			●	●	●			●

Accessories

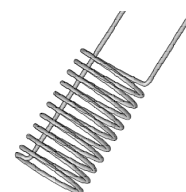
Basic reactor sets

Order No.	Description
7860050C	VR-5000 reactor set, designed for electrical heating CHM
7860060C	VR-5000 reactor set with double walled jacket, designed for heating with thermal liquid
7860055C	VR-5000 reactor set, designed for electrical heating CHM, for usage with bottom drain valve
7860065C	VR-5000 reactor set with double walled jacket, for the usage with bottom drain valve



Cooling coil

Order No.	Description
7745414C	VR-5000 cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
7815211C	Bottom valve, 55bar, 232°C
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



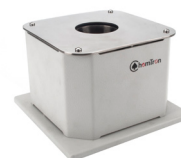
Temperature Measurement

Order No.	Description
7797450C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 450 mm, with cable
7777155C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 450 mm, with cable



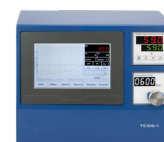
Electrical Heating

Order No.	Description
7716035C	CHM-5000, electrical heating jacket for VR-5000
7716058C	Insulating plate, made of PTFE, for reactors without bottom drain valve



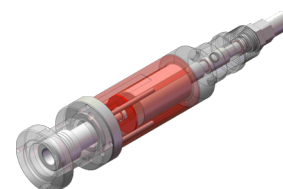
Controller

Order No.	Description
TCSS-1	Program controller for temperature and stirring, matching with heating-stirring mantle
9700160	Temperature controller LC6



Stirring

Order No.	Description
5727090C	RVE-100 mechanical clutch, made of stainless steel
5727090	RV-100 magnetic clutch, made of stainless steel 316 Ti, max torque 100 Ncm
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7860030C	VR-5000 paddle stirrer, made of stainless steel
7860031C	VR-5000 paddle stirrer, made of PTFE
7860032C	VR-5000 gas entrainment stirrer, made of stainless steel
7860033C	VR-5000 gas entrainment stirrer, made of PTFE



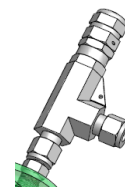
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7745418C	VR-5000 sampling tube, made of stainless steel
7715258C	VR-5000 sampling tube, made of PTFE
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE
5735575	External gas fitting panel, for installation of up to 4 additional gas fittings with 8 mm tube connection, including panel, T-connections with tubings and flexible high pressure tubing L 1 m for connection to reactor lid



Pressure relief valve

Order No.	Description
10000471	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel
5797219	Spring for pressure relief valve p/n 10000471, blue, 3.4 - 24.1 bar
5797215	Spring for pressure relief valve p/n 10000471, yellow, 24.1- 51.7 bar



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001221-50C	Reactor Lift for VR-5000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-51C	Reactor Lift for VR-5000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-52C	Reactor Lift for VR-5000 in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001222-50C	Reactor Lift for VR-5000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-51C	Reactor Lift for VR-5000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-52C	Reactor Lift for VR-5000 with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001219	Auto drive to turnover the jacketed reaction vessel, especially suitable for the reaction vessel without bottom valve



Accessories/Consumables

Order No.	Description
5701017	Exhaust hose for rupture disc holder, L 2.5 m, G3/8" male
5701077	High pressure gas hose, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
7725625C	"Stand for VR-5000 reactor lid, for storage of the reactor lid"
7708193C	O-ring for VR-5000, FKM, Viton
10000410C	O-ring for VR-5000, PTFE
10000411C	O-ring for VR-5000, FKM/FEP
5054076C	O-ring for VR-5000, FFKM
5751455	Rupture disc 25 bar, made of monel, D 24 mm, with certificate and PFA protection foil
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Pilot Plants

10L to 50L

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.



Specification

		VR-10L	VR-20L	VR-30L	VR-50L
Model		VR-10L	VR-20L	VR-30L	VR-50L
Performance and Material	Material	316L S.S.	316L S.S.	316L S.S.	316L S.S.
	Max. Temperature	300°C	300°C	300°C	300°C
	Max. Pressure	≤5bar	≤5bar	≤5bar	≤5bar
	Volume	10L	20L	30L	50L
Jacketed vessel	Inner Dia.	250mm	300mm	350mm	400mm
	Inner Height	250mm	300mm	300mm	350mm
	Thickness	4mm	4mm	4mm	4mm
O-ring	Material	PTFE (Viton, FFKM for optional)			
	Size	283mm	333mm	383mm	433mm
Lids	O.D.	300mm	350mm	400mm	450mm
	I.D.	250mm	300mm	350mm	400mm
Heating unit (Optional)	Thickness	28mm	28mm	28mm	28mm
	JULABO unit	Yes			
Stir	Type of sealling	Double mechanical seal			
	Motor	Overhead stirring motor			
	Speed	20~1800rpm(Other model for optional)			
Frame	Type	SS Frame			
	Liquid receiving tray	Stainless steel			

Stainless Steel Reactor

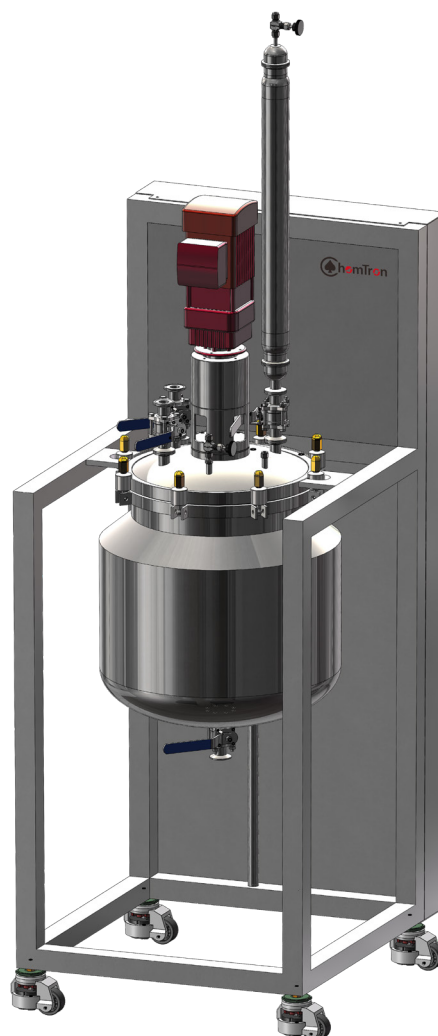
VR-10L designed to work at atmosphere pressure or under vacuum

Pilot Plant are ideally suitable for big volume experimental runs. Equipped with rectification and distillation units. This series reactor is available in stainless steel, with or without jacket.

The VR-10L reactor are notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, Silicon or Viton.

Features

- 10L / 5 bar / 200°C
- The vessel with jacket and bottom outlet
- Strong device is used to fix the reaction vessel and lid
- O-seal ring made of PTFE, Silicon or Viton
- Temperature control by heating and cooling circulator, such as JULABO unit
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil
- With rectification and distillation unit

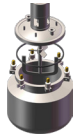










Specification

Model	VR-10L	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	10L
	Inner Dia.	250mm
	Inner Height	250mm
	Thickness	4mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	283mm
Lids	O.D.	300mm
	I.D.	250mm
	Thickness	28mm
Heating unit (Optional)	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Liquid receiving tray	Stainless steel

Standard packages

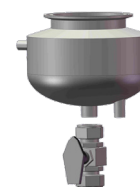
Order No.	Description
7810050C-M1	10L Low pressure reaction system, without bottom valve and jacket The basic reactor set 7810050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L, Reactor controller TCSS-1
7810050C-M2	10L Low pressure reaction system, without bottom valve and jacket, with Distillation unit The basic reactor set 7810050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L and Distillation unit, Reactor controller TCSS-1
7810050C-M3	10L Low pressure reaction system, without bottom valve and jacket, with Rectification & Distillation unit The basic reactor set 7810050C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L and Rectification & Distillation unit, Reactor controller TCSS-1
7810055C-M1	10L Low pressure reaction system, with bottom valve, without jacket The basic reactor set 7810055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L, Reactor controller TCSS-1
7810055C-M2	10L Low pressure reaction system, with bottom valve, without jacket, with Distillation unit The basic reactor set 7810055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L and Distillation unit, Reactor controller TCSS-1
7810055C-M3	10L Low pressure reaction system, with bottom valve, without jacket, with Rectification & Distillation unit The basic reactor set 7810055C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with CHM-10L and Rectification & Distillation unit, Reactor controller TCSS-1
7810060C-M1	10L Low pressure reaction system, without bottom valve, with jacket The basic reactor set 7810060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7810060C-M2	10L Low pressure reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7810060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7810060C-M3	10L Low pressure reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7810060C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7810065C-M1	10L Low pressure reaction system, with bottom valve and jacket The basic reactor set 7810065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7810065C-M2	10L Low pressure reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7810065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7810065C-M3	10L Low pressure reaction system, with bottom valve and jacket The basic reactor set 7810065C, Overhead stirring motor, Magnetic clutch RV-100, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Temperature control system		Stirring unit			Lift system with or without Distillation unit / Rectification unit		
	Basic reactor set	CHM-10L	TCSS-1	RVE-100	WB18D	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
									
7810050C-M1	●	●	●	●	●	●	●		
7810050C-M2	●	●	●	●	●	●		●	
7810050C-M3	●	●	●	●	●	●			●
7810055C-M1	●	●	●	●	●	●	●		
7810055C-M2	●	●	●	●	●	●		●	
7810055C-M3	●	●	●	●	●	●			●
7810060C-M1	●			●	●	●	●		
7810060C-M2	●			●	●	●		●	
7810060C-M3	●			●	●	●			●
7810065C-M1	●			●	●	●	●		
7810065C-M2	●			●	●	●		●	
7810065C-M3	●			●	●	●			●

Accessories

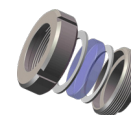
Basic reactor sets

Order No.	Description
7810050C	VR-10L reactor set, designed for electrical heating CHM
7810060C	VR-10L reactor set with double walled jacket, designed for heating with thermal liquid
7810055C	VR-10L reactor set, designed for electrical heating CHM, for usage with bottom drain valve
7810065C	VR-10L reactor set with double walled jacket, for the usage with bottom drain valve



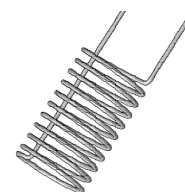
Illumination and Sight window

Order No.	Description
2130.001	LED lamp adapter, DN38
2121.001.01	Sight glass for VR-10L, DN38



Cooling coil

Order No.	Description
7745414C	VR-10L cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
7815211C	Bottom valve, 55bar, 232°C
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



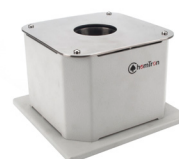
Temperature Measurement

Order No.	Description
7797450C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 450 mm, with cable
7777155C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 450 mm, with cable



Electrical Heating

Order No.	Description
7757244C	CHM-10L, electrical heating jacket for VR-10L
7716058C	Insulating plate, made of PTFE, for reactors without bottom drain valve



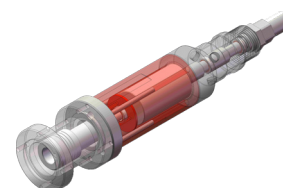
Controller

Order No.	Description
TCSS-1	Program controller for temperature and stirring, matching with heating-stirring mantle
9700160	Temperature controller LC6



Stirring

Order No.	Description
5727090C	RVE-100 mechanical clutch, made of stainless steel
5727090	RV-100 magnetic clutch, made of stainless steel 316 Ti, max torque 100 Ncm
5727400C	RVE-400 mechanical clutch, made of stainless steel
5727400	RV-400 magnetic clutch, made of stainless steel 316 Ti, max torque 400 Ncm, lift system recommended
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7816425C	VR-10L paddle stirrer, made of stainless steel
7816426C	VR-10L gas entrainment stirrer, made of stainless steel



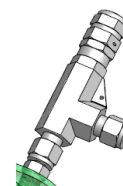
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7810120C	VR-10L sampling tube, made of stainless steel
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE
5735575	External gas fitting panel, for installation of up to 4 additional gas fittings with 8 mm tube connection, including panel, T-connections with tubings and flexible high pressure tubing L 1 m for connection to reactor lid



Pressure relief valve

Order No.	Description
10000471	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel
5797219	Spring for pressure relief valve p/n 10000471, blue, 3.4 - 24.1 bar
5797215	Spring for pressure relief valve p/n 10000471, yellow, 24.1 - 51.7 bar



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001221-60C	Reactor Lift for VR-10L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-61C	Reactor Lift for VR-10L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-62C	Reactor Lift for VR-10L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001222-60C	Reactor Lift for VR-10L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-61C	Reactor Lift for VR-10L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-62C	Reactor Lift for VR-10L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001219	Auto drive to turnover the jacketed reaction vessel, especially suitable for the reaction vessel without bottom valve



Accessories/Consumables

Order No.	Description
5701017	Exhaust hose for rupture disc holder, L 2.5 m, G3/8" male
5701077	High pressure gas hose, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
7708193C	O-ring for VR-10L, FKM, Viton
10000410C	O-ring for VR-10L, PTFE
10000411C	O-ring for VR-10L, FKM/FEP
7054076C	O-ring for VR-10L, FFKM
5751455	Rupture disc 25 bar, made of monel, D 24 mm, with certificate and PFA protection foil
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Stainless Steel Reactor

VR-20L designed to work at atmosphere pressure or under vacuum

Pilot Plant are ideally suitable for big volume experimental runs. Equipped with rectification and distillation units. This series reactor is available in stainless steel, with or without jacket.

The VR-20L reactor are notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, Silicon or Viton.

Features

- 20L / 5 bar / 200°C
- The vessel with jacket and bottom outlet
- Strong device is used to fix the reaction vessel and lid
- O-seal ring made of PTFE, Silicon or Viton
- Temperature control by heating and cooling circulator, such as JULABO unit
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil
- With rectification and distillation unit

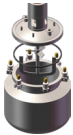










Specification

Model	VR-20L	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	20L
	Inner Dia.	300mm
	Inner Height	300mm
	Thickness	4mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	333mm
Lids	O.D.	350mm
	I.D.	300mm
	Thickness	28mm
Heating unit (Optional)	JULABO unit	Yes
	Type of sealling	Double mechanical seal
Stir	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
	Type	SS Frame
Frame	Liquid receiving tray	Stainless steel

Standard packages

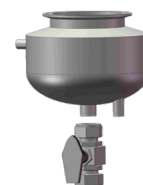
Order No.	Description
7811050C-M1	20L Low pressure reaction system, without bottom valve and jacket The basic reactor set 7811050C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L, Reactor controller TCSS-1
7811050C-M2	20L Low pressure reaction system, without bottom valve and jacket, with Distillation unit The basic reactor set 7811050C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L and Distillation unit, Reactor controller TCSS-1
7811050C-M3	20L Low pressure reaction system, without bottom valve and jacket, with Rectification & Distillation unit The basic reactor set 7811050C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L and Rectification & Distillation unit, Reactor controller TCSS-1
7811055C-M1	20L Low pressure reaction system, with bottom valve, without jacket The basic reactor set 7811055C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L, Reactor controller TCSS-1
7811055C-M2	20L Low pressure reaction system, with bottom valve, without jacket, with Distillation unit The basic reactor set 7811055C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L and Distillation unit, Reactor controller TCSS-1
7811055C-M3	20L Low pressure reaction system, with bottom valve, without jacket, with Rectification & Distillation unit The basic reactor set 7811055C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with CHM-20L and Rectification & Distillation unit, Reactor controller TCSS-1
7811060C-M1	20L Low pressure reaction system, without bottom valve, with jacket The basic reactor set 7811060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7811060C-M2	20L Low pressure reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7811060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7811060C-M3	20L Low pressure reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7811060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7811065C-M1	20L Low pressure reaction system, with bottom valve and jacket The basic reactor set 7811065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7811065C-M2	20L Low pressure reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7811065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7811065C-M3	20L Low pressure reaction system, with bottom valve and jacket The basic reactor set 7811065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Temperature control system		Stirring unit			Lift system with or without Distillation unit / Rectification unit		
	Basic reactor set	CHM-20L	TCCS-1	RVE-400	WB18D	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
									
7811050C-M1	●	●	●	●	●	●	●		
7811050C-M2	●	●	●	●	●	●		●	
7811050C-M3	●	●	●	●	●	●			●
7811055C-M1	●	●	●	●	●	●	●		
7811055C-M2	●	●	●	●	●	●		●	
7811055C-M3	●	●	●	●	●	●			●
7811060C-M1	●			●	●	●	●		
7811060C-M2	●			●	●	●		●	
7811060C-M3	●			●	●	●			●
7811065C-M1	●			●	●	●	●		
7811065C-M2	●			●	●	●		●	
7811065C-M3	●			●	●	●			●

Accessories

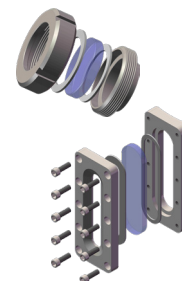
Basic reactor sets

Order No.	Description
7811050C	VR-20L reactor set, designed for electrical heating CHM
7811060C	VR-20L reactor set with double walled jacket, designed for heating with thermal liquid
7811055C	VR-20L reactor set, designed for electrical heating CHM, for usage with bottom drain valve
7811065C	VR-20L reactor set with double walled jacket, for the usage with bottom drain valve



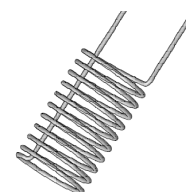
Illumination and Sight window

Order No.	Description
2130.001	LED lamp adapter, DN38
2123.002.01	Sight glass for VR-20L



Cooling coil

Order No.	Description
7745415C	VR-20L cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
7815211C	Bottom valve, 55bar, 232°C
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



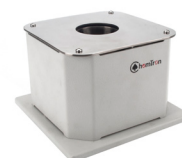
Temperature Measurement

Order No.	Description
7797450C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 450 mm, with cable
7777155C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 450 mm, with cable



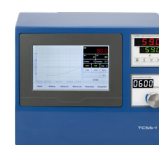
Electrical Heating

Order No.	Description
7757244C-20	CHM-20L, electrical heating jacket for VR-20L
7716058C	Insulating plate, made of PTFE, for reactors without bottom drain valve



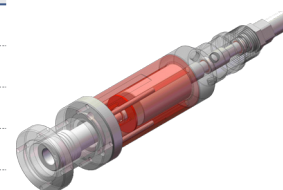
Controller

Order No.	Description
TCSS-1	Program controller for temperature and stirring, matching with heating-stirring mantle
9700160	Temperature controller LC6



Stirring

Order No.	Description
5727400C	RVE-400 mechanical clutch, made of stainless steel
5727400	RV-400 magnetic clutch, made of stainless steel 316 Ti, max torque 400 Ncm, lift system recommended
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7816425C-20	VR-20L paddle stirrer, made of stainless steel



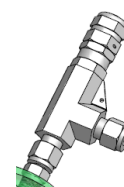
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7810120C	VR-20L sampling tube, made of stainless steel
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE
5735575	External gas fitting panel, for installation of up to 4 additional gas fittings with 8 mm tube connection, including panel, T-connections with tubings and flexible high pressure tubing L 1 m for connection to reactor lid



Pressure relief valve

Order No.	Description
10000471	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel
5797219	Spring for pressure relief valve p/n 10000471, blue, 3.4 - 24.1 bar
5797215	Spring for pressure relief valve p/n 10000471, yellow, 24.1 - 51.7 bar



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001221-70C	Reactor Lift for VR-20L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-71C	Reactor Lift for VR-20L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001221-72C	Reactor Lift for VR-20L in combination with CHM, ground stand, fixed head with electrical lift and swing mechanism, electrical heating NHM is not included
10001222-70C	Reactor Lift for VR-20L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-71C	Reactor Lift for VR-20L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-72C	Reactor Lift for VR-20L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001219	Auto drive to turnover the jacketed reaction vessel, especially suitable for the reaction vessel without bottom valve



Accessories/Consumables

Order No.	Description
5701017	Exhaust hose for rupture disc holder, L 2.5 m, G3/8" male
5701077	High pressure gas hose, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
N2112.010F	O-ring for VR-20L, PFA
N2112.010G	O-ring for VR-20L, FFKM
5751455	Rupture disc 25 bar, made of monel, D 24 mm, with certificate and PFA protection foil
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Stainless Steel Reactor

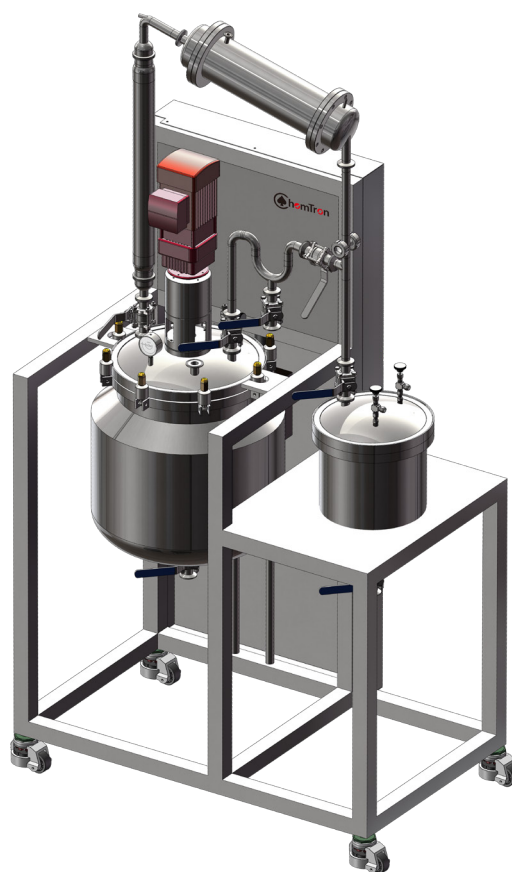
VR-30L designed to work at atmosphere pressure or under vacuum

Pilot Plant are ideally suitable for big volume experimental runs. Equipped with rectification and distillation units. This series reactor is available in stainless steel, with or without jacket.

The VR-30L reactor are notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, Silicon or Viton.

Features

- 30L / 5 bar / 200°C
- The vessel with jacket and bottom outlet
- Strong device is used to fix the reaction vessel and lid
- O-seal ring made of PTFE, Silicon or Viton
- Temperature control by heating and cooling circulator, such as JULABO unit
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil
- With rectification and distillation unit

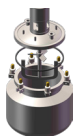








Specification

Model	VR-30L	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	30L
	Inner Dia.	350mm
	Inner Height	300mm
	Thickness	4mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	383mm
Lids	O.D.	400mm
	I.D.	350mm
Heating unit (Optional)	Thickness	28mm
	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Liquid receiving tray	Stainless steel

Standard packages

Order No.	Description
7812060C-M1	30L Stainless steel reaction system, without bottom valve, with jacket The basic reactor set 7812060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7812060C-M2	30L Stainless steel reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7812060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7812060C-M3	30L Stainless steel reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7812060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7812065C-M1	30L Stainless steel reaction system, with bottom valve and jacket The basic reactor set 7812065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7812065C-M2	30L Stainless steel reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7812065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7812065C-M3	30L Stainless steel reaction system, with bottom valve and jacket The basic reactor set 7812065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Stirring unit			Lift system with or without Distillation unit / Rectification unit		
		RVE-400	WB18D	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
7812060C-M1							
7812060C-M2	●	●	●	●	●	●	
7812060C-M3	●	●	●	●			●
7812065C-M1	●	●	●	●	●		
7812065C-M2	●	●	●	●		●	
7812065C-M3	●	●	●	●			●

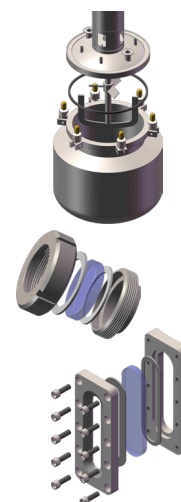
Accessories

Basic reactor sets

Order No.	Description
7812060C	VR-30L reactor set with double walled jacket, designed for heating with thermal liquid
7812065C	VR-30L reactor set with double walled jacket, for the usage with bottom drain valve

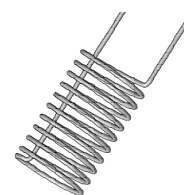
Illumination and Sight window

Order No.	Description
2130.001	LED lamp adapter, DN38
2123.001.01	Sight glass for VR-30L



Cooling coil

Order No.	Description
7745414C-30	VR-30L cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
8815211C	Bottom valve
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



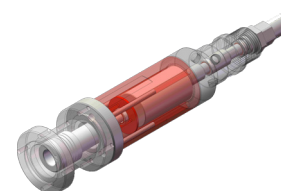
Temperature Measurement

Order No.	Description
7797450C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 450 mm, with cable
7777155C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 450 mm, with cable



Stirring

Order No.	Description
5727400C	RVE-400 mechanical clutch, made of stainless steel
5727400	RV-400 magnetic clutch, made of stainless steel 316 Ti, max torque 400 Ncm, lift system recommended
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7816425C-30	VR-30L paddle stirrer, made of stainless steel



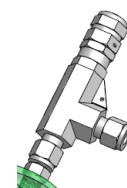
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7810120C	VR-30L sampling tube, made of stainless steel
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE



Pressure relief valve

Order No.	Description
10000471C	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001222-80C	Reactor Lift for VR-30L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-81C	Reactor Lift for VR-30L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-82C	Reactor Lift for VR-30L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001219	Auto drive to turnover the jacketed reaction vessel, especially suitable for the reaction vessel without bottom valve



Accessories/Consumables

Order No.	Description
8701077C	Tubing, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
N2112.011F	O-ring for VR-30L, PFA
N2112.011G	O-ring for VR-30L, FFKM
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Pilot Plants

10L to 200L



Stainless Steel Reactor

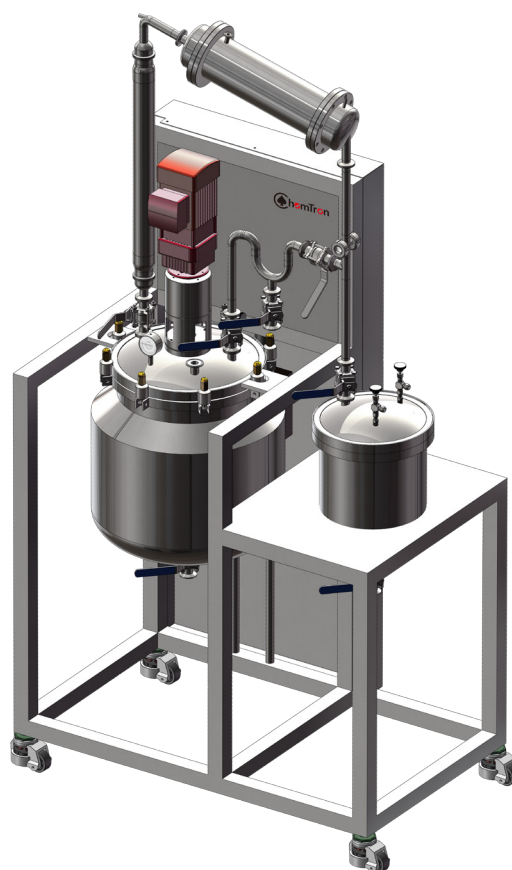
VR-50L designed to work at atmosphere pressure or under vacuum

Pilot Plant are ideally suitable for big volume experimental runs. Equipped with rectification and distillation units. This series reactor is available in stainless steel, with or without jacket.

The VR-50L reactor are notable for its ease of handling. The reactor is closed using a manual quick closure. The reactor seal is established using a conical flange lock and O-ring seal of PTFE, Silicon or Viton.

Features

- 50L / 5 bar / 200°C
- The vessel with jacket and bottom outlet
- Strong device is used to fix the reaction vessel and lid
- O-seal ring made of PTFE, Silicon or Viton
- Temperature control by heating and cooling circulator, such as JULABO unit
- Stirring by overhead stirrer
- Optionally internal heating/cooling coil
- With rectification and distillation unit

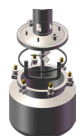








Specification

Model	VR-50L	
Performance and Material	Material	316L S.S.
	Max. Temperature	300°C
	Max. Pressure	≤5bar
Jacketed vessel	Volume	50L
	Inner Dia.	400mm
	Inner Height	350mm
	Thickness	4mm
O-ring	Material	PTFE (Viton, FFKM for optional)
	Size	433mm
Lids	O.D.	450mm
	I.D.	400mm
	Thickness	28mm
Heating unit (Optional)	JULABO unit	Yes
Stir	Type of sealling	Double mechanical seal
	Motor	Overhead stirring motor
	Speed	20~1800rpm(Other model for optional)
Frame	Type	SS Frame
	Liquid receiving tray	Stainless steel

Standard packages

Order No.	Description
7813060C-M1	50L Stainless steel reaction system, without bottom valve, with jacket The basic reactor set 7813060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7813060C-M2	50L Stainless steel reaction system, without bottom valve, with jacket, with Distillation unit The basic reactor set 7813060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7813060C-M3	50L Stainless steel reaction system, without bottom valve, with jacket, with Rectification & Distillation unit The basic reactor set 7813060C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included
7813065C-M1	50L Stainless steel reaction system, with bottom valve and jacket The basic reactor set 7813065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand, Thermostat or heating circulator is not included
7813065C-M2	50L Stainless steel reaction system, with bottom valve and jacket, with Distillation unit The basic reactor set 7813065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Distillation unit, Thermostat or heating circulator is not included
7813065C-M3	50L Stainless steel reaction system, with bottom valve and jacket The basic reactor set 7813065C, Overhead stirring motor, Mechanical clutch RVE-400, Paddle stirrer, Electric lifting stand with Rectification & Distillation unit, Thermostat or heating circulator is not included

Order No.	Basic reactor set	Stirring unit			Lift system with or without Distillation unit / Rectification unit		
		RVE-400	WB18D	Paddle stirrer	Electric lift stand	Reactor Lift with Distillation unit	Reactor Lift with Rectification & Distillation unit
							
7813060C-M1	●	●	●	●	●		
7813060C-M2	●	●	●	●		●	
7813060C-M3	●	●	●	●			●
7813065C-M1	●	●	●	●	●		
7813065C-M2	●	●	●	●		●	
7813065C-M3	●	●	●	●			●

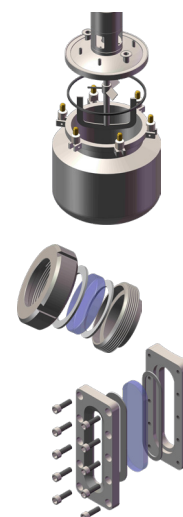
Accessories

Basic reactor sets

Order No.	Description
7813060C	VR-50L reactor set with double walled jacket, designed for heating with thermal liquid
7813065C	VR-50L reactor set with double walled jacket, for the usage with bottom drain valve

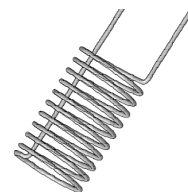
Illumination and Sight window

Order No.	Description
2130.001	LED lamp adapter, DN38
2123.001.01	Sight glass for VR-50L



Cooling coil

Order No.	Description
7745414C-50	VR-50L cooling coil, spiral design, made of stainless steel



Bottom drain valve

Order No.	Description
8815211C	Bottom valve
7815115C	Stand for reactor with bottom drain valve, height approx. 310 mm, made of stainless steel



Pressure and Vacuum Measurement

Order No.	Description
8810125C	Pressure and Vacuum gauge -1~+5 bar, Ø 63 mm, made of stainless steel



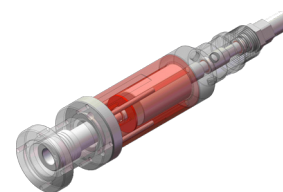
Temperature Measurement

Order No.	Description
7797450C	Thermocouple Typ K for the usage with TCSS, Ø 1.5 mm, L 450 mm, with cable
7777155C	PT-100 thermosensor for the usage with most heating circulators, Ø 1.5 mm, L 450 mm, with cable



Stirring

Order No.	Description
5727400C	RVE-400 mechanical clutch, made of stainless steel
5727400	RV-400 magnetic clutch, made of stainless steel 316 Ti, max torque 400 Ncm, lift system recommended
WB20C	Overhead stirrer, speed range from 20 to 2000 rpm, maximum torque up to 70Ncm
WB18D	Overhead stirrer, speed range from 20 to 1800 rpm, maximum torque up to 565Ncm
WB18C	Remotely controlled overhead stirrer, speed range from 20 to 800 rpm, maximum torque up to 1320Ncm
7816425C-50	VR-50L paddle stirrer, made of stainless steel



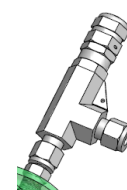
Armatures

Order No.	Description
5781631	Needle valve, for gas- or liquid feeding/extraction, 8 mm tube connection, made of stainless steel
10000333	T-connection set, including tubing and T-connection with 3 x 8 mm tube connection
7810120C	VR-50L sampling tube, made of stainless steel
5101811	Frit for stainless steel sampling tube
5101810	Frit for PTFE sampling tube, made of porous PTFE



Pressure relief valve

Order No.	Description
1000471C	Pressure relief valve, without spring, 8 mm tube connection, made of stainless steel



ressure relief valve SS

Lift system with or without Distillation unit / Rectification unit

Order No.	Description
10001222-90C	Reactor Lift for VR-50L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-91C	Reactor Lift for VR-50L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001222-92C	Reactor Lift for VR-50L with double jacket, ground stand, fixed head with electrical lift and swing mechanism
10001219	Auto drive to turnover the jacketed reaction vessel, especially suitable for the reaction vessel without bottom valve



Accessories/Consumables

Order No.	Description
8701077C	Tubing, made of stainless steel braided PTFE, 8 mm tube connections, L 2 m
N2112.011F	O-ring for VR-50L, PFA
N2112.011G	O-ring for VR-50L, FFKM
5900768	Sealing G3/8" for exhaust tubing p/n 5701017, made of PTFE



Pilot Plants

10L to 200L





WIGGENS
THE MAGIC MOTION



WIGGENS China

Room 303, Hall C, Office Building M8, No. 1
Jiuxianqiao East Road, Chaoyang District, Beijing 100015
Tel :+86-4008092068 Service: +86-400-650-2011



WIGGENS GmbH

Gässlesweg 22-24, 75334 Straubenhardt
Tel: +49 7248 4529088
www.wiggens.com