

INCH-POUND

A-A-55826A

2 July 2010

SUPERSEDING

A-A-55826

5 September 1996

COMMERCIAL ITEM DESCRIPTION

TORCHES, OXYACETYLENE, HAND HELD, CUTTING AND WELDING

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. **SCOPE.** This commercial item description (CID) covers hand held, oxyacetylene torches used for cutting and welding ferrous metals. The torches are intended for use by the military for field maintenance operations on military equipment.

2. **CLASSIFICATION.** The torches shall be classified by the following types, as specified (see 7.3(b)):

Type I - Torch, combination, welding and cutting

Type II - Torch, cutting

3. SALIENT CHARACTERISTICS

3.1 General requirements. The torches shall be hand held oxyacetylene torches, of the positive pressure type, capable of mixing and controlling the flow of gases to the torches' tips. The torches shall meet the requirements of Compressed Gas Association (CGA) E-5, "Torch Standard", and shall be listed with Underwriters Laboratories Inc. (UL) as meeting the requirements of UL 123, "UL Standard for Safety Oxy-Fuel Gas Torches", and marked in accordance with UL labeling requirements.

3.2 Type I torch. The type I torch shall include a torch handle, welding tips (as specified in 3.6), cutting attachments (as specified in 3.7), and cutting tips (as specified in 3.8).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Supply Center Richmond (DSCR), ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <https://assist.daps.dla.mil/>.

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3.3 Type II torch. The type II torch shall be designed strictly for cutting and shall be supplied with cutting tips as specified in 3.8. The cutting head shall be at an angle of 90 ± 2 degrees relative to the centerline of the torch handle.

3.4 Control valves. The preheat control valve shall provide a seal that does not allow leak-through at a pressure of 50 pounds-force per square inch gauge (psig) or greater, when the valve is closed with not greater than 20 inch-pounds of torque applied at the knob. The cutting oxygen control valve shall not leak externally at a pressure of 50 psig or greater, when the valve is open or closed.

3.5 Gas inlets. The torch handle shall have a reverse flow check valve that meets the requirements of CGA E-2, "Hose Line Check Valve Standards for Welding and Cutting", and a flashback arrestor that is built into the handle for both the fuel inlet and the oxygen inlet lines. Hose connections shall be at the rear of the torch handle and shall meet the requirements for threaded connections 022 and 023 of CGA E-1, "Standard for Rubber Welding Hose and Hose Connections for Gas Welding, Cutting, and Allied Processes". Each inlet shall be clearly and permanently marked to identify the acetylene and oxygen lines.

3.6 Welding tips. Each welding tip provided for use with the type I torch shall be of the gooseneck design and shall include an integral mixer with each tip. The tips shall provide a long bulbous flame symmetrical with the axis of the end of the tip. Unless otherwise specified (see 7.3(c)), the type I torch shall be provided with three welding tips that shall be of the drill sizes shown in table I. Tips shall be legibly and permanently marked for size according to the manufacturer's standard practice.

TABLE I. Welding tip sizes.

Tip	Drill size at tip orifice	Diameter (inches)
1	70 - 74	0.028 - 0.0225
2	55 - 62	0.052 - 0.0380
3	40 - 45	0.098 - 0.0820

3.7 Cutting attachment. The type I cutting attachment shall consist of a mating part and retaining nut for mounting to the torch handle, gas tubes for carrying gases to the tip, a torch head, a tip retaining nut, a preheat oxygen control valve, and a lever-operated valve to control oxygen flow. The cutting head shall be at an angle of 90 ± 2 degrees relative to the centerline of the torch handle. The preheat oxygen valve and the cutting oxygen valve are not required on the cutting attachment if these functions are provided on the torch handle. The cutting attachment shall be mountable onto the torch handle using hand tightening only and shall provide a gas-tight fit.

3.8 Cutting tips. The cutting tips shall be of a one-piece design for use with acetylene and shall be configured with a minimum of four preheat orifices uniformly distributed around the oxygen orifice. The oxygen orifice shall provide a stream of oxygen, which travels down the centerline of the preheat flame group and shall not deviate from the centerline by more than 2 degrees.

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Unless otherwise specified (see 7.3(d)), the type I torch shall be provided with tip sizes 1 through 4, and the type II torch with tip sizes 1 through 5, as shown in table II. Tips shall be legibly and permanently marked for size according to the manufacturer's standard practice.

TABLE II. Cutting tip sizes.

Tip	Oxygen hole drill size	Diameter (inches)
1	67 - 56	0.0320 - 0.0465
2	55 - 53	0.0520 - 0.0595
3	52 - 43	0.0635 - 0.0890
4	42 - 31	0.0935 - 0.1200
5	30 - 20	0.1285 - 0.1610

3.9 Wrenches. The torches shall be supplied with correctly sized wrenches having suitable openings for all sizes of tip nuts, hose connections, and packing nuts where adjustments are required. The wrenches shall be inherently corrosion resistant or shall be plated or treated for corrosion resistance.

3.10 Performance.

3.10.1 Oxygen flow rate. The type I torch, with the largest cutting tip (see table II) installed in the cutting attachment, shall have a cutting oxygen flow rate of not less than 450 cubic feet per hour (cfh) at a torch oxygen inlet pressure not exceeding 90 psig. The type II torch, with its largest cutting tip (see table II) installed, shall have a cutting oxygen flow rate of not less than 850 cfh at a torch oxygen inlet pressure not exceeding 85 psig.

3.10.2 Acetylene flow rate. The type I torch, with the largest cutting tip (see table II) installed in the cutting attachment and the preheat flame adjusted to neutral, shall have an acetylene flow rate of not less than 25 cfh at a torch acetylene inlet pressure not greater than 10 psig. The type II torch, with the largest cutting tip (see table II) installed and the preheat flame adjusted to neutral, shall have an acetylene flow rate of not less than 40 cfh at a torch acetylene inlet pressure not greater than 10 psig.

3.10.3 Leakage. Joints, valves, o-ring seals, metal-to-metal mating seals, gas passages, connections, and glands shall be capable of sustaining gas pressures of not less than 50 psig internally and externally. Valves shall sustain the gas pressures without leakage sufficient for formation of a bubble when submerged in clean water for 10 seconds, both when the valves are closed and when the valves are open to gas passage. The cutting tip seats shall not allow gas leakage at operating pressures, or higher, when tightened with not greater than 20 foot-pounds of torque applied at the tip nut.

3.10.4 Backfire and flashback. The type I and type II torches shall withstand five backfires (see 7.4(a)), at a rate of not less than one per second with no flashback (see 7.4(b)), when the oxygen and acetylene are set at the manufacturer's recommended pressures and the preheat flame is adjusted to neutral.

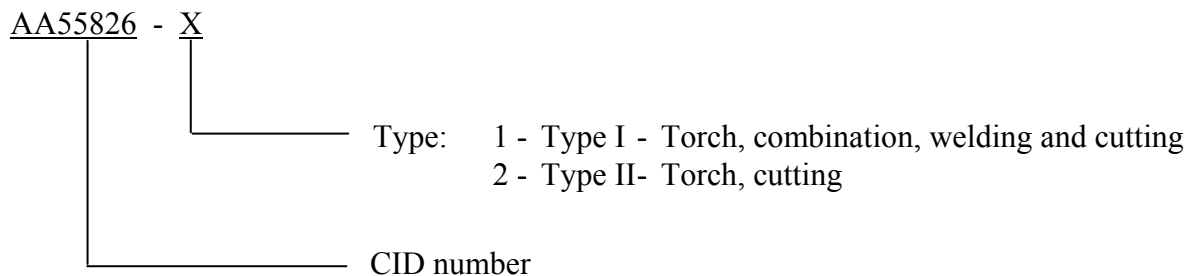
4.2 Environmental protection. The item shall meet all applicable Environmental Protection Agency restrictions in effect on the date of the contract. These regulations apply to the emission of materials hazardous to the environment or the user's health and shall be met during the manufacturing, service, transportation, storage, and operation/use of the item.

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same products offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The products offered must have been previously sold either to the government or on the commercial market.

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (see 7.3(e)).

7.1 Part or identification number (PIN). The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.



Example of reference part number: AA55826-1

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7.2 Sources of documents.

7.2.1 FAR. The FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies may be obtained from <https://www.acquisition.gov/far/>.

7.2.2 CGA standards. Copies of CGA standards may be obtained from the Compressed Gas Association, 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923. Electronic copies may be obtained from <http://www.cganet.com/>.

7.2.3 UL standards. Copies of UL standards may be obtained from Underwriter Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096. Electronic copies may be obtained from <http://www.ul.com/>.

7.3 Ordering data. The acquisition order should specify the following information:

- a. CID document number, revision, and CID PIN.
- b. Type of torch required (see 2).
- c. Welding tips, if different (see 3.6).
- d. Cutting tips, if different (see 3.8).
- e. Packaging requirements (see 6.1).

7.4 Definitions. Terms used in this document are defined as follows:

a. Backfire. The explosion of gases due to a momentary retrogression of the flame into the torch tip, usually caused by snuffing the burning tip against any surface or by an imbalance of gases. A typical backfire (a loud "pop") results in immediate, automatic extinguishing of the flame and, if an ignition source exists outside of the tip, the mixed gases then promptly re-light and burn properly.

b. Flashback. A retrogression of the flame into the torch, as far back as the mixing chamber, and a sustained burning of gases inside the torch or tip.

7.5 Subject term (key word) listing.

Backfire
Ferrous metals
Flame
Flashback
Flow
Gases
Preheat

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MILITARY INTERESTS:

Custodians:

Army - AR

Navy - YD

Air Force - 99

DLA - GS

Review Activities:

Army - AV

Navy - MC

Air Force - 84

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA - GS6

(Project 3433-2010-001)

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