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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 in accordance with ASTM B221, AMS-QQ-A-200/8, or equivalent.

3.3.2 Captive nut (when applicable). The captive nut material shall stainless steel in accordance with ASTM A582 or equivalent.

3.3.3 Cup. The cup material for visual indicators shall stainless steel in accordance with ASTM A240, ASTM A582, or equivalent.

3.3.4 Flat washer. The flat washer (included with options "W" and "D") shall comply with NAS 620 or equivalent.

3.3.5 Lockwasher. The lockwasher (included with options "W" and "D") shall comply with NAS M35338, NAS 1676, or equivalent.

3.3.6 Screw. The screw material shall be stainless steel in accordance with AMS-QQ-S-763, ASTM A484, ASTM A582, or equivalent.

3.3.7 Screw retention lock nut (when applicable). When screw retention is specified, the lock nut used shall comply with NAS M21042, NAS M21043, or equivalent.

3.3.8 Spring. The spring material for visual indicators shall be stainless steel in accordance with ASTM A313, ASTM A580, or equivalent.

3.4 Finish. Finish shall be as specified herein and on the applicable CID specification sheet or equivalent.

3.4.1 Aluminum parts. All aluminum parts shall be finished as specified in the following paragraphs. A finish designator (see table I) shall be included in the PIN.

3.4.1.1 Chemical film. Chemical film finish provides corrosion prevention on aluminum and aluminum alloys. Chemical film finish shall be in accordance with MIL-C-5541, Class 1A or equivalent. Chemical film finish assemblies shall include a suffix "C" in the PIN.

3.4.1.2 Black anodized. Black anodized finish provides good surface corrosion protection and medium abrasion resistance. Black anodize finish shall be in accordance with MIL-A-8625, Type II, Class 2 or equivalent. Black anodized finish assemblies shall include a suffix "B" in the PIN.

3.4.1.3 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 suffix "H" in the PIN.

3.4.1.4 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 suffix "D" in the PIN.

3.4.1.5 Nickel, electroless. Electroless nickel finish provides a hard and smooth surface and protects aluminum and aluminum alloys from corrosion, oxidation and wear. 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 suffix "E" in the PIN.

3.4.1.6 Nickel, electrodeposited. Electrodeposited nickel finish protects metals against corrosive attack in rural, industrial, and marine atmospheres and offers high hardness for wear and low friction. Electrodeposited nickel finish shall be in accordance with AMS-QQ-N-290, Class 1, Grade G, Bright or equivalent. Electrodeposited nickel finish assemblies shall include a suffix "P" in the PIN.

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3.4.2 Stainless steel parts (when applicable). Stainless steel parts shall be subjected to passivation treatment in accordance with AMS-QQ-P-35, MIL-S-5002, or equivalent.

TABLE I. Card holder finishes.

Finish Designator	Finish	Reference document (or equivalent)	Paragraph
C	Chemical film	MIL-C-5541, Class 1A	3.4.1.1
B	Anodize, black	MIL-A-8625, Type II, Class 2	3.4.1.2
H	Anodize, hard black	MIL-A-8625, Type III, Class 2	3.4.1.3
D	Anodize, hard black, with dry film lubricant	MIL-A-8625, Type III, Class 2 and MIL-PRF-46010 (for dry film lubricant)	3.4.1.4
E	Nickel, electroless	AMS-C-26074, Grade B, Class 4	3.4.1.5
P	Nickel, electrodeposited	AMS-QQ-N-290, Class 1, Grade G, Bright	3.4.1.6

3.5 Interface and physical dimensions. The card holders shall be as specified herein and the applicable CID specification sheet. Tolerances, unless otherwise specified on the applicable CID specification sheet, shall be  $\pm 0.010$  (0.25 mm) for three place decimals and  $\pm 0.02$  (0.5 mm) for two place decimals.

3.5.1 Screw. The screw shall have a internal hex socket head for tool engagement and shall turn clockwise to secure the card holder and circuit card assembly into the applicable fixture. Unless otherwise specified, the internal hex socket head shall be .094 inch (2.38 mm) across flats.

3.5.2 Mounting options. The mounting options shall be as specified in the following paragraphs. Mounting option designators shall be included in the PIN (see table II).

TABLE II. Mounting options.

PIN designation	Hole description
N	No mounting holes
J	Counterbore through holes, 2 places
T	Tapped 0-80 UNF holes, 2 places
V	Tapped 2-56 UNC holes, 2 places
K	Counterbore through holes, 3 places
R	Tapped 0-80 UNF holes, 3 places
S	Tapped 2-56 UNC holes, 3 places
F	Tapped, metric 2 x 0.4 holes, 2 places
G	Tapped, metric 2.5 x 0.45 holes, 2 places
L	Tapped, metric 2 x 0.4 holes, 3 places
M	Tapped, metric 2.5 x 0.45 holes, 3 places

3.5.2.1 No mounting holes. 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 suffix "N" in the PIN.

3.5.2.2 Mounting holes. When two mounting holes are required, the holes shall be spaced as indicated in the applicable CID specification sheet. When specified on the applicable CID specification sheet, holder assemblies greater than 6.00 inches (152.4 mm) in length require additional mounting holes.

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3.5.2.2.1 Counterbore through holes. Unless otherwise specified on the applicable CID specification sheet, counterbore holes shall be .066 to .073 inch (1.68 to 1.85 mm) diameter through holes, countersunk 100 degrees by .140 inch (3.56 mm) diameter with an access/clearance counter bore hole of .156 inch (3.97 mm) diameter by a depth specified in table III. Card holders using counterbore holes shall include a suffix "J" or "K" in the PIN.

TABLE III. Counter bore hole depth.

Counter bore hole depth <sup>1/</sup>	Applicable CID specification sheet
.135 (3.43 mm)	A-A-59590/11 and /12
.160 (4.06 mm)	A-A-59590/7, /8, /9, and /10
.200 (5.08 mm)	A-A-59590/1, /2, /3, /4, /5, /6, /17, /18, /19, /20, and /25
.300 (7.62 mm)	A-A-59590/13, /14, /15, and /16
.390 (9.91 mm)	A-A-59590/21, /22, /23, and /24

<sup>1/</sup> Dimensions are in inches. Millimeters, in parenthesis, are given for information only.

3.5.2.2.2 Tapped holes. Tapped holes shall be 0-80 UNF or 2-56 UNC through holes. Card holders using tapped holes shall include a suffix "T", "V", "R", or "S", respectively in the PIN.

3.5.2.2.3 Tapped holes, metric. Metric tapped holes shall be metric 2 x 0.4 or metric 2.5 x 0.45 through holes. Card holders using metric tapped holes shall include a suffix "F", "G", "L", or "M", respectively in the PIN.

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

3.5.4 Length. Card holders length shall be the length of the body and wedge assembly (not to include hardware protrusion) in its relaxed state. Card holders length designator shall be included in the PIN. Examples of length designation (13<sup>th</sup> and 14<sup>th</sup> characters of PIN) are underlined below:

1.80 inch (45.7 mm) card holder = AA59590/05CN18W;

3.00 inch (127.0 mm) card holder = AA59590/05CN30W;

8.30 inch (170.2 mm) card holder = AA59590/05CN83W.

3.5.5 Options. Card holders may have the following options.

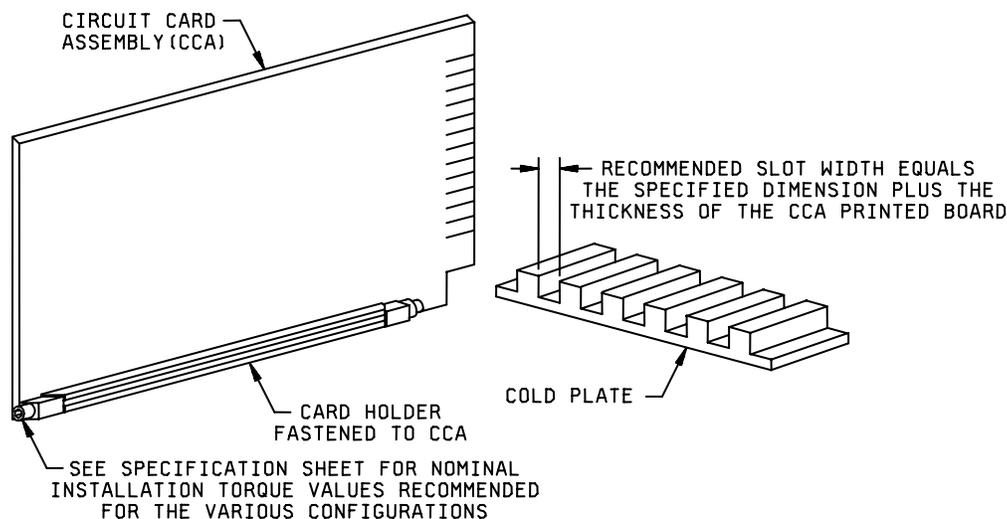
3.5.5.1 Lockwasher and flat washer. A lockwasher and flat washer located under the screw head will provide for additional resistance to loosening from shock and vibration. Card holders requiring a lockwasher and flat washer option shall include a suffix "W" in the PIN.

3.5.5.2 Screw self-locking element. The use of a screw self-locking element will provide prevailing torque for resistance to loosening from shock vibration. Card holders requiring a screw self-locking element shall include a suffix "E" in the PIN.

3.5.5.3 Lockwasher, flat washer, and screw self-locking element. Card holders requiring a lockwasher, flat washer, and screw self-locking element option shall include a suffix "D" in the PIN.

3.5.6 Cold plate slot width dimension. Recommended slot width dimension (see figure 1) will be specified on the applicable CID specification sheet.

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FIGURE 1. Cold plate usage details.

3.5.7 Nominal installation torque. When card holders are used in cold plate applications as depicted on figure 1, the nominal installation torque of each card holder shall be as specified on the CID specification sheet.

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

3.6 Marking. Card holders supplied to this CID can be marked with the manufacturer's standard commercial PIN when applicable.

#### 4. REGULATORY REQUIREMENTS.

4.1 Recycled/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).

#### 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 24 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 24 months.

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5.3 Inspection requirements. Inspection and acceptance of material shall be in accordance with the requirements cited in the contract or purchase request.

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

MIL-S-5002	–	Surface Treatments and Inorganic Coatings for Metal Surfaces of Weapon Systems.
MIL-C-5541	–	Chemical Conversion Coatings On Aluminum And Aluminum Alloys.
MIL-A-8625	–	Anodic Coatings For Aluminum And Aluminum Alloys.
MIL-PRF-46010	–	Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting.

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

## Other Publications

## AEROSPACE INDUSTRIES ASSOCIATION (AIA)

AIA/NAS NAS 620	–	Washer, Flat - Reduced Outside Diameter.
AIA/NAS NAS 1676	–	Washer, Lock-Spring, Helical, Hi-Collar.
AIA/NAS NAS M35338	–	Washer, Lock-Spring, Helical, Regular (Medium) Series.
AIA/NAS M21042	–	Nut, Self-Locking, 450 Degrees F, Reduced Hexagon, Reduced Height, Ring Base, Non-Corrosion Resistant Steel
AIA/NAS M21043	–	Nut, Self-Locking, 800 Degrees 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	–	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A313	–	Standard Specification for Stainless Steel Spring Wire.
ASTM A484	–	Standard Specification for General Requirements for Stainless Steel Bars, Billets and Forgings.
ASTM A580	–	Standard Specification for Stainless Steel Wire.
ASTM A582	–	Standard Specification for Free-Machining Stainless Steel Bars.
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, P.O. Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or at URL: <http://www.astm.org/>.)

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## SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

SAE AMS-QQ-P-35	–	Passivation Treatments for Corrosion-Resistant Steel.
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 Bars, Wire, Shapes, and Forgings, Corrosion Resistant.
SAE AMS-C-26074	–	Coatings, Electroless Nickel, Requirements for.

(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, Post Office Box 3990, Columbus, OH 43218-3990, by telephone (614) 692-7402, or via electronic mail at [ActiveDevices.CAC@dsc.dla.mil](mailto:ActiveDevices.CAC@dsc.dla.mil).

7.6 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. Table IV lists the Environmental Protection Agency (EPA) top seventeen hazardous materials targeted for major usage reduction. If any of these hazardous materials are required, it is recommended that it be used only when other materials cannot meet performance requirements.

TABLE IV. EPA top seventeen hazardous materials.

Benzene	Dichloromethane	Tetrachloroethylene
Cadmium and Compounds	Lead and Compounds	Toluene
Carbon Tetrachloride	Mercury and Compounds	1,1,1 - Trichloroethane
Chloroform	Methyl Ethyle Ketone	Trichloroethylene
Chromium and Compounds	Methyl Isobutyl Ketone	Xylenes
Cyanide and Compounds	Nickel and Compounds	

7.6.1 Guidance on use of alternative parts with less hazardous or non-hazardous materials. This specification provides for a number of alternative plating 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.

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MILITARY INTERESTS:

Custodians:  
Army – CR  
Navy – EC  
Air Force – 11  
DLA – CC

Review activities:  
Air Force – 99

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FSS  
Preparing Activity  
DLA – CC  
Project 5998-0193

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