



Operating Instructions for CLD Series Liquid Distribution Systems

[return to manual index](#) | [repair services](#)

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. The container has four (4) valves: A liquid valve (V-1), a full trycock valve (V-2), a pressure building valve (V-3), and a vent valve (V-4). A pressure-building regulator (PVC-1) is located in series with the pressure-building valve.

Safety Devices

A safety relief valve and a rupture disc on the vent manifold protect the inner liquid reservoir.

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. A liquid level gauge is provided to indicate approximate container contents.

Handling

These containers are designed for use in the upright position and must never be laid on their side. If a container must be lifted use a forklift or similar device beneath the base, or hoist by means of the lifting lugs on the top head. Do not attempt to lift by means of slings around the shell.

Pressure-Building System

This container is equipped with an integral pressure-building system to aid in liquid withdrawal as long as a sufficient liquid supply is in the container and the pressure-building valve 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.

Filling

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

procedure. Attach the extension to the full trycock valve (V-2, located top center) and orient it so that the discharge is directed away from personnel and out of van compartment. Connect the liquid source to the fill/withdrawal valve, (V-1, labeled liquid) using a suitable transfer line. Open the full trycock valve and the fill/withdrawal valve. To begin the transfer open the liquid source valve.

WARNING

A cold stream of gas and or liquid will exit from the full trycock extension. Keep clear of exiting stream.

When the container is filled to maximum capacity, liquid will start to exit from the full trycock; at that point, shut off the liquid source valve. (Consult DOT regulations or your local liquid supplier for the maximum allowable liquid load consistent with your working pressure). Disconnect the transfer line and the full trycock extension (if necessary). Shut off the fill/withdrawal valve and the full trycock valve.

Withdrawal

Transferring liquid from the container is accomplished by the following procedure: Be sure the vent valve (V-4, located on the vent manifold) 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 (V-3) to operate the integral pressure-building coil (PBC-1). With the pressure building system functioning, the preset pressure will be maintained throughout the withdrawal, as long as sufficient liquid supply is present.

Attach a suitable transfer line to the fill/withdrawal valve (V-1). 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.

WARNING

Do not operate this vessel in a closed compartment or confined area unless the vent stack is ducted to the outside. Do not open the fill/withdrawal or the full trycock valve if in a confined area.

Changing Service

CLD series are suitable for carrying liquid oxygen, nitrogen or argon, however, changing from inert service to oxygen service is not recommended.

CAUTION

Before operating this vessel, please read thoroughly, "[PRECAUTIONS FOR THE SAFE HANDLING AND STORAGE OF LIQUEFIED GASES](#)", included with these instructions, for additional precautions and good practice regarding cryogenics.

1.800.426.2186

Call for information about repair and refurbishing services. Visit parts.cryofab.com for replacement parts.

Cryofab | [sales\(at\)cryofab.com](mailto:sales@cryofab.com)

phone: 800.426.2186 | 908.686.3636

fax: 908.686.9538

540 North Michigan Avenue,

PO Box 485

Kenilworth, NJ, USA 07033