[INCH-POUND]
A-A-59460
12 June 2000
SUPERSEDING
MIL-P-80249A
22 March 1982

COMMERCIAL ITEM DESCRIPTION

PLATING UNIT, SELECTIVE (BRUSH), PORTABLE

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 portable selective (brush) plating units intended for use is such processes as electrodepositing metal in touch-up plating processes, in repair of components that cannot be disassembled for repair, and resurfacing and resizing worn surfaces.

2. CLASSIFICATION. The plating units shall be of the following types and sizes. The type and size to be furnished shall be as specified (see 7.2(b)).

Type I - Manual control
Type II - Automatic control

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Defense Supply Center Richmond, ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

AMSC N/A FSC 3426

Size - Sizes are shown in table I.

TABLE I Plating unit sizes.

Size	Power output,	
	Amperes	Volts, direct current, minimum
1	0 to 5	0 to 12
2	0 to 10	0 to 12
3	0 to 15	0 to 12
4	0 to 20	0 to 12
5	0 to 25	0 to 18
6	0 to 30	0 to 18
7	0 to 50	0 to 18
8	0 to 60	0 to 18
9	0 to 100	0 to 18
10	0 to 150	0 to 18
11	0 to 300	0 to 18
12	0 to 500	0 to 18

3. SALIENT CHARACTERISTICS

3.1 General requirements. The machine shall be new and one of the manufacturer's current models capable of operation in accordance with the requirements herein. All parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement, and repair.

3.1.1 Process instruction manual. A process instruction manual shall be provided with each plating unit. The manual shall provide detail information for preparing the surfaces of metals to be plated, plating characteristics such as ampere-hours, voltage range, thickness control, plating rate, current density, anode-to-cathode speed, recommended ventilation requirements, safe storage, storage and handling of solutions, and types of solutions and their intended uses. This manual is in addition to the technical information normally required for installation, operation, and maintenance of the equipment.

3.2 Components. The plating unit shall include, as a minimum, the following components:

3.2.1 Power pack. A lightweight direct current (DC) power pack shall be provided that is designed specifically for the plating process. The power output shall not be less than that specified for each size shown in table I.

3.2.1.1 Output terminals. Unless otherwise specified (see 7.2(c)), size 1 through 4 plating units shall be provided with one set of output terminals, and size 5 through 12 plating units shall be provided with two sets of output terminals.

3.2.1.2 Leads. Unless otherwise specified (see 7.2(d)), size 1 through 4 plating units shall be provided with one set of flexible leads, and size 5 through 12 plating units shall be provided with two sets of flexible leads. Each set shall consist of a lead to the workpiece and a lead to the anode handle. Each set of leads shall be capable of handling the maximum power output of the plating unit. Each set of leads shall be constructed of the material and be of the length considered by the manufacturer as standard.

3.2.1.3 Voltmeter and ammeter. The plating unit shall be provided with a voltmeter and ammeter with scale ranges capable of reading the full voltage and ampere output of the unit. The voltmeter and ammeter shall be digital or analog as specified (see 7.2(e)).

3.2.1.4 Ampere-hour meter. When specified (see 7.2(f)), size 1 through 4 plating units shall have an ampere-hour meter. Size 5 through 12 plating units shall be provided with an ampere-hour meter for plating thickness control. When provided, the ampere hour meter shall be of the reset digital type.

3.2.2 Controls.

3.2.2.1 Manual controls (type I and type II). Unless otherwise specified (see 7.2(g)), the power pack shall include, as a minimum, the following manual switches and controls:

a. On-off switch.
b. Reverse current switch.
c. Infinitely variable voltage control.
d. Ampere-meter reset switch.

3.2.2.2 Automatic control (type II). The type II plating unit shall have automatic control of the power pack ampere-hour output. Unless otherwise specified (see 7.2(h)), the automatic control shall, as a minimum, be capable of the following functions:

a. Program the required ampere-hour output.
b. Sound an alarm when the programmed ampere-hour has been reached.
c. Display programmed data and process status.

3.2.3 Anodes. If required, anodes of suitable size and shape, e.g. round, flat, concave, or convex, shall be provided as specified (see 7.2(i)). The anodes shall be air cooled, flow through, or sacrificial as specified (see 7.2(j)).

3.2.4 Plating solutions. If required, high-speed plating solutions, specially formulated for the metal to be worked, shall be provided as specified (see 7.2(k)).

3.2.5 Electrical system. Unless otherwise specified (see 7.2(l)), the power pack shall conform to the American National Standards Institute/National Fire Prevention Association (ANSI/NFPA)

79. Unless otherwise specified (see 7.2(m)), the power pack shall operate from a 115-volt, single-phase, 60-hertz electrical circuit.

3.2.6 Electric motors. Unless otherwise specified (see 7.2(n), motors for the optional workpiece turning head and plating tools shall have sealed and permanently lubricated ball or roller bearings, shall be energy efficient, and shall conform to National Electrical Manufacturers Association (NEMA) MG-1. The motor(s) shall be totally enclosed and fan cooled (TEFC) or sealed as specified (see 7.2(o)).

3.2.7 Optional accessories.

3.2.7.1 Plating station. When specified (see 7.2(p)), a plating station shall be provided. The plating station shall consist of a work area, sink, air and water piping, electrical service, storage cabinets, and drawers. The work area shall be covered with a chemically resistant surface.

3.2.7.2 Mobile cart. When specified (see 7.2(q)), a mobile cart shall be provided for conveyance of the plating unit power pack and to store plating tools, solutions, and cables.

3.2.7.3 Solution pump. When specified (see 7.2(r)), a solution pump shall be provided. When provided, the pump shall be a peristaltic, electric-motor-driven pump with means to adjust the flow rate and shall include all necessary hoses, couplings, and power cable. The pump flow rate in gallons per minute shall be as specified (see 7.2(s)).

3.2.7.4 Turning head. When specified (see 7.2(t)), a turning head shall be provided. Unless otherwise specified (see 7.2(u)), the turning head shall be driven by a 115-volt, single-phase, 60-hertz electric motor with a stepless speed control from 0 to 400 revolutions per minute. Unless otherwise specified (see 7.2(v)), the motor shall have a power takeoff for driving a rotary tool handle or grinding accessory.

3.2.7.5 Oscillating (traversing) arm. When specified (see 7.2(w)), an oscillating (traversing) arm shall be provided.

3.2.7.6 Rotary plating tool. When specified (see 7.2(x)), a rotary plating tool shall be provided. Unless otherwise specified (see 7.2(y)), the rotary plating tool shall be driven by a 115-volt, single phase, 60-hertz electric motor with a forward-reverse switch and stepless speed control with a range 0 to 900 revolutions per minute. The tool shall be capable of plating internal diameters ranging from 0.060 to 1.5 inches.

3.2.7.7 Variable-speed internal diameter (ID) plater. When specified (see 7.2(z)), a variable-speed ID plater shall be provided. Unless otherwise specified (see 7.2(aa)), the plater shall be driven by a 115-volt, single phase, 60-hertz electric motor with a stepless speed control with a range from 10 to 90 revolutions per minute. The plater shall be capable of plating internal diameters ranging from 4 to 12 inches. When specified (see 7.2(bb)), an optional adapter shall be provided to allow plating internal diameters up to 3 feet.

3.2.7.8 Other accessories. Other accessories shall be provided as specified (see 7.2(cc)).

3.3 Performance. Unless otherwise specified (see 7.2(dd)), the plating unit shall be connected to a suitable heat sink and operated continuously at its maximum rated voltage and ampere output for at least 4 hours. Any evidence of overheating or malfunctioning of the unit or components shall be cause for rejection.

3.4 Machine dimensions and weight. If required, the maximum machine dimensions (length, width, and height) and machine weight shall not exceed the restrictions specified (see 7.2(ee)).

3.5 Safety and health requirements. The manufacturer shall ensure that the machine and all equipment and accessories used on the machine shall be in compliance with Occupational Safety and Health Administration (OSHA) 29 CFR PART 1910. This does not ensure compliance with other OSHA requirements for the plating unit in its operating environment such as noise levels, radiation levels, electromagnetic emissions, noxious vapors, and airborne contaminants. If required, hazard conditions of the plating unit operation shall be analyzed, and other requirements to integrate the plating unit into its intended operating environment shall be as specified (see 7.2(ff))

3.6 Nameplate. A nameplate shall be securely attached to the machine. Unless otherwise specified (see 7.2(gg)), the nameplate shall contain the following information:

a. Nomenclature.
b. Manufacturer's name.
c. Serial number.
d. Machine model designation.
e. Power input (volts, total amperes, phase, frequency).
f. Power output (volts and amperes range).
g. Contract number or order number.
h. National stock number.
i. Date of manufacture.

4. REGULATORY REQUIREMENTS

4.1 Recovered 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).

4.2 Environmental protection. The item shall meet all applicable Environmental Protection Agency (EPA) 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 adhered to during the manufacturing, service, transportation, storage, and operation/use of the item.

5. QUALITY ASSURANCE PROVISIONS

5.1 Product conformance. The products shall meet the salient characteristics of this commercial item description; conform to the manufacturer'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.

5.1.1 Verification of conformance. Unless otherwise specified (see 7.2(hh)), the plating unit shall have certification of conformance to Aerospace Material Specification (AMS) 2451 by an accredited testing laboratory satisfactory to the Government.

5.2 Warranty. Unless otherwise specified (see 7.2(ii)), the manufacturer's standard commercial warranty, terms, and conditions shall apply.

6. PACKAGING. Unless otherwise specified (see 7.2(jj)), preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES

7.1 Sources of referenced documents.

7.1.1 Government documents. Copies of Federal documents may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402

7.1.2 Industry standards. Copies of industry standards referenced in this CID may be obtained from the following addresses:

National Electrical Manufacturers Association (NEMA)

NEMA MG-1 Motors and Generators

Applications for copies should be sent to the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

National Fire Protection Association (NFPA)

ANSI/NFPA 79 Electrical Standard for Industrial Machinery

Applications for copies should be sent to the National Fire Protection Association, One Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

Occupational Safety and Health Administration (OSHA)

OSHA 1910 Occupational Safety and Health Standards for General Industry (29 CFR Part 1910)

Applications for copies should be sent to the U.S. Department of Labor, 200 Constitution Avenue NW, Room 423, Washington, DC 20210.

Society of Automotive Engineers (SAE)

AMS 2451 Plating, Brush, General Requirements

Applications for copies should be sent to the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

7.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this document.
b. Type and size of plating unit required (see 2).
c. Output terminals, if different (see 3.2.1.1).
d. Leads, if different (see 3.2.1.2).
e. Voltmeter and ammeter, as specified (see 3.2.1.3).
f. Ampere-hour meter, if different (see 3.2.1.4).
g. Manual controls, if different (see 3.2.2.1).
h. Automatic control, if different (see 3.2.2.2).
i. Anode size and shape, as specified (see 3.2.3).
j. Anode type, as specified (see 3.2.3).
k. Plating solutions, as specified (see 3.2.4).
l. Electrical system industrial standard, if different (see 3.2.5).
m. Electrical system voltage, if different (see 3.2.5).
n. Optional equipment motor, as specified (see 3.2.6).
o. Electric motors, if different (see 3.2.6).
p. Plating station, if required (see 3.2.7.1).
q. Mobile cart, if required (see 3.2.7.2).
r. Solution pump, if required (see 3.2.7.3).
s. Solution pump flow rate, as specified (see 3.2.7.3).
t. Turning head, if required (see 3.2.7.4).
u. Turning head motor, if different (see 3.2.7.4).
v. Turning head power takeoff, if different (see 3.2.7.4).
w. Oscillating (traversing) arm, if required (see 3.2.7.5).
x. Rotary plating tool, if required (see 3.2.7.6).
y. Rotary plating tool motor, if different (see 3.2.7.6).
z. Variable speed ID plater, if required (see 3.2.7.7).
aa. Variable speed ID plater motor, if different (see 3.2.7.7).
bb. Variable speed ID plater adapter, if required (see 3.2.7.7).
cc. Optional accessories, as specified (see 3.2.7.8).

dd. Performance, if different (see 3.3).
ee. Machine dimensions and weight, as specified (see 3.4).
ff. Additional health and safety requirements, as specified (see 3.5).
gg. Nameplate, if different (see 3.6).
hh. Verification of conformance, if different (see 5.1.1).
ii. Warranty, if different (see 5.2).
jj. Packaging requirements, if different (see 6).

7.3 Part identification number (PIN). The following part identification numbering procedure is for Government purposes and does not constitute a requirement for the contractor.

AA59460-XXX

- Size: Sizes are shown in table I
- Type: A - Type I, Manual control
  B - Type II, Automatic control
- CID number

MILITARY INTERESTS:

Custodians
Navy - SH

Reviewers
Navy - AS, OS, MS

PREPARING ACTIVITY:
DLA - GS

(Project 3426-0056)