

TECHNICAL BULLETIN

OXY-FUEL HOSE LINE FLASHBACK ARRESTORS

Many years of field experience have shown that oxy-fuel gas torches are reliable and safe when operated in accordance with instructions recommended by the manufacturer. Under certain circumstances, the user's failure to follow these instructions can cause the backflow (reverse flow) of unwanted gas and/or a flashback into the upstream equipment.

Flashback is a rapid flame propagation. Hose line flashback arrestors are devices designed to prevent a flashback from passing through the device and progressing into upstream equipment.

Several types of hose line flashback arrestors are available for installation at either the torch inlet or the regulator outlet connections. These devices often combine several functions within a common housing. They may use a reverse flow check valve, pressure relief valve, excess flow shutoff valve, pressure sensitive shutoff valve, temperature sensitive shutoff valve, flame barrier, or other safety device in conjunction with the means to quench a flashback flame.

A hose line flashback arrestor can provide a measure of protection against the hazards of flashback. To maintain this protection and to ensure that the hose line flashback arrestor has not become damaged or inoperative during use, a routine inspection program should be followed as specified in the instructions provided by the manufacturer.

It is the user's responsibility to ensure the hose line flashback arrestor model chosen is designed for the intended pressure, gas service, and flow requirements necessary to safely accomplish the intended task. Large cutting tips, heating tips, and other devices require large volumes of gases that can exceed the flow capacity of some hose line flashback arrestors. Undersized hose line flashback arrestors create flow restrictions, which can contribute to overheating and flashback. Pressure drop charts are normally supplied with hose line flashback arrestors and should be followed closely when setting pressures. Contact the manufacturer if pressure drop charts are not available or for any questions regarding the use of the hose line flashback arrestors.

Threaded connections of hose line flashback arrestors should conform to the requirements of [CGA E-1](#), *Standard for Rubber Welding Hose and Hose Connections for Gas Welding, Cutting, and Allied Processes* or ISO 3253, *Gas welding equipment—Hose connections for equipment for welding, cutting, and allied processes* [1, 2]. NPT threaded connections may also be used. See [ASME B1.20.1](#), *Pipe Threads, General Purpose, Inch* [3].

Hose line flashback arrestors are not a substitute for the station outlet protective equipment (S_F , S_O , or P_F) required in NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes* [4].

Safe use of oxy-fuel gas equipment can only be ensured by observing proper operating procedures recommended by the equipment manufacturer.

References

Unless otherwise specified, the latest edition shall apply.

[1] [E-1](#), *Standard for Rubber Welding Hose and Hose Connections for Gas Welding, Cutting, and Allied Processes*, Compressed Gas Association, Inc., 14501 George Carter Way, Suite 103, Chantilly, VA 20151.
www.cganet.com

[2] ISO 3253, *Gas welding equipment—Hose connections for equipment for welding, cutting, and allied processes*, American National Standards Institute, 25 West 43rd St., New York, NY 10036. www.ansi.org

[3] **ASME B1.20.1**, *Pipe Threads, General Purpose, Inch*, ASME International, Two Park Ave., New York, NY 10016. www.asme.org

[4] NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169. www.nfpa.org

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

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