CGA V-5—2008

REAFFIRMED 2013

DIAMETER INDEX SAFETY SYSTEM (NONINTERCHANGEABLE LOW PRESSURE CONNECTIONS FOR MEDICAL GAS APPLICATIONS)

SIXTH EDITION

COMPRESSED GAS ASSOCIATION, INC.

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Work Item 12-055
Medical Equipment Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendices A, B, C, D, E, F, G and H (Normative) are a requirement.

NOTE—No technical information has been changed from the 2008 edition. This reaffirmed edition may include minor editorial changes.

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1 Introduction

The administration of medical gases to patients is subject to a variety of hazards that can result from human error due to preoccupation, a mental lapse, or carelessness. This publication was developed to reduce the possibility of inadvertent substitution of the wrong medical gases by personnel when using equipment for administering anesthesia, resuscitation, and therapy.

CGA V-1*, Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections,* establishes assigned standard connections for threaded outlets on cylinder valves, which results in the removal from service of all cylinder valves having nonconforming threaded outlets [1].[1] CGA V-1 also describes the details of the Pin Index Safety System for flush-type medical gas cylinder valves. This system reduces the possibility of inadvertent substitution of the wrong gases on equipment with yoke-type connections. The Pin Index Safety System has been adopted by national and international standards organizations including the Canadian Standards Association International (CSA) and the International Organization for Standardization (ISO).

2 Scope

The Diameter Index Safety System defines noninterchangeable removable connections for use with medical gases at pressures of 200 psig (1380 kPa) or less.[2] Removable, threaded connections are readily and commonly engaged or disengaged in routine use and service and are often found on regulators, resuscitation equipment, anesthesia equipment, therapy equipment, and other similar equipment.

The Diameter Index Safety System supplements but does *not* replace:

- any of the means for medical gas identification currently in use;
- the Pin Index Safety System;
- the existing threaded outlet standards for cylinder valves; or
- automatic quick coupler valves that also provide noninterchangeable connections for medical gases and suction equipment.

CGA does not designate where the Diameter Index Safety System should be applied.

3 CGA V-5 revisions

3.1 Second edition (1978)

The second edition of CGA V-5 included the original twelve connections described the 1959 edition and added a co-standard 1000-A series. Eight new connections (1500 series) designed and shown in SI dimensions were also added.

3.2 Third edition (1989)

3.2.1 1500 series replaced by 2000 series

The third edition abandoned the 1500 series connections in favor of a new smaller 2000 series, which offered eight new connections that are designed and shown in customary U.S. dimensions (inches).

3.2.2 Revised nitrous oxide-oxygen mixture connection

Connection No. CGA 1570, which was described in the 1978 edition and assigned to nitrous oxide-oxygen mixtures (nitrous oxide 47.5% to 52.5%), was replaced by Connection No. CGA 2020.

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.

[2] kPa shall indicate gauge pressure unless otherwise noted as (kPa, abs) for absolute pressure or (kPa, differential) for differential pressure. All kPa values are rounded off per CGA P-11, *Metric Practice Guide for the Compressed Gas Industry* [2].