

COMMERCIAL ITEM DESCRIPTION  
SPECIFICATION SHEET

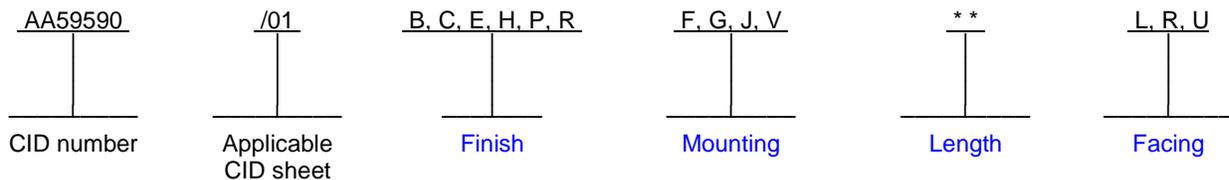
HOLDERS, ELECTRICAL CARD, WEDGE RETAINERS, 3 PIECE, SCREW ACTUATED DRIVE,  
.225 X .260 INCH BODY SIZE, WITH LEVER ACTION LOCKING

The General Services Administration has authorized the use of this  
commercial item description (CID) for all federal agencies.

The complete requirements for procuring electrical card holders described herein shall consist of this document and  
the latest issue in effect of [A-A-59590](#).

**SCOPE.** This CID specification sheet covers 3 piece card holders that use a lever, with a locking feature, to actuate  
wedges to hold circuit card assemblies into their installed positions in heat sinking devices (cold plates, heat  
exchanger) or other applications. Card holders covered by this CID specification sheet are intended to provide  
60g/6ms resistance to shock, withstand 25 G-rms of vibration and provide 2 to 4 degrees C/Watts/inch thermal  
resistance between the circuit card assemblies and the heat sink surfaces. Items covered by this CID specification  
sheet are intended for commercial/industrial applications.

**CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN).** This CID specification sheet uses a classification  
system which is included in the Part Identification Number (PIN) as shown in the following example (see [notes](#)).



Example: AA59590/01GF28U is the PIN for an gold chemical film finished, 2.8 inch (71.1 mm) long card holder with  
an actuating lever that locks the card holder into its installed position. The card holder also features two tapped  
mounting holes for use with 2-56 UNC 2B fasteners.

**SALIENT CHARACTERISTICS.**

**Performance.** Card holders shall hold the circuit card firmly in place providing high resistance to shock and vibration  
while providing maximum thermal transfer. The direct clamping force of configuration A card holders is approximately  
120 pounds (534 Newtons) when adjusted in accordance with the recommended procedure.

**Material.** Unless otherwise specified herein, the card holder materials shall be as specified in [A-A-59590](#).

**Interface and physical dimensions.** The card holders supplied to this CID specification sheet shall be as specified  
herein and the general CID.

**Cold plate slot width.** The recommend cold plate slot width to accommodate the circuit card assembly with attached  
card holder is .300 inch (7.62 mm) plus the thickness of the printed board of the circuit card assembly (see  
[A-A-59590](#)).

**Configuration.** The configuration of a card holder shall be as specified in [table I](#). The details of a particular  
configuration consist of those on [figure 1](#).

**Finish options.** The finish designator shall be as specified in [A-A-59590](#). The finishes available for this CID specification sheet are as follows: "B" (black anodize), "C" (gold chemical film), "E" (electroless nickel), "H" (hard black anodize), "P" (electrodeposited nickel), or "R" (clear chemical film).

**Mounting options.** The mounting designators shall be as specified in [A-A-59590](#). The mounting options available for this CID specification sheet are as follows: "F" (tapped metric M2 x 0.4 holes), "G" (tapped metric M2.5 x 0.45 holes), "J" (rivet mount holes with counterbore and countersink), or "V" (tapped 2-56 UNC holes). See [figure 1](#) for mounting hole spacing requirements.

**Rivet mount holes.** The holes used for rivet mounting shall be .066/.073 inch (1.68/1.85 mm) diameter, countersunk 100 degrees by .140 inch (3.56 mm) diameter through holes with a counterbore of .156 inch (3.96 mm) diameter by .200 inch (5.08 mm) deep.

**Rivets.** This card holder uses rivet style A as specified in [A-A-59590](#) when rivet mounting is used.

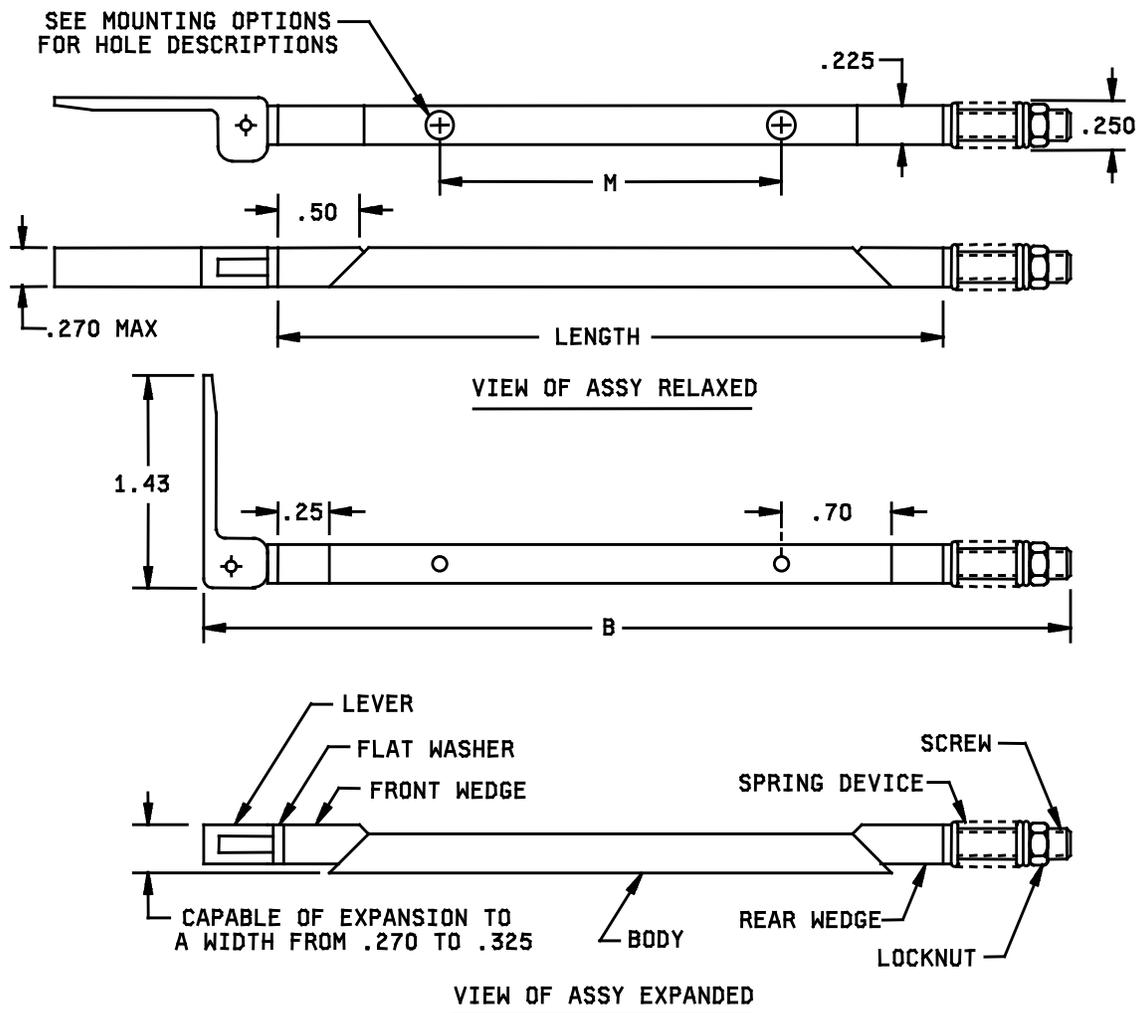
**Length, expanded, and relaxed dimensions.** The length, expanded, and relaxed dimensions shall be as specified on [figure 1](#). The length designator shall be as specified in [A-A-59590](#) and the available lengths for this CID specification sheet are listed in table I.

**Facing.** This card holder is available for mounting in either the left hand, right hand, or universal position. The universal card holder is depicted by configuration A on [figure 1](#). Left and right facing card holders are depicted by configuration B on [figure 1](#) and [figure 2](#). Universal card holders shall include a suffix "U" in the PIN. Left facing card holders shall include a suffix "L" in the PIN. Right facing card holders shall include a suffix "R" in the PIN.

**Lever.** A lever-action device shall be used to expand the card holder to secure the attached circuit card assembly in its installed position. When in the relaxed state, the card holders shall allow the circuit card assembly to be placed into or removed from its installed position with zero insertion force to a slight extraction drag. To secure the circuit card assembly in place, the lever shall be actuated, to become perpendicular with the card holder, and parallel with and towards the circuit card.

TABLE I. Additional assembly dimensions (see figure 1).

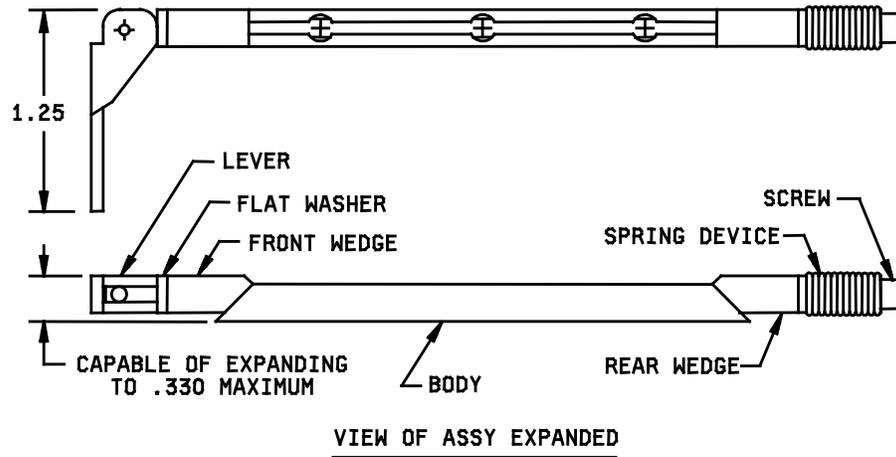
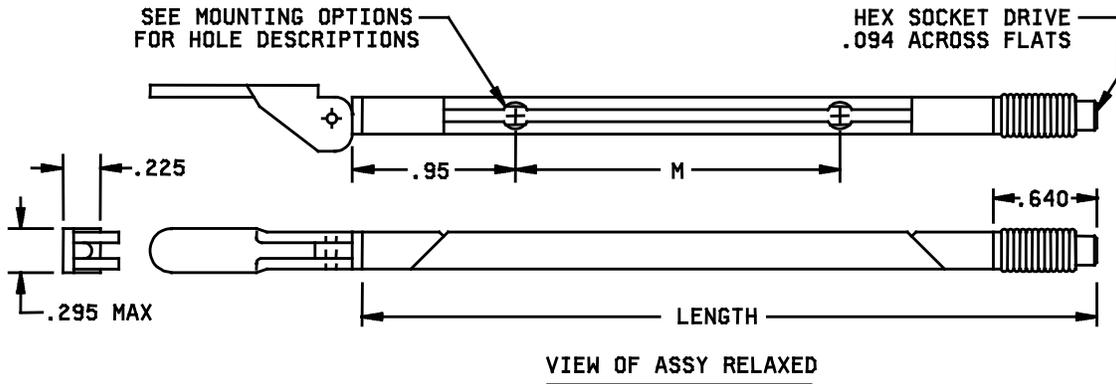
PIN length designator	Configuration	Dimension "Length" $\pm 0.02$ ( $\pm 0.5$ mm)	Dimension "B" $\pm 0.03$ ( $\pm 0.8$ mm)	Dimension "M" $\pm 0.005$ ( $\pm 0.13$ mm)
28	A	2.80 (71.1)	3.70 (93.9)	.90 (22.9)
30	B	3.00 (76.2)		.46 (11.7)
38	A	3.80 (96.5)	4.70 (119.4)	1.90 (48.3)
40	B	4.00 (101.6)		1.46 (37.1)
48	A	4.80 (121.9)	5.70 (194.8)	2.90 (73.7)
50	B	5.00 (127.0)		2.46 (62.5)
58	A	5.80 (147.3)	6.70 (170.2)	3.90 (99.1)
60	B	6.00 (152.5)		3.46 (87.9)
68	A	6.80 (172.7)	7.70 (195.6)	4.90 (124.5)
70	B	7.00 (177.8)		4.46 (113.3)
78	A	7.80 (198.1)	8.70 (220.9)	5.90 (149.9)
80	B	8.00 (203.2)		5.46 (138.7)
88	A	8.80 (223.5)	9.70 (246.4)	6.90 (175.3)
90	B	9.00 (228.6)		6.46 (164.1)



Configuration A

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.225	5.72	.25	6.4	.325	8.26	.70	17.8
.250	6.35	.270	6.86	.50	12.7	1.43	36.3

FIGURE 1. Relaxed and expanded dimensions.



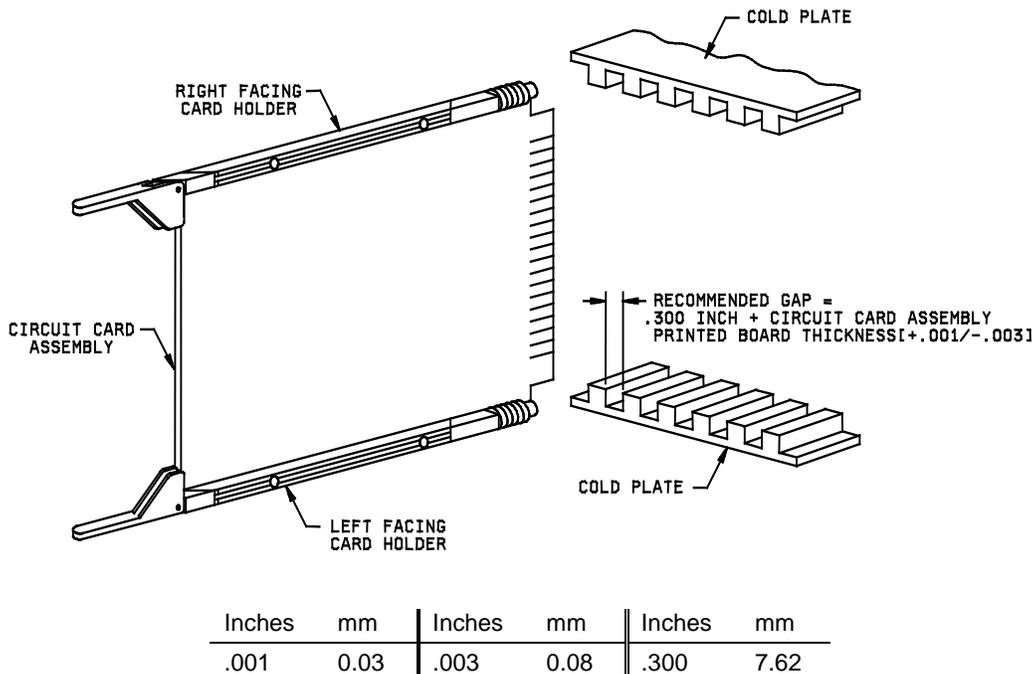
Configuration B (Right hand facing shown)

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.094	2.39	.295	7.49	.640	16.26	1.25	31.8
.225	5.72	.330	8.38	.95	24.1		

NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Unless otherwise specified, tolerances are  $\pm 0.02$  inch (0.5 mm) for two place decimals and  $\pm 0.010$  inch (0.25 mm) for three place decimals.
3. Lever design may vary between configurations.

FIGURE 1. Relaxed and expanded dimensions – Continued.



## NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Left hand and right hand facings applicable to configuration B only.
3. Universal facing card holders (configuration A, not shown) can be used in either left hand or right hand applications.

FIGURE 2. Facing options for configuration B.

Application data for card holders. Configuration A card holders can be used in either left or right facing applications. Configuration A card holders are supplied assembled but are not adjusted from the manufacturer. Configuration B card holders are supplied assembled and pre-adjusted from the manufacturer.

Clamping force adjustment procedure for configuration A (universal) card holder. The universal card holder is supplied assembled but not adjusted for use. In order to apply the proper clamping force the card holder needs to be adjusted in accordance with the following procedure:

- (1) Fasten card holder to circuit card assembly.
- (2) Insert circuit card assembly with card holders attached into cold plate.
- (3) Actuate lever to locked/closed position.
- (4) Tighten locknut on end of screw until wedges initially contact wall of cold plate slot, or slight insertion/extraction drag is felt.
- (5) Additionally tighten locknut two full turns.
- (6) Card holder is now adjusted and ready for use.

Clamping force data for configuration A (universal) card holders. Direct force of card holder is approximately 120 pound force (533.8 N) when adjusted in accordance with the recommended procedure herein. Direct force of card holder is affected as follows:

- (a) 6 pound force (26.7 N) for each .0010 inch (0.025 mm) variation of cold plate slot width, or
- (b) 72 pound force (320.3 N) for each full turn of locknut.

NOTES.

PIN. The PIN should be used for Government purposes to buy commercial products to this CID specification sheet. See the classification section for PIN format example.

Source of documents.

Commercial Item Description

[A-A-59590](#) – Holder, Electrical Card, Wedge Retainers, 3 Piece, For Cold Plate Applications, General Requirements For.

(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.)

Ordering data. Ordering data is as specified in [A-A-59590](#).

Commercial products. As part of the market analysis and research effort, this CID specification sheet was coordinated with the following manufacturers of commercial products. At the time of CID specification sheet preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID specification sheet. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown.)

<u>Manufacturer CAGE</u>	<u>Manufacturer name and address</u>	<u>Manufacturer contact information</u>
18915	Birtcher – A Division of Pentair Electronic Packaging 7328 Trade Street San Diego, CA 92121-3410	Telephone: (858) 740-2400 Toll Free: (800) 854-7086 Facsimile: (858) 740-2430 (URL): <a href="http://www.birtcherproducts.com">www.birtcherproducts.com</a>
61081	Calmark – A Division of Pentair Electronic Packaging 7328 Trade Street San Diego, CA 92121-3410	Telephone: (858) 740-2400 Toll Free: (800) 854-7086 Facsimile: (858) 740-2430 Electronic mail: <a href="mailto:sales@calmark.com">sales@calmark.com</a> URL: <a href="http://www.calmark.com">www.calmark.com</a>
5BG68	Card Locks Unlimited, Inc. 2310 E. Orangethorpe Avenue Anaheim, CA 92806-1231	Telephone: (714) 738-6194 Facsimile: (714) 446-0119 E-mail: <a href="mailto:sales@clumfg.com">sales@clumfg.com</a> URL: <a href="http://www.clumfg.com">www.clumfg.com</a>

Part number supersession data. These CID specification sheet PINs supersedes the following manufacturer's part numbers as shown in table II. The CID PINs listed in table II are only for length designator "28" (configuration A) or "30" (configuration B). See [table III](#) for CID PIN construction using other available lengths for this CID specification sheet. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE II. Commercial P/N supersession data. <sup>1/</sup>

PIN designator AA59590/01 <sup>2/</sup>	Vendor similar designator or type part number <sup>3/</sup> CAGE 18915	Vendor similar designator or type part number <sup>3/</sup> CAGE 61081	Vendor similar designator or type part number <sup>3/</sup> CAGE 5BG68
CF28U			3225LCG-2.80TM2
CF30L	146CR-M2-6-C-L		
CF30R	146CR-M2-6-C-R		
CG28U			3225LCG-2.80TM2.5
CG30L	146CR-M-6-C-L		
CG30R	146CR-M-6-C-R		
CJ28U			3225LCG-2.80H
CJ30L	146CR-R-6-C-L		
CJ30R	146CR-R-6-C-R		
CV28U			3225LCG-2.80T2
CV30L	146CR-S-6-C-L		
CV30R	146CR-S-6-C-R		
RF28U			3225LCC-2.80TM2
RG28U			3225LCC-2.80TM2.5
RJ28U			3225LCC-2.80H
RV28U			3225LCC-2.80T2
BF28U		L225CR2.80TM2	3225LBA-2.80TM2
BF30L	146CR-M-6-B-L		
BF30R	146CR-M-6-B-R		
BG28U		L225CR2.80TM2.5	3225LBA-2.80TM2.5
BG30L	146CR-M2-6-B-L		
BG30R	146CR-M2-6-B-R		
BJ28U			3225LBA-2.80H
BJ30L	146CR-R-6-B-L		
BJ30R	146CR-R-6-B-R		
BV28U		L225CR2.80	3225LBA-2.80T2
BV30L	146CR-S-6-B-L		
BV30R	146CR-S-6-B-R		

See footnotes at end of table.

TABLE II. Commercial P/N supersession data – Continued. 1/

PIN designator AA59590/01 <u>2/</u>	Vendor similar designator or type part number <u>3/</u> CAGE 18915	Vendor similar designator or type part number <u>3/</u> CAGE 61081	Vendor similar designator or type part number <u>3/</u> CAGE 5BG68
HF28U		LHA225CR2.80TM2	3225LHB-2.80TM2
HF30L	146CR-M2-6-B3-L		
HF30R	146CR-M2-6-B3-R		
HG28U		LHA225CR2.80TM2.5	3225LHB-2.80TM2.5
HG30L	146CR-M-6-B3-L		
HG30R	146CR-M-6-B3-R		
HJ28U			3225LHB-2.80H
HJ30L	146CR-R-6-B3-L		
HJ30R	146CR-R-6-B3-R		
HV28U		LHA225CR2.80	3225LHB-2.80T2
HV30L	146CR-S-6-B3-L		
HV30R	146CR-S-6-B3-R		
EF28U		LEN225CR2.80TM2	3225LEN-2.80TM2
PF30L	146CR-M2-6-N-L		
PF30R	146CR-M2-6-N-R		
EG28U		LEN225CR2.80TM2.5	3225LEN-2.80TM2.5
PG30L	146CR-M-6-N-L		
PG30R	146CR-M-6-N-R		
EJ28U			3225LEN-2.80H
PJ30L	146CR-R-6-N-L		
PJ30R	146CR-R-6-N-R		
EV28U		LEN225CR2.80	3225LEN-2.80T2
PV30L	146CR-S-6-N-L		
PV30R	146CR-S-6-N-R		

- 1/ CID PINs listed only with length designator "28" for configuration A and "30" for configuration B. See [table III](#) for CID PIN construction using other available lengths.
- 2/ Card holder using mounting option "J" must be disassembled during the mounting onto the circuit card assembly and require readjustment upon reassembly.
- 3/ The manufacturer's part number shall not be used for procurement to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see the marking paragraph of the basic CID.

TABLE III. Example of PIN with available length designators.

PIN designator AA59590/01	Vendor similar designator or type part number <u>1/</u> <u>2/</u> CAGE 18915	PIN designator AA59590/01	Vendor similar designator or type part number <u>2/</u> <u>3/</u> CAGE 61081	Vendor similar designator or type part number <u>2/</u> <u>3/</u> CAGE 5BG68
BV30⊗	146CR-S-6-B-⊗	BV28U	L225CR2.80	3225LBA-2.80T2
BV40⊗	146CR-S-8-B-⊗	BV38U	L225CR3.80	3225LBA-3.80T2
BV50⊗	146CR-S-10-B-⊗	BV48U	L225CR4.80	3225LBA-4.80T2
BV60⊗	146CR-S-12-B-⊗	BV58U	L225CR5.80	3225LBA-5.80T2
BV70⊗	146CR-S-14-B-⊗	BV68U	L225CR6.80	3225LBA-6.80T2
BV80⊗	146CR-S-16-B-⊗	BV78U	L225CR7.80	3225LBA-7.80T2
BV90⊗	146CR-S-18-B-⊗	BV88U	L225CR8.80	3225LBA-8.80T2

- 1/ The circle-asterisk "⊗" in PIN denotes card holder facing (either L or R). Card holder is available using left or right facing (see configuration B on [figure 1](#)).
- 2/ The manufacturer's part number shall not be used for procurement to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see the marking paragraph of the basic CID.
- 3/ Card holder is available using universal facing (see configuration A on [figure 1](#)).

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 5998-2009-052

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/>.