

SAFETY BULLETIN

USE OF REGULATOR PRESSURE GAUGES

General precautions

Oxygen and hydrocarbons (e.g., oil and grease are common hydrocarbon) under certain conditions can react violently resulting in explosions, fire, and damage or injury to personnel and property. Never allow oil or grease to come in contact with any external or internal part of the threaded fitting or internal portion of the pressure element assembly of oxygen gauges. Even a minute amount of hydrocarbon can be hazardous in the presence of oxygen.

Regulator gauges should be installed or replaced only by qualified personnel.

Installation precautions

- DO** maintain the pressure element assembly and connection cleanliness level required for the intended application.
- DO** refer to the manufacturer's instruction manual for the correct pressure ranges to be used.
- DO** use the wrench flats provided on the gauge connection and the proper size wrench to secure the gauge to the regulator.
- DO** use only the thread sealant recommended by the regulator manufacturer for the specific application.
- DO NOT** install a low pressure gauge into the high pressure port on a regulator.
- DO NOT** use the gauge case for wrenching.
- DO NOT** interchange gauges from one gas application to another.
- DO NOT** exchange gauges from one regulator to another.
- DO NOT** conduct calibration verification using air from shop air lines, oil, or a contaminated pressure source.
- DO NOT** remove the restrictor installed in the gauge connection. The restrictor limits gas flow and aids in limiting temperature rise due to adiabatic compression.

Operation precautions

Gauges can fail during operation and the energy contained in the compressed gases can produce violent effects should the pressure element assembly rupture.

- DO** always apply cylinder pressure slowly. Heat due to adiabatic compression can cause ignition.
- DO** wear safety glasses or provide eye protection.
- DO** stand with the cylinder between yourself and the regulator (cylinder valve outlet facing away) when opening the cylinder valve.
- DO** read CGA SB-8, *Use of Oxy-Fuel Gas Welding and Cutting Apparatus* [1].
- DO NOT** stand in front of or behind the pressure gauges when applying cylinder pressure to the regulator. This reduces the possibility of injury from flying parts should the pressure element assembly rupture.
- DO NOT** operate regulators without eye protection.

Reference

Unless otherwise specified, the latest edition shall apply.

[1] CGA SB-8, *Use of Oxy-Fuel Gas Welding and Cutting Apparatus*, Compressed Gas Association, Inc., 14501 George Carter Way, Suite 103, Chantilly, VA 20151. www.cganet.com

Related documents

ASME B40.100, *Pressure Gauges and Gauge Attachments*, ASME International, Three Park Ave., New York, NY 10016. www.asme.org

CGA E-4, *Standard for Gas Pressure Regulators*, Compressed Gas Association, Inc., 14501 George Carter Way, Suite 103, Chantilly, VA 20151. www.cganet.com

UL 404, *Gauges, Indicating Pressure, for Compressed Gas Service*, Underwriters Laboratories, Inc., 333 Pfingsten Rd., Northbrook, IL 60062. www.ul.com

UL 252A, *Compressed Gas Regulator Accessories*, Underwriters Laboratories, Inc., 333 Pfingsten Rd., Northbrook, IL 60062. www.ul.com

AWS C4.2/C4.2M, *Recommended Practices for Safe Oxyfuel Gas Cutting Torch Operation*, American Welding Society, 550 NW LeJeune Rd., Miami, FL 33126. www.aws.org

ANSI/AWS Z49.1, *Safety in Welding, Cutting, and Allied Processes*, American Welding Society, 550 NW LeJeune Rd., Miami, FL 33126. www.aws.org

ISO 5171, *Pressure gauges used in welding, cutting and allied processes*, American National Standards Institute, 25 West 43rd St., New York, NY 10036. www.ansi.org

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.

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. For more information contact CGA at Phone: 703-788-2700, ext. 799. E-mail: customerservice@cganet.com.

Work Item 12-012
Industrial Gases Apparatus Committee

NOTE—No technical information has been changed from the 2007 edition. This reaffirmed edition may include minor editorial changes.

REAFFIRMED: 2014
THIRD EDITION: 2007
SECOND EDITION: 1998
FIRST EDITION: 1991

© 2007 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.