CGA®

Compressed Gas Association

The Standard For Safety Since 1913

CGA E-4—2021

STANDARD FOR GAS PRESSURE REGULATORS

EIGHTH EDITION

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Work Item 20-031
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendices A, B, and C (Informative) are for information only.

EIGHTH EDITION: 2021
SEVENTH EDITION: 2016
SIXTH EDITION: 2010
FIFTH EDITION: 2006

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1 Introduction

This publication establishes minimum performance and safety requirements for gas pressure regulators. These requirements are based on existing technology and represent the state of the art at the time of publication. There is no intent to discourage or impede future innovation of gas pressure regulators.

This publication does not address any personnel safety or health concerns, nor does it address any environmental requirements, which can be involved in the testing or making of these devices. Each manufacturer shall address these matters relative to their operations and comply with local, state/provincial, and national regulations and laws.

2 Scope

This publication specifies requirements for regulators used with compressed gases to reduce the supply pressure from a storage cylinder, pipeline, or other source to the use pressure.

This publication contains design and manufacturing requirements relating to materials, construction, performance, test procedures, information, marking, and packaging of pressure regulators. Appendix A provides information relating to regulator flow capacity calculations. For pressure regulators used with medical gases, additional requirements are specified in CGA E-7, *Standard for Medical Gas Pressure Regulators, Flowmeters, and Orifice Flow Selectors* [1].[1]

This publication does not apply to liquefied petroleum gas (LPG) pressure regulators for equipment intended for installation and use in accordance with the requirements of NFPA 58, *Liquefied Petroleum Gas Code* [2].

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.

3.2 Technical definitions

3.2.1 Creep
Continuing rise above set pressure, after downstream flow is shutoff due to an internal leak.

NOTE—Creep is sometimes referred to as crawl.

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