CGA

Compressed Gas Association

The Standard For Safety Since 1913

CGA V-17—2016

(Formerly TB-9)

GUIDELINE FOR HANDLING AND USE OF CGA 630/710 SERIES ULTRA HIGH INTEGRITY SERVICE CONNECTIONS

FIRST EDITION

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Work Item 11-048
Cylinder Valve Committee

NOTE—Technical changes from TB-9—2008 edition are underlined.

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1 Introduction

In 1989, the Compressed Gas Association, Inc. (CGA), approved a new group of cylinder valve outlet connections assigned as the CGA 630/710 series. This series was conceived to provide higher purity and leak integrity than previous connections. Extensive design and testing was undertaken by CGA's Cylinder Valve Committee, formerly known as the Connections Standards Committee, to fulfill these requirements. Refer to drawings 630 and 710 in CGA V-1, *Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections* for complete design information [1].

2 Scope

This publication provides guidelines for the assembly of CGA 630/710 series ultra high integrity service connections.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall
Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should
Indicates that a procedure is recommended.

3.1.3 May
Indicates that the procedure is optional.

3.1.4 Will
Is used only to indicate the future, not a degree of requirement.

3.1.5 Can
Indicates a possibility or ability.

4 Description

This connection is unique in appearance and uses a more precise and sophisticated sealing mechanism than other CGA connections (see Figure 1).

- The sealing mechanism consists of a precision-machined gasket between a pair of precision-machined polished circular ridges called toroids, one located in the valve outlet and one located in the nipple;
- The valve outlet is extended to permit the incorporation of the diameter index safety system (DISS), anti-rotational slots, and flow-limiting devices;
- Noninterchangeability of connections is achieved in the DISS system by a series of increasing and decreasing diameters in the valve outlets and in a recess on the nipples;
- The nipple has two keys or pins oriented 180 degrees apart, a recessed face to protect the toroid and to retain the sealing gasket, and a notch to facilitate the gasket removal;
- The nut has two leak test holes and is internally silver plated; and
- The sealing gasket has a retaining clip and its sealing surfaces are recessed for protection.