



# Operating Instructions for CH Series Self-Pressurizing Dewars

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## Introduction

The container consists of an inner stainless steel cylinder securely supported in an outer jacket shell. The space between the inner and outer vessels contains a highly efficient insulation material and is evacuated.

## Safety Devices

A relief valve and a rupture disc protect the inner liquid reservoir, both located on the manifold.

A combination evacuation valve and relief device is provided to service the vacuum space. This protects the container in the event of a leak in the inner reservoir. If this device vents, contact Cryofab; do not attempt to use the container or re-evacuate the insulation space.

## Gauges

A pressure gauge is provided indicating inner vessel pressure and a liquid level gauge is provided to indicate approximate container contents.

## Pressure Building System

This container is equipped with an integral pressure-building system to aid in liquid withdrawal. The pressure-building system consists of the pressure-building coil, the pressure-building valve and the pressure-building regulator all connected in series.

The pressure-building regulator maintains a preset vessel pressure during liquid withdrawal as long as a sufficient liquid supply is in the container and the pressure-building valve is open. If a different pressure setting is required, the pressure-building regulator can be adjusted. To lower the setting, turn the adjusting screw counterclockwise to increase the setting turn clockwise.

**NOTE:** When the pressure building system is operating frost will appear near the bottom of the container

## Filling

These containers can be filled from a pressurized liquid source using the following

procedure: Connect the liquid source to the fill/withdrawal valve (labeled liquid) using a suitable transfer line. Open the vent valve (labeled vent) and the fill/withdrawal valve. To begin the transfer open the liquid source valve. Keep the container pressure below the relief valve setting during filling. Throttle the flow from the liquid source if necessary.

## **WARNING**

A cold stream of gas and/or liquid will exit from the vent valve. Keep clear of exiting stream.

When the container is filled to maximum capacity, liquid will start to exit from the vent valve. At that point shut the fill/withdrawal and vent valves.

## **Withdrawal**

Transferring liquid from the container is accomplished by the following procedure: Be sure the vent valve is closed and check the pressure gauge to see that the vessel pressure is adequate for the intended application. If additional pressurization is required, open the pressure-building valve to operate the integral pressure-building coil. With the pressure-building system functioning, the preset pressure will be maintained throughout the withdrawal as long as a sufficient liquid supply is present.

Attach a suitable transfer line to the fill/withdrawal valve. Open the fill/withdrawal valve as far as necessary to obtain the desired flow rate. When the transfer is complete, close the fill/withdrawal valve and disconnect the transfer line. The pressure-building valve may be left open, if desired. This may, to a limited extent, determine the operating pressure of the vessel until the liquid is saturated.

## **Changing Service**

Although these containers can be supplied from the factory for LN<sub>2</sub>, LARG, or LOX service, do not attempt to change the service for which the container was originally supplied without consulting the factory.

**1.800.426.2186**

Call for information about repair and refurbishing services. Visit [parts.cryofab.com](https://parts.cryofab.com) for replacement parts.

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