

POSITION STATEMENT

LOCATION OF PRESSURE RELIEF DEVICES IN SMALL ACETYLENE CYLINDERS

Question

Would the “MC” and “B” acetylene cylinders be safer if they had the pressure relief devices in the cylinder shell instead of the cylinder valve?

Answer

The Compressed Gas Association, Inc. (CGA) does not recommend moving the pressure relief device on “MC” and “B” cylinders from the cylinder valve to the cylinder shell.

Reasons

1. All acetylene cylinder designs are tested by subjecting filled cylinders with their pressure relief devices to tests prescribed in [CGA C-12, Qualification Procedure for Acetylene Cylinder Design](#) [1]. Inclusive in [CGA C-12](#) are flashback and fire tests mandated by the U.S. Department of Transportation and Transport Canada. These tests have shown no difference in relief response time or cylinder safety between locations on either the cylinder shell or on the cylinder valve.
2. The location of the pressure relief device in “MC” and “B” valves allows for more resistance to damage. The fusible alloy making up the pressure relief device is cast directly into the valve body for maximum retainment and cylinder protection.
3. While fusible metal relief devices will melt in a fire, they can also melt from other sources of heat, with weld spatters and cutting or burning slag being the most common. Therefore, fusible plugs cast into the valves on “MC” and “B” cylinders, used principally for oxyacetylene welding and cutting, minimize their melting from such causes.
4. Due to their small size, acetylene “MC” and “B” cylinders are relatively easy for the operator to handle and move. However, because of their small size, the limited space at the tops of these cylinders, and the configurations of their bottoms, these cylinders do not lend themselves to conveniently locate fusible plugs in the cylinder shell.
5. In 95 years of incident data available to the compressed gas industry, there is none to support the idea that safety would in any way be enhanced by mandating the pressure relief devices be installed into the cylinder shell of “MC” and “B” acetylene cylinders.

Therefore, the CGA does not find that “MC” and “B” acetylene cylinders would be safer if the pressure relief devices were placed into the cylinder shell rather than in the cylinder valve.

Reference

Unless otherwise specified, the latest edition shall apply.

[1] [CGA C-12, Qualification Procedure for Acetylene Cylinder Design](#), The Compressed Gas Association, Inc., 14501 George Carter Way, Suite 103, Chantilly, VA 20151. www.cganet.com

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Work Item 10-20
Acetylene Committee

NOTE—No technical information has changed from the 2006 edition. This reaffirmed edition may include minor editorial changes.

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SECOND EDITION: 2006
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