Service Bulletin

PN 21500382 A

RELEASE DATE: December 18, 2024

MODEL: CAIRE Liquid Oxygen Models: Liberator™ Reservoir

ISSUE: Proper Handling Liberator

NOTES: CAIRE would like to remind our valued customers on the proper handling of the Liberator Reservoirs. CAIRE Liberators should always be stored, transported and operated in an upright position. CAIRE has specially designed roller bases (part number 10855678) for moving Liberators short distances over smooth surfaces and hand trucks can be used for rougher surfaces. Liberators should not be leaned on their edge and rolled as this can cause damage to the neck support and insulation systems and void the warranty.

Please contact your local Sales Representative or our Customer Service, or Technical Service teams for assistance with any inquiries or concerns.

CONTACT: For technical questions, contact Technical Service:

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PN 21500362 A

RELEASE DATE: December 15, 2024

MODEL: CAIRE Liberator all models

ISSUE: Filling Process

NOTES: CAIRE® would like to remind our valued customers of the correct procedure to follow when filling a Liberator Liquid Oxygen Unit.
This instruction affects all Liberator models currently in service.

When filling the Liberator it is recommended to monitor and regulate the pressure by attaching a pressure testing assembly, PN B-701732-00 (or equivalent) to the flow control valve (FCV) using the FCV extension. The FCV extension elbow supplied with all Liberators **should not** be fitted during the fill process. This elbow is only required when the unit is used in conjunction with a Humidifier Bottle during oxygen delivery to the patient.

Figure 1 – Pressure testing Assembly

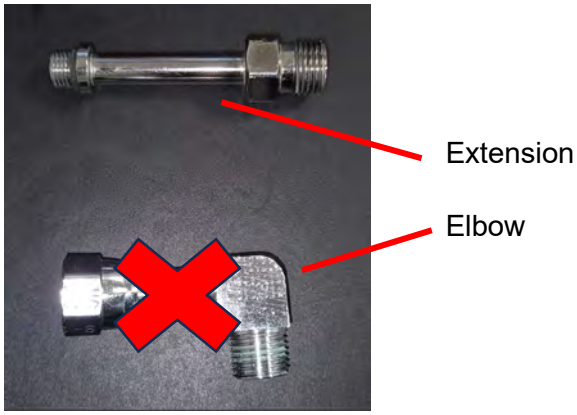

Figure 2 – FCV Extension and Elbow

The filling process should be carried out as follows –

1. Ensure that the person carrying out the fill process is using the correct Personal Protective Equipment (PPE) consisting of the following – See figure 3 below.
   a. Face Shield
   b. Heavy Insulated Cryogenic Gloves
   c. Long sleeve shirt
   d. Long Pants
   e. Safety shoes/boots

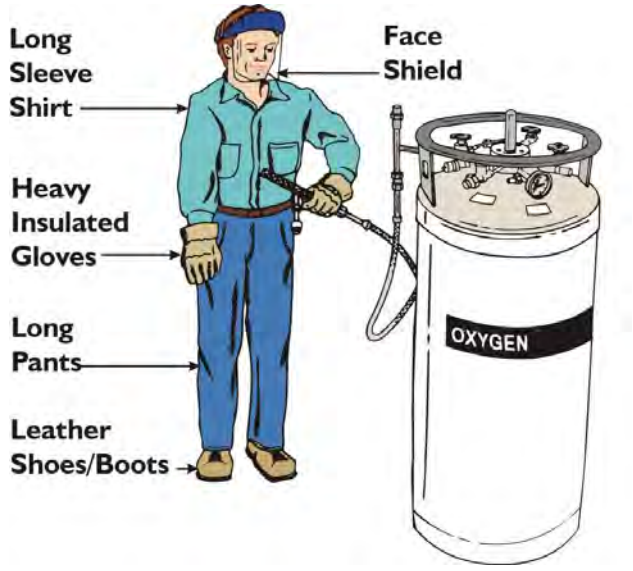

Figure 3 – PPE Required (minimum)

2. Attach a fill adaptor and transfer hose to the source tank. Figure 4.

Figure 4 – Fill adaptor and transfer hose

Note: The source tank should have an operating pressure between 35-50 psi (2.4-3.5 bar)

3. Purge the transfer hose by depressing or engaging the poppet until liquid oxygen is dispensed. Figure 5.

Figure 5 – purging transfer hose.

4. Wipe the QDVs on the fill adaptor and reservoir dry using a lint-free cloth and swab stick.(supplied with QDV Cleaning kit PN 21484987.) Figures 5 - 7

Figure 5. QDV Cleaning kit PN 21484987

Figure 6 – Wiping male QDV – ensure to remove all moisture/ice

Figure 7 – Wiping of fill connectors depending on QDV Fitted.

Note: This step must be carried out prior to each fill.

5. Attach the FCV extension to the FCV and the pressure test assembly to the FCV extension. Open the FCV to a setting of 2.0 LPM or higher. Figure 8.

Figure 8 – FCV extension fitted to FCV and pressure gauge to FCV extension.
Note: FCV elbow is not to be fitted to the FCV extension.

6. Open the Reservoir vent valve using the vent wrench. Figure 9.

Figure 9 – Vent valve wrench fitted

7. Connect the fill adaptor to the QDV on the reservoir. Press down firmly so the QDVs lock into place. Figure 10.

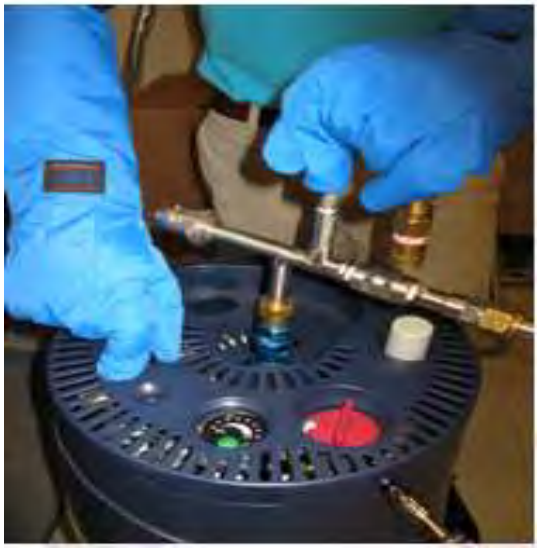

Figure 10 – fill adaptor fitted to QDV

8. Monitor the pressure in the reservoir at all times during the fill and throttle (open/close) the vent valve using the wrench to keep the pressure between 18-24 psi (1.24 – 1.65 bar) Figure 11.
9.

Figure 11

If the pressure is too high – open the vent valve slightly to reduce the pressure.
If the pressure is too low – close the vent valve slightly to raise the pressure.

10. When liquid oxygen begins to spray from the vent valve and the sound changes, the reservoir is full. Close the vent valve to stop the fill and disconnect the fill adaptor by pressing the pop off release button. Figure 12.

Figure 12 – Vent Valve wrench and pop off release button.

11. Disconnect the external pressure gauge from the FCV extension and close the FCV.

Note – Failure to follow the above instructions can cause the equipment to function incorrectly.

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PN 21500363 A

RELEASE DATE: December 15, 2024

MODEL: CAIRE Helios Base Units

ISSUE: ELG(Electronic Level Gauge) Tubing

NOTES: CAIRE® would like to advise customers on the procedure for repairing leaks on the HI/LO connections of the ELG – See Figure 1.

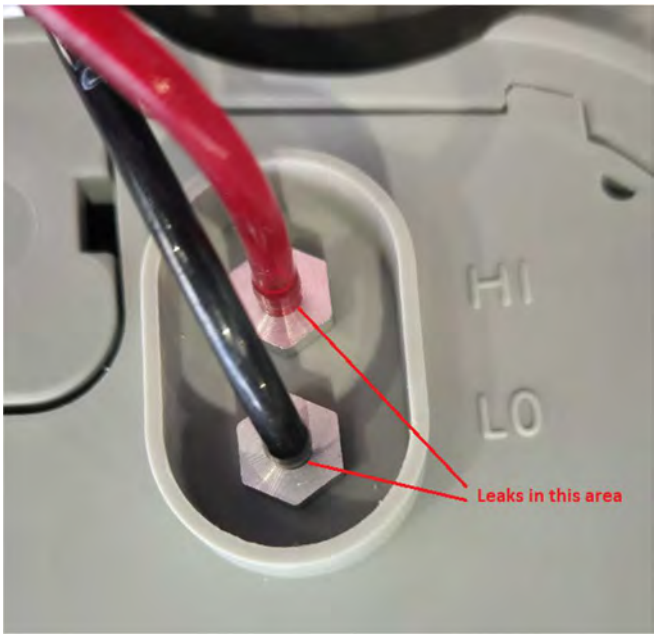

Figure 1 – Area where leaks may occur

If leaks are found in these areas then they should be repaired as follows –

1. Ensure that the equipment is fully empty and remove the tubes from the HI – LO connections.
   Warning – Failing to enure the equipment is empty before removing the tubing can allow Liquid oxygen to escape and cause severe cold burn injuries. Please reference HELiOS Reservoir Technical Manual (PN 14883289) for proper process for emptying reservoir.

2. Trim 3/8” (9mm) from the swollen ends of the tubing. Figure 2.

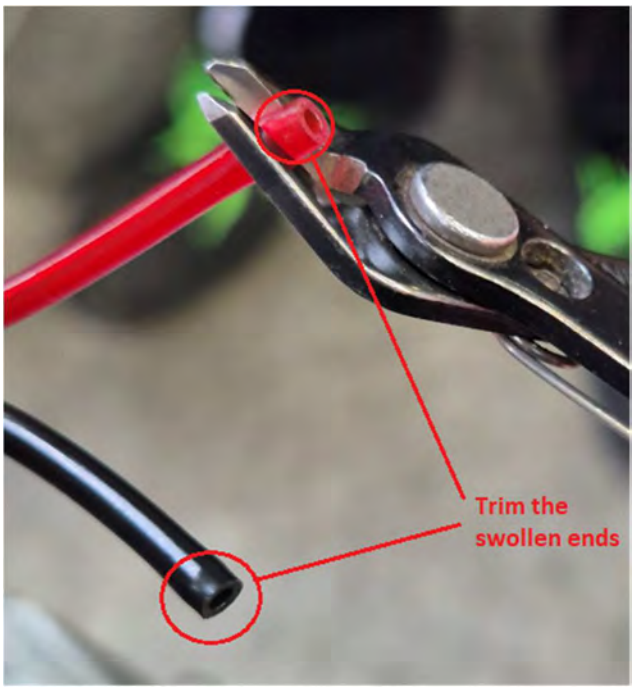

Figure 2 – Trim tubing 3/8” (9mm)

3. Fit brass clamps PN B-775794-00 to the tubing and reconnect the tubing – red tube to the HI connector and black to the LO connector. Figure 3.

Figure 3 – Brass Clamps fitted.

4. Seat the clamp over the barbed connections. Figure 4.

Figure 4 – Collars seat over barb.

5. Re-assemble the equipment and carry out a leak test as per the service manual.

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