



Standard Specification for Paintball Valve Male Threaded Connection for Use with Approved Cylinders¹

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1. Scope

1.1 This specification covers the male threaded connection used to connect a CO₂ Control Valve or Compressed Air Regulator with an output pressure of 10 342 kPa (1800 psig) or less for use with a paintball marker to a DOT approved cylinder.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D2240 Test Method for Rubber Property—Durometer Hardness

F1750 Specification for Paintball Marker Threaded-Propellant Source Interface

F2030 Specification for Paintball Cylinder Burst Disk Assemblies

2.2 Military Standards:³

AMS7277 O-Ring Dash Sizes

MS28775 Packing, Preformed, Hydraulic, +275 Deg. F (“O”-Ring)

2.3 CGA Standards:⁴

CGA S-1.1 Pressure Relief Device Standards-Part

¹ This specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment and Facilities and is the direct responsibility of Subcommittee F08.24 on Paintball and Equipment.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

⁴ Available from Compressed Gas Association (CGA), 4221 Walney Rd., 5th Floor, Chantilly, VA 20151-2923, <http://www.cganet.com>.

1-Cylinders for Compressed Gases

2.4 Federal Standards:⁵

FED-STD-H28/9A 24 March 1989 Federal Standard Screw-Thread Standards for Federal Services Section 9 Gas Cylinder Valve Outlet and Inlet Threads

NBS Handbook H-28

2.5 Code of Federal Regulations:⁶

DOT 49 CFR 173

DOT 49 CFR 178

DOT CFFC 4th Revision

2.6 ANSI Standards:⁷

ANSI Y14.5M-1994 Dimensioning and Tolerancing

3. Connector Gender Assignment

3.1 The male connector is that connector which is configured as part of the CO₂ control valve or compressed air regulator for use with a paintball marker.

3.2 The female connector is that connector which is configured as part of the DOT approved cylinder.

4. Materials and Manufacture

4.1 The male connector shall be made from materials that are compatible with CO₂, compressed air or gaseous nitrogen.

4.2 The O-ring seal shall be made from an elastomer compatible with CO₂, compressed air or gaseous nitrogen used to power paintball markers. The O-ring seal shall have a hardness that will register a Type A durometer reading of between 70 to 90 ± 5. The O-ring shall conform dimensionally to the requirements in AMS7277 or MS28775 based upon the size and material recommendations of the cylinder manufacturer.

4.3 The O-ring seal shall be installed on the male connector in the groove described by Dimensions C and D on Fig. 1.

4.4 The male connectors shall not have any sharp edges or hanging burrs. All sharp edges will be broken R.38 MAX (R.015 MAX).

⁵ Available from The National Conference on Weights and Measures, 15245 Shady Grove Road, Suite 130, Rockville, MD 20850.

⁶ Available from U.S. Department of Transportation, 400 7th Street, SW, Washington, D.C. 20590.

⁷ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.