

[INCH-POUND]
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SUPERSEDING
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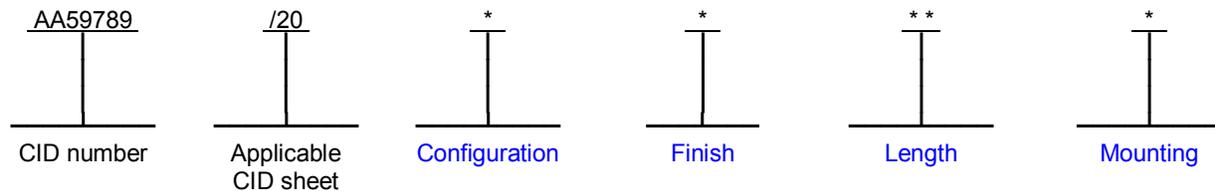
COMMERCIAL ITEM DESCRIPTION

HOLDER, ELECTRICAL CARD, WEDGE RETAINERS, 5 PIECE,
FOR COLD PLATE APPLICATIONS, GENERAL REQUIREMENTS FOR

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 the general requirements for a family of 5 piece wedge card holders for holding circuit card assemblies into their installed positions when used in heat sinking devices (cold plates, heat exchanger) or other applications. Card holders covered by this CID are intended to provide maximum contact between thermal paths on the circuit card assemblies to the heat sink surfaces, and to provide increased resistance to loosening due to shock and vibration. Requirements for specific card holders are covered in the individual CID specification sheets. Card holders covered by this CID are intended for commercial/industrial applications.

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



3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Card holders supplied to this CID shall be as specified on the applicable CID specification sheet.

3.2 CID specification sheet. The family of card holders for use on circuit card assemblies shall be in accordance with the requirements specified herein and the applicable CID specification sheet. In the event of conflict between this general CID and the applicable CID specification sheet, the latter shall govern.

3.3 Material. Materials shall be as specified herein and on the applicable CID specification sheet.

3.3.1 Body and wedges. The body and wedge material shall be aluminum alloy 6061 temper T6 in accordance with [ASTM B221](#), [SAE AMS-QQ-A-200/8](#), or equivalent.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Defense Supply Center, Columbus, ATTN: DSCC-VAC, Post Office Box 3990, Columbus, OH 43218-3990, facsimile (614) 693-1642, or electronic mail at 5998.Documents@dla.mil. Since contact information can change, you may want to verify the currency of the address information using the ASSIST Online database at <https://assist.daps.dla.mil/>.

AMSC N/A

FSC 5998

3.3.2 Rear wedge thread reinforcement (when applicable). The rear wedge thread reinforcement (captive nut or helical insert) material shall stainless steel in accordance with [ASTM A582/A582M](#) or equivalent.

3.3.3 Cup. The cup material for visual indicators shall stainless steel in accordance with [ASTM A240/A240M](#), [ASTM A582/A582M](#), or equivalent.

3.3.4 Flat washer. The flat washer shall comply with [AIA/NAS NAS 620](#) or equivalent.

3.3.6 Lockwasher. The lockwasher shall comply with [AIA/NAS NASM35338](#), [AIA/NAS NAS 1676](#), or equivalent.

3.3.7 Screw. The screw material shall be stainless steel in accordance with [SAE AMS-QQ-S-763](#), [ASTM A484/A484M](#), [ASTM A582/A582M](#), or equivalent.

3.3.8 Screw retention lock nut (when applicable). When screw retention is specified, the lock nut used shall comply with [AIA/NAS NASM21043](#) or equivalent.

3.3.9 Spring. The spring material for visual indicators shall be stainless steel in accordance with [ASTM A313/A313M](#), [ASTM A580/A580M](#), or equivalent.

3.3.10 Alignment springs. The alignment spring (when needed) shall be either beryllium copper in accordance with [ASTM B194](#), or stainless steel in accordance with [SAE AMS 5904](#), or equivalent.

3.4 Configurations. Card holders are available with many options that determine its configurations. The individual options of a particular card holder are specified on the applicable CID specification sheet. Listed below is a compilation of the most popular options.

3.4.1 Lockwasher and flat washer. A lockwasher and flat washer located under the screw head will provide for additional resistance to loosening from shock and vibration. Unless otherwise inherent to the design of the card holder, on those where a lockwasher and flat washer are an option, a configuration identifier shall be included in the PIN.

3.4.2 Screw self-locking element. The use of a screw self-locking element will provide prevailing torque for resistance to loosening from shock vibration. Unless otherwise specified, the self-locking element shall comply with [AIA/NAS NAS1283](#), [MIL-DTL-18240](#), or equivalent. Card holders requiring a screw self-locking element shall include a configuration identifier in the PIN.

3.4.3 Facing (left or right). Some card holders require a facing suffix to denote their unique orientation when properly installed on a circuit card assembly. These card holders are available for mounting in either the left hand or right hand position. Unless otherwise specified, left facing card holders shall include a configuration identifier "L" in the PIN. Unless otherwise specified, right facing card holders shall include a configuration identifier "R" in the PIN.

3.5 Finish.

3.5.1 Stainless steel parts (when applicable). Stainless steel parts shall be subjected to passivation treatment in accordance with [SAE AMS 2700](#), [MIL-S-5002](#), or equivalent.

3.5.2 Beryllium copper parts (when applicable). Beryllium copper parts shall be finished in accordance with [SAE AMS-QQ-N-290](#), Class 1, Grade G, Bright or equivalent.

3.5.3 Aluminum parts. Unless otherwise specified, all aluminum parts shall be finished as specified in 3.5.3.1.1 through 3.5.3.3.2, inclusive. Finish designators shall be as specified in table I and on the applicable CID specification sheet or equivalent. A finish designator shall be included in the PIN.

TABLE I. Card holder finishes for aluminum parts and PIN designators.

Finish designator	Finish	Reference document (or equivalent)	Paragraph
B	Anodize, black	MIL-A-8625 , Type II, Class 2	3.5.3.1.1
W	Anodize, red	MIL-A-8625 , Type II, Class 2	3.5.3.1.2
Q	Anodize, black with dry film lubricant	MIL-A-8625 , Type I or II, Class 2 and MIL-PRF-46010 (for dry film lubricant)	3.5.3.1.3
H	Anodize, hard black	MIL-A-8625 , Type III, Class 2	3.5.3.1.4
D	Anodize, hard black with dry film lubricant	MIL-A-8625 , Type III, Class 2 and MIL-PRF-46010 (for dry film lubricant)	3.5.3.1.5
C	Chemical film, gold	MIL-DTL-5541 , Class 1A	3.5.3.2.1
R	Chemical film, clear	MIL-DTL-5541 , Class 1A	3.5.3.2.2
E	Nickel, electroless	SAE AMS-C-26074 , Grade B, Class 4	3.5.3.3.1
P	Nickel, electrodeposited	SAE AMS-QQ-N-290 , Class 1, Grade G, Bright	3.5.3.3.2

3.5.3.1 Anodize. Anodized coatings are intended to provide surface corrosion resistance and have good dielectric properties. Two types of anodized finishes are available for extractors fabricated of aluminum, thin anodize, and thick (or hard) anodize. A thin anodized coating applied to aluminum wedge bodies provides good surface corrosion protection and medium abrasion resistance. A hard anodized coating applied to the aluminum wedge bodies provides excellent surface corrosion and abrasion resistance under severe service conditions.

3.5.3.1.1 Black anodized. Black anodize finish shall be in accordance with [MIL-A-8625](#), Type II, Class 2 or equivalent. Black anodized finish assemblies shall include a finish designator "B" in the PIN.

3.5.3.1.2 Red anodized. Red anodize finish shall be in accordance with [MIL-A-8625](#), Type II, Class 2 or equivalent. Black anodized finish assemblies shall include a finish designator "W" in the PIN.

3.5.3.1.3 Black anodized with dry film lubricant. Dry film lubricant applied over black anodize is for the reduction of wear and friction. Black anodize finish shall be in accordance with [MIL-A-8625](#), Type I or Type II, Class 2 or equivalent. Dry film lubricant shall be in accordance with [MIL-PRF-46010](#), Type I or equivalent. Black anodized with dry film lubricant finish assemblies shall include a finish designator "Q" in the PIN.

3.5.3.1.4 Hard black anodized. Hard black anodized finish provides excellent surface corrosion and abrasion resistance under severe service conditions. Hard black anodize finish shall be in accordance with [MIL-A-8625](#), Type III, Class 2 or equivalent. Hard black anodized finish assemblies shall include a finish designator "H" in the PIN.

3.5.3.1.5 Hard black anodized with dry film lubricant. Dry film lubricant applied over hard black anodize is for the reduction of wear and friction. Hard black anodize finish shall be in accordance with [MIL-A-8625](#), Type III, Class 2 or equivalent. Dry film lubricant shall be in accordance with [MIL-PRF-46010](#) or equivalent. Hard black anodized with dry film lubricant finish assemblies shall include a finish designator "D" in the PIN.

3.5.3.2 Chemical film. Chemical film finishes are primarily used for corrosion resistance where lower electrical resistance is required. Two types of chemical film finishes are available for devices fabricated of aluminum. A low electrical resistance chemical film finish, class 3, applied to aluminum provides good surface corrosion protection and medium abrasion resistance. A thicker but less conductive chemical film finish, class 1A, applied to aluminum extractors provides better surface corrosion and abrasion resistance under severe service conditions than class 3 chemical film finish.

3.5.3.2.1 Chemical film, gold. Gold chemical film finish shall be in accordance with [MIL-DTL-5541](#), Class 1A or equivalent. Gold chemical film finish assemblies shall include a finish designator "C" in the PIN.

3.5.3.2.2 Chemical film, clear. Clear chemical film finish shall be in accordance with [MIL-DTL-5541](#), Class 1A or equivalent. Clear chemical film finish assemblies shall include a finish designator "R" in the PIN.

3.5.3.3 Nickel. Two different nickel finishes are available for the aluminum parts of card holders, electroless and electrodeposited nickel. Electroless nickel finish provides a hard and smooth surface and protects aluminum and aluminum alloys from corrosion, oxidation and wear. Electrodeposited nickel finish protects metals against corrosive attack in rural, industrial, and marine atmospheres and offers high hardness for wear and low friction.

3.5.3.3.1 Nickel, electroless. Electroless nickel finish shall be in accordance with [SAE AMS-C-26074](#), Grade B, Class 4 or equivalent. Electroless nickel finish assemblies shall include a finish designator "E" in the PIN.

3.5.3.3.2 Nickel, electrodeposited. Electrodeposited nickel finish shall be in accordance with [SAE AMS-QQ-N-290](#), Class 1, Grade G, Bright or equivalent. Electrodeposited nickel finish assemblies shall include a finish designator "P" in the PIN.

3.6 Interface and physical dimensions. The card holders shall be as specified herein and the applicable CID specification sheet.

3.6.1 Expanded and relaxed dimensions. Expanded and relaxed dimensions shall be as specified in the applicable CID specification sheet.

3.6.2 Card holder length. Unless otherwise specified, the card holder length shall be the length of the body and wedge assembly in its relaxed state. The lengths available for a particular card holder shall be listed on the applicable CID specification sheet. Card holder length designator shall be included in the PIN. See table II for primary length designators for card holders 10 inches (254 mm) or greater in length. Examples of length designation (13th and 14th characters of PIN) are underlined below:

2.30 inch (58.4 mm) card holder = AA59789/01BN23W;

7.60 inch (193.0 mm) card holder = AA59789/02BN76W;

11.50 inch (292.1 mm) card holder = AA59789/03BNB5W.

TABLE II. Primary length designators for card holders 10 inches (254 mm) or longer.

PIN designation	Primary length, inches	PIN designation	Primary length, inches
A	10 (254 mm)	E	14 (356 mm)
B	11 (279 mm)	F	15 (381 mm)
C	12 (305 mm)	G	16 (406 mm)
D	13 (330 mm)	H	17 (431 mm)

3.6.3 Mounting options. The mounting options shall be as specified in 3.6.3.1 through 3.6.3.5, inclusive. Mounting option designators shall be included in the PIN (see table III). When mounting holes are required, the number of holes and their location on the card holder mounting body shall be as specified on the applicable CID specification sheet.

TABLE III. Mounting hole options and PIN designators.

PIN designation	Hole description	Number of holes
N	No holes (for adhesive mounting)	0
R	Rivet mount holes; counterbore and countersunk through holes	2 or more
T	Tapped 0–80 UNF 2B holes	2 or more
S	Tapped 2–56 UNC 2B holes	2 or more
V	Tapped 4–40 UNC 2B holes	2 or more
U	Tapped, metric M2 x 0.4 holes	2 or more
M	Tapped, metric M2.5 x 0.45 holes	2 or more
Y	Tapped, metric M3 x 0.5 holes	2 or more
P	Index pins	2 or more

3.6.3.1 No mounting holes. The no mounting holes option is intended to be used when card holders are to be mounted with adhesives. Card holders not having mounting holes shall include a mounting designator "N" in the PIN (see table III).

3.6.3.2 Rivet mounting holes (counterbore and countersunk through holes). The holes used for rivet mounting shall be of the diameter, countersunk angle, depth, and counterbore diameter (when applicable) specified on the applicable CID specification sheet. Card holders using rivet mount holes shall include a mounting designator "R" in the PIN (see table III).

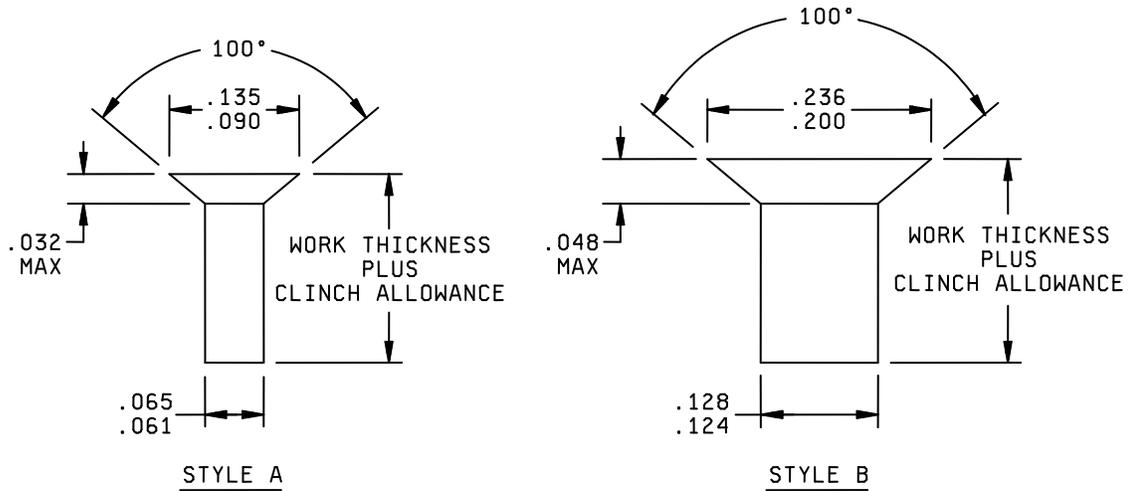
3.6.3.2.1 Rivet dimensions. The rivet styles typically used when rivet mounting holes is specified are depicted on figure 1.

3.6.3.3 Tapped holes. Tapped holes shall be 0–80 UNF, 2–56 UNC, or 4–40 UNC through holes. Card holders using tapped holes shall include a mounting designator "T", "S", or "V", respectively in the PIN (see table III).

3.6.3.4 Tapped holes, metric. Metric tapped holes shall be 2 mm x 0.4 mm (.08 x .016), 2.5 mm x 0.45 mm (.098 x .018), or 3 mm x 0.5 mm (.12 x .019) through holes. Card holders using metric tapped holes shall include a mounting designator "U", "M", or "Y", respectively in the PIN (see table III).

3.6.3.5 Index pins. Index pins details shall be specified on the applicable CID specification sheet. Card holders using index pins shall include a mounting designator "P" in the PIN (see table III).

3.6.4 Actuating screw. Unless otherwise specified on the applicable CID specification sheet, the screw shall have a internal hex socket head for tool engagement and shall turn clockwise to secure the card holder and the attached circuit card assembly into its installed position.



Inches	mm								
.032	0.81	.061	1.55	.090	2.29	.128	3.25	.200	5.08
.048	1.21	.065	1.65	.124	3.15	.135	3.43	.236	5.99

NOTES:

1. Dimensions are in inches. Millimeter equivalents are given for general information only.
2. Unless otherwise specified, tolerances are ± 0.02 inch (0.51 mm) for two place decimals and ± 0.010 inch (0.25 mm) for three place decimals.

FIGURE 1. Suggested rivet dimensions.

3.6.5 Cold plate slot width dimension (see [figure 2](#)). Recommended slot width dimension will be specified on the applicable CID specification sheet.

3.6.6 Nominal installation torque. When card holders are used in cold plate applications as depicted on [figure 2](#), the nominal installation torque of each card holder shall be as specified on the CID specification sheet.

3.6.7 Disassembly. Unless otherwise specified by the CID specification sheet, card holders shall have the capability of being disassembled before or after mounting to the circuit card assembly.

3.7 Marking. Card holders supplied to this CID can be marked with the manufacturer's standard commercial PIN when applicable. The PIN marked on the unit pack shall be the CID PIN.

3.8 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.

3.9 Workmanship. Card holders 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.

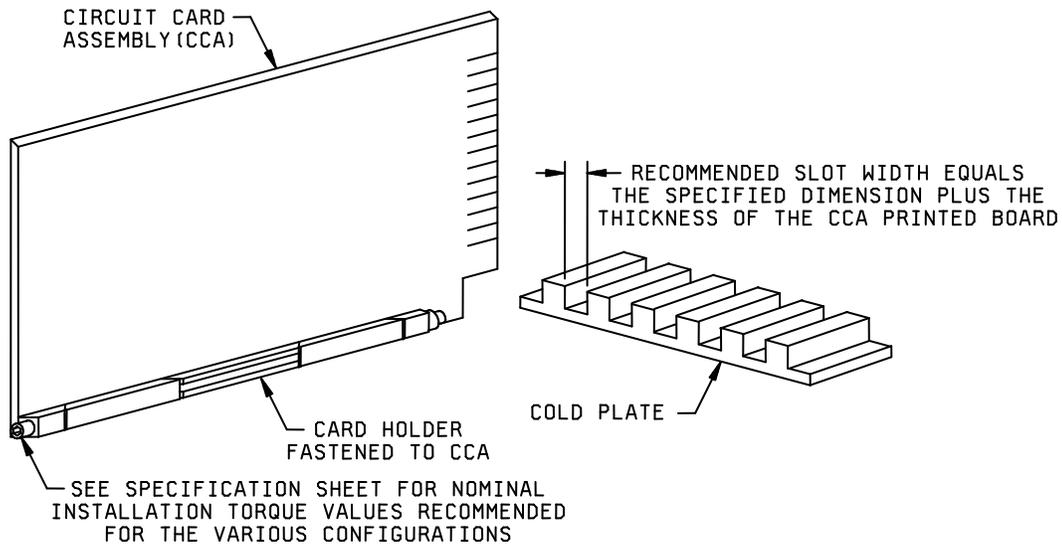


FIGURE 2. Cold plate slot width details.

4. **REGULATORY REQUIREMENTS.** 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).

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, quality assurances practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.2 **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 12 months.
- b. The company producing the item must have sold 500 units meeting the requirements of this CID in the commercial marketplace over the past 12 months.

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 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these card holders to DSCC under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.3 Source of documents.

DEPARTMENT OF DEFENSE SPECIFICATIONS

- MIL-S-5002 – Surface Treatments and Inorganic Coatings for Metal Surfaces of Weapon Systems.
- MIL-DTL-5541 – Chemical Conversion Coatings On Aluminum And Aluminum Alloys.
- MIL-A-8625 – Anodic Coatings For Aluminum And Aluminum Alloys.
- MIL-DTL-18240 – Fastener Element, Self-Locking, Threaded Fastener, 250°F Maximum.
- MIL-PRF-46010 – Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting.

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

FEDERAL REGULATIONS

- FAR – Federal Acquisition Regulations (FAR).

(Copies of these documents are available online at <http://www.acqnet.gov/comp/far/index.html> or from the U.S. Government Printing Office, 732 North Capital Street, NW, Washington D.C. 20401.)

Other Publications

AEROSPACE INDUSTRIES ASSOCIATION (AIA)

- AIA/NAS NAS 620 – Washer, Flat - Reduced Outside Diameter.
- AIA/NAS NAS 1283 – Fasteners, Male Threaded, Self-locking.
- AIA/NAS NAS 1676 – Washer, Lock-Spring, Helical, Hi-Collar.
- AIA/NAS NASM35338 – Washer, Lock-Spring, Helical, Regular (Medium) Series.
- AIA/NAS NASM21043 – Nut, Self-Locking, 800°F, Reduced Hexagon, Reduced Height, Ring Base, Corrosion Resistant Steel.

(Application for copies should be addressed to the Aerospace Industries Association, 1250 Eye Street, NW, Suite 1200, Washington, DC 20005-3924 or at URL: <http://www.aia-aerospace.org/>)

ASTM INTERNATIONAL (ASTM)

ASTM A240/A240M	–	Standard Specification for Chromium and Chromium–Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A313/A313M	–	Standard Specification for Stainless Steel Spring Wire.
ASTM A484/A484M	–	Standard Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings.
ASTM A580/A580M	–	Standard Specification for Stainless Steel Wire.
ASTM A582/A582M	–	Standard Specification for Free–Machining Stainless Steel Bars.
ASTM B194	–	Standard Specification for Copper–Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar.
ASTM B221	–	Standard Specification for Aluminum and Aluminum–Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.

(Application for copies should be addressed to the ASTM International, PO Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or at URL: <http://www.astm.org/>)

SAE INTERNATIONAL (SAE)

SAE AMS–QQ–A–200/8	–	Aluminum Alloy 6061, Bar, Rod, Shapes, Tube, and Wire, Extruded.
SAE AMS–QQ–N–290	–	Nickel Plating (Electrodeposited).
SAE AMS–QQ–S–763	–	Steel, Corrosion Resistant, Bars, Wire, Shapes, and Forgings.
SAE AMS–C–26074	–	Electroless Nickel Coatings.
SAE AMS 2700	–	Passivation of Corrosion-Resistant Steels.
SAE AMS 5904	–	Steel, Corrosion Resistant, Sheet and Strip 18Cr - 9.0Ni (SAE 30302) Cold Rolled, 1/2 Hard, 150 ksi (1034 MPa) Tensile Strength-UNS S30200.

(Application for copies should be addressed to the SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or at URL: <http://www.sae.org/>)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

7.4 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.

7.5 Government users. To acquire information on obtaining these card holders from the Government inventory system, contact Defense Supply Center, Columbus, ATTN: DSCC–CAC, P.O. Box 3990, Columbus, OH 43218–3990, DSN 850–7402 or (614) 692–7402, or via electronic mail at ActiveDevices.CAC@dscclia.mil.

7.6 Assistance. Questions or comments pertaining to this document should be addressed to Defense Supply Center, Columbus, ATTN: DSCC–VAC, P.O. Box 3990, Columbus, OH 43218–3990; telephone (614) 692–0526; DSN 850–0526; facsimile (614) 693–1642; or electronic mail address 5998.Documents@dla.mil. This document is available for [downloading](http://www.dscclia.mil) at World Wide Web URL <http://www.dscclia.mil>.

7.7 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible to meet the requirements of this specification. As of the dating 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 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).

7.7.1 Guidance on use of alternative parts with less hazardous or non-hazardous materials. This specification provides for a number of alternative metal protection finish materials via the PIN. Users should select the PIN with the least hazardous material that meets the form, fit, and function requirements of their application.

7.8 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 – CR
Navy – EC
Air Force – 85
DLA – CC

Review Activity:
Air Force – 99

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FAS
Preparing Activity
DLA – CC
Project 5998-2010-006

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/>.