

INCH-POUND

 A-A-50310A
 19 October 2011
 SUPERSEDING
 A-A-50310
 30 May 1990

COMMERCIAL ITEM DESCRIPTION

SPRAY GUN, PAINT, HEAVY DUTY (SIPHON OR PRESSURE FEED)

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

1. SCOPE. This commercial item description (CID) covers the general requirements for two types (siphon and pressure feed) of air operated, heavy-duty paint spray guns consisting of forged aluminum bodies, paint cups, and carrying cases. Spray guns covered by this CID are intended for commercial/industrial applications.

2. CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN). This CID uses a classification system which is included in the PIN as shown in the following example (see 7.1).



2.1 Type and size. Spray gun types and sizes are classified as shown in table I.

2.1.1 Example of PIN: The PIN AA50310-S001 specifies a type S, siphon feed, size 001.

TABLE I. Spray gun types and sizes

Characteristics	Type		
	S (siphon feed)		P (pressure feed)
	Size 001	Size 002	Size 001
Elliptical pattern	1.5 by 7 inches	2 by 8 inches	2 by 9
Round pattern	1.5 inches	2 inches	2 inches
Air pressure, psig <u>1/</u>	30-50	50-60	55-65
Fluid flow rate, oz./min.	7.25 or more	8 or more	14.5 or more
Air flow rate, cfm <u>2/</u>	2.2 - 4.0	7.0 - 8.0	7.0 - 8.0
Viscosity, seconds <u>3/</u>	up to 20	up to 30	25 - 30

1/ Pressure is in pounds per square inch gage (psig).

2/ Air flow is in cubic feet per minute (cfm). Note: The volume of air flow shall be corrected to 29.92 inches of mercury, standard barometric pressure, at +70 °F.

3/ Timed measurements of paint viscosity using a Number 2 Zahn cup at 77 ±5 °F for type S, and a Number 4 Ford cup at the same temperature for type P.

Beneficial comments, recommendations, additions, deletions, etc., and data that may improve this document should be sent to: DLA, Land and Maritime, ATTN: VAI, P.O. Box 3990, Columbus, OH 43218-3990, or email to FluidFlow@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil>.

3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Spray guns supplied to this CID shall be as specified herein.

3.2 Materials. Materials used for the spray gun shall be free from defects that would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in best commercial practices (see section 4). Suitable protection against galvanic corrosion shall be provided when dissimilar metals are used.

3.3 Design and construction. The spray gun shall be a complete functional assembly, consisting of a gun and a cup. The spray gun shall be new and of the manufacturer's latest commercial design. The gun shall be designed for heavy-duty commercial and industrial production use. The spray gun shall be for hand-held operation and designed with an air pressure, fluid material atomizing and mixing cap. The type S gun shall be designed for siphon feed. The type P gun shall be designed for pressure feed. All valves used in either the type S or type P spray guns shall be replaceable.

3.3.1 Spray gun body. The spray gun body shall be an aluminum alloy drop forging with a hook provided at the top of the body (see figure 2).

3.3.2 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.

3.3.3 Air caps and fluid nozzles. Air caps and nozzles meeting the requirements of table I shall be provided with each spray gun. For type S, the air caps and nozzles shall be external mix siphon feed type. The spray gun shall be provided with all the hardware necessary to perform as either a type S size 001 or a size 002 spray gun. The conversion shall be accomplished by changing only the air cap. The necessary hardware shall be provided for the spray gun to perform as a type S or a type P spray gun.

3.3.4 Air cap. The air cap shall be fabricated from brass or bronze with smooth exterior and interior surfaces that 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.

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

3.3.6 Siphon tube assembly (type S gun). 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 (9.53 mm) female national standard straight pipe thread mechanical (NPSM) with a 30 degree tapered seat.

3.3.7 Spray gun cup. A heavy duty, one-quart capacity cup shall be provided 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 (117.48 mm) and the smallest throat diameter shall be not less than 3.25 inches (82.55 mm). The material wall thickness of the cup shall be no less than 0.040 inches (1.02 mm). The cup interior shall have a 63 microinch (1.6 microns) (XXX mm) or finer arithmetic average surface roughness, and shall contain no burrs or slivers.

3.3.7.1 Type P spray gun cup. The type P spray gun, in addition to the material and dimensional requirements of 3.3.7, shall have a cup lid that includes an air regulator adjustment, a fine air flow volume adjustment valve, and a pressure gage (air). A pop-off pressure safety relief valve, vented to atmosphere, shall be mounted on the gun cup lid or at the base of the gun handle. The air regulator shall be capable of regulating within 5 psig the air pressure inside the cup at any point within the full-range scale of the air pressure gage. The cup shall be capable of withstanding internal air pressure of 50 psig without a pressure drop of more than 2 psig during a two-minute period. The safety relief valve shall release pressure at not less than 50 psig and not more than 60 psig and shall reset itself when pressure is reduced below the valve release pressure.

3.3.8 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 chrome-treated leather, fiber, or synthetic material. Flow rate shall be adjustable. The paint valve shall be self-closing when the trigger is released.

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

3.3.10 Pattern control valve. An adjustable pattern control valve shall be provided to infinitely regulate the spray pattern from round to elliptical and vice versa.

3.3.11 Trigger. The trigger shall control both the air and paint valves 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 material shall be corrosion-resistant metal or metal plated to resist corrosion.

3.3.12 Connections. The spray gun shall be provided with paint and air connections. The paint inlet connection shall be a 0.375 inch (9.53 mm) National Pipe Straight Mechanical (NPSM) male thread with a thirty (30) degree internal tapered seat, and the connection for the air hose shall be a 0.250 inch (6.35 mm) 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.

3.3.13 Air leakage. The valve packings and seals, when subjected to 100 psig pressure, shall allow no more than a 10 psig drop in one minute after pressure cut-off.

3.3.14 Hydrostatic pressure. The spray gun with the cup removed shall not be damaged and shall perform as specified herein after being subjected to a hydrostatic pressure of 250 psig minimum for a period of not less than one minute.

3.3.15 Durability. The spray gun and components shall not be damaged and shall perform as specified herein after being subjected to 10,000 full-stroke trigger actuations while under an air pressure of 60 psig.

3.4 Performance and product characteristics. The paint spray gun and all its components shall perform in accordance with the requirements specified herein and in table I.

3.4.1 Sprayable material. The spray gun shall be capable of spraying liquid materials such as enamels, lacquers, primers, shellacs, varnishes, polyurethanes, stains, paints, and the two-part aliphatic polyurethane coatings, thinned to a viscosity as specified in table I.

3.4.2 Sprayable material finish. The type S and type P guns, with the appropriate air cap and nozzle combinations, shall provide a coating finish equal to or better than the passenger car finishes provided by the major domestic automobile manufacturers when spraying black to charcoal color pigmented acrylic paint over a 3-foot by 3-foot square prepared metal surface. Viscosity shall conform to table I.

3.4.3 Spray pattern. The spray gun, in any configuration, 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 thinned to the required viscosity for both type S and type P configurations 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 (190.50 mm) to 8.5 inches (215.90 mm) from the sprayed surface, and the paint sprayed for not more than one second. The type P spray gun shall produce acceptable patterns on horizontal, flat, non-porous surfaces positioned both below the spray gun and above the spray gun (overhead).

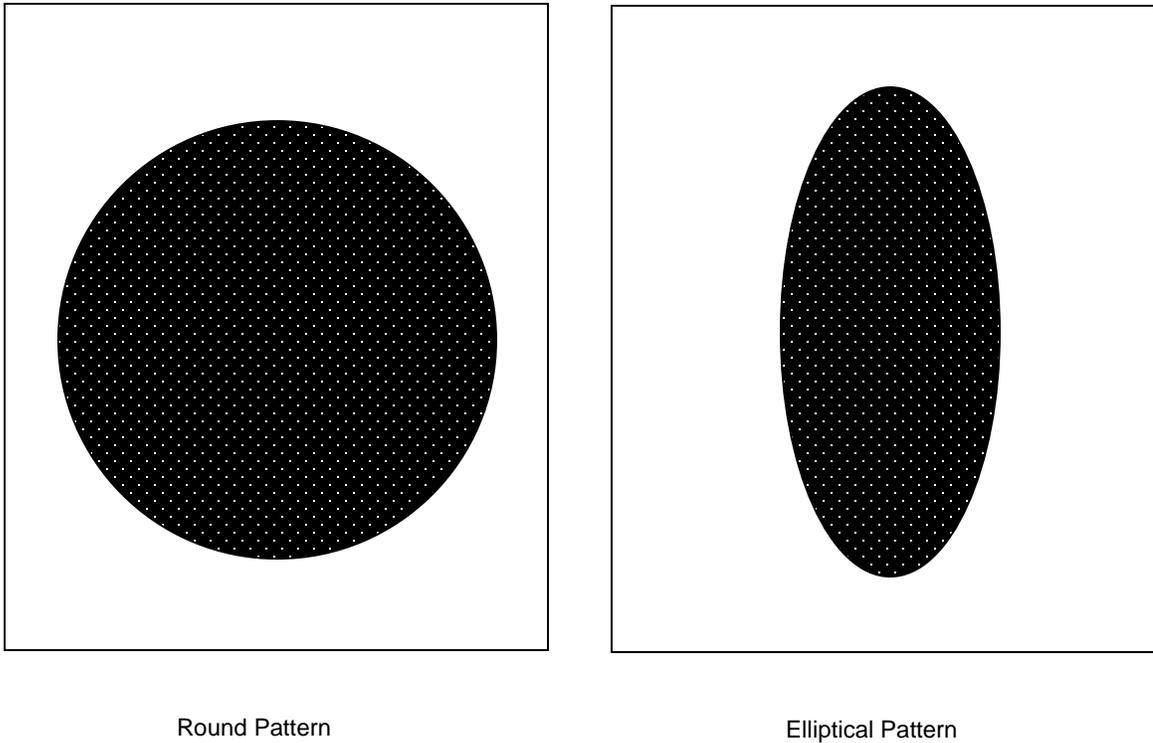


FIGURE 1. Acceptable spray patterns.

3.5 Impact resistance. The spray gun, with the cup removed (the type S gun shall also have the siphon tube assembly removed) and the nozzle and connections protected, shall withstand being dropped 6 times through a free fall of 6 feet (minimum) to an unprotected concrete floor. There shall be no damage or deformation to the spray gun sufficient to degrade its performance.

3.6 Carrying case. The carrying case shall be made of high-density polyethylene plastic that meets the requirements of ASTM D4976 designation PE235. The carrying case shall be molded with custom contours to accommodate the spray gun, cup, and all hardware necessary for conversion from one size or type to the other. The carrying case shall consist of the top and bottom shells, handle, and clasps.

3.7 Marking. The spray guns supplied to this CID shall be marked with the manufacturer's (MFR's) standard commercial PIN.

3.8 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they are within specified tolerances after conversion using tables in the latest revision of FED-STD-376, and all other requirements of this CID are met.

3.6 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.7 Workmanship. Coupling halves, cap and wye; quick disconnect pneumatic hose, two-lug universal type shall be processed in such a manner as to be uniform in quality and shall be free from other defects that will affect life, serviceability, or appearance.

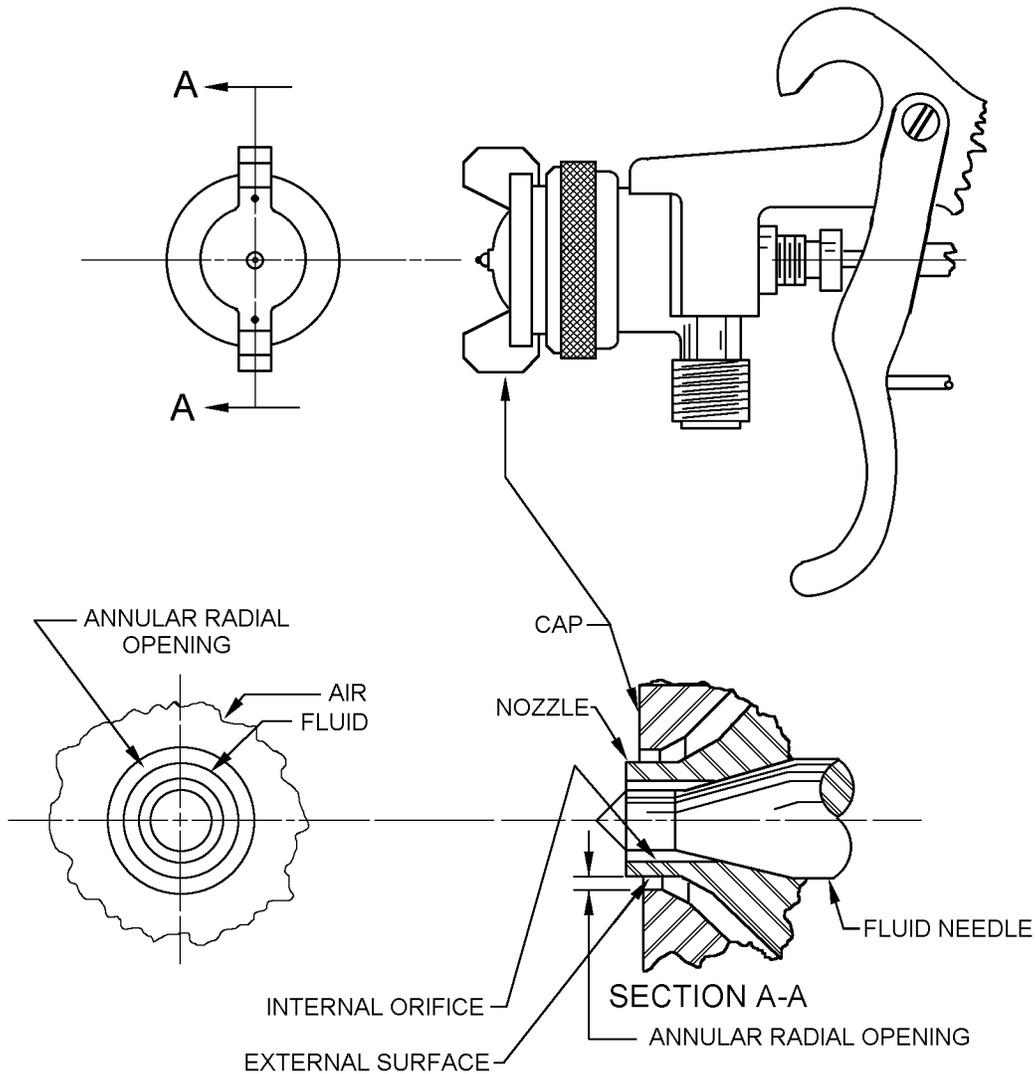


FIGURE 2. Pressure feed nozzle.

4. **REGULATORY REQUIREMENTS.** The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR).

5. **PRODUCT CONFORMANCE PROVISIONS.**

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 product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.1.1 Pop-off pressure safety relief valve test. This test shall verify conformance to 3.3.7.1 and shall be performed on each spray gun offered for acceptance. An air pressure gage capable of measuring pressure in the gun cup shall be installed. The gage shall be accurate within one percent over the range of 45 to 65 psig and readable to the nearest psig. Starting with the air regulator adjusted to 40 psig, adjust the regulator slowly upward, carefully observing the gage air pressure, until the pop-off pressure safety relief valve opens. The pressure release point shall be not less than 50 psig and not more than 60 psig. The valve shall reset itself upon reduction of pressure below the release point. Failure of the relief valve to open in the range of 50 to 60 psig, or failure of the valve to reset itself shall be cause for rejection.

5.2 Market acceptance. The following market acceptance criteria are necessary to document the quality of the product to be provided under this CID:

- a. The company producing the item must have been producing a product meeting the requirements of this CID for at least 5 years.
- b. The company producing the item must have sold at least 25 units meeting this CID in the commercial marketplace over the past 2 years.

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

7. NOTES.

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible to meet the requirements of this specification. As of the date of this document, the U.S. Environmental Protection agency (EPA) is focusing efforts on reducing 31 priority chemicals. The list of chemicals and additional information is available on their website <http://www.epa.gov/osw/hazard/wastemin/priority.htm>. Included in the EPA list of 31 priority chemicals are cadmium, lead, and mercury. Use of these materials should be minimized or eliminated unless needed to meet the requirements specified herein (see Section 3).

7.3 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these spray guns to DLA Land and Maritime under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.4 Source of documents.

FEDERAL STANDARD

- FED-STD-376 - Preferred Metric Units for General Use by the Federal Government

(Copies of this document are available online at <https://assist.daps.dla.mil/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

FEDERAL REGULATIONS

- FAR 23.403 - Federal Acquisition Regulation (FAR)

(Copies of this document is available online at www.acquisition.gov/comp/far/index.html or from the U. S. Government Printing Office, 732 North Capital Street NW, Washington, DC 20401.)

Other Publications:

ASTM INTERNATIONAL

- ASTM D4976 - Standard Specification for Polyethylene Plastics Molding and Extrusion Materials

(Copies of these documents are available online at <http://www.astm.org> or from the ASTM International, P.O. Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

7.5 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN.
- b. Product conformance provisions.
- c. Packaging requirements.

7.6 Commercial products. As part of the market analysis and research effort, this CID was coordinated with the following manufacturers of commercial products. At the time of CID preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID.

(NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only those shown.)

<u>MFR's CAGE</u>	<u>MFR's name and address</u>
5S985	Fluid-Air Products, Inc. 12834 Gravois Rd. Saint Louis, MO 63127-1713 Voice telephone: (314) 729-7000
07334	ITW Industrial Finishing DBA Binks DeVilbiss 195 Internationale Blvd. Glendale Heights, IL 60139 Voice telephone: (630) 237-5000

7.7 Part number (P/N) supersession data. These CID PINS supersede the following MFRs' P/Ns as shown in table II. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE II. P/N supersession data.

Dash number	MFR's CAGE	MFR's P/N <u>1/</u>
AA50310		
-S001	17431	PMBC-45E
-S002	5S985	MBC-58E
	17431	PMBC-58E
-P001	5S985	MBC-58FX
	17431	PMBC-58FX

1/ The manufacturer's P/N shall not be used for procurement to the requirements of this CID. At the time of preparation of this CID, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements see 3.7.

7.8 Government users. To acquire information on obtaining these air blow guns from the Government inventory system, contact DLA Land and Maritime, ATTN: FMU, P.O. Box 3990, Columbus, OH 43218-3990, or telephone (614) 692-8734.

7.9 Key words.

Air cap
Hand-held
Material
Valve, air
Valve
Valve, relief

7.10 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

MILITARY INTERESTS:

Custodians:
Army – AR
Navy – MC
Air Force – 99
DLA – CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FAS
Preparing activity:
DLA – CC

(Project 4940-2011-002)

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 <https://assist.daps.dla.mil>.