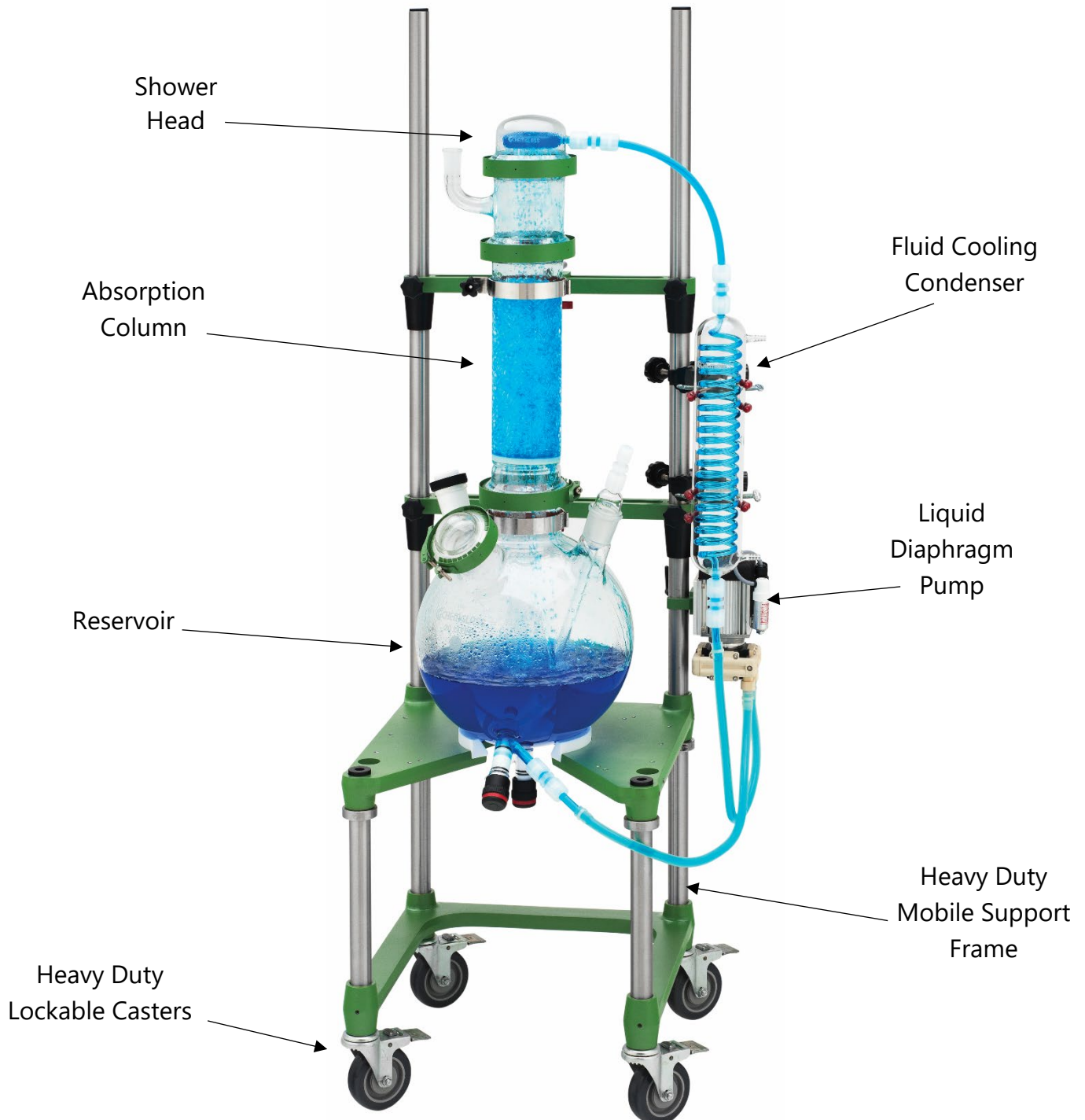


ASSEMBLY INSTRUCTIONS FOR 20L GAS SCRUBBERS



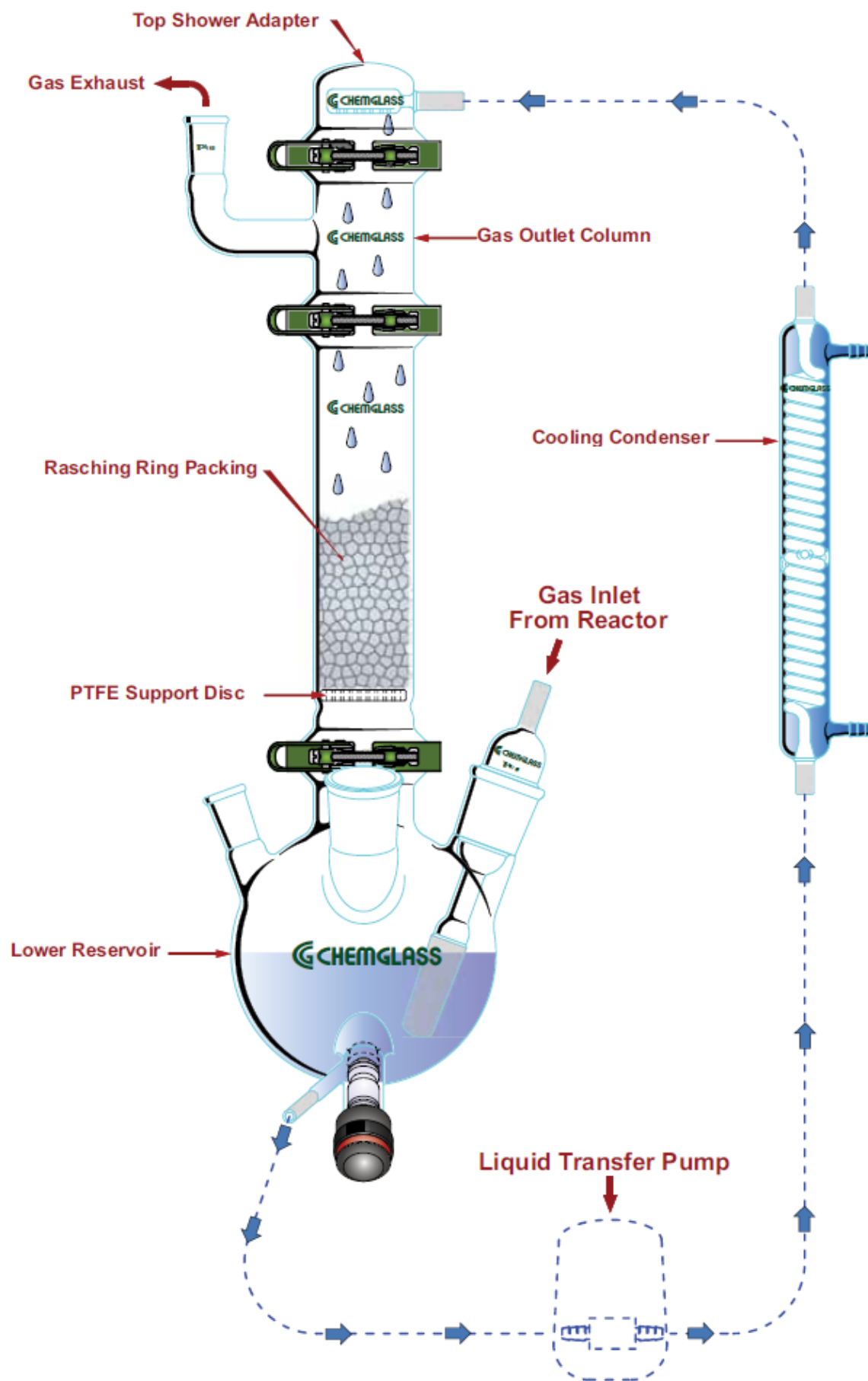
Read entire assembly instructions before you begin. Familiarize yourself with all of the parts, and pay close attention to all notes and highlights. If you have any questions, please contact our technical service department at (800) 843-1794 or technical-service@cglifesciences.com

Support frames are shipped via common carrier and require loading dock access with a fork lift or jack. If you do not have a loading dock, then a lift gate-equipped truck must be requested at the time of order.

Complete Assembly Instructions

1. Position stand in desired location and lock casters so the unit remains stationary while setting up.
2. Position the PTFE flask ring so the open groove lines up with the front of the scrubber stand.
3. Place lower reservoir on the PTFE ring, and secure flask to stand under the flange with support clamp CG-1947-A100 or CG-1947-A60 depending on what size scrubber purchased. Bottom drain should be facing toward the front of the scrubber stand.
4. Once lower reservoir is secured, place PTFE envelope gasket (CG-147-G-01 or CG-147-G-03) on the top of the flange of lower reservoir.
5. Next, place the absorption column on top of the PTFE envelope gasket and secure with the quick release clamp (CG-141-T-11 or CG-141-T-12).
6. Place the PTFE support disc inside of the absorption column so it lays flat at the bottom.
7. Secure absorption column to stand just below the top flange with support clamp.
8. Carefully pour packing rashing rings into the absorption column until filled to desired level in column.
9. Place PTFE envelope gasket on top of the absorption column.
10. Next, place gas outlet column on top of the PTFE envelope gasket, secure the gas outlet column to the absorption column with the supplied quick release clamp.
11. Place PTFE envelope gasket on top of the gas outlet column and place top shower adapter on top securing with quick release clamp. (Port should be facing right when looking at column).
12. Attach the graham condenser to the right side of the reactor stand using the supplied 3-prong extension clamps. (Clamps should be secured between the 2 main supporting rings).
13. Secure liquid diaphragm pump to the right side of the stand below the condenser.
14. Attach compression fittings to all ground joint connections on shower head, bottom drain of lower reservoir, top and bottom of condenser.
15. Cut tubing to length so it does not kink or bend at a very sharp angle (sharp angles will create stress on the glass connections).
16. Attach tubing to compression fittings on glassware and diaphragm pump (see diagram). Tubing should be cut so that the ends are as square as possible and compression fittings should only be hand tightened.

Flow Diagram



Chemglass Gas Scrubbers

3L and 20L Models - Contact us about the 50L version

Laboratory scale gas scrubbers for many air and exhaust cleanup tasks.

Gas scrubbing takes place when the exhaust enters the inlet in the round bottom flask and travels upward through the absorption column. The scrubbing fluid is pumped from the round bottom flask upwards into the shower head adapter and then flows counter-current to the exhaust gas through the packed column thereby causing intensive contact between the two. Scrubber can be used by creating either a positive flow through the reaction vessel using a carrier such as nitrogen, or by connection of a vacuum source to the column adapter.

3 Liter Scrubbers can handle 15 liters per minute of gas flow when pump is set at maximum. 20 Liter Scrubbers can handle 25 liters per minute with the supplied pump, CG-1171-50.

Complete scrubber with lower reservoir, absorption column, glass-filled TFE packing support disc, glass raschig rings column packing, top shower head adapter, PTFE diaphragm liquid transfer pump, 3ea quick release column clamps, 3ea envelope style gaskets, fluid cooling condenser, gas inlet adapter, PTFE tubing and 5ea PFA compression fittings.

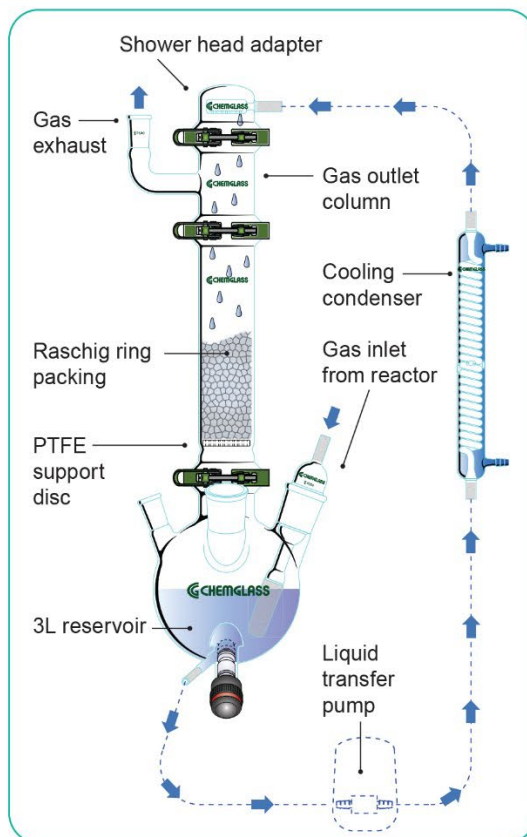
3L Gas Scrubber - Stand sold separately.

Part No.	Description
CG-1830-10	3L Gas Scrubber, Complete (Stand Sold Separately)
CG-1949-100	Benchtop Support Stand for 3L Gas Scrubber (See page 3.)
CG-1951-100	Mobile Support Stand for 3L Gas Scrubber (See page 4.)

20L Gas Scrubber - Stand sold separately.

Part No.	Description
CG-1830-50	20L Gas Scrubber, Complete (Stand Sold Separately)
CG-1830-60	Mobile Support Stand for 20L Gas Scrubber, for Walk-in Hoods (See page 4.)

* Not subject to discount.



The compact 3 liter fits most laboratory hoods. It can also be used in walk-in hoods with the CG-1951-100 mobile or CG-1950-100 benchtop reactor stands.



www.cglifesciences.com
 customer-service@cglifesciences.com
 T 1.800.843.1794
 F 1.800.922.4361



CG-1830-16



CG-1830-13



CG-1830-15



CG-1830-30



CG-1830-12



Top View



Shower Head Adapters

Adapter attaches to the top of the exhaust gas outlet column and has an all glass shower head to disperse the scrubbing fluid down into the absorption column. Inlet connection is 1/2" Swagelok® tubing for use with CG-1975-20 compression fitting.

Part No.	Description	Scrubber (L)	Flange (mm)
CG-1830-16	Shower Head Adapter	3	60
CG-1830-55	Shower Head Adapter	20	100

Absorption Columns

Heavy wall columns having Duran® flanges on both ends. Indents to hold a glass-filled PTFE packing support near bottom of column. Packing support sold separately.

Part No.	Description
CG-1830-13	Column for 3L Gas Scrubber, 60mm, 12" OAL
CG-1830-52	Column for 20L Gas Scrubber, 100mm, 15" OAL
CG-1830-14	Glass-Filled PTFE Packing Support for 3L Scrubber
CG-1830-53	PTFE Packing Support for 20L Scrubber

Exhaust Gas Outlet Columns

Heavy wall column, 4.5" long having a sidearm with a 24/40 outer joint. The 24/40 outer joint can be used with an adapter for connection to a vacuum source.

Part No.	Description	Scrubber (L)	Flange (mm)
CG-1830-15	Exhaust Gas Outlet	3	60
CG-1830-54	Exhaust Gas Outlet	20	100

Graham Condensers

Condenser for use in cooling of the scrubbing fluid. Graham coil-type condenser having 1/2" Swagelok® tubing for use with CG-1975-20 compression fitting. Overall length is ~350mm with an effective length of 250mm. Hose connections have a 9mm OD small serration and a 10mm OD large serration.

Part No.	Description	Scrubber (L)
CG-1830-30	Graham Condenser	3
CG-1830-57	Graham Condenser	20

Lower Reservoirs

Heavy wall, round bottom flask lower reservoirs for gas scrubbers. Flasks have Duran® Flange center neck. Drain valve is a 0-14mm with perfluoro o-rings. Valve is offset from the bottom of the flask to permit solids to settle and not clog valve or damage the fluid pump head. Connection on the outlet of the valve is 1/2" Swagelok® glass tubing for use with CG-1975 compression fitting.

Part No.	Reservoir Capacity (L)	Center Flange (mm)	— Side Necks —	
			24/40	45/50
CG-1830-12	3	60	2	2
CG-1830-51	20	100	—	2

Gas Inlet and Gas Scrubber Adapters

Gas inlet adapters with 45/50 inner joints, are used for connection of the gas source to the lower reservoir. Inlet connection is 1/2" Swagelok® tubing for use with CG-1975-20 compression fittings. Adapters are available in 3 styles.

Style "A": Adapter has a large 25mm x 70mm Extra Coarse Fritted section that will disperse the gas sub-surface into the scrubbing fluid. This adapter is the best for hard to scrub gases.

Style "B": Adapter has an extension tube without the fritted section to insert the gas into the scrubbing fluid sub-surface. **Please Note:** This style adapter is supplied with the complete scrubber.

Style "C": Adapter permits the gas to enter the flask above the sub-surface of the scrubbing fluid. When using this adapter, all of the gas to liquid interaction takes place in the column.

Part No.	Description	Scrubber (L)	Joint Size
CG-1830-18	Style "A"	3	45/50
CG-1830-19	Style "B"	3	45/50
CG-1830-20	Style "C"	3	45/50
CG-1830-56	Style "A"	20	45/50



Style "A" Style "B" Style "C"

3L Benchtop Support Stand, Single Setup

- 3/4" S.S. Pipe (1.050" OD) Uprights and Heavy Duty PTFE-coated Aluminum Fittings Provide Maximum Strength and Chemical Durability
- All S.S. Uprights are Passivated to Inhibit Corrosion
- Middle Support Bracket is Vertically Adjustable and Supplied with Heavy Duty Clamps
- Top Support Bracket is Vertically Adjustable and Provides for Attachment of an Overhead Stirrer. Mounting Clamps Accept a MAXIMUM Support Arm of 5/8" Diameter
- Unique Design Allows Easy Installation / Removal of Glassware
- Compact Footprint: 14"W x 15"D x 40"H

This benchtop support stand is constructed of stainless steel and PTFE-coated aluminum parts and features a reduced width of 14 inches. Stand can hold a single reactor, flask, or gas scrubber apparatus. The stand provides support for the reaction vessel / flask, glassware, overhead stirring motor, temperature monitor and other accessories.

This stand is supplied with an additional adapter plate to support 300mL-1000mL reactors.

Part No.	Description
CG-1949-100	Benchtop Support Stand with Single Base Plate, Support Rods, Cork Rings, 250mL Adapter Plate and 300mL-1000mL Adapter Plate

* Not subject to discount.



CG-1949-100

Custom support stands available - contact us for details.

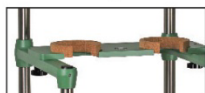




Two Support Plates Included



Single



Dual

This 3L stand is supplied with an additional adapter plate to support 300mL-1000mL reactors on the single setup support base.

CG-1951-100

Custom support stands available.

Contact us for details.



Overall Dimensions
19" W x 19" D x 66" H

CG-1830-60

3L Benchtop Support Stand, Mobile

- 3/4" S.S. Pipe (1.050" OD) Uprights and Heavy Duty PTFE-coated Aluminum Fittings Provide Maximum Strength and Chemical Durability
- All S.S. Uprights are Passivated to Inhibit Corrosion
- Adjustable S.S. Shelf / Tray
- Supports Reactors from 250mL to 5L: Single Setup is for Reactor Sizes 300mL to 5L; Dual Setup is for Reactor Sizes 250 to 1000mL
- Middle Support Bracket is Vertically Adjustable and includes Velcro Clamps for Reactors up to 1000mL and Heavy Duty Clamps for use with 2 through 5L Reactors
- Top Support Bracket is Vertically Adjustable and Provides for Attachment of a Single or Two Overhead Stirrers. Mounting Clamps Accept Overhead Stirrers with a MAXIMUM Support Arm of 5/8" Diameter
- Unique Design Allows Easy Installation and Removal of Glassware
- Single and Dual Reactor Support Plates have Built-In Bubble Levels
- Mobile: Large Swivel Casters with Locking Mechanisms
- 19" W x 19" D x 71.25" H

Similar to the CG-1950-100, but reactor stand is mobile and designed to fit into most walk-in hoods. Allows small scale reactors to be setup in walk-in hoods near existing heater/chillers. Stand can hold a single reactor or two reactors side by side. The stand provides support for the reaction vessel(s), glassware, overhead stirring motor and temperature monitor.

Part No.	Description
CG-1951-100	Benchtop Mobile Support Stand with Single and Dual Base Plates, Support Rods, Cork Rings, 250mL Adapter Plate and 300mL-1000mL Adapter Plate

20L Support Stand, Mobile

Mobile support stand for 20L gas scrubbers for use in walk-in hoods only. Requires two each of clamps CG-9205-06 and CG-9253-10 for Gas Scrubber System.

Part No.	Description
CG-1830-60	Mobile Support Stand, 20L, Walk-in Hood

Miscellaneous Components for Gas Scrubbers

Part No.	Description
CG-141-T-11	Quick-Release Clamp, 60mm, PTFE-Coated
CG-141-T-12	Quick-Release Clamp, 100mm, PTFE-Coated
CG-147-G-01	Envelope-Style Gasket, 60mm
CG-147-G-03	Envelope-Style Gasket, 100mm
CG-1283-03	Raschig Rings, 8 x 8mm, Distilling Column, 1 lb.
CG-1975-20	Compression Fitting, PFA, 1/4" to 1/2"
CG-1975-21	Compression Fitting, PFA, 1/2" to 1/2"
CG-1975-01	Tubing, Heavy-Duty, FEP, 1/4" OD x 1/8" ID x 10ft Long
CG-1975-03	Tubing, Heavy-Duty, FEP, 1/2" OD x 3/8" ID x 10ft Long
CG-1171-20	PTFE Diaphragm Liquid Transfer Pump, Adjustable up to 3L / Min
CG-1171-50	Diaphragm Liquid Metering Pump, Constant Speed 6L / Min

* Not subject to discount.

