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INCH-POUND

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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 (CID) 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 outdoors.

2. SALIENT CHARACTERISTICS

2.1 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.

2.2 Standard commercial product. The torch outfit shall, as a minimum, be in accordance with the requirements of this CID and shall be the manufacturer's standard commercial product. Additional or better features that are not specifically prohibited by this CID but 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 product that has been sold or is being currently offered for sale on the commercial market through advertisements, manufacturer's catalogs, or brochures, and represents the latest production model.

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.

AMSC N/A FSC 3433

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2.3 Torch outfit component parts. Unless otherwise specified (see 6.2(b)), 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	2.3.1	1
2	Torch, cutting and welding	2.3.2	1
3	Welding tips	2.3.3	8
4	Other tips	2.3.3.1	As specified
5	Heating tip	2.3.4	1
6	Cutting tips	2.3.5	15
7	Gouging tip	2.3.6	1
8	O-rings	2.3.7	6 each type and size
9	Regulator, pressure (acetylene and MAPP gas)	2.3.8	1
10	Regulator, pressure (oxygen)	2.3.8	1
11	Gage, pressure (acetylene and MAPP gas)	2.3.9	1 cylinder, 1 delivery
12	Gage, pressure (oxygen)	2.3.9	1 cylinder, 1 delivery
13	Hose assembly	2.3.10	2
14	Hose coupling, male, LH	2.3.10.1(a)	1
15	Hose coupling, male, RH	2.3.10.1(b)	1
16	Coupling nut, female, LH	2.3.10.1(c)	2
17	Coupling nut, female, RH	2.3.10.1(d)	2
18	Coupling tailpieces, straight	2.3.10.1(e)	4
19	Ferrules	2.3.10.1(f)	6
20	Welding hose crimping pliers	2.3.10.1(g)	1
21	Wrench, acetylene valve	2.3.11	1
22	Wrench, multipurpose	2.3.12	1
23	Cleaners, tip	2.3.13	2 sets
24	Igniter, friction	2.3.14	4
25	Flint	2.3.14.1	24
26	Brush, wire	2.3.15	2
27	Hammer, chipping	2.3.16	1
28	Operator's manual	2.3.17	1

2.3.1 Carrying case. The carrying case shall be designed and constructed to withstand normal in-service abuse without damage to itself or its contents. The case shall be approximately 33 inches (838 millimeters (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.

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

2.3.1.2 Tray. A tray shall be provided. The design of the tray shall allow for display of the 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.

2.3.2 Torch, cutting and welding. The torch (basic, with reverse flow check valves) 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 multi-flame heating and cutting.

2.3.3 Welding tips. Unless otherwise specified (see 6.2(c)), all welding tips specified in table II shall be provided.

TABLE II. Welding tips.

Tip orifice size range		Quantity
Drill size	Drill diameter	
70-74	0.0280 - 0.0225	1
65-69	0.0350 - 0.0292	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

2.3.3.1 Other tips. When specified (see 6.2(c)), 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 acquisition order.

2.3.4 Heating tip. A multi-flame 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.

2.3.5 Cutting tips. Unless otherwise specified (see 6.2(d)), all cutting tips specified in table III shall be provided.

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TABLE III. Cutting tips.

Preheat orifice range		Cutting orifice range			
Drill size	Drill diameter (inch)	Drill size	Drill diameter (inch)	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
65-70	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 - 0.0292	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

2.3.6 Gouging tip. A gouging tip suitable for use with acetylene and MAPP gas shall be provided. The gouging tip shall have a cutting orifice drill size of 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.

2.3.7 O-rings. Six of each type and size of the 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.

2.3.8 Pressure regulators. Two pressure regulators shall be provided: one for use with acetylene or MAPP gas and one for use with oxygen. Each regulator shall be equipped with two pressure gages (see 2.3.9): one for 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 6.2(e)), the regulators shall be of a two stage design.

2.3.9 Pressure gages. Two pressure gages shall be provided for each pressure regulator. The pressure 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.

2.3.10 Hose assembly. Two 25-foot (7.62m) lengths of 0.25-inch (6.4-mm) dual oxygen and acetylene hoses, complete with couplings, shall be provided. The coupling tailpieces and coupling nuts shall be attached to the hoses using crimped ferrules. The coupling tailpieces shall be the straight stepped type.

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2.3.10.1 Hose assembly accessories. Hose assembly accessories shall be provided for making hose-to-hose couplings and for use in repairs. The accessories shall consist of the following items and 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 (of the vise-grip locking type) for 0.1875-inch (4.8-mm) and 0.25-inch (6.4-mm) hoses.

2.3.11 Wrench, acetylene valve. A wrench to operate the acetylene cylinder valve shall be provided.

2.3.12 Wrench, multipurpose. A multipurpose wrench shall be provided 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.

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

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

2.3.14.1 Flint. A minimum of 24 flints that are suitable for use with the igniters shall be provided.

2.3.15 Brush, wire. Two wire brushes shall be provided. Each brush shall have a minimum of 3 rows of wire bristles and shall have a curved handle.

2.3.16 Hammer, chipping. A chipping hammer shall be provided. The hammer shall be a cross peen, single or double bevel, and punch point, with a round wooden handle.

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

2.4 Treatment and painting. Unless otherwise specified (see 6.2(f)), treatment and painting shall be in accordance with the manufacturer's best standard practice.

2.5 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.

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

3. REGULATORY REQUIREMENTS

3.1 Recovered materials. The offer or/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

3.2 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 the conversion table contained in the latest version of IEEE SI 10, "American National Standard for Use of the International System of Units (SI): The Modern Metric System", and all other requirements of this CID 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.

4. PRODUCT CONFORMANCE PROVISIONS

4.1 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 product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

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

5. PACKAGING

5.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (see 6.2(f)).

6. NOTES

6.1 Sources of documents.

6.1.1 FAR. The FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of FAR documents may be obtained from http://www.arnet.gov/far/.

6.1.2 ASTM standards. Copies of ASTM standards may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies of ASTM standards may be obtained from http://www.astm.org/.

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

a. CID document number, revision, and CID PIN.
b. Outfit content and quantities, if different (see 2.3).
c. Welding tips, if different (see 2.3.3 and 2.3.3.1).
d. Cutting tips, if different (see 2.3.5).
e. Pressure regulators, if other than two stage (see 2.3.8).
f. Treatment and painting, if different (see 2.4).
g. Preservation, packing, and marking (see 5.1).

6.3 Subject term (key word) listing.

Acetylene
gas
MAPP
oxygen

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - 6FEE

Preparing Activity:
DLA - GS6

(Project 3433-0158)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.