

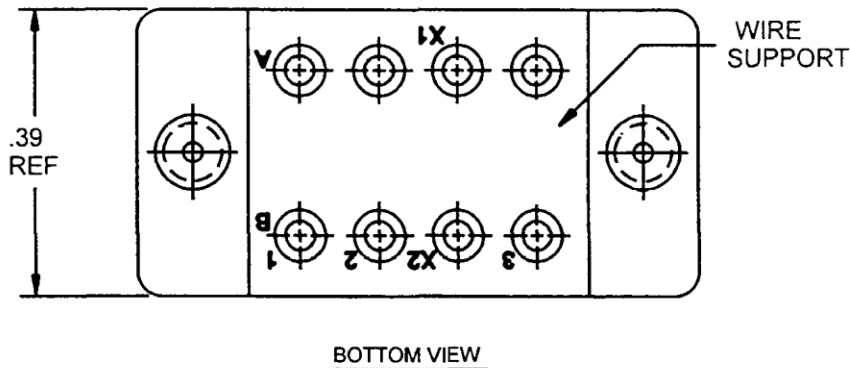
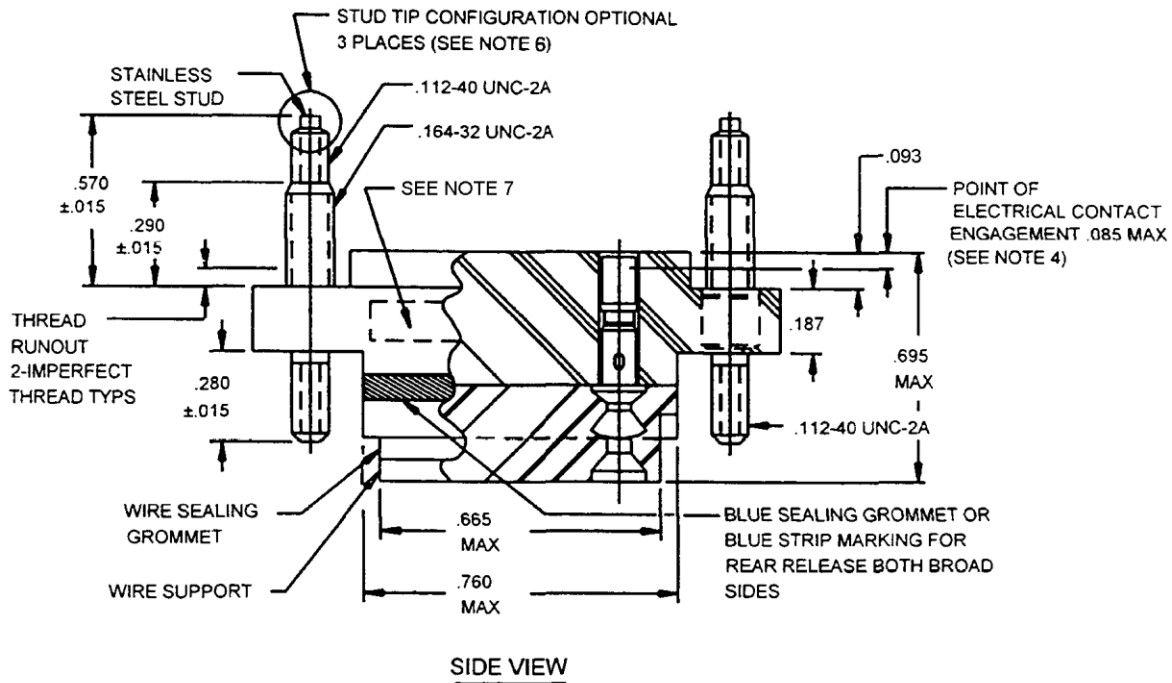
MIL-DTL-12883/45D
w/AMENDMENT 2
20 April 2011
SUPERSEDING
MIL-DTL-12883/45D
w/AMENDMENT 1
22 March 2005

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS, FOR RELAYS, FOR 2-POLE, 5 AMPERES
(MIL-PRF-6106 AND MIL-PRF-83536)

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-12883.



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NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.
3. Marking shall be characters which are molded .035 inch (0.89 mm) minimum. If optional ink marking is used it shall be in accordance with MIL-STD-1285.
4. Point of electrical contact engagement, from mating face of socket insulator to the socket contact.
5. Metric equivalents are given for information only.
6. The configuration of the stud tip shall be optional provided it meets all requirements of this specification.
7. Stamp Part or Identifying Number (PIN) on either side.

FIGURE 1. Socket configurations (-01, -02, and -03) - Continued.

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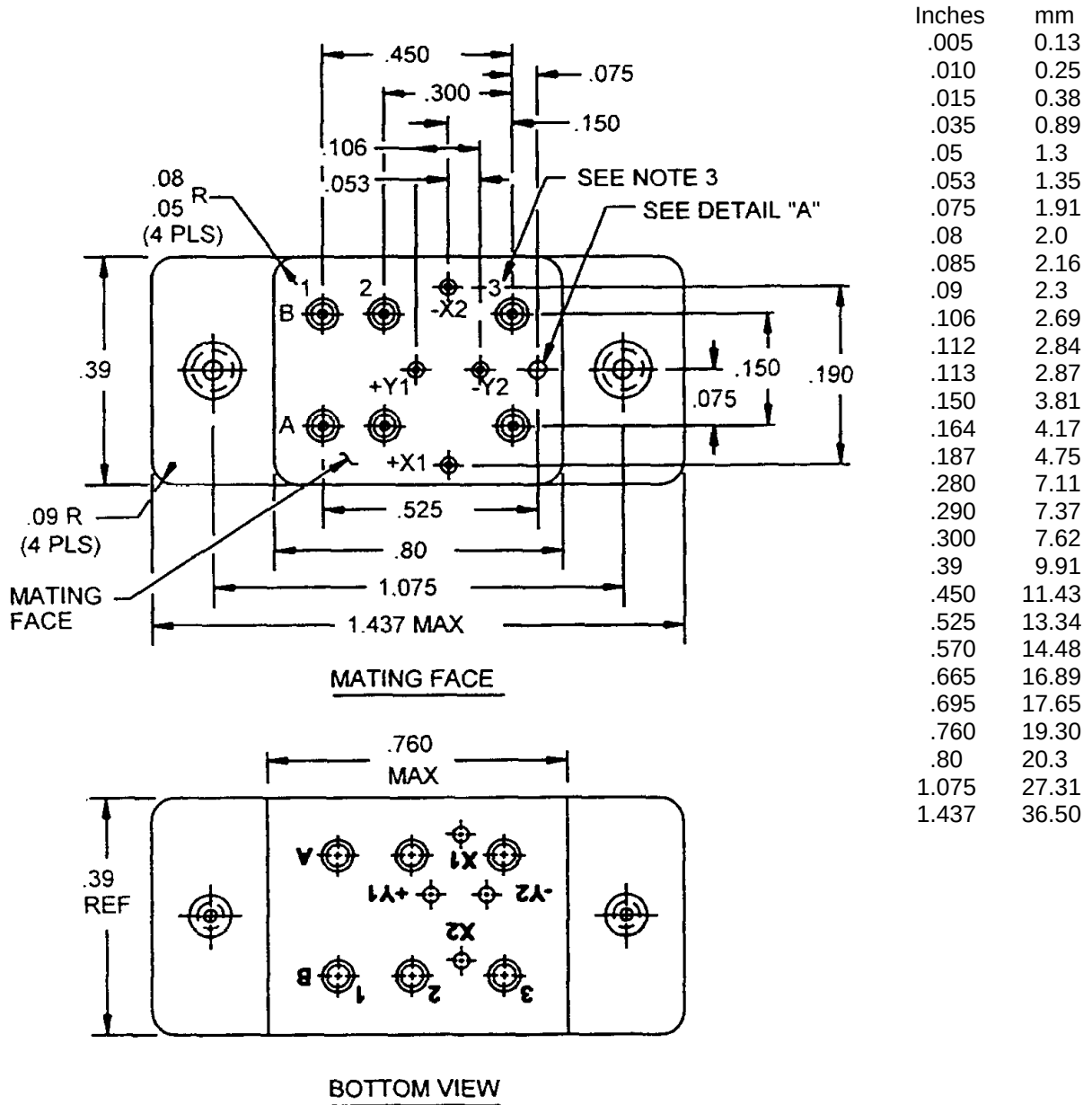
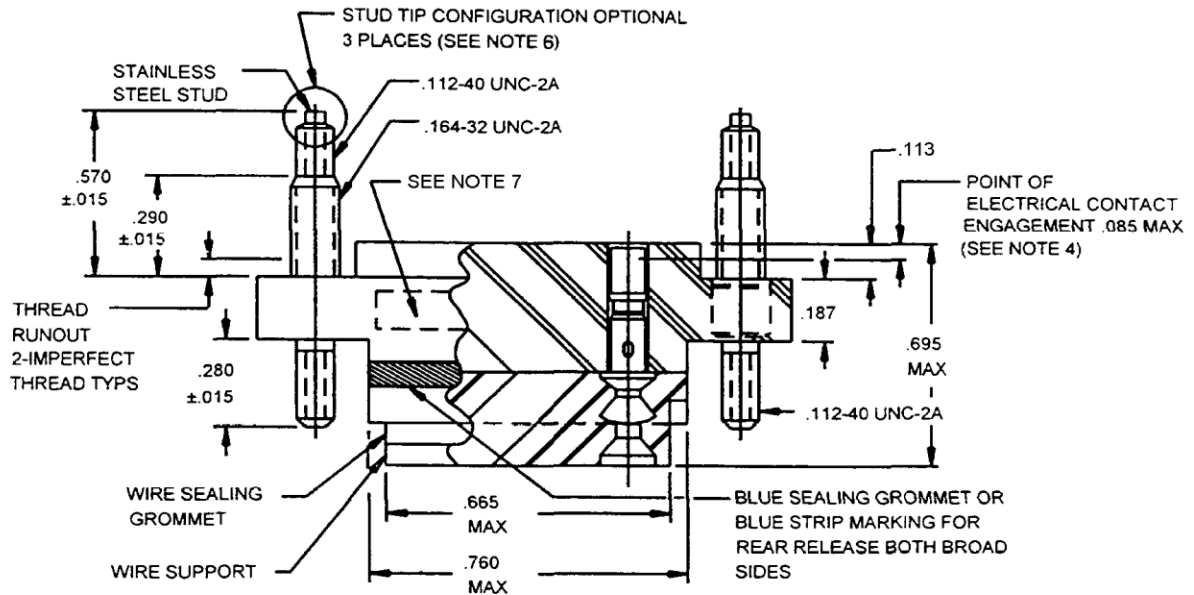
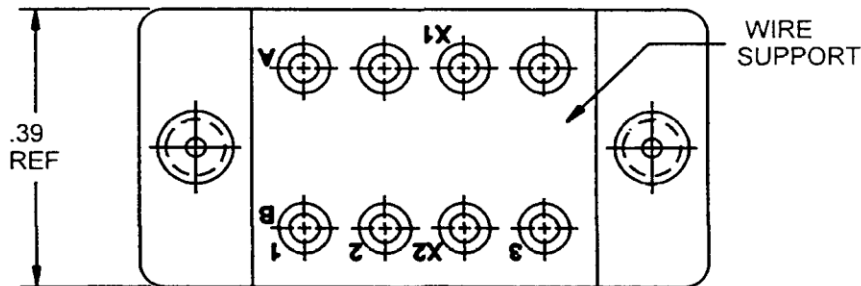


FIGURE 2. Socket configurations (-04, -05, and -06).

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SIDE VIEW



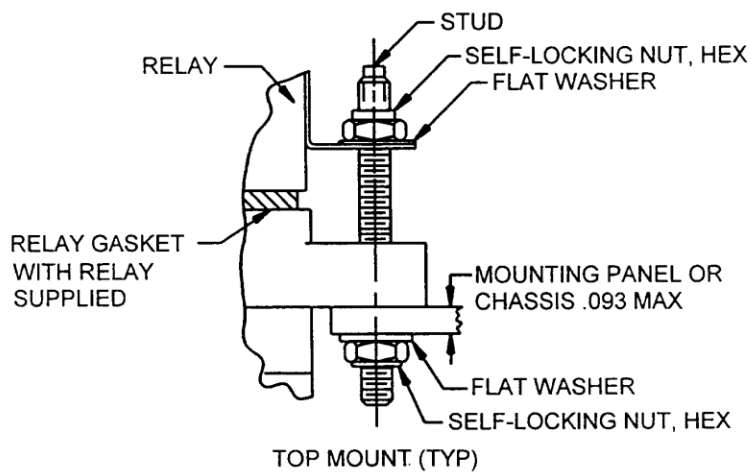
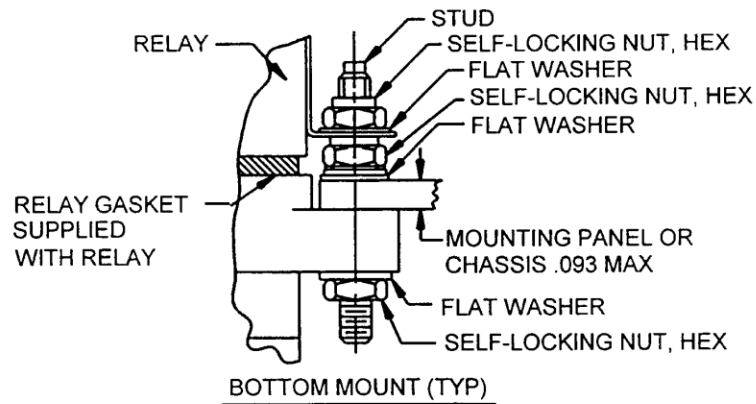
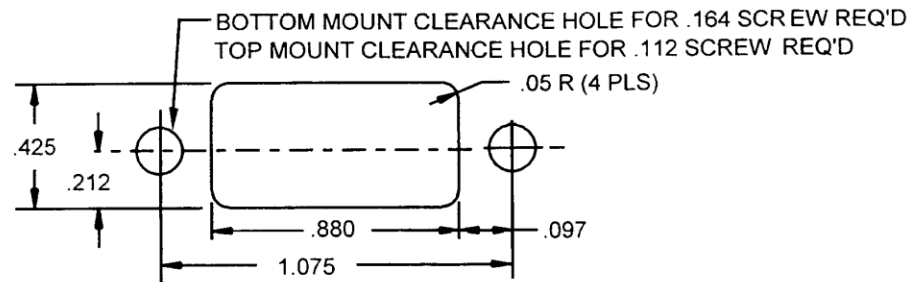
BOTTOM VIEW

NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.
3. Marking shall be characters which are molded .035 inch (0.89 mm) minimum. If optional ink marking is used it shall be in accordance with MIL-STD-1285.
4. Point of electrical contact engagement, from mating face of socket insulator to the socket contact.
5. Metric equivalents are given for information only.
6. The configuration of the stud tip shall be optional provided it meets all requirements of this specification.
7. Stamp PIN on either side.

FIGURE 2. Socket configurations (-04, -05, and -06) - Continued.

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Inches	mm
.005	0.13
.010	0.25
.019	0.48
.021	0.53
.05	1.27
.093	2.36
.097	2.46
.112	2.84
.164	4.17
.176	4.47
.190	4.83
.206	5.23
.212	5.38
.224	5.69
.290	7.37

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.

FIGURE 3. Mounting (hardware and panel cutout).

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REQUIREMENTS

Dimensions and configurations: See figures 1, 2, 3, and table I.

Insulator and wire support: Diallyl phthalate, in accordance with ASTM D5948, type SDG-F, any glass filled thermoplastic material in accordance with ASTM D5204.

Color: Material color shall be optional providing that the color provides a contrasting background for the blue sealing grommet or blue color bands indicating rear release contacts.

Grommet: Silicon rubber.

Mounting hardware: Corrosion resistant steel or steel with cadmium/chromate finish.

Test gauge: A mating relay in accordance with table I shall be used as a test gauge or mating connector.

Electrical:

Insulation resistance: 1,000 megohms minimum.

Dielectric withstanding voltage:

Sea level: Test voltage: 1,000 V rms.

High altitude (80,000 feet (24.4 km)): Test voltage: 500 V rms.

Environmental:

Temperature range: Operating temperature range -70°C to +125°C.

Wire sealing: A resilient socket grommet is permanently bonded to the wire entry face of the socket so as to provide moisture sealing capabilities, over the following range of finished wire:

Contact	Wire diameter
M39029/101-552	.030 min-.060 max (0.76 min-1.52 max mm)
M39029/101-553	.040 min-.083 max (1.02 min-2.11 max mm)

Mechanical:

Contacts: In accordance with SAE-AS39029/101. Socket contacts shall be crimp removable, rear release and accept the following relay pin diameters (see table I):

Size 20 (.039 inch through .041 inch (0.99 through 1.04 mm)).

Size 22 (.030 inch through .032 inch (0.76 through 0.81 mm)).

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TABLE I. Dash numbers and configurations.

Dash number/socket configuration	Contact size mating end wire barrel		Number of contacts	Contact designation M39029/101	Mating relay	Polarization type
-01	20	20	8	-553	^{1/} M83536/1-021, M83536/1-024, M83536/2-021, M83536/2-024	I
-02	20	20	8	-553		II
-03	20	20	8	-553		III
-04	20 22	20 22	6 4	-553 -552	M6106/38-002	None required
-05	20 22	20 22	6 4	-553 -552		II
-06	20 22	20 22	6 4	-553 -552		III

^{1/} Reference M83536 for supersession data on M6106 relays.

Insertion and withdrawal force: The insertion and withdrawal forces shall be as specified in table II.

TABLE II. Insertion and withdrawal forces.

Condition	Test	M12883/45	
		-01 through -03	-04 through -06
Initial	Insertion force (max)	9 lbf (40.0 Newton)	10.0 lbf (44.5 Newton)
	Withdrawal force (min)	.35 lbf (1.6 Newton)	.44 lbf (2.0 Newton)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	11.0 lbf (48.9 Newton)	11.7 lbf (52.0 Newton)
	Withdrawal force (min)	.30 lbf (1.3 Newton)	.38 lbf (1.7 Newton)
After vibration	Insertion force (max)	11.0 lbf (48.9 Newton)	11.7 lbf (52.0 Newton)
	Withdrawal force (min)	.30 lbf (1.3 Newton)	.38 lbf (1.7 Newton)

Durability: Shall be in accordance with MIL-DTL-12883.

Vibration (sinusoidal): In accordance with MIL-STD-202, method 204, test condition G, except as specified below:

- The frequency range shall be varied logarithmically between the limits of 10 and 3000 Hz.
- The procedure of method of 201 of MIL-STD-202 may be applied during 10-55 Hz band of the vibration frequency range.

Vibration (random): In accordance with test procedure EIA-364-28, test condition V, test condition letter G, with a duration of 15 minutes. The mating relay shall be used as the test gage.

Shock (mechanical): In accordance with MIL-STD-202, method 213, condition C, except peak value shall be 200 g's.

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Torque: Relay sockets and hardware shall be subjected to testing torque as specified in table III. Sockets shall be installed in mounting panel when test torque is applied. No physical damage will be permitted. Torque shall be maintained for a reasonable period of time to insure stud, socket, and associated hardware have not been damaged.

TABLE III. Torque requirements (installed in panel conditions).

Thread size	Torque			
	Testing		Installation	
	Inch-pounds	Newton-meter	Inch-pounds	Newton-meter
.112-40	8 + 1, -0	0.90 + .11, -0	4 ±1	0.45 ± .11
.164-32	20 +1, -0	2.26, + .1, -0	15 ±1	1.70 ± .11

Socket contact tools shall be in accordance with table IV.

TABLE IV. Contact tools.

Nomenclature	PIN	
Crimp tool	M22520/7-01	
Positioner	M22520/7-12 (for size 20)	M22520/7-11 (for size 22)
Insertion/removal tool	M81969/16-01 (for size 20)	M81969/16-04 or M81969/14-01 (for size 22)

Weight: The socket, hardware, and electrical contacts shall have a maximum weight of .033 pound (15 grams).

Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis (see figure 3), and shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket. The hardware shall provide the nominal spacing between socket surfaces and relay mounting flange, regardless of mounting configuration.

Mounting hardware shall be supplied with the relay socket and shall consist of the following:

Self locking nuts .112-40 (4 each) (.206 max dia x .176 max height).

Flat washers .112 (4 each) (.224 max OD x .021 max thickness).

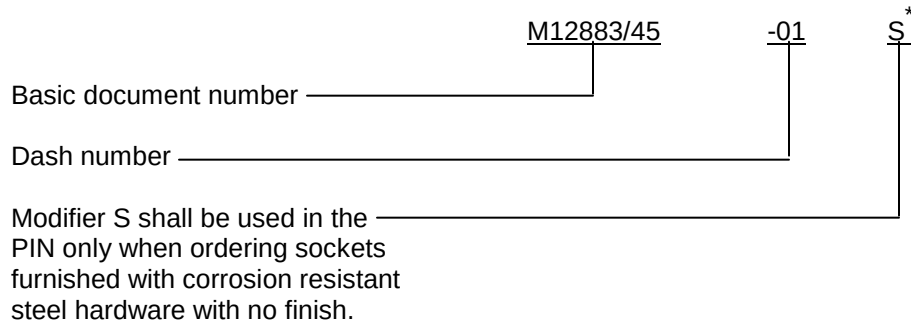
Self locking nuts .164-32 (2 each) (.290 max dia x .190 max height).

Flat washers .164 (2 each) (.290 max OD x .019 max thickness).

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PIN: The PIN shall be marked on the socket body as shown in the example (see figure 1). The PIN shall consist of the basic number of this specification sheet and the dash number from table I.

Example:



- * For future acquisition of these sockets as of the effective date of revision B, 20 December 1989, parts identified with an “S” modifier shall be corrosion resisting steel (CRS), and parts without an “S” modifier shall be cadmium chromate finish. No mixing of hardware types shall be permitted.

Acquisition requirement: Sockets without contacts may be ordered when so indicated (see MIL-DTL-12883). This applies only to original equipment manufacturers (OEMs) and subcontractors. All direct shipments to the government shall include all applicable contacts and mounting hardware. The PIN to be marked on the socket shall be as shown in the PIN example (see figures 1 and 2 and table I).

Supersession and cross-references: See table V.

TABLE V. Supersession and cross-reference.

Active Government PIN	Superseded manufacturer PIN	
	CAGE 58982	CAGE 99699
M12883/45-01	RSE120159	SE205-1010
M12883/45-02	RSE120161	SE205-1011
M12883/45-03	RSE120163	SE205-1012
M12883/45-04	RSE120165	
M12883/45-05	RSE120167	
M12883/45-06	RSE120169	

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

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Referenced documents. In addition to MIL-DTL-12883, this document references the following:

MIL-STD-202
MIL-STD-1285
MIL-PRF-6106
MIL-PRF-83536
SAE-AS39029/101
ASTM D5204
ASTM D5948
EIA-364-28

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:

DLA - CC

(Project 5935-2010-132)

Review activities:

Army - AR, AT, AV, CR4
Navy - AS, MC, OS, SH
Air Force - 99

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>.