2017

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Setting Standards Since 1960
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Helium Bomb Chamber

Operating Manual: HLT28GBC110

M/N: HLT-2.8G-BC (110 PSIG)

Contents

1. Safety Information

This bomb chamber shall be operated only by qualified personnel. All designated operators of this shall read and understand this manual before use.

ALWAYS ensure that the pressure in the chamber is at zero (0) and the pressure source is shut off before loosening the clamps and/or removing the lid.

This system shall be operated in stable indoor ambient conditions with adequate ventilation.

DO NOT pressurize the tank over 110 PSIG.

2. Description

Ambient Operating Conditions	For use indoors only
	Temperature Range
	Maximum Relative Humidity

2.1 Two (2) ball valves, for vacuum and pressure, have been included.
2.2 One (1) pressure relief valve, set to 110 PSIG, is also included.
2.3 One (1) pressure gauge is included and shall be used for reference only.

3. Installation

3.1 Placement

3.1.1 The unit must be situated on a stable surface.

3.1.2 Adequate ventilation must be provided. Additionally, a facility vent duct may be used when venting gas pressure from the chamber.

3.2 Conforming Use

3.2.1 This helium bomb chamber is intended for leak testing sealed units by allowing helium penetration.

3.2.2 The system must be operated in a stable indoor environment with adequate ventilation.

3.2.3 Only qualified personnel are permitted to operate and maintain this chamber.

3.2.4 DO NOT over pressurize the bomb chamber. Maximum working pressure is 110 PSIG.

4. Primary Operations, UUT Testing

4.1 Device Loading & Chamber Evacuation

4.1.1 Verify that the chamber pressure reads zero (0) psi on the included reference gauge.
4.1.2 Remove the lid and place the devices (UUTs) to be testing into the chamber.
4.1.3 Inspect the rubber gasket for cleanliness. DO NOT use any grease on the rubber gasket.
4.1.4 Secure the lid using the clamps after the UUTs have been loaded.
4.1.5 Connect an appropriate vacuum line to the bomb chamber to one (1) of the two (2) included valves.
4.1.6 Ensure the valve is open to the vacuum line and evacuate the chamber until a vacuum of approx. 29” Hg is achieved.
4.1.7 Once the vacuum level is achieved, shut off the vacuum source by closing the valve.

4.2 Chamber Backfill & Pressurization

4.2.1 With the bomb chamber, internally under vacuum (approx. 29” Hg), ensure that the appropriate tracer gas (Helium) line is connected to the valve opposite of the vacuum valve.
4.2.2 Slightly loosen a connection (between the end of the tracer gas line and the valve on the bomb chamber) and create a minimal flow of helium through the line by applying approx. 1-2 PSIG to purge the line of all air.
4.2.3 Once the line has been purged of all air (only helium remaining in line), tighten and/or seal the connection.
4.2.4 Ensure the tracer gas line has been regulated (no overpressure) to the appropriate pressure before backfilling and pressurizing the chamber.
4.2.5 Slowly open the tracer gas line valve to backfill the chamber with helium and pressurize to a specified test pressure (DO NOT exceed 110 PSIG).
4.2.6 Once the test pressure has been achieved, isolate the pressure source by closing the valve.
4.2.7 The bomb chamber is now under pressure and can be held for a specified duration.
4.2.8 The chamber must be left on a stable surface, in adequate ambient conditions, and undisturbed.

4.3 Chamber Vent

4.3.1 Ensure that adequate ventilation has been provided and/or a facility vent duct is used before equalizing (venting) the chamber pressure.

4.3.2 With all facility supplied lines (vacuum and pressure) disconnected from the valves, carefully vent the chamber by opening any one (1) of the two (2) ball valves included on the lid and reduce the pressure to 0 PSIG.

4.3.3 Verify that the reference gauge reads zero (0) PSIG before removing the lid.

4.3.4 The devices (UUTs) can now be removed from the chamber and leak tested.

4.3.5 Replace and secure the lid to maintain cleanliness of the interior surfaces.

5. Maintenance

5.1 Test Chamber

5.1.1 The interior of the chamber must be kept clean and free of residue, debris, grease, and moisture. Periodically wipe down all interior surfaces of the chamber to reduce contamination.

6. Troubleshooting

6.1 For any issues, questions, or concerns regarding this chamber, please contact Helium Leak Testing, Inc.

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