

[INCH-POUND]
A-A-50582
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SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

TORCH OUTFIT, 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 covers a complete, portable cutting and welding torch outfit suitable for use with acetylene and methylacetylene-propadiene (MAPP) gas when either gas is coupled with oxygen. The torch outfit is intended for use either indoors or out-of-doors.

2. **CLASSIFICATION.** This section is not applicable to this commercial item description.

3. SALIENT CHARACTERISTICS.

3.1 Design. All parts of the equipment shall be designed for use with oxygen, acetylene, and MAPP gas. All parts shall be of proper size, suitable material, and sufficient strength to ensure satisfactory performance for the cutting and welding services specified. The cutting and welding torch shall be a handheld positive pressure type and equipped for controlling and mixing the flow of gases to the torch tip. All parts subject to wear or breakage shall be accessible for adjustment and repair.

3.2 Standard commercial product. The torch outfit shall, as a minimum, be in accordance with the requirements of this commercial item description and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this commercial item description but which are a part of the manufacturer's standard commercial product, shall be included in the torch outfit being furnished. A standard commercial product is a

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A-A-50582

product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.3 Component parts. Unless otherwise specified (see 7.2), the portable cutting and welding outfit shall consist of the items and quantity of equipment listed in table I.

TABLE I. Contents of outfit.

Item no.	Item description	Paragraph reference	Quantity
1	Carrying case.	3.3.1	1
2	Torch, welding (basic) with reverse flowcheck valves.	3.3.2	1
3	Welding tips.	3.3.3	8
4	Heating tip.	3.3.3.1	1
5	Other tips.	3.3.3.2	As specified
6	Cutting tips.	3.3.3.3	15
7	Gouging tip.	3.3.3.3	1
8	O-rings.	3.3.4	12 ea. type and size
9	Regulator, acetylene and MAPP gas.	3.3.5	1
10	Regulator, oxygen.	3.3.5	1
11	Gage, acetylene and MAPP gas.	3.3.6	1 primary 1 secondary
12	Gage, oxygen.	3.3.6	1 primary 1 secondary
13	Hose assembly, 25 ft (7 620 mm).	3.3.7	2
14	Hose coupling, male, LH.	3.3.7.1	1
15	Hose coupling, male, RH.	3.3.7.1	1
16	Coupling nut, female, LH.	3.3.7.1	2
17	Coupling nut, female, RH.	3.3.7.1	2
18	Coupling tailpieces, straight.	3.3.7.1	4
19	Ferrules.	3.3.7.1	6
20	Welding hose crimping pliers.	3.3.7.1	1
21	Wrench, acetylene valve.	3.3.8	1
22	Wrench, multipurpose.	3.3.8	1
23	Cleaners, tip.	3.3.9	2 sets
24	Igniters, flint, friction.	3.3.10	4
25	Flint (extra).	3.3.10.1	24
26	Brush, wire.	3.3.11	1
27	Hammer, chipping.	3.3.12	1
28	Operator's manual.	3.3.15	1

A-A-50582

3.3.1 Carrying case. The carrying case shall be designed and constructed to withstand the abuse normal in service without damage to itself or its contents. The case shall be approximately 33 inches (838 millimetre (mm)) long, 14 inches (356 mm) wide, 12 inches (305 mm) high, excluding protections. A 0.25-inch (6 mm) thick plywood insert shall be provided. The case shall be painted with olive drab enamel.

3.3.1.1 Handles. The handle opening shall be of the size to fit a 5-inch (127 mm) wide and 2-inch (51 mm) thick gloved hand.

3.3.1.2 Tray. A tray shall be provided. The design of the tray shall allow for display of tray contents when the case cover is open. The tray shall be compartmentalized to hold small components, such as those listed in table I. Depth of the tray shall be determined by the manufacturer. The tray shall cover the length and half the width of the inside. Handles or handholds in the ends of the tray shall be provided for ease of lifting the tray out of the case. The tray shall have a bottom, two sides, and two ends.

3.3.2 Torch, cutting and welding. The torches shall be suited for welding 0.5-inch (13 mm) thickness and cutting 6-inch (152 mm) thickness in mild steel base metal without flashback. The torch shall perform as specified with oxygen and acetylene for welding and cutting, and with oxygen and MAPP gas for multiflame heating and cutting.

3.3.3 Welding tips. Unless otherwise specified (see 7.2), all tips specified in tables II and III shall be provided.

TABLE II. Welding tips.

Tip orifice size range		Quantity
Drill size	Drill diameter	
70-74	0.0270-0.0210	1
65-69	0.0350-0.0280	1
60-64	0.0400-0.0360	1
55-59	0.0520-0.0410	2
50-54	0.0700-0.0550	1
45-49	0.0820-0.0730	1
40-44	0.0980-0.0860	1

3.3.3.1 Heating tip. In addition to the welding tips specified in table II, a multiflame heating tip and nozzle with a separate mixer shall be provided. The heating tip shall be suitable for use with acetylene and MAPP gas. The heating tip shall be of the bent or gooseneck type, having an overall length of not less than 17 inches (432 mm) nor more than 19 inches (483 mm). The heating tip shall have not less than 12 orifices of drill size 54-57.

A-A-50582

3.3.3.2 Other tips. When specified (see 7.2), and in addition to the welding tips specified in table II, tips for welding with oxygen and MAPP gas shall be provided for the drill size number specified in the order.

3.3.3.3 Cutting and gouging tips. In addition to the cutting tips specified in table III, a gouging tip suitable for use with acetylene and MAPP gas shall be furnished. The gouging tip shall have a cutting orifice drill size 50-54 and not less than six preheat orifices drill size 58-64. The gouging tip shall be bent at a 30-degree to 40-degree angle.

TABLE III. Cutting tips.

Preheat orifice range		Cutting orifice range			
Drill size	Drill diameter	Drill size	Drill diameter	Gas application with oxygen	Quantity
70-75	0.0280-0.0210	60-65	0.0400-0.0350	Acetylene	1
68-73	0.0310-0.0240	55-59	0.0520-0.0410	Acetylene	1
65-73	0.0350-0.0280	50-54	0.0700-0.0550	Acetylene	1
60-65	0.0400-0.0350	45-49	0.0820-0.0730	Acetylene	1
65-69	0.0350-0.0290	60-64	0.0400-0.0360	MAPP gas	2
63-68	0.0370-0.0310	55-59	0.0520-0.0410	MAPP gas	3
60-64	0.0400-0.0360	52-54	0.0635-0.0550	MAPP gas	2
56-59	0.0465-0.0410	48-51	0.0760-0.0670	MAPP gas	2
	slotted	54-56	0.0550-0.0465	Natural gas-propane	1
	slotted	51-53	0.0670-0.0595	Natural gas-propane	1

3.3.4 O-rings. Six each of replaceable O-rings used as a seal for the gas and oxygen in the welding torch, cutting attachment, tips, and mixers shall be provided. The material and size of the O-rings shall be identical to the O-rings installed in the torch and attachments.

3.3.5 Pressure regulators. Two regulators shall be supplied, one for use with acetylene and MAPP gas and one for use with oxygen. Each regulator shall be equipped with two pressure gages, one for the cylinder pressure and one for the delivery pressure. All regulators shall be suitable for use with the welding torch described herein while using oxygen and acetylene, or oxygen and MAPP gas. Unless otherwise specified (see 7.2), the regulators shall be of a two stage design.

3.3.6 Gages. The gages shall be suitable for use with oxygen, acetylene, and MAPP gas as required for the regulators. Each gage shall be built to withstand the rough handling normally encountered in service.

3.3.7 Hose and couplings. Two 25-foot (7 620 mm) lengths of 0.25-inch (6.4 mm) dual oxygen and acetylene hose, complete with couplings, shall be furnished. The coupling tailpiece and

A-A-50582

coupling nut shall be attached to the hose using crimped ferrules. The coupling tailpiece shall be the straight stepped type.

3.3.7.1 Hose connection accessories. Hose accessories for making hose to hose couplings, and for use in repairs shall be furnished, and shall consist of the following item in the quantities specified.

- a. One hose coupling, male, left-hand thread for acetylene.
- b. One hose coupling, male, right-hand thread for oxygen.
- c. Two hose coupling nuts, female, 0.25-inch (6.4 mm), left-hand.
- d. Two hose coupling nuts, female, 0.25-inch (6.4 mm), right-hand.
- e. Four coupling tailpieces, straight stepped type, for use with ferrules for 0.25-inch (6.4 mm) inside diameter hose.
- f. Six ferrules for crimping to attach the coupling tailpieces to the 0.25-inch (6.4 mm) inside diameter hose.
- g. One pair of welding hose crimping pliers for 0.1875-inch (4.8 mm) and 0.25-inch (6.4 mm) hose of the vise-grip locking type.

3.3.8 Wrenches. Provide a single wrench to operate the acetylene cylinder valve. Provide a heavy-duty multipurpose wrench for:

- a. Connecting cutting and welding tips, nozzles, and attachments to the torch.
- b. Connecting hoses to regulators and torch body.
- c. Connecting regulators to cylinders.

3.3.9 Tip cleaners. Two sets of tip cleaners to suit all tips listed in tables II and III shall be furnished, packed in a metal case of suitable dimensions.

3.3.10 Igniter. Four friction igniters (spark lighters) shall be furnished, each complete with flint.

3.3.10.1 Flints. Four boxes of six flints, suitable for use with the spark lighters, shall be provided.

3.3.11 Wire brush. Two wire brushes shall be furnished. Each brush shall have 3 row brushes and a curved handle.

3.3.12 Chipping hammer. A chipping hammer shall be furnished. The hammer shall be a cross peen, single or double bevel, and punch point, with a round wood handle.

3.3.13 Operator's manual. The contractor shall furnish to the government a standard operator's manual normally furnished in commercial practice for each torch outfit specified in the contract.

3.4 Treatment and painting. Treatment and painting shall be in accordance with the manufacturer's best standard practice if not otherwise specified herein.

A-A-50582

3.5 Identification marking. The torch outfit shall be marked for identification. The approved item name is "TORCH OUTFIT, CUTTING AND WELDING." The marking shall be placed outside on both sides of the case, in 1-inch (25.4 mm) block letters, in yellow enamel.

3.6 Lubricants. Lubricants on any part of the torch that will be exposed or in contact with oxygen or acetylene and MAPP gas shall be compatible with oxygen at 90 pound-force per square inch (621 kilopascal) gage.

4. REGULATORY REQUIREMENTS.

4.1 Materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR). Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this commercial item description are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this commercial item description.

4.2 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest version of ASTM E 380, and all other requirements of this commercial item description including form, fit, and function are met. If a product is manufactured to metric dimensions and these dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer has the option of accepting or rejecting the product.

5. QUALITY ASSURANCE PROVISIONS.

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

6. PACKAGING. The preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 Source of documents.

7.1.1 The Federal Acquisition Regulation (FAR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

A-A-50582

7.1.2 ASTM Standards are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this CID.
- b. Outfit content and quantities, if other than specified (see 3.3).
- c. Tips, other than as specified (see 3.3.3 and 3.3.3.2).
- d. Regulators, if other than two-stage (see 3.3.5).

7.3 National Stock Numbers (NSNs). The following is a list of NSNs assigned which correspond to this CID. The list may not be indicative of all possible NSNs associated with the CID.

NSN

3433-00-076-3261

7.4 Subject term (key word) listing.

Acetylene torch
Braze torch
Cutting torch
Hot wrench
MAPP gas
Oxy-acetylene
Torch
Welder
Welding torch

MILITARY INTEREST:

Custodian:
Navy - YD1

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:
Navy - YD1

(Project 3433-0138)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
A-A-50582

2. DOCUMENT DATE (YYMMDD)
970702

3. DOCUMENT TITLE

TORCH OUTFIT, CUTTING AND WELDING

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME

G. M. KRALIK

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(2) AUTOVON
551-5741

c. ADDRESS (Include Zip Code)
COMMANDING OFFICER, NCBC CODE 15E2R
1000 23RD AVENUE
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