CUSTOM DEWAR DESIGN & FABRICATION

How to Design Cryogenic Containers That Fit Your Exact Specifications

U0718

Common Questions

The custom cryogenic fabrication process begins by identifying the exact requirements of the equipment and considering optional additions. There are a number of common questions asked when we receive a request from customers. These questions are to get a better idea of what kinds of specifications the dewar flask is going to need to meet, based on your individual needs. The following are questions we might ask depending on the type of container being designed.

Custom Dewar Flasks

- How is this container going to be used?
- What liquid gas service will this be used for?
- Dimensional requirements? Inside opening? Depth?
- Are there pressure requirements?
- Do you require a flanged top termination?
- Is this incorporated into a product to be sold?
- What performance do you need from the dewar to meet the requirements of your application?

Base standard product line: CF Series. For specs see our website https://www.cryofab.com/products/Cryogenic-Dewar-Flasks

Custom Liquid Nitrogen Dewar

- How is this container going to be used?
- What liquid gas service will this be used for?
- What are the pressure requirements?
- Do you require gas service? Or do you only require this dewar for liquid?
- Is this incorporated into a product to be sold? Or is it just for use in your laboratory?
- What performance do you need from the dewar to meet the requirements of your application?

Base standard product line: CL/CLPB Series. For specs see our website https://www.cryofab.com/products/cl_clpb_series

Custom Liquid Helium Dewar

- How is this container going to be used—Is it primarily for transport/ storage, liquefaction, or as an experimental dewar?
- If experimental, do you require a larger neck than the standard 1.5" O.D.?
- Are there any dimensional restraints?
- Are there pressure requirements above 10 PSI?
- What country will the dewar operate in?
- Will this be used for transportation by air?
- Is this incorporated into a product to be sold?
- What performance do you need from the dewar to meet the requirements of your application?
- Base or caster mounted? Outboard casters?
- Outboard bracket casters and pull handle?
- For Vessels above 250 liters are fork lift provisions required?
- For dewars used with cryocoolers and inserts would you like an auxiliary side neck so that your device can remain installed?

Base standard product line: CMSH Series. For specs see our website https://www.cryofab.com/products/cmsh_series

Here are some samples of custom dewars. See the next page for more add-ons to consider.

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CUSTOM DEWAR DESIGN & FABRICATION

Optional Add-Ons For a Custom Dewar

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Custom Dewar Flasks

Optional Add-ons

- Built-In Fill Lines
- Built-In Level Sensor Lines
- Cover Plates
- Bottom Drains
- Caster Mounting
- Handles
- Lifting Lugs
- Viewports
- Side Inlet/Outlets
- Autofill Systems
- Level Controllers

Custom Liquid Nitrogen Dewar

Optional Add-ons

- CFUL-4 (4' Cryogenic Fill/Withdrawal Transfer Hose, Armor Casing)
- CFUL-6 (6' Cryogenic Fill/Withdrawal Transfer Hose, Armor Casing)
- 1" O.D. Phase Separator W/Hose Adapter
- Locking Casters
- Outboard Caster Configuration
- Vertical 1/2" Withdrawal Port
- Gravity Feed Top Port (allows access to inner reservoir through top)
- Dedicated Solenoid Outlet, 1/4" NPT
- Removable Manifold
- Additional Segregated Fill/ Withdrawal Valve
- Side Neck Access (So center neck can be utilized for an experiment)

Custom Liquid Helium Dewar

Optional Add-ons

- Differential Pressure Liquid Level Gauges
- Super Conducting Liquid Level Systems
- Flow Meters
- Absolute Relief Valve For Air Transport
- Larger Neck Openings
- Auxiliary Side Neck
- Outboard Caster Configuration
- Locking Casters (Pedal Lock)

Why Custom Design and Fabrication with Cryofab?

There are two issues that most people see as a draw back to cryogenic design.

1. "It will cost too much"

Historically, our pricing has been more than reasonable. Cryofab works with our customers to fabricate a budget-conscious price structure without compromising the end result integrity.

2. "Delivery will be too long"

Most products can be developed by using a wide variety of materials on hand. Normal deliveries for nonstandard fabrications can be as short as 8 weeks.

It is not possible to put into print the different types of products that Cryofab has fabricated over the past 30 years. The statement "a picture is worth a thousand words" especially holds true for this aspect of our fabricating capabilities. Please review some cryogenic design work on our web page, https://www.cryofab.com/cryogenic-design then give us a call. Together we can formulate a plan to meet your exact requirements.

Cryofab Experience

Since 1971, Cryofab has been manufacturing "state of the art" cryogenic equipment including vacuum insulated vessels and piping. Experts in the design and fabrication of equipment for the ultimate cold fluid, liquid helium, Cryofab has the ability to custom manufacture high-quality vacuum insulated cryogenic piping systems including bayonets, elbows, tees, crosses, valves and flexible hoses.

Boundaries have yet to be set for cryogenic applications. Areas where our equipment and talents have been applied are:

- Industrial
- Laboratory
- Medical
- Homecare
- Biotechnology
- Semiconductor
- Superconductivity
- Pharmaceutical

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