

**CGA E-12—2019**

**STANDARD FOR  
SAFETY DEVICES USED IN  
GAS WELDING, CUTTING, AND  
ALLIED PROCESSES**

**SECOND EDITION**



*The Standard For Safety Since 1913*

**PLEASE NOTE:**

The information contained in this document was obtained from sources believed to be reliable and is based on technical information and experience currently available from members of the Compressed Gas Association, Inc. and others. However, the Association or its members, jointly or severally, make no guarantee of the results and assume no liability or responsibility in connection with the information or suggestions herein contained. Moreover, it should not be assumed that every acceptable commodity grade, test or safety procedure or method, precaution, equipment or device is contained within, or that abnormal or unusual circumstances may not warrant or suggest further requirements or additional procedure.

This document is subject to periodic review, and users are cautioned to obtain the latest edition. The Association invites comments and suggestions for consideration. In connection with such review, any such comments or suggestions will be fully reviewed by the Association after giving the party, upon request, a reasonable opportunity to be heard. Proposed changes may be submitted via the Internet at our web site, [www.cganet.com](http://www.cganet.com).

This document should not be confused with federal, state, provincial, or municipal specifications or regulations; insurance requirements; or national safety codes. While the Association recommends reference to or use of this document by government agencies and others, this document is purely voluntary and not binding unless adopted by reference in regulations.

A listing of all publications, audiovisual programs, safety and technical bulletins, and safety posters is available via the Internet at our website at [www.cganet.com](http://www.cganet.com). For more information contact CGA at Phone: 703-788-2700, ext. 799. E-mail: [customerservice@cganet.com](mailto:customerservice@cganet.com).

Work Item 16-035  
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

SECOND EDITION: 2019

FIRST EDITION: 2011

© 2019 The Compressed Gas Association, Inc. All rights reserved.

All materials contained in this work are protected by United States and international copyright laws. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording, or any information storage and retrieval system without permission in writing from The Compressed Gas Association, Inc. All requests for permission to reproduce material from this work should be directed to The Compressed Gas Association, Inc., 14501 George Carter Way, Suite 103, Chantilly VA 20151. You may not alter or remove any trademark, copyright or other notice from this work.

<b>Contents</b>	<b>Page</b>
1 Scope .....	1
2 Definitions.....	1
3 Installation .....	3
4 Construction and materials.....	3
4.1 Construction .....	3
4.2 Materials.....	3
4.3 Oxygen service.....	3
5 Connections .....	4
6 Marking.....	4
6.1 General information .....	4
6.2 Additional information.....	4
7 Manufacturer's instructions .....	4
8 Performance requirements.....	4
8.1 Flow characteristics .....	4
8.2 Design qualification requirements for all safety devices.....	5
8.3 Additional design qualification requirements for each type of safety device .....	5
9 Test methods and procedures.....	7
9.1 General test procedures for all safety devices .....	7
9.2 Test procedures for all safety devices .....	7
9.3 Test methods for specific types of safety devices .....	8
10 References .....	10
 <b>Figures</b>	
Figure 1—Typical flashback arrestor .....	1
Figure 2—Typical check valve .....	2
Figure 3—Typical excess flow shutoff valve .....	2
Figure 4—Typical pressure relief valve.....	2
Figure 5—Typical pressure sensitive shutoff valve.....	3
Figure 6—Typical temperature sensitive shutoff valve .....	3
Figure 7—Typical test circuit for the performance of flashback arrestors.....	8
Figure 8—Typical test circuit for the performance of temperature sensitive shutoff valves .....	9
 <b>Appendix</b>	
Appendix A—Oxy-fuel hose line flashback arrestors (Informative).....	11