



# Standard Specification for Paintball Marker Threaded-Propellant Source Interface<sup>1</sup>

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## 1. Scope

1.1 This specification covers the male and female threaded connectors used to interface a propellant source with a working pressure of 10 342 kPa (1800 psig) or less to a paintball marker.

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:*<sup>2</sup>

**D2240** Test Method for Rubber Property—Durometer Hardness

2.2 *ANSI Standard:*<sup>3</sup>

ANSI Y14.5M–1994 Dimensioning and Tolerancing

2.3 *CGA Standard:*<sup>4</sup>

CGA-320 .825-14NGO-RH-EXT (Flat Nipple)

2.4 *Federal Standard:*<sup>5</sup>

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

2.5 *Military Standard:*<sup>5</sup>

**MS28775** O-Ring Dash Sizes

## 3. Connector Gender Assignment

3.1 The female connector is that connector which is configured as part of the paintball marker.

3.2 The male connector is that connector which is configured as part of the propellant source.

## 4. Materials and Manufacture

4.1 The male and female connectors shall be made from materials that are compatible with CO<sub>2</sub>. The materials and processes used to manufacture male and female connectors shall result in items with mechanical strength sufficient to pass a 20 684-kPa (3000-psig) proof pressure check without failure or any degradation to function.

4.2 The O-ring seal shall be made from an elastomer compatible with CO<sub>2</sub>. The O-ring seal shall have a hardness that will register a Type A durometer reading of  $90 \pm 5$ . The O-ring shall conform dimensionally to **MS28775-015** and conform to Test Method **D2240**.

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

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

## 5. Performance

5.1 The interface is intended for use with CO<sub>2</sub> compressed air or gaseous CO<sub>2</sub>, or both.

5.2 The maximum operating pressure of the interface is 10 342 kPa (1800 psig).

5.3 The maximum allowable leakage at 10 342 kPa (1800 psig) is 0.1 cm<sup>3</sup>/min.

5.4 The male connector shall incorporate a means for propellant shutoff that shall meet the maximum leakage requirement.

5.5 When the male and female connectors are joined and pressurized, together they shall meet the maximum leakage specification.

## 6. Physical Envelope

6.1 The male connector shall conform to the physical envelope described in **Fig. 1**.

<sup>1</sup> 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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<sup>2</sup> 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.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

<sup>4</sup> Available from Compressed Gas Association (CGA), 1725 Jefferson Davis Hwy., Suite 1004, Arlington, VA 22202-4102.

<sup>5</sup> Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401.