



COMPRESSED GAS ASSOCIATION, INC.

# SAFETY BULLETIN

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## MEDICAL GAS QUICK DISCONNECT WALL ADAPTORS

Medical gas quick disconnect wall adaptors are widely used in hospitals during patient care activities including administering anesthesia, resuscitation, and respiratory therapy. There have been occasional reports of poor fits and interchangeability problems between mating components produced by different manufacturers. While no serious injuries or deaths have been attributed to incorrect adaptor connections, compromised connection integrity is an industry concern.

Keyed or pinned medical gas quick disconnect wall adaptors are marketed under specific trade names and are manufactured using a variety of design configurations and tolerances. Although adaptors produced by various manufacturers may look the same, they may not properly connect with the mating adaptors produced by a different manufacturer. Any incorrectly connected adaptors can compromise the integrity of a medical gas connection by causing leakage, loss of gas-specificity, or unintended disconnection.

Performance requirements for medical gas quick disconnect wall adaptors are specified in NFPA 99, *Standard for Health Care Facilities*, UL 1331, *Station Inlets and Outlets*, and CSA Z5359, *Low-Pressure Hose Assemblies for use with Medical Gases* [1, 2, 3]. However, there is no industry consensus document that defines critical dimensional requirements for keyed or pinned medical gas quick disconnect wall adaptors.

CGA V-5, *Diameter Index Safety System (Noninterchangeable Low Pressure Connections for Medical Gas Applications)*, describes the Diameter Index Safety System (DISS), a standardized system that includes a series of noninterchangeable, low pressure connections for use in medical applications [4]. CGA V-5 contains detailed dimensional specifications that can be used for a wide variety of gas connections. Use of DISS connections prevents leaks, maintains gas specificity, and eliminates unintended disconnection by ensuring adaptor interchangeability regardless of the manufacturer.

The end user is responsible for ensuring medical gas quick disconnect wall adaptor connection integrity for both new and retrofit applications. Ways to accomplish this include:

- purchasing all medical gas system components from reputable and qualified manufacturers/suppliers;
- testing all mating adaptor components (regardless of manufacturer) before use for connection integrity; or
- using adaptor components manufactured in accordance with CGA V-5.

### References

Unless otherwise specified, the latest edition shall apply.

[1] NFPA 99, *Standard for Health Care Facilities*, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269. [www.nfpa.org](http://www.nfpa.org)

[2] UL 1331, *Station Inlets and Outlets*, Underwriter's Laboratories, 333 Pfingsten Rd., Northbrook, IL 60062. [www.ul.com](http://www.ul.com)

[3] CSA Z5359, *Low-pressure hose assemblies for use with medical gases*, Canadian Standards Association International, Sales Department, 5060 Spectrum Way, Mississauga, ON L4W 5N6, Canada. [www.csa.ca](http://www.csa.ca)

[4] CGA V-5, *Diameter Index Safety System (Noninterchangeable Low Pressure Connections for Medical Gas Applications)*, Compressed Gas Association, Inc., 4221 Walney Rd., 5th Floor, Chantilly, VA 20151. [www.cganet.com](http://www.cganet.com)

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Medical Gases and Equipment Committee

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