A-A-50310
30 May 1990

COMMERCIAL ITEM DESCRIPTION

SPRAY GUN, PAINT (HEAVY DUTY, SIPHON FEED)

The General Services Administration has authorized the use of this Commercial Item Description (CID) as a replacement for Military Specification MIL-S-12877H which is cancelled.

Abstract. This description covers one type of air operated, siphon feed, heavy duty paint spray gun consisting of a forged aluminum alloy gun body, a paint cup and a carrying case. The spray gun shall be provided with parts to convert the spray gun to perform as either of the following sizes:

Size 1 - Air volume consumption not less than 2.2 cubic feet per minute (cfm) nor more than 4 cfm (Touch-up size).

Size 2 - Air volume consumption not less than 7 cfm nor more than 8 cfm (Full coat size).

Salient characteristics. The spray gun shall meet the following requirements.

1. Spray gun body. The spray gun body shall be an aluminum alloy drop forging with a hook provided at the top of the body.

2. Spray head. The spray head shall be brass or bronze and of the detachable type. The interior and exterior surfaces shall be smooth and finished with a chrome or nickel plating.

3. Air caps and fluid nozzles. Both Size 1 and Size 2 air caps and nozzles meeting the requirements of Table I shall be provided with each spray gun. Air caps and nozzles shall be external mix siphon feed type. The spray gun shall be provided with all hardware necessary to perform as either a Size 1 or a Size 2. The conversion shall be accomplished by changing only the air cap.

3.1 Air cap. The air cap shall be fabricated from brass or bronze with smooth exterior and interior surfaces which are chrome or nickel plated. The air cap shall be self-centering on the nozzle and fitted to the spray gun head with a threaded retaining ring.

Beneficial comments, recommendations, clarifications, additions, deletions, etc. and any data which may improve this document should be sent: Commander, US Army Armament Research, Development and Engineering Center, ATTN: SMCAR-EST-S, Rock Island, IL 61299-7300

AMSC N/A FSC 4940

TABLE I. Minimum Effective Dimensions of Spray Pattern.

	Size 1	Size 2
Elliptical Pattern	1.5 by 7 inches	2 by 8 inches
Round Pattern	1.5 inches	2 inches
Air pressure	30-50 psig	50-60 psig
Fluid Flow Rate	7.25 oz or more/minute	8 oz or more/minute
Air Flow Rate*	2.2-4.0 cfm	7.0-8.0 cfm
Viscosity**	up to 20 seconds	up to 30 seconds

*The air flow shall be corrected for pressure and temperature differential to standard barometric pressure at 29.92 inches of mercury and 70 degrees F

**timed measurements of paint viscosity using a Number 2 ZAHN Cup at 77 ±5 degrees F.

3.2 Nozzle. The nozzle shall be fabricated from stainless steel and have a Rockwell C hardness of 48-60. The nozzle shall be ground or lapped on all seating surfaces and air passages.

4. Siphon tube assembly. The siphon tube assembly shall consist of the spray gun cup lid, quick release clamp, gasket, and siphon tube for delivering paint from the cup into the spray head. The assembly shall attach to the spray head with a 0.375 inch female national standard straight pipe thread mechanical (NPSM) with a 30 degree tapered seat.

5. Spray gun cup. A heavy duty, one quart capacity spray gun cup, shall be provided with each spray gun. The cup shall have an aluminum alloy body with an external stainless steel or aluminum alloy reinforcement ring permanently attached to its bottom. The outside diameter of the cup shall be not more than 4.625 inches and the smallest throat diameter shall be not less than 3.25 inches. The material wall thickness of the cup shall be no less than 0.040 inches. The cup interior shall have a 63 microinch (1.6 microns) or finer arithmetical average surface roughness, and shall contain no burrs or slivers.

6. Valves. All valves shall be replaceable.

6.1 Paint valve. The trigger operated paint valve shall be a stainless steel needle valve. The valve shall be ground on all seating surfaces. The valve packing shall be of chrome treated leather, fiber, or synthetic material. Flow rate shall be adjustable. The paint valve shall be self closing when the trigger is released.

6.2 Air valve. The air valve shall be trigger operated with a replaceable valve seat. The packing shall be chrome treated leather, fiber, or synthetic material. The air valve shall be self closing when the trigger is released.

6.3 Pattern control valve. An adjustable pattern control valve shall be provided to infinitely regulate the spray pattern from round to elliptical and vice versa (see Figure 1).

7. Trigger. The trigger shall control both the air valve and the paint valve and shall operate to permit air flow before paint flow. Releasing the trigger shall cause the paint valve to close before the air flow is stopped. The trigger shall be fabricated of corrosion resistant metal, or of metal plated to resist corrosion.

8. Connections. The spray gun shall be provided with paint siphon tube and air connections. The connection for the siphon tube shall be of 0.375 inch male national standard straight pipe thread mechanical (NPSM) with a thirty (30) degree internal tapered seat, and the connection for the air hose shall be a 0.250 inch male NPSM with a thirty (30) degree internal tapered seat. The air hose fitting shall be detachable from the butt of the handle grip and shall be fabricated from drawn brass rod.

9. Air leakage. Valve packing and seals when subject to 100 psig pressure shall allow no more than a 10 psig drop in 1 minute.

10. Hydrostatic pressure. The spray gun with the cup removed shall be designed and fabricated to perform as specified (see Table I) after being subject to a hydrostatic pressure of not less than 250 psig.

11. Durability. The spray gun and components shall be capable of withstanding 10,000 trigger actuations in less than 2 hours when subject to a pressure of 60 spig.

12. Performance and product characteristics. The paint spray gun and all of its parts shall perform in accordance with the requirements specified herein and in Table I.

12.1 Sprayable Material Finish. Using the Size 1 (2.2-4.0 cfm) air cap and nozzle combination and the Size 2 (7-8 cfm) air cap and nozzle combination, the spray gun shall provide a coating finish equal to or better than the commercial automotive passenger car finish provided by major domestic automobile manufacturers when spraying black to charcoal color pigmented acrylic paint over a 1 yard by 1 yard prepared metal surface. Viscosity shall conform to Table I.

12.2 Spray pattern. In both Size 1 and Size 2 configurations the spray paint gun shall produce symmetrical round and elliptical spray patterns (see Figure 1) meeting the requirements of Table I. The effective area of the spray pattern is that area which has 100 percent paint coverage. The pattern shall be produced using a black to charcoal color alkyd gloss enamel exterior automotive paint conforming to Federal Specification TT-E-489, Type I, Class A, thinned to the required viscosity for both Size 1 and Size 2 applications in accordance with Table I. The spray pattern shall be produced, without paint runs within the paint area, with the spray gun held stationary in a perpendicular position 7.5 to 8.5 inches from the sprayed surface, and the paint sprayed for not more than one (1) second.

13. Impact resistance. The spray gun, with the cup and siphon tube assembly removed and the nozzle and connections protected, shall withstand being dropped six (6) times through a free fall of six (6) feet to an unprotected concrete floor without damage or deformation to the spray gun sufficient to degrade its performance.

14. Carrying case. The carrying case shall be made of high density polyethylene meeting the requirements of Federal Specification L-P-390, Type III, Class H, Grade 2. The carrying case shall be molded with custom contours to accommodate the spray gun, cup and all hardware necessary for conversion from one size spray capability to the other. The carrying case shall consist of the top and bottom shells, handle, and clasps.

Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices. The Government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

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 revision of Federal Standard No. 376, and all other requirements of this Commercial Item Description are met.

If a product is manufactured to metric dimensions and those 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.

Preservation, packaging, packing, labeling, and marking. Preservation, packaging, packing, labeling, and marking shall be as specified in the contract or order.

Notes.

Ordering data. Acquisition documents should specify the following:

Title, CID number, and date of this document.

As the result of a market acceptability survey, the following companies have shown to be manufacturers of an acceptable product described within this Commercial Item Description. This list does not limit or exclude the selection of other manufacturers who have an acceptable product provided that they meet the market acceptability survey criteria, as verified by the CID developer, that has been established for the CID. Other manufacturers' products will be considered for a current procurement if market acceptability qualification can be established before the specified date of contract award; otherwise other manufacturers' products will be considered for future solicitations.

DeVilbiss Industrial Products Corporation
300 Philips Avenue
PO Box 913
Toledo, Ohio 43692-0913

Model Number MBC-510-58E (Spray Gun) with
(1) MB-4039-45 (Cap)
(1) TGC-545 (Cup)
(1) Carrying Case

Binks Manufacturing Company
9201 West Belmont Avenue
Franklin Park, Illinois 60131

Model Number 7 (Spray Gun) with
(1) 35x35 (Siphon Cup Nozzle)
(1) 81-550 (Siphon Cup)
(1) Carrying Case

Sharpe Manufacturing Company
PO Box 15042
1224 Wall Street
Los Angeles, California 90015

Model Number 971G-6-70 (Spray Gun) with
(1) Model 400G (Siphon Cup)
(1) 71-02 #T (Air Cap)
(1) Carrying Case (Comp # 38522)

FED-STD-376, L-P-390, and TT-E-489 are available from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.

This document was prepared by U.S. Army Armament Research, Development and Engineering Center (Tools and Equipment Engineering Division, Standardization and Specification Engineering Branch), SMCAR-EST-S, Rock Island, IL 61299-7300.

MILITARY INTERESTS:

Military Coordinating Activity

Custodian

Army - AL
Navy - MC
Air Force - 99

Review activity

DLA-CS

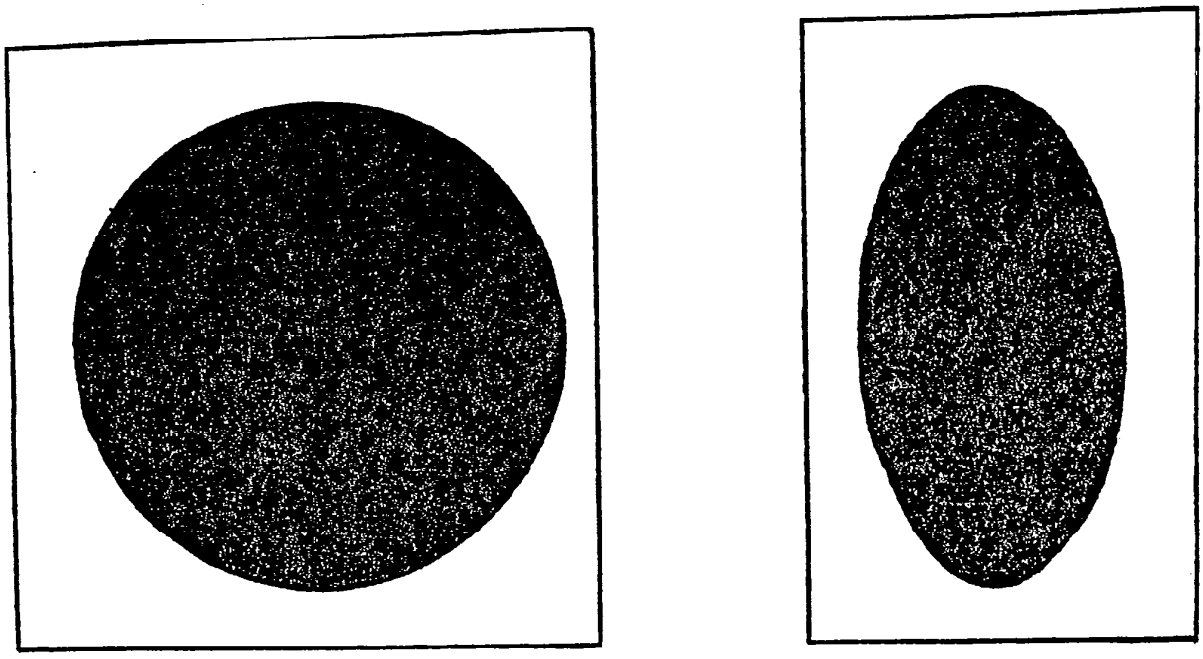
CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS

PREPARING ACTIVITY:

Army - AL

Project 4940-0596



Round pattern

Elliptical Pattern

FIGURE 1. Acceptable spray patterns.