WIGGENS
THE MAGIC MOTION

EN

Chemical Process Equipment _ Synthesis, Separation and Purification

Energy | Petrochemical | Life Sciences | Cosmetics | Pharmaceutical | Environmental



About WIGGENS

What Does Wiggens Stand for?

***W**ide Product Range*
***I**nternational Orientation*
***G**reat Quality*
***G**reat Service*
***E**nergetic Team*
***N**ew Technology*
***S**olutions*

WIGGENS
THE MAGIC MOTION

Wiggens was established in 2005 with the goal of delivering the best laboratory equipment and service for reliable results. Since then Wiggens has been producing top-quality general laboratory equipment, analysis apparatus and chemical reaction solutions. Our brand Wiggens stands for high quality, durability and remarkable performance.

Wiggens is your reliable laboratory companion and provides products that can be used in different kinds of laboratory environments. The Wiggens product range includes:

* Rotary Evaporator
* Pump
* Vacuum Filtration Apparatus
* Heating & Mixing unit
* Incubator & Oven
* Analysis Apparatus
* Gas Generator
* Chemical Reactor

ChemVak

ChemVak, the product brand of Wiggens, is specialized in vacuum technology offering an extensive range of vacuum pumps for all applications, including chemical-resistant diaphragm pumps, oil-free pumps and rotary vane vacuum pumps, complemented by vacuum filtration equipment for a wide range of different applications. In addition, solvent recovery systems and bio-suction systems are part of the product range.

ChemTron

ChemTron is our product brand focusing on analysis apparatus, gas generators and chemical reaction solutions, as well as efficient chemical separation tools-rotary evaporator, automatic distillation system, crystalization system etc...

WIGGENS
THE MAGIC MOTION
Product Brand

ChemVak

* Pumps

ChemTron

* Analysis Apparatus
* Gas Generator
* Chemical Reactor



Chemical Process Equipment _ Synthesis



Bench Top Glass Reactor

250-5000mL
-60~+200°C
-1~0bar



Pilot Plant Glass Reactor _ EZChem series

10-100L
-60~+200°C
-1~0bar



Pilot Plant Glass Reactor _ PlusChem series

10-100L
-60~+200°C
-1~0.5bar



Pilot Plant Glass Reactor _ PlusChem series Triple Wall

10-100L
-60~+200°C
-1~0.5bar



Spherical Reactor

12-200L
RT~200°C
-1~0bar



Glass Pressure Reactor

500-5000mL
-50~+200°C
up to 3.1bar



Quartz Pressure Reactor

2-5L
RT~+160°C
up to 10bar



Glass Filler Reactor _ lab scale

0.6-6L
-60~+200°C
-1~2bar



Glass Filter Reactor _ pilot scale

10-100L
-60~+200°C
-1~0bar

PRODUCTION
KILO LAB
PILOT PLANT
LABORATORY

PREPARATION
PROCESS
FILTRATION
PURIFICATION
WASTE HANDLING



Homogenizing Reactor

1000-5000mL
-60~+200°C



Ultrasonic Reactor

3-2000mL



Photochemical Reactor

250-1000mL



Hydrogenation Reactor

9-1850mL
up to 4.1bar



Parallel Reaction Stations

20-250mL
RT+5~180°C



Ultra Low Temperature Liquid Nitrogen Glass Reactor

-180~+120°C

PRODUCTION
KILO LAB
PILOT PLANT
LABORATORY

PREPARATION
PROCESS
FILTRATION
PURIFICATION
WASTE HANDLING

Chemical Process Equipment _ Separation and Purification



Rotary evaporator _
lab scale Strike series

Up to 3 L



Rotary evaporator _
pilot scale ST20 series

6 L, 10 L, 20 L



Rotary evaporator _
industrial scale ST50, ST100 series

50L、100L



Thin film evaporator & Molecular distillation device

PRODUCTION

KILO LAB

PILOT PLANT

LABORATORY

PREPARATION

PROCESS

FILTRATION
PURIFICATION

WASTE HANDLING

Auto Reaction Controller



Wiggens auto reaction controller can integrate equipped with various function expansion interfaces to meet the reactor requirment of customer. It is controlled by a 7" touch screen, which can monitor and control the following parameters:

- Internal temperature (Temperature inside reactor)
- External temperature (Bath fluid temperature)
- Stirring speed
- Vacuum
- Vapor temperature (monitoring only)
- pH measurement

Realize process monitoring, process control, visual archiving, data recording, alarm output and emergency stop, scientists can use it to perform various reaction processes such as synthesis, distillation, extraction, and crystallization etc.

Compact design, flexible in configuration of different functional unit, which is very suitable for R&D laboratories.

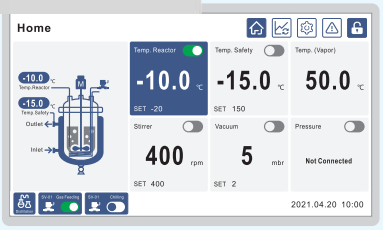
Display and Operation



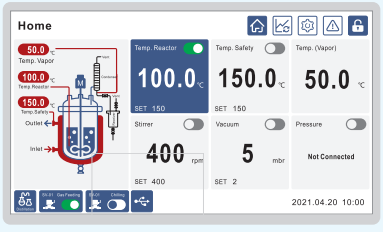
Main interface (Home)



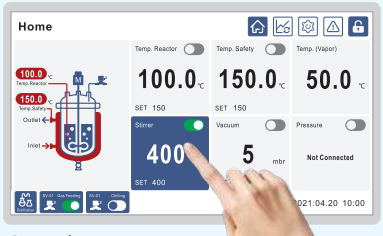
Heating mode



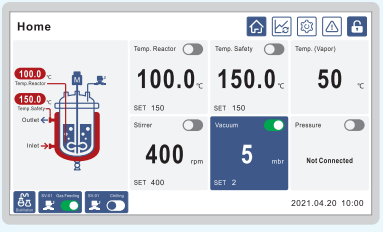
Cooling mode



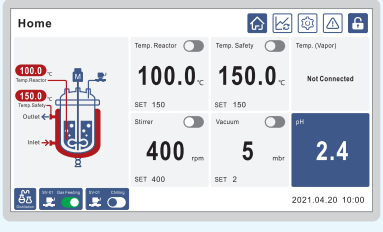
Distillation mode



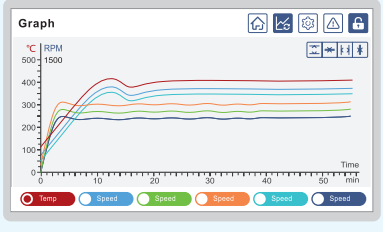
Set speed



Set vacuum



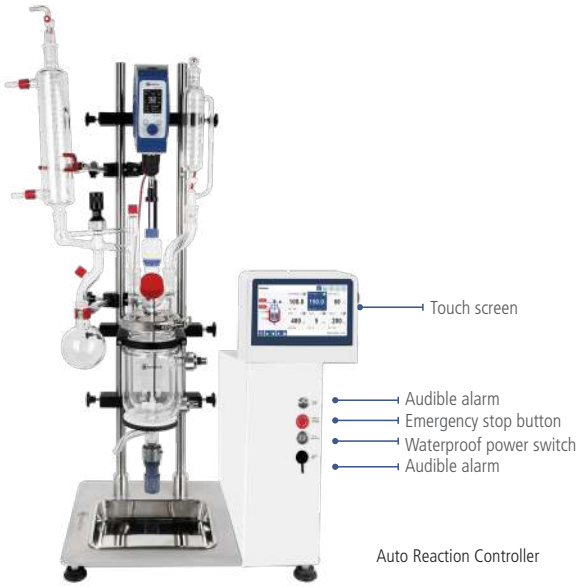
pH measurement



Monitoring interface (Graph)

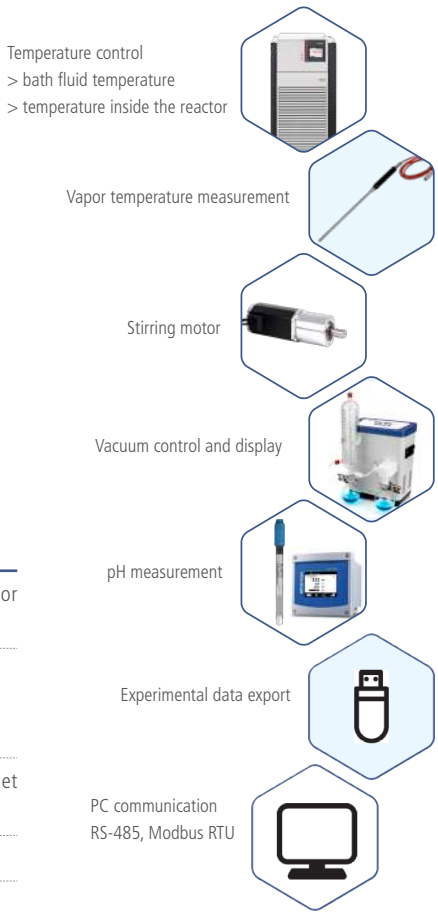


Alarm



Auto Reaction Controller

Communication Interface



Addons

Item	Function and connection port	Description
1	Stirring	Integrated stirring control system, for Wiggens stirrer (motor) or magnetic stirrer (motor not included)
2	Temperature control	Julabo models: CF31, CF41, DD, MS, Forte HT, Presto -Bath fluid temperature measurement -Reaction temperature measurement and control
3	Vacuum control and display	Integrated vacuum controller and sensor (vacuum pump, gas inlet adapter and tubing need to be ordered separately)
4	Vapor temperature measurement	Lemo port for pt-100 sensor
5	pH measurement	4-20mA interface for pH transmitter

Order information

Order No.	Part	Suitable for
JCRS-50	Controlling box with detachable touch screen	Bench top glass reactor
JCRS-51	Controlling box with detachable touch screen	EZChemtron Pilot reaction system PlusChemtron Pilot reaction system







INTRODUCES...

Auto-Reactor AR1.8

WIGGENS Introduces the newest addition to our reactor family "Auto reaction system AR1.8"

WIGGENS combine more than 20 years of reactor temperature controlling technology, Along with our key equipment partners, such as JULABO, Chemtron, Stroglass, glass, KGW, METTLER, we assemble process auto-Reactor to fit today's tough reaction requirements.

WIGGENS introduces our new systems for totally automated reactions. Systems are available in bench scale from 250mL up to 5000mL glass reaction system and kilo-scale from 10L up to 100L glass jacketed Reactor. It is also suitable for 25mL to 100L stainless steel reaction systems. The standard systems can control and data log two main parameters, including jacket temperature, motor speed. The display shows both the set and actual parameters.

You can also build your own custom system using other equipment (after certified by WIGGENS), with many other accessory combinations, such as a "clean-in-place" system, "constant pH reaction" system...

AR1.8 also supports touch screens. The software can control, data log, and graph reactions as they occur in real time. The time parameter can establish a delayed start time and set the reaction run time, thus setting the actual end time. Numerous safety parameters can also be set.

AR1.8 can interact with new or existing components, such as Julabo temperature control units, Wiggens stir motors, vaccum system, liquid dosing pump, Mettler balance, and also glassware from Steroglass, ChemTron glass and KGW



30L Glass reaction system

"Quality reactions Require quality controller Technology systems"



Interface

Equipment monitoring, Curve monitoring, Data query, programming control and system settings

User Management

Support Multi-user login entry and password settings, as well as user logs;

Avalible Equipment

- There is no limit to the number of devices that can be connected
- Support communication ports settings, device settings, and parameter settings
- Support digital signal communication
- Support analog signal acquisition and output, used to connect all devices with analog communication interfaces, such as pH, conductivity, pressure sensors, flow meters, liquid pump…
- Support switch signal control, such as solenoid valve, relay…

Software features

Main Screen

All access devices are visible and can be monitored and set up remotely

Graph Monitoring

Multi-y axis curve display, customizable curve attributes, and with curve scaling, cursor display, history curve query;

Data Management

Query real-time data and history data, and can be exported in Excel mode;
Programming Control: One parameter, or groups of parameters can be programmed in two modes: ladder mode, slope mode

Association control

Any parameter can be associated with another one or a different set of parameters
Data Upload: Upload data to the host computer or information center, The host computer or information center can also set up and monitor the equipment through the system. External communication interface supports MODBUS-RUT (RS485) , MODBUS TCP/PI (RJ45)

Log Management

User log, Running log, Programming log and Associated log, and can be queried and exported.



Auto-Reactor control system
(Customized version)



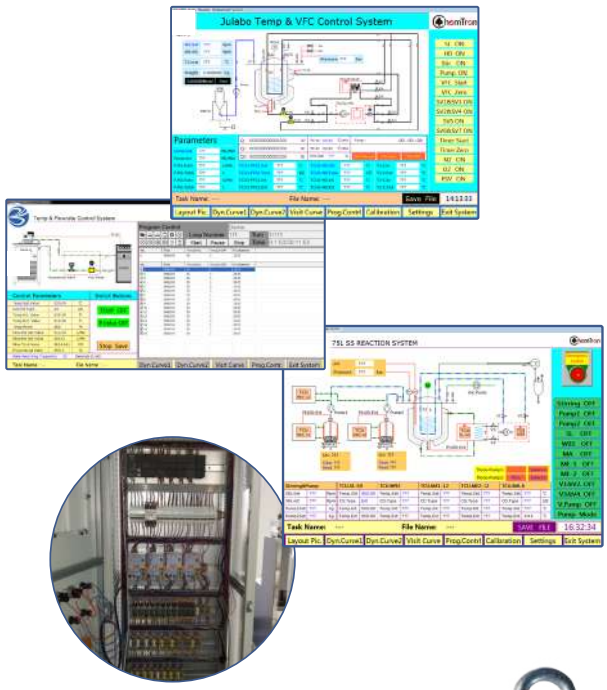
Auto Reactor 2.0

Auto Reactor 2.0 is a computer-controlled reactor system used in chemical/pharmaceutical research and development for process automation, reaction optimization, and scaling up. Its core is to achieve full parameter automatic and precise control of the synthesis process.

The core advantages of industrial reaction process control systems are significant, and they can adapt to the stringent requirements of multiple industries: integrating SIS interlocking, fault self diagnosis, and redundancy design for safety, ensuring reliable operation; Implement batch processing and phased precise control in terms of management and control, supporting rapid switching between multiple formulas; Compatible with multiple devices and bus protocols on the Internet, seamlessly integrating with the upper system to meet compliance data archiving requirements; Equipped with convenient human-machine collaboration function, supporting manual and automatic undisturbed switching and graded permission control, adapted to explosion-proof environment and industry regulations; Adopting modular design, supporting online modification and simulation testing, and maintaining flexible expansion.

Feature

- Can be fully customized according to customer processes
- Integrated SIS safety interlock, automatic triggering of emergency stop when parameters exceed the limit
- Hardware and software redundancy design ensures the safe operation of the system even in the event of partial failures
- Real time fault self diagnosis and grading alarm, recording SOE for easy accident tracing
- Support complex batch processing and multi recipe management
- Multi variable coordinated control, precise tracking of preset curves and measurement of materials
- Compatible with multiple buses and instruments, seamlessly integrated with upper level systems such as DCS and MES
- Hierarchical operation permission management, HMI visualization presenting device status
- Support automatic/manual disturbance free switching, convenient for debugging and emergency handling
- Compliant with explosion-proof and industry regulatory standards, meeting compliance requirements
- Modular programming, supporting online maintenance and simulation testing, easy to expand



Example of typical application scenarios:

- Polymerization
- Hazardous processes such as nitrification and hydrogenation
- Biological fermentation
- Biological fermentation crystallization, distillation



ATEX Version

BENCH TOP GLASS REACTOR

Standard volume: 250ml, 500ml, 1000ml, 2000ml and 5000ml

with or without jacket, triple wall version is also available



The All-in-one bench top glass reactor is a highly integrated and miniaturized laboratory reaction equipment, optimized for desktop intensive experimental scenarios. Different from traditional split-type glass reactors with scattered accessories, this all-in-one design integrates core modules including stirring drive, precise temperature control system, circulating cooling interface, sealed reaction cavity and operation panel into a single desktop unit, realizing plug-and-play use and greatly saving laboratory space.

The reaction vessel is made of high-purity borosilicate glass, which possesses excellent chemical inertness, high light transmittance and corrosion resistance, allowing real-time observation of reaction changes such as mixing, phase transition and crystallization. The built-in high-precision stirring and constant-temperature control system ensures stable and uniform reaction conditions, effectively improving experimental repeatability. The standardized sealed structure supports vacuum reaction and inert gas protection, meeting the requirements of oxygen-free and sealed synthesis experiments.

Featuring integrated design, compact structure, easy operation, low energy consumption and stable performance, this reactor is perfectly suitable for laboratory small-batch synthesis, fine chemical reaction screening, biomedical sample preparation, environmental analysis experiments and university scientific research teaching applications.

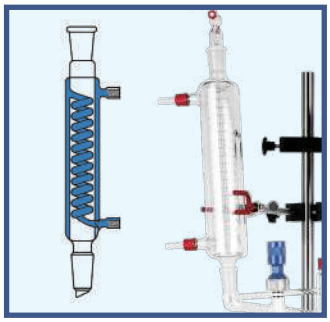
Bench Top Reactor

All-in-one



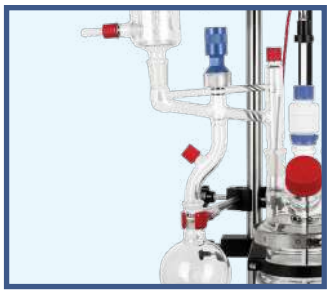
Reactor Lid

5-opening lid is standard, optional for PTFE lid (low temperature) or stainless steel lid (homogeneous or high stirring speed)



High Efficiency Condenser

Serpentine pipe and double jacket design ensure high condensation efficiency



Switchable Distillation Head

Condensation reflux and distillation can be switched by a valve



Stainless Steel Stand

Unique design allows easy installation and removal of glassware, All parts are made of high quality stainless steel, corrosion resistant. Standard with removable spill tray.



Dead Volume Free Bottom Valve

The industrial valve is a dead volume free PTFE spindle valve with sloped outlet. The spindle shall be pressed in without turning. In the valve housing is an additional spring mounted in. So the spring pressure of the spindle to the valve seat can be increased spring- loaded and the spindle regulates itself. This guarantees a good tightness at large variations of temperature. The industrial valve is available with a 10 mm bore hole (standard) and as desired with a 20mm bore hole.





Wide Application Range

The optimization of chemical reactions is enabled by having access to a broad and seamless range of reaction conditions: stirring and temperature control.



Jacketed Reaction Vessel

Volume from 250ml to 5000ml are optional. If lower temperature required, heatable reaction vessels with vacuum jacket is recommended.



High Torque Overhead Stirrer

WOHS-400 Pro is recommended for large volume or high viscosity sample



Universal Stirring Bearing

Unique features of the design are a permanently loaded Composite PTFE/ PEEK Seal and a Glass Ball- Bearing for rigidity and smoothness of operation, for use with standard taper ground glass joints can be used with PTFE, glass and meatal shaft stirrers.



Pressure Relief Manifold inlet/outlet

A pressure relief manifold for jacketed reaction vessels, designed to protect the vessel from breakage while isolated or disconnected from the circulator. Installed on the outlet side of the vessel, the manifold will reduce the likelihood of breakage caused by an excessive pressure differential exerted by expansion of the heat transfer fluid.



Auto Reaction Software (Optional)

Stirring speed, temperature and other parameters can be remotely controlled, all the data can be recorded.



Bench Top Reactor

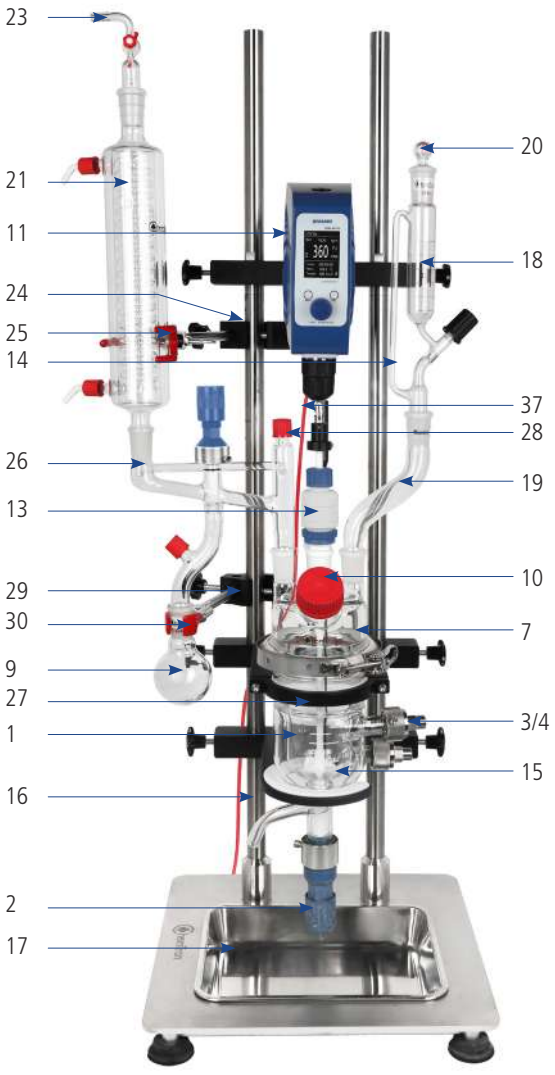
WRS-1501-02 Bench top reactor, all-in-one, jacketed, 250ml

NEW Bench top Reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the Bench top Reactor support stand and clamping system allows for quick and easy installation/removal of glassware and fits into most fume hood. System is supplied complete with the components listed below and numbered on the image below.

250ml complete bench top Reactor

Part number	Description
WRS-1501-021	Complete with Glassware & Stand, and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 8)
WRS-1501-022	Complete with Glassware, Stand, and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 8)
WRS-1501-021M	Complete with Glassware & Stand, Multi channel regulating valve and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 9)
WRS-1501-022M	Complete with Glassware, Stand, Multi channel regulating valve and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 9)

Approx. Stand Dimensions (W x D x H): 500x 440x1200mm



Specification

Max. reaction volume recommendation	250mL
Flange	DN100
Bore diameter of bottom valve	0-10mm
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200°C
Vessel pressure	suitable for atmospheric and vacuum reaction
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation If high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø8mm / 500mm
Blade diameter	40mm (4 blade angled type stir paddle)
Length of condenser	300mm
Volume of collection flask	125mL
Volume of liquid funnel	60mL
Distance between discharge port and spill tray	130mm
Weight	28.5kg

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction Vessel			
1	CRS-0839-47	250mL Jacketed reaction vessel	250ml flask, cylindrical, jacketed, 100mm flange, without drain valve, DN15 inlet and outlet of jacket	1
2	CRS-4153B-S	Bottom outlet valve	Bottom outlet valve typy "j", 10mm, approx.95mm	1
3	4200	Metal adapter with clamp	Metal adapter for thermostat hoses (DN15 to m16x1)	2
4	4201	Silicone sealant DN15	Silicone sealant DN15, -60℃ to +200℃	2
5*	JRS-11081-21	Clamp Holder	Clamp holder	2
6*	JRS-11065-16	3 Prong	3 Prong, extended, large	2
	Part2 Reactor lid			
7	JRS-2904-01	Reactor lid	Lid, 100mm, 5 neck, 24/40 CN, (3) 24/40 SN, (1) GL45 SN	1
8	JRS-1701-02	O-Ring	100mm pfa encapsulated O-ring	1
9	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
10	JRS-2301-01	Cap	Cap, solid, GL45	1
	Part3 Stirring unit			
11	W3041015	WOHS-15 Pro Stirrer	Digital overhead stirrer WOHS-15 pro	1
12	W3041018	WOHS-400 Pro Stirrer	Digital overhead stirrer WOHS-400 pro	1
13	5-104-7	Stirring bearing	8mm PTFE/peek stirring bearing	1
14	JRS-8126-05N	Shaft coupling	8mm shaft coupling	1
15	5-250-8-2	Screw propeller	Screw propeller, 4-bladed (PTFE coated), shaft ø8mm, l=500mm, rotor ø40mm	1
	Part4 Reactor stand			
16	CRS-2602-02	Reactor stand	Smart supporting structure	1
17	CR-13221	Spill tray	For bench top reactor supporting sturcture, stainless steel	1
	Part5 Liquid funnel			
18	JRS-2803-01	Funnel	Funnel, addition, 60ml, 0-4mm metering valve, 24/40 joints	1
19	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
20	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
21	JRS-2506-09	Condenser	Jacketed, 300mm, 24/40	1
22	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
23	JRS-2012-02	Vacuum adapter	Vacuum adapter, 24/40	1
24	JRS-11081-21	Clamp holder	Clamp holder	1
25	JRS-11065-16	3 Prong	3 Prong, extended, large	1
	Part7 Distillation unit			
26	JRS-2619-01	Distillation reflux / divider head	Distillation reflux / divider head claisen style	1
27	JRS-6887-232	125ml flask	125ml flask, single neck, 24/40	1
28	JRS-2302-05	Cap	Cap, solid, GL18	1
29	JRS-11081-21	Clamp holder	Clamp holder	1
30	JRS-11073-20	2 Prong	2 Prong, extended, large	1
	Part8 Adapters and clamps			
31	JRS-5028-31	Temperature sensor adapter	Temperature sensor adapter, O.D.=6.5mm, 24/40	1
32	JRS-7643-08	PTFE sleeves	PTFE sleeves , 24/40	1
33	JRS-7598-24	Keck clip	Keck clip, 24/40	1
	Part9 Multi channel regulating valve			
34	JRS-12194-02	Multi channel regulating valve	Multi channel regulating valve outlet	1
35	JRS-12194-06	Multi channel regulating valve	Multi channel regulating valve inlet	1
36	8930220	Metal tubing	0.5 M metal tubing, insulated, 2 fittings m16x1 female (-50...+200 ℃)	2
	Optional			
37	8981015	Temperature sensor	300x6mm, SS/PTFE, 3m cable	1

*Not included in JRS-1501-021M and JRS-1501-022M

Bench Top Reactor

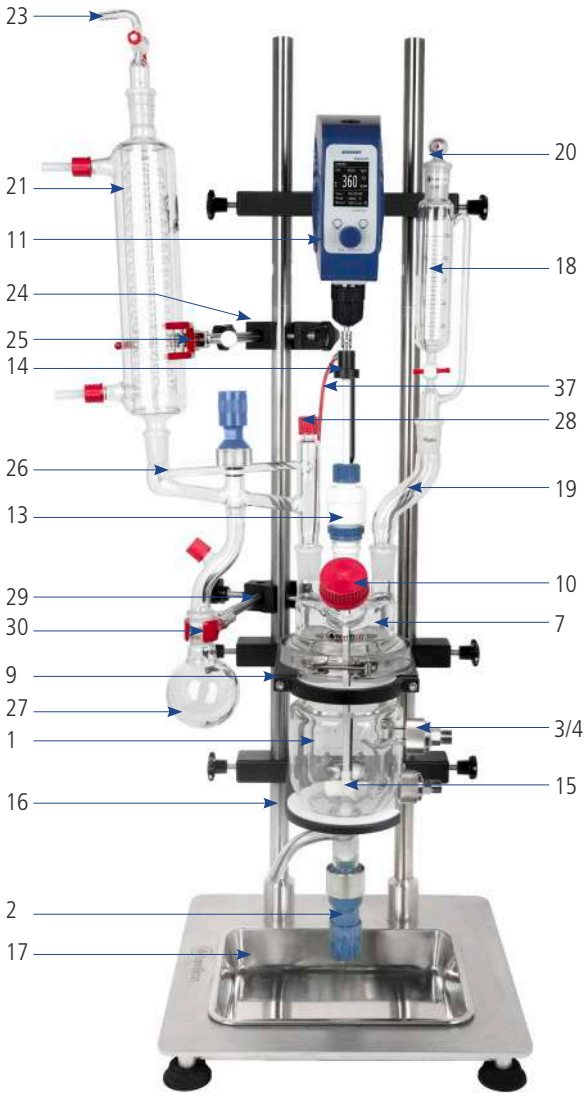
WRS-1501-03 Bench top reactor, all-in-one, jacketed, 500ml

NEW Bench top Reactor are complete with support stand, overhead stirrer and glassware. Available with the optional multi channel regulating valve. The unique design of the Bench top Reactor support stand and clamping system allows for quick and easy installation/removal of glassware and fits into most fume hood. System is supplied complete with the components listed below and numbered on the image below.

500ml complete bench top Reactor

Part number	Description
WRS-1501-031	Complete with Glassware & Stand, and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 8)
WRS-1501-032	Complete with Glassware, Stand, and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 8)
WRS-1501-031M	Complete with Glassware & Stand, Multi channel regulating valve and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 9)
WRS-1501-032M	Complete with Glassware, Stand, Multi channel regulating valve and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 9)

Approx. Stand Dimensions (W x D x H): 500x 440x1200mm



Specification

Max. reaction volume recommendation	500mL
Flange	DN100
Bore diameter of bottom valve	0-10mm
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	suitable for atmospheric and vacuum reaction
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation If high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø8mm / 500mm
Blade diameter	40mm(4 blade angled type stir paddle)
Length of condenser	300mm
Volume of collection flask	250mL
Volume of liquid funnel	125mL
Distance between discharge port and spill tray	130
Weight	28.9kg

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction Vessel			
1	CRS-0839-48	500ml jacketed reaction vessel	500ml flask, cylindrical, jacketed, 100mm flange, without drain valve, DN15 inlet and outlet of jacket	1
2	CRS-4153B-S	Bottom outlet valve	Bottom outlet valve typy "j", 10mm, approx.95mm	1
3	4200	Metal adapter with clamp	Metal adapter for thermostat hoses (DN15 to m16x1)	2
4	4201	Silicone sealant DN15	Silicone sealant DN15, -60℃ to +200℃	2
5*	JRS-11081-21	Clamp holder	Clamp holder	2
6*	JRS-11065-16	3 Prong	3 Prong, extended, large	2
	Part2 Reactor lid			
7	JRS-2904-01	Reactor lid	Lid, 100mm, 5 neck, 24/40 CN, (3) 24/40 SN, (1) GL45 SN	1
8	JRS-1701-02	O-ring	100mm pfa encapsulated O-ring	1
9	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
10	JRS-2301-01	Cap	Cap, solid, GL45	1
	Part3 Stirring unit			
11	W3041015	WOHS-15 pro	Digital overhead stirrer WOHS-15 pro	1
12	W3041018	WOHS-400 pro	Digital overhead stirrer WOHS-400 pro	1
13	5-104-7	Stirring bearing	8mm PTFE/peek stirring bearing	1
14	JRS-8126-05N	Shaft coupling	8mm shaft coupling	1
15	5-250-8-2	Screw propeller	Screw propeller, 4-bladed (PTFE coated), shaft ø8mm, l=500mm, rotor ø40mm	1
	Part4 Reactor stand			
16	CRS-2602-02	Reactor stand	Smart supporting structure	1
17	CR-13221	Spill tray	For bench top reactor supporting sturcture, stainless steel	1
	Part5 Liquid funnel			
18	JRS-2803-02	Funnel	Funnel, addition, 125ml, 0-4mm metering valve, 24/40 joints	1
19	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
20	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
21	JRS-2506-09	Condenser	Jacketed, 300mm, 24/40	1
22	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
23	JRS-2012-02	Vacuum adapter	Vacuum adapter, 24/40	1
24	JRS-11081-21	Clamp holder	Clamp holder	1
25	JRS-11065-16	3 Prong	3 Prong, extended, large	1
	Part7 Distillation unit			
26	JRS-2619-01	Distillation reflux / divider head	Distillation reflux / divider head claisen style	1
27	JRS-6887-224	250ml flask	250ml flask, single neck	1
28	JRS-2302-05	Cap	Cap, solid, GL18	1
29	JRS-11081-21	Clamp holder	Clamp holder	1
30	JRS-11073-20	2 Prong	2 Prong, extended, large	1
	Part8 Adapters and clamps			
31	JRS-5028-31	Temperature sensor adapter	Temperature sensor adapter, O.D.=6.5mm, 24/40	1
32	JRS-7643-08	PTFE sleeves	PTFE sleeves , 24/40	1
33	JRS-7598-24	Keck clip	Keck clip, 24/40	1
	Part9 Multi channel regulating valve			
34	JRS-12194-02	Multi channel regulating valve	Multi channel regulating valve outlet	1
35	JRS-12194-06	Multi channel regulating valve	Multi channel regulating valve inlet	1
36	8930220	Metal tubing	0.5 M metal tubing, insulated, 2 fittings m16x1 female (-50...+200 ℃)	2
	Optional			
37	8981015	Temperature sensor	300x6mm, SS/PTFE, 3m cable	1

*Not included in JRS-1501-021M and JRS-1501-022M

Bench Top Reactor

WRS-1501-04 Bench top reactor, all-in-one, jacketed, 1000ml

NEW Bench top Reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the Bench top Reactor support stand and clamping system allows for quick and easy installation/removal of glassware and fits into most fume hood. System is supplied complete with the components listed below and numbered on the image below.

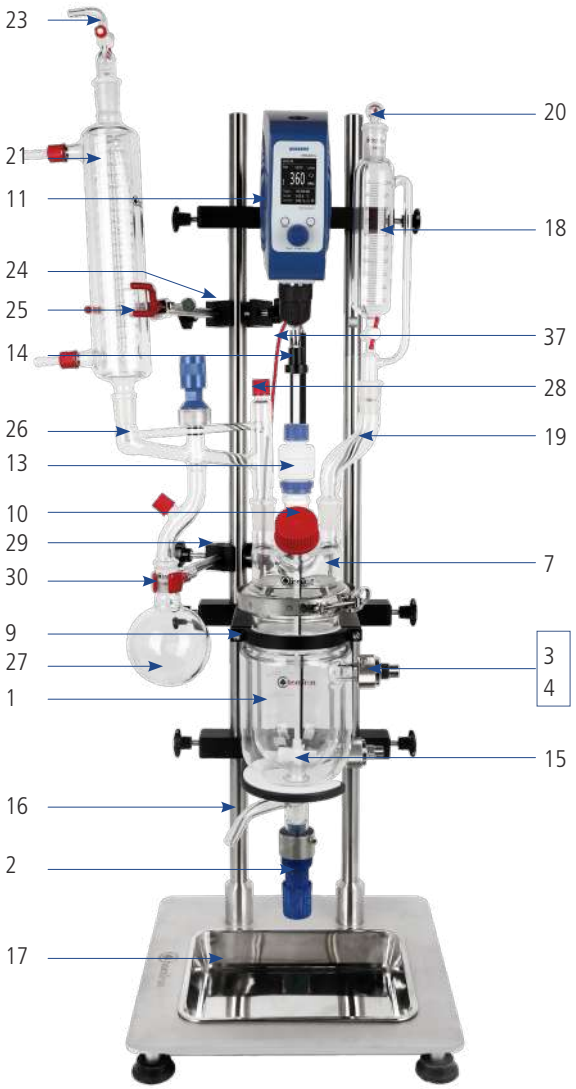
1000ml complete bench top Reactor

Part number	Description
WRS-1501-041	Complete with Glassware & Stand, and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 8)
WRS-1501-042	Complete with Glassware, Stand, and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 8)
WRS-1501-041M	Complete with Glassware & Stand, Multi channel regulating valve and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 9)
WRS-1501-042M	Complete with Glassware, Stand, Multi channel regulating valve and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 9)

Specification

Max. reaction volume recommendation	1000mL
Flange	DN100
Bore diameter of bottom valve	0-10mm
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	suitable for atmospheric and vacuum reaction
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation If high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø10mm / 550mm
Blade diameter	70mm (4 blade angled type stir paddle)
Length of condenser	300mm
Volume of collection flask	500mL
Volume of liquid funnel	250mL
Distance between discharge port and spill tray	140
Weight	29.2kg

Approx. Stand Dimensions (W x D x H): 500x 440x1220mm



Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction Vessel			
1	CRS-0841-10	1000ml jacketed reaction vessel	1000ml flask, cylindrical, jacketed, 100mm flange, without drain valve, DN15 inlet and outlet of jacket	1
2	CRS-4153B-S	Bottom outlet valve	Bottom outlet valve typy "j", 10mm, approx.95mm	1
3	4200	Metal adapter with clamp	Metal adapter for thermostat hoses (DN15 to m16x1)	2
4	4201	Silicone sealant DN15	Silicone sealant DN15, -60℃ to +200℃	2
5*	JRS-11081-21	Clamp holder	Clamp holder	2
6*	JRS-11065-16	3 Prong	3 Prong, extended, large	2
	Part2 Reactor lid			
7	JRS-2904-01	Reactor lid	Lid, 100mm, 5 neck, 24/40 CN, (3) 24/40 SN, (1) GL45 SN	1
8	JRS-1701-02	O-ring	100mm pfa encapsulated O-ring	1
9	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
10	JRS-2301-01	Cap	Cap, solid, GL45	1
	Part3 Stirring unit			
11	W3041015	WOHS-15 pro	Digital overhead stirrer WOHS-15 pro	1
12	W3041018	WOHS-400 pro	Digital overhead stirrer WOHS-400 pro	1
13	5-105-7	Stirring bearing	10mm PTFE/peek stirring bearing	1
14	JRS-8126-06N	Shaft coupling	10mm shaft coupling	1
15	5-255-10-2	Screw propeller	Screw propeller, 4-bladed (PTFE coated), shaft ø10mm, l=550mm, rotor ø70mm	1
	Part4 Reactor stand			
16	CRS-2602-02	Reactor stand	Smart supporting structure	1
17	CR-13221	Spill tray	For bench top reactor supporting sturcture, stainless steel	1
	Part5 Liquid funnel			
18	JRS-2803-03	Funnel	Funnel, addition, 250ml, 0-4mm metering valve, 24/40 joints	1
19	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
20	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
21	JRS-2506-09	Condenser	Jacketed, 300mm, 24/40	1
22	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
23	JRS-2012-02	Vacuum adapter	Vacuum adapter, 24/40	1
24	JRS-11081-21	Clamp holder	Clamp holder	1
25	JRS-11065-16	3 Prong	3 Prong, extended, large	1
	Part7 Distillation unit			
26	JRS-2619-01	Distillation reflux / divider head	Distillation reflux / divider head claisen style	1
27	JRS-6887-226	500ml flask	500ml flask, single neck	1
28	JRS-11081-21	Clamp holder	Clamp holder	1
29	JRS-11073-20	2 Prong	2 Prong, extended, large	1
30	JRS-2302-05	Cap	Cap, solid, GL18	1
	Part8 Adapters and clamps			
31	JRS-5028-31	Temperature sensor adapter	Temperature sensor adapter, O.D.=6.5mm, 24/40	1
32	JRS-7643-08	PTFE sleeves	PTFE sleeves , 24/40	1
33	JRS-7598-24	Keck clip	Keck clip, 24/40	1
	Part9 Multi channel regulating valve			
34	JRS-12194-02	Multi channel regulating valve	Multi channel regulating valve outlet	1
35	JRS-12194-06	Multi channel regulating valve	Multi channel regulating valve inlet	1
36	8930220	Metal tubing	0.5 M metal tubing, insulated, 2 fittings m16x1 female (-50...+200 ℃)	2
	Optional			
37	89810154	Temperature sensor	400x6mm, SS/PTFE, 3m cable	1

*Not included in JRS-1501-021M and JRS-1501-022M

Bench Top Reactor

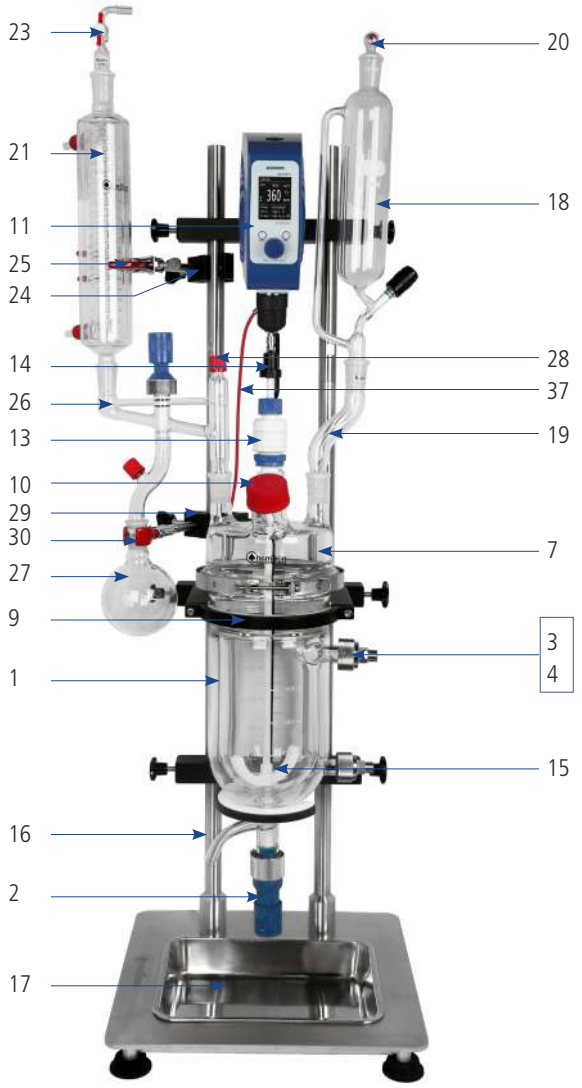
WRS-1501-05 Bench top reactor, all-in-one, jacketed, 2000ml

NEW Bench top Reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the Bench top Reactor support stand and clamping system allows for quick and easy installation/removal of glassware and fits into most fume hood. System is supplied complete with the components listed below and numbered on the image below.

2000ml complete bench top Reactor

Part number	Description
WRS-1501-051	Complete with Glassware & Stand, and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 8)
WRS-1501-052	Complete with Glassware, Stand, and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 8)
WRS-1501-051M	Complete with Glassware & Stand, Multi channel regulating valve and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 9)
WRS-1501-052M	Complete with Glassware, Stand, Multi channel regulating valve and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 9)

Approx. Stand Dimensions (W x D x H): 530x 440x1280mm



Specification

Max. reaction volume recommendation	2000mL
Flange	DN150
Bore diameter of bottom valve	0-10mm
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	suitable for atmospheric and vacuum reaction
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation If high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø10mm / 550mm
Blade diameter	100mm (Anchor style stir paddle)
Length of condenser	300mm
Volume of collection flask	1000mL
Volume of liquid funnel	500mL
Distance between discharge port and spill tray	140
Weight	33kg

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction Vessel			
1	CRS-0829-95	2000ml jacketed reaction vessel	2000ml flask, cylindrical, jacketed, 150mm flange, without drain valve, DN15 inlet and outlet of jacket	1
2	CRS-4153B-L	Bottom outlet valve	Bottom outlet valve typy "j", 10mm, approx.115mm	1
3	4200	Metal adapter with clamp	Metal adapter for thermostat hoses (DN15 to m16x1)	2
4	4201	Silicone sealant DN15	Silicone sealant DN15, -60℃ to +200℃	2
5*	JRS-11081-21	Clamp holder	Clamp holder	2
6*	JRS-11065-16	3 Prong	3 Prong, extended, large	2
	Part2 Reactor lid			
7	JRS-2904-03	Reactor lid	Lid, 150mm, 5 neck, 24/40 CN, (3) 24/40 SN, 45° angled GL45 SN	1
8	JRS-1701-03	O-ring	150mm pfa encapsulated O-ring	1
9	JRS-2401-03	Clamp	Clamp, flange, 150mm	1
10	JRS-2301-01	Cap	Cap, solid, GL45	1
	Part3 Stirring unit			
11	W3041015	WOHS-15 pro	Digital overhead stirrer WOHS-15 pro	1
12	W3041018	WOHS-400 pro	Digital overhead stirrer WOHS-400 pro	1
13	5-105-7	Stirring bearing	10mm PTFE/peek stirring bearing	1
14	JRS-8126-06N	Shaft coupling	10mm shaft coupling	1
15	5-0355-10-2	Anchor impeller	Anchor impeller (PTFE coated), shaft ø10mm, l=650mm, rotor ø100mm	1
	Part4 Reactor stand			
16	CRS-2602-03	Reactor stand	Smart supporting structure	1
17	CR-13221	Spill tray	For bench top reactor supporting sturcture, stainless steel	1
	Part5 Liquid funnel			
18	JRS-2803-04	Funnel	Funnel, addition, 500ml, 0-4mm metering valve, 24/40 joints	1
19	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
20	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
21	JRS-2506-09	Condenser	Jacketed, 300mm, 24/40	1
22	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
23	JRS-2012-02	Vacuum adapter	Vacuum adapter, 24/40	1
24	JRS-11081-21	Clamp holder	Clamp holder	1
25	JRS-11065-16	3 Prong	3 Prong, extended, large	1
	Part7 Distillation unit			
26	JRS-2619-01	Distillation reflux / divider head	Distillation reflux / divider head claisen style	1
27	JRS-6887-226	500ml flask	500ml flask, single neck	1
28	JRS-2302-05	Cap	Cap, solid, GL18	1
29	JRS-11081-21	Clamp holder	Clamp holder	1
30	JRS-11073-20	2 Prong	2 Prong, extended, large	1
	Part8 Adapters and clamps			
31	JRS-5028-31	Temperature sensor adapter	Temperature sensor adapter, O.D.=6.5mm, 24/40	1
32	JRS-7643-08	PTFE sleeves	PTFE sleeves , 24/40	1
33	JRS-7598-24	Keck clip	Keck clip, 24/40	1
	Part9 Multi channel regulating valve			
34	JRS-12194-02	Multi channel regulating valve	Multi channel regulating valve outlet	1
35	JRS-12194-06	Multi channel regulating valve	Multi channel regulating valve inlet	1
36	8930220	Metal tubing	0.5 M metal tubing, insulated, 2 fittings m16x1 female (-50...+200 ℃)	2
	Optional			
37	89810154	Temperature sensor	400x6mm, SS/PTFE, 3m cable	1

*Not included in JRS-1501-021M and JRS-1501-022M

Bench Top Reactor

WRS-1501-06 Bench top reactor, all-in-one, jacketed, 5000ml

NEW Bench top Reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the Bench top Reactor support stand and clamping system allows for quick and easy installation/removal of glassware and fits into most fume hood. System is supplied complete with the components listed below and numbered on the image below.

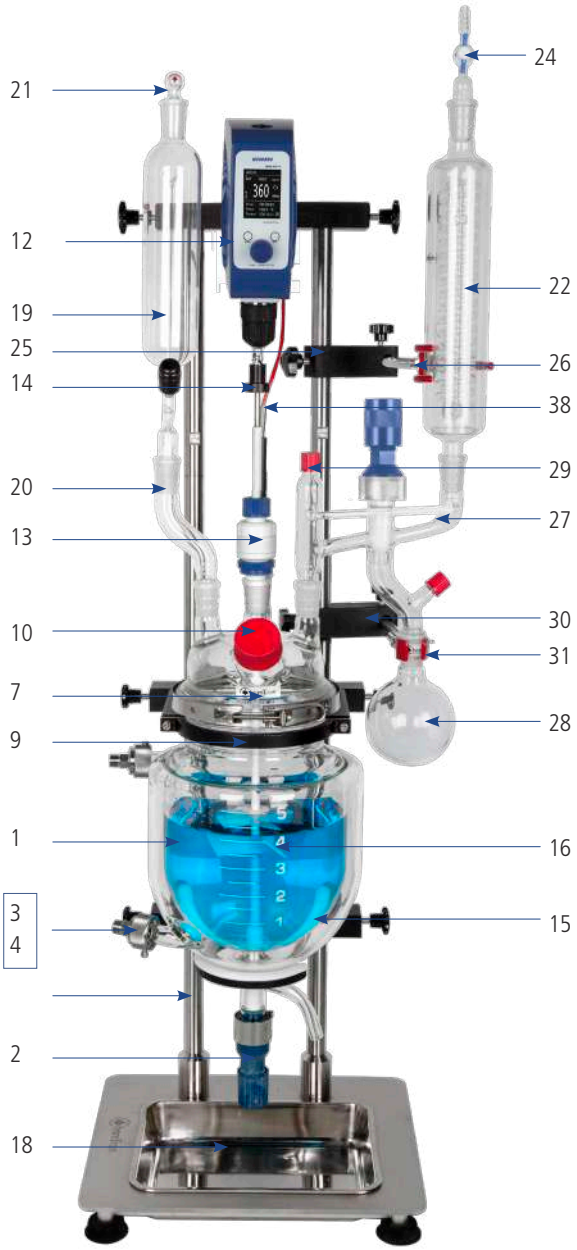
5000ml complete bench top Reactor

Part number	Description
WRS-1501-061	Complete with Glassware & Stand, and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 8)
WRS-1501-062	Complete with Glassware, Stand, and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 8)
WRS-1501-061M	Complete with Glassware & Stand, Multi channel regulating valve and Digital Overhead Stirrer WOHS-15 Pro (Part 1-Part 9)
WRS-1501-062M	Complete with Glassware, Stand, Multi channel regulating valve and High Torque Overhead Stirrer WOHS-400 Pro (Part 1-Part 9)

Approx. Stand Dimensions (W x D x H):
550x 440x1300mm

Specification

Max. reaction volume recommendation	5000mL
Flange	DN150
Bore diameter of bottom valve	0-10mm
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	suitable for atmospheric and vacuum reaction
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation If high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø10mm / 650mm
Blade diameter	Low position: 140mm(Anchor Style Stir Paddle) High position: 70mm(4 blade angled type stir paddle)
Length of condenser	300mm
Volume of collection flask	2000mL
Volume of liquid funnel	1000mL
Distance between discharge port and spill tray	150
Weight	37kg



Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction Vessel			
1	CRS-0841-11	5000ml jacketed reaction vessel	5000ml flask, cylindrical, jacketed, 150mm flange, without drain valve, DN15 inlet and outlet of jacket	1
2	CRS-4153B-L	Bottom outlet valve	Bottom outlet valve typy "j", 10mm, approx.115mm	1
3	4200	Metal adapter with clamp	Metal adapter for thermostat hoses (DN15 to m16x1)	2
4	4201	Silicone sealant DN15	Silicone sealant DN15, -60℃ to +200℃	2
5*	JRS-11081-21	Clamp holder	Clamp holder	2
6*	JRS-11065-16	3 Prong	3 Prong, extended, large	2
	Part2 Reactor lid			
7	JRS-2904-03	Reactor lid	Lid, 150mm, 5 neck, 24/40 CN, (3) 24/40 SN, 45° angled GL45 SN	1
8	JRS-1701-03	O-ring	150mm pfa encapsulated O-ring	1
9	JRS-2401-03	Clamp	Clamp, flange, 150mm	1
10	JRS-2301-01	Cap	Cap, solid, GL45	1
	Part3 Stirring unit			
11	W3041015	WOHS-15 pro	Digital overhead stirrer WOHS-15 pro	1
12	W3041018	WOHS-400 pro	Digital overhead stirrer WOHS-400 pro	1
13	5-105-7	Stirring bearing	10mm PTFE/peek stirring bearing	1
14	JRS-8126-06N	Shaft coupling	10mm shaft coupling	1
15	5-0365-10-2	Anchor impeller	Anchor impeller (PTFE coated), shaft ø10mm, l=650mm, rotor ø140mm	1
16	5-610090	Adjustable turbine	Adjustable turbine, shaft ø10mm, 90mm	1
	Part4 Reactor stand			
17	CRS-2602-03	Reactor stand	Smart supporting structure	1
18	CR-13221	Spill tray	For bench top reactor supporting sturcture, stainless steel	1
	Part5 Liquid funnel			
19	JRS-2803-05	Funnel	Funnel, addition, 1000ml, 0-4mm metering valve, 24/40 joints	1
20	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
21	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
22	JRS-2506-09	Condenser	Jacketed, 300mm, 24/40	1
23	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
24	JRS-2012-02	Vacuum adapter	Vacuum adapter, 24/40	1
25	JRS-11081-21	Clamp holder	Clamp holder	1
26	JRS-11065-16	3 Prong	3 Prong, extended, large	1
	Part7 Distillation unit			
27	JRS-2619-01	Distillation reflux / divider head	Distillation reflux / divider head claisen style	1
28	JRS-6887-227	1000ml flask	1000ml flask, single neck	1
29	JRS-2302-05	Cap	Cap, solid, GL18	1
30	JRS-11081-21	Clamp holder	Clamp holder	1
31	JRS-11073-20	2 Prong	2 Prong, extended, large	1
	Part8 Adapters and clamps			
32	JRS-5028-31	Temperature sensor adapter	Temperature sensor adapter, O.D.=6.5mm, 24/40	1
33	JRS-7643-08	PTFE sleeves	PTFE sleeves , 24/40	1
34	JRS-7598-24	Keck clip	Keck clip, 24/40	1
	Part9 Multi channel regulating valve			
35	JRS-12194-02	Multi channel regulating valve	Multi channel regulating valve outlet	1
36	JRS-12194-06	Multi channel regulating valve	Multi channel regulating valve inlet	1
37	8930220	Metal tubing	0.5 M metal tubing, insulated, 2 fittings m16x1 female (-50...+200 ℃)	2
	Optional			
38	89810154	Temperature sensor	400x6mm, SS/PTFE, 3m cable	1
39	CRS-2602-13	Reactor stand, installed on the ground	Smart supporting structure	1

*Not included in JRS-1501-021M and JRS-1501-022M

PILOT PLANT GLASS REACTOR _

EZChem series

Standard volume: 10L,20L,30L,50L and 100L,

with jacket, triple wall version is also available

The 10L-100L Jacketed Glass Reactor is a pilot-scale and small-production reaction device tailored for medium-to-large volume experimental and trial production scenarios. The whole vessel is made of high-strength thickened borosilicate glass, which features outstanding corrosion resistance, low thermal expansion coefficient and excellent light transmittance, fully adapting to long-term continuous reaction of various organic, acidic and weak alkaline media without contamination or reaction interference.

The unique jacket structure enables the circulation of heating or cooling media, allowing rapid and uniform temperature regulation and elimination of local temperature differences, thereby ensuring high reproducibility of reaction results. Equipped with standard precision ground joints, the reactor achieves seamless connections between glass components. It supports flexible disassembly, facilitating internal cleaning, material replacement and equipment maintenance, which significantly improves experimental efficiency and equipment durability.

Available in multiple specifications ranging from 10L to 100L, this reactor meets the experimental demands from scale-up verification to pilot trial production. Supporting vacuum reaction, inert gas protection, constant-temperature stirring, distillation and concentration processes, it is an indispensable core device for chemical research, pharmaceutical development, new material pilot test and fine chemical industrialization.



PILOT PLANT GLASS REACTOR _

PlusChem series

Standard volume: 10L,20L,30L,50L and 100L,

with jacket, triple wall version is also available

The 10L-100L Jacketed Glass Reactor is a pilot-scale and small-production reaction device tailored for medium-to-large volume experimental and trial production scenarios. The whole vessel is made of high-strength thickened borosilicate glass, which features outstanding corrosion resistance, low thermal expansion coefficient and excellent light transmittance, fully adapting to long-term continuous reaction of various organic, acidic and weak alkaline media without contamination or reaction interference.

The unique jacket structure allows circulating delivery of heating or cooling medium, realizing rapid and uniform temperature adjustment inside the kettle and avoiding local temperature difference, which ensures stable and repeatable reaction conditions. Different from traditional rigid connection structures, the flexible flange connection design effectively buffers vibration and stress generated during stirring and temperature cycling, preventing glass cracking and air leakage. It greatly improves equipment safety and service life, while facilitating quick assembly, disassembly, internal cleaning and material replacement.

Available in multiple specifications ranging from 10L to 100L, this reactor meets the experimental demands from scale-up verification to pilot trial production. Supporting vacuum reaction, inert gas protection, constant-temperature stirring, distillation and concentration processes, it is an indispensable core device for chemical research, pharmaceutical development, new material pilot test and fine chemical industrialization.



EZChem Pilot Plant Reactor

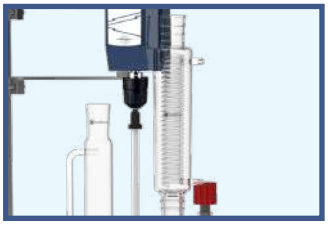
10L, 20L, 30L, 50L and 100L EZChem reactor. designed for maximum diversity and ease of use, we have developed a simple base system building platform which allows any reactor system to be customized using catalog or custom designed parts. Each base system comes with the basic starting components required. Simply select the motor and accessories needed to complete the design. For customized components or application design, contact our technical department for further assistance.

1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.



Reactor lid

The standard Grinding opening on the cauldron cap is similar to Bench top series, which allows customer to scale up from lab to pilot scale



High Efficiency Condenser

Serpentine pipe and double jacket design ensure high condensation efficiency



Switchable Distillation Head

Condensation reflux and distillation can be switched by a valve



Stainless Steel Stand

Unique design allows easy installation and removal of glassware, all parts are made of high quality stainless steel, corrosion resistant. Standard with removable spill tray. The stand can be moved when casters fall and more stable when they are lifted



Dead Volume Free Bottom Valve

The industrial valve is a dead volume free PTFE spindle valve with sloped outlet. The spindle shall be pressed in without turning. In the valve housing is an additional spring mounted in. So the spring pressure of the spindle to the valve seat can be increased spring- loaded and the spindle regulates itself. This guarantees a good tightness at large variations of temperature. The industrial valve is available with a 25 mm bore hole





Wide Application Range

The optimization of chemical reactions is enabled by having access to a broad and seamless range of reaction conditions: stirring and temperature control.



Jacketed Reaction Vessel

Volume from 10L to 100L are optional, two kinds of height-diameter ratio for 50L reaction vessel



Remote-controlled Stirrer

Strong stirring motor with low-position control unit, friendly design allows users to control more easily, two-stage stirring mode can be automatically switched



Universal Stirring Bearing

for use with standard grinding glass joints can be used with PTFE, glass and meatal shaft stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball- Bearing for rigidity and smoothness of operation.



Pressure Relief Manifold inlet/outlet

A pressure relief manifold for jacketed reaction vessels, designed to protect the vessel from breakage while isolated or disconnected from the circulator. Installed on the outlet side of the vessel, the manifold will reduce the likelihood of breakage caused by an excessive pressure differential exerted by expansion of the heat transfer fluid.



Auto Reaction Software (Optional)

Stirring speed, temperature and other parameters can be remote control and data recording

EZChem Pilot Plant Reactor

10L Process reactor, cylindrical, jacketed

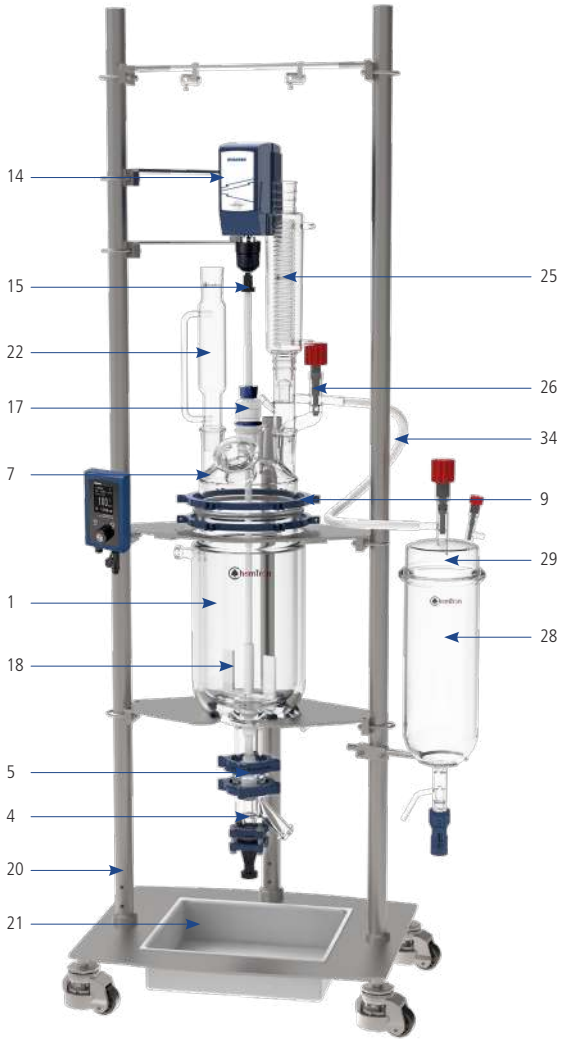
EZChem pilot plant reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve and distillation unit. The unique design of the smart supporting structure and clamping system allows for quick and easy installation/removal of glassware. System is supplied complete with the components listed below and numbered on the image below.

1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

10L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-011	10L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-011M	10L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-012	10L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-012M	10L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
720 W x 600D x 2080H (mm)



Specification

Reaction volume	10L
Flange of vessel	DN200
Bore diameter of bottom valve	0-25mm
Reactor lid	DN 200, 45/50(CN),3×45/50(SN),1×24/40(SN), Addition port 60 MM/45°
Total openings on the lid	6
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø16mm / 1000mm（SS/ PTFE）
Blade	Anchor style stir paddle
Length of condenser	300mm
Volume of collection flask	5L
Volume of liquid funnel	1L
Temperature sensor	Ø6mm×600mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG069269	10L jacketed vessel	Jacketed vessel DN200, 10L / discharge DN50	1
2	SQSO038985	Adapter	Adapter, DN15 to M16*1 male	2
3	GQQI007895	Flange	DN15 flange with bolt/nut and insert	2
4	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
5	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
6	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
7	SQEG079136	DN200 reactor lid	Lid DN 200, 45/50(CN),3×45/50(SN),1×24/40(SN), Addition port 60 MM/45°	1
8	JRS-1701-04	O-ring	200mm CAPFE O-ring	1
9	JRS-4067-01	Flange clamp	200mm flange clamp	1
10	JRS-2909-01	Cap	60mm PTFE cap	1
11	JRS-1701-01	O-ring	60mm PTFE encapsulated O-ring	1
12	JRS-2401-01	Clamp	Clamp, flange, 60mm	1
13	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
14	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
15	JRS-8126-16	Shaft coupling	8.6mm shaft coupling	1
16	JRS-8127-16	Shaft collar	16mm shaft collar	1
17	005-112-7	Stirring bearing	Stirring bearing, for 16mm shaft, 45/50 joints	1
18	005-03100-16-2	Anchor shaft	16mm PTFE coated stirring shaft, anchor, 1000mm length	1
19	005-616100	Adajusted rotor	Adajusted rotor, 4-blade angle type, shaft ϕ16mm	1
	Part4 Reactor stand			
20	JRS-3602-01	Support stand	Smart supporting structure	1
21	CR13231	Spill tray	Spill tray, stainless steel, for DN200 reactor supporting sturcture	1
	Part5 Liquid funnel			
22	JRS-2803-05	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 1000ml	1
23	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
24	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
24	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
25	JRS-2506-13	Condenser	Jacketed coil 300mm jacket length, 45/50	1
	Distillation unit			
26	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
27	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
28	JRS-2715-05	5L receiving vessel	5L receiving vessel	1
29	JRS-2910-10	Receiving lid	Receiving lid, 150mm	1
30	JRS-1701-03	O-ring	150mm PTFE encapsulated O-ring	1
31	JRS-2401-03	Clamp	Clamp, flange, 150mm	1
32	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
33	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
34	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
35	JRS-2103-02	Stopper	Stopper, 45/50	2
36	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated	1

EZChem Pilot Plant Reactor

20L Process reactor, cylindrical, jacketed

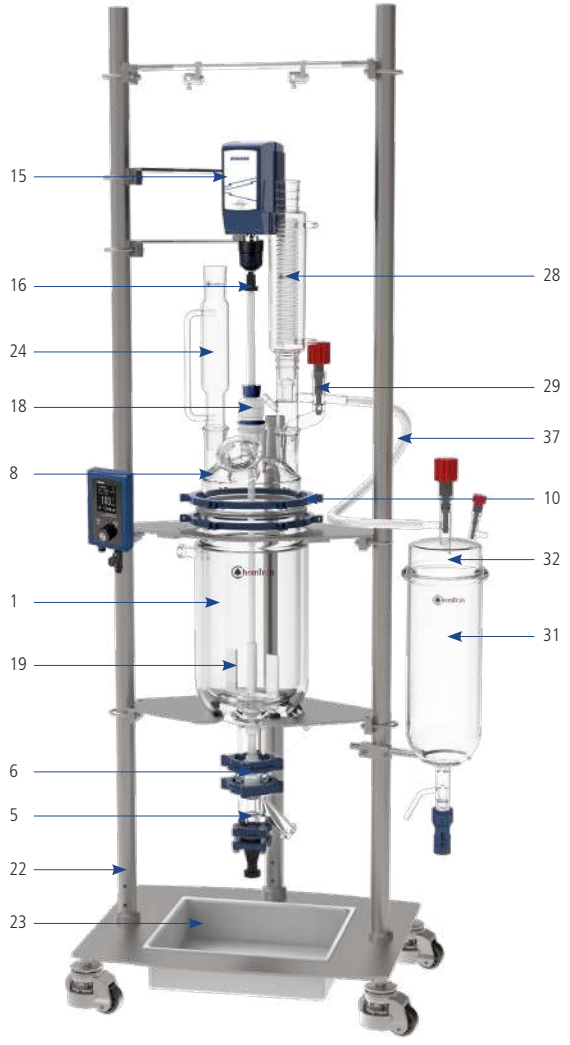
EZChem pilot plant reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve and distillation unit. The unique design of the smart supporting structure and clamping system allows for quick and easy installation/removal of glassware. System is supplied complete with the components listed below and numbered on the image below.

1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

20L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-021	20L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-021M	20L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-022	20L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-022M	20L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800 W x 660D x 2380H (mm)



Specification

Reaction volume	20L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	8
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø16mm / 1000mm（SS/ PTFE）
Blade	Anchor style stir paddle
Length of condenser	300mm
Volume of collection flask	5L
Volume of liquid funnel	1L
Temperature sensor	Ø6mm×600mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG075940	20L jacketed vessel	Jacketed vessel DN300, 20L / discharge DN50	1
2	SQSO038987	Adapter	Adapter, DN25 to m24*1.5 Male	2
3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
4	VAJQ068912	Gasket	PTFE gasket DN25	2
5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
7	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
8	SQEG075961	Dn300 reactor lid	Reactor lid, dn 300 flange, center joint: 45/50, side joints: (4) 45/50, side joints: (2) 29/32, addition port 100 mm.	1
9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
11	JRS-2909-02	Cap	100mm PTFE cap	1
12	JRS-1701-02	O-ring	100mm PTFE encapsulated O-ring	1
13	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
14	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
15	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
16	JRS-8126-16	Shaft coupling	8.6mm shaft coupling	1
17	JRS-8127-16	Shaft collar	16mm shaft collar	1
18	005-112-7	Stirring bearing	Stirring bearing, for 16mm shaft, 45/50 joints	1
19	005-03100-16-2	Anchor shaft	16mm PTFE coated stirring shaft, anchor, 1000mm length	1
20	005-616100	Adajusted rotor	Adajusted rotor, 4-blade angle type, shaft ϕ16mm	1
	Part4 Reactor stand			
22	JRS-3602-02	Support stand	Smart supporting structure	1
23	CR13232	Spill tray	Spill tray, stainless steel, for DN200 reactor supporting sturcture	1
	Part5 Liquid funnel			
24	JRS-2803-05	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 1000ml	1
25	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
26	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
27	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
28	JRS-2506-13	Condenser	Jacketed coil 300mm jacket length, 45/50	1
	Distillation unit			
29	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
30	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
31	JRS-2715-05	5L receiving vessel	5L receiving vessel	1
32	JRS-2910-10	Receiving lid	Receiving lid, 150mm	1
33	JRS-1701-03	O-ring	150mm PTFE encapsulated O-ring	1
34	JRS-2401-03	Clamp	Clamp, flange, 150mm	1
35	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
36	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
37	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
38	JRS-2103-02	Stopper	Stopper, 45/50	2
39	JRS-8250-14	Stopper	Stopper, 29/42	2
40	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated	1

EZChem Pilot Plant Reactor

30L Process reactor, cylindrical, jacketed

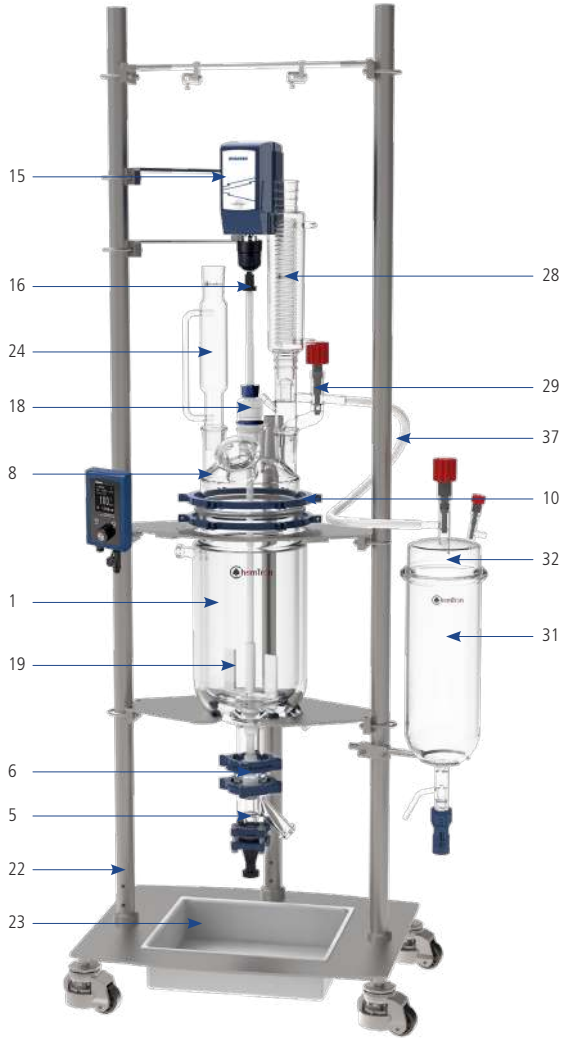
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1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

30L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-031	30L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-031M	30L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-032	30L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-032M	30L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800 W x 660D x 2650H (mm)



Specification

Reaction volume	30L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	8
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø16mm / 1000mm（SS/ PTFE）
Blade	Anchor style stir paddle
Length of condenser	300mm
Volume of collection flask	5L
Volume of liquid funnel	1L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG066063	30l jacketed vessel	Jacketed vessel DN300, 30l / discharge DN50	1
2	SQSO038987	Adapter	Adapter, DN25 to m24*1.5 Male	2
3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
4	VAJQ068912	Gasket	PTFE gasket DN25	2
5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
7	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
8	SQEG075961	Dn300 reactor lid	Reactor lid, dn 300 flange, center joint: 45/50, side joints: (4) 45/50, side joints: (2) 29/32, addition port 100 mm.	1
9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
11	JRS-2909-02	Cap	100mm PTFE cap	1
12	JRS-1701-02	O-ring	100mm PTFE encapsulated O-ring	1
13	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
14	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
15	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
16	JRS-8126-28	Shaft coupling	28mm stir shaft swivel coupling, 3/8" stir motor shaft	1
17	JRS-8127-28	Shaft collar	28mm shaft collar	1
18	JRS-8067-105	Screw thread bearing	28mm PTFE Screw thread bearing	1
19	JRS-8080-14	Glass stirring shaft	28mm glass stirring shaft, 1140mm length	1
20	JRS-8091-36	Anchor style agitator	Shaft size, 28mm; blade length, 178mm	1
21	JRS-8093-35	Agitator	Shaft size, 28mm; blade length, 150mm; blade angle, 45	1
	Part4 Reactor stand			
22	JRS-3602-02	Support stand	Smart supporting structure	1
23	CR13232	Spill tray	Spill tray, stainless steel, for DN200 reactor supporting sturcture	1
	Part5 Liquid funnel			
24	JRS-2803-05	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 1000ml, 45/50	1
25	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
26	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
27	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
28	JRS-2506-13	Condenser	Jacketed coil 300mm jacket length, 45/50	1
	Distillation unit			
29	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
30	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
31	JRS-2715-10	5L receiving vessel	5L receiving vessel	1
32	JRS-2910-10	Receiving lid	Receiving lid, 150mm	1
33	JRS-1701-03	O-ring	150mm PTFE encapsulated O-ring	1
34	JRS-2401-03	Clamp	Clamp, flange, 150mm	1
35	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
36	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
37	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
38	JRS-2103-02	Stopper	Stopper, 45/50	2
39	JRS-8250-14	Stopper	Stopper, 29/42	2
40	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated	1

EZChem Pilot Plant Reactor

50L Process reactor, cylindrical, jacketed

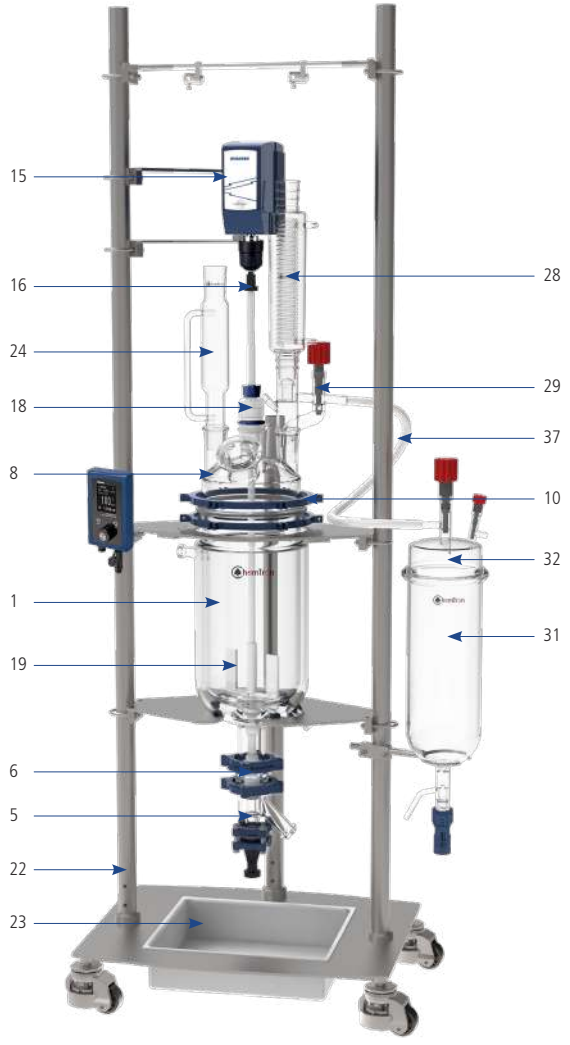
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1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

50L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-041	50L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-041M	50L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-042	50L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-042M	50L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800 W x 660D x 2650H (mm)



Specification

Reaction volume	50L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	8
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø28mm / 1600mm (glass)
Blade	Anchor style stir paddle
Length of condenser	400mm
Volume of collection flask	10L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×1200mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG062749	50L jacketed vessel	Jacketed vessel DN300, 50L / discharge DN50	1
2	SQSO038987	Adapter	Adapter, DN25 to m24*1.5 Male	2
3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
4	VAJQ068912	Gasket	PTFE gasket DN25	2
5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
7	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
8	SQEG075961	Dn300 reactor lid	Reactor lid, DN 300 flange, center joint: 45/50, side joints: (4) 45/50, side joints: (2) 29/32, addition port 100 mm.	1
9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
11	JRS-2909-02	Cap	100mm PTFE cap	1
12	JRS-1701-02	O-ring	100mm PTFE encapsulated O-ring	1
13	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
14	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
15	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
16	JRS-8126-28	Shaft coupling	28mm stir shaft swivel coupling, 3/8" stir motor shaft	1
17	JRS-8127-28	Shaft collar	28mm shaft collar	1
18	JRS-8067-105	Screw thread bearing	28mm PTFE Screw thread bearing	1
19	JRS-8080-24	Glass stirring shaft	28mm glass stirring shaft, 1600mm length	1
20	JRS-8091-36	Anchor style agitator	Shaft size, 28mm; blade length, 178mm	1
21	JRS-8093-35	Agitator	Shaft size, 28mm; blade length, 150mm; blade angle, 45	1
	Part4 Reactor stand			
22	JRS-3602-03	Universal support stand	Smart supporting structure	1
23	CR13232	Spill tray	Spill tray, stainless steel, for DN300 reactor supporting sturcture	1
	Part5 Liquid funnel			
24	JRS-2803-06	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 2000ml, 45/50	1
25	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
26	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
27	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
28	JRS-2506-14	Condenser	Condenser, jacketed coil 400mm jacket length, 45/50 with detachable hose barbs	1
	Distillation unit			
29	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
30	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
31	JRS-8080-30	10L receiving vessel	10L receiving vessel, 200mm, 0-10mm valve	1
32	JRS-6530-40	Receiving lid	Receiving lid, 200mm, (3) 45/50	1
33	JRS-1701-04	O-ring	Capfe o-ing , 200mm	1
34	JRS-2401-04	Quick-release clamp	200mm quick-release clamp	1
35	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
36	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
37	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
38	JRS-2103-02	Stopper	Stopper, 45/50	2
39	JRS-8250-14	Stopper	Stopper, 29/42	2
40	8981016	External pt100 sensor	External pt100 sensor 900 x 6 mm dia., Stainless steel, PTFE coated	1

EZChem Pilot Plant Reactor

50L Process reactor, cylindrical, jacketed

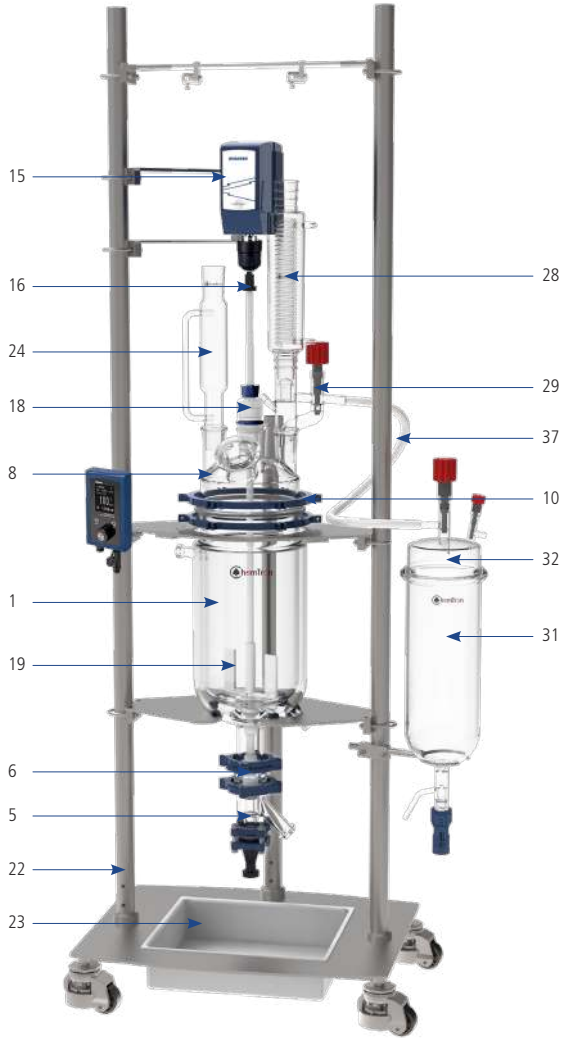
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1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

50L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-051	50L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-051M	50L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-052	50L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-052M	50L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
890 W x 716D x 2650H (mm)



Specification

Reaction volume	50L
Flange of vessel	DN400
Bore diameter of bottom valve	0-25mm
Reactor lid	DN400, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	8
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø28mm / 1400mm (glass)
Blade	Anchor style stir paddle
Length of condenser	400mm
Volume of collection flask	10L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG075094	50L jacketed vessel	Jacketed vessel DN400, 50L / discharge DN50	1
2	SQSO038987	Adapter	Adapter, DN25 to m24*1.5 Male	2
3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
4	VAJQ068912	Gasket	PTFE gasket DN25	2
5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
7	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
8	SQEG079137	DN400 reactor lid	Reactor lid, DN 400 flange, center joint: 45/50, side joints: (4) 45/50, side joints: (2) 29/32, addition port 100 mm	1
9	JRS-6525-53	Gasket	Gasket, DN400, PTFE	1
10	JRS-6525-33	Coupling flange	Coupling flange, DN400	1
11	JRS-2909-02	Cap	100mm PTFE cap	1
12	JRS-1701-02	O-ring	100mm PTFE encapsulated O-ring	1
13	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
14	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
15	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
16	JRS-8126-28	Shaft coupling	28mm stir shaft swivel coupling, 3/8" stir motor shaft	1
17	JRS-8127-28	Shaft collar	28mm shaft collar	1
18	JRS-8067-105	Screw thread bearing	28mm PTFE Screw thread bearing	1
19	JRS-8080-24	Glass stirring shaft	28mm glass stirring shaft, 1400mm length	1
20	JRS-8091-36	Anchor style agitator	Shaft size, 28mm; blade length, 178mm	1
21	JRS-8093-35	Agitator	Shaft size, 28mm; blade length, 150mm; blade angle, 45	1
	Part4 Reactor stand			
22	JRS-3602-04	Universal support stand	Smart supporting structure	1
23	CR13233	Spill tray	Spill tray, stainless steel, for DN400 reactor supporting sturcture	1
	Part5 Liquid funnel			
24	JRS-2803-06	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 2000ml, 45/50	1
25	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
26	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
27	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
28	JRS-2506-14	Condenser	Condenser, jacketed coil 400mm jacket length, 45/50 with detachable hose barbs	1
	Distillation unit			
29	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
30	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
31	CRS6999	10L receiving vessel	10L receiving vessel, 200mm, 0-10mm valve	1
32	JRS-6530-40	Receiving lid	Receiving lid, 200mm, (3) 45/50	1
33	JRS-1701-04	O-ring	Capfe o-ing , 200mm	1
34	JRS-2401-04	Quick-release clamp	200mm quick-release clamp	1
35	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
36	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
37	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
38	JRS-2103-02	Stopper	Stopper, 45/50	2
39	JRS-8250-14	Stopper	Stopper, 29/42	2
40	8981016	External pt100 sensor	External pt100 sensor 900 x 6 mm dia., Stainless steel, PTFE coated	1

EZChem Pilot Plant Reactor

100L Process reactor, cylindrical, jacketed

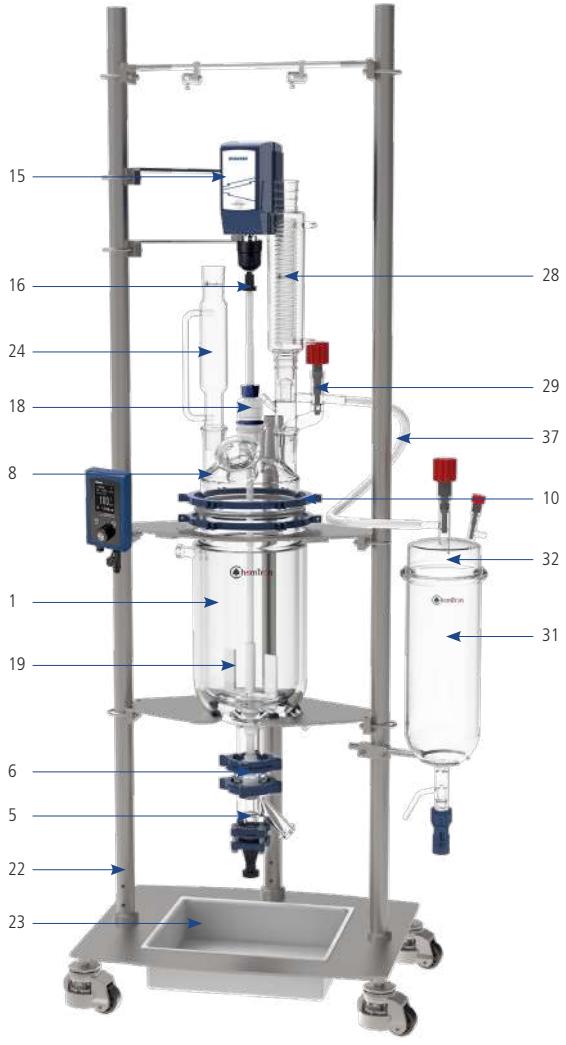
EZChem pilot plant reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve and distillation unit. The unique design of the smart supporting structure and clamping system allows for quick and easy installation/removal of glassware. System is supplied complete with the components listed below and numbered on the image below.

1. Select the base system dependent on desired working volume.
2. Select the motor that best suits your application.
3. Select the components and accessories which best fit your application.

100L complete standard pilot reactor

Part Number	Description	Motor Type
WRS-1503-061	100L Process System	Complete with reaction system, Stand, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-061M	100L Process System	Complete with reaction system, Stand, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-062	100L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
WRS-1503-062M	100L Process System with distillation unit	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
890 W x716D x 2980H (mm)



Specification

Reaction volume	100L
Flange of vessel	DN400
Bore diameter of bottom valve	0-25mm
Reactor lid	DN400, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	8
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	Atmospheric pressure and vacuum
Jacket pressure	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter/length of stirring Rod	Ø28mm / 1600mm（glass）
Blade	Anchor style stir paddle
Length of condenser	400mm
Volume of collection flask	20L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×1200mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part1 Reaction vessel			
1	SQEG075095	100L jacketed vessel	Jacketed vessel DN400, 100L / discharge DN50	1
2	SQSO038987	Adapter	Adapter, DN25 to m24*1.5 Male	2
3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
4	VAJQ068912	Gasket	PTFE gasket DN25	2
5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
7	VAJQ068914	Gasket	PTFE gasket DN50	1
	Part2 Reactor lid			
8	SQEG079137	DN400 reactor lid	Reactor lid, DN 400 flange, center joint: 45/50, side joints: (4) 45/50, side joints: (2) 29/32, addition port 100 mm	1
9	JRS-6525-53	Gasket	Gasket, DN400, PTFE	1
10	JRS-6525-33	Coupling flange	Coupling flange, DN400	1
11	JRS-2909-02	Cap	100mm PTFE cap	1
12	JRS-1701-02	O-ring	100mm PTFE encapsulated O-ring	1
13	JRS-2401-02	Clamp	Clamp, flange, 100mm	1
14	JRS-9016-131	Temperature sensor adapter	Temperature sensor adapter, 45/50 joint	1
	Part3 Stirring unit			
15	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
16	JRS-8126-28	Shaft coupling	28mm stir shaft swivel coupling, 3/8" stir motor shaft	1
17	JRS-8127-28	Shaft collar	28mm shaft collar	1
18	JRS-8067-105	Screw thread bearing	28mm PTFE Screw thread bearing	1
19	JRS-8080-30	Glass stirring shaft	28mm glass stirring shaft, 1600mm length	1
20	JRS-8091-36	Anchor style agitator	Shaft size, 28mm; blade length, 178mm	1
21	JRS-8093-35	Agitator	Shaft size, 28mm; blade length, 150mm; blade angle, 45	1
	Part4 Reactor stand			
22	JRS-3602-05	Universal support stand	Smart supporting structure	1
23	CR13233	Spill tray	Spill tray, stainless steel, for DN400 reactor supporting sturcture	1
	Part5 Liquid funnel			
24	JRS-2803-06	Funnel	Funnel graduated, pressure equalizing, PTFE stopcock, 2000ml, 45/50	1
25	JRS-2002-17	Adapter	Adapter, bushing, 45/50 inner, 24/40 outer	1
26	JRS-2020-01	Offset adapter	Offset adapter, 24/40	1
27	JRS-2103-01	Glass stopper	Glass stopper, 24/40	1
	Part6 Condenser			
28	JRS-2506-14	Condenser	Condenser, jacketed coil 400mm jacket length, 45/50 with detachable hose barbs	1
	Distillation unit			
29	JRS-2620-02	Distillation reflux / divider head	Distillation, head, reflux/divider, 45/50	1
30	JRS-2017-02	Adapter	Adapter, inlet or outlet, 90° , 3/8" hose barb	1
31	CRS7000-20	20L receiving vessel	20L receiving vessel, 200mm, 0-10mm valve	1
32	JRS-6530-40	Receiving lid	Receiving lid, 200mm, (3) 45/50	1
33	JRS-1701-04	O-ring	Capfe o-ing , 200mm	1
34	JRS-2401-04	Quick-release clamp	200mm quick-release clamp	1
35	JRS-2036-03	Adapter	Adapter, compression, union, PTFE, 1/2"	1
36	JRS-2040-03	Adapter	Adapter, compression, union, PTFE, 1/2" to 3/4"	1
37	JRS-3201-03	PFA tubing	PFA tubing, od:1/2in, id:3/8in, 1 meter	2
	Optional			
38	JRS-2103-02	Stopper	Stopper, 45/50	2
39	JRS-8250-14	Stopper	Stopper, 29/42	2
40	8981014	External pt100 sensor	External pt100 sensor 1200 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃ , 3 m cable	1

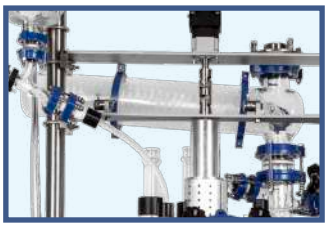
PlusChem Pilot Plant Reactor

- The flange of EZChem series up to DN400, and PlusChem up to DN450
- Glass connection is the grinding joint for EZChem series, Flange connection for PlusChem
- Better heat transfer, mass transfer effect for Plus series
- Grinding joint connection between two glass part for EZChem series, flange connection for PlusChem
- Compared with EZChem, PlusChem with better expansibility, vertical condenser, horizontal condenser, more interface, Combined application of multiple Reactor and other complex experiments;
- With mechanical seal, PlusChem suitable for higher speed mixing application;
- PlusChem can choose GMP bottom valve, smaller sizes allow the entire unit to be pushed into a fume hood to meet GMP standards, and temperature sensors can be fixed to the bottom valve;
- Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection;
- Standard software more for EZChem, but PlusChem will have more linkage.



Reaction Lid

A variety of standard flange openings on the reaction lid meet different application, Compared to EZChem series, it has more extensibility



High Efficiency Condenser

Both vertical and horizontal condensers are available



Switchable Distillation Head

The distillation head can be used between condensing reflux and distillat ion experiment, just adjust the valve to switch the working mode.



Dead Volume Free Bottom Valve

The industrial valve is a dead volume free PTFE spindle valve with sloped outlet. The spindle shall be pressed in without turning. In the valve housing is an additional spring mounted in. So the spring pressure of the spindle to the valve seat can be increased spring- loaded and the spindle regulates itself. This guarantees a good tightness at large variations of temperature. The industrial valve is available with a 10 mm bore hole (standard) and as desired with a 20mm bore hole.



Stainless Steel Stand

Unique design allows easy installation and removal of glassware, All parts are made of high quality stainless steel, corrosion resistant. Standard with removable spill tray. The stand can be moved when casters fall and more stable when they are lifted





Wide Application Range

The optimization of chemical reactions is enabled by having acces s to a broad and seamless range of reaction conditions: stirring an d temperature control.



Jacketed Reaction Vessel

Volume from 10L to 100L are optional, 50L and 100L vessels with different ratio of height to diameter are available



Remote-controlled Stirrer

Strong stirring motor with low-position control unit, friendly design allows users to control more easily, two-stage stirring mode can be automatically switched



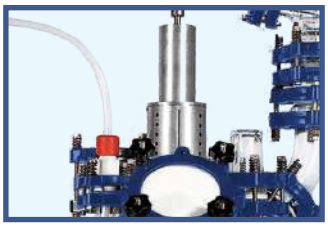
Over pressure safety device

The whole reaction system is designed to withstand a slightly positive pressure of 0.5 bar. When the pressure exceeds, the pressure is released automatically by the rupture disc



Mechanical Sealing system

With this seal structure, it can simultaneously meet the requirements of sealing and power transmission



Pressure Relief Manifold inlet/outlet

A pressure relief manifold for jacketed reaction vessels, designed to protect the vessel from breakage while isolated or disconnected from the circulator. Installed on the outlet side of the vessel, the manifold will reduce the likelihood of breakage caused by an excessive pressure differential exerted by expansion of the heat transfer fluid.



Auto Reaction Software (Optional)

Stirring speed, temperature and other parameters can be remote control and data recording



PlusChem Pilot Plant Reactor Horizontal Condenser

10L Pilot plant for high performance applications

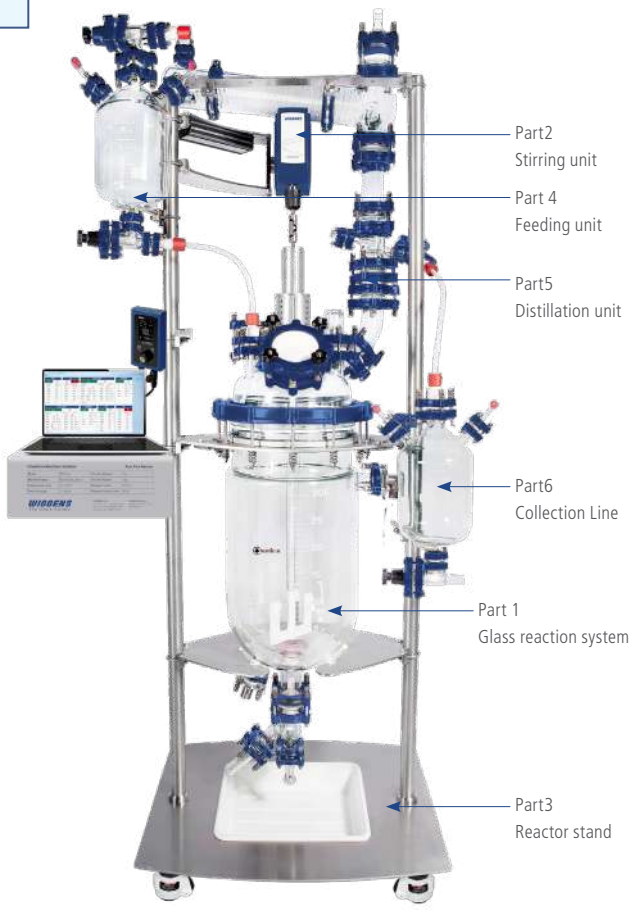
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> The flange of vessel for PlusChem up to DN450
> Better heat transfer, mass transfer effect for PlusChem
> Flange connection for PlusChem between two glass part
> Compared with Easychem, PlusChem with better expansibility
> With mechanical seal, PlusChem suitable for higher speed mixing application
> Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection

10L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH10L	10L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH10L	10L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
720 W x600D x 2080H (mm)



Specification

Reaction volume	10L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1xDN25(CN) , 1xDN80, 3xDN40, 1xDN25, 1xDN50
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø16mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN50 / 0.6m^2
Volume of collection flask	5L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×600mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077051	Glass reaction system	Included: 10L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG070921	10L jacketed vessel	Jacketed vessel DN300, 10L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG073335	Dn300 reactor lid	Lid, DN300 7 nozzles with :central DN25 for stirring, DN80 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN50 for vapours	1
1-9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
1-10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
1-11	GZRI300080	Cap	PTFE blank cap DN80	1
1-12	SQQI007880	Flange	Dn80 flange with bolt/nut and insert	1
1-13	VAJQ068917	Gasket	PTFE gasket DN80	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO077263	Stirring and sealing unit	Stirring and sealing unit ATSA25/16 for 10L reactor, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-01	Support stand	Stainless steel frame for reactor with lid, DN300	1
3-2	CR13232	Spill tray	Spill tray, stainless steel, for DN300 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK077054	Feeding line	Feeding line 5L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK077053	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK077055	Collection line	Collection line 5L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser

20L Pilot plant for high performance applications

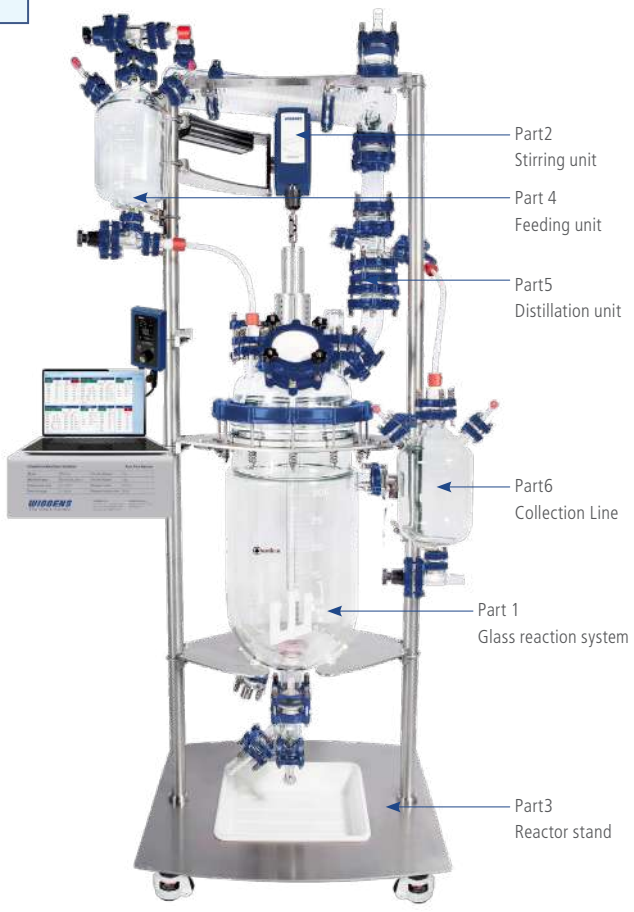
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> The flange of vessel for PlusChem up to DN450
> Better heat transfer, mass transfer effect for PlusChem
> Flange connection for PlusChem between two glass part
> Compared with Easychem, PlusChem with better expansibility
> With mechanical seal, PlusChem suitable for higher speed mixing application
> Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection

20L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH20L	20L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH20L	20L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
720 W x600D x 2080H (mm)



Specification

Reaction volume	20L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1xDN25(CN) , 1xDN80, 3xDN40, 1xDN25, 1xDN50
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø16mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN50 / 0.6m^2
Volume of collection flask	5L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×600mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077052	Glass reaction system	Included: 20L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG075940	20L jacketed vessel	Jacketed vessel DN300, 20L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG073335	Dn300 reactor lid	Lid, DN300 7 nozzles with :central DN25 for stirring, DN80 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN50 for vapours	1
1-9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
1-10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
1-11	GZRI300080	Cap	PTFE blank cap DN80	1
1-12	SQQI007880	Flange	Dn80 flange with bolt/nut and insert	1
1-13	VAJQ068917	Gasket	PTFE gasket DN80	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO077264	Stirring and sealing unit	Stirring and sealing unit ATSA25/16 for 20L reactor, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-01	Support stand	Stainless steel frame for reactor with lid, DN300	1
3-2	CR13232	Spill tray	Spill tray, stainless steel, for DN300 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK077054	Feeding line	Feeding line 5L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK077053	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK077055	Collection line	Collection line 5L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser

30L Pilot plant for high performance applications

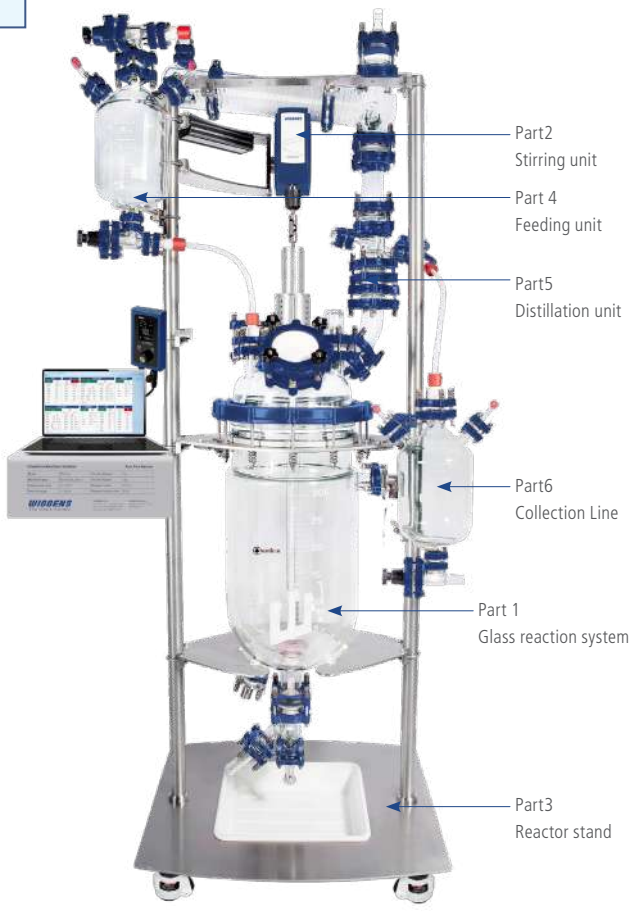
PlusChem pilot plant reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the smart supporting structure and clamping system allows for quick and easy installation/removal of glassware. System is supplied complete with the components listed below and numbered on the image below.

> The flange of vessel for PlusChem up to DN450
> Better heat transfer, mass transfer effect for PlusChem
> Flange connection for PlusChem between two glass part
> Compared with Easychem, PlusChem with better expansibility
> With mechanical seal, PlusChem suitable for higher speed mixing application
> Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection

30L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH30L	30L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH30L	30L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 5L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
720 W x600D x 2080H (mm)



Specification

Reaction volume	30L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1xDN25(CN) , 1xDN80, 3xDN40, 1xDN25, 1xDN50
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø16mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN50 / 0.6m^2
Volume of collection flask	5L
Volume of liquid funnel	5L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077056	Glass reaction system	Included: 30l jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG066063	30l jacketed vessel	Jacketed vessel DN300, 30l / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG073335	Dn300 reactor lid	Lid, DN300 7 nozzles with :central DN25 for stirring, DN80 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN50 for vapours	1
1-9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
1-10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
1-11	GZRI300080	Cap	PTFE blank cap DN80	1
1-12	SQQI007880	Flange	DN80 flange with bolt/nut and insert	1
1-13	VAJQ068917	Gasket	PTFE gasket DN80	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO077265	Stirring and sealing unit	Stirring and sealing unit ATSA25/16 for 30l reactor, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-01	Support stand	Stainless steel frame for reactor with lid, DN300	1
3-2	CR13232	Spill tray	Spill tray, stainless steel, for DN300 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK077054	Feeding line	Feeding line 5L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK077053	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK075997	Collection line	Collection line 10L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981013	External pt100 sensor	External pt100 sensor 600 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser, DN300

50L Pilot plant for high performance applications

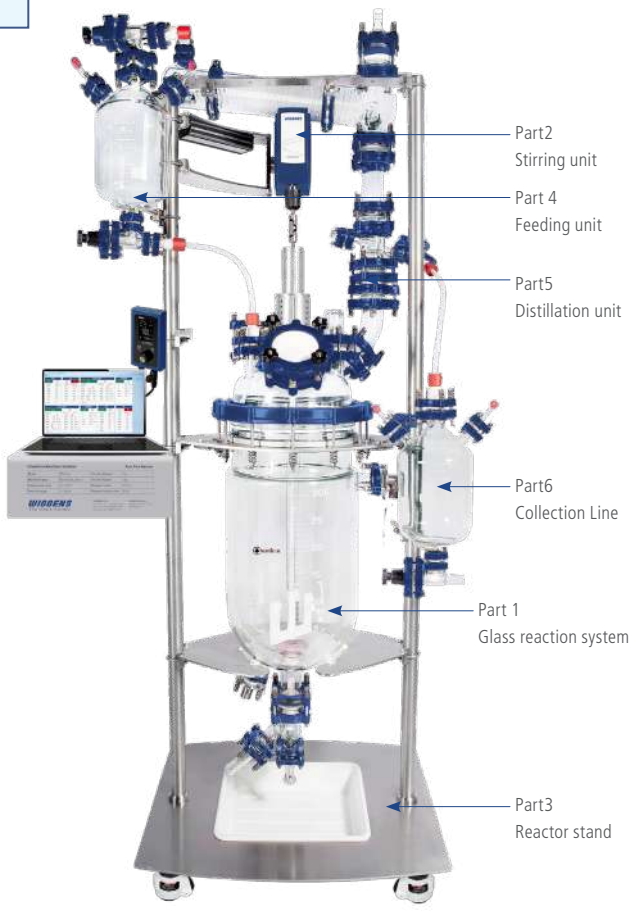
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> The flange of vessel for PlusChem up to DN450
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> With mechanical seal, PlusChem suitable for higher speed mixing application
> Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection

50L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH50LDN300	50L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH50LDN300	50L complete PlusChem Pilot Plant reactor-DN300, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800W x660D x 2380H (mm)



Specification

Reaction volume	50L
Flange of vessel	DN300
Bore diameter of bottom valve	0-25mm
Reactor lid	DN300, 1xDN25(CN) , 1xDN80, 3xDN40, 1xDN25, 1xDN50
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø30mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN50 / 0.6m^2
Volume of collection flask	10L
Volume of liquid funnel	10L
Temperature sensor	Ø6mm×1200mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077050	Glass reaction system	Included: 50L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG062749	50L jacketed vessel	Jacketed vessel DN300, 50L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG073335	DN300 reactor lid	Lid, DN300 7 nozzles with :central DN25 for stirring, DN80 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN50 for vapours	1
1-9	JRS-2405-02	Gasket	Gasket, DN300, PTFE	1
1-10	JRS-2402-01	Coupling flange	Coupling flange, DN300	1
1-11	GZRI300080	Cap	PTFE blank cap DN80	1
1-12	SQQI007880	Flange	DN80 flange with bolt/nut and insert	1
1-13	VAJQ068917	Gasket	PTFE gasket DN80	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO077266	Stirring and sealing unit	Stirring and sealing unit ATSA25/16 for 50L reactor, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-02	Support stand	Stainless steel frame for reactor with lid, DN300	1
3-2	CR13232	Spill tray	Spill tray, stainless steel, for DN300 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK075996	Feeding line	Feeding line 10L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK075995	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK075997	Collection line	Collection line 10L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981016	External pt100 sensor	External pt100 sensor 900 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, au-to/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser, DN400

50L Pilot plant for high performance applications

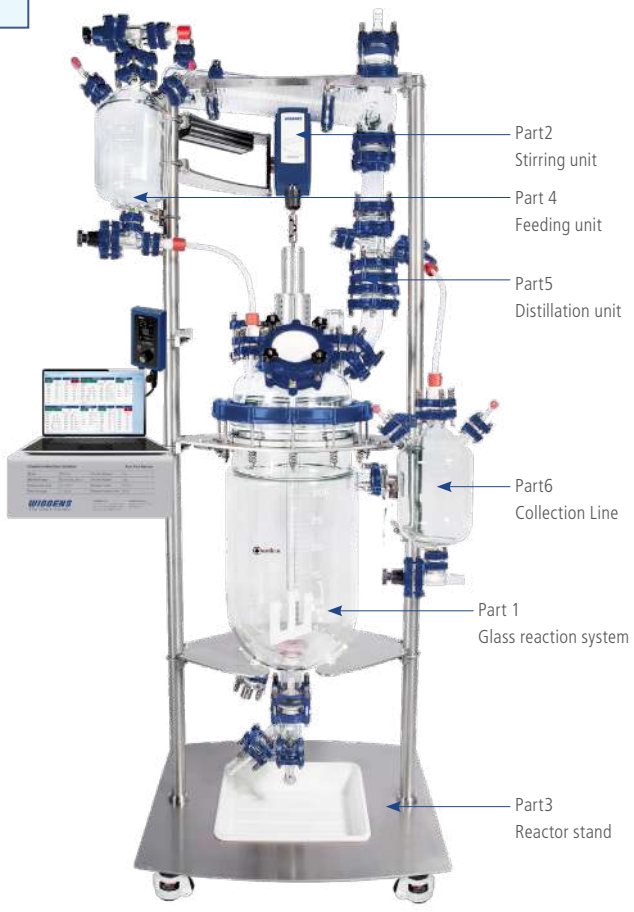
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50L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH50LDN400	50L complete PlusChem Pilot Plant reactor-DN400, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH50LDN400	50L complete PlusChem Pilot Plant reactor-DN400, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800W x660D x 2650H (mm)



Specification

Reaction volume	50L
Flange of vessel	DN400
Bore diameter of bottom valve	0-25mm
Reactor lid	DN400, 1xDN50(CN) , 1xDN80, 3xDN40, 1xDN25, 1xDN80
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø30mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN80 / 1.5m^2
Volume of collection flask	10L
Volume of liquid funnel	10L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077057	Glass reaction system	Included: 50L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG075094	50L jacketed vessel	Jacketed vessel DN400, 50L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG077508	DN400 reactor lid	Lid, DN400 7 nozzles with : central DN50 for stirring, DN100 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN80 for vapours	1
1-9	JRS-2405-03	Gasket	Gasket, DN400, PTFE	1
1-10	JRS-2402-02	Coupling flange	Coupling flange, DN400	1
1-11	GZRI400100	Cap	PTFE blank cap DN100	1
1-12	SQQI007881	Flange	DN100 flange with bolt/nut and insert	1
1-13	VAJQ068918	Gasket	PTFE gasket DN100	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO078030	Stirring and sealing unit	Stirring and sealing unit ATSA50/25 for 50L reactor-DN400, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-03	Support stand	Stainless steel frame for reactor with lid, DN400	1
3-2	CR13233	Spill tray	Spill tray, stainless steel, for DN400 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK075996	Feeding line	Feeding line 10L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK075995	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK075997	Collection line	Collection line 10L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981016	External pt100 sensor	External pt100 sensor 900 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser, DN450

50L Pilot plant for high performance applications

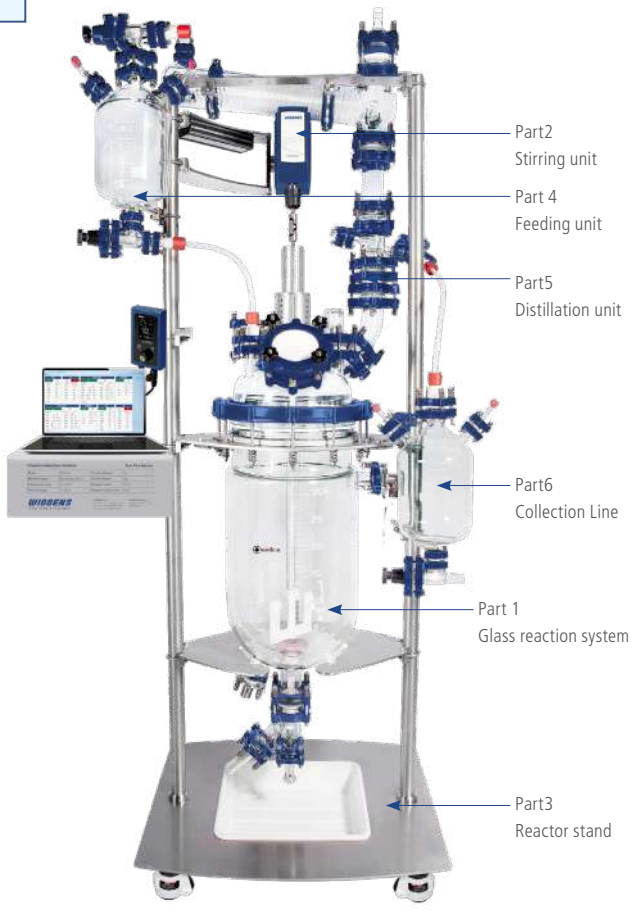
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50L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH50LDN450	50L complete PlusChem Pilot Plant reactor-DN450, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH50LDN450	50L complete PlusChem Pilot Plant reactor-DN450, Horizontal Condenser	Complete with reaction system, Stand, 10L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
800W x660D x 2650H (mm)



Specification

Reaction volume	50L
Flange of vessel	DN450
Bore diameter of bottom valve	0-25mm
Reactor lid	DN450, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø30mm (SS/ PTFE)
Blade	Anchor style stir paddle
Condensation area	DN80 / 1.5m^2
Volume of collection flask	10L
Volume of liquid funnel	10L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077058	Glass reaction system	Included: 50L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG081337	50L jacketed vessel	Jacketed vessel DN450, 50L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG081338	Dn450 reactor lid	Lid, DN450 7 nozzles with : central DN50 for stirring, DN100 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN80 for vapours	1
1-9	JRS-2405-04	Gasket	Gasket, DN450, PTFE	1
1-10	JRS-2402-03	Coupling flange	Coupling flange, DN450	1
1-11	GZRI400100	Cap	PTFE blank cap DN100	1
1-12	SQQI007881	Flange	DN100 flange with bolt/nut and insert	1
1-13	VAJQ068918	Gasket	PTFE gasket DN100	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO078031	Stirring and sealing unit	Stirring and sealing unit ATSA50/25 for 50L reactor-DN450, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-05	Support stand	Stainless steel frame for reactor with lid, DN450	1
3-2	CR13234	Spill tray	Spill tray, stainless steel, for DN450 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK075996	Feeding line	Feeding line 10L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK075995	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK075997	Collection line	Collection line 10L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981016	External pt100 sensor	External pt100 sensor 900 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃, 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser, DN400

100L Pilot plant for high performance applications

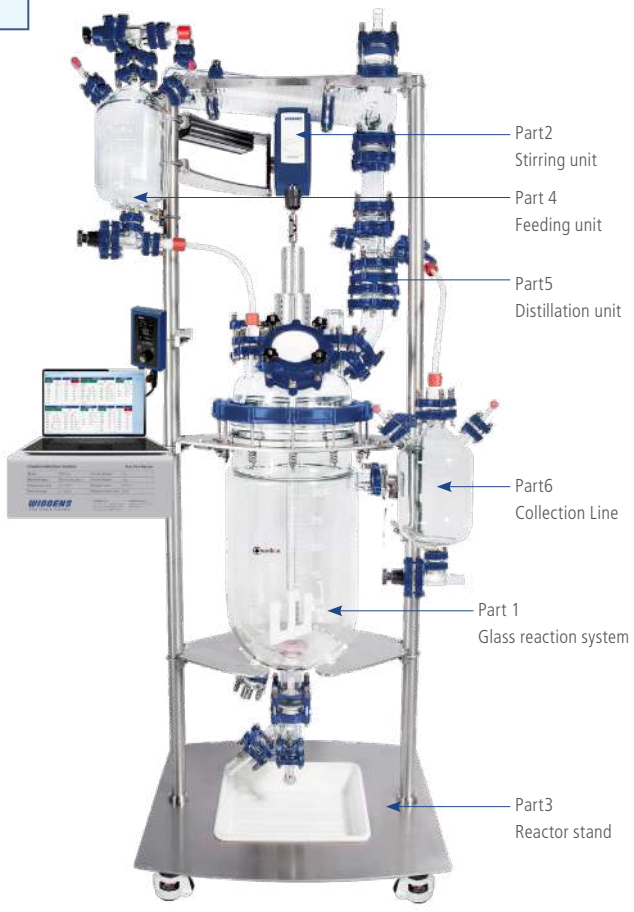
PlusChem pilot plant reactor are complete with support stand, overhead stirrer and glassware, available with the optional multi channel regulating valve. The unique design of the smart supporting structure and clamping system allows for quick and easy installation/removal of glassware. System is supplied complete with the components listed below and numbered on the image below.

- The flange of vessel for PlusChem up to DN450
- Better heat transfer, mass transfer effect for PlusChem
- Flange connection for PlusChem between two glass part
- Compared with Easychem, PlusChem with better expansibility
- With mechanical seal, PlusChem suitable for higher speed mixing application
- Compared with EZChem, PlusChem comes standard with pressure Rupture disc, can be sealed for short periods of time, nitrogen protection

100L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH100LDN400	100L complete PlusChem Pilot Plant reactor-DN400, Horizontal Condenser	Complete with reaction system, Stand, 25L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH100LDN400	100L complete PlusChem Pilot Plant reactor-DN400, Horizontal Condenser	Complete with reaction system, Stand, 25L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
890W x716D x 2980H (mm)



Specification

Reaction volume	100L
Flange of vessel	DN400
Bore diameter of bottom valve	0-25mm
Reactor lid	DN400, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø28mm（SS/ PTFE）
Blade	Anchor style stir paddle
Condensation area	DN80 / 1.5m^2
Volume of collection flask	25L
Volume of liquid funnel	25L
Temperature sensor	Ø6mm×900mm

Part List

Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077388	Glass reaction system	Included: 100L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG075095	100L jacketed vessel	Jacketed vessel DN400, 100L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG077508	DN400 reactor lid	Lid, DN400 7 nozzles with : central DN50 for stirring, DN100 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN80 for vapours	1
1-9	JRS-2405-03	Gasket	Gasket, DN400, PTFE	1
1-10	JRS-2402-02	Coupling flange	Coupling flange, DN400	1
1-11	GZRI400100	Cap	PTFE blank cap DN100	1
1-12	SQQI007881	Flange	DN100 flange with bolt/nut and insert	1
1-13	VAJQ068918	Gasket	PTFE gasket DN100	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO078032	Stirring and sealing unit	Stirring and sealing unit ATSA50/25 for 100L reactor-DN400, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-04	Support stand	Stainless steel frame for reactor with lid, DN400	1
3-2	CR13233	Spill tray	Spill tray, stainless steel, for DN400 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK079086	Feeding line	Feeding line 25L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK075995	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK079087	Collection line	Collection line 25L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981014	External pt100 sensor	External pt100 sensor 1200 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃ , 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

PlusChem Pilot Plant Reactor Horizontal Condenser, DN450

100L Pilot plant for high performance applications

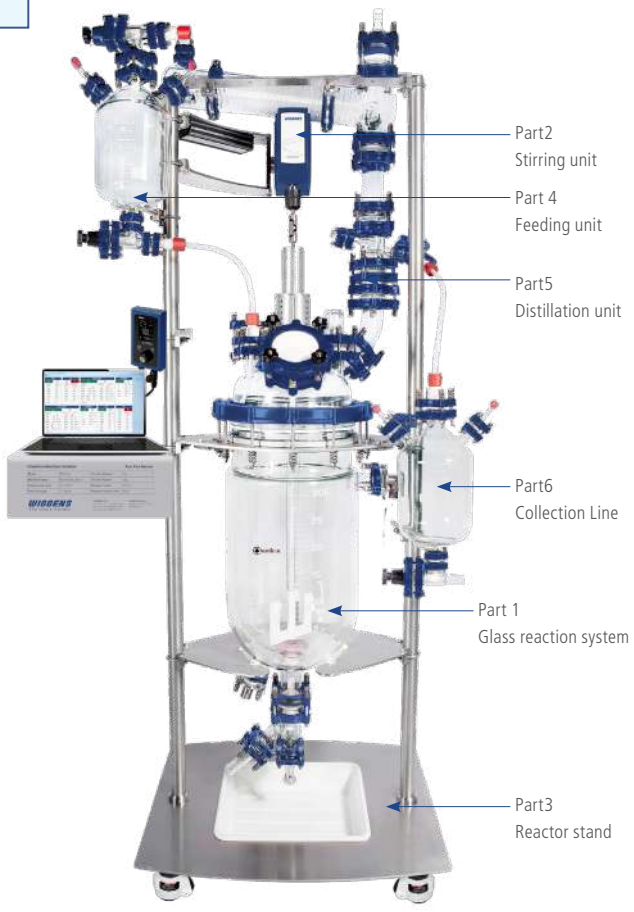
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100L complete PlusChem Pilot Plant reactor

Part Number	Part	Description
KC1-PLUS-CH100LDN450	100L complete PlusChem Pilot Plant reactor-DN450, Horizontal Condenser	Complete with reaction system, Stand, 25L Distillation unit, High Torque Overhead Stirrer WOHS-400 ProF
KC2-PLUS-CH100LDN450	100L complete PlusChem Pilot Plant reactor-DN450, Horizontal Condenser	Complete with reaction system, Stand, 25L Distillation unit, Manifold / Drain System and High Torque Overhead Stirrer WOHS-400 ProF

Approx. Stand Dimensions:
890W x716D x 2980H (mm)



Specification

Reaction volume	100L
Flange of vessel	DN450
Bore diameter of bottom valve	0-25mm
Reactor lid	DN450, 1×45/40(CN), 4×45/40(SN), 2×29/32(SN), 1×DN100(SN-45°)
Total openings on the lid	7
Material of reaction vessel and lid	High quality borosilicate glass
Temperature range	-60~200℃
Vessel pressure	-1~0.5bar, Standard with rupture disc
Material of wet part	Borosilicate glass / PTFE / PFA
Inlet and outlet of jacket	DN25
Type of stirring bearing	Mechanical Seal
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation, if high-speed mixing applications are required, please consult your Wiggens
Diameter of stirring Rod	Ø28mm (SS/ PTFE)
Blade	Anchor style stir paddle
Condensation area	DN80 / 1.5m^2
Volume of collection flask	25L
Volume of liquid funnel	25L
Temperature sensor	Ø6mm×1200mm

Part List

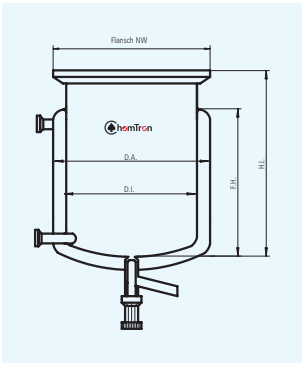
Item.	Order No. / Part	Name	Product Description	Qty
	Part 1 Glass reaction system			
1	SQHK077389	Glass reaction system	Included: 100L jacketed vessel, bottom valve, reactor lid, stirring unit (without motor), adapters, gaskets, clamps	1
	Included			
1-1	SQEG078142	100L jacketed vessel	Jacketed vessel DN450, 100L / discharge DN50	1
1-2	SQSO038987	Adapter	Adapter, DN25 to m30*1.5 Male	2
1-3	SQQI007877	Flange	DN25 flange with bolt/nut and insert	2
1-4	VAJQ068912	Gasket	PTFE gasket DN25	2
1-5	SQTK032037	Glass bottom valve	Glass bottom valve 0~25mm, DN50 without dead volume	1
1-6	GQQI007879	Flange	DN50 flange with bolt/nut and insert	1
1-7	VAJQ068914	Gasket	PTFE gasket DN50	1
1-8	SQEG081338	DN450 reactor lid	Lid, DN450 7 nozzles with : central DN50 for stirring, DN100 PTFE nozzle for solids, DN40 with glass thermometer pocket for pt100, DN40 with well for ph, DN40 free nozzle, DN25 with dip pipe and adapter for liquids, DN80 for vapours	1
1-9	JRS-2405-04	Gasket	Gasket, DN450, PTFE	1
1-10	JRS-2402-03	Coupling flange	Coupling flange, DN450	1
1-11	GZRI400100	Cap	PTFE blank cap DN100	1
1-12	SQQI007881	Flange	DN100 flange with bolt/nut and insert	1
1-13	VAJQ068918	Gasket	PTFE gasket DN100	1
1-14	VAJQ901613	Temperature sensor adapter	Temperature sensor adapter	1
1-15	SQQI007878	Flange	DN40 flange with bolt/nut and insert	1
1-16	VAJQ068913	Gasket	PTFE gasket DN40	1
1-17	GZRI040032	Adapter compression	Adapter compression, union, DN40 to 32mm, for install temperature and ph probe	2
1-18	JRS-3006-01	Shaft coupling	10mm shaft coupling	1
1-19	SQAO078033	Stirring and sealing unit	Stirring and sealing unit ATSA50/25 for 100L reactor-DN450, included mechanical seal graphite/PTFE, stirring shaft and impeller	1
1-20	JRS-3006-11	Mechanical seal holder	Mechanical seal holder	1
	Part2 Stirring unit			
2-1	100600F	Stirrer motor with remote controller WOHS-400 Pro F	Remotely controllable ultra high torque / high speed stirrers, speed range:12~1800rpm, maximum torque:565N-cm, output power:150W	1
	Part3 Reactor stand			
3-1	JRS-4062-05	Support stand	Stainless steel frame for reactor with lid, DN450	1
3-2	CR13234	Spill tray	Spill tray, stainless steel, for DN450 reactor supporting sturcture	1
	Part 4 Feeding unit			
4	SQHK079086	Feeding line	Feeding line 25L with valves and adapter	1
	Part5 Distillation unit			
5	SQHK075995	Distillation unit	Included distillation head, condenser, rupture disc and adatpers	1
	Part6 Collection Line			
6	SQHK079087	Collection line	Collection line 25L with valves and adapter	1
	Multi channel regulating valve			
7	JRS-6101-001	Multi channel regulating valve	Multi channel regulating valve outlet with m24 circulator fittings	1
8	JRS-6102-001	Multi channel regulating valve	Multi channel regulating valve inlet with m24 circulator fittings	1
9	8930261	Metal tubing	1 M metal tubing, insulated, 2 fittings m24x1.5 Female (-100...+350 ℃)	2
	Optional			
10	8981014	External pt100 sensor	External pt100 sensor 1200 x 6 mm dia., Stainless steel, PTFE coated, -75...+250 ℃ , 3 m cable	1
11	MLFM069215	Datalogger ph meter m300	Datalogger ph meter m300, ph range from -1 to +15, auto/0.001/0.01/0.1 Are optional, precision ±0.03ph	1
12	MLFM042649	Inpro 4800	Inpro 4800, length 425mm, with pt1000	1
13	MLMF067082	3 Meter cable	3 Meter cable, connect the electrode to the meter	1

Components and Accessories

Cylindrical Flask with thermal jacket and bottom valve

cylindrical flasks with easy drain valve. Graduated on both sides. The easy drain valve is designed to prevent accidental removal when opening, and incorporates a compression tube angled side arm for maximum unobstructed drainage.

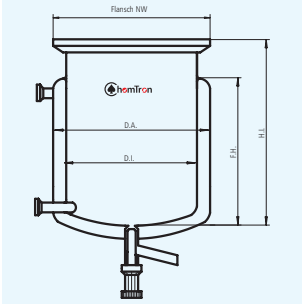
Order No.	Volume	NW	D.A.	D.I.	F.H.	H.I.	Bottom valve
CRS-0839-47	250mL	100	-	-	-	-	0-10mm
CRS-0839-48	500mL	100	130	90	112	176	0-10mm
CRS-0841-10	1000mL	100	140	110	157	210	0-10mm
CRS-0829-95	2000mL	150	160	130	218	280	0-10mm
CRS-0841-11	5000mL	150	250	215	222	299	0-10mm



Cylindrical Flask with thermal jacket and bottom valve

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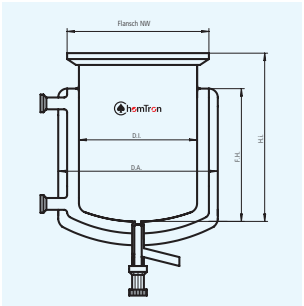
Order No.	Volume	NW	D.A.	D.I.	F.H.	H.I.	Bottom valve
CRS7166	250mL	60	100	60	100	150	0-10mm
CRS7172	500mL	100	140	100	80	140	0-10mm
CRS7173	1000mL	100	140	100	150	210	0-10mm
CRS7174	2000mL	100	140	100	270	330	0-10mm
CRS7180	5000mL	150	200	150	290	365	0-10mm
CRS7166-V2	250mL	60	100	60	100	150	0-20mm
CRS7172-V2	500mL	100	140	100	80	140	0-20mm
CRS7173-V2	1000mL	100	140	100	150	210	0-20mm
CRS7174-V2	2000mL	100	140	100	270	330	0-20mm
CRS7180V-2	5000mL	150	200	150	290	365	0-20mm



Cylindrical Flask with vacuum jacket, with thermal jacket and bottom valve

cylindrical flasks with easy drain valve. Graduated on both sides. The easy drain valve is designed to prevent accidental removal when opening, and incorporates a compression tube angled side arm for maximum unobstructed drainage.

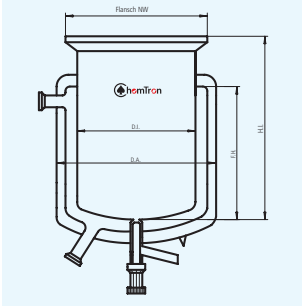
Order No.	Volume	NW	D.A.	D.I.	F.H.	H.I.	Bottom valve
CRS7550	250	60	130	60	100	150	0-10mm
CRS7561	500	100	150	100	75	135	0-10mm
CRS7562	1000	100	150	100	140	200	0-10mm



Cylindrical Flask with vacuum jacket, with thermal jacket and bottom valve

cylindrical flasks with easy drain valve. Graduated on both sides. The easy drain valve is designed to prevent accidental removal when opening, and incorporates a compression tube angled side arm for maximum unobstructed drainage.

Order No.	Volume	NW	D.A.	D.I.	F.H.	H.I.	Bottom valve
CRS7575	2000	150	225	150	130	245	0-10mm
CRS7577	5000	150	225	150	190	305	0-10mm
CRS7575-V2	2000	150	225	150	130	245	0-20mm
CRS7577-V2	5000	150	225	150	190	305	0-20mm



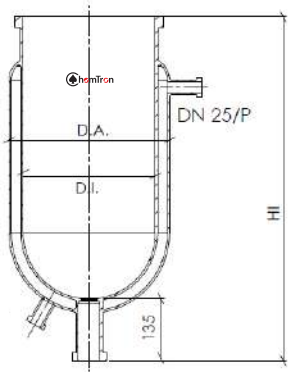
CYLINDRICAL FLASK Flange, Easy Drain Valve

Cylindrical flasks with easy drain valve. Graduated on both sides, allowing for either left or right-hand flask orientation. The easy drain valve is designed to prevent accidental removal when opening, and incorporates a compression tube angled side arm for maximum unobstructed drainage.



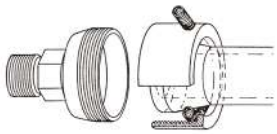
Order No.	Capacity,mL	Flange Size,mm	Inlet/Outlet Connection	BottomOutlet
JRS-6441-38	1000	100	NW 16	Easy Drain
JRS-6441-40	2000	100	NW 16	Easy Drain
JRS-6441-42	3000	150	NW 25	Easy Drain
JRS-6441-44	4000	150	NW 25	Easy Drain
JRS-6441-46	5000	150	NW 25	Easy Drain
JRS-6441-48	6000	150	NW 25	Easy Drain

Heatable reaction vessels with thermal jacket and bottom outlet



Order No.	Volume	NW	D.A.	D.I.	H.I.	Bottom outlet	jacket joint flange
SQEG069269	10L	200	240	200	594	DN50	DN15
SQEG070921	10L	300	365	300	495	DN50	DN25
SQEG075940	20L	300	365	300	600	DN50	DN25
SQEG066063	30L	300	365	300	780	DN50	DN25
SQEG080101	50L	300	365	300	1070	DN50	DN25
SQEG075094	50L	400	488	400	850	DN50	DN25
SQEG081337	50L	450	519	450	750	DN50	DN25
SQEG075095	100L	400	488	400	1260	DN50	DN25
SQEG078142	100L	450	519	450	1100	DN50	DN25

Thermal jacket connection



Order No.	Description
4200	Metal adapter for thermostat hoses (DN15 to M16x1)
4201	Silicone sealant DN15
4202	PTFE sealant DN15



Order No.	Description
SQSO038987	Metal adapter for thermostat hoses (DN25 to M24x1.5)
SQQI007877	DN25 Flange with bolt/nut and insert
VAJQ068912	PTFE sealant DN25

Bottom valve

PTFE spindle valve with sloped outlet. The spindle shall be pressed in without turning. In the valve housing is an additional spring mounted in. So the spring pressure of the spindle to the valve seat can be increased spring- loaded and the spindle regulates itself. This guarantees a good tightness at large variations of temperature. The industrial valve is available with a 10 mm bore hole (standard) and as desired with a 20 mm bore hole.



Order No.	Description	Suitable for
CRS-4153B-S	10 mm bore hole, Length 95mm	250-1000ml reactor
CRS-4153B-L	10 mm bore hole, Length 115mm	2000 & 5000ml reactor
CRS-4153B-V	20 mm bore hole, Length 140mm	250-5000ml reactor
SQTK032037	0-25 mm, DN50	EZChem, PlusChem

Lid for EZChem series



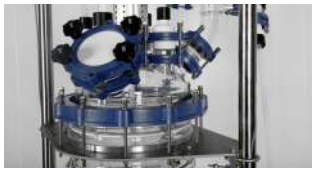
Order No.	Flange NW	Centre socket	Side sockets	Solid feeding socket	Gasket	Clamp	Side cover (PTFE)
JRS-2904-12	DN200	45/50(1)	45/50(3)	60mm(1)	JRS-1701-04	JRS-4067-01	JRS-2909-01
SQEG075961	DN300	45/50(1)	45/50(4)29/32(2)	100mm(1)	VAJQ068919	SQQI007884	JRS-2909-02
SQEG079137	DN400	45/50(1)	45/50(4)29/32(2)	100mm(1)	VAJQ068920	SQQI007885	JRS-2909-02

Lid for PlusChem series

Order No.	Flange NW	Centre socket	Side sockets	Solid feeding socket	Gasket	Coupling Flange
SQEG073335	DN300	DN25	DN25(1), DN40(3), DN50(1)	DN80	JRS-2405-02	2402-01
SQEG077508	DN400	DN50	DN25(1), DN40(3), DN80(1)	DN100	JRS-2405-03	2402-02
SQEG081338	DN450	DN50	DN25(1), DN40(3), DN80(1)	DN100	JRS-2405-04	2402-03

Side cover, PTFE

GZRI300080	Cap	PTFE Blank Cap DN80
SQQI007880	Flange	DN80 Flange with bolt/nut and insert
VAJQ068917	Gasket	PTFE Gasket DN80
GZRI400100	Cap	PTFE Blank Cap DN100
SQQI007881	Flange	DN100 Flange with bolt/nut and insert
VAJQ068918	Gasket	PTFE Gasket DN100



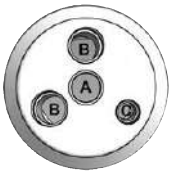
Lid for bench-top glass reactor

Order No.	Flange NW	Centre socket	Side sockets	Solid feeding socket	O-Ring	Quick release clamp	Side cover
JRS-6443-02	DN60	24/40(1)	14/20(3)	24/40(1)	JRS-1701-01	JRS-2401-01	JRS-2103-01
JRS-2904-01	DN100	24/40(1)	24/40(3)	GL45(1)	JRS-1701-02	JRS-2401-02	JRS-2301-01
JRS-2904-03	DN150	24/40(1)	24/40(3)	GL45(1)	JRS-1701-03	JRS-2401-03	JRS-2301-01

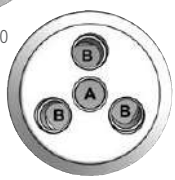


Lid for reaction vessels, PTFE, DN60

Order No.	Flange NW	A/B	C	O-Ring
JRS-12858-10	DN60	1/2"NPT	1/4"NPT	JRS-1701-01
JRS-12858-15	DN60	1/2"NPT	-	JRS-1701-01



JRS-12858-10



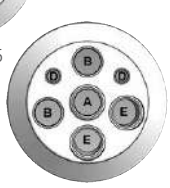
JRS-12858-15

Lid for reaction vessels, PTFE, DN100

Order No.	Flange NW	A/B/E	C	D	O-Ring	Quick release clamp
JRS-12860-12	DN100	3/4"NPT	1"NPT	1/4"NPT	JRS-1701-02	JRS-2401-02
JRS-12860-25	DN100	3/4"NPT	1"NPT	1/4"NPT	JRS-1701-02	JRS-2401-02



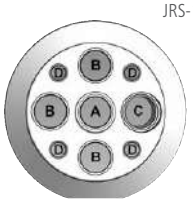
JRS-12860-25



JRS-12860-12

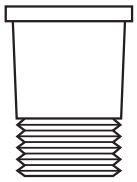
Lid for reaction vessels, PTFE, DN150

Order No.	Flange NW	A/B/C	D	O-Ring	Quick release clamp
JRS-12862-16	DN150	1"NPT	1/2"NPT	JRS-1701-03	JRS-2401-03



PTFE Inserts for PTFE reaction vessel lids

Order No.	Description	NPT
JRS-12866-05	19/38 PTFE Standard taper adapter, outer	1/2"
JRS-12866-08	19/38 PTFE Standard taper adapter, outer	3/4"
JRS-12866-14	24/40 PTFE Standard taper adapter, outer	1/2"
JRS-12866-16	24/40 PTFE Standard taper adapter, outer	3/4"
JRS-12866-18	24/40 PTFE Standard taper adapter, outer	1"
JRS-12866-21	29/42 PTFE Standard taper adapter, outer	1/2"
JRS-12866-23	29/42 PTFE Standard taper adapter, outer	3/4"
JRS-12866-25	29/42 PTFE Standard taper adapter, outer	1"
JRS-12866-33	45/50 PTFE Standard taper adapter, outer	3/4"
JRS-12866-35	45/50 PTFE Standard taper adapter, outer	1"



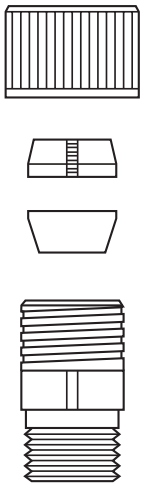
PTFE Plug

Order No.	Description	NPT
JRS-12867-04	PTFE Plug	1/4"
JRS-12867-12	PTFE Plug	1/2"
JRS-12867-18	PTFE Plug	3/4"
JRS-12867-24	PTFE Plug	1"



Screw thread compression fittings

Order No.	Description	NPT
JRS-12869-08	PTFE 8mm bore compression fitting	1/2"
JRS-12869-12	PTFE 14mm bore compression fitting	3/4"
JRS-12869-25	PTFE 14mm bore compression fitting	3/4"
JRS-12869-27	PTFE 16mm bore compression fitting	3/4"
JRS-12869-29	PTFE 19mm bore compression fitting	3/4"
JRS-12869-33	PTFE 14mm bore compression fitting	1"
JRS-12869-35	PTFE 16mm bore compression fitting	1"
JRS-12869-37	PTFE 19mm bore compression fitting	1"
JRS-12869-39	PTFE 25mm bore compression fitting	1"



Screw thread compression fittings

Order No.	Description	NPT
JRS-12871-03	PTFE Screw thread #7-NPT	1/4"
JRS-12871-07	PTFE Screw thread #7-NPT	1/2"
JRS-12871-11	PTFE Screw thread #11-NPT	1/2"
JRS-12871-14	PTFE Screw thread #15-NPT	3/4"
JRS-12871-18	PTFE Screw thread #18-NPT	3/4"
JRS-12871-25	PTFE Screw thread #25-NPT	1"



Digital stirring motor

Laboratory stirrer designed for simple tasks. It automatically adjusts the speed through microprocessor-controlled technology. Safety circuits installed ensure automatic cut-off in anti-stall or overload conditions. Continuous comparison of shaft speed to desired speed is maintained and variations adjusted automatically. This guarantees a constant speed even with changes in viscosities of the sample.

Model	WHOS-15 Pro	WOHS-400 Pro
Stirring quantity Max (L/water)	50	100
Speed range (rpm)	40~2000	10~360 / 361~1800
Viscosity Max (cPs)	20000	150000
Speed display	TFT display	TFT display
Time setting range	99h59min50sec	99h59min50sec
Power (W)	60	150
Torque max. at stirring shaft (N-cm)	29	565 / 113
Order No.	W3041015	W3041018



Remotely controllable high torque / high speed stirrer

Laboratory stirrer designed for simple tasks. It automatically adjusts the speed through microprocessor-controlled technology. Safety circuits installed ensure automatic cut-off in anti-stall or overload conditions. Continuous comparison of shaft speed to desired speed is maintained and variations adjusted automatically. This guarantees a constant speed even with changes in viscosities of the sample.

Model	WOHS-200 Pro F	WOHS-400 Pro F
Stirring quantity Max (L/water)	100	100
Speed range (rpm)	10~600 / 601~3000	10~360 / 361~1800
Viscosity Max (cPs)	100000	150000
Speed display	TFT display	TFT display
Time setting range	99h59min50sec	99h59min50sec
Power (W)	150	150
Torque max. at stirring shaft (N-cm)	339 / 68	565 / 113
Order No.	W3041030	W3041018



Coupling

The universal swivel coupling is designed for connection to a metal chuck. The compression connection is secured via Allen screw, and attaches to various O.D. glass stirring shafts. When used with pass-through assemblies, the coupling allows for easy, flexible height adjustment.

Order No.	Description	Suitable for
JRS-8126-05N	8mm Shaft Coupling	250/500ml
JRS-8126-06N	10mm Shaft Coupling	1000/2000/5000ml
JRS-8126-16	16mm Shaft Coupling	EZChem 10/20/30L
JRS-8126-28	28mm Shaft Coupling	EZChem 50/100L



Stirrer bearing PTFE

Inert PTFE stirrer bearing. Features a totally enclosed bearing body for non-shedding, anti-whip, chemically-resistant design. The bearing can also be used in slight vacuum or slight pressure applications. The design has a composite PTFE/PEEK main internal seal and a specially fabricated glass ball-bearing for rigidity and smoothness during lengthy operation. Maximum recommended speeds up to 500rpm continuous operation. Ideal for glass, metal, or PTFE stir shafts. Bottom is a molded, inner standard taper joint. Average length is 96mm and 45mm O.D. at bearing center.



Order No.	Description	Suitable for
5-104-7	8mm PTFE/PEEK stirrer bearing	BTG 250ml/500ml reaction system
5-105-6	10mm PTFE/PEEK stirrer bearing	BTG 1000/2000/5000 reaction system
5-11207	16mm PTFE/PEEK stirrer bearing	EZChem 10/20/30L reaction system

Stirrer bearing Glass

Self-aligning, lubricant-free PTFE Trubore™ glass and PTFE bearing for use with stainless steel or glass stirring shafts. The lock nut permits stirring in either direction without fear of unthreading. The compression saddle with O-Ring maintains constant force with little attention. Not recommended for precision ground glass shafts.



Order No.	Description	Suitable for
JRS-8067-105	Complete bearing assembly, shaft size 28mm, bottom inner 45/50	EZChem 50/100L reaction system

Collar w/PTFE Gasket

Designed to be used with stirring shafts. Handy for positioning shaft in bearing, and preventing shaft from dropping into flask. Supplied with PTFE gasket to prevent scratching top of bearing, and to act as dust cover.



Order No.	Description	Suitable for
JRS-8127-28	Glass-Filled PTFE, shaft size 28mm	EZChem 50/100L reaction system

#7 Temperature sensor adapter w/PTFE Ferrule

With inner joint at bottom, and #7 temperature sensor adapter with inner thread at top. Suitable for most vacuum work.

Note: Supplied complete with Nylon bushing and PTFE ferrule in place of O-Ring.



Order No.	Description	Suitable for
JRS-5028-31	#7 temperature sensor adapter with inner thread	EZChem 50/100L reaction system
Replacement parts		
JRS-11710-07	PTFE Ferrule, 1/4" hole	

PTFE joint sleeves

Prevent glass joints from freezing, also allow ease of removal for ground glass joints. Precludes contamination from lubricant or leaks. Will withstand low to medium vacuum.

Order No.	Description
JRS-7643-08	0.05mm wall thickness, 24/40, up to 280°C
JRS-7643-10	0.05mm wall thickness, 29/42, up to 280°C
JRS-7643-16	0.05mm wall thickness, 45/50, up to 280°C



Joint clips standard taper joint, acetal plastic

Keck type clips made from polymethylene acetal resin, snap on and off with ease. Will not scratch the glass, and are resistant to concentrated alkalies and dilute acids. Useful temperature range:
-40˚C to 140˚C. Slight positive pressure only.

Order No.	Description
JRS-7598-24	Suitable for joint size 24/40, green, 10pcs
JRS-7598-29	Suitable for joint size 29/42, red, 10pcs
JRS-7598-45	Suitable for joint size 45/50, Brown, 10pcs



Stirring shaft and impeller

Order No.	Description	Suitable for
5-250-8-2	Screw Propeller, 4-Bladed (PTFE Coated), Shaft Ø8mm, L=500mm, Rotor Ø40mm	250/500ml
5-255-10-2	Screw Propeller, 4-Bladed (PTFE Coated), Shaft Ø10mm, L=550mm, Rotor Ø70mm	1000ml
5-0355-10-2	Anchor Impeller (PTFE Coated), Shaft Ø10mm, L=650mm, Rotor Ø100mm	2000ml
5-0365-10-2	Anchor Impeller (PTFE Coated), Shaft Ø10mm, L=650mm, Rotor Ø140mm	5000ml
5-610090	Adjustable Turbine, Shaft Ø10mm, 90mm	5000ml
5-03100-16-2	16mm PTFE coated stirring shaft, anchor, 1000mm length	EZChem 10L
5-616100	Adajusted rotor, 4-blade angle type, shaft Ø16mm	EZChem 10/20L
JRS-8080-14	28mm Glass Stirring Shaft, 1140mm length	EZChem 30L
JRS-8080-24	28mm Glass Stirring Shaft, 1470mm length	EZChem 50/100L
JRS-8091-36	Shaft Size, 28mm; Blade Length, 178mm	EZChem 30/50/100L
JRS-8091-36N	Shaft Size, 28mm; Blade Length, 178mm	EZChem 50/100L
JRS-8093-35	Shaft Size, 28mm; Blade Length, 150mm; Blade Angle, 45	EZChem 30/50/100L





Liquid funnel pressure equalizing, graduated, w/PTFE needle valve stopcock

Double graduated addition funnel with threaded stopcock with PTFE plug permits smooth needle valve adjustment down to 0.1mL/min flow rate. Double PTFE ring seals prevent exposure of backup O-Ring to corrosive liquids. Angled position makes manipulation of stopcock easier than conventional style.

Order No.	Description
JRS-2803-02	Capacity 125mL, Joint 24/40, Overall length 380mm, Bore: 0~4mm
JRS-2803-03	Capacity 250mL, Joint 24/40, Overall length 385mm, Bore: 0~4mm
JRS-2803-04	Capacity 500mL, Joint 24/40, Overall length 500mm, Bore: 0~4mm
JRS-2803-02	Capacity 1000mL, Joint 24/40, Overall length 565mm, Bore: 0~4mm
JRS-2803-03	Capacity 2000mL, Joint 24/40, Overall length 760mm, Bore: 0~4mm



Glass stopper

Double graduated addition funnel with threaded stopcock with PTFE plug permits smooth needle valve adjustment down to 0.1mL/min flow rate. Double PTFE ring seals prevent exposure of backup O-Ring to corrosive liquids. Angled position makes manipulation of stopcock easier than conventional style.



Order No.	Description
JRS-2103-01	Glass stopper, 24/40
JRS-8250-14	Glass stopper, 29/42
JRS-8250-20	Glass stopper, 45/50

Offset adapter

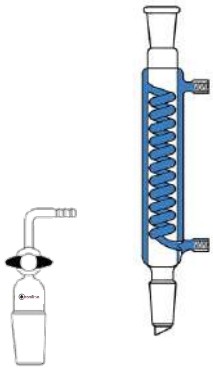
Offset adapters are used to gain better vertical clearance when using addition funnels, condensers, or other apparatus. Both bottom inner joint and top outer joints are slightly offset and angled for reactor heads.



Order No.	Description
JRS-2020-01	Offset adapter, 24/40, without drip tip
JRS-5268-15	Offset adapter, 29/42, without drip tip
JRS-2020-02	Offset adapter, 45/50, without drip tip
JRS-5268-54	Offset adapter, 24/40, with drip tip
JRS-5268-56	Offset adapter, 29/42, with drip tip
JRS-5268-58	Offset adapter, 45/50, with drip tip

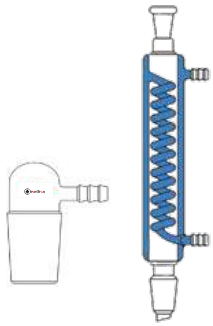
Condenser with jacket and cooling coil, high-efficiency

This high-efficiency condenser creates a turbulent flow, making it very desirable for use under reduced pressure. Internal and external cooling surfaces result in high efficiency per unit length. The cooling water joint is detachable



Order No.	Description	Suitable for
JRS-2501-09	Condenser with jacket and cooling coil, 300mm, 24/40	250-5000ml
JRS-2501-10	Condenser with jacket and cooling coil, 400mm, 24/40	5000ml
JRS-2012-02	Vacuum Adapter, 24/40, for 10mm tubing	
JRS-11081-21	Clamp holder	
JRS-11065-16	3 Prong, Extended, Large	

Condenser with jacket and cooling coil, high-efficiency



Order No.	Description	Suitable for
JRS-2506-13	Condenser with jacket and cooling coil, 300mm, 45/50	EZChem 10/20/30L
JRS-2506-14	Condenser with jacket and cooling coil, 400mm, 45/50	EZChem 50/100L
JRS-2017-02	Adapter, inlet or outlet, 90° , 3/8" hose barb	

pH measurement



Order No.	Description
MLFM069215	Datalogger pH meter M300, pH range from -1 to +15, Auto/0.001/0.01/0.1 are optional, Precision ±0.03pH
MLFM042649	Inpro 4800, Length 425mm, with pt1000
MLMF067082	3 meter cable, connect the electrode to the meter

Distillation Reflux / Divider Head, Collection flask

Order No.	Description	Suitable for
JRS-11065-16	Distillation Reflux / Divider Head Claisen Style, 24/40	All-in-one series
JRS-2302-05	Cap, Solid, GL18	All-in-one series
JRS-11081-21	Clamp holder	All-in-one series
JRS-11073-20	2 Prong, Extended, Large	All-in-one series
JRS-6887-232	250mL collection flask, Single neck, 24/40	250ml
JRS-6887-224	250mL collection flask, Single neck, 24/40	500ml
JRS-6887-226	500mL collection flask, Single neck, 24/40	1000/2000ml
JRS-6887-227	1000mL collection flask, Single neck, 24/40	5000ml



Order No.	Description	Suitable for
JRS-2620-02	Distillation Reflux / Divider Head Claisen Style, 45/50	EZChem series
JRS-2910-10	Lid for collection flask, DN150	EZChem 10/20/30/50L
JRS-2910-11	Lid for collection flask, DN200	EZChem 100L
JRS-2715-05	5L collection flask, DN150, bottom valve 0-10mm	EZChem 10/20/30L
JRS-2715-10	10L collection flask, DN150, bottom valve 0-10mm	EZChem 50L
JRS-2715-20	20L collection flask, DN200, bottom valve 0-10mm	EZChem 100L



Adapter, bushing

Order No.	Description	Suitable for
JRS-2002-17	Adapter, bushing, 45/50 inner, 24/40 outer	EZChem 10/20/30L



Termperature sensor

Order No.	Description	Suitable for
8981015	300x6mm, SS/PTFE, 3m cable	250ml-500ml
89810154	400x6mm, SS/PTFE, 3m cable	1000ml-5000ml
8981013	600x6mm, SS/PTFE, 3m cable	EZChem 10/20/30L
8981016	900x6mm, SS/PTFE, 3m cable	EZChem 50L
8981014	1200x6mm, SS/PTFE, 3m cable	EZChem100L



Multi channel regulating valve

Order No.	Description	Suitable for
JRS-12194-02	Multi channel regulating valve, Outlet of the reactor jacket, M16x1	All-in-one series / EZChem 10L
JRS-12194-06	Multi channel regulating valve, Inlet of the reactor jacket, M16x1	All-in-one series / EZChem 10L
8930220	0.5 m Metal tubing, 2 fittings M16x1 female	All-in-one series / EZChem 10L

Order No.	Description	Suitable for
JRS-12194-12	Multi channel regulating valve, Outlet of the reactor jacket, M30x1.5	EZChem 20L/30L/50L/100L
JRS-12194-16	Multi channel regulating valve, Inlet of the reactor jacket, M30x1.5	EZChem 20L/30L/50L/100L
8930271	1.0 m Metal tubing, 2 fittings M30x1.5 female	EZChem 20L/30L/50L/100L



Smart supporting sturecture for All-in-one series

Order No.	Description	Suitable for
CRS-2602-01	Smart supporting sturecture with DN60 flange, 400×400×1200mm	All-in-one series
CRS-2602-02	Smart supporting sturecture with DN100 flange, 400×400×1200mm	All-in-one series
CRS-2602-03	Smart supporting sturecture with DN150 flange, 400×400×1200mm	All-in-one series



Smart supporting sturcture for parallel Reactor

Order No.	Description	Suitable for
CRS-2605-01	Smart supporting sturecture for two parallel Reactor	All-in-one series
CRS-2605-02	Smart supporting sturecture for three parallel Reactor	All-in-one series
CRS-2605-03	Smart supporting sturecture for four parallel Reactor	All-in-one series



Smart supporting sturcture

Order No.	Description	Suitable for
CRS-2602-13	For 5L Glass reaction system with DN150 flange	5000mL
JRS-3602-01	For 10L standard pilot reactor with DN200 flange, 720×600×2080mm	EZChem 10L
JRS-3602-02	For 20L and 30L standard pilot Reactor with DN300 flange, 800×660×2380mm	EZChem 20L/30L
JRS-3602-03	For 50L standard pilot reactor with DN300 flange, 800×660×2650mm	EZChem 50L
JRS-3602-04	For 50L standard pilot reactor with DN400 flange, 890×716×2650mm	EZChem 50L
JRS-3602-05	For 100L standard pilot reactor with DN400 flange, 890×716×2980mm	EZChem 100L



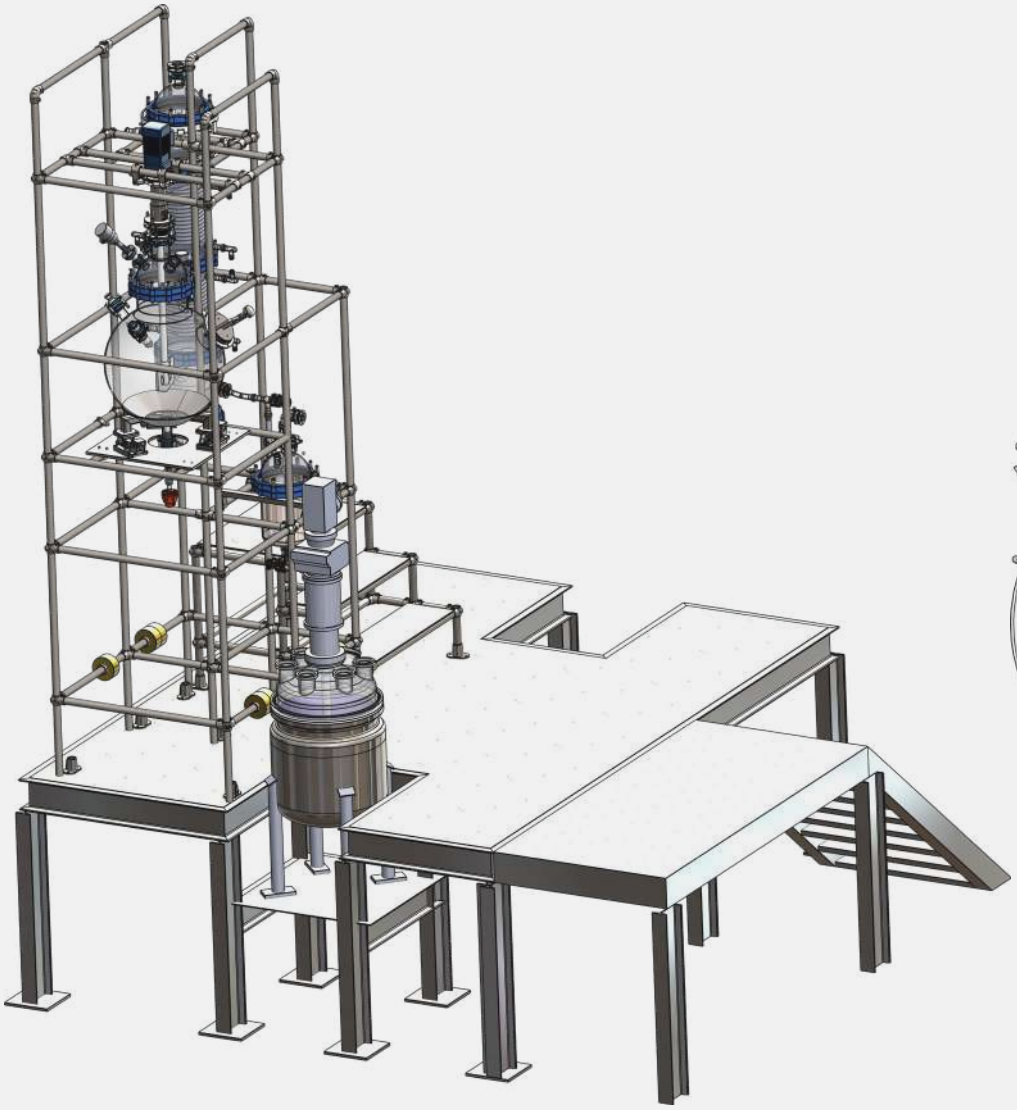
SPHERICAL REACTOR

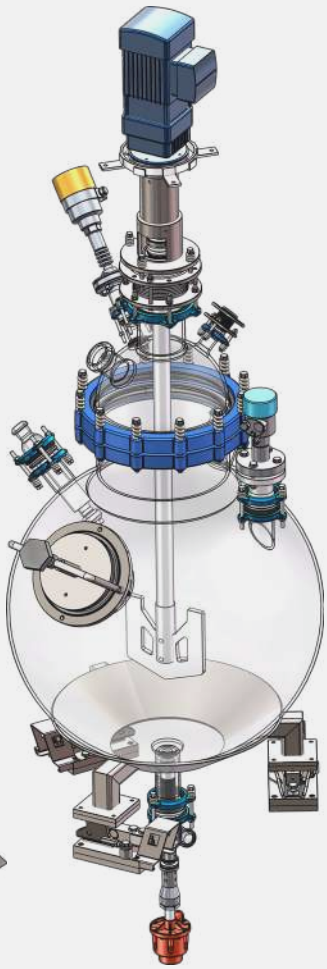
Standard volume: 12L,22L,50L,72L,100L and 200L, without jacket

The Glass Spherical Reactor is a universal atmospheric-pressure reaction instrument, specially developed for conventional laboratory chemical synthesis and solution treatment. The main body adopts integrated blow-molded high borosilicate glass, which is resistant to most organic solvents, acidic and weak alkaline media, with no chemical dissolution or catalytic interference, ensuring pure and undisturbed reaction systems and reliable experimental data.

Different from ordinary straight-tube and cylindrical reaction kettles, the spherical cavity structure realizes more uniform liquid flow field and better stirring mixing performance. It avoids material deposition and reaction dead zones, greatly improving the uniformity of solid-liquid mixing and reaction progress. The open detachable structure supports convenient material feeding, real-time sampling, residue cleaning and equipment maintenance. It can be matched with stirring, constant temperature heating, condensation and circulating devices to meet diversified experimental demands.

With the advantages of simple structure, high visibility, easy operation and low cost, this reactor is widely applicable in fine chemical synthesis, pharmaceutical sample preparation, solution mixing and dilution, solvent distillation and concentration, environmental sample pretreatment and daily laboratory conventional reaction tests.





Unjacketed Spherical Reactor Systems

12L & 22L Reactors w/Support Stand

Features

- Elevated mantle support.
- Temperature-controlled heating mantle.
- Bottom outlet.
- Flask with 4" (10.2cm) center opening,two 45/50 side necks, one #7 Thred thermometer opening, and one 28/15 ball joint take-off at the bottom.
- Electric stirring motor (Cat. No. 13649-07), self-standing on flask-mounted motor mount (air motor also available).
- PID Digital readout temperature controller with PFA coated "J" thermoprobe for precise temperature control.
- Bottom heating mantle.
- Flat-sided powder funnel for easy additions.
- Rugged, steel-reinforced PTFE stirring rod with precision Trubore® economy bearing. Removable PTFE paddle agitator.
- Mantle supports raise the mantle about 36" (91.4 cm) for easy access to the flask's bottom.
- Approximate overall height: 71" ; Base width: 28" .
- Flask with Sink Valve or Zero Dead Space Valve available upon request.
- Complete Self-Supporting Assembly.
- Easily located near an electrical outlet.
- Can be moved intact without disassembly when not in use.

ChemTron Reaction Assemblies are available as listed. For design changes or modifications, we offer custom fabrication. Contact us via email, phone, or fax for a quotation.

12 Liter Order Code	22 Liter Order Code	
JRS-6469-16	JRS-6469-18	FLASK, Center Neck 10.2cm Flange, Two 45/50 Side Necks, One #7 Thred and One 28/15 Ball Outlet At Bottom
JRS-6469-26	JRS-6469-26	HEAD, 45/50
JRS-6495-10	JRS-6495-10	GASKET, PTFE
JRS-8124-10	JRS-8124-15	CHUCK, Flex-Grip
JRS-8071-07	JRS-8079-03	ROD, PTFE w/Stainless Steel Core
JRS-8089-08	JRS-8091-10	AGITATOR, PTFE Paddle
JRS-3649-07	JRS-13649-07	MOTOR, only
JRS-6469-30	JRS-6469-32	MOTOR MOUNT
JRS-13530-10	JRS-13530-10	MOTOR CONTROLLER, only
JRS-8042-121	JRS-8065-64	BEARING, Economy, 45/50
JRS-6468-13	JRS-6468-13	CLAMP, Head, Aluminum
JRS-6469-40	JRS-6469-40	ADAPTER, Stopcock, 28/15, PTFE, 6mm Bore
JRS-12126-24	JRS-12126-24	TEMPERATURE CONTROLLER
JRS-12141-25	JRS-12141-25	SENSOR, PFA Coated, 12" x 1/4"
JRS-12141-80	JRS-12141-80	SENSOR LEAD, only, Type "J"
JRS-6469-52	JRS-6469-52	FUNNEL, Powder, 45/50
JRS-8250-20	JRS-8250-20	STOPPER, 45/50
JRS-7666-15	JRS-7666-15	CLAMP, 28/15
JRS-11080-19	JRS-11080-19	CLAMP Holder, Regular
JRS-12044-28	JRS-12044-30	MANTLE, Heating, w/Hole
JRS-12097-45	JRS-12097-47	MANTLE, Support
JRS-6469-62	JRS-6469-67	Complete

Unjacketed Spherical Reactor Systems

12L, 22L, 50L & 72L Reactors w/Support Stand

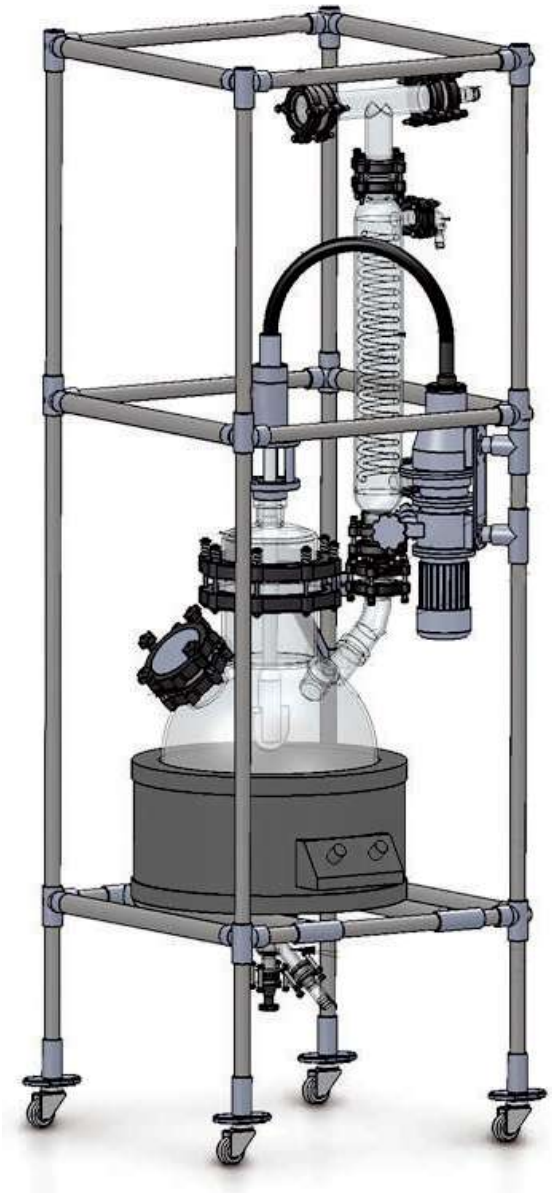
Features

- Rugged, steel-reinforced PTFE stirring rod.
- Heavy-duty mechanical lab stirrer.
- Temperature-controlled heating mantle.
- Complete Reaction Assembly.
- Utilizes standard reaction equipment.
- Flasks ranging from 12L to 72L with spherical and standard taper joints.
- 19mm diameter steel-reinforced PTFE stirring rod operates without lubrication, running in a precision Trubore™ bearing. Removable PTFE paddle with interchangeable agitators.
- 6016 condenser efficiently attached to 65/40 side joint.
- Adjustable thermowell depth via Thred® adapter.
- Includes a heavy-duty mechanical lab stirrer; an air-driven motor option is available upon request.
- Heavy-duty bottom heating mantle.
- Approximate overall height: 12L and 22L – 59″ ; 50L and 72L – 63″ .
- For non-electric motor options, contact wiggens for a customized quotation.

12 Liter Order Code	22 Liter Order Code	50 Liter Order Code	72 Liter Order Code	
JRS-6470-20	JRS-6470-24	JRS-6470-26	JRS-6470-28	FLASK, Center and Two Side 65/40, Two 29/42
JRS-6016-75	JRS-6016-77	JRS-6016-79	JRS-6016-79	CONDENSER, Pilot Plant
JRS-8040-55	JRS-8060-10	JRS-8060-10	JRS-8060-10	BEARING, 65/40, Water-Cooled
JRS-8071-10	JRS-8079-05	JRS-8079-10	JRS-8079-10	ROD, PTFE w/Stainless Steel Core
JRS-8088-10	JRS-8092-10	JRS-8092-10	JRS-8092-10	AGITATOR, PTFE, Single Blade
JRS-8126-10	JRS-8126-22	JRS-8126-22	JRS-8126-22	CHUCK
JRS-7297-37	JRS-7297-37	JRS-7297-37	JRS-7297-37	FUNNEL, Pressure Equalizing, 24/40, 1000mL
JRS-8250-12	JRS-8250-12	JRS-8250-12	JRS-8250-12	STOPPER, 24/40
JRS-5025-24	JRS-5025-24	JRS-5025-24	JRS-5025-24	ADAPTER, 24/40 - 65/40
JRS-5030-42	JRS-5030-42	JRS-5030-42	JRS-5030-42	ADAPTER, Maxi 29/42
JRS-5030-24	JRS-5030-24	JRS-5030-24	JRS-5030-24	ADAPTER, Midi 29/42
JRS-6470-42	JRS-6470-44	JRS-6470-46	JRS-6470-46	THERMOWELL, 10mm O.D.
JRS-13565-10	JRS-13565-10	JRS-13565-10	JRS-13565-10	OVERHEAD STIRRER
JRS-7666-30	JRS-7666-30	JRS-7666-30	JRS-7666-30	CLAMPS, 65/40 Union Type (3)
JRS-12043-27	JRS-12043-29	JRS-12043-31	JRS-12043-33	HEATING MANTLE, Alum. Housing
JRS-12097-08	JRS-12097-10	JRS-12097-12	JRS-12097-14	MANTLE SUPPORT
JRS-12126-45	JRS-12126-45	JRS-13552-04	JRS-13552-06	TEMPERATURE CONTROLLER
JRS-6470-60	JRS-6470-64	JRS-6470-68	JRS-6470-72	Complete

Unjacketed Spherical Reactor Systems

50L, 72L , 100L& 200L Reactors w/Support Stand



Our design prioritizes diversity and user-friendliness. It serves as a simple base system for customization, enabling the use of catalog or custom-designed parts to tailor your reactor system. Each system includes essential starting components. To meet your specific requirements, just choose the motor and accessories you need. Enhance your system further with a wide range of optional components we provide.

Unjacketed Kilo Systems include:

- 4 Post Reactor Stand
- Unjacketed Spherical Flask
- Head, Coupling and O-Rings
- Agitator, Stir Shaft, Bearing & Collar
- Lid and Clamp
- Bottom Drain Valve
- Heating Mantle
- Temperature Controller with Probe
- Cooling/Heating Coil (not pictured)

50L, 72L & 100L

for Flange Mount Motors	Capacity (L)
JRS-12847-02	50
JRS-12847-04	72
JRS-12847-06	100

Included Components

Order Code	No.	Description	Qty
JRS-12842-04	1	Universal Support Stand	1
JRS-6530-14	2	50L Unjacketed Spherical Flask w/Flush Seal Valve	1
JRS-6530-21		72L Unjacketed Spherical Flask w/Flush Seal Valve	
JRS-6530-27		100L Unjacketed Spherical Flask w/Flush Seal Valve	
JRS-6530-33	3	200mm, 3 Neck Head	1
JRS-6517-31		200mm Quick-release Clamp	1
JRS-8080-14	4	28mm Glass Stirring Shaft, 45″ Length	1
JRS-8127-28		28mm Shaft Collar	1
JRS-8067-105		28mm PTFE Thred Bearing	1
JRS-8101-28		7″ O.D. Multi-paddle Style Lower Agitator w/Receptacle	1
JRS-8093-25		5-1/2″ O.D. Upper Turbine, 45 Degree	1
JRS-8126-28		28mm Shaft Coupling	1
JRS-6482-20	5	Flush Seal Drain Valve w/CAPFE O-Ring and Top Pin	1
JRS-8856-11		2″ Beaded Pipe Coupling	1
JRS-12050-41	6	1000Watt Aluminum Heating Mantle w/Hole, 230VAC (50L Only)	1
JRS-12041-40		1200 Watt Girdle Mantle, 230VAC (50L Only)	
JRS-12050-43		1300 Watt Aluminum Heating Mantle w/Hole, 230VAC (72L Only)	1
JRS-12041-42		1800 Watt Girdle Mantle, 2 Circuit, 230VAC (72L Only)	
JRS-12050-45		1600 Watt Aluminum Heating Mantle w/Hole, 230VAC (100L Only)	1
JRS-12041-44		1400 Watt Girdle Mantle, 3 Circuit, 230VAC (100L Only)	
JRS-13552-04	9	Pilot Plant Temperature Controller, 230VAC, 4 Circuit	1
JRS-12141-28		1/4 x 36″ PFA Coated Type "J" Thermocouple	1
JRS-12141-80		Type "J" Coiled Thermocouple Extension Cord	1
JRS-5028-32		29/42 to #7 Thred Adapter	1
JRS-5021-94		29/42 to 45/50 Reducing Adapter	1
JRS-12067-61	10	Heat Exchange Cooling Coil, PTFE-Clad Copper (50L Only)	1
JRS-12067-63		Heat Exchange Cooling Coil, PTFE-Clad Copper (72L Only)	
JRS-12067-65		Heat Exchange Cooling Coil, PTFE-Clad Copper (100L Only)	
JRS-5030-24		29/42 to #11 Thred Adapter	2

200 L

Order Code	Description
JRS-6474-29	FLASK, w/Side Necks and 2″ Beaded Pipe Bottom Opening
JRS-6472-23	HEAD, Domed, w/Seven Openings
JRS-6525-51	GASKET, PTFE
JRS-6525-30	COUPLING, w/inserts and hardware
JRS-6525-60	WRENCH, Torque, 30 in-lbs
JRS-6525-61	SOCKET, 1/4″
JRS-6472-245	DRAIN VALVE, Flush Seal
JRS-8856-07	CLAMP, Drain Valve, 1″
JRS-8856-11	CLAMP, Drain Valve, 2″
JRS-8830-207	SWEEP ELBOW, 60° , 1″ BP
JRS-15312-33	CAP, 4″
JRS-7855-880	O-Ring, CAPFE, for 4″ Flange
JRS-6517-25	CLAMP, Quick-release
JRS-12053-78	MANTLE, Bottom, Aluminum, w/hole, 4-2000w-230v, wired w/ plugs
JRS-6474-373	SUPPORT ASSEMBLY, Complete
JRS-13552-06	TEMPERATURE CONTROL SYSTEM, Complete
JRS-13553	STIRRING MOTOR AND CONTROLLER, 3/8 HP
JRS-8091-36	AGITATOR, Lower, PTFE, Multi-paddle, 178mm
JRS-8093-35	AGITATOR, Upper, PTFE, w/4 Pitched Blades, 152mm
JRS-8080-24	STIRRING SHAFT, Polished Glass, 28mm
JRS-8067-105	BEARING, PTFE, 45/50
JRS-6472-156	CONNECTOR, Beam, Connects 5/8″ Motor Shaft to Chuck
JRS-6472-157	CHUCK, 28mm, Connects Beam Connector to Stirring Shaft
JRS-8127-28	COLLAR, w/PTFE Gasket
JRS-12067-68	COIL, Cooling/Heating, Copper/PTFE, 1/2″
JRS-5030-42	ADAPTER, #15 – 29/42 (2)
JRS-8042-21	ADAPTER, #15 – 45/50
JRS-5274-22	ADAPTER, #15 – 45/50, w/4mm PTFE Stopcock
JRS-5031-86	ADAPTER, #11 and #15 – 45/50
JRS-5040-96	ADAPTER, Side Arm, 45/50 – 45/50 – 24/40
JRS-5075-45	ADAPTER, Angle, 45/50 – 45/50
JRS-5268-21	ADAPTER, Offset, 45/50 – 45/50
JRS-7506-02	BUSHING, Nylon, #11
JRS-7506-06	BUSHING, Nylon, #15 (4)
JRS-5945-76	CONDENSER, 500mm, 45/50
JRS-5958-99	CONDENSER, Cold Finger, 14mm O.D., 625mm
JRS-8250-20	STOPPER, 45/50 (3)
JRS-11079-24	CLAMP, Chain
JRS-11081-21	CLAMP HOLDER, Pilot Plant (2)
JRS-11166-25	SUPPORT ROD,1/2″ diameter, 18″ long
JRS-11175-23	END-TO-END CONNECTOR
JRS-8115-08	GREASE, Krytox GPL
JRS-6474-75	Complete

GLASS PRESSURE REACTOR

Standard volume: 500ml, 1000ml, 2000ml, 3000ml and 5000ml, with or without jacket

The Glass Pressure Reactor is a conventional sealed pressure reaction device for laboratory medium-temperature and low-pressure chemical experiments. Manufactured from high-quality borosilicate glass, it features good transparency, stable chemical properties and excellent pressure resistance, allowing real-time visual monitoring of sealed pressurized reactions. With a reliable precision sealing structure and intelligent temperature control system, it stably maintains constant temperature and pressure reaction conditions. It supports vacuum treatment and inert gas protection, and is widely used in organic synthesis, chemical reaction optimization, sample pretreatment, mild pressure catalysis and conventional laboratory pressure reaction experiments.

It is an essential basic laboratory equipment, perfectly meeting the daily experimental demands of medium and low pressure, mild temperature and visual sealed reactions for scientific research and industrial trial production.





The **Two-Piece System** consists of a flanged flask and head with a shallow O-Ring groove, O-Ring, and quickrelease clamp. Flange sizes range from 60mm to 150mm inside diameter, allowing the use of large agitators and facilitating product removal and clean-out.

The **One-Piece System** provides a #25 center opening, with smaller openings as side necks, and has a higher allowable operating pressure.

Both systems offer jacketed and unjacketed vessels, with or without bottom outlet valves. These jackets are heat-sealed. Complete systems and their components are listed on the following pages. Systems are available with:

Due to varying conditions, ChemTron cannot guarantee glassware against breakage caused by pressure or vacuum.

- Liquid addition funnel
- Solid addition funnel
- Stirring motor, controller and flexible shaft
- Heating mantle and temperature control system
- Thermowell
- Moisture test receiver
- Temperature controller with thermocouple
- Pressure relief manifold
- System frame

Safety is the foremost concern when operating pressurized glass Reactor. With this in mind, ChemTron offers a separate manifold, 6448 (see photo), which MUST be used in conjunction with all pressure systems listed in this catalog. It consists of a glass manifold with Screw threads, PTFE adapters, a pressure gauge, a primary adjustable pressure release valve, and a secondary fixed pressure rupture disc. In addition, approved safety shields, eye and body protection should be used to avoid personal injury.

Order information for complete system

6427 Series

Jacketed Two-Piece Pressure Reactor
without bottom outlet



Order information	
CRS6427-207	500ml System (60mm flange)
CRS6427-209	500ml System (100mm flange)
CRS6427-212	1000ml System (100mm flange)
CRS6427-217	2000ml System (100mm flange)
CRS6427-223	3000ml System (150mm flange)
CRS6427-228	5000ml System (150mm flange)

6423 Series

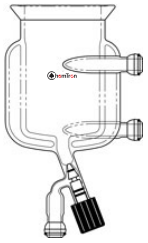
Unjacketed Two-Piece Pressure Reactor
without bottom outlet



Order information	
CRS6423-200	500ml System (60mm flange)
CRS6423-205	500ml System (100mm flange)
CRS6423-210	1000ml System (100mm flange)
CRS6423-215	2000ml System (100mm flange)
CRS6423-220	3000ml System (150mm flange)
CRS6423-225	5000ml System (150mm flange)

6429 Series

Jacketed Two-Piece Pressure Reactor
with bottom outlet



Order information	
CRS6429-229	500ml System (60mm flange)
CRS6429-232	500ml System (100mm flange)
CRS6429-235	1000ml System (100mm flange)
CRS6429-237	2000ml System (100mm flange)
CRS6429-242	3000ml System (150mm flange)
CRS6429-245	5000ml System (150mm flange)

6425 Series

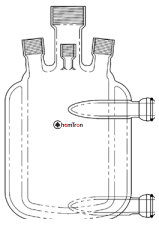
Unjacketed Two-Piece Pressure Reactor
with bottom outlet



Order information	
CRS6425-201	500ml System (60mm flange)
CRS6425-206	500ml System (100mm flange)
CRS6425-211	1000ml System (100mm flange)
CRS6425-214	2000ml System (100mm flange)
CRS6425-221	3000ml System (150mm flange)
CRS6425-226	5000ml System (150mm flange)

6438 Series

Jacketed One-Piece Pressure Reactor
without bottom outlet



Order information	
CRS6438-240	500ml System (60mm flange)
CRS6438-247	1000ml System (100mm flange)
CRS6438-250	2000ml System (100mm flange)
CRS6438-253	3000ml System (150mm flange)
CRS6438-255	5000ml System (150mm flange)

6436 Series

Unjacketed One-Piece Pressure Reactor
without bottom outlet



Order information	
CRS6436-233	500ml System
CRS6436-236	1000ml System
CRS6436-239	2000ml System
CRS6436-243	3000ml System
CRS6436-245	5000ml System

6439 Series

Jacketed One-Piece Pressure Reactor
with bottom outlet



Order information	
CRS6439-243	500ml System (60mm flange)
CRS6439-248	1000ml System (100mm flange)
CRS6439-252	2000ml System (100mm flange)
CRS6439-254	3000ml System (150mm flange)
CRS6439-257	5000ml System (150mm flange)

6437 Series

Unjacketed One-Piece Pressure Reactor
with bottom outlet



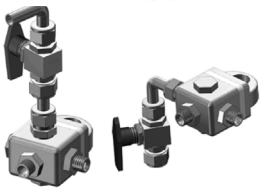
Order information	
CRS6437-235	500ml System
CRS6437-238	1000ml System
CRS6437-241	2000ml System
CRS6437-244	3000ml System
CRS6437-246	5000ml System

Components And Accessories For Pressure Reactor



Smart Supporting Structure

Description	Order No.
For 60mm Flange Reactor	CRS.2602.01
For 100mm Flange Reactor	CRS.2602.02
For 150mm Flange Reactor	CRS.2602.03
For 200mm Flange Reactor	CRS.2602.04



Multi channel regulating valve

Description	Order No.
Multi channel regulating valve outlet	6101-000
Multi channel regulating valve inlet	6102-000



Spill Containment Tray, PVC

designed to place under a reactor or system to contain a spill or leak.

Description	Order No.
Spill Containment Tray, PVC	CR13220

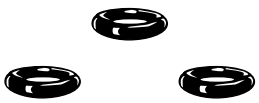
Lids



Lids *For Pressure or Filter Reactor, Screw threads*

Reactor lid only, with Duran style flange and Screw threads for use with 6384, 6386, 6388, or 6518 reactor bodies. Also fits 6423, 6425, 6427, and 6429 flasks. Pressure rating is 35psig. 6433-23 (only) has angled side joints. Uses 6517 quick-release clamp.

Cap., mL	Flange I.D., (mm)(in)	Center Neck	Side Necks	Order No.
150 - 600	60 (2.4")	#15	(2)#15-(1)#7	JRS-6433-23
1000-2000	100 (4")	#15	(3)#15-(1)#7	JRS-6433-35
3000-6000	150 (6")	#15	(4)#15-(1)#7	JRS-6433-44



O-ring *Replacement*

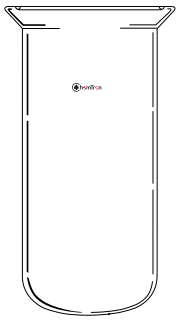
Replacement O-Rings for use with TWO-PIECE Pressure Reaction Flasks 6423, 6425, 6427, 6429, and 6433 Head having Schott grooved flanges. Offered is silicone or CAPFE (a resilient silicone rubber core encapsulated in a continuous, thick, nonporous FEP PTFE). CAPFE is supplied with flasks.

For FlangeSize, mm(in)	Order No.	Order No.
	CAPFE	SILICONE
60 (2.4")	JRS-7855-878	JRS-7855-251
100 (4")	JRS-7855-880	JRS-7855-254
150 (6")	JRS-7855-881	JRS-7855-260

Flasks

Flasks *Pressure Reaction, Unjacketed*

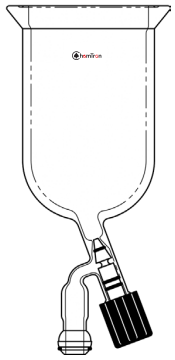
Rugged, heavy-wall unjacketed reaction flask, part of the TWO-PIECE Pressure Reactor, for use at elevated pressures. Schott-type flange supplied with a shallow O-Ring groove for use with mating grooved head, Catalog No. 6433. Supplied with CAPFE O-Ring (silicone optional). For heating mantle, see 12058.



Capacity, mL	O.D., mm	I.D. mm	Flange Size, mm (In.)	Height, mm	Top O-Ring Order No.	Order No.
500	70	60	60	210	JRS-7855-878	JRS-6423-05
500	110	100	100	100	JRS-7855-880	JRS-6423-07
1000	110	100	100	180	JRS-7855-880	JRS-6423-10
2000	140	130	100	230	JRS-7855-880	JRS-6423-20
3000	165	155	150	210	JRS-7855-881	JRS-6423-30
5000	165	155	150	310	JRS-7855-881	JRS-6423-35

Flasks *Pressure Reaction, Unjacketed, w/ Bottom Outlet*

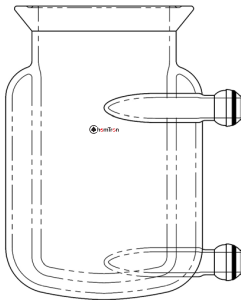
Heavy wall reaction flask with threaded bottom outlet, part of the two-piece pressure reactor, for use at elevated pressures. Duran® type top flange supplied with O-Ring groove for use with heads 6433, 6527, 6528 or 6529. For heating mantle, see 12058. Bottom outlet tube has 28/15 O-Ring ball joint connection with size –116 FETFE® O-Rings. Uses 6517 quick-release clamp.
Note: Supplied with CAPFE O-Ring (silicone optional).



Capacity, mL	O.D., mm	I.D. mm	Flange Size, mm	Height, mm	Bottom Outlet, mm	Top O-Ring Order No.	Order No.
500	70	60	60	210	0-8 mm	JRS-7855-878	JRS-6425-04
500	110	100	100	100	0-8 mm	JRS-7855-880	JRS-6425-06
1000	110	100	100	180	0-8 mm	JRS-7855-880	JRS-6425-12
2000	140	130	100	230	0-8 mm	JRS-7855-880	JRS-6425-15
3000	165	155	150	210	0-10 mm	JRS-7855-881	JRS-6425-19
5000	165	155	150	310	0-10 mm	JRS-7855-881	JRS-6425-23

Flasks *Pressure Reaction, Jacketed*

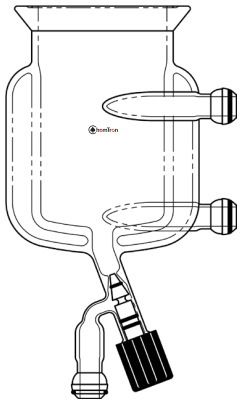
Heavy wall reaction flask with jacket, part of the two-piece pressure reactor, for use at elevated pressures. Duran type top flange supplied with O-Ring groove for use with heads 6433, 6527, 6528 or 6529. Cooling/heating jacket is heat sealed. Inlet/outlet on jacket has size 28/15 O-Ring ball joints with size –116 FETFE O-Rings. Uses 6517 quick-release clamp.
Note: Supplied with CAPFE O-Ring (silicone optional).



Capacity, mL	O.D., mm	I.D. mm	Flange Size, mm	Height, mm	Top O-Ring Order No.	Order No.
500	110	60	60	210	JRS-7855-878	JRS-6427-09
500	130	96	100	100	JRS-7855-880	JRS-6427-13
1000	150	96	100	180	JRS-7855-880	JRS-6427-16
2000	180	126	100	230	JRS-7855-880	JRS-6427-18
3000	215	151	150	210	JRS-7855-881	JRS-6427-23
5000	215	151	150	310	JRS-7855-881	JRS-6427-26

Flasks *Pressure Reaction, Jacketed, with Bottom Outlet*

Heavy wall reaction flask with jacket and threaded bottom outlet, part of the two-piece pressure reactor, for use at elevated pressures. Duran® type top flange supplied with a shallow O-Ring groove for use with heads 6433, 6527, 6528 or 6529. Cooling/heating jacket is heat sealed. Inlet/outlet on jacket and bottom valve have size 28/15 O-Ring ball joint connections with size –116 FETFE® O-Rings. Uses 6517 quick-release clamp.
Note: Supplied with CAPFE O-Ring (silicone optional).



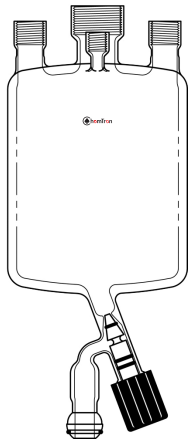
Capacity, mL	O.D., mm	I.D. mm	Flange Size, mm	Height, mm	Bottom Outlet, mm	Top O-Ring Order No.	Order No.
500	110	60	60	210	0-8 mm	JRS-7855-878	JRS-6429-09
500	130	96	100	100	0-8 mm	JRS-7855-880	JRS-6429-14
1000	150	96	100	180	0-8 mm	JRS-7855-880	JRS-6429-20
2000	180	126	100	230	0-8 mm	JRS-7855-880	JRS-6429-24
3000	215	151	150	210	0-10 mm	JRS-7855-881	JRS-6429-28
5000	215	151	150	310	0-10 mm	JRS-7855-881	JRS-6429-33



Flasks *Pressure Reaction, Unjacketed*

Heavy wall unjacketed reaction flask, part of the one-piece pressure reactor system, for use at elevated pressures. With vertical Screw thread necks for positive connection of stirrer, funnel, thermowell, condenser, etc.

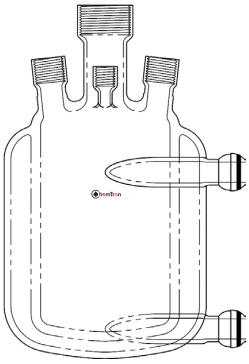
Capacity, mL	O.D., mm	I.D. mm	Height, mm	Center Neck	Side Necks	Order No.
500	110	96	100	#25	(1) #7; (3) #15	JRS-6436-06
1000	110	96	180	#25	(1) #7; (3) #15	JRS-6436-09
2000	140	126	180	#25	(1) #7; (3) #15	JRS-6436-22
3000	165	151	195	#25	(1) #7; (4) #15	JRS-6436-31
5000	165	151	310	#25	(1) #7; (4) #15	JRS-6436-37



Flasks *Pressure Reaction, with Bottom Outlet*

Heavy wall reaction flask with threaded bottom outlet valve. Part of the one-piece pressure reactor, for use at elevated pressures. With vertical Screw thread necks for positive connection of stirrer, funnel, thermowell, condenser, etc. Bottom outlet is a 28/15 O-Ring ball joint (with size –116 FETFE O-Rings, 7855-726) and a threaded valve for retrieving contents of flask.

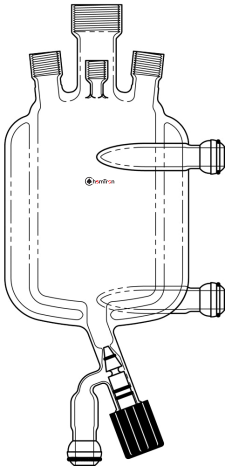
Capacity, mL	O.D., mm	I.D. mm	Bottom Outlet, mm	Height, mm	Center Neck	Side Necks	Order No.
500	110	96	0-8 mm	100	#25	(1) #7; (3) #15	JRS-6437-07
1000	110	96	0-8 mm	180	#25	(1) #7; (3) #15	JRS-6437-13
2000	140	126	0-8 mm	180	#25	(1) #7; (3) #15	JRS-6437-16
3000	165	151	0-10 mm	185	#25	(1) #7; (4) #15	JRS-6437-20
5000	165	151	0-10 mm	310	#25	(1) #7; (4) #15	JRS-6437-24



Flasks *Pressure Reaction, Jacketed*

Heavy wall reaction flask with jacket. Part of the one-piece pressure reactor, for use at elevated pressures. With vertical Screw thread necks for positive connection of stirrer, funnel, thermowell, condenser, etc. Cooling/heating jacket is heat sealed. Inlet/outlet on jacket has easy connect/ disconnect size 28/15 O-Ring ball joints with size –116 FETFE O-Rings.

Capacity, mL	O.D., mm	I.D. mm	Height, mm	Center Neck	Side Necks	Order No.
500	140	96	#25	108	(1) #7; (3) #15	JRS-6438-14
1000	150	96	#25	195	(1) #7; (3) #15	JRS-6438-17
2000	180	126	#25	195	(1) #7; (3) #15	JRS-6438-19
3000	215	151	#25	205	(1) #7; (4) #15	JRS-6438-24
5000	215	151	#25	325	(1) #7; (4) #15	JRS-6438-29



Flasks *Pressure Reaction, Jacketed, with Bottom Outlet*

Heavy wall reaction flask with jacket, part of the one-piece pressure reactor, for use at elevated pressures. With vertical Screw thread necks for positive connection of stirrer, funnel, thermowell, condenser, etc. Cooling/heating jacket is heat sealed. Inlet/outlet on jacket has easy connect/ disconnect size 28/15 O-Ring ball joints. Bottom outlet is a 28/15 O-Ring ball joint with size –116 FETFE O-Ring, and a threaded valve for retrieving contents of flask.

Capacity, mL	O.D., mm	I.D. mm	Height, mm	Center Neck	Side Necks	Bottom Outlet, mm	Order No.
500	130	96	108	#25	(1) #7; (3) #15	0-8 mm	JRS-6439-15
1000	150	96	195	#25	(1) #7; (3) #15	0-8 mm	JRS-6439-21
2000	180	126	195	#25	(1) #7; (3) #15	0-8 mm	JRS-6439-25
3000	215	151	205	#25	(1) #7; (4) #15	0-10 mm	JRS-6439-29
5000	215	151	325	#25	(1) #7; (4) #15	0-10 mm	JRS-6439-34

Adapters

Bushing *Nylon or PTFE*

Used with o-ring and Screw thread to make a compression seal between thread and glass like 6024 condenser or 7299 funnel. Supplied with one 7855-716 size –110 FETFE o-ring.



	Screw thread Size	B, (mm)	Order No.
NYLON	15	14	JRS-7506-06
PTFE	15	14	JRS-7506-27

Adapter *Swagelok, PTFE*

PTFE adapter with male Screw thread to NPT female for connecting pressure gauge, pressure relief valve or connection from pressure tank to Screw thread on head of pressure reactor Supplied with one FETFE o-ring (see size and Order No. below) except -176.



Screw thread Size	NPT Thred Size	O-Ring Size / Order No.	Order No.
7	1/8"	7855-707	JRS-5844-58
15	1/8"	7855-716	JRS-5844-62
15	1/4"	7855-716	JRS-5844-74
25 (w/o O-Ring)	1/4"	——	JRS-5844-176

Plug *Nylon or PTFE*

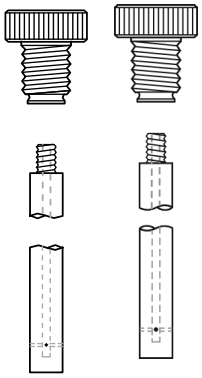
Solid plug for sealing top of 6024 condenser or Screw threads on 6433 head. Supplied with one FETFE o-ring (see size and Order No. below).



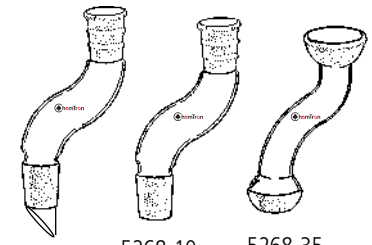
	Screw thread Size	O-Ring Size / Order No.	Order No.
NYLON	7	7855-707	JRS-5846-04
	15	7855-716	JRS-5846-12
	25	7855-734	JRS-5846-16
PTFE	7	7855-707	JRS-5846-44
	15	7855-716	JRS-5846-48
	25	7855-734	JRS-5846-50

Sparger Tube *for Pressure Reactor, PTFE*

Sparger tube for use in #15 Screw thread with either one- or two-piece Reactor. Consists of a closed bottom, 1/2-inch O.D. tube with a 1/8-inch I.D. bore. Bottom of tube has two 3/64-inch holes, 90° apart; top has a 5/16-inch male thread for connecting to bottom of #15 adapter. Adapter has a female thread in handle for tubing connection. Simply thread tube into bottom of #15 adapter. Thread into #15 Screw thread on reactor. Attach appropriate size tubing to top of adapter. Adapter and tube are fabricated from PTFE. O-ring on adapter is FETFE®. For replacement FETFE o-rings, order 7855-716. Order tube and adapter separately.

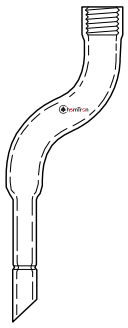


	Tube Length, mm (in.)	Order No.
TUBE ONLY	140 (5.5")	JRS-6444-04
	190 (7.5")	JRS-6444-09
	343 (13.5")	JRS-6444-16
	Thread Size, Top of Adapter	Order No.
ADAPTER ONLY	1/4"-28 UNF	JRS-6444-30
	1/4" NPT	JRS-6444-38



Adapter Offset

	Joints	Order No.
Without Drip Tip	14/20	JRS-9089-08
	24/40	JRS-5268-10
	29/42	JRS-5268-15
	45/50	JRS-5268-21
	35/25	JRS-5268-35
With Drip Tip	14/20	JRS-9089-40
	24/40	JRS-5268-54
	29/42	JRS-5268-56
	45/50	JRS-5268-58



Adapter *Offset, with Screw thread*

Offset adapter with #15 Screw thread offset to a 14mm O.D. tube with o-ring groove. For use with ChemTron pressure Reactor to locate condenser, etc., away from stirrer. NOT supplied with bushing or o-ring. Order 7506-06 for bushing and FETFE® o-ring.

Order No.
JRS-5269-12



Thermowell

For use with two-piece pressure Reactor in #15 Screw thread. Well has a shoulder that rides against bottom of bushing to prevent "blowout." O-ring groove makes thermowell suitable for full vacuum, as well as pressure use. Inner diameter of well at top is approximately 5mm. Order thermowell and bushing separately.

For Reactor Cap., mL	Length, mm	Order No.
500	205	JRS-6471-04
500	170	JRS-6471-10
1000-2000	220	JRS-6471-14
3000	235	JRS-6471-22
5000	360	JRS-6471-24
500	115	JRS-6471-41
1000-2000	180	JRS-6471-43
3000	210	JRS-6471-47
5000	290	JRS-6471-49
Bushing w/FETFE o-ring, only		JRS-8648-19



Beaded pipe coupling

Order No.	Size
JRS.2405.01 (8856-07)	1in



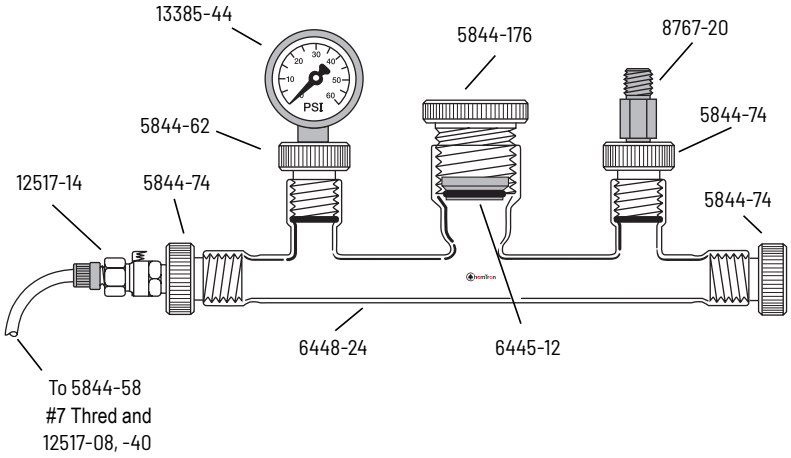
Adapters Stainless Steel, Circulator Hose

304 Stainless steel adapters designed for use with ChemTron jacketed glass pilot plant Reactor and circulator hoses for popular circulating chillers. One style connects o-ring ball joints on jacket inlet / outlet to hoses to/from circulator. The other style connects "M" style to NPT thread.

Connection Description	Order No.
Flask to Hose, 28/15 Socket to M16x1 Male	JRS-12187-05
Flask to Hose, 28/15 Socket to M24x1 Male	JRS-12187-06

Manifold *Pressure, Epoxy Coated*

Complete glass manifold, fitted with a pressure gauge, primary adjustable pressure relief valve, and secondary rupture disc to allow for safer operation of pressure and filter Reactor. 13385 Pressure Gauge is a 0-60 psi stainless steel internal, with 1-1/2-inch face and 1/8-inch NPT male connection for use with 5844-74 adapter in #15 Screw thread.
8767 Pressure Relief Valve is adjustable from 3-50 psig by adjusting set screws to desired cracking pressure. Ends are 1/4-inch NPT for connecting to #15 Screw thread on manifold with 5844-74 adapter.
6445 Rupture Disc is a secondary safety device that, in the event of an overpressure (one that cannot be handled by the 8767 relief
valve) will rupture at a predetermined burst rating; 55 psig (±3 psig) for -12 version, 65 psig (±3 psig) for -41 version. Disc is manufactured from high-purity carbon with a PTFE coating on the underside. No springs or moving parts, disc is secured directly in #25 Screw thread of manifold with 5844-176 adapter.
Manifold is connected to #7 Screw thread on 6433 head using 5844-58 adapter and 12517 tubing connectors with 1/4-inch tubing.

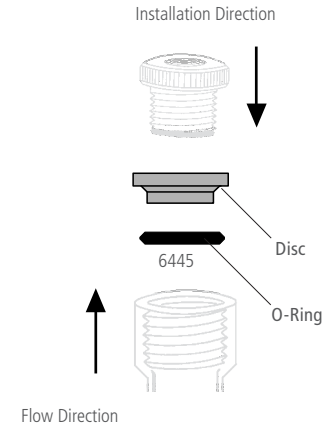


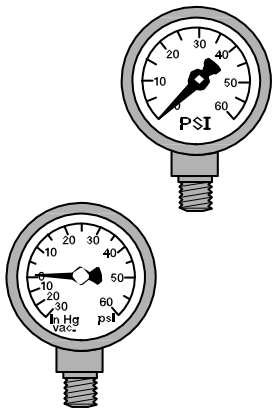
Description	Order No.
Adapter, PTFE, #7–1/8-inch NPT	JRS-5844-58
Adapter, PTFE, #15–1/8-inch NPT	JRS-5844-62
Adapter, PTFE, #15–1/4-inch NPT (3)	JRS-5844-74
Adapter, PTFE, #25–1/4-inch NPT, w/ O-ring	JRS-5844-176
Rupture Disc, Graphite, 55 psig	JRS-6445-12
Rupture Disc, Graphite, 65 psig (for pressure version only)	JRS-6445-41
Manifold, Glass, (4) #15, (1) #25, Epoxy Coated	JRS-6448-24
Valve, Pressure Relief, 1/4-inch NPT, 3–50 psig	JRS-20
Coupling Body, 1/8-inch MPT	JRS-12517-08
Coupling Body, 1/4-inch MPT	JRS-12517-14
Coupling Insert, for 1/4-inch O.D. tubing (2)	JRS-12517-40
Tubing, PP, 1/4-inch O.D. x .170-inch I.D., 10 feet	JRS-12681-110
Gauge, Pressure, 0–60 psi, 1/8-inch MPT	JRS-13385-44
Complete	JRS-6448-54*
Replacement O-rings	
Size –110 for #15 adapters (shelf-pack of 12)	JRS-7855-716
Size –212 for #25 adapters (shelf-pack of 6)	JRS-7855-734

Rupture Disc *Pressure, Graphite*

For use in 6448 pressure manifold, these rupture discs provide extra protection to personnel and equipment involved with static and dynamic pressurized systems. In the event of an overpressure — one that cannot be handled by the 8767-20 pressure relief valve — this disc will rupture at a predetermined burst rating: 55 psig (±3 psig) for two-piece units, 65 psig (±3 psig) for one-piece units. Manufactured from a single piece of a high-purity carbon, these discs have a PTFE coating on underside, are tamper-proof, have no springs or moving parts and mount directly in a #25 Screw thread. Simply place the FETFE o-ring (7855-734) supplied with disc, on the underside to make the seal, drop into the #25 Screw thread and hold in place using a 5844-176 adapter.

Disc Burst Pressure	Use With	Order No.
55 psig	TWO-PIECE Reactor	JRS-6445-12
65 psig	ONE-PIECE Reactor	JRS-6445-41





Gauge *Pressure*

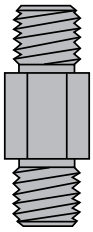
0 to 60 psig Pressure Gauge for monitoring pressure in Pressure Reaction Vessels. Available with 316 Stainless Steel internals, 304 Stainless case. Gauge has a 1½" diameter face with a 1/8" NPT male connector. Use with 5844 Adapter to connect to manifold.

Order No.
JRS-13385-44

Gauge *Compound, Pressure and Vacuum*

Full vacuum to 60 psig Pressure/Vacuum Gauge for monitoring negative or positive pressure in Pressure Reaction Vessels. Available with 316 Stainless Steel internals, 304 Stainless case. Gauge has a 1½" diameter face with a 1/8" NPT male connector. Use with 5844 Adapter to connect to manifold.

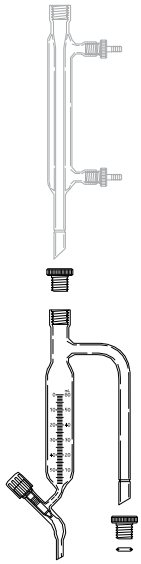
Order No.
JRS-13385-52



Valve *Pressure Relief, Adjustable*

The primary protection to personnel and equipment involved with static and dynamic pressurized systems. This one-piece pressure relief valve is adjustable from 3 to 50 psig (for use with ChemTron Pressure Reactor) by simply adjusting set screws to desired cracking pressure. When pressure exceeds set cracking pressure, valve bleeds; when safe lower pressure is realized, valve will reseal. Fabricated from 316 Stainless Steel with a Viton O-Ring. Ends are ¼" MPT for connecting to Screw thread with a 5844 Adapter. Combining this valve with the 6445 Rupture Disc in the same pressure manifold offers fail-safe protection against runaway pressure situations.

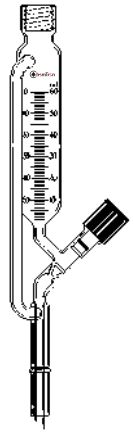
Order No.
JRS-8767-20



Moisture Test Receiver *Pressure*

Used to determine heavier-than-water, co-distilling solvent component content of reaction mixture. For use with Chemtron pressure Reactor with #15 Screw thread. Side arm is connected to #15 Screw thread on pressure reactor head with 7506 bushing and size –110 FETFE® o-ring, 7855-716. The 6024-20 pressure condenser, with #15 top plug, is attached to #15 thread at top of receiver with bushing and o-ring. Receiver capacity is 60mL, graduated in 1mL subdivisions. Bottom outlet stopcock is a 0-3mm with FETFE o-rings. Pressure rating is 45 psig @100°C . Complete consists of receiver and bushing with o-ring. Condenser and #15 Plug NOT supplied — order separately.

Description	Order No.
Receiver, only, 60 mL, #15	JRS-7701-04
Bushing, Nylon, #15, w/FETFE o-ring (2)	JRS-7506-06
Complete	JRS-7701-20



Funnels

Pressure Equalizing, Screw thread w/PTFE Needle Valve Stopcock

For use with Pressure Reactor. Heavy wall funnel has a #15 Screw thread at top that can be stoppered using 5846 Plug, not supplied. Bottom drip tip is long enough to be secured in the #15 Screw thread on 6433 Reactor Head or One-Piece Reactor and has a bump and groove that restricts blowout when secured with 7506-06 Bushing and FETFE O-Ring, not supplied. With pressure equalizing arm and 0-3mm threaded PTFE stopcock plug.

Capacity, mL	Screw thread #	Bore, mm	Order No.
60	#15	0-3	JRS-7299-06
125	#15	0-3	JRS-7299-12
250	#15	0-3	JRS-7299-25
500	#15	0-3	JRS-7299-34

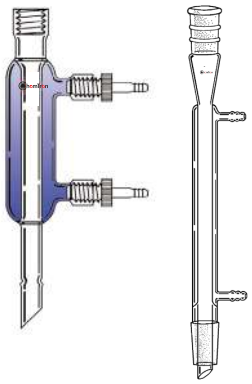
Condensers

West style condenser for use with 6433 threaded or 6527, 6528 or 6529 jointed heads.

6024-20 supplied with #15 Screw thread at top for 5846 plug (not supplied) and drip stem with groove, and long enough to be secured in #15 Screw thread with 7506-06 bushing and FETFE o-ring (not supplied) to restrict blowout. With #7 Screw thread on inlet/outlet for use with 5853 tubing connectors. Supplied with bushing and connectors for 1/4-inch I.D. tubing.

6029-13 supplied with 24/40 joint at top and bottom and D size barbed hose connection on inlet/outlet for ¼-inch I.D. tubing.

Use w/Head No.	Jacket Length, mm	Order No.
6433	200	JRS-6024-20
6527, 6528, 6529	250	JRS-6029-13

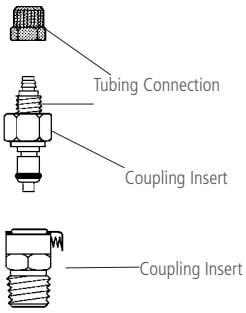


Accessories

Tubing Connector *Quick Connect/Disconnect*

Two-piece tubing connector, used to connect tubing from a pressure source to the manifold of the ChemTron pressure reactor. Offers the convenience of a quick connect/ disconnect coupling. Body has MNPT thread for connecting to a 5844 adapter at end of pressure manifold. Coupling insert is connected to tubing from pressure source. Push coupling insert into coupling body for leak-tight connection; press thumb latch to quick disconnect. Fabricated of polypropylene. Order body and insert separately.

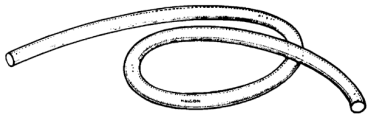
Description	Order No.
Coupling Body, 1/8-inch MPT	JRS-12517-08
Coupling Body, 1/4-inch MPT	JRS-12517-14
Coupling Insert, for 1/4-inch OD x 0.170 ID Tubing	JRS-12517-40



Tubing *Polypropylene*

Polypropylene tubing used to make connection between pressure source and 12517 quick disconnect on side of pressure manifold, and between other side of manifold and the pressure reactor.

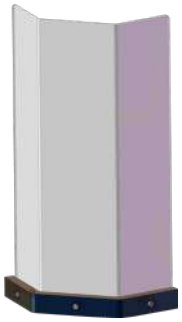
Size, in.	Qty.	Order No.
1/4 O.D. x 0.170 I.D.	100-foot box	JRS-12681-10
1/4 O.D. x 0.170 I.D.	10-foot length	JRS-12681-110
3/8 O.D. x 75mm length	Pkg. of 12 lengths	JRS-12681-812



Safety Shield *Self Supporting*

Weighted, all-transparent safety shield for laboratory worker protection. Polycarbonate shield is 4.7mm (3/16") thick. Three-sided construction provides stability and protects personnel from front and sides. Heavy steel perimeter base is 25mm x 48mm (1" x 1½"), coated with green epoxy. Outside width is 50cm (19½"), 17cm (6½") front to back.

Height, mm	Weight, kg	Order No.
760	8.4 (18.5 lbs)	JRS-13270-07
910	8.9 (19.6 lbs)	JRS-13270-10



QUARTZ PRESSURE REACTOR

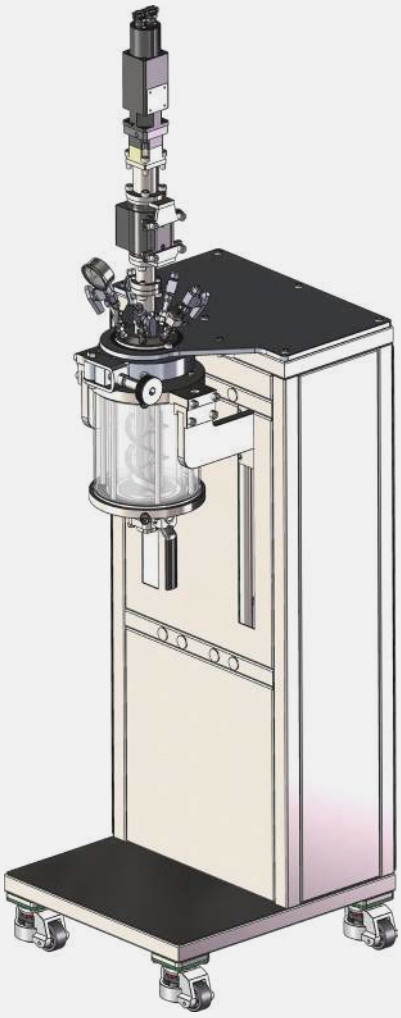
Standard volume: 2000ml, 3000ml and 5000ml, with jacket

The Quartz Glass Pressure Reactor is a high-performance sealed reaction instrument tailored for high-temperature, high-pressure and light-assisted chemical experiments. The reaction chamber is integrally formed from high-purity synthetic quartz glass, which features extreme chemical inertness, zero impurity precipitation, and resistance to strong acids, organic solvents and most corrosive media. It effectively avoids reaction contamination and ensures high-purity experimental environments and accurate data reproducibility.

With unique optical properties of full-spectrum ultraviolet and visible light transmission, the reactor is perfectly compatible with various photochemical and photocatalytic high-pressure reactions that cannot be realized by ordinary glass equipment. Its excellent thermal shock resistance and low expansion coefficient enable stable operation under cyclic heating and pressurizing conditions. The standardized pressure-sealing assembly provides reliable airtight performance, supporting vacuum pumping, inert gas pressurization and constant-pressure sealed reaction. Matched with an intelligent temperature control system, it realizes accurate and stable temperature regulation throughout the reaction process.

Combining the advantages of visual reaction, high pressure resistance, high temperature resistance and ultra-high purity, this reactor is an essential device for high-pressure photochemistry, hydrothermal synthesis, advanced material preparation, high-purity chemical synthesis and environmental catalytic research.







GLASS FILTER REACTOR

Standard volume: 600ml, 1000ml, 2000ml, 3000ml and 6000ml (lab scale); 10L, 20L, 30L, 50L and 100L (process filtration), with or without jacket

The Glass Filtration Reactor is a multifunctional all-in-one reaction and purification instrument, specially designed for experimental scenarios requiring synchronous reaction and solid-liquid separation. The whole device is made of high-purity thickened borosilicate glass, which is resistant to various organic solvents, acids and weak alkalis. It produces no impurity precipitation or catalytic interference, effectively ensuring the purity of reaction products and accurate experimental data.

Different from traditional separate reaction and filtration equipment, this reactor integrates stirring reaction, constant temperature control and vacuum filtration into a single unit. The bottom high-precision filter plate supports uniform and stable filtration, which can efficiently separate crystals, solid catalysts and reaction liquid. The vacuum negative pressure design greatly improves filtration speed and avoids product loss caused by multiple material transfer. Adopting standard ground glass connection, the equipment features reliable sealing performance, supporting vacuum reaction and inert gas protective reaction environments. The detachable structure brings great convenience for residue cleaning, filter replacement and daily equipment maintenance.

Featuring integrated operation, no cross-contamination, visual process and high experimental efficiency, this reactor is ideal for fine chemical synthesis, pharmaceutical product purification, crystal recrystallization, catalyst recovery and laboratory sample pretreatment.

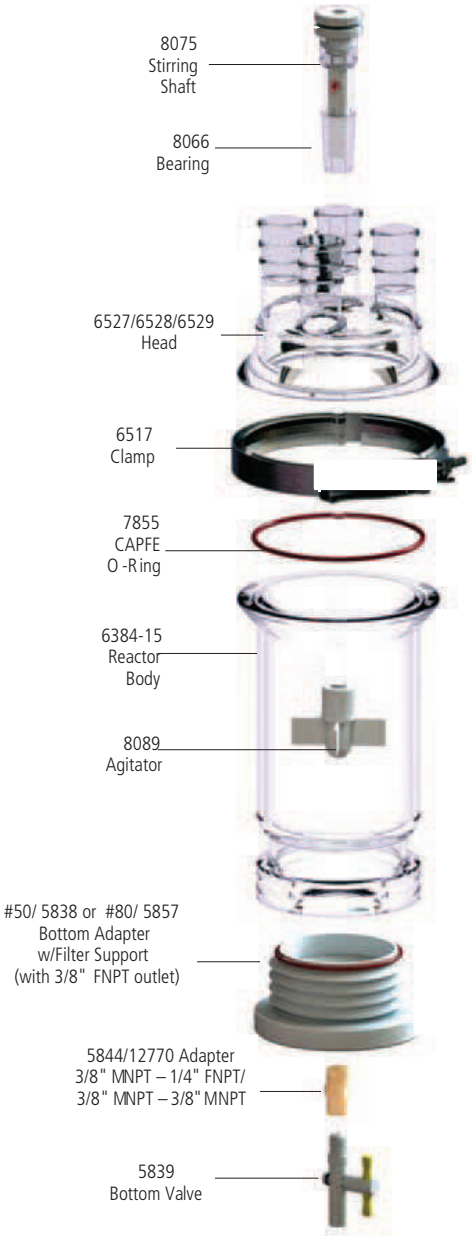


Unjacketed Filter Reactor

Rugged, heavy wall reactor with 60mm, 100mm, or 150mm Schott® style top flange with o-ring groove at top, for connection to 6527, 6528, or 6529 heads, with 6517 quick-release clamp. Bottom has an Screw thread (internal glass thread) for installing 5838-83 (size 50) or 5857-86 (size 80) bottom adapter with filter support and drain valve. Head has three 24/40 joints on 60mm size; four 24/40 joints on 100mm and 150mm sizes.

Complete item consists of: reactor body with CAPFE o-ring, head with joints, 6517 clamp, PTFE bottom adapter with CAPFE o-ring (with perforated plate—#80 thread only), retainer ring, 350 micron polypropylene screen support and 100 micron polyethylene support, 5844 adapter, 5839 shutoff valve (optional larger valve is available), 8066 bearing, 8075 stirring rod, and 8089 multi-paddle agitator.

For replacement glass fritted support, polyethylene support, or polypropylene screen, see 5848 or 5814. For condenser and funnel, see 6029 and 7298; stoppers with 24/40 joints, see 8250. For stirring motor, see 13511 or 13566 motor; for chuck, see 8124 or 8126. Use 7855-829 CAPFE O-ring for #50 adapter, 7855-864 for #80 bottom adapter.





- Stand and Support Shelf not included.
- 150mL size requires chain clamp rather than a shelf.
- For #80, bottom also available with 1/2" MNPT.

Capacity, mL	Flange I.D., mm (in.)	Bottom screw thread #	Body I.D., mm	Approx. Height*, mm	Top CAPFE O-Ring	Order No.
150**	60 (2.4)	#50	60	100	7855-878	JRS-6384-115
600**	60 (2.4)	#50	83	205	7855-878	JRS-6384-121
1000	100 (4)	#80	100	180	7855-880	JRS-6384-125
2000	100 (4)	#80	130	210	7855-880	JRS-6384-129
3000	150 (6)	#80	150	205	7855-881	JRS-6384-133
6000	150 (6)	#80	150	395	7855-881	JRS-6384-137

* Height measurements are measured from top of flask flange to seal on top thread.

** 150mL and 600mL heads have angled side necks.

Unjacketed Filter Reactor, Pressure Version

Heavy wall glass reactor available with 60mm, 100mm, or 150mm diameter Schott® style flange with O-ring groove at top. Connects to 6433 head with a 6517 quick-release clamp. Reactor bottom has an Screw thread for installing a 5838-83 (#80) or 5857-86 (#50) adapter with a filter support and bottom drain valve. The 60mm reactor head has a #15 Screw thread center neck, (2) #15 and (1) #7 Screw thread side necks. The 100mm head has a #15 Screw thread center neck, (3) #15, and (1) #7 Screw thread side necks. The 150mm head has a #15 Screw thread center neck, (4) #15, and (1) #7 Screw thread side necks. The Screw threads allow for vacuum or pressure applications, and for easy draining of material out of the reactor. The main bearing, funnel and condenser are designed to connect to the threads on the head via compression bushing connections. The #7 Screw thread is used for connecting a 1/4 inch O.D. tubing fitting to allow for a direct connection to a pressure source or a #6448 pressure manifold.

Complete item consists of: reactor body with 60mm CAPFE O-ring, head with Screw threads, 6517 clamp, PTFE bottom threaded adapter and valve with CAPFE O-ring, retainer ring, 350 micron polypropylene screen support, 100 micron polyethylene support, 5844 adapter, 8044 bearing, 8075 stir rod, 8089 multi-paddle agitator, 6024 condenser, 7299 addition funnel and #7 Screw thread bushing. #80 bottom adapter also comes with a perforated glass plate support.

Pressure manifold, stand and clamps are optional. For replacement glass fritted discs and supports see 5848 or 5814. See 13511 or 13566 motor; for chuck, see 8124 or 8126. Use 7855-829 CAPFE O-ring for #50 adapter, 7855-864 for #80 bottom adapter.

<2.4bar at 100°C



- Stand and Support Shelf not included.
- 150mL size requires chain clamp rather than a shelf.
- For #80, bottom also available with 1/2" MNPT.



Glass Filter Discs

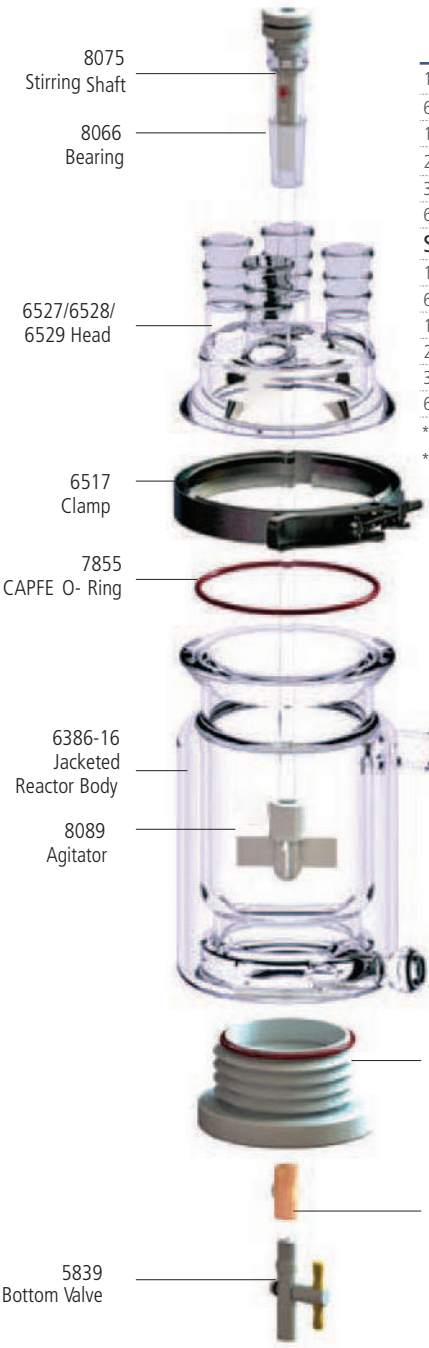
Capacity, mL	Flange I.D., mm (in.)	Bottom screw thread #	Body I.D., mm	Approx. Height*, mm	Top CAPFE O-Ring	Order No.
150**	60 (2.4)	#50	60	100	JRS-7855-878	**JRS-6384-225**
600**	60 (2.4)	#50	83	205	JRS-7855-878	**JRS-6384-231**
1000	100 (4)	#80	100	180	JRS-7855-880	**JRS-6384-235**
2000	100 (4)	#80	130	210	JRS-7855-880	**JRS-6384-239**
3000	150 (6)	#80	150	205	JRS-7855-881	**JRS-6384-243**
6000	150 (6)	#80	150	395	JRS-7855-881	**JRS-6384-247**

* Height measurements are measured from top of flask flange to seal on top thread.

** 150mL and 600mL heads have angled side necks.

Jacketed Filter Reactor

Rugged, heavy wall reactor, jacketed for cooling and/or heating of reaction material. With 60mm, 100mm, or 150mm Schott® style flange with o-ring groove at top, for connection to 6527, 6528 or 6529 heads, with 6517 quickrelease
clamp. Bottom has an Screw thread (internal glass thread) for installing 5838-83 (size 50) or 5857-86 (size 80) bottom adapter with filter support and drain valve. Body is jacketed with size 28/15 o-ring ball joints on inlet/outlet, sealed tangentially for more efficient circulation. Head has three 24/40 joints on 60mm size; four 24/40 joints on 100mm and 150mm sizes. Complete item consists of: reactor body with 60mm CAPFE o-ring, head with joints, 6517 clamp, PTFE bottom adapter with CAPFE o-ring (with perforated plate — #80 thread only), retainer ring, 350 micron polypropylene screen support, and 100 micron polyethylene support, 5844 adapter, 5839 shutoff valve (optional larger valve is available), non-flaking 8066 bearing, 8075 stirring rod, 8089 multi-paddle agitator.
For replacement glass fritted support, polyethylene support, or polypropylene screen, see 5848 or 5814. For condenser and funnel, see 6029 and 7298; stoppers with 24/40 joints, see 8250. For stirring motor, see 13511 or 13566 motor; for chuck, see 8124 or 8126. Use 7855-829 CAPFE O-ring for #50 adapter, 7855-864 for #80 bottom adapter.



Ball Joint Inlet/Outlet (28/15)

Capacity, mL	Flange I.D., mm (in.)	Bottom screw thread #	Body I.D., mm	Approx. Height*, mm	Top CAPFE O-Ring	Order No.
150**	60 (2.4)	#50	60	100	JRS-7855-878	JRS-6386-40
600**	60 (2.4)	#50	83	205	JRS-7855-878	JRS-6386-45
1000	100 (4)	#80	100	180	JRS-7855-880	JRS-6386-50
2000	100 (4)	#80	130	210	JRS-7855-880	JRS-6386-55
3000	150 (6)	#80	150	205	JRS-7855-881	JRS-6386-60
6000	150 (6)	#80	150	395	JRS-7855-881	JRS-6386-65
Screw thread Inlet/Outlet (#11, 3000 & 6000mL are #15)						
150**	60 (2.4)	#50	60	100	JRS-7855-878	JRS-6386-440
600**	60 (2.4)	#50	83	205	JRS-7855-878	JRS-6386-445
1000	100 (4)	#80	100	180	JRS-7855-880	JRS-6386-450
2000	100 (4)	#80	130	210	JRS-7855-880	JRS-6386-455
3000	150 (6)	#80	150	205	JRS-7855-881	JRS-6386-460
6000	150 (6)	#80	150	395	JRS-7855-881	JRS-6386-465

* Height measurements are measured from top of flask flange to seal on top thread.

** 150mL and 600mL heads have angled side necks.

- Stand and Support Shelf not included.
- 150mL size requires chain clamp rather than a shelf.
- For #80, bottom also available with 1/2" MNPT.

Jacketed Filter Reactor, Pressure Version

Heavy wall glass reactor, jacketed version for cooling or heating of reactor. Available with 60mm, 100mm, or 150mm diameter Schott® flange with O-ring grove at top. Connects to 6433 head with a 6517 quick-release clamp. Reactor bottom has an Screw thread for installing a 5838-83 (#50) or 5857-86 (#80) adapter with a filter support and bottom drain valve. Jacket inlet/outlet are size 28/15 O-ring ball joint connections, sealed tangentially for more efficient circulation. The 60mm reactor head has a #15 Screw thread center neck, (2) #15 and (1) #7 Screw thread side necks. The 100mm head has a #15 Screw thread center neck, (3) #15 and (1) #7 Screw thread side necks. The 150mm head has a #15 Screw thread center neck, (4) #15 and (1) #7 Screw thread side necks. The Screw threads allow for vacuum or pressure applications and for draining material out of the reactor. The main bearing, funnel and condenser are designed to connect to the threds on the head via compression bushing connections. The #7 Screw thread is used for connecting a 1/4 inch O.D. tubing fitting to allow for a direct connection to a pressure source or a 6448 pressure manifold.

Complete item consists of: reactor body with 60mm CAPFE O-ring, head with Screw threads, 6517 clamp, PTFE bottom threaded adapter and valve with CAPFE O-ring, retainer ring, 350 micron polypropylene screen support, 100 micron polyethylene support, 5844 adapter , 8044 bearing, 8075 stir rod, 8089 multi-paddle agitator, 6024 condenser, 7299 addition funnel and #7 Screw thread bushing. #80 bottom adapter also comes with a perforated glass plate support.

Pressure manifold, stand, and clamps are optional. For replacement glass fritted discs and supports, see 5848 or 5814. For motor, see 13511 or 13566; for chucks, see 8124 or 8126. Use 7855-829 CAPFE O-ring for #50 adapter, 7855-864 for #80 bottom adapter.



Ball Joint Inlet/Outlet (28/15)

Capacity, mL	Flange I.D., mm (in.)	Bottom screw thread #	Body I.D., mm	Approx. Height*, mm	Top CAPFE O-Ring	Order No.
150**	60 (2.4)	#50	60	100	JRS-7855-878	JRS-6386-107
600**	60 (2.4)	#50	83	205	JRS-7855-878	JRS-6386-110
1000	100 (4)	#80	100	180	JRS-7855-880	JRS-6386-115
2000	100 (4)	#80	130	210	JRS-7855-880	JRS-JRS-6386-120
3000	150 (6)	#80	150	205	JRS-7855-881	JRS-6386-124
6000	150 (6)	#80	150	395	JRS-7855-881	JRS-6386-128
Screw thread Inlet/Outlet (#11, 3000 & 6000mL are #15)						
150**	60 (2.4)	#50	60	100	JRS-7855-878	JRS-6386-507
600**	60 (2.4)	#50	83	205	JRS-7855-878	JRS-6386-510
1000	100 (4)	#80	100	180	JRS-7855-880	JRS-6386-515
2000	100 (4)	#80	130	210	JRS-7855-880	JRS-6386-520
3000	150 (6)	#80	150	205	JRS-7855-881	JRS-6386-524
6000	150 (6)	#80	150	395	JRS-7855-881	JRS-6386-528

* Height measurements are measured from top of flask flange to seal on top thread.

** 150mL and 600mL heads have angled side necks.

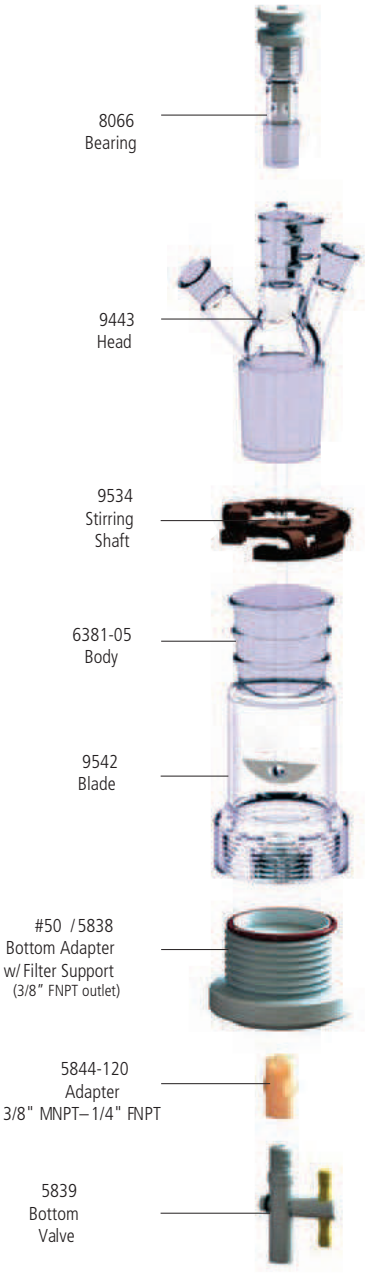


- Stand and Support Shelf not included.
- 150mL size requires chain clamp rather than a shelf.
- For #80, bottom also available with 1/2" MNPT.

Unjacketed Filter Reactor

Small-volume filter reactor with 45/50 joint at top, and #50 Screw thread (internal glass thread) at bottom that accepts a 5838-83 (#50) PTFE bottom adapter with filter support and drain valve. Head has a 19/38 center neck and three 14/20 side necks. Complete item consists of: reactor body, head with joints, clamp, #50 PTFE bottom adapter with size –136 CAPFE o-ring, 350 micron polypropylene screen support, 100 micron polyethylene support, 5844 adapter, 5839-42 shutoff valve, 8066-120 non-flaking bearing, 9534-40 stirring rod, 9542-20 blade. For glass fritted support replacements for polypropylene screen and polyethylene support, see 5848 or 5814; for condensers, see 6024; for addition funnel, see 7299. For stirring motor, see 13523; for chuck, see 8124 or 8126.

Small Volume



Top Joint	Bottom screw thread #	Body I.D., mm	Approx. Height, mm	Complete Order No.	Head, only Order No.	Body, only Order No.
100mL Capacity						
45/50	#50	51	65	JRS-6381-25	JRS-9443-10	JRS-6381-05
150mL Capacity						
45/50	#50	51	125	JRS-6381-30	JRS-9443-10	JRS-6381-10

Replacement Parts	Order No.
Adapter, PTFE, 3/8" MPT–1/4" FNPT, only	JRS-5844-120
Bottom Adapter, #50–3/8" FNPT, only	JRS-5838-83
Bottom Shutoff Valve, 1/4" MNPT–1/4" Tube, PTFE	JRS-5839-42
Clamp, Plastic, 45/50	JRS-7598-45
Bearing, 19/22, 6mm	JRS-8066-120
Stopper, 14/20	JRS-9543-04
Stirring Shaft	JRS-9534-40
Stirring Blade, PTFE	JRS-9542-20

Optional Accessories	Order No.
PTFE Sleeves 14/20/Pkg. 3	JRS-7642-07
PTFE Sleeves 19/38/Pkg. 3	JRS-7643-06
PTFE Sleeves 45/50/Pkg. 3	JRS-7642-23
Thermometer Adapter, 14/20	JRS-5028-26
CAPFE O-Ring	JRS-7855-829

> Stand and Support Shelf not included.

Filter vessel Kilo-Scale, Jacketed

Kilo scale, cylindrical glass vessel flanged on both ends. Unique jacketed flange delivers cooling/ heating capacity in what is for other manufacturers a "dead zone". Vessel maintains a consistent interior bore-thru diameter from top to bottom. See our 13823 family for the appropriate filter base. Minus 60℃ to 200℃ , maximum jacket pressure 8psig.



Order No.	Capacity	Top flange I.D.	Bottom Flange I.D.	Bore-thru I.D.	Inlet/Outlet, Beaded pipe
JRS-12650-10	10L	200mm	300mm	200mm	1"
JRS-12650-20	20L	300mm	400mm	300mm	1"
JRS-12650-30	30L	300mm	400mm	300mm	1.5"
JRS-12650-50	50L	400mm	450mm	400mm	1.5"
JRS-12650-75	75L	400mm	450mm	400mm	1.5"
JRS-12650-100	100L	400mm	450mm	400mm	1.5"
JRS-12650-150	150L	400mm	450mm	400mm	1.5"

Filter base Glass-Filled, PTFE

Filter bases to match with our 12650 product family of reactor vessels. All wetted materials are glass-filled PTFE for strength or stainless steel (ball valve and pipe nipple). Choose the cooresponding flange size of your vessel, desired porosity press-fit filter and the appropriate 13824 product family pipe nipple and ball valve. All clamping materials are included with each size filter base.



Filter Plate



Filter Base

Filter Plate Order No.	Filter Base Order No.	Fits Flange Size, mm	Micron Size
	JRS-13823-200	200	
JRS-13823-201		200	27
JRS-13823-205		200	115
	JRS-13823-300	300	
JRS-13823-301		300	27
JRS-13823-305		300	115
	JRS-13823-400	400	
JRS-13823-401		400	27
JRS-13823-405		400	115

Ball valve Stainless Steel, PTFE Seal

On/Off ball valve with lockable handle (padlock not included). Wetted surfaces are stainless steel and PTFE.
Size: 2" female and male



Order No.	Description	NPT Connections
JRS-13824-01	Ball Valve	2" Female
JRS-13824-10	Pipe Nipple	2" Male

HOMOGENIZING REACTOR

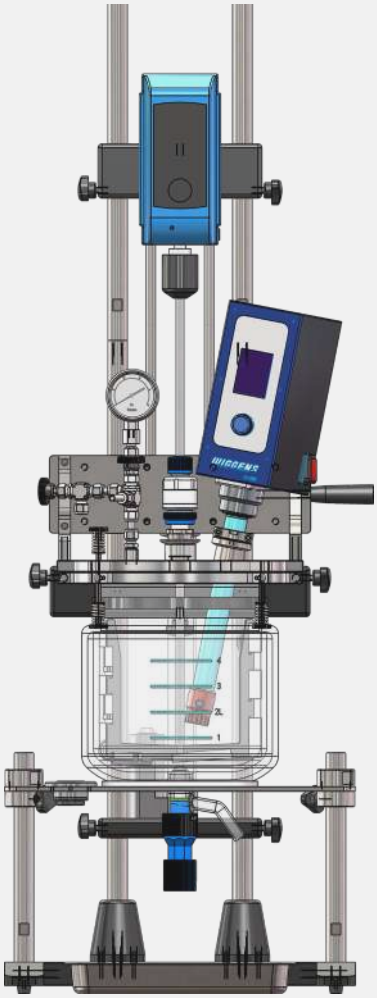
Standard volume: 1000ml, 2000ml and 5000ml

The Glass Homogenizing Reactor is a professional multifunctional instrument integrating chemical reaction, high-speed homogenization, emulsification and fine mixing functions. The transparent glass vessel is made of thickened high-purity borosilicate material, which is resistant to most organic solvents, weak acids and weak alkalis without impurity precipitation or catalytic interference. It ensures pure reaction environments and stable, repeatable experimental data.

Different from ordinary stirring reactors that only achieve simple mixing, this device is equipped with a high-efficiency homogenizing head, which generates powerful mechanical shear, layer tearing and micro-jet effects inside the liquid. It can rapidly break material clusters, refine particle size, and realize uniform mixing, fine emulsification and stable dispersion of liquid-liquid and solid-liquid systems. The matched circulating temperature control system effectively controls the temperature rise caused by high-speed homogenization, preventing material denaturation and ensuring the stability of heat-sensitive materials.

Adopting standard ground glass connection, the reactor features reliable airtightness, supporting vacuum defoaming, inert gas protection and sealed constant-temperature homogenization. The detachable structural design facilitates quick disassembly, thorough cleaning, replacement of homogenizing components and daily maintenance. Featuring visual operation, high homogenization efficiency, no dead corners and wide applicability, this reactor is the preferred equipment for laboratory formula development, process optimization and small-batch production of emulsified and dispersed materials.







ULTRASONIC REACTOR

Standard volume: 3ml~2000ml, with or without jacket

The Ultrasonic Glass Reactor is a specialized experimental instrument designed for ultrasonic-assisted chemical reactions. Adopting high-strength borosilicate glass as the reaction cavity material, it is inert to most organic solvents, acids and weak alkalis, avoiding secondary contamination and catalytic interference, which guarantees accurate and repeatable experimental data. The built-in high-efficiency ultrasonic transducer produces uniform and stable ultrasonic waves, triggering strong cavitation, turbulence and micro-jet effects in the reaction solution. This technology effectively breaks molecular clusters, enhances reactant mixing and contact efficiency, and greatly shortens reaction time compared with traditional heating and stirring reaction methods.

The reactor is integrated with a precision circulating temperature control system, which can stably maintain the required reaction temperature and avoid thermal damage caused by ultrasonic local overheating. The fully sealed design supports vacuum reaction, inert gas protection and constant-pressure reaction environments, meeting the experimental requirements of oxygen-free and dust-free conditions. With the advantages of visual reaction process, mild reaction conditions, high reaction efficiency and easy operation, it is widely applicable in fine chemical synthesis, nanomaterial preparation, environmental pollutant degradation, pharmaceutical ingredient extraction and biochemical reaction research.

Applications for Ultrasonic Processing:

- Cell Culture
- Soil Sample Prep
- Nanotechnology
- Drug Development
- Agriculture
- Sonochemistry
- Super Mixing
- Colloids, Dispersions
- Emulsions
- Homogenization
- Tissue or Cell Disruption
- Photochemistry





Features

The system guarantees a constant amplitude and thus reproducible results independently from changing conditions within the sample. Settings within a range of 10 to 100 % are possible. Verification of actual value at the display. Permanent control of ultrasound irradiation as well as indication of wear of the probe.

Pulsation
limits temperature increase when processing heatsensitive samples. The adjustable pulsation allows cooling during rest intervals.

Continuous operation
constant sound radiation – extremely effective

Integrated timer
duration of sonication storable; indication of elapsed time during continuous operation or of remaining time in count-down mode.

Switching ON / OFF – easy to handle
either at the generator or directly at the ultrasonic converter via button or remote control.

Foil keypad – easy-care and user-friendly.

Fail-safe during continuous operation and idling.

CE-marked, also as medical device compliant to the directive for in-vitro diagnostics 98/79/EG

9832 Ultrasonic reactor

> Including three different volume of vessels, from 3 to 200ml, unjacketed
> Visible sound proof box, with supporting table and anti-slip mat, 20dB-AU noise reduction



Small Volume reactor

1	C9810-24	GM4200, Ultrasound generator	1
2	C9814-25	UW200 Ultrasonic converter	1
3	3732	SH 200 G, Booster horns	
4	C9818-17	TS106, Microtip dia.6mm	1
5	C9825-21	Clamp, Heavy Duty	1
6	C9860-24	Sound proof box, with rod, swivelling clam and quick clamp for vessels, 20dB noise reduction	1
7	9852-21	Slide Adapter, 25mm, Body only	1
8	7506-10	25mm Screw thread Nylon Bushing	1
9	9833-05	Vessel, Tapered, 250mL, #25 Center, (3) 14/20 sides	1
10	9843-04	Vessel, 3-10mL, #25 Center, (2) 14/20 sides, Body only	1
11	9844-07	Vessel, 10-50mL, #25 Center, (2) 14/20 sides, Body only	1
12	7506-12	36mm Screw thread Nylon Bushing	4

9833 Ultrasonic reactor, Jacketed

> Including three different volume of vessels, from 3 to 200ml, jacketed
> Visible sound proof box, with supporting table and anti-slip mat, 20dB-AU noise reduction
> Cooling circulator is optional



Small Volume, Jacketed

1	C9810-24	GM4200, Ultrasound generator	1
2	C9814-25	UW200 Ultrasonic converter	1
3	3732	SH 200 G, Booster horns	
4	C9818-17	TS106, Microtip dia.6mm	1
5	C9825-21	Clamp, Heavy Duty	1
6	C9860-24	Sound proof box, with rod, swivelling clam and quick clamp for vessels, 20dB noise reduction	1
7	9852-21	Slide Adapter, 25mm, Body only	1
8	7506-10	25mm Screw thread Nylon Bushing	1
9	9848-07	Jacketed vessel, Tapered, 250mL, #25 Center, (3) 14/20 sides	1
10	9851-05	Jacketed vesse, 3-10mL, #25 Center, (2) 14/20 sides, Body only	1
11	9850-12	Jacketed vesse, 10-50mL, #25 Center, (2) 14/20 sides, Body only	1
12	7506-12	36mm Screw thread Nylon Bushing	4
13	9610025	Recirculating Cooler, -15 ... 40° C, 250W at 20° C	1

9834 Ultrasonic reactor

> Including two different volume of vessels, from 500 to 1000ml, unjacketed
> Visible sound proof box, with supporting table and anti-slip mat, 20dB-AU noise reduction



Large Volume, Tapered Flask

1	C9810-25	GM4400, Ultrasound generator	1
2	C9814-26	UW400 Ultrasonic converter	1
3	3754	SH 400 G, Booster horns	
4	C9816-07	TS419, Microtip dia.19mm	1
5	C9860-25	Sound proof box, with rod, swivelling clam and quick clamp for vessels, 20dB noise reduction	
6	C9825-21	Clamp, Heavy Duty	1
7	9833-12	Vessel, Tapered, 500mL, #36 Center, (3) 24/40 sides	1
8	9833-21	Vessel, Tapered, 2000mL, #36 Center, (3) 24/40 sides	1
9	7506-12	36mm Screw thread Nylon Bushing	3

9835 Ultrasonic reactor

> Round bottom flask, 2000ml, unjacketed
> Center opening for stirring, side opening for untrasonic
> Visible sound proof box, with supporting table and anti-slip mat, 20dB-AU noise reduction
> Stirring unit has been included



Large Volume, Round Bottom Flask

1	C9810-25	GM4400, Ultrasound generator	1
2	C9814-26	UW400 Ultrasonic converter	1
3	3754	SH 400 G, Booster horns	
4	C9816-07	TS419, Microtip dia.19mm	1
5	C9860-25	Sound proof box, with rod, swivelling clam and quick clamp for vessels, 20dB noise reduction	1
6	C9825-21	Clamp, Heavy Duty	1
7	9837-20	Round Bottom Flask, 2000mL, #36 Center, (3) 24/40 sides	1
8	7506-12	36mm Screw thread Nylon Bushing	3
9	100300	Overhead Stirrer, 40~2000RPM	1
10	005.105.7	PTFE bearing, 24/40, 10mm	1
11	002.052.1	Stainless steel coated PTFE rod, 10mm, with PTFE impeller	1



Ultrasonic generator (control unit)

Transforming of low-frequency voltage of 50 or 60 Hz into high frequency voltage of 20 kHz.
Controlling and displaying of process parameters and sequences.
Amplitudesetting: 10 to 100 %
Pulsation:ON cycles 0.2 – 600 s, OFF cycles 0.3 – 600 s
Time setting: 9 h: 59 min: 59 s, continuous or timed
Indicators: Alphanumerical LC display of amplitude, pulse level, time, energy input, temperature (optional)
Energy display: in kJ
Temperature display and measurement: Optional, 0 to 120 °C , temperature sensor required, alternatively beep or switch off

Ultrasonic nominal output max.	Order No.
200 W	GM4200
400 W	GM4400



UW 200 UW 400

Ultrasonic converter

Transforming electrical voltage delivered from the generator into mechanical vibrations of 20 kHz

Available probes dia. [mm]	Order No.
3/ 4.5/ 6/ 9/ 13/ 16/ 25	UW 200
13/16/19/25/32/38	UW 400



SH 200 G SH 400 G

Standard and booster horns SH

They amplify and transmit the vibrations to the probe. The suitable horn will be tightened to the ultrasonic converter.
For adapting replaceable probes. With external thread for connection of different vessels by the use of adapters NA.

Booster horns	Order No.
SH 200 G	3732
SH 400 G	3754



TS 106 TS 419

Probes

Transmitting the mechanical vibrations into the sample. The radiating surface is located on the tip of the probe, but not on the sides. The higher the amplitude the more intense the sonication and the more erosion at the radiating surface of the tip. Due to their shapes probes multify the amplitudes. This is followed by highest power densities in the sample.

Model	Diameter [mm]	Length* ca. [mm]	Booster horn for HD	Amplitude [µm]	Volume [ml]	Order No.
TS 106	6	128	SH 200 G	210	10–350	3743
TS 419	19	132	SH 400 G	142	250 – 1500	3754



Ultrasonic Sound Abatement Cabinet

Although ultrasonic vibrations are above the human audible range, in ultrasonic processing, high-pitched noise is produced from harmonics emanating from the vessel walls and the fluid surface. The sound abatement cabinet permits extended processing without discomfort by greatly reducing that noise.
Cabinet is fabricated from steel, painted chemically resistant blue, with clear plastic door. Inside of cabinet is lined with sound-abating foam.

Model	Order No.
LS 20	3698
LS 30	3699



Foot switch remote control

It is applicable for hand-free switching ON/OFF of the device. Delivered with 3 m connecting cable.

Type	For HD	Order No.
TS 8	4200 / 4400	513

Reaction Vessel *Jacketed, Sonochemical*

Similar to 9833-05 vessel except jacketed to provide active cooling from tap water or mechanical cooler. Jacket is cylindrical with flat bottom for greater stability. With #25 Screw thread center neck and three 14/20 side necks. Use 7506-10 bushing with o-ring in center neck to secure 9852-41 slide adapter for connecting converter. Capacity 250mL. Use with 3/8-inch I.D. tubing, size D hose connection. See page 7 for more detailed hose connection information.



Description	Order No.
Vessel, only	JRS-9848-07
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9848-35

Reaction Vessel *Jacketed, Sonochemical*

Similar to 9844-07 vessel except jacketed to provide active cooling from tap water or mechanical cooler. Jacket is cylindrical with flat bottom for greater stability. With #25 Screw thread center neck and two 14/20 side necks. Use 7506-10 bushing with o-ring in center neck to secure 9852-41 slide adapter for connecting converter. Capacity 10–50mL. Use with 3/8-inch I.D. tubing, size D hose connection. See page 7 for more detailed hose connection information.



Description	Order No.
Vessel, only	JRS-9850-12
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9850-30

Reaction Vessel *Jacketed, Sonochemical*

Similar to 9843-04 vessel except jacketed to provide active cooling from tap water or mechanical cooler. Jacket is cylindrical with flat bottom for greater stability. With #25 Screw thread center neck and two 14/20 side necks. Use 7506-10 bushing with o-ring in center neck to secure 9852-41 slide adapter for connecting converter. Capacity 3-10mL. Use with 3/8-inch I.D. tubing, size D hose connection. See page 7 for more detailed hose connection information.



Description	Order No.
Vessel, only	JRS-9851-05
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9851-27

Reaction Vessel *Sonochemical, Small Volume, 3-10mL*

Tapered walls and proper size horn allow volumes as little as 3mL to be mixed. Fabricated of borosilicate glass with #25 Screw thread center neck and two 14/20 side necks. With 7506-10 bushing, center neck will accept 9852-41 slide adapter with 9814 horn and extender (see chart below). Vessel measures 123mm (4-7/8 inches) high. Not supplied with bushing.



Description	Order No.
Reactor Body, only	JRS-9843-04
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9843-25

Horn OD (inches)	Order No.	Extender Size (inches)	Order No.	Connection Type	Min. Vessel Volume
12.7mm	9814-25	6.4mm×108mm	JRS-9818-17	ADJUSTABLE	3 ml
12.7mm	9814-25	12.7mm×127mm	JRS-9816-06	ADJUSTABLE	6-10 ml

Reaction Vessel *Sonochemical, Small Volume, 10-50mL*



For small-scale reactions and mixing, 10mL in bottom well and up to 50mL in main body. With #25 Screw thread center neck and two 14/20 side necks. With 7506-10 Bushing, center neck will accept 9852-41 Slide Adapter with 9814 Horn and Extender (see chart below). Vessel measures 120mm (4-3/4-inch) high (including thread). Not supplied with bushing.

Description	Order No.
Reactor Body, only	JRS-9844-07
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9844-19

Horn OD (inches)	Order No.	Extender Size (inches)	Order No.	Connection Type
12.7mm	JRS-9814-25	6.4mm×108mm	JRS-9818-17	ADJUSTABLE
12.7mm	JRS-9814-25	12.7mm×127mm	JRS-9816-06	ADJUSTABLE

Reaction Vessel *Sonochemical, Tapered, 4-Neck*



Fabricated from borosilicate glass with walls tapered inward toward bottom to allow operation with smaller volumes. 250mL size supplied with #25 Screw thread center neck and three 14/20 side necks. All other capacities supplied with #36 Screw thread center neck and three 24/40 side necks. Use 7506-10 bushing and o-ring in #25 Screw thread 7506-12 bushing and o-ring in #36 Screw thread to form a leak-tight compression seal with all 9814 Horns with groove and 9852-41 or 9852-45 slide adapter. Stated capacity is WITHOUT horn. See horn selection chart, below, for proper horn size. Vessel NOT supplied with bushing or o-ring, order separately.

Capacity, mL	Order No.
250	JRS-9833-05
500	JRS-9833-12
1000	JRS-9833-16
2000	JRS-9833-21

Description	Order No.
#25 Nylon Bushing w/FETFE o-ring, only	JRS-7506-10
#36 Nylon Bushing w/FETFE o-ring, only	JRS-7506-12

Reaction vessel *Sonochemical, Round Bottom, 4-Neck*

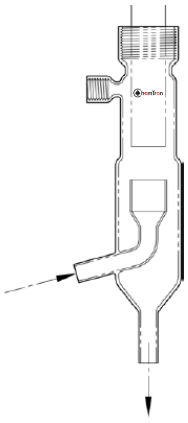


Borosilicate glass, round-bottom vessel. Supplied with 24/40 center neck and two 24/40 side necks. Fourth neck is #25 Screw thread on 500mL for use with 7506-10 bushing and o-ring; #36 Screw thread on 1000mL and 2000mL sizes for use with 7506-12 bushing and o-ring to make a leak-tight compression seal with all 9814 horns and 9852-41 or 9852-45 slide adapter. Center neck can be used for mechanical stirring if needed. Stated capacity is WITHOUT horn. See horn selection chart, below, for proper horn size. Vessel NOT supplied with bushing or o-ring, order separately.

Capacity, mL	Order No.
500	JRS-9837-09
1000	JRS-9837-14
2000	JRS-9837-20

Description	Order No.
#25 Nylon Bushing w/FETFE o-ring, only	JRS-7506-10
#36 Nylon Bushing w/FETFE o-ring, only	JRS-7506-12

Flo-Thru Reactor *Sonochemical*



Continuous-flow borosilicate glass vessel provides uniform treatment by forcing reactant to pass in front of horn tip. The degree of processing is controlled by varying the power level and flow rate, max. 1.5L/Min. Reactants are pumped through side port, overflowing inner cup and out through bottom port. Treated material drains completely (no hang-up). Use of 9852-41 slide adapter in #25 Screw thread at top allows probe position to be varied within the inlet cup area, thereby maximizing use of ultrasonic energy.
Must be used with 1/2-inch O.D. (9814-25) horn and either 1/2-inch–5 extender (9816-06) or 1/4-inch-5 (9818-17) microtip. Inlet and outlet tubes are 1/2-inch O.D. (13mm). #7 Screw thread located below top thread is for bleed or vacuum connection. For latter use, bushing with hole needs to be ordered for tubulature connection. Operated in vertical position only.
Complete item consists of reactor, #7 PTFE plug and #25 nylon bushing. Slide adapter and horn must be ordered separately.

Description	Order No.
Reactor Body, only	JRS-9841-18
#7 PTFE Plug, only	JRS-5803-05
#25 Nylon Bushing w/FETFE o-ring	JRS-7506-10
Complete	JRS-9841-30

Adapter *Slide, Sonochemical*

For use with 1/2-inch ultrasonic horn, 9814-25, and 1/4-inch or 1/2-inch extenders, only. Both slide adapters have a #36 Screw thread at top with a 6-inch extension, either 25 mm O.D. for insertion into a #25 Screw thread or 35 mm O.D. for use in a #36 Screw thread. Secure 1/2-inch horn in adapter with 7506 bushing and o-ring, then slide adapter extension into thread on reaction vessel, again securing with 7506 bushing. Now you have a variable depth adjustment of horn to achieve greater efficiency. Complete item consists of adapter, one nylon bushing with one FETFE o-ring.



Screw thread Size	Extender O.D., mm	Order No.
	Glass Adapter	
#36	25mm	JRS-9852-21
#36	35mm	JRS-9852-25
	Bushing w/O-Ring	
#36	25mm	JRS-7506-12
	Complete	
#36	25mm	JRS-9852-41
#36	35mm	JRS-9852-45

Overhead Stirrer

Specially designed for optimum usability and the highest efficiency in the same class with advanced safety features.



Order No.	Model	Speed Range	Maximum Viscosity	Maximum Torque	Chuck range max. diameter
		rpm	cps	N-cm	mm
CR3090.01	OHS.1	20-2000	20000	70	10

Recirculating cooler

saving water, accurate temperature control, high efficiency condensing for Strike 300



Your advantages

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

JULABO	Model	Working temp. range	Temp. stability	Cooling capacity (W)					Pump capacity Flow rate/pressure		Filling volume liters	Dimensions
Order No.		°C	°C	20	10	0	-10	-20	L/min	bar	L	WxL/D cm
9VT1R02	RT2	-20~95	±0.05	150	140	110	100	50	10	0.23	4~6	12.5x11.5 / 19
9VT1R04	RT4	-25~95	±0.05	300	280	220	170	70	10	0.23	4~6	12.5x11.5 / 19

Helpful Hints for Sonochemistry

- As tip size decreases, intensity increases, at a given power setting.
- Almost all activity takes place immediately below the tip.
- Tips MUST be kept submerged during operation.
- Horns (probes) or extenders MUST be held ONLY at the node (nodal point).
- Tips 1/4" and smaller CANNOT be operated at full power output. Follow directions provided with power supply.
- Side of horn, extender or tip of probe should NEVER touch vessel walls.
- Most reactions work better when solution is kept cool.
- In many reactions the probe itself may provide enough turbulence and additional stirring usually is not necessary unless very viscous materials or heavy metal catalysts are used.
- For large-volume reactions, consider multi-neck vessels since mechanical stirring might be necessary.
- Removable tips have been sometimes problematic as liquid may seep into gaps between probe and tip. Many sonochemists have no problem with this and find the economy of the removable tip important. However, it is important to remove, clean and polish the tip regularly to avoid cross-contamination and excessive wear.

PHOTOCHEMICAL REACTOR

Standard volume: 250ml, 500ml and 1000ml, with or without jacket

The photochemical reactor is an essential laboratory apparatus for studying photochemical and photocatalytic reactions. By irradiating reaction systems with ultraviolet, visible or simulated sunlight, it enables chemical transformations that cannot be achieved by conventional thermal reactions.

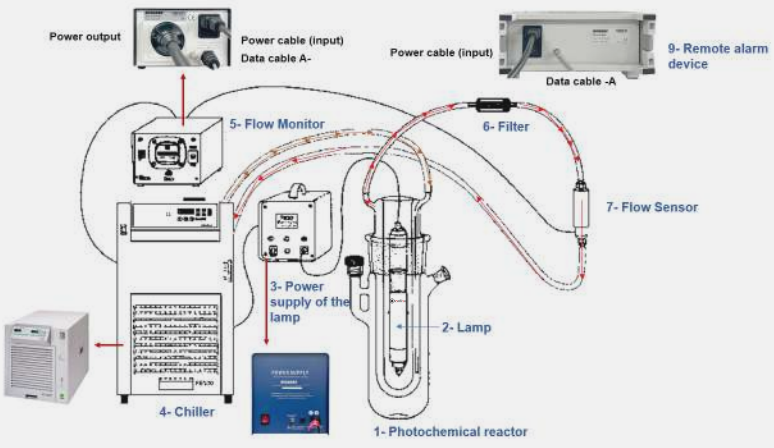
The system consists of a light source module, reaction vessel, temperature control unit, magnetic/mechanical stirring assembly, gas inlet and outlet ports, and a protective housing. It supports reaction conditions including constant temperature, anaerobic atmosphere, continuous stirring and real-time sampling.

It is extensively used in research areas such as photocatalysis, photoredox organic synthesis, photodegradation of dyes and contaminants, photopolymerization, and photobiology. Optional configurations include quartz reaction tubes, circulating cooling systems, and multi-position reaction holders for parallel experiments.



Water-flow power cut-off

- Prevents damage caused by water or power failure.
- Controls 1.8kw AC power at 120* volts, 15 amperes; or 4.6kw AC power at 230 volts, 20 amperes .
- Provides Automatic Reset for power outages of less than 90 seconds' time and water line pressure drops of less than 5.0 seconds.



7861 Photochemical reactor

#50 Thread



250mL System
C7861-410

1	JRS-7863-16	Reactor Body, 250mL, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-02	Stand Insert, PTFE, 250mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7861-430

1	JRS-7863-18	Reactor Body, 500mL, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-05	Stand Insert, PTFE, 500mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7861-450

1	JRS-7863-20	Reactor Body, 1000mL, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

7840 Photochemical reactor

Standard Taper



250mL System
C7840-320

1	JRS-7841-03	Reactor Body, 250mL	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-02	Stand Insert, PTFE, 250mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7840-340

1	JRS-7841-04	Reactor Body, 500mL	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-05	Stand Insert, PTFE, 500mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7840-360

1	JRS-7841-06	Reactor Body, 1000mL	1
2	JRS-7854-27	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

7864 Photochemical reactor

#50 Thread, jacketed



250mL System
C7864-410

1	JRS-7864-08	Reactor Body, 250mL, jacketed, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-02	Stand Insert, PTFE, 250mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7864-430

1	JRS-7864-10	Reactor Body, 500mL, jacketed, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-05	Stand Insert, PTFE, 500mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7864-450

1	JRS-7864-12	Reactor Body, 1000mL, jacketed, #50 Thread	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

7842 Photochemical reactor

Standard Taper, jacketed



250mL System
C7842-320

1	JRS-7841-05	Reactor Body, 250mL, Standard Taper, jacketed	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-02	Stand Insert, PTFE, 250mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7842-340

1	JRS-7841-10	Reactor Body, 500mL, Standard Taper, jacketed	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-05	Stand Insert, PTFE, 500mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7842-360

1	JRS-7841-16	Reactor Body, 1000mL, Standard Taper, jacketed	1
2	JRS-7854-27	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

7865 Photochemical reactor

#50 Thread, with jacket and bottom outlet



250mL System
C7865-410

1	JRS-7865-06	Reactor Body, 250mL, #50 Thread, with jacket and bottom outlet	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-02	Stand Insert, PTFE, 250mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7865-430

1	JRS-7865-08	Reactor Body, 500mL, #50 Thread, with jacket and bottom outlet	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	1
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-05	Stand Insert, PTFE, 500mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7865-450

1	JRS-7865-10	Reactor Body, 1000mL, #50 Thread, with jacket and bottom outlet	1
2	JRS-7874-38	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-7506-14	#50 Screw thread Nylon Bushing	
7	JRS-12687-12	FEP Tubing	1
8	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
9	JRS-7825-34	Immersion Lamp, 450W	1
10	JRS-7830-61	Power Supply, 230V, 50Hz	1
11	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

7844 Photochemical reactor

Standard Taper, with jacket and bottom outlet



250mL System
C7844-320

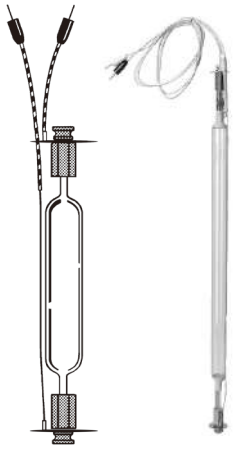
1	JRS-7844-03	Reactor Body, 250mL, Standard Taper, with jacket and bottom outlet	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-02	Stand Insert, PTFE, 250mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

500mL System
C7844-340

1	JRS-7844-06	Reactor Body, 500mL, Standard Taper, with jacket and bottom outlet	1
2	JRS-7854-25	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-05	Stand Insert, PTFE, 500mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1

1000mL System
C7844-360

1	JRS-7844-09	Reactor Body, 1000mL, Standard Taper, with jacket and bottom outlet	1
2	JRS-7854-27	Quartz Immersion Well	1
3	JRS-7841-09	Sparger Tube	1
4	JRS-13654-14	Stir bar, PTFE	1
5	JRS-5029-10	#7 Nylon Bushing	1
6	JRS-12687-12	FEP Tubing	1
7	JRS-7837-10	Stand Insert, PTFE, 1000mL	1
8	JRS-7825-34	Immersion Lamp, 450W	1
9	JRS-7830-61	Power Supply, 230V, 50Hz	1
10	C9860-34	Safety reaction cabinet for the safe operation of photochemical reaction equipment.	1
Optional: Water Flow Monitor			
1	WFM-230	Water flow monitor.	1
2	WFM-03	Flow sensor. Flow rate: 2 to 30 L/min	1
3	250WV	Water shut off valve. Turns off water flow during an alarm.	1
4	WFM-AA	Audible Alarm. Alarm (70 dB) sounds during under flow condition.	1
5	WFM-OC	Digital Alarm Outlet. High current (170 ma) open collector output.	1
6	12160	Water filter	1



Immersion Lamp Photochemical *(Medium Pressure)*

Medium pressure, quartz, mercury-vapor lamp. For use in all ChemTron immersion wells. 61cm PTFE covered lead wires, fitted with pin type connectors. A 6-foot power cord also allows for lowering lamp into well for vertical operation. Approximately 40-48% of the radiated energy is in the ultraviolet portion of the spectrum, 40-43% in the visible region and the balance in the Infrared. Can be inserted into a glass well/sleeve with a 25mm I.D. For replacement cord, order 9698-10.

Watts	Lamp Volts	Lamp Amps	Arc Length, mm	Distance from Lamp to Bottom, mm	Approx. Total Length, mm	Order No.
100	90-110	1.2	69.85	42.86	155.58	JRS-7825-30
200	110-130	1.9	121.92	64.52	250.95	JRS-7825-32
450	125-145	3.6	131.50	56.50	244.35	JRS-7825-34
450	125-145	3.6	279.40	57.15	400.05	JRS-7825-35
550	140-150	4.5	109.54	57.15	236.54	JRS-7825-36
1200	270-300	4.7	317.50	87.38	492.25	JRS-7825-40

Warranty: One year from date of shipment. (When used under normal conditions with ChemTron Glass equipment.) Typical lamp life 1000 hrs.

CAUTION:
Ultra-violet radiation is permanently damaging to the retina of the eye. Never operate lamp where it can be viewed directly.

Spectral Characteristics (Watts)

Far U.V	Middle U.V	Near U.V.	Visible	Infrared	Total Radiated Energy	Order No.
2200-2800Å	2800-3200Å	3200-4000Å	4000-6000Å	10000-14000Å		
1.14	1.97	1.53	4.73	2.12	11.49	JRS-7825-30
2.88	4.14	3.46	10.6	4.1	25.18	JRS-7825-32
27.0	28.7	28.0	75.7	16.4	175.8	JRS-7825-34
27.0	28.7	28.0	75.7	16.4	175.8	JRS-7825-35
29.2	32.8	32.9	87.2	20.6	202.7	JRS-7825-36
116.15	117.01	104.03	187.07	48.68	572.9	JRS-7825-40

FOR SAFETY:

We recommend use of Safety Reaction Cabinet (7836) plus Water-Flo Monitor (12168) when operating these lamps.



Power Supply *Photochemical, Ready to Use, Cased*

Cased, open "core and coil" type transformers that supply the extra voltage and current required to initiate the lamp's arc and reduce operational power. Intended for use with our 7825 or 7883 series photochemical lamps. Carefully choose the correct power supply for your environment (voltage and Hz inputs, wattage outputs).

Note: Units are not CE, CSA or UL rated.

Size	For Lamp No.	Voltage	Weight	Hz.	L×W×H(cm)	Order No.
A-2	7825-30	230	8 lbs.	50	17.8×12.7×11.4	JRS-7830-53
C-21	7825-34 & 35	230	40 lbs.	50	30.5×21.6×22.9	JRS-7830-61
G-21	7825-40	230	65 lbs.	60	45.7×28.3×27.9	JRS-7830-71
G-22	7825-40	230	65 lbs.	50	45.7×28.3×27.9	JRS-7830-89



Photochemical *safety reaction cabinet**

This steel cabinet allows for the safe operation of photochemical reaction equipment. Eliminates the need for a hood, or to construct a special safe area to operate the U.V. lamp. The cabinet has welded seams and a fully hinged door with lip to prevent light from escaping. The door has a key lock for positive closure and it controls a safety switch that prevents U.V. lamp operation unless door is closed. The floor of cabinet is sealed to 1" height to contain any possible spills.

Inside the cabinet is a plug-in light, auxiliary 120v socket and a 60 CFM exhaust fan, all controlled by an ON/OFF switch. Also inside are pin jack sockets for lamp connection and a removable 1/2" aluminum rod, mounted vertically, for clamping the reactor.

The cabinet is supplied with a 6ft. grounded power cord with NEMA plug for connection to a 120v source, and a 6ft., two-wire cord with male pin jacks for connection to the lamp power supply. Handles are mounted on both sides for easier carrying, and there are rubber feet on the bottom of the cabinet for stability. Painted black inside, chemically resistant blue outside.

Order No.
JRS-7836-20- I
JRS-7836-20- II

*designed by Dr. John Penn, West Virginia University Dept. of Chemistry, Morgantown, WV 26506

For foreign use, 230 volts, 50Hz, use with stepdown transformer #NE05F1430

Absorption Sleeves

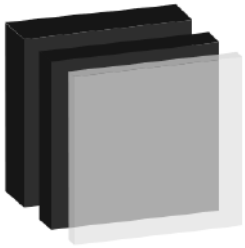
Filter sleeve for use with all ChemTron Immersion Wells to restrict portions of the radiated energy from reaching the reactant material. An invaluable aid in predetermining which portion of the spectrum creates the reaction. Sleeves are glass, open-end tubes which telescope into well assembly to surround the light source. For use with 100, 200, 450, and 1200 watt lamps, only.



Type Glass	Length, mm	O.D., mm	I.D., mm	Order No.
Pyrex 7740	280	26	30	JRS-7835-44
Pyrex 7740	762	26	30	JRS-7835-45

Filter Glasses Color, *Polished*

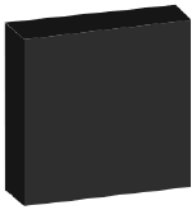
A combination of either 7891-40 and 7891-42, or 7891-40 and 7891-44 isolates 3650 line. 51 x 51mm. For use in four-sided filter chamber supplied with 7891 reactor.



Corning #	Thickness	Color	Order No.
CS 0-52	1.9-2.1mm	Clear	JRS-7891-40
CS 7-37	4.9-5.1mm	Black	JRS-7891-42
CS 7-60	4.4-4.6mm	Black	JRS-7891-44

Filter Glasses Color, *Polished*

When used in conjunction with a filter solution of potassium chromate and sodium hydroxide less than 3% of the 3340 line passes. The solution may be circulated via pump as a coolant through well. 51 x 51mm. For use in four-sided filter chamber supplied with 7891 reactor.



Corning #	Thickness	Color	Order No.
CS 7-54	3mm	Black	JRS-7891-46

Reaction Assembly* *Photochemical, Microscale*

Photochemical Reactor as described in Journal of Chemical Education, Vol. 66, No. 1, January1989, pages 86-88. Unit incorporates all the features found in our larger units but is designed for carrying out reactions on a small scale, volumes of 5-15mL. This size translates to a reduction in the expense of start-up chemicals and minimal risk of exposure to hazardous materials or explosion.

Reactor body is fabricated of borosilicate glass with #25 Screw thread at top, 14/10 outer side joint externally threaded to allow an "O-Ring-CAP-SEAL" connection with mating inner joint, and porosity E (4-8 micron) filter disc at bottom for use as a gas inlet to remove oxygen from the solution and/or for agitation (mixing). Use with 3/8" or 7/16" I.D. Tubing, Size E. See page 5 for more detailed Hose Connection information.

Immersion well is either quartz or borosilicate, 11mm I.D., with water jacket. Well can also be used to flow filter solutions in front of lamp to attain desired wavelengths. Well is assembled by insertion into #25 Screw thread and securing with an O-Ring compression seal. This type connection allows volume adjusting by raising or lowering well inside reactor, volume range 5-15mL.

Recommended lamp for this unit is a Pen-Ray1 5.5 watt low pressure, cold cathode, mercury gaseous discharge made of double bore quartz; Matching power supply operates at 115v, 60 Hz.



	Order No.
Reactor Assembly with Quartz Well	JRS-7880-60
Reactor Assembly with Borosilicate Well	JRS-7880-62



	Order No.
Reactor Body, only	JRS-7880-20
Immersion Well, Quartz	JRS-7880-15
Immersion Well, Borosilicate	JRS-7880-12
Bushing, Nylon, #25	JRS-7506-10
U.V. Lamp, only	JRS-12132-08
U.V. Power Supply	JRS-12132-30



Reaction Vessel *Photochemical*

Reaction vessel constructed of borosilicate glass to accommodate the 7854, 7857 or 7858 immersion wells. With one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one-#7 Screw thread side arm for thermometer. Center joint is 60/40. Bottom of reactor is flat to allow use of magnetic stirrer. Volumes indicated are total volumes. Volume in reactive area of lamp is approx. 40-50% of total volume. Complete unit consists of vessel, sparger tube, PTFE stir bar, threaded nylon bushing and three meters of 4.8mm (3/16-inch) I.D. PTFE tubing.

Capacity, mL	For Immersion Well Size	Order No.
250	220mm	JRS-7841-03
500	220mm	JRS-7841-04
1000	290mm	JRS-7841-06

Description	Order No.
Sparger Tube, 14/20	JRS-7841-09
PTFE Stir Bar, 38mm x 8mm	JRS-13654-14
Nylon Bushing, #7	JRS-5029-10
PTFE Tubing, 4.8mm I.D. x 3m (for sparger)	JRS-12687-12



Reaction Vessel *Photochemical, Jacketed*

Jacketed reaction vessel designed to enable cooling of reactant material during photolysis. Constructed of borosilicate glass to accommodate the 7854 or 7857 immersion wells. With one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one #7-Screw thread side arm for thermometer. Center joint is 60/40. Bottom of reactor is flat to allow use of stir bar. Volumes indicated are total volumes. Volume in reactive area of lamp is approximately 40-50% of total volume. Size C hose connections. Listing is vessel only.

Capacity, mL	For Immersion Well Size	Order No.
250	220mm	JRS-7841-05
500	220mm	JRS-7841-10
1000	290mm	JRS-7841-16

Description	Order No.
Sparger Tube, 14/20	JRS-7841-09



Reaction Vessel Photochemical, *Jacketed, with Stopcock*

Jacketed reaction vessel to enable cooling of reactant material during photolysis plus the added feature of a 2mm bore, 1:5 PTFE stopcock at bottom for draining inner vessel contents. Constructed of borosilicate glass to accommodate the 7874, 7875, or 7876 immersion wells. With one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one-#7 Screw thread side arm for thermometer. Center joint is 60/40. Bottom of reactor is flat to allow use of stir bar. Volumes indicated are total volumes. Volume in reactive area of lamp is approximately 40-50% of total volume. Size C hose connections. Listing is vessel only.

Capacity, mL	For Immersion Well Size	Order No.
250	220mm	JRS-7844-03
500	220mm	JRS-7844-06
1000	290mm	JRS-7844-09

Description	Order No.
Sparger Tube, 14/20	JRS-7841-09

Immersion Well *Photochemical, Quartz*

Double-walled, quartz immersion well for use with 7825-30, -32, -34, and -36 lamps. With inlet and outlet tubes for cooling. A small diameter inlet tube extends down the annular space to insure flow of coolant from bottom of well upward to outlet. Well has 60/40 inner joint. Outer jacket 53mm O.D. Length above joint is 76mm. Order 7854-25 for use with 7841-03 (250mL) and 7841-04 (500mL) reaction vessels. Order 7854-27 for use with 7841-06 (1000mL) reaction vessel.

I.D. mm	O.D., mm	For Use With These Reaction Vessels	Distance (C) From Bottom of Well to Bottom of Joint	Order No.
31	53	7841-03, -04	220mm	JRS-7854-26
31	53	7841-06	290mm	JRS-7854-28



Immersion Well *Photochemical, Borosilicate*

Double-walled, borosilicate immersion well for use with 7825-30, -32, -34, and -36 U.V. lamps. Coolant is introduced through a 4.8mm I.D. PTFE tube attached to a glass tube and secured with a #7 Screw thread bushing. PTFE tube extends down the annular space to insure flow of coolant from bottom of well upward to outlet.
Well has 60/40 inner joint. Outer jacket is 53mm OD. Length above joint is 76mm. Order 7857-06 for use with 7841-03 (250mL) and 7841-04 (500mL), reaction vessels. Order 7857-11 for use with 7841-06 (1000mL), reaction vessel.

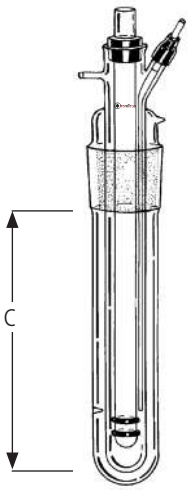
I.D. mm	O.D., mm	For Use With These Reaction Vessels	Distance (C) From Bottom of Well to Bottom of Joint	Order No.
31	53	7841-03, -04	220mm	JRS-7857-06
31	53	7841-06	290mm	JRS-7857-11



Immersion Well *Photochemical, Low Temperature*

Triple-walled, quartz, immersion well for use at temperatures as low as -78 °C . With 60/40 center inner joint. Outer two walls are permanently sealed together and the space between evacuated. This keeps lamp coolant water from warming the reactant and also prevents coolant water from freezing, thus lamp emits correct wavelengths and operates at optimum temperature for longer life. Innermost wall is held in place via a stopper and permits a carefully positioned, PTFE water inlet tube to extend below the lamp bottom. Inner tube is removable and may be interchanged with borosilicate glass tubes. One size tube fits both wells. Well is for use only with 7825 code -30, -32, -34 and -35 lamps. Outer chamber consists of a 7858-84 drilled neoprene stopper, 7855-740 spacer o-rings, metal water inlet, connecting tube and PTFE tubing.
Complete unit consists of quartz evacuated outer chamber, one each quartz and borosilicate glass inner tube and assembly Instructions.

Size	Distance (C) From Bottom of Well to Joint	Order No.
AA	220mm	JRS-7858-08
BB	290mm	JRS-7858-14
AA	220mm	JRS-7858-42
BB	290mm	JRS-7858-45
Inner Tubes, only, Quartz		JRS-7858-85
Inner Tubes, only, Borosilicate Glass		JRS-7858-88





Reaction Vessel *Photochemical, Screw threads*

Reaction vessel fabricated of borosilicate glass to accommodate the 7874, 7875 or 7876 immersion wells only, With #50 Screw thread at top which accepts a 7506-14 bushing and FETFE o-ring to form a compression seal with the immersion well, one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one #7-Screw thread side arm for thermometer. Bottom of reactor is flat to allow use of magnetic stirrer. Volumes indicated are total volumes. Working volume in reactive area of lamp is approximately 40-50% of total volume. Complete unit consists of vessel, sparger tube, PTFE stir bar, threaded nylon thermometer bushing, #50 nylon bushing and three meters of 4.8mm (3/16-inch) I.D. PTFE tubing.

Capacity, mL	Order No.
250	JRS-7863-16
500	JRS-7863-18
1000	JRS-7863-20

Description	Order No.
Sparger Tube, 14/20	JRS-7841-09
PTFE Stir Bar, 38mm x 8mm	JRS-13654-14
Nylon Thermometer Bushing, #7	JRS-5029-10
Nylon #50 Bushing	JRS-7506-14
PTFE Tubing, 4.8mm I.D. x 3m (for sparger)	JRS-12687-12



Reaction Vessel *Photochemical, Jacketed*

Jacketed reaction vessel designed to enable cooling of reactant material during photolysis. Constructed of borosilicate glass to accommodate the 7874, 7875 or 7876 immersion wells. With one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one #7-Screw thread side arm for thermometer. Center joint is #50 Screw thread. Bottom of reactor is flat to allow use of stir bar. Volumes indicated are total volumes. Volume in reactive area of lamp is approximately 40-50% of total volume. Size C hose connections. Listing is vessel only.

Capacity, mL	Order No.
250	JRS-7864-08
500	JRS-7864-10
1000	JRS-7864-12
Sparger Tube, 14/20	JRS-7841-09



Reaction Vessel *Photochemical, Jacketed, with Stopcock*

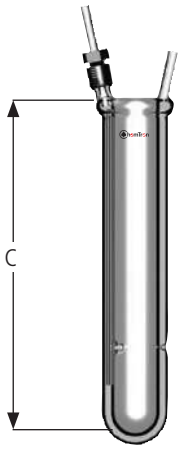
Jacketed reaction vessel to enable cooling of reactant material during photolysis plus the addedfeature of a 2mm bore, 1:5 PTFE stopcock at bottom for draining inner vessel contents. Constructed of borosilicate glass to accommodate the 7874, 7875 or 7876 immersion wells. With one- 14/20 angled joint for sparger tube, one- 24/40 vertical joint for condenser and one-#7 Screw thread side arm for thermometer. Center joint is #50 Screw thread. Bottom of reactor is flat to allow use of stir bar. Volumes indicated are total volumes. Volume in reactive area of lamp is approximately 40-50% of total volume. Size C hose connections. Listing is vessel only.

Capacity, mL	Order No.
250	JRS-7865-06
500	JRS-7865-08
1000	JRS-7865-10
Sparger Tube, 14/20	JRS-7841-09

Immersion Well *Photochemical, Quartz, without Joint*

Double-walled quartz immersion well for use with 7863, 7864, 7865, 7891, or 7885 pilot scale Reactor and 7825 lamps only. Coolant is introduced through a 4.8mm I.D. PTFE tube attached to a glass tube and secured with a #7 Screw thread bushing. PTFE tube extends down the annular space to insure flow of coolant from bottom of well upward to outlet. Well is used with 7506-14 nylon bushing with FETFE o-ring to form a compression type seal with threaded reaction vessels.
Well offers a greaseless connection and can be adjusted to desired height. The Screw thread means easier dismantling since there is no chance of freezing. Code -26 is for use in 7891 turntable reactor; code -38 for use in 7863, 7864, and 7865 reaction vessels, all capacities.

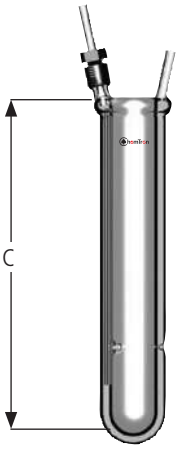
I.D. mm	O.D., mm	Total Length (C), mm	Order No.
31	48	255	JRS-7874-26
31	48	450	JRS-7874-38
31	48	840	JRS-7874-48



Immersion Well *Photochemical, Borosilicate, without Joint*

Double-walled, borosilicate glass, immersion well for use with 7863, 7864, 7865, or 7891 Reactor and 7825 lamps only. Coolant is introduced through a 4.8mm I.D. PTFE tube attached to a glass tube and secured with a #7 Screw thread bushing. PTFE tube extends down the annular space to insure flow of coolant from bottom of well upward to outlet. Well is used with 7506-14 nylon bushing with FETFE o-ring to form a compression type seal with threaded reaction vessels. Well offers a greaseless connection and can be adjusted to desired height. The Screw thread joint means easier dismantling since there is no chance of freezing. Code -35 for use with 7891 turntable reactor; code -45 for use in 7863, 7864, and 7865, all capacities.

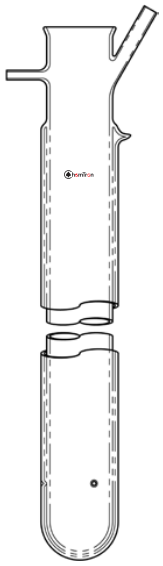
I.D. mm	O.D., mm	Total Length (C), mm	Order No.
31	48	255	JRS-7875-35
31	48	450	JRS-7875-45



Immersion Well *Low temperature, Photochemical, Plain*

Tripled walled, quartz, immersion well for use in temperatures as low as -78ºC. Same as 7858 immersion well, except, plain-sided, (without standard taper joint), for use with #50 Screw thread bushing and all 7863, 7864, and 7865 vessels. 415mm total jacket length. Will accommodate 7858-85 and -88 inner tubes.

Description	Order No.
Complete	JRS-7876-50
"Complete" consists of all of the following items (may be purchased separately):	
Outer Well	JRS-7876-10
Stopper	JRS-7858-84
O-Ring	JRS-7855-740
Inlet Tube	JRS-7858-82
Inlet Holder	JRS-7858-81
#50 Nylon Bushing with FETFE O-Ring	JRS-7506-14
Inner Tubes (480mm×30 mm)	
Quartz	JRS-7858-85
Borosilicate Glass	JRS-7858-88

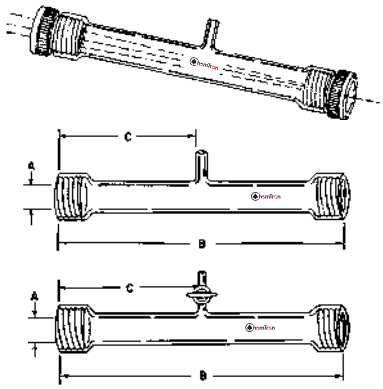


Bushing *#50 Screw thread*

Bushing connector for securing 7874, 7875, or 7876 Immersion Wells in 7863, 7864, or 7865 reaction vessels by forming a FETFE o-ring compression seal. Supplied with o-ring. For replacement o-rings, see 7855-744. Fits all #50 Screw thread joints.

	Order No.
Nylon	JRS-7506-14
PTFE	JRS-7506-35





Photochemical Cell *with Removable Window*

Straight, borosilicate glass, photochemical cell with threaded end fittings for use with 7896 cell window holder. The ease in removing these holders makes cleaning the cell easier. Available with single or plain port or with single, straight, 2mm bore, glass stopcock. NOT supplied with windows or holders. Please state dimension B, otherwise we will supply B = 12 inches. Port will be centered between threaded ends unless requested otherwise. For lengths smaller than one foot, use single foot prices.

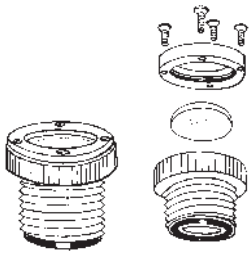
Type Port	I.D. mm	Order No.
Plain	25	JRS-7894-10
Plain	50	JRS-7894-15
w/Stopcock	25	JRS-7894-30
w/Stopcock	50	JRS-7894-35

Cell Windows



Windows to be used with 7894 photochemical cells and 7896 cell window holder. The windows are ground and polished (optical grade).

Material	Size Diameter, mm x W.T., in.	Order No.
	For #25 Thred	
Quartz	30mm×3.2mm	JRS-7895-03
	For #50 Thred	
Quartz	62mm×3.2mm	JRS-7895-08



Cell Window Holder

Nylon cell window holder for use with 7894 photochemical cells and 7895 cell windows. The removable cell window is compressed between two FETFE o-rings for a leak-tight fit. Holder is then threaded into end of a 7894 cell until o-ring compression seal is formed between the holder and the cell. Supplied complete, consisting of threaded body, two FETFE o-rings, compression ring and four flat-head screws. For replacement o-rings, see 7855-727, -729.

Screw thread Size	Order No.
25	JRS-7896-20
50	JRS-7896-30



Reflector *Photochemical (For Medium Pressure Lamp)*

Reflector, for use with Hanovia U.V. lamps. Reflects 85% of spectral rays. Made of aluminum with 44.5 x 10cm opening. Lamp is the same as listed under 7825, except ends are adapted for reflector. Lamp and reflector must be ordered separately. Holes in reflector are drilled to accept 11.4cm lamp and are adjustable for 19.1cm and 30.5cm lamps, (Larger lamps available on special order). Reflector supplied with clamps on rear brackets for mounting to 1/2-inch rod (not supplied) and 6-foot power cord. Power supply operates on 120v, 60Hz. (230v, 50Hz available, order 7830-61 in place of 7830-60). Complete unit consists of reflector, lamp and power supply.

Reflector only Order No.
7883-02

Lamp Watts	Arc Length, cm	Order No.
	Lamp, only	
450	11.4(4.5")	JRS-7883-14
	Power Supply, only	
450		JRS-7830-60
550		JRS-7830-61

Water Flow Monitor *Model WFM-230*

Monitor precisely measures the flow of water through a condenser, bath or a photochemical reactor. Upon interruption or if the flow drops below an operator set rate, power to the monitored equipment is cutoff. Manual power reset.

Model	Description	Flow Rate, LPM	Qty.	Order No.
WFM-01	Flow Sensor	0.1 to 2.5	1	JRS-12168-01
WFM-02	Flow Sensor	1 to 10	1	JRS-12168-02
WFM-03	Flow Sensor	2 to 30	1	JRS-12168-03
—	Shut-Off Valve	—	1	JRS-12168-10
WFM-230	Water Flow Monitor	—	1	JRS-12168-230



Lab Safety Controller *Model LS-230*

Lab safety controller by Chemtron combines all the features of the digital temperature monitor and the water-flow monitor into a single versatile instrument. Plug any piece of equipment into the monitor, then if the water flow rate falls below the set level, or if the reaction temperature goes above or below the user set limits, the outlet power turns off automatically. The unit will also cut off power if the main power is interrupted. The controller then has to be reset.

Model	With Sensor Cord and Adapter	Temperature Range (°C)	Thermocouple Type	Qty.	Order No.
LS-230-T	No	–200 to 250	T	1	JRS-12167-01
LS-230-J	No	0 to 800	J	1	JRS-12167-03
LS-230-K	No	–50 to 1200	K	1	JRS-12167-05



Model	Description	Flow Rate, LPM	Qty.	Order No.
WFM-01	Flow Sensor	0.1 to 2.5	1	JRS-12168-01
WFM-02	Flow Sensor	1 to 10	1	JRS-12168-02
WFM-03	Flow Sensor	2 to 30	1	JRS-12168-03
—	Shut-Off Valve	—		JRS-12168-10

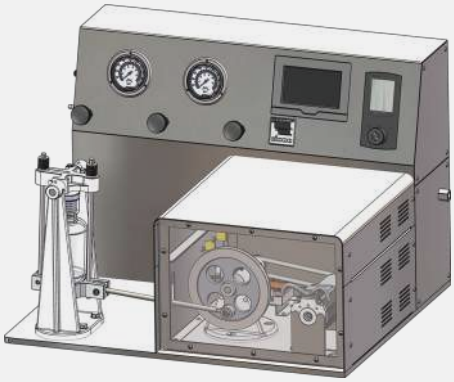
HYDROGENATION REACTOR

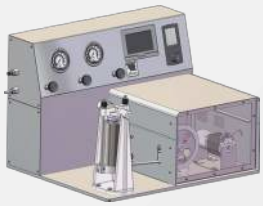
Standard volume: 9ml~1850ml

The hydrogenation reactor is a novel and efficient experimental apparatus developed for mild hydrogenation reactions and heterogeneous catalytic reactions. The main reaction cavity is made of high-strength G3.3 borosilicate glass, which is resistant to most organic solvents, acidic and weak alkaline media, with no catalytic interference to the reaction system, ensuring pure and reliable experimental results.

Equipped with a precision drive system, the device achieves uniform and stable reciprocating oscillation to promote full mixing of hydrogen gas, liquid reactants and solid catalysts. This oscillation-enhanced mass transfer method significantly improves hydrogen dissolution efficiency and reaction conversion rate compared with traditional static or single-stirring reaction modes. The integrated temperature control system supports precise constant-temperature reaction within a conventional temperature range, and the fully sealed pressure-resistant structure ensures safe operation under low-pressure hydrogen environment.

Featuring visual reaction process, easy operation, clean reaction environment and wide applicability, this reactor is the preferred equipment for laboratory small-batch hydrogenation synthesis, drug intermediate reduction, dye hydrogenation treatment, new catalyst screening and performance testing. It can be customized with different oscillation frequencies and vessel volumes to meet diverse experimental demands.





Hydrogenation reactor with temperature control

7482 Hydrogenation reactor

- Including six different volume of vessels, from 9 to 335ml
- Built in hydrogen cylinder, the Max. pressure up to 60pisg
- Two pressure gauges show pressure of the reactor and hydrogen cylinder inside
- Bright TFT screen which can display the shaking speed
- Smart and convenient on-touch control the speed
- Protective Lidfor hydrogenation bottle
- Temperature control model is available

No.	Order No.	Description	Qty
1-1	JRS-7482-20	Apparatus I	1
1-2	JRS-7482-70	"Apparatus IA, for Hazardous locations, 115v-60Hz [Conforms to NEC Class I, Grp. D and Class II, Grp. E, F, G]"	1
1-3	JRS-7482-74	Apparatus IB, with Air Motor	1
2	JRS-8648-120	Reaction Vessel, glass, #7 Screw thread 9ml	1
3	JRS-8648-124	Reaction Vessel, glass, #7 Screw thread 16ml	1
4	JRS-8648-126	Reaction Vessel, glass, #7 Screw thread 46ml	1
5	JRS-8648-135	Reaction Vessel, glass, #25 Screw thread 77ml	1
6	JRS-8648-138	Reaction Vessel, glass, #25 Screw thread 180ml	1
7	JRS-8648-140	Reaction Vessel, glass, #25 Screw thread 335ml	1
8	JRS-7482-31	#7 Spacer-Bushing, Nylon	1
9	JRS-5029-202	#7 Bushing, Nylon, Big Head	1
10	JRS-7482-33	#7-#25 Adapter, PTFE	1
11	JRS-7482-37	Upper Rubber Pad	1
12	JRS-7482-38	lower Rubber Pad	1

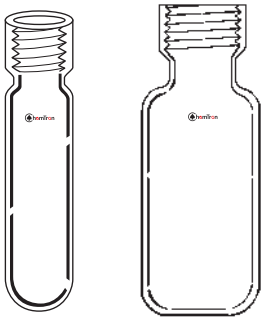
7485 Hydrogenation reactor

- Including two different volume of vessels, 950ml and 1850ml
- Built in hydrogen cylinder, the Max. pressure up to 60pisg
- Two pressure gauges show pressure of the reactor and hydrogen cylinder inside
- Bright TFT screen which can display the shaking speed
- Smart and convenient on-touch control the speed
- Protective Lidfor hydrogenation bottle
- Temperature control model is available

No.	Order No.	Description	Qty
1-1	JRS-7485-25	Apparatus II	1
1-2	JRS-7485-72	"Apparatus IIA, for Hazardous locations, 115v-60Hz [Conforms to NEC Class I, Grp. D and Class II, Grp. E, F, G]"	1
1-3	JRS-7485-78	Apparatus IIB, with Air Motor	1
2	JRS-8648-155	Reaction Vessel, glass, #25 Screw thread 950ml	1
3	JRS-8648-157	Reaction Vessel, glass, #25 Screw thread 1850ml	1
4	JRS-7485-36	Spacer-Bushing, Aluminum	1
5	JRS-5029-202	#7 Bushing, Nylon, Big Head	1
6	JRS-7482-33	#7-#25 Adapter, PTFE	1
7	JRS-7482-37	Upper Rubber Pad	1
8	JRS-7482-38	lower Rubber Pad	1

Pressure Tube Components

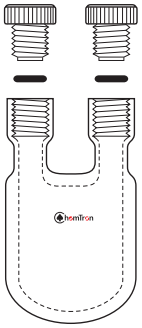
Tube only Length, cm x O.D., mm		Thread Size	Approx. Cap., mL	Qty.	Order No.
Bottle only,	4.0×25.4	7	8	1	JRS-8648-120
Bottle only,	4.0×31.7	7	14	1	JRS-8648-124
Bottle only,	5.0×44.5	7	25	1	JRS-8648-126
Bottle only,	**11.5×57.2**	**25**	**175**	**1**	JRS-8648-138
Bottle only,	**11.5×75.0**	**25**	**325**	**1**	JRS-8648-140
Bottle only,	**12.3×38.1**	**25**	**75**	**1**	JRS-8648-135
Bottle only,	**17.0×114.3**	**25**	**950**	**1**	JRS-8648-155
Bottle only,	**17.0×152.4**	**25**	**1850**	**1**	JRS-8648-157



Trap *Hydrogenation/Gas*

Used normally between hydrogen source and reaction flask. Bottle measures approximately 41mm I.D. x 90mm long, with two #7 Screw threads. Use 5029-200 Bushing and O-Ring in each neck to secure tubing.

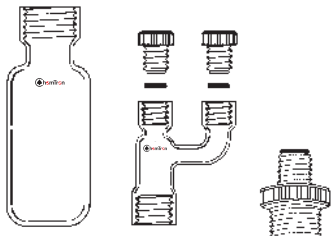
	Order No.
Bottle, only	JRS-7482-42
Bushing, Nylon, #7 with O-Ring (2)	JRS-5029-200
Complete	JRS-7482-46



Temperature Measurement Apparatus *for 7482 Hydrogenation / Gas Apparatus*

Borosilicate glass vessels, Offset Adapter, Coupling and Modified Top Bottle Clamp for use with 7482 Shaker Type Parr Hydrogenation / Gas Apparatus I to allow temperature measurement while connected to hydrogen source. For use with three larger vessels only, with #25 Screw thread neck. Working capacity is ½ of the actual capacity, listed below. Thermometer probe can be inserted through bushing.

	Screw thread Size	Capacity, mL	Order No.
60 psi glass vessel	#25	75	JRS-8648-135
60 psi glass vessel	#25	175	JRS- 8648-138
60 psi glass vessel	#25	325	JRS- 8648-140
Adapter, Offset	#7 (2) #15 (1)	-	JRS-5102-05
Bushing, Nylon, with O-Rings (2)	#7	-	JRS-5029-200
Coupling, PTFE	#15 to #25	-	JRS-5843-120
Top Bottle Clamp, modified	-	-	JRS-7482-25
Ferrules, Package/12	#7	-	JRS- 11710-07
Spacer-Bushing, Nylon	#7	-	JRS-7482-31
Spacer-Bushing, Aluminum	#7	-	JRS-7485-36
Complete	-	-	JRS-8648-57



8648-135, -138, -140 | 5029-200 5102-05 | 5843-120

Heating Mantles *for Hydrogenation / Gas Bottles*

For Use with Vessel Size	Order No.
250 - 500mL	JRS-7479-20
1000 - 2500mL (7478)	JRS-7479-42



PARALLEL REACTION STATION

Standard volume: 20ml or 30ml for 12 stations, 50ml, 100ml and 250ml for 6 stations

The 6/12-position parallel reactor is a professional high-throughput experimental instrument developed to solve the problems of low efficiency and long cycle of traditional single-batch chemical experiments. The equipment is equipped with 6 or 12 independent micro reaction chambers, which can complete simultaneous and mutually isolated reaction tests. All reaction positions share a unified precise temperature control and stirring system, ensuring consistent reaction environment for each group of samples and effectively eliminating experimental errors caused by different batches of tests.

Adopting safe and corrosion-resistant reaction vessel materials, the reactor adapts to most organic solvents, weak acid and weak alkali reaction systems. Each micro reaction unit is equipped with an independent sealing structure, which can realize vacuum treatment and inert gas protection, meeting the experimental requirements of anaerobic and sealed synthesis. The micro-volume reaction design effectively reduces reagent consumption and experimental cost, while greatly improving the efficiency of reaction condition screening, process optimization and catalyst performance comparison.

With the advantages of high throughput, low reagent consumption, stable operation and reliable data consistency, this parallel reactor is the ideal equipment for laboratory scientific research, new process development, multi-condition comparative testing and batch sample pretreatment.



Specification

Model	PRS-6	PRSC-6	PRS-12
Avalible volume of the reaction flask	50ml, 100ml and 250ml	50ml, 100ml and 250ml	20ml/30ml
Maximum load	Up to 6 reaction flasks	Up to 6 reaction flasks	Up to 12 reaction tubes
Temperature range	RT+5~180℃	-78~RT+5℃	RT+5~180℃
Stirring speed	0~600rpm	0~600rpm	0~600rpm
Vacuum	20mbar	20mbar	20mbar
Cooling jacket	Yes	Yes	Yes

Ordering information

Order number	description
PR202110-250	PRS-6 Reaction Module Basic, with 250ml reaction flask(6pcs)
PR202110-100	PRS-6 Reaction Module Basic, with 100ml reaction flask(6pcs)
PR202110-050	PRS-6 Reaction Module Basic, with 50ml reaction flask(6pcs)
PR202210-020	PRS-12 Reaction Module Basic, with 20ml reaction tubes(12pcs)
WH260-R	Hot plate & stirrer with round top plate, Max temperature up to 450℃



Rotary Evaporator

Laboratory Rotary Evaporator
Up to 3 L (Strike 185 / Strike 385)







Large Rotary Evaporator

6 L, 10 L, 20 L



ST20
Large Capacity Rotary Evaporator



ST20 CRE
Continuous Operation Rotary Evaporator
Reliable PLC controlling system



ST20 ATEX
Explosion-Proof Rotary Evaporator

Rotary Evaporator

Strike 185

Wiggens Strike series rotary evaporators are specially designed for distillation, concentration, purification, powder drying and separation of one or several solvents, with maximum safety, efficiency and ease of use. All functions can be viewed and monitored on the large and clear touch screen display, the parameters can be set by touch screen, the turning knob or using both the same time for fast adjustment, the user can reduce the process time by using the programs for automatic distillation with the integrated temperature controller, vacuum controller, timer and other special features.

Features



Sealing system

- The unique sealing system allows a perfect vacuum-tight and anti-corrosion
- With chemically resistant gasket, suitable for various samples
- This sealing system is a standard feature in all strike models and can be used with all types of glassware set



Mechanical structure

- With electric lifting device, adjustable stroke, and it can also stop at any position
- With powerful rotation motor, the speed up to 300 rpm
- Adjustable angle of the evaporating flask can be individually set according to your needs



Glassware set

- All glassware sets are also available with a transparent plastic coating for added safety.
- Four types of condensers
- Different volumes of evaporating and receiving flasks
- Standard package includes one 1000 mL evaporating flask and one 1000 mL receiving flask
- Other accessories are optional, such as adapters, anti-sprinkling bubbles, vapor tubes...



Vapor tube

- Evaporating flasks and vapor tubes come with a standard NS 29/32 joint
- PTFE sleeves provide a tight seal while preventing the glassware from sticking together
- Easy to disassemble, clean and replace the parts



Thread locking design

- The easy clamp is made of highly durable materials, ensuring long-lasting performance
- The integrated clamp design minimizes the risk of loss during operation
- The easy clamp can easily remove the flask

Display and operation

- Touch screen with multi-language user interface
- Easy to operate using the turning knob
- Multifunction display, All parameters can be display on the same screen
- Screen sizes (95x55 mm)



Function

- Custom method, one-click start, after starting to save the last settings
- Up to 9 steps programmable distillation conditions
- Timing function distillation, the distillation program will be stopped automatically when the setting time is reached



Safety

- The heating bath includes independent over-temperature protection
- In case of a power outage, the electric lifting drive the evaporation flask remove from the heating bath to prevent the safety issues and potential thermal damage to your sample



Heating bath

- With the same heating bath, you can choose the water or oil bath fluid in the MENU
- Two bath fluid modes, up to 85 °C with water; up to 180 °C with oil
- High quality stainless steel (304) bath tank
- The position of the bath can be easily adjusted to fix the evaporation position for different volume evaporating flasks



Optional accessories and peripheral modules

- Vacuum controller, the vacuum can be set and displayed directly on the touch screen
- Vapor temperature sensor with glass sleeve
- Vacuum pump, vacuum solvent recovery system, chiller, adapter and tube



Rotary Evaporator

STRIKE 285

The rotary evaporator STRIKE 285 combines excellent operating characteristics and high performance levels, all in an ergonomic design, offering excellent separation, concentration and purification solutions. All functions can be viewed and monitored on the large and clear touch screen display, the parameters can be set by touch screen, the turning knob or using both the same time for fast adjustment, the user can reduce the process time by using the programs for automatic distillation with the integrated temperature controller, vacuum controller, timer and other special features.

The evaporation flask is connected to vapor tube via coupling ring for easy fixing and removal of the flask, and the flask ejector design allows you to remove the sticking flasks from vapor tube in easy way by just turning the ejector.

Features



Sealing system

- The unique sealing system allows a perfect vacuum-tight and anti-corrosion
- With chemically resistant gasket, suitable for various samples
- This sealing system is a standard feature in all strike models and can be used with all types of glassware sets



Mechanical structure

- With electric lifting device, adjustable stroke, and it can also stop at any position
- With powerful rotation motor, the speed up to 300 rpm
- Adjustable angle of the evaporating flask can be individually set according to your needs



Glassware set

- All glassware sets are also available with a transparent plastic coating for added safety.
- Four types of condensers
- Different volumes of evaporating and receiving flasks
- Standard package includes one 1000 mL evaporating flask and one 1000 mL receiving flask
- Other accessories are optional, such as adapters, anti-sprinkling bubbles, vapor tubes...



Vapor tube

- Evaporating flasks and vapor tubes come with a standard NS 29/32 joint
- PTFE sleeves provide a tight seal while preventing the glassware from sticking together
- Easy to disassemble, clean and replace the parts



Thread locking design

- With screw thread locking function, screw cap is fixed by clip spring to prevent loss
- The screw cap can be removed for installing other evaporating flasks with different connectors
- Made of corrosion-resistant material

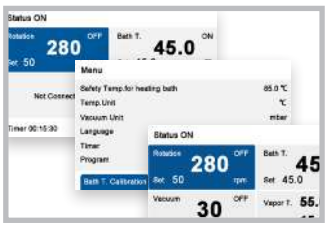
Display and operation

- Touch screen with multi-language user interface
- Easy to operate using the turning knob
- Multifunction display, for bath temperature, rotation speed, vacuum, vapor and condenser cooling water temperature
- Screen sizes (95x55 mm)



Function

- Custom method, one-click start, after starting to save the last settings
- Up to 9 steps programmable distillation conditions
- Timed distillation program. The distillation program will be closed automatically when the setting time is reached



Safety

- A safety heating bath with overheat
- In case of a power outage, electric lifting device remove the flask from the heating bath to prevent the safety issues and potential thermal damage to your sample
- A protective shield is included as standard and can be positioned for convenient operator access



Heating bath

- With the same heating bath, you can choose the water or oil bath fluid in the MENU
- Two bath fluid modes, up to 85 °C with water, up to 185 °C with oil
- High strength stamped inner bath and anti-corrosion PTFE coating
- With high quality protective shell, prevent scald
- The position of the bath can be easily adjusted to fix the evaporation position for different volume evaporating flasks



Optional accessories and peripheral modules

- Vacuum controller, the vacuum can be set and displayed directly on the touch screen
- Vapor temperature sensor with glass sleeve
- Vacuum pump, vacuum solvent recovery system, chiller, adapter and tube



Rotary Evaporator

Strike 185 / 285

① Main Interface

Tap the screen to select a setting, then use the control knob to adjust and confirm values

> Rotation switch and Rotation switch and settings
> Bath temperature switch and settings
> Vacuum switch and settings
> Vapor temperature display, when connected to a vapor temperature sensor
> Cooling temperature display, when connected to a cooling temperature sensor

② Menu

> Safety temperature settings for the bath
> Temperature unit
> Vacuum unit
> Delta of vaccum
> Language
> Timer

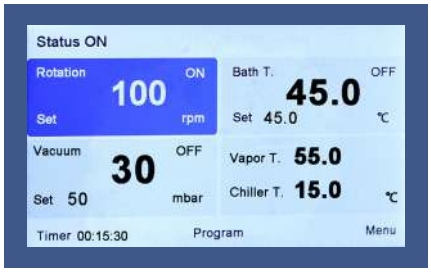
③ Program

All the parameters:
Up to 9 steps programmable distillation conditions including the bath temperature, rotation speed, vacuum, vacuum delta and can be set separately in each step

④ Bath Temperature Calibration (two points)

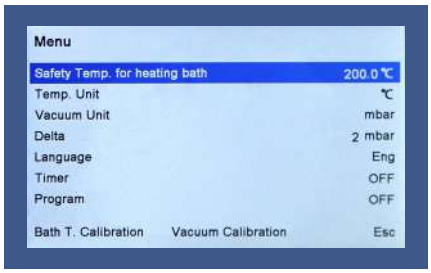
⑤ Vacuum Calibration (two points)

Display and operation

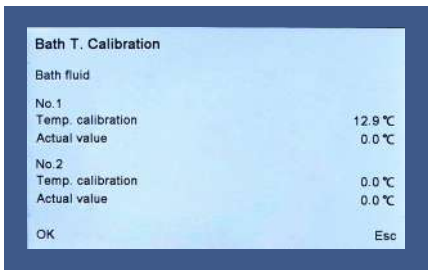


①

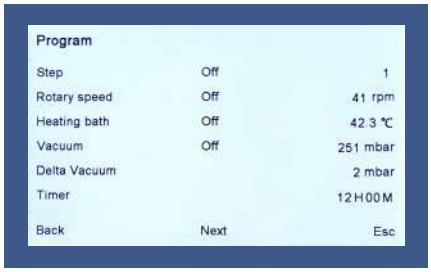
During the experiment, all information can be displayed on the same screen



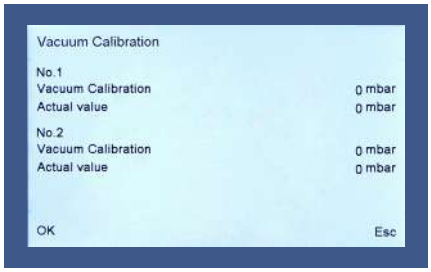
②



④



③



⑤





BEST PERFORMANCE IN SEPARATION & PURIFICATION

From universities to research institutes, laboratories around the world require high-performance rotary evaporators for demanding applications. The new Strike 385 has been specially developed by Wiggens, incorporating pioneering technologies to meet these requirements, and is manufactured to the highest quality standards.

The new Strike 385 is available with a heating bath, rotational device, vacuum system, as well as vapor and cooling temperature monitoring.

The new Strike 385 is intelligent. Operate your Strike 385 intuitively via the touch screen. Its large display offers programming options and is exceptionally easy to read.



Contact us for more information
or to request a quotation for the new version of the Strike 385.

www.wiggens.com







Specifications

Model	STRIKE 185	STRIKE 285	STRIKE 385
Type of condenser	4 types, Diagonal condenser / Vertical condenser (vapor rises / vapor descends) / Dry ice condenser		
Plastic coated safety glassware	Available for condenser and receiving flask		
Condensing area	1500 cm^2 (standard) / 2000 cm^2(optional)		
Available evaporation flasks	50 / 100 / 250 / 500 / 1000 / 2000 / 3000 mL	50 / 100 / 250 / 500 / 1000 / 2000 mL	50 / 100 / 250 / 500 / 1000 / 2000 / 3000 mL
Available receiving flasks	250 / 500 / 1000 / 2000 mL	250 / 500 / 1000 / 2000 mL	250 / 500 / 1000 / 2000 mL
Motor	DC	DC	DC
Speed range	20-300 rpm	20-300 rpm	20-300 rpm
Lifting system	Electric drive, the evaporation flask leaves the heating bath automatically after power failure		
Stroke	130mm, adjustable, and can be stopped at any position		
Bath temperature range	Up to 180 ℃	Up to 180 ℃	Up to 185 ℃
Heating power	1400 W	1400 W	1400 W
Set temperature resolution	0.1 ℃	0.1 ℃	0.1 ℃
Bath volume	5 L (round opening)	5 L (pear-shaped opening)	5 L (round opening)
Material of heating bath	Stainless steel	PTFE coated aluminum	Stainless steel
Vacuum controller	ST280 (optional)	ST280(optional)	ST280 (optional)
Vacuum range	1~1014 mbar (ultimate vacuum depends on the performance of the vacuum pump)		
Vacuum accuracy	1 mbar	1 mbar	1 mbar
Vapor temperature sensor	Optional	Optional	Optional
Cooling temperature sensor	Optional	Optional	Optional
Timer	Yes	Yes	Yes
Storage method	None	None	21
Distillation procedure	1x9 steps	1x9 steps	21x5 steps (manually) 21x5 steps (Automatically)
Vapor temperature detection	Yes (vapor temp. sensor is needed)	Yes (vapor temp. sensor is needed)	Yes (vapor temp. sensor is needed)
Vapor temperature protection	No	No	Vapor range / Vapor min / Vapor max
Dimensions	790x410x700mm (M1/M4) 650x410x890mm (M3/M6) 650x410x890mm (M7)	690x430x700mm (M1/M4) 690x430x790mm (M3/M6)	790x410x700mm (M1/M4) 650x410x890mm (M3/M6) 650x410x890mm (M7)
Weight	30 kg	26 kg	30 kg
Permissible ambient temperature	5~40 ℃	5~40 ℃	5~40 ℃
Permissible relative humidity	80%	80%	80%
Protection class	IP20	-	IP20
RS 232 interface	Yes, for firmware update only	Yes, for firmware update only	Yes, USB disk, PC software
Material of cover	Powder coated stainless steel	Plastic	Powder coated stainless steel
Power supply	230 VAC, 50 / 60 Hz	230 VAC, 50 / 60 Hz	230 VAC, 50 / 60 Hz

Models of STRIKE 185



STRIKE 185 M1 / M4



STRIKE 185 M3 / M6



STRIKE 185 M7

	Model	Order No.	Model	Order No.
	With standard glassware		With plastic coated safety glassware	
Diagonal condenser	Strike 185 M1	SQED148113	Strike 185 M4	SQED148419
Vertical condenser (steam rises)	Strike 185 M3	SQED148111	Strike 185 M6	SQED148417
Dry ice condenser			Strike 185 M7	SQED148420

Models of STRIKE 285



STRIKE 285 M1 / M4



STRIKE 285 M2 / M5



STRIKE 285 M3 / M6



STRIKE 285 M7

	Model	Order No.	Model	Order No.
	With standard glassware		With plastic coated safety glassware	
Diagonal condenser	STRIKE 285 M1	SQED158113	STRIKE 285 M4	SQED158419
Vertical condenser (steam rises)	STRIKE 285 M3	SQED158111	STRIKE 285 M6	SQED158417
Dry ice condenser			STRIKE 285 M7	SQED158420

Models of STRIKE 385



STRIKE 385 M3 / M6

	Model	Order No.	Model	Order No.
	With standard glassware		With plastic coated safety glassware	
Diagonal condenser	Strike 385 M1	SQED160113	Strike 385 M4	SQED160419
Vertical condenser (steam rises)	Strike 385 M3	SQED160111	Strike 385 M6	SQED160417
Dry ice condenser			Strike 385 M7	SQED160420

Standard delivery includes the Basic unit Strike, Heating bath, Guard shield, Condenser, 1 L Evaporation flask, 1 L Receiving flask and tube set

Five steps to building up your rotary evaporator

Step 1



STRIKE 185
Slanting glassware



STRIKE 185
Vertical glassware (Vapor rising)



STRIKE 185
Dry ice condenser



Rotary evaporator STRIKE 185 / 285 / 385

- Three sets of glassware available
- Two kinds of glass materials available: Borosilicate glass / Borosilicate glass with safety coating
- Evaporating flasks, 1000 mL (optional 50-2000 mL)
- Collecting flasks, 1000 mL (optional 250-2000 mL)

Step 2



Recirculating chiller
-20 ~ +40 °C

Chiller

Various chillers available for different applications

	0.5-1 L	up to 2 L	
STRIKE	1	2	3-4
Chiller	VALEGRO 350	VALEGRO 500 VALEGRO 801	VALEGRO 1001

Step 3



C420 / C520
Vacuum pump



CSH420 / CSH520
Solvent Recovery System



CSC420 / CSC520
Vacuum solvent recovery system

Vacuum system

Different vacuum systems are optional according to different experimental requirements

	C series	CSH series	CSC series
Vacuum pump	●	●	●
Vacuum controller	○	○	●
Condensers	○	●	●
Separator	○	●	●
Collecting flasks	○	●	●

Step 4



ST280
Vacuum controller



DVR480
Vacuum controller

Vacuum controller

- If a vacuum controller is selected, different vacuum can be controlled
- ST280 is a mounting vacuum control accessory for Wiggens rotary evaporator, the vacuum setting and display are through the touch screen of rotary evaporator
- DVR480 can set and display the vacuum value directly
- CSC Vacuum solvent recovery system series already contain the vacuum controller

Step 5





Possible to operate according to vapor temperature (if optional probe is present)

Temperature sensor

- Possible to operate according to vapor temperature (if optional probe is present)
- STRIKE285 can also display cooling water temperature (if optional probe is present)
- Glass temperature sensor, corrosion resistant
- Vapor temperature can be displayed on the screen of rotary evaporators
- All models can display the cooling water temperature

Accessories

Chemical Resistant Pump

Chemical resistant diaphragm pump with double stage

Model	A410	A510	C410	C420	C510	C520	C610
Order No.	170410	170510	169410	169420	169510	169520	169610
Max.power [W]	95	245	95	95	245	150	245
Ultimate vacuum [mbar]	13	8	13	15	8	10	2-4
Max.Flow Rate [L/min]	25	40	25	35	34	50	37
Outlet connection [mm]	10	10	10	10	10	10	10

The above are the specifications of 220 V models. Suitable for Strike 185/285/385



Solvent Recovery System, without vacuum control

Included chemical resistant diaphragm pump, glassware and support stand

Model	CSH410	CSH510	CSH520
Order No.	900512	900513	900515
Power [W]	95	245	150
Ultimate Vacuum[mbar]	13	8	10
Max. Flow Rate [L/min]	25	34	50
Outlet connection [mm]	10	10	10

The above are the specifications of 220 V models. Suitable for Strike 185/285/385



Solvent Recovery System, with vacuum control

Fully controllable stand-alone vacuum pump including vacuum controller

Model	CSC 410	CSC 510	CSC 520
Order No.	900522	900523	900525
Power [W]	95	245	150
Ultimate Vacuum [mbar]	13	8	10
Pump max. Flow Rate [L/min]	25	34	50
Outlet connection [mm]	10	10	10

The above are the specifications of 220 V models. Suitable for Strike 185/285/385



Solvent Recovery System, with vacuum control

Fully controllable stand-alone vacuum pump including vacuum controller

Model	CSP410	CSP510	CSP520
Order No.	900542	900543	900545
Power [W]	95	245	150
Ultimate Vacuum [mbar]	13	8	10
Pump max. Flow Rate [L/min]	25	34	50
Outlet connection [mm]	10	10	10

The above are the specifications of 220 V models. Suitable for Strike 185/285/385



Vacuum controller

ST280 is a mounting vacuum control accessory for Wiggens rotary evaporator, the vacuum setting and display are through the touch screen of rotary evaporator for accurate vacuum control of Strike 185/285/385 or valve regulated vacuum pumps.
Vacuum range: 1~1014 mbar
Vacuum accuracy: 1 mbar



Description	Model	Order No.
Vacuum controller of Strike 185 / 285	ST280	SQEF059422

Recirculating Chillers

The new VALEGRO recirculating coolers are environmentally friendly all-rounders for a wide range of cooling and heating tasks. They are characterized by a good ratio between cooling capacity and unit size as well as an optimal usability.

Features

- Climate-friendly thanks to natural refrigerant
- OLED touch display with intuitive menu navigation
- Good ratio between cooling capacity and size
- USB-C and RS232 as standard, Ethernet available as option
- Illuminated, easy-to-clean level indicator



VALEGRO 350 VALEGRO 1001

Model	VALEGRO 350	VALEGRO 500	VALEGRO 801	VALEGRO 1001
Order No.	9610035	9610050	9610081	9610101
Working temperature range [°C]	-20...+40	-20...+40	-20...+40	-20...+40
Temperature stability [°C]	±0.3	±0.3	±0.3	±0.3
Cooling capacity [kW]	0.35	0.5	0.8	1
Pump capacity flow pressure [L/min]	16	19	15...23	15...23
Pump capacity pressure [bar]	0.6	0.85	0.5...1.1	0.5...1.1

Tubing and clamp



Description	Order No.
Vacuum tube, Viton, OD=14 mm, ID=8 mm	168001-01
Vacuum tube, PTFE, OD=12 mm, ID=10 mm	016.1712.01
Cooling water tube	8930008
2 Tube clamps, size 1, tubing 8 mm inner dia.	8970480
2 Tube clamps, size 2, tubing 10-12 mm inner dia.	8970481

Glassware set

Included condenser, evaporation flask and receiving flask in each glassware set, the ventilation and replenishment valve, clamp and adapter



GS1 / GS4



GS2 / GS5



GS3 / GS6

Model	Condenser	Evaporation flask	Receiving flask	Order No.
GS1	SQEF059799	SQFY015937	SQUA015796	SQED159113GS
GS2	SQEF059796	SQFY015937	SQUA015796	SQED159112GS
GS3	SQEF059794	SQFY015937	SQUA015796	SQED159111GS
GS4	SQEF059798	SQFY015937	SQUA015789	SQED159419GS
GS5	SQEF059797	SQFY015937	SQUA015789	SQED159418GS
GS6	SQEF059792	SQFY015937	SQUA015789	SQED159417GS
GS7	SQEF059793	SQFY015937	SQUA015789	SQED159420GS



GS7

Condenser

Made of high quality borosilicate glass or plastic coated safety glassware

Type of condenser	Order No.	Order No.
	Standard	Coated
Diagonal condenser	SQEF059799	SQEF059798
Vertical condenser (steam sinks)	SQEF059796	SQEF059797
Vertical condenser (steam rises) , 1500 cm²	SQEF059794	SQEF059792
Vertical condenser (steam rises), 2000 cm²	SQEF059894	SQEF059892
Dry ice condenser		SQEF059793



Diagonal condenser



Vertical condenser (steam sinks)



Vertical condenser (steam rises)



Dry ice condenser

Evaporation flask

The flask is made of high quality borosilicate glass

Volume	Order No.	Order No.
	NS 29/32	NS 24/40
50 mL	SQFY051171	SQFY051181
100 mL	SQFY015948	SQFY015958
250 mL	SQFY015949	SQFY015959
500 mL	SQFY015941	SQFY015951
1000 mL	SQFY015937	SQFY015947
2000 mL	SQFY015946	SQFY015956
3000 mL (for Strike 185 only)	SQFY015945	SQFY015957



Powder flask

The flask is made of high quality borosilicate glass

Volume	Order No.	Order No.
	NS 29/32	NS 24/40
500 mL	SQFY146060	SQFY146070
1000 mL	SQFY146062	SQFY146072
2000 mL	SQFY146061	SQFY146071
3000 mL (for Strike 185 / 385 only)	SQFY146063	SQFY146073



Receiving flask

The flask is made of high quality borosilicate glass or plastic coated safety glassware, spherical joint 35/20

Volume	Order No.	Order No.
	Standard	Coated
250 mL	SQUA015797	SQUA015788
500 mL	SQUA015798	SQUA015791
1000 mL	SQUA015796	SQUA015789
2000 mL	SQUA015792	SQUA015790
Accessories		
Spherical joint clamp, 35/20, stainless steel		FLMM016694



Spider

Made of high quality borosilicate glass

Inner joint	Outer joint	Order No.
NS 29/32	3xNS 24/29	SQUA162436
NS 29/32	4xNS 24/29	SQUA162437
NS 29/32	3xNS 29/32	SQUA162434
NS 29/32	4xNS 29/32	SQUA162435
Accessories		
Joint clip, 24/29		JRS-7596-24
Joint clip, 29/32		JRS-7596-29



Reduction Adapter

Made of high quality borosilicate glass

Inner joint	Outer joint	Order No.
NS 29/32	NS 24/29	SQAD160001
NS 29/32	NS 19/26	SQAD160002
NS 29/32	NS 14/23	SQAD160003



Foam brake

The rising foam produces bursts in the glass ball extension. This stops foam from entering the receiving flask. Made of high quality borosilicate glass, the maximum recommended load is 1.5 kg

Bubble volume	Top Outer	Bottom Inner	Order No.
50 mL	NS 29/32	NS 29/32	SQFW126450
100 mL	NS 29/32	NS 29/32	SQFW126451
100 mL	NS 29/32	NS 24/29	SQFW126452
250 mL	NS 29/32	NS 29/32	SQFW126453
250 mL	NS 29/32	NS 24/29	SQFW126454



Vapor temperature sensor

Vapor temperature can be displayed on the screen of Strike 185/285/385 when the vapor temperature sensor is connected. But only vapor temperature can be connected with Strike 385, in addition to monitoring the vapor temperature, safety vapor temperature can be set (vapor max./vapor min./vapor range)

Description	Order No.
Vapor temperature sensor, for Strike 185/285/385. With glass dip tube	SQEF059420



Cooling water temperature sensor

Cooling water temperature is displayed on the Strike 185/285 screen when the optional temperature sensor is connected. Not available on Strike 385

Description	Order No.
M+R in-lin temperature sensor, for Strike 185/285	SQEF059424



Replacement Vapor Tube, PTFE Filling Tube and Sealing Gasket

Description	Order No.
Glass vapor tube, 29/32	SQEF082902
Glass vapor tube, 24/40	SQEG087532
PTFE filling tube	BQRY024329
Sealing gasket	S185-006-01



Ventilation and Replenishment Valve

Used for release the vacuum and refilling during the process

Description	Order No.
Ventilation and replenishment valve	SQEF162449



PTFE sleeves

PTFE sleeves are for use with glass adapters to prevent the joint from freezing, as well as allow ease of removal for ground glass joints. These sleeves are sturdy and reusable

Joint size	Order No.
NS 29/32	KAMY011542
NS 24/29	KAMY011544
NS 19/22	KAMY011546
NS 14/23	KAMY011547



Spherical joint clamp

Description	Order No.
Spherical joint clamp, 35/20, stainless steel	FLMM016694



Practical Guide for Efficient Rotary Evaporation

The graph shows the relationship between the pressure and boiling temperature of a selection of solvents.

The temperature difference between the vapor temperature and the cooling medium should be at 20 °C to result in sufficient condensation.

The temperature difference between the heating bath and vapor temperature should be at 20K to result in a sufficient Distillation rate (dT)

i.e.: Set a vacuum for a boiling point at 40 °C， set the heating bath temperature at 60 °C .



Solvent data

Solvent	Total formula	Boiling point (°C) at Atm.	Vacuum for a boiling at 40 °C	
			mbar	mmHg
Dichloroethane	CH_2Cl_2	40.7	Atm.	Atm.
Diethyl ether	$C_4H_{10}O$	34.6	Atm.	Atm.
Pentane	C_5H_{12}	36.1	Atm.	Atm.
1,2 Dichloroethane(trans)	$C_2H_2Cl_2$	47.8	751	563
Acetone	C_3H_6O	56.5	556	387
Trichloromethane (chloroform)	$CHCl_3$	61.3	474	356
Diisopropyl ether	$C_6H_{14}O$	67.5	375	281
Tetrahydrofuran (THF)	C_4H_8O	66	357	268
Methanol	CH_4O	64.7	337	253
Hexane	C_6H_{14}	68.7	335	251
1,1,1-Trichloroethane	$C_2H_3Cl_3$	74.1	300	225
Tetrachloroethylene	CCl_4	76.7	271	203
2-Butanone	C_4H_8O	79.6	243	182
Ethyl acetate	$C_4H_8O_2$	77.1	240	180
Benzene	C_6H_6	80.1	236	177
Cyclohexane	C_6H_{12}	80.7	235	176
Acetonitrile	C_2H_3N	81.8	230	173
1,2 Dichloroethane	$C_2H_4Cl_2$	82.4	210	158
Trichloroethylene	C_2HCl_3	86.7	183	137

Solvent	Total formula	Boiling point (°C) at Atm.	Vacuum for a boiling at 40 °C	
			mbar	mmHg
1,2 Dichloroethane(cis)	$C_2H_2Cl_2$	59	479	134
Ethanol	C_2H_6O	78.4	175	131
Isopropyl alcohol	C_3H_8O	82.5	137	103
Tert.-butanol	$C_4H_{10}O$	82.9	130	98
Heptane	C_7H_{16}	98.4	120	90
1,4-Dioxane	$C_4H_8O_2$	101.1	107	80
Toluene	C_7H_8	110.6	77	58
Water	H_2O	100	72	54
N-propyl alcohol	C_3H_8O	97.8	67	50
Tetrachloroethylene	C_2Cl_4	120.8	53	40
Chlorobenzene	C_6H_5Cl	132.2	36	27
1,1,2,2-Tetrachloroethane	$C_2H_2Cl_4$	145.9	35	26
Xylene (isomers mixture)	C_8H_{10}	137-143	25	19
N-butanol	$C_4H_{10}O$	117.5	25	19
Isoamyl alcohol	$C_5H_{12}O$	130.6	14	11
Pentachlorinated Ethane	C_2HCl_5	160.5	13	10
Dimethyl formamide	C_3H_7NO	153	11	8
Amyl alcohol	$C_5H_{12}O$	137.8	11	8

ST20

Pilot-Scale Rotary Evaporation for Demanding Processes

3 Options Available

* Standard Rotary Evaporator
* ATEX Version
* Continuous Rotary Evaporator

Each option is available in 6 L, 10 L, and 20 L configurations.

Industrial Relation System Design Concept

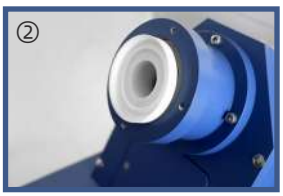




Vertical glassware (Vapor sinking)

ST20 - Large-capacity rotary evaporator









ST20 has both industrial and laboratory rotary evaporation features. It meets all the process needs by using borosilicate glass and PTFE permitting aggressive substance treatment. The plant allows for evaporation of volatile components (low boiling point) so as to separate them from the residual ones (high boiling point) due to the difference of their boiling points. Easy and totally safe startup, check and stop procedures of the process: ST20 is provided with a transparent protection shield for the evaporation flask and the thermostatic bath.

① Heating bath

The heating bath is lifted by means of a hydraulic system which, in case of power failure, goes automatically down to avoid fluid overheating and bumping.

② Sealing system

A great feature of ST20 is its sealing system made of self-lubricating material which guarantees perfect vacuum tightness. This sealing system does not require any maintenance.

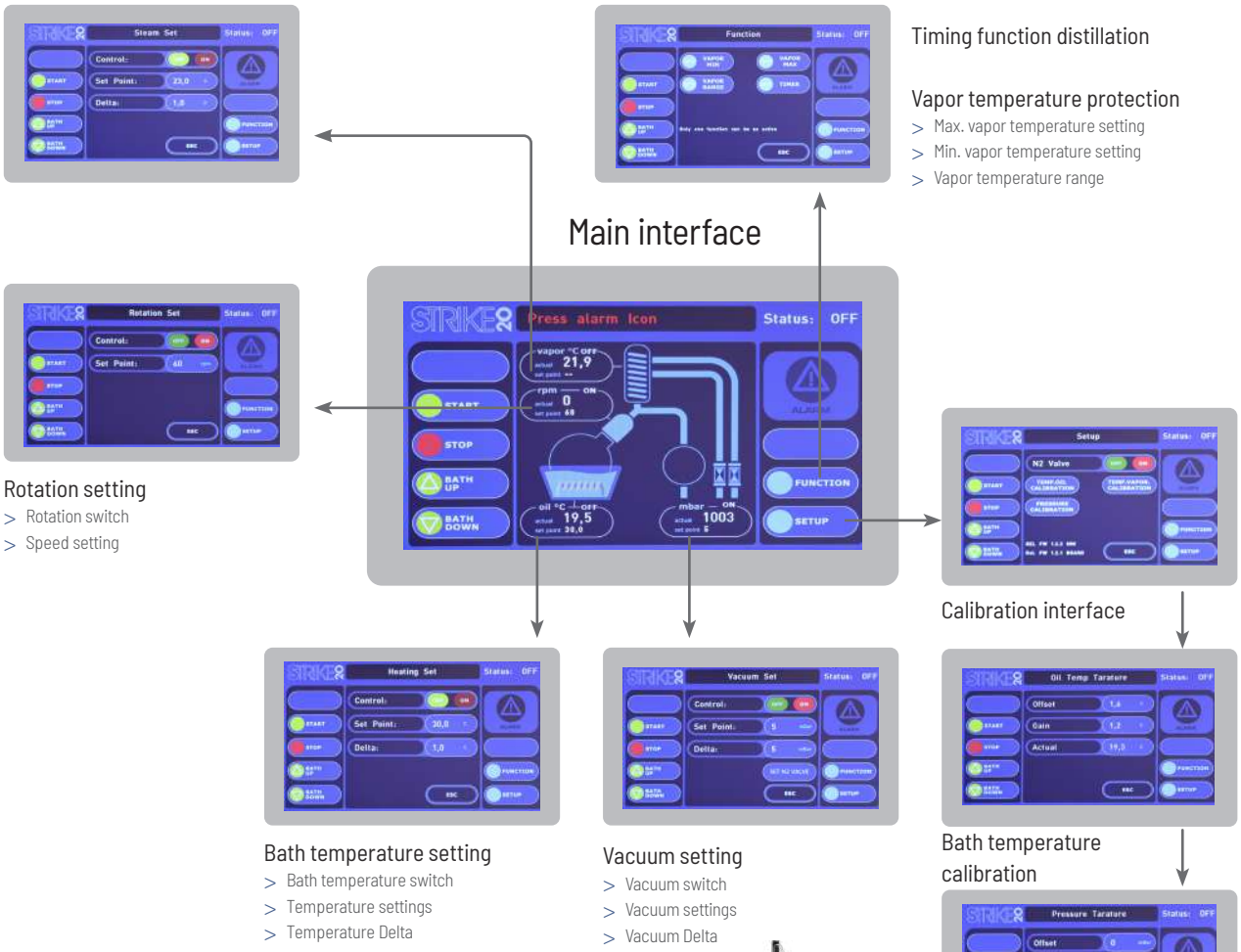
③ Vacuum and temperature

ST20 runs under atmospheric pressure conditions or vacuum. It guarantees perfect vacuum tightness up to 8 mbar. The perfect sealing up to 8 mbar allows for reduced process time due to low evaporation temperature of the fluid. The thermostatic bath can run both with water and oil, and the maximum temperature can reach 150 °C; it also permits evaporation of any solvent under atmospheric pressure conditions. The heating bath is supplied with 3 kW electric heaters.

④ Measurement, visual display and recording of the following parameters:

> Bath pre-set and real temperature
> Vapor pre-set and real temperature
> Pre-set and real rotation speed
> Pre-set and real vacuum reading and setting

Display and operation



Display

The process operating parameters can be set and monitored on a 7" touch-screen display.

Measurement, display and data recording of the following parameters:

- Set and actual temperature value of the bath
- Set and actual vapour temperature value
- Set and actual rotation speed value of the evaporation flask
- Set and actual vacuum value (vacuum controller included as standard)



Order information

Order No.	Model	Configuration
C02034001	ST20	with descending condenser, 20 L evaporation flask, 10 L receiving flask
C02034002	ST20	with descending condenser, 20 L evaporation flask, 2×6 L receiving flask
C02034003	ST20	with ascending condenser, 20 L evaporation flask, 10 L receiving flask
C02034004	ST20	with ascending condenser, 20 L evaporation flask, 2×6 L receiving flask

ST20

Vertical glassware (Vapor sinking)

ST20 CRE

Continuous distillation rotary evaporator ST20 CRE

Reliable PLC Control System

All standard functions of the ST20 are included, in addition to an automatic continuous distillation feature.



Order information of ST20 CRE

Order No.	Model	Configuration
C02034011	ST20 CRE	with descending condenser, 20 L evaporation flask, 10 L receiving flask, 4 x Liquid level sensors, Solenoid valve set
C02034013	ST20 CRE	with ascending condenser, 20 L evaporation flask, 10 L receiving flask, 4 x Liquid level sensors, Solenoid valve set

Parameter

- Bath temperature: RT+5 ~ +150 °C
- Rotation speed: 10 ~ 150 rpm
- Vacuum: 8 mbar

Display

- Touch screen
- Bath temperature, speed, vacuum, vapor temperature and safety features
- The distillation mode can be switched by one button

Process mode

- Batch distillation (Conventional mode)
- Continuous distillation (Cascade mode)

Glassware

- Vapor sinking type
- Vapor rising type
- Evaporating flask: 6/10/20 L
- Collection flask: 2x6 L or 1x10 L

Liquid level sensors

- Monitoring the liquid level in evaporation flasks
- Monitoring the liquid level in collection flasks
- Low level alarm for the reservoir of solutions which have to be evaporated
- High level alarm for the reservoir of the distilled solvent

Solenoid valve set

- Vacuum control valve
- Nitrogen gas valve to have inert atmosphere protection for sample
- Refill valve
- Discharge valve

Safety

- Over temperature protection
- Automatic liquid level monitoring and alarm function
- Standard protective cover

ST20 ATEX

Large-Capacity rotary evaporator
Explosion-proof type - ST20 ATEX

ATEX version for enhanced process and operator safety





For more detailed information, please contact WIGGENS

Order information

Order No.	Model	Configuration
C02034021	ST20 ATEX	with descending condenser, 20 L evaporation flask, 10 L receiving flask
C02034022	ST20 ATEX	with descending condenser, 20 L evaporation flask, 2x6 L receiving flask
C02034023	ST20 ATEX	with ascending condenser, 20 L evaporation flask, 10 L receiving flask
C02034024	ST20 ATEX	with ascending condenser, 20 L evaporation flask, 2x6 L receiving flask







Specifications

Model	ST20	ST20 ATEX	ST20 CRE
	Batch processing	Batch processing	Batch or Continuous processing
Type of condenser	2 types: Vertical condenser (Steam rises or steam sinks)		
Plastic coated safety glassware	Possible for condenser and receiving flask		
Condensing area	0.6 m² (standard) / 1.2 m²(optional)		
Available evaporation flasks [L]	6/10/20	6/10/20	6/10/20
Available receiving flasks [L]	1x10 or 2x6	1x10 or 2x6	1x10
Motor	AC	AC, EX	AC
Speed range [rpm]	10 ~ 150	10 ~ 100	10 ~ 150
Lifting system	Electric drive	Pneumatic drive	Electric drive
Stroke [mm]	190	190	225
Max. bath temperature	150 °C (standard) 180 °C (option)	150 °C , EX	150 °C (standard) 180 °C (option)
Heating power [kW]	3	3	3
Set temperature resolution [°C]	0.1	0.1	0.1
Bath volume [L]	25	25	25
Material of heating bath	Stainless steel	Stainless steel	Stainless steel
Vacuum controller	Integrated	Integrated, EX	Integrated
Vacuum range [mbar]	1 ~ 1014	1 ~ 999	1 ~ 1014
Vacuum accuracy [mbar]	1	1	1
Vapor temperature sensor	Integrated	Integrated	Integrated
Timer [min]	0 ~ 999	0 ~ 999	0 ~ 999
Vapor temperature detection	Yes	Yes	Yes
Vapor temperature protection	Yes	Yes	Yes
Dimensions [mm]	1355x725x2070	1355x725x2070	1355x725x2070
Weight [kg]	160	160	163
Permissible ambient temperature [°C]	5 ~ 40	5 ~ 40	5 ~ 40
Permissible relative humidity	80%	80%	80%
Protection class	IP20	IP20	IP20
Interface	USB-B	Without	USB-A / Ethernet
Solenoid valve group	–	–	Integrated
Sample level sensor	–	–	Integrated
Power supply	230 VAC, 50 / 60 Hz	230 VAC, 50 / 60 Hz	230 VAC, 50 / 60 Hz

Accessories

Vacuum pump

Chemical resistant diaphragm pump with triple stage

Model	C960T	C960T EX
Order No.	169960	169960EX
Max.power	370 kW	550 kW
Ultimate vacuum	<2 mbar	<3 mbar
Max. pumping speed	60 L/min	60 L/min
Inlet connection	10 mm	KF DN 25
Outlet connection	10 mm	KF DN 16
Suitable for	ST20, ST20CRE	ST20 ATEX

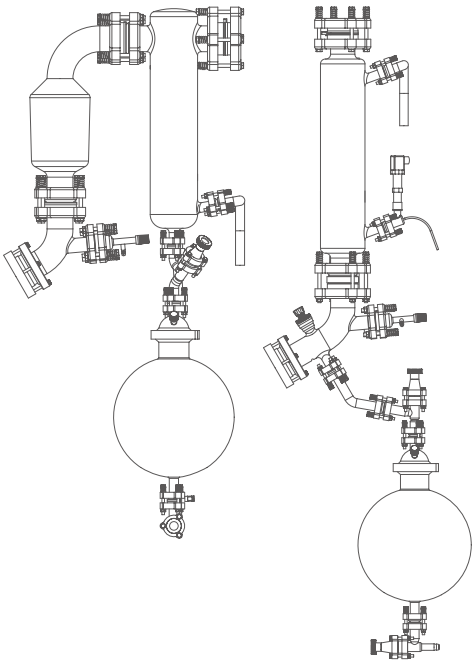


C960T

Glassware set

GS10 and GS20 suitable for high-boiling distillation
GS30 and GS40 suitable for liquids with a boiling point up to 100 °C or foaming liquids
GS50 and GS60 suitable for for low-boiling solvents; refrigerated with dry ice
GS11 and GS22 suitable for very high rates of distillation, especially for foaming liquids

Model	Condenser	Evaporation flask	Receiving flask	Order No.
GS10	Vertical condenser (steam rises)	20 L	10 L	C02039123
GS20	Vertical condenser (steam rises)	20 L	2x6 L	C02039124
GS30	Vertical condenser (steam sinks)	20 L	10 L	C02039125
GS40	Vertical condenser (steam sinks)	20 L	2x6 L	C02039126
GS50	Cold trap	20 L	10 L	C02039127
GS60	Cold trap	20 L	2x6 L	C02039128
GS11	2pcs of vertical condensers (steam rises & steam sinks)	20 L	10 L	C02039129
GS22	2pcs of vertical condensers (steam rises & steam sinks)	20 L	2x6 L	C02039130



Evaporation flask

Replacement borosilicate glass for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Evaporation flasks are designed to fit all large capacity rotary evaporators.

Volume	Order No.
6 L	C02039102
10 L	C02039103
20 L	C02039104



Evaporation flask

The flask is made of plastic coated safety glassware , Plastic coated flasks are clear and will withstand temperatures up to 100 °C .

Volume	Order No.
6 L	C02039105
10 L	C02039106
20 L	C02039107



Evaporation flask

The flask is made of high quality glassware with an amber coating to protect light-sensitive contents
Note: Flasks can be plastic-coated upon request.

Volume	Order No.
6 L	C02039108
10 L	C02039109
20 L	C02039110



Powder flask

Also referred to as drying flasks, particularly suited for drying of powdered samples. The baffles, indented into the glass provide better circulation and mixing of the powders while rotating.

Volume	Order No.
10 L	C02039111
20 L	C02039112



Receiving flask

Replacement borosilicate glass for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Receiving flasks are designed to fit all large capacity rotary evaporators. Now available in coated, non-coated, amberized, and jacketed versions

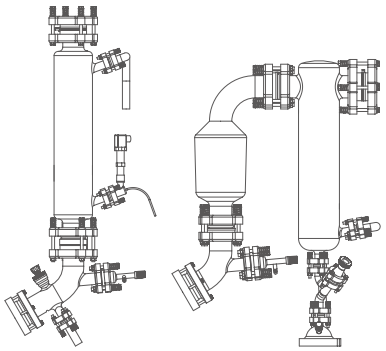
Volume	Order No.	Order No.	Order No.	Order No.
	Standard	Coated	Jacketed	Amberized
6 L	C02039113	C02039115	C02039117	C02039119
10 L	C02039114	C02039116	C02039118	C02039120
Replacement parts and accessories				
Glass lid of receiving flask				SQEG083572
Bottom valve of receiving flask				20-227-001
Open ring supports with long extension arms for supporting receiving flask				KC29429



Condenser

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Condensers are designed to fit all large capacity rotary evaporators. Available poly-coated or non-coated.

Description	Order No.	Order No.
	Standard	Coated
Vertical condenser (steam rises), A	C02039121	C02039123
Vertical condenser (steam sinks), B	C02039122	C02039124



A B

Cold trap

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Inner and outer cold trap components for glassware set. Available poly-coated or non-coated.

Description	Order No.	Order No.
	Standard	Coated
Inner cold trap	C02039125	-
Outer cold trap	C02039126	-
Outer cold trap	-	C02039127



Expansion vessel for steam sinks version only

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Upper expansion tanks for glass sets available in either poly-coated or non-coated versions

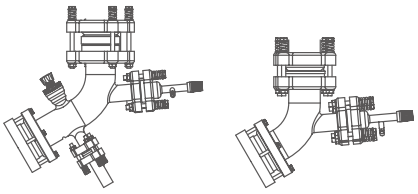
Description	Order No.	Order No.
	Standard	Coated
Expansion vessel for steam sinks version only	C02039128	C02039129



Distillation head

Replacement components for ST20, ST20 CRE and ST20 ATEX rotary evaporators, available poly-coated or non-coated

Description	Order No.	Order No.
	Standard	Coated
For ST20 and ST20 ATEX, steam rises version (A)	C02039130	C02039134
For ST20 and ST20 ATEX, steam sinks version (B)	C02039131	C02039135
For ST20 CRE, steam rises version	C02039132	C02039136
For ST20 CRE, steam sinks version	C02039133	C02039137

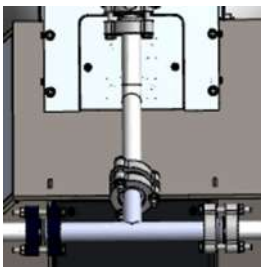


A B

Glass tube set

Replacement components for ST20, ST20 ATEX rotary evaporators, available poly-coated or non-coated

Description	Order No.	Order No.
	Standard	Coated
Glass tube set for connect condenser and 2pcs of 6 L receiving flask, for ST20 and ST20 ATEX	C02039138	C02039139



Vacuum sensor and vapor temperature sensor

Description	Order No.
Vacuum sensor for ST20 and ST20 CRE	VAJQ081056
Vacuum sensor for ST20 ATEX	VAJQ070992
Vapor temperature sensor	KC29481



Level sensor and Solenoid valve for ST20 CRE only

Monitoring of low liquid level in evaporation flask and evaporation tank
Monitoring of high liquid level in receiving flask and receiving tank
The solenoid valve group can switch automatically according to the program:

Description	Order No.
Level sensor in 20 L evaporation flask, quartz	20-0623-04
Level sensor in the receiving flask, quartz	20-0623-05
Level sensor in the sample tank	SQAF2000-05
Level sensor in the receiving tank	SQAF2000-06
Solenoid valve (N/O), DN8, G1/4"	20-0623-07
Solenoid valve (N/C) , DN15, G1/2"	20-0623-09



Flange clamp and PTFE gasket

Flange size	Coupling, Insert ring,Bolt, compression spring, washer and nut	PTFE gasket
DN15	SQQI007876	SQQI011682
DN25	SQQI007877	SQQI011688
DN50	SQQI007878	SQQI011696



Rupture disc and Nitrogen solenoid valve

Material: SS316L
Size: DN50
Discharge area: 1781 mm^2
Burst pressure: 0.46±0.25 bar (20 °C)

Description	Order No.
Rupture disc	VAJQ077020
Holder of rupture disc	VAJQ077021
Nitrogen solenoid valve, for protect oxygen-sensitive substances	VAJQ077022



Tubing and clamp

Material: SS316L
Size: DN50
Discharge area: 1781 mm^2
Burst pressure: 0.46±0.25 bar (20 °C)

Description	Order No.
Vacuum tube (ID=19 mm)	8930319
Reinforced tubing for cooling water (ID=12 mm)	8930312
Tubing insulation (ID=23 mm), for 8930312	8930413
2 Tube clamps, size 3, for Reinforced tubing (ID=12 mm)	8970482
2 Tube clamps, size 4, for Reinforced tubing (ID=19 mm)	8970483



Guard shield

with safety design, the distillation process can be started only when the guard shield of heating bath is closed

Description	Order No.
Guard shield of heating bath	C02039140
Guard shield of condenser and receiving flask	C02039141



Trolley

for evaporaing flask handling

Description	Order No.
Stainless steel trolley for evaporaing flask handling, for ST20, ST20 CRE	SQFW080270
Stainless steel trolley for evaporaing flask handling, for ST20 ATEX	SQFW080271









Industrial Rotary Evaporator

ST50 / ST100 / ST50 ATEX / ST100 ATEX

ST50 / ST100 series are large capacity rotary evaporator designed for industrial plants. It meets all the process needs by using Borosilicate glass and PTFE permitting aggressive substances treatment.

The unit works under vacuum or atmosphere conditions. The rotation of the 50 or 100 L evaporation flask in the heating bath results in a forced convection and homogenous distribution of the product, thus preventing sedimentation. Moreover, it ensures high evaporating exchange surface. The sealing system guarantees the perfect vacuum tightness and maintenance-free operation. Possibility to customize glassware as for Clients needs.

The highest performance proposal
For your evaporation processes!



Safety

ST50 / ST100 series are supplied with an optional transparent protection shield for the evaporation flask.
The special shaped and robust shield ensures utmost protection from evaporation flask breakage and spray during process at high temperature.

> The heating bath and the protective shield are lifted by an electronically monitored system.
> An automatic system lowers the heating bath in case of power failure, overheating and any other bad occurrences.
> ST50 / ST100 series are supplied with a rupture disk, a safety device, positioned on the glassware to prevent overpressure.

Vacuum sealing system

> Made of lubrificating material allowing perfect vacuum tightness.
> No maintenance required



Heating bath

Lifted by means of a powered system, the heating bath, in case of power failure or alarms, goes automatically down to prevent fluid overheating, and the process will immediately stop.
Its electric heater enhanced to 8 kW ensures continuous evaporation of a wide range of products even in critical working conditions.

Measurement, display and data recording of the following parameters:

> Set and actual temperature value of the bath
> Set and actual vapor temperature value
> Set and actual rotation speed value of the evaporation flask
> Set and actual vacuum value (vacuum controller included as standard)



Screen of ST50 / 100

Parameters measurement, visual display and recording of the following:

- Bath pre-set and real temperature
- Vapor pre-set and real temperature
- Pre-set and real rotation speed
- Pre-set and real vacuum reading and setting

Specifications

Model	ST50	ST100	ST50 ATEX	ST100 ATEX
	Batch processing	Batch processing	Batch processing	Batch processing
Type of condenser	2 types, Vertical condenser (Steam rises or steam sinks)		2 types, Vertical condenser (Steam rises or steam sinks)	
Plastic coated safety glassware	Possible for condenser and receiving flask		Possible for condenser and receiving flask	
Condensing area	0.6 m^2 (50 L system)	1.43 m^2 (100 L system)	0.6 m^2 (50 L system)	1.43 m^2 (100 L system)
Available evaporation flasks [L]	50	100	50	100
Available receiving flasks	20 L, 2x20 L, 50 L (optional) , 100 L (optional)		20 L, 2x20 L, 50 L (optional) , 100 L (optional)	
Motor	AC	AC	AC, EX	AC, EX
Speed range [rpm]	5 ~ 100	5 ~ 100	5 ~ 100	5 ~ 100
Lifting system	Electric drive	Electric drive	Pneumatic drive	Pneumatic drive
Stroke	300mm, adjustable, and can be stopped at any position		300mm, adjustable, and can be stopped at any position	
Max. bath temperature	150 °C (standard)	150 °C (standard)	150 °C , EX	150 °C , EX
Temperature accuracy [°C]	±2	±2	±2	±2
Heating power [kW]	8	8	8	8
Set temperature resolution [°C]	0.1	0.1	0.1	0.1
Bath volume [L]	110	110	110	110
Material of heating bath	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Vacuum controller	Integrated	Integrated	Integrated, EX	Integrated, EX
Vacuum range [mbar]	0 ~ 999	0 ~ 999	0 ~ 1014	0 ~ 1014
Vacuum accuracy [mbar]	1	1	1	1
Vapor temperature sensor	Integrated	Integrated	Integrated	Integrated
Timer	Yes	Yes	Yes	Yes
Vapor temperature detection	Yes	Yes	Yes	Yes
Vapor temperature protection	Yes	Yes	Yes	Yes
Dimensions [mm]	1830x890x2110	1830x890x2110	1830x890x2110	1830x890x2110
Weight [kg]	370	370	400	400
Permissible ambient temperature [°C]	5 ~ 40	5 ~ 40	5 ~ 40	5 ~ 40
Permissible relative humidity	80%	80%	80%	80%
Interface	USB-B	USB-B	Without	Without
RS 232 interface	Yes, for firmware update only	Yes, for firmware update only	Yes, for firmware update only	Yes, for firmware update only
Power supply	400 V / 3 PNPE / 50 Hz	400 V / 3 PNPE / 50 Hz	400 V / 3 PNPE / 50 Hz	400 V / 3 PNPE / 50 Hz

Order information

Order No.	Model	Configuration
C02035001	ST50	with descending condenser, 50 L evaporation flask, 20 L receiving flask
C02035002	ST50	with descending condenser, 50 L evaporation flask, 2x20 L receiving flask
C02035003	ST50	with ascending condenser, 50 L evaporation flask, 20 L receiving flask
C02035004	ST50	with ascending condenser, 50 L evaporation flask, 2x20 L receiving flask

Order No.	Model	Configuration
C02035005	ST100	with descending condenser, 100 L evaporation flask, 20 L receiving flask
C02035006	ST100	with descending condenser, 100 L evaporation flask, 2x20 L receiving flask
C02035007	ST100	with ascending condenser, 100 L evaporation flask, 20 L receiving flask
C02035008	ST100	with ascending condenser, 100 L evaporation flask, 2x20 L receiving flask



Order information

Order No.	Model	Configuration
C02035021	ST50 ATEX	with descending condenser, 50 L evaporation flask, 20 L receiving flask
C02035022	ST50 ATEX	with descending condenser, 50 L evaporation flask, 2x20 L receiving flask
C02035023	ST50 ATEX	with ascending condenser, 50 L evaporation flask, 20 L receiving flask
C02035024	ST50 ATEX	with ascending condenser, 50 L evaporation flask, 2x20 L receiving flask

Order No.	Model	Configuration
C02035025	ST100 ATEX	with descending condenser, 100 L evaporation flask, 20 L receiving flask
C02035026	ST100 ATEX	with descending condenser, 100 L evaporation flask, 2x20 L receiving flask
C02035027	ST100 ATEX	with ascending condenser, 100 L evaporation flask, 20 L receiving flask
C02035028	ST100 ATEX	with ascending condenser, 100 L evaporation flask, 2x20 L receiving flask



Accessories

Trolley

for evaporaing flask handling

Description	Order No.
Stainless steel trolley for evaporaing flask handling, for 50 L evaporation flask	C02039150
Stainless steel trolley for evaporaing flask handling, for 100 L evaporation flask	C02039151



Vacuum pump

Chemical resistant diaphragm pump with triple stage

Model	C2000T
Order No.	W032002
Max.power	750 kW
Ultimate vacuum	<2 mbar
Max. pumping speed	180 L/min
Inlet connection	KF25
Outlet connection	G1/2

Evaporation flask

Replacement borosilicate glass for Wiggens ST50 and ST100 series rotary evaporator. Evaporation flasks are designed to fit all large capacity rotary evaporators.

Volume	Order No.
50 L	C02039152
100 L	C02039153



Evaporation flask

The flask is made of plastic coated safety glassware , Plastic coated flasks are clear and will withstand temperatures up to 100℃ .

Volume	Order No.
50 L	C02039154
100 L	C02039155



Evaporation flask

The flask is made of high quality glassware with an amber coating to protect light-sensitive contents
Note: Flasks can be plastic-coated upon request.

Volume	Order No.
50 L	C02039156
100 L	C02039157



Powder flask

Also referred to as drying flasks, particularly suited for drying of powdered samples. The baffles, indented into the glass provide better circulation and mixing of the powders while rotating.

Volume	Order No.
50 L	C02039158
100 L	C02039159



Receiving flask

Replacement borosilicate glass for Wiggens ST50 and ST100 series rotary evaporator. Receiving flasks are designed to fit all large capacity rotary evaporators. Now available in coated, non-coated, amberized, and jacketed

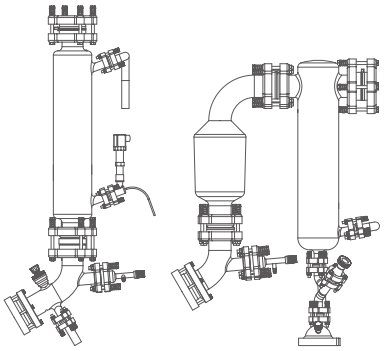
Volume	Order No.	Order No.	Order No.	Order No.
	Standard	Coated	Jacketed	Amberized
20 L	C02039160	C02039161	C02039162	C02039163
Replacement parts and accessories				
Glass lid of receiving flask				C02039164
Bottom valve of receiving flask				20-227-001
Open ring supports with long extension arms for supporting receiving flask				KC29429



Condenser

Replacement borosilicate glass components for Wiggens ST50 and ST100 series rotary evaporator. Condensers are designed to fit all large capacity rotary evaporators. Available poly-coated or non-coated

Description	Order No.	Order No.
	Standard	Coated
Vertical condenser (steam rises), A	SQEG034294	SQEG034284
Vertical condenser (steam sinks), B	SQEG034293	SQEG034283



A B

Expansion vessel for steam sinks version only

Replacement borosilicate glass components for Wiggens ST100 and ST100 ATEX rotary evaporators. Upper expansion tanks for glass sets available in either poly-coated or non-coated versions

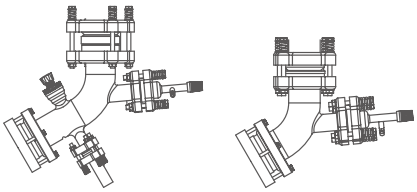
Description	Order No.	Order No.
	Standard	Coated
Expansion vessel for steam sinks version only	C02039165	C02039166



Distillation head

Replacement components for ST50 and ST100 series rotary evaporator, available poly-coated or non-coated

Description	Order No.	Order No.
	Standard	Coated
For ST50 and ST100 series, steam rises version (A)	C02039167	C02039169
For ST50 and ST100 series, steam sinks version (B)	C02039168	C02039170

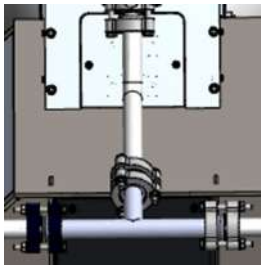


A B

Glass tube set

Replacement components for ST50 and ST100 series rotary evaporator, available poly-coated or non-coated

Description	Order No.	Order No.
	Standard	Coated
Glass tube set for connect condenser and 2pcs of 20 L receiving flask, for ST50 and ST100 series	C02039171	C02039172



Vacuum sensor and vapor temperature sensor

Description	Order No.
Vacuum sensor for ST50 / ST100	VAJQ081056
Vacuum sensor for ST50 ATEX / ST100 ATEX	VAJQ070992
Vapor temperature sensor	KC29481



Flange clamp and PTFE gasket

Flange size	Coupling, Insert ring, Bolt, compression spring, washer and nut	PTFE gasket
DN15	SQQI007876	SQQI011682
DN25	SQQI007877	SQQI011688
DN50	SQQI007878	SQQI011696
DN80	SQQI007879	SQQI011697



Rupture disc and Nitrogen solenoid valve

Material: SS316L
Size: DN50
Discharge area: 1781 mm^2
Burst pressure: 0.46±0.25 bar (20 °C)

Description	Order No.
Rupture disc	VAJQ077020
Holder of rupture disc	VAJQ077021
Nitrogen solenoid valve, for protect oxygen-sensitive substances	VAJQ077022



Tubing and clamps

Material: SS316L
Size: DN50
Discharge area: 1781 mm^2
Burst pressure: 0.46±0.25 bar (20 °C)

Description	Order No.
Vacuum tube (ID=19 mm)	8930319
Reinforced tubing for cooling water (ID=12 mm)	8930312
Tubing insulation (ID=23 mm), for 8930312	8930413
2 Tube clamps, size 3, for Reinforced tubing 12 mm or 1/2 " ID	8970482
2 Tube clamps, size 4, for Reinforced tubing 3/4 " ID	8970483



Guard shield

with safety design, the distillation process can be started only when the guard shield of heating bath is closed

Description	Order No.
Guard shield of heating bath	C02039173
Guard shield of condenser and receiving flask	C02039174

WIGGENS
THE MAGIC MOTION

Thin film evaporator

Molecular distillation device



Thin film evaporator

Wiped film and thin film evaporators consist of a cylindrical heating jacket and an inner rotating wiper system, distributing the product on the heating jacket as a thin and turbulent film. The turbulence in the wiped film increases the heat and mass transfer to achieve a high evaporation rate at short residence times, often within a single processing pass. The separated vapors are either condensed on an external condenser or further separated in a fractional column. Wiped film and thin film evaporation allow the handling of heat-sensitive, fouling and viscous products.

Features

- Compact and modular design
- Glassware are made of high quality borosilicate glass
- Three basic models are available according to the size of evaporator
- Three wiper elements are available for each model
- Mechanical sealed unit is suitable for high viscosity samples, and magnetic clutch is suitable for high vacuum experiment
- Manual, automatic and continuous working modes are available
- Both of bench top stand and movable frame are suitable for CTF-70
- The vacuum pump and temperature control unit can be selected according to the application



Bench top stand is only suitable for CTF-70



Movable frame is suitable for CTF-70, CTF-100 and CTF-150

Specification

Model	CTF-70A	CTF-70B	CTF-100B	CTF-150B
Structure	Bench-top	Movable frame	Movable frame	Movable frame
Working temperature range	Up to 300 °C	Up to 300 °C	Up to 300 °C	Up to 300 °C
Ultimate vacuum	≤1 (with rotary vane pump) ≤0.001 (with rotary vane pump and oil diffusion pump)			
Stirring speed	50~300 rpm	50~300 rpm	50~300 rpm	50~300 rpm
Flange of	DN70	DN70	DN100	DN150
Processing efficiency (Depends on the sample and process)	about 0.1~4 L/h	about 0.1~4 L/h	about 0.2~6 L/h	about 0.5~15 L/h
Evaporation area	0.052 m^2	0.052 m^2	0.083 m^2	0.235 m^2
Feeding	Dosing funnel or Feeding gear pump			
Condensation area	0.2 m^2	0.2 m^2	0.3 m^2	0.4 m^2
Collection or discharge	Collection flask, Distilling spinder with collection flasks or Continuous feeding device			

Typical Applications: BDO butanediol; Lecithin; Whey; Biopolymers; Used oil; Isocyanates TDI, HDI; Devolatilization of silicone oil

Molecular distillation device / Short path evaporator

Short path or molecular distillation allows the evaporation of heat sensitive products at operating pressures down to 0,001 mbar at short residence times. On a cylindrical heating jacket the product is distributed and turbulized by a wiping system. The evaporated fraction is condensed on a condenser installed in the center of the evaporator. This arrangement minimizes the path from evaporation to condensing surface and achieves the lowest possible pressure drop. The high vacuum and the short residence time avoids thermal stress and decomposition of the processed products.

Features

- Compact and modular design
- Glassware are made of high quality borosilicate glass
- Three basic models are available according to the size of evaporator
- Three wiper elements are available for each model
- Mechanical sealed unit is suitable for high viscosity samples, and magnetic clutch is suitable for high vacuum experiment
- Manual, automatic and continuous working modes are available
- Both of bench top stand and movable frame are suitable for CMD-70
- The vacuum pump and temperature control unit can be selected according to the application



Bench top stand is only suitable for CMD-70



Movable frame is suitable for CMD-70, CMD-100 and CMD-150

Specification

Model	CMD-70A	CMD-70B	CMD-100B	CMD-150B
Structure	Bench-top	Movable frame	Movable frame	Movable frame
Working temperature range	Up to 300 °C	Up to 300 °C	Up to 300 °C	Up to 300 °C
Ultimate vacuum	≤0.001 mbar	≤0.001 mbar	≤0.001 mbar	≤0.001 mbar
Stirring speed	50~300 rpm	50~300 rpm	50~300 rpm	50~300 rpm
Flange of	DN70	DN70	DN100	DN150
Processing efficiency (Depends on the sample and process)	about 0.1~4 L/h	about 0.1~4 L/h	about 0.2~6 L/h	about 0.5~15 L/h
Evaporation area	0.052 m^2	0.052 m^2	0.083 m^2	0.235 m^2
Feeding vessel	Dosing funnel or Feeding gear pump			
Condensation area	0.2 m^2	0.2 m^2	0.3 m^2	0.4 m^2
Collection or discharge	Collection flask, Distilling spinder with collection flasks or Continuous feeding device			

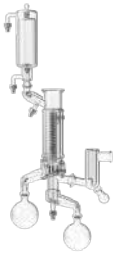
Typical Applications: GE, MOSH, MOAH removal from vegetable oils; Monoglyceride concentration; Used oil recovery; Removal of POP's from fish oils; EPA and DHA concentration; Epoxy resins; Lanolin alcohols, lanolin; Isocyanates TDI, MDI, XDI, HDI; Devolatilization of silicone oil

Modular design

1. Evaporator



Thin-film evaporation



Molecular distillation

2. Feeding



Dosing funnel
(with or without jacket)



Feeding gear pump

3. Collection and discharge



Collection flask



Distilling spinder
with collection flask



Discharge gear pump

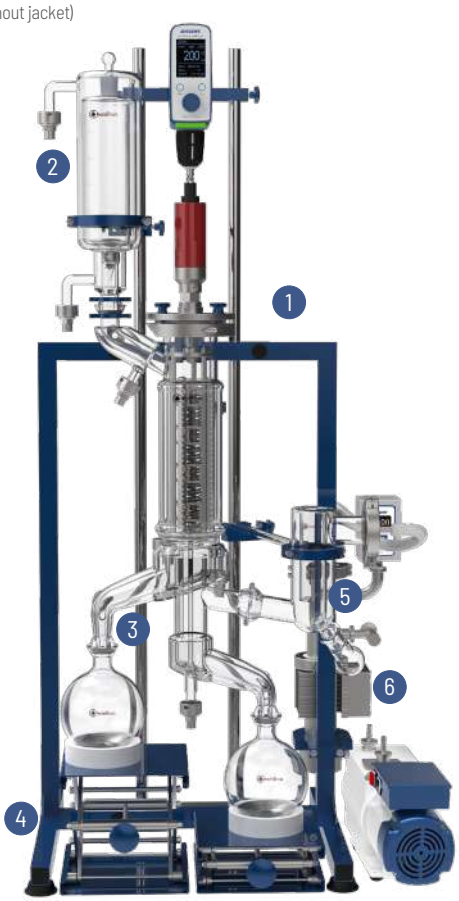
4. Support stand and frame



Bench top support stand



Movable frame



6. Vacuum pump



Rotary vane pump



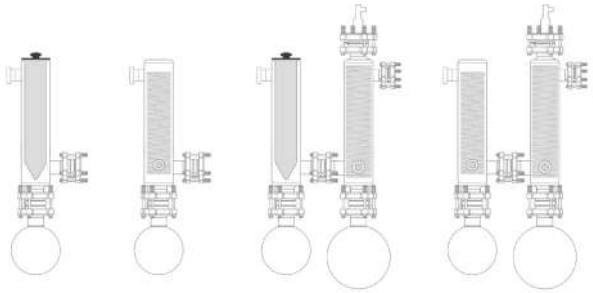
Oil diffusion pump

7. Automation & Continuous operation

Automatic control

Continous operation

5. Condenser and Cold trap



> Condenser with cooling coil, single stage
> Cold trap, 1-stage
> Cold trap and condenser
> Condenser with cooling coil, double stage

8. Temperature control unit

Heating circulators
Refrigerated circulators
Immersion coolers
Cryogenic cooling system with liquid nitrogen



Order information

Standard packages of thin film evaporator

Description	Order No.
Basic unit CTF-70, included Bench top support stand, Evaporator, Lid, Stirring motor, External condenser, Mechanical seal RVE-100, PTFE rolling wiper elements, 1000ml feeding funnel, 1000ml collection flask for distillate, 1000ml collection flask for residue, Condenser with cooling coil, Rotary vane pump, Digital vacuum meter and relief valve	CTF-70A
Basic unit CTF-70, included Movable frame with wheels , Evaporator, Lid, Stirring motor, External condenser, Mechanical seal RVE-100, PTFE rolling wiper elements, 1000ml feeding funnel, 1000ml collection flask for distillate, 1000ml collection flask for residue, Condenser with cooling coil, Rotary vane pump, Digital vacuum meter and relief valve	CTF-70B
Basic unit CTF-100, included Movable frame with wheels , Evaporator, Lid, Stirring motor, External condenser, Mechanical seal RVE-100, PTFE rolling wiper elements, 2000ml feeding funnel, 2000ml collection flask for distillate, 2000ml collection flask for residue, Condenser with cooling coil, Rotary vane pump, Digital vacuum meter and relief valve	CTF-100B
Basic unit CTF-150, included Movable frame with wheels , Evaporator, Lid, Stirring motor, External condenser, Mechanical seal RVE-100, PTFE rolling wiper elements, 5000ml feeding funnel, 5000ml collection flask for distillate, 5000ml collection flask for residue, Condenser with cooling coil, Rotary vane pump, Digital vacuum meter and relief valve	CTF-150B



Bench top stand is only suitable for CTF-70



Movable frame is suitable for CTF-70, CTF-100 and CTF-150

Standard packages of molecular distillation device

Description	Order No.
Basic unit CMD-70, included Bench top support stand, Evaporator, Lid, Stirring motor, Mechanical seal RVE-100, PTFE rolling wiper elements, 1000ml feeding funnel, 1000ml collection flask for distillate, 1000ml collection flask for residue, Condenser with cooling coil, Oil diffusion pump & Rotary vane pump, Digital vacuum meter and relief valve	CMD-70A
Basic unit CMD-70, included Movable frame with wheels , Evaporator, Lid, Stirring motor, Mechanical seal RVE-100, PTFE rolling wiper elements, 1000ml feeding funnel, 1000ml collection flask for distillate, 1000ml collection flask for residue, Condenser with cooling coil, Oil diffusion pump & Rotary vane pump, Digital vacuum meter and relief valve	CMD-70B
Basic unit CMD-100, included Movable frame with wheels , Evaporator, Lid, Stirring motor, Mechanical seal RVE-100, PTFE rolling wiper elements, 2000ml feeding funnel, 2000ml collection flask for distillate, 2000ml collection flask for residue, Condenser with cooling coil, Oil diffusion pump & Rotary vane pump, Digital vacuum meter and relief valve	CMD-100B
Basic unit CMD-150, included Movable frame with wheels , Evaporator, Lid, Stirring motor, Mechanical seal RVE-100, PTFE rolling wiper elements, 5000ml feeding funnel, 5000ml collection flask for distillate, 5000ml collection flask for residue, Condenser with cooling coil, Oil diffusion pump & Rotary vane pump, Digital vacuum meter and relief valve	CMD-150B



Bench top stand is only suitable for CMD-70



Movable frame is suitable for CMD-70, CMD-100 and CMD-150

TF Evaporator

Order No.	Evaporator only	Filling	Discharge	Connect with external condenser	Jacket
SQTF0070	TF70	GM38	2×GM38	GM50	22#
SQTF0100	TF100	GM38	2×GM38	GM50	25#
SQTF0150	TF150	GM38	2×GM38	GM50	DN15



External condenser for TF system

Order No.		Connect with TF evaporator	Bottom	Suitable for
SQTF1021	Condenser, 0.2m^2	GM50	GM38	CTF-70
SQTF1022	Condenser, 0.3m^2	GM50	GM38	CTF-100
SQTF1023	Condenser, 0.4m^2	GM50	GM38	CTF-150



MD Evaporator

Order No.	Evaporator only	Filling	Discharge	Inner condenser	Jacket
SQMD0070	MD70	GM38	2×GM38	Hose connection, use with 8 mm I.D. tubing	22#
SQMD0100	MD100	GM38	2×GM38	Hose connection, use with 19 mm I.D. tubing	25#
SQMD0150	MD150	GM38	2×GM38	Hose connection, use with 19 mm I.D. tubing	DN15



Stirring motor

Order No.	Part	Description	Suitable for
C3041015	Stirring motor	with max speed of 300 rpm, max torque 30 Ncm Touch screen or PC software is need to control	All models
C3041018	Stirring motor	with max speed of 300 rpm, max torque 120 Ncm Touch screen or PC software is need to control	All models



Sealing bearing

Both magnetic clutch and mechanical seal are available, magnetic clutch is suitable for high vacuum application, and mechanical seal suitable for high viscosity sampes

Order No.	Part	Description	Suitable for
10004534C	Magnetic clutch RV-100	Suitable for high vacuum application	All models
10004535C	Mechanical seal RVE-100	Suitable for high viscosity sampes	All models



Wiper elements

Three wiper elements are available for each model

Order No.	Part	Description	Suitable for
SQTD1061	Metal elastic wiper elements	For processing high viscosity samples	CTF-70 / CMD-70
SQTD1062	Metal elastic wiper elements	For processing high viscosity samples	CTF-100 / CMD-100
SQTD1063	Metal elastic wiper elements	For processing high viscosity samples	CTF-150 / CMD-150
SQTD1064	PTFE rolling wiper elements	For low viscosity samples	CTF-70 / CMD-70
SQTD1065	PTFE rolling wiper elements	For low viscosity samples	CTF-100 / CMD-100
SQTD1066	PTFE rolling wiper elements	For low viscosity samples	CTF-150 / CMD-150
SQTD1067	General wiper elements	For low viscosity samples	CTF-70 / CMD-70
SQTD1068	General wiper elements	For low viscosity samples	CTF-100 / CMD-100
SQTD1069	General wiper elements	For low viscosity samples	CTF-150 / CMD-150

Feeding device

Customer can select from different sizes of filling funnel, with or without jacket. Feeding gear pump is needed in continuous process

Order No.		Flange	Bottom	Jacket	Valve
SQTD1001	1L funnel	—	GM38	—	With
SQTD1002	1L jacket funnel	—	GM38	22#	With
SQTD1003	1L filling vessel	DN100	GM38	—	Optional
SQTD1004	1L jacketed filling vessel	DN100	GM38	22#	Optional
SQTD1005	2L filling vessel	DN150	GM38	—	Optional
SQTD1006	2L jacketed filling vessel	DN150	GM38	25#	Optional
SQTD1007	5L filling vessel	DN150	GM38	—	Optional
SQTD1008	5L jacketed filling vessel	DN150	GM38	DN15	Optional
SQTD1101	Gear pump 1	2178ml/h, max.70rpm, 300°C , 4bar, inlet GM38, outlet DN15			Optional
SQTD1102	Gear pump 2	21780ml/h, max.140rpm, 300°C , 4bar, inlet GM38, outlet DN15			Optional
SQTD1103	Gear pump 3	32670ml/h, max.140rpm, 300°C , 4bar, inlet GM38, outlet DN15			Optional
4216	Metal adapter	Metal adapter ofjacket connector(22# to M16x1)			
4217-F	Fluororubber sealant	Fluororubber sealant 22#			
4218	Metal adapter	Metal adapter of jacket connector(25# to M16x1)			
4219	Fluororubber sealant	Fluororubber sealant 25#			
4200	Metal adapter	Metal adapter of jacket connector (DN15 to M16x1)			
4201	Fluororubber sealant	Fluororubber sealant DN15,-60°C to +200°C			

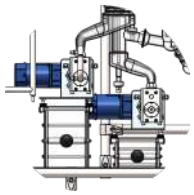


Collection and discharge device

Three types of collection and discharge device for both distillate and residue. Discharge gear pump is needed in continuous process

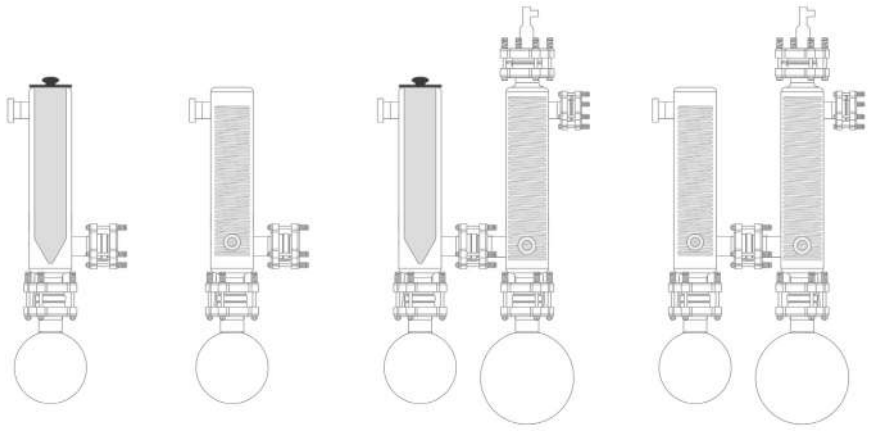
Order No.	Part	Description
SQTD1011	250ml receiving flask	GM38
SQTD1012	500ml receiving flask	GM38
SQTD1013	1000ml receiving flask	GM38
SQTD1014	2000ml receiving flask	GM38
SQTD1015	5000ml receiving flask	GM38
SQTD1016	Spider	GM38 to 24/40(3)
SQTD1017	250ml receiving flask	24/40, suitable for sipder
SQTD1101	Gear pump 1	2178ml/h, max.70rpm, 300°C , 4bar, inlet GM38, outlet DN15
SQTD1102	Gear pump 2	21780ml/h, max.140rpm, 300°C , 4bar, inlet GM38, outlet DN15
SQTD1103	Gear pump 3	32670ml/h, max.140rpm, 300°C , 4bar, inlet GM38, outlet DN15





Condenser and cold trap for vacuum line

Customers can select following cold trap, condenser, or 2-stage cooling unit



Cold trap | Condenser with cooling coil | Cold trap & condenser | Double cooling coil

Order No.	Condenser / Cold trap	Connect with MD evaporator or TF external condenser	Vacuum	Bottom	Suitable for
SQTD1031	165ml cold trap	GM50	KF40	GM28	CTF/CMD-70
SQTD1032	750ml cold trap	GM50	KF50	GM28	CTF/CMD-100
SQTD1033	1000ml cold trap	GM50	KF50	GM28	CTF/CMD-150
SQTD1034	Condenser	GM50	KF40	GM28	CTF/CMD-70
SQTD1035	Condenser	GM50	KF50	GM28	CTF/CMD-100
SQTD1036	Condenser	GM50	KF50	GM28	CTF/CMD-150
SQTD1037	Condenser, double stage	GM50	KF40	GM28	CTF/CMD-70
SQTD1038	Condenser, double stage	GM50	KF50	GM28	CTF/CMD-100
SQTD1039	Condenser, double stage	GM50	KF50	GM28	CTF/CMD-150
SQTD1040	165ml cold trap & condenser	GM50	KF40	GM28	CTF/CMD-70
SQTD1041	750ml cold trap & condenser	GM50	KF50	GM28	CTF/CMD-100
SQTD1042	1000ml cold trap & condenser	GM50	KF50	GM28	CTF/CMD-150
SQTD1051	250ml receiving flask	GM28			
SQTD1052	500ml receiving flask	GM28			

Vacuum pump

Oil-sealed Rotary Vane vacuum pump is suitable for some applications in thin film evaporation, Oil diffusion pump & Rotary vane pump are needed if super high vacuum is need





Order No.	Part	Description	Suitable for
900111	Rotary vane pump	180L/min, 4×10^{-4}mbar, KF25 inlet and outlet	All models
900411	Oil diffusion pump & Rotary vane pump	Oil diffusion pump (80L/s, 1×10^{-4}mbar, inlet KF50, outlet KF25) Rotary vane pump (180L/min, 4×10^{-4}mbar, KF25 inlet and outlet)	All models
900411-01	Digital vacuum meter	Vacuum range : 0.001~1000mbar	All models
900411-02	Needle valve	Vacuum needle valve	All models
900411-03	Corrugated metal vacuum tube	DN 25, length 1m	All models

Temperature control unit

In the Thin film evaporator and molecular distillation in particular, numerous process sequences are bound to one temperature or can be supported by a specific temperature control application, and thus made more efficient, different types of temperature control units are available for us, like heating circulator, Recirculating cooler, Immersion cooler, even cryogenic cooling system with liquid nitrogen

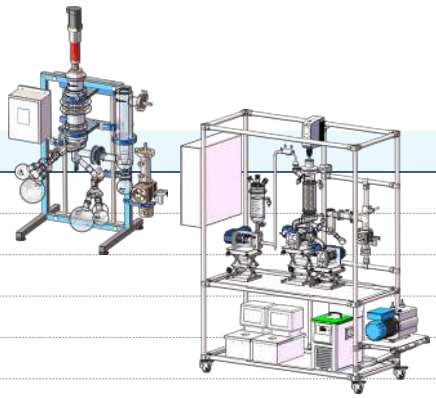


Order No.	Part	Description	Suitable for
9021504.D	DYNEO DD-BC4	Heating circulatorWorking temperature range 20...200°C , Temperature stability ±0.01°C , heating capacity 2kW	All models
9033506	MAGIO MX-BC6	Heating circulatorWorking temperature range 20...300°C , Temperature stability ±0.01°C , heating capacity 3kW	All models
9660003	FL300	Recirculating cooler, Working temperature range -20...40 °C , Temperature stability ±0.5°C , Cooling capacity 0.3kW(20°C)	All models
9661006	FL601	Recirculating cooler, Working temperature range -20...40 °C , Temperature stability ±0.5°C , Cooling capacity 0.6kW(20°C)	All models
9650840	FT400	Immersion cooler, working temperature range -40..30°C , Cooling capacity 0.45kW(20°C)	All models
9650890	FT900	Immersion cooler, working temperature range -90..30°C , Cooling capacity 0.3kW(20°C)	All models
On request		Cryogenic cooling system with liquid nitrogen, Up to -180°C	All models

Please note: bath oil, connection tube, adapter need to be ordered separately

Support stand and frame

Both of bench top stand and movable frame are suitable for CTF-70



Order No.	Part	Description	Suitable for
SQTD1071	Support stand	Bench top support stand	CTF-70
SQTD1072	Support stand	Bench top support stand	CMD-70
SQTD1073	Movable frame	Movable frame with wheels	CTF-70 / CMD-70
SQTD1074	Movable frame	Movable frame with wheels	CTF-100 / CMD-100
SQTD1075	Movable frame	Movable frame with wheels	CTF-150 / CMD-150

Auto and Continuous operation

Manual, automatic and continuous working modes are available for each model

Order No.	Part	Description	
JCRS-71	Control box with touch screen	The following paramenters canbe monitored or controlled: - Heating temperature (1pc) - Cooling temperature (Only monitoring, In-line temperature sensor is needed) - Stirring speed - Vacuum	
JCRS-81	Control box with PC software	The following paramenters canbe monitored or controlled: - Heating temperature (Several heating devices can be controlled separately.) - Cooling temperature (Only monitoring, In-line temperature sensor is needed) - Stirring speed - Vacuum - Gear pump (Feeding and Discharge) - Cascade control, program control, continuous operation	
JCRS-91	PLC control system	The following paramenters canbe monitored or controlled: - Heating temperature (Several heating devices can be controlled separately.) - Cooling temperature (Only monitoring, In-line temperature sensor is needed) - Stirring speed - Vacuum - Gear pump (Feeding and Discharge) - Cascade control, program control, continuous operation - Centralized power supply	



WIGGENS
THE MAGIC MOTION

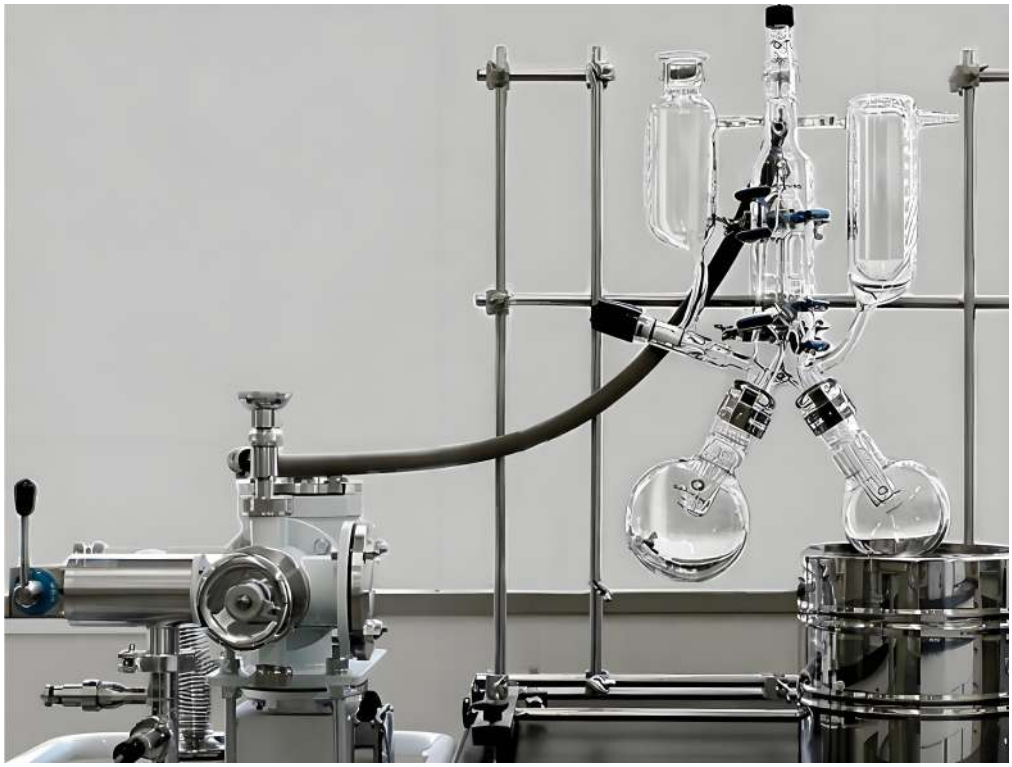
WIGGENS China
Building No. 45, Tianshan International Enterprise Base,
Yanjiao Economic Development Zone, Beijing, China
Tel : +86-4008092068

WIGGENS GmbH
Gässlesweg 22-24, 75334 Straubenhardt
Germany
Tel:+49 7248 4529088
info@wiggens.com www.wiggens.com

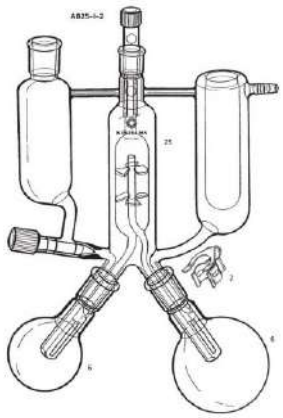
Authorized Distributor

Solvent-Assisted Flavor Evaporation System(SAFE)

The Solvent Assisted Flavor Evaporator (SAFE) is a highly efficient, mild and reliable sample pretreatment technique, and an indispensable tool in modern flavor chemistry research. Operating under low-temperature and high-vacuum conditions, it perfectly solves the problem of extracting thermally sensitive volatile compounds from complex matrices, providing a reliable guarantee for the accurate identification of key aroma-active substances in foods, flavors and other products.







Main Features of the SAFE Apparatus

The core design concept of SAFE is to efficiently and gently recover volatile components at extremely low temperatures, minimizing the decomposition of heat-sensitive substances and the formation of artificial artifacts.

Mild separation conditions (the most critical feature)

Low-temperature operation: The entire system (especially the evaporation flask and receiving flask) is placed in a low-temperature constant-temperature bath (e.g., liquid nitrogen, dry ice/acetone bath). Typically, the evaporation flask is maintained at 20–40° C (water or oil bath), while the receiving flask is cooled to -196° C (liquid nitrogen) or -78° C (dry ice). This large temperature difference serves as the driving force for high-efficiency distillation.

High vacuum environment: The system is connected to a high-efficiency vacuum pump, and the operating pressure can be extremely low (typically below 10^{-2} mbar). High vacuum greatly reduces the boiling point of solvents, allowing volatiles to be distilled at temperatures far below their atmospheric boiling points, thereby avoiding chemical changes caused by high temperatures (such as hydrolysis, oxidation, Maillard reaction, etc.).

High recovery rate and high efficiency

Due to the high vacuum and low-temperature cold trap, even extremely trace and high boiling volatile compounds can be efficiently distilled and completely captured in the receiving bottle, with a very high recovery rate.

Reduce artifacts

Compared with traditional methods such as simultaneous distillation extraction (SDE), SAFE avoids prolonged high-temperature co heating of organic solvents and samples in the aqueous phase, significantly reducing side reactions such as ester hydrolysis and olefin isomerization, and can more accurately reflect the original flavor composition of the sample.

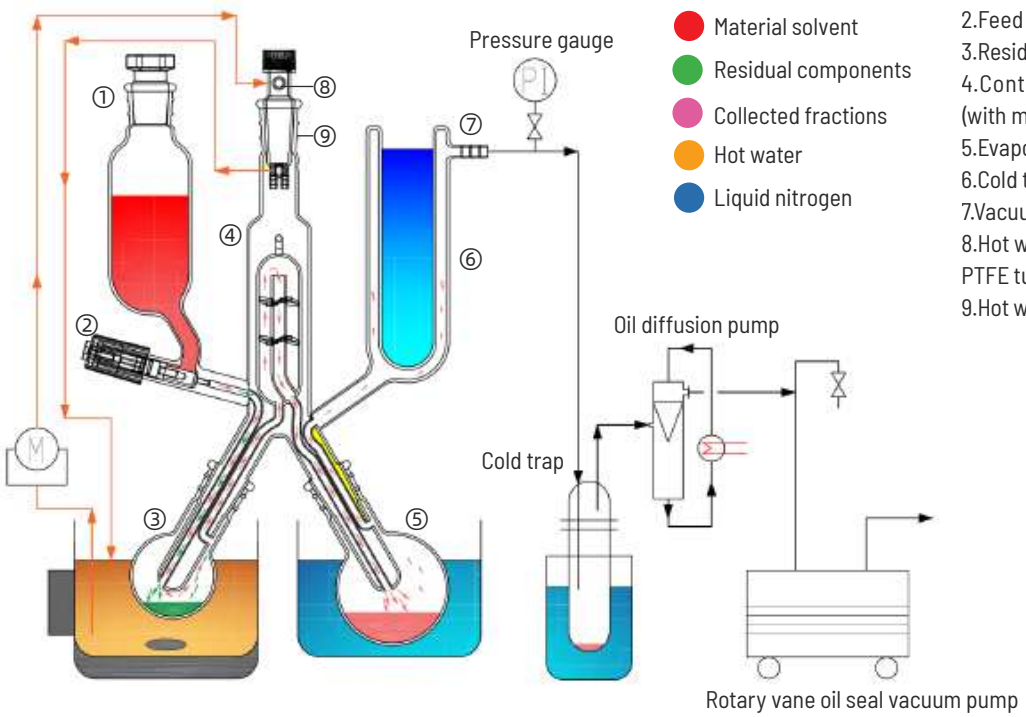
Wide applicability

It can handle various types of samples, including complex matrices with high oil content, high sugar content, and rich protein (such as coffee, chocolate, gravy, dairy products, fruit juice, etc.).

Compatible with multiple organic solvents, suitable solvents can be selected for extraction and distillation based on the polarity of the target volatiles.

Relatively simple to operate and easy to clean.

The design of the glassware components facilitates convenient disassembly, cleaning and assembly, avoiding cross-contamination between samples.



1.Raw material feeder
2.Feed control needle valve
3.Residue collection
4.Controlled distillation column (with mist separator)
5.Evaporation receiver
6.Cold trap
7.Vacuum port
8.Hot water inlet, connected with a PTFE tube.
9.Hot water outlet.

Application of the SAFE Device

SAFE is mainly used to extract, purify, and concentrate volatile flavor/aroma components from complex, non-volatile, or semi volatile sample matrices, in preparation for subsequent analysis and identification.

Food Flavor Analysis
Coffee and tea: Analyze their roasting aroma and identify key aroma components.
Dairy products: such as cheese and butter, analyze their characteristic fatty acid derivatives, sulfides, etc.
Meat products: Analysis of meat flavor components produced by Maillard reaction, lipid oxidation products, etc.
Fruits and juices: Extract their fresh, volatile ester and aldehyde aromas, such as strawberries, oranges, etc.
Baking food: Analysis of baking aroma components of bread, cookies, etc.
Edible oils and fats: Analyze their aroma and odor components produced by oxidative degradation.
Analysis of alcoholic beverages and drinks: Beer, wine, liquor, etc., used to study their fermented aroma, aged aroma, and sources of off-flavors.

Spice and Perfume Industry
Separate aroma molecules from natural plants (such as flowers, herbs, spices) or complex flavor and fragrance products, for the construction of fingerprint profiles and quality control.

Tobacco industry:
Analyze the mainstream smoke, sidestream smoke, and volatile aroma components of tobacco leaves themselves.

Environmental analysis
Although not widely used in the field of flavor, SAFE can also be used to gently separate volatile organic pollutants (VOCs) from environmental samples such as soil and water.

Biochemical research
Extract volatile metabolites from biological fluids or tissue culture media.



Tail gas scrubbing and treatment equipment



The laboratory gas scrubbing unit can be used for the purification of various air and exhaust gases. The liquid storage tank of the scrubbing unit is available in capacities ranging from 10L to 100L. It features a compact design, making it suitable for use in laboratory fume hoods, or it can be integrated into a mobile benchtop reactor stand and installed as a whole in a walk-in fume hood.
Gas scrubbing takes place as exhaust gas enters the inlet of the round-bottom flask and passes upward through the absorption column. The scrubbing liquid is pumped upward from the round-bottom flask into the spray head adapter and then flows countercurrently into the exhaust gas passing through the packed column, resulting in intense contact between the two phases. The scrubber can be operated either by generating a positive flow through the reaction vessel using a carrier gas such as nitrogen, or by connecting a vacuum to the column adapter.

Composition

- Support frame
- Lower liquid storage tank
- Glass absorption tower (including support tray and packing material)
- Glass Raschig ring column packing
- Exhaust gas outlet column
- Overhead shower head adapter
- PTFE Diaphragm Liquid Transfer Pump
- Flange clamp
- High-efficiency condenser
- Inlet adapter
- PTFE tubes and PFA compression fittings

Order No.	Name
SQHN071677	10L Gas Scrubbing Unit
SQHN071678	20L Gas Scrubbing Unit
SQHN071679	50L Gas Scrubbing Unit
SQHN071680	100L Gas Scrubbing Unit

Dual Exhaust Gas Scrubbing Treatment Equipment



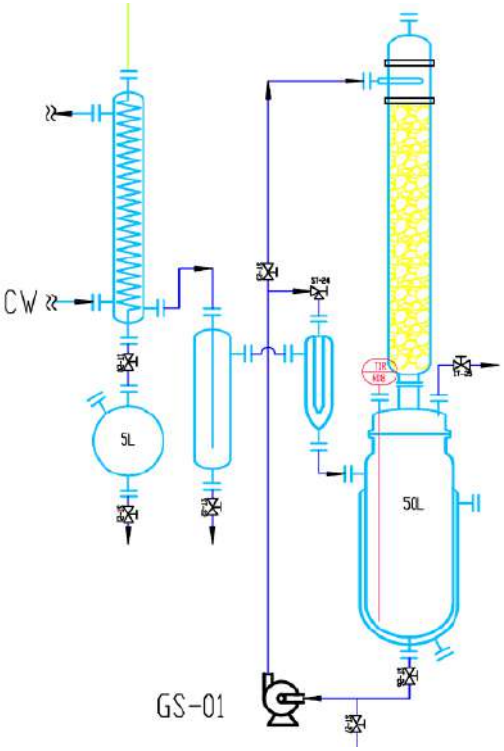
Laboratory gas scrubbing units can be used for the purification of various air and exhaust gases. The liquid storage tank capacity of the scrubbing unit is 2×20L. It features a compact design, suitable for use in laboratory fume hoods, or can be integrated into a mobile benchtop reactor stand and installed as a whole in a walk-in fume hood.
Gas scrubbing occurs as exhaust gas enters the inlet of the round-bottom flask and passes upward through the absorption tower. The scrubbing liquid is pumped upward from the round-bottom flask into the spray head adapter and then flows countercurrently against the exhaust gas passing through the packed column, resulting in intense contact between the two phases. The scrubber can be operated either by generating a positive flow through the reaction vessel using a carrier gas such as nitrogen, or by connecting a vacuum source to the column adapter.

Composition

- Dual support frame
- Lower liquid storage tank
- Glass absorption tower (with support tray and packing), DN50 & DN100
- Glass Raschig ring column packing
- Exhaust gas outlet column
- Overhead shower head
- PTFE diaphragm liquid delivery pump
- Flange clamp
- High-efficiency condenser
- Inlet adapter
- PTFE tubing and PFA compression fitting accessories

Venturi-type exhaust gas scrubbing treatment equipment





The core principle of the Venturi-type tail gas absorption and treatment unit is based on the Venturi effect. In this tail gas absorption device, we have added a Venturi tube as a means of generating vacuum.



Venturi glass jet pump

Working Principle:

1.Gas Acceleration and Pressure Reduction

When exhaust gas enters the constriction section of the Venturi tube, the cross-sectional area of the pipeline gradually decreases, resulting in increased flow velocity and reduced pressure. A low-pressure zone forms at the throat, drawing in ambient air or liquid (e.g., circulating water) to mix with the exhaust gas.

2.Mixing and Purification

The mixed gas stream enters the diffuser section, where the flow velocity gradually decreases and the pressure recovers. Particulate matter in the exhaust gas collides with and adheres to water droplets, and impurities are separated by centrifugal and gravitational forces. The purified gas is discharged from the top.

3.Circulatory Absorption

Circulating water is atomized in the spray tower and fully contacts the exhaust gas, removing soluble components (such as organic exhaust gas and acid mist) or adsorbing particulate matter via the circulating liquid.

Application Features

Highly efficient purification: Suitable for treating exhaust gas with high dust concentration and complex components, such as industrial waste gas and organic waste gas.

Simple structure: No complicated mechanical parts (such as vacuum pumps) are required, resulting in low maintenance costs.

Energy saving and environmental protection: Energy consumption is reduced through optimized flow channel design, meeting green manufacturing standards.

Main Applications

Venturi tubes are highly suitable for applications requiring medium to low vacuum levels, such as:

Filtration apparatus in chemical laboratories

Air extraction and priming before starting the water pump

Ejector / Jet pump

Suction of powder particles in pneumatic conveying systems

Specification

Max. reaction volumerecommendation	250mL system	500mL system	1000mL system	2000mL system	5000mL system
Flange	DN100	DN100	DN100	DN150	DN150
Bore diameter of bottom valve	0-10mm0-20mm(optional)	0-10mm0-20mm(optional)	0-10mm0-20mm(optional)	0-10mm0-20mm(optional)	0-10mm0-20mm(optional)
Reactor lid	CN:24/40, SN:24/40(3), 45° -GL45				
Material of reaction vessel and lid	High quality borosilicate glass				
Temperature range	-60~200° C	-60~200° C	-60~200° C	-60~200° C	-60~200° C
Vessel pressure	Suitable for atmospheric and vacuum reaction				
Jacket pressure	up to 0.5bar	up to 0.5bar	up to 0.5bar	up to 0.5bar	up to 0.5bar
Material of wet part	Borosilicate glass / PTFE / PFA				
Inlet and outlet of jacket	DN15	DN15	DN15	DN15	DN15
Stirring speed	Available at 500 RPM for long-term operation, 800 RPM for short-term operation. If high-speed mixing applications are required, please consult your Wiggens				
Diameter/length of stirring Rod	Ø8mm / 500mm	Ø8mm / 500mm	Ø10mm / 550mm	Ø10mm / 550mm	Ø10mm / 650mm
Blade diameter	40mm(4 blade angled type stir paddle)	40mm(4 blade angled type stir paddle)	70mm（4 blade angled type stir paddle）	100mm（Anchor style stir paddle）	Low position: 140mm(Anchor Style Stir Paddle)High position: 70mm(4 blade angled type stirpaddle)
Length of condenser	300mm	300mm	300mm	300mm	300mm
Volume of collection flask	125mL	250mL	500mL	500mL	1000mL
Volume of liquid funnel	60mL	125mL	250mL	500mL	1000mL
Distance between discharge portand spill tray	130mm	130mm	140mm	140mm	150mm
Weight	28.5kg	28.9kg	29.2kg	33kg	37kg

Complete packages

Order No.	Reaction system	Overhead stirrer	Muti-channel regulating valve
WRS-1501-021	250ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	No included
WRS-1501-022	250ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	No included
WRS-1501-021M	250ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	Included
WRS-1501-022M	250ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	Included
WRS-1501-031	500ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	No included
WRS-1501-032	500ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	No included
WRS-1501-031M	500ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	Included
WRS-1501-032M	500ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	Included
WRS-1501-041	1000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	No included
WRS-1501-042	1000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	No included
WRS-1501-041M	1000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	Included
WRS-1501-042M	1000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	Included
WRS-1501-051	2000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	No included
WRS-1501-052	2000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	No included
WRS-1501-051M	2000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	Included
WRS-1501-052M	2000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	Included
WRS-1501-061	5000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	No included
WRS-1501-062	5000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	No included
WRS-1501-061M	5000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-15 Pro	Included
WRS-1501-062M	5000ml glass reactor, liquid funnel, condenser, distillation unit	WOHS-400 Pro	Included





WOHS-15 Pro



Muti-channel regulating valve

mounted to the support stand, the pressure relief manifold inlet/outlet set will help protect the glass vessel from breakage due to an excessive pressure differential exerted by the thermal transfer fluid while the vessel is isolated or disconnected from the circulator.

Order information

		250mL system	500mL system	1000mL system	2000mL system	5000mL system
	Part 1 Reaction vessel					
1	Jacketed reaction vessel	CRS-0839-47	CRS-0839-48	CRS-0841-10	CRS-0829-95	CRS-0841-11
2	Bottom outlet valve	CRS-4153B-S	CRS-4153B-S	CRS-4153B-S	CRS-4153B-L	CRS-4153B-L
3	Metal adapter with clamp	4200	4200	4200	4200	4200
4	Silicone sealant DN15	4201	4201	4201	4201	4201
5	Clamp holder	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21
6	3 Prong, extended, large	JRS-11065-16	JRS-11065-16	JRS-11065-16	JRS-11065-16	JRS-11065-16
	Part 2 Reactor lid					
7	Reactor lid	JRS-2904-01	JRS-2904-01	JRS-2904-01	JRS-2904-03	JRS-2904-03
8	O-ring	JRS-1701-02	JRS-1701-02	JRS-1701-02	JRS-1701-03	JRS-1701-03
3	Clamp	JRS-2401-02	JRS-2401-02	JRS-2401-02	JRS-2401-03	JRS-2401-03
10	Cap, solid, GL45	JRS-2301-01	JRS-2301-01	JRS-2301-01	JRS-2301-01	JRS-2301-01
	Part 3 Stirring unit					
11	Overhead stirrer WOHS-15 Pro	W3041015	W3041015	W3041015	W3041015	W3041015
12	Overhead stirrer WOHS-400 Pro	W3041018	W3041018	W3041018	W3041018	W3041018
13	Stirring bearing	5-104-7	5-104-7	5-105-7	5-105-7	5-105-7
14	Shaft coupling	JRS-8126-05N	JRS-8126-05N	JRS-8126-06N	JRS-8126-06N	JRS-8126-06N
15	Stirring shaft and impeller	5-250-8-2	5-250-8-2	5-255-10-2	5-0355-10-2	5-0365-10-2
16	—	—	—	—	5-610090	
	Part 4 Reactor stand					
17	Reactor stand	WRS-2602-02	WRS-2602-02	WRS-2602-02	WRS-2602-03	WRS-2602-03
	Reactor stand, installed on the ground	—	—	—	—	CRS-2602-13
18	Spill tray	CR-13221	CR-13221	CR-13221	CR-13221	CR-13221
	Part 5 Liquid funnel					
19	Liqund funnel	JRS-2803-01	JRS-2803-02	JRS-2803-03	JRS-2803-04	JRS-2803-05
20	Offset adapter	JRS-2020-01	JRS-2020-01	JRS-2020-01	JRS-2020-01	JRS-2020-01
21	Glass stopper	JRS-2103-01	JRS-2103-01	JRS-2103-01	JRS-2103-01	JRS-2103-01
	Part 6 Condenser					
22	Condenser	JRS-2506-09	JRS-2506-09	JRS-2506-09	JRS-2506-09	JRS-2506-09
23	Offset adapter	JRS-2020-01	JRS-2020-01	JRS-2020-01	JRS-2020-01	JRS-2020-01
24	Vacuum adapter	JRS-2012-02	JRS-2012-02	JRS-2012-02	JRS-2012-02	JRS-2012-02
25	Clamp holder	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21
26	3 Prong, extended, large	JRS-11065-16	JRS-11065-16	JRS-11065-16	JRS-11065-16	JRS-11065-16
	Part 7 Distillation unit					
27	Distillation reflux / divider head	JRS-2619-01	JRS-2619-01	JRS-2619-01	JRS-2619-01	JRS-2619-01
28	Receiving flask	JRS-6887-232	JRS-6887-224	JRS-6887-226	JRS-6887-226	JRS-6887-227
29	Cap, solid, GL18	JRS-2302-05	JRS-2302-05	JRS-2302-05	JRS-2302-05	JRS-2302-05
30	Clamp holder	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21	JRS-11081-21
31	2 Prong, extended, large	JRS-11073-20	JRS-11073-20	JRS-11073-20	JRS-11073-20	JRS-11073-20
	Part 8 Adapters and clamps					
32	Temperature sensor adapter	JRS-5028-31	JRS-5028-31	JRS-5028-31	JRS-5028-31	JRS-5028-31
33	PTFE sleeves	JRS-7643-08	JRS-7643-08	JRS-7643-08	JRS-7643-08	JRS-7643-08
34	Keck clip	JRS-7598-24	JRS-7598-24	JRS-7598-24	JRS-7598-24	JRS-7598-24
	Part 9 Multi channel regulating valve					
35	Multi channel regulating valve, outlet	JRS-12194-02	JRS-12194-02	JRS-12194-02	JRS-12194-02	JRS-12194-02
36	Multi channel regulating valve, inlet	JRS-12194-06	JRS-12194-06	JRS-12194-06	JRS-12194-06	JRS-12194-06
37	0.5 M metal tubing	8930220	8930220	8930220	8930220	8930220
	Part 10 Temperature sensor					
38	Temperature sensor	8981015	8981015	89810154	89810154	89810154

Illustration

