

CHEMGLASS LIFE SCIENCES

USER'S MANUAL

for

Spinner Flasks

Description

The Chemglass Life Sciences spinner systems are designed for long life, high efficiency and low maintenance. Spinners are the ideal environment for culturing a wide variety of cell cultures such as insect cells, hybridomas and many other suspension adapted cells.

There are eleven vessels sizes in flat or dimpled bottoms, and baffled side walls. Flat bottom vessels are available in all sizes, dimpled bottom in 100 ml to 8 L, and dimpled baffled vessels in 100 ml to 3 L sizes. Vessel volumes stated are working volumes. The dimple is located in the center of the vessel bottom to eliminate the “dead zone” and improve mixing. All vessels incorporate an industry standard center screw port. The 25 ml use a 38 size, 50 ml a 51, 100 to 500 ml a 70, and 1 to 36 L use a standard 100 size center port. There are two vessel side ports in inch vessel size. The 25 and 50 ml vessels use 18 size ports, 10 and 250 ml use 32, and 500 ml to 36L use 100 size ports.

The paddle assemblies include wide tapered paddle (no paddle for 25 and 50 ml sizes), ideal for mixing with low mechanical shear stress for cells while ensuring optimal oxygen transfer. The internal bearing surfaces consist of the static glass shaft and PTFE magnet holder, resulting in smooth trouble free rotation.

Features

- Three vessel styles: flat or dimple bottom and baffled side walls
- Heavy wall center port and side arms
- Eleven vessel volumes for 25 ml to 36 L
- Standard 1:1 HD vessel geometries for optimal cell growth
- Tapered paddle design for optional mixing
- Standard or fully internal agitation
- FDA approved materials
- Unique agitation design ensures sterility

Material Specifications

Spinners flasks are constructed of high quality components with the following specifications:

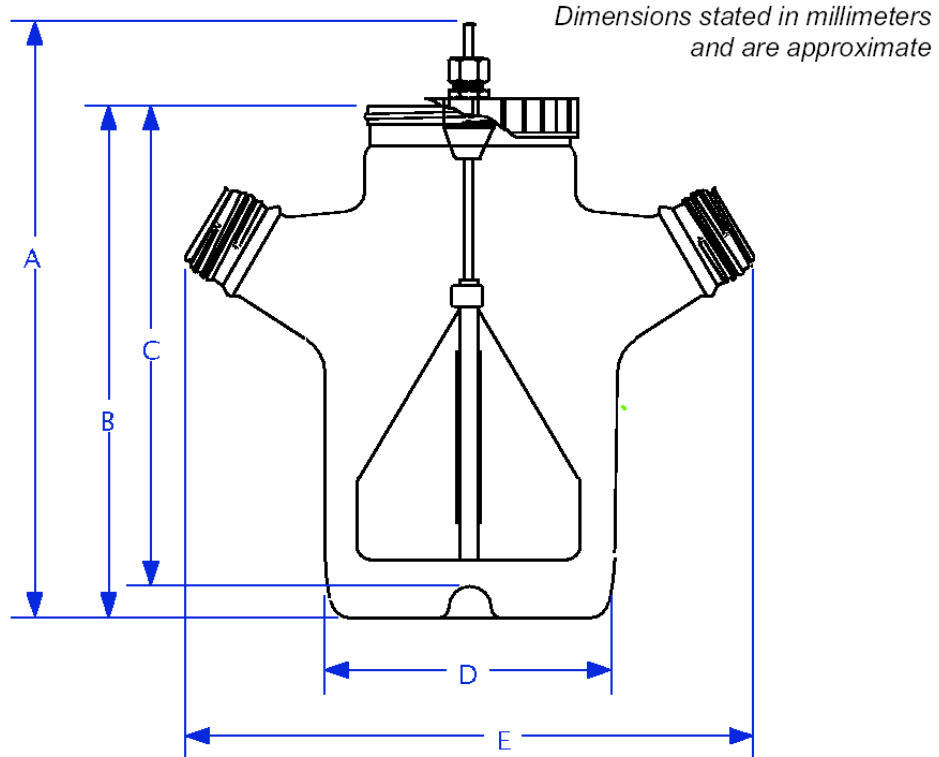
<i>Vessels:</i>	Borosilicate glass,
<i>Shafts:</i>	Borosilicate glass, 7 or 9 mm diameters
<i>Magnets:</i>	PTFE encapsulated
<i>Paddle:</i>	PTFE

<i>Cap:</i>	Polypropylene
<i>Maximum temperature:</i>	200° F (93°C)
<i>Maximum pressure:</i>	10 psig
<i>Material certifications:</i>	21 CFR 177.1550 21 CFR 177.2600 TSE\BSE Declarations ASTM E-438, USP Type I, Class A glass


Material certificates are available upon request.

General Dimensions

Vessel	Std.	A Internal	B	C	D	E
25 ml	185	NA	120	NA	38	105
50 ml	175	NA	110	NA	57	137
100 ml	197	137	132	121	70	160
250 ml	205	145	140	130	89	181
500 ml	240	180	175	155	110	203
1 L	305	245	240	223	140	274
3 L	355	295	290	270	165	285
6 L	475	415	410	387	204	268
8 L	485	430	425	402	238	288
15	525	465	460	NA	290	354
36 L	600	540	535	NA	410	439



Manual Symbols

 The warning symbol indicates attention to an operation that could cause injury, equipment or process damage.

Operating and Assembly instructions

The cap and paddle assemblies are shipped partially assembled. If these items are not pre-assembled or if you need to reassemble these items, follow the diagrams and steps below.

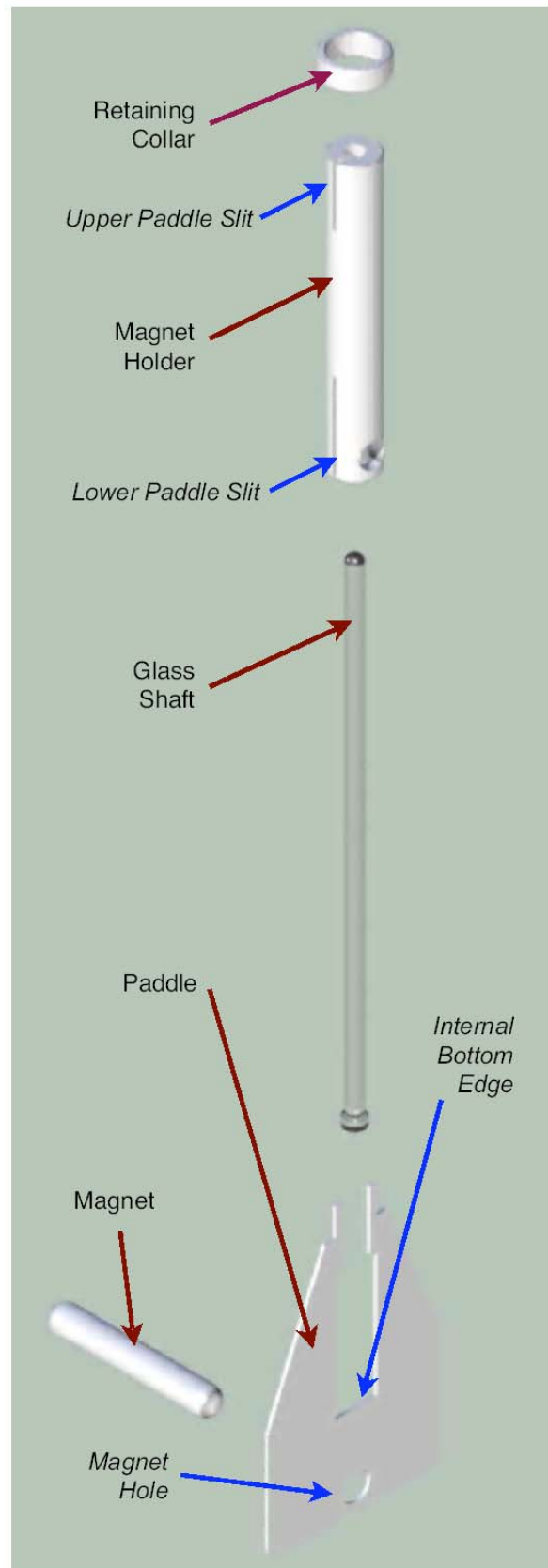
Paddle Assembly

The paddle assemblies for the standard and internal are configured in the same manner. Except for the glass shafts, they are identical.

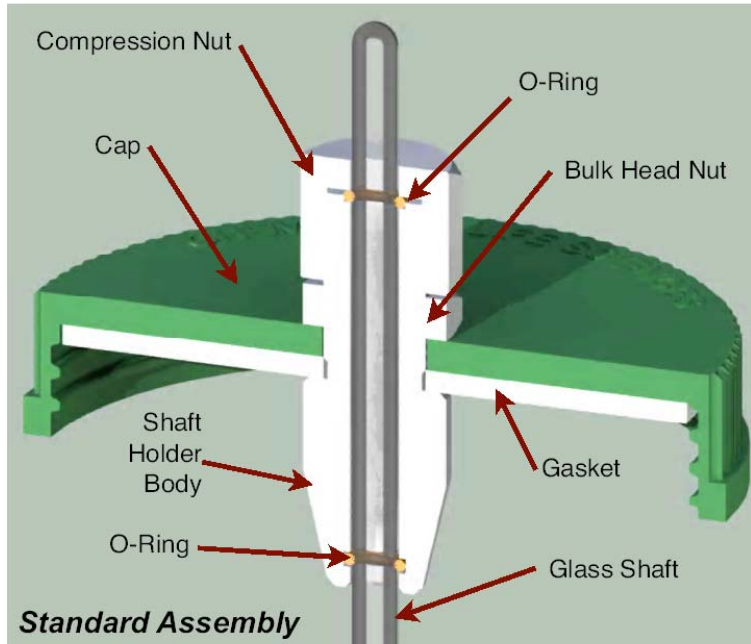
- Grasp the magnet holder and insert the glass shaft through the bottom so it clears the lower paddle slit. It can only be inserted in one way, so the bottom bearing flange stops internally in the magnet holder.
- Insert the paddle internal bottom edge into the lower paddle slit. Pull paddle until it stops, and the magnet holes are aligned. The 25 and 50 ml vessels do not have paddles. Gently fit the top two paddle “ears” into the upper paddle slit.
- Insert the bar magnet into the magnet hole. Adjust the magnet so its center is roughly in line with the shaft.
- Slide the retaining collar over the glass shaft and on to the magnet holder.

Standard Cap Assembly

- Locate the shaft holder and insert the O-ring into the internal O-ring groove.
- Place the white silicone gasket in the inside of the center screw cap.



- Insert the threaded portion of the shaft body holder from the underside of the cap, through the center screw cap.
- Secure the shaft holder body by threading on the bulkhead nut on the top of the cap. Hand tighten; over tightening may gaul the PTFE threads.
- Locate the paddle assembly. Insert the shaft, of the paddle assembly, through the underside of the shaft holder. The shaft will be snug against the internal O-Ring. By gently twisting the shaft while inserting can help. Water or a non-toxic FDA approved lubricant can also be used.

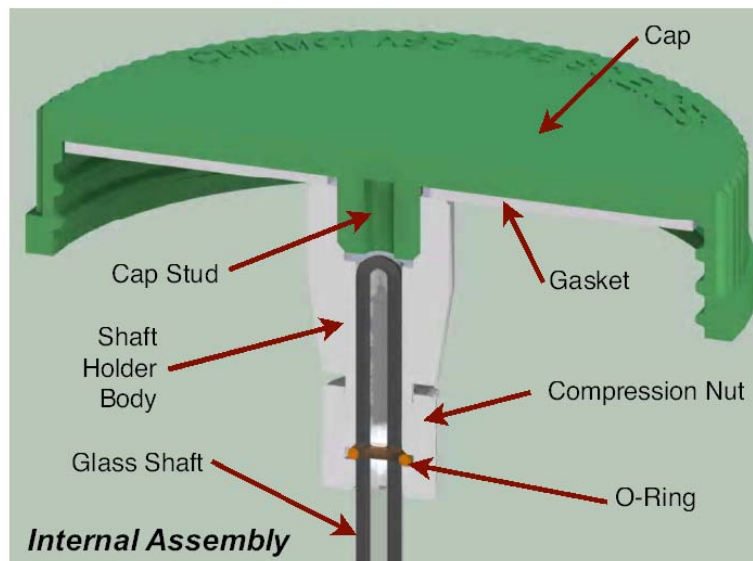


- Push the shaft through the bottom of the holder until it extends about one to two inches above the top of the holder.
- Insert the top O-Ring over the shaft. The O-Ring will stretch over the rounded end of the shaft. Slip the O-Ring down the shaft until it meets the top of the holder.
- Loosely hand tighten the compression nut on the shaft holder.
- Inset the complete assembly in to the vessel and tighten the center screw cap.
- Adjust the paddle to the desired height by moving the protruding portion of the glass shaft up or down.
- Lock the position of the paddle and shaft by tightening the compression nut.

Internal Cap Assembly

- Place the white silicone gasket in the inside of the center screw cap.
- Thread the shaft holder on to the cap stud.

- Locate the paddle assembly and compression nut. Insert the end of the glass shaft in the compression nut hole making sure the “flat” portion of the goes on first (the other end is the threaded portion).
- Insert the top O-Ring over the shaft. The O-Ring will stretch over the rounded end of the shaft. Pull the O-Ring down the shaft about one inch.



- Insert the shaft and paddle assembly through the bottom of the holder until it stops at the cap stud. The O-Ring will lay against the shaft holder.
- Hand tighten the compression nut on the shaft holder until the paddle assembly is secured.
- Inset the complete assembly in to the vessel and tighten the center screw cap.

Note

The paddle height can be adjusted by losing the compression and moving the shaft in and out of the shaft holder. There is limited “travel” with internal assembly.

The approximate paddle clearance is about 1/4” to 1/2” for the bottom of the vessel.

Cleaning Glass

- Use a commercial cleanser approved for glass.
- Rinse all glassware as soon as possible after use.
- To decontaminate ware, autoclave contaminated items in water containing cleanser
- Disassemble spinner assemblies, compression fittings and paddle assemblies for cleaning and to avoid the trapping of disinfectants and cleansers. Failure to do so may result in release of these compounds during use with possible detrimental effects to cultures or assays.
- Thoroughly rinse items in tap water then distilled or deionized water. Even the smallest amounts of cleansers, disinfectants or acids can affect the final performance of the products. Rigorously follow your rinsing protocol.

Do not use glassware that is scratched, chipped or cracked for centrifugation, pressure, vacuum, heating or freezing. Breakage may result.

Siliconizing

It is recommended that the vessel be siliconized prior to use with microcarriers. This process minimizes the tendency for the microcarriers to adhere to the inner wall of the glass flask. The best siliconizing fluids are those based on dimethyldichlorosilane in an organic solvent. A small volume of siliconizing fluid is added to a thoroughly cleaned vessel and used to wet all surfaces which may come into contact with the microcarriers. Excess fluid is drained from the vessel which is then allowed to air dry. After drying, wash the vessel thoroughly with distilled water and sterilize by autoclaving. One siliconizing treatment is sufficient for many experiments.

Some suitable siliconizing fluids are listed below:

Sigmacote from Sigma Chemical


Repelcote from Hopkins and Williams

Dimethyldichlorosilane from BDH

Prosil-2B from PCR Research Chemicals

Sterilizing

To prevent warping of the top cap and magnet holder, it is recommended that the flask be autoclaved in the standing position only. In large vessels, place a few ml of distilled water in the flask to generate additional steam in the vessel. Place approx. 20 ml of water (or PBS buffer) for each 10 liter of flask volume and autoclave @ 121°C for 15 to 30 minutes.

 Make sure that the vessel is vented so that pressure or vacuum will not build up and cause vessel to explode or implode.

Service

Paddle does not rotate on the magnetic stirrer

Unscrew the center cap and rotate the magnet holder. If the paddle rotates freely then the problem is with the magnetic stirrer. If the paddle is locked it may need to be disassembled and cleaned or the holder and shaft will need to be replaced.

Paddle seems to pause and then start rotating on the magnetic stirrer

The magnetic force between the paddle magnet and stirrer is not strong enough to rotate at the desired speed for the paddle size and culture viscosity. A slower speed or stronger magnetic stirrer are solutions.

Paddle seems to skip or jump while rotating on the magnetic stirrer

The bearing surface between the glass shaft and magnet holder may be worn or impacted with material. Test out of the vessel for rotation. Clean or replace magnet holder.

Please consult Chemglass Life Sciences for all service requirements and needs.

Chemglass Life Sciences Warranty and Limitation of Liability

Guarantee

Chemglass Life Sciences, herein know as “CGLS”, warrants the equipment to be free from all defects and guarantees acceptable performance assuming the equipment has been installed in accordance with the instructions provided by CGLS, and has been used for the specific design purpose, and has been maintained according to the maintenance instructions accompanying the equipment or other CGLS published documents. The warranty period runs for one full year after start-up of the equipment, or fourteen months after shipment, which ever comes first.

Return Authorization

CGLS must authorize any return of material. The purchaser is responsible for all packaging and shipping to CGLS. If the equipment or material came in contact or was proximate to any biological organism, toxic or corrosive material, or any agent reasonably deemed to be potentially harmful, it must be cleaned and decontaminated prior to receipt by CGLS. The purchaser is obligated to disclose fully in writing, the cleaning and decontamination method. We reserve the right not to accept any unauthorized or potentially harmful shipment.

Correspondence

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