

INCH-POUND

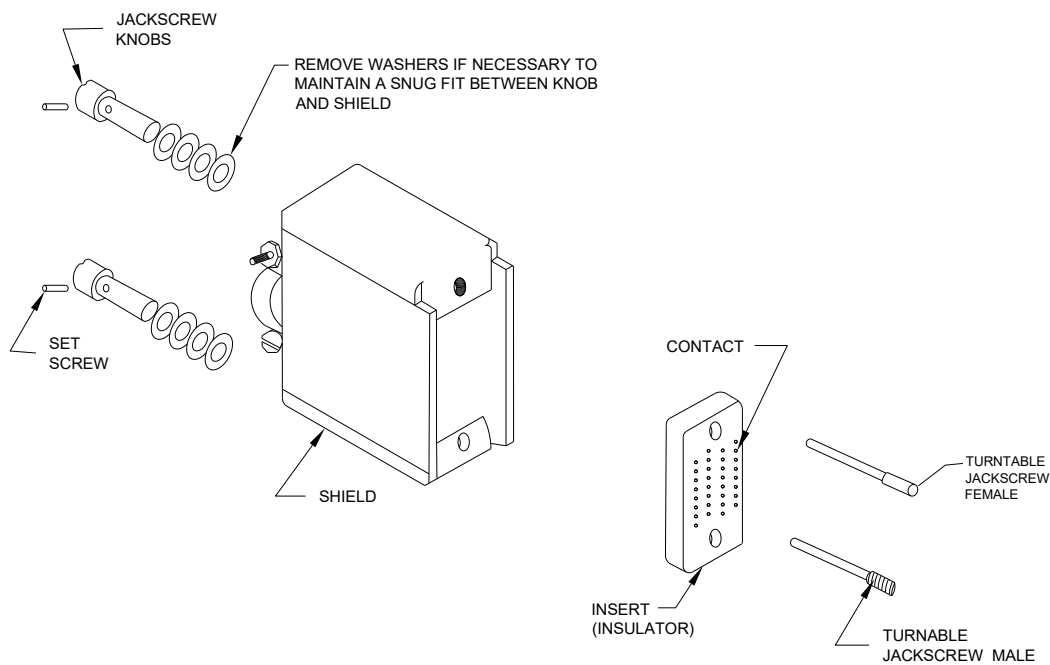
MIL-DTL-28748/14A
w/Amendment 1
5 August 2021
SUPERSEDING
MIL-DTL-28748/14A
27 February 2019

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR, RACK AND PANEL, CRIMP TYPE REMOVABLE SOCKET CONTACTS, SIZE 22

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the connectors described herein shall consist of this document
and the latest issue of Specification MIL-DTL-28748.

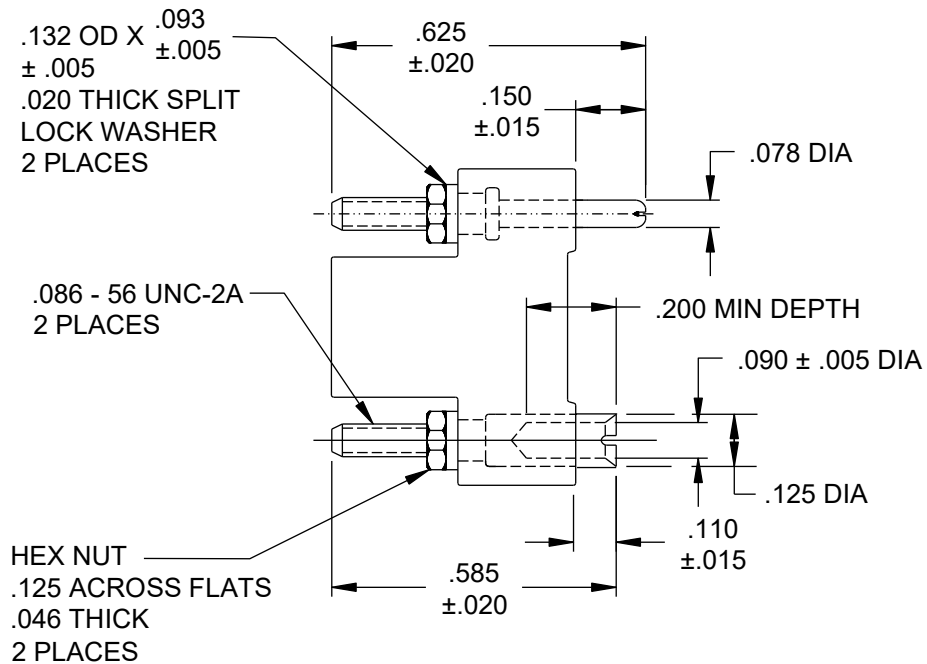


Configuration A. Connector.

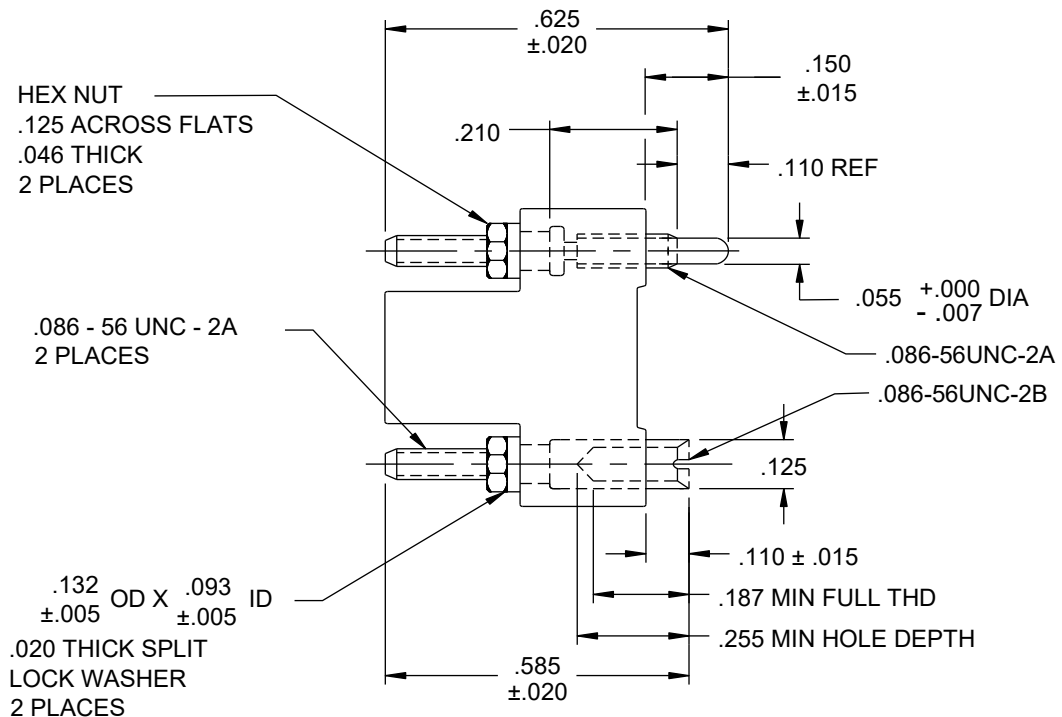
FIGURE 1. Connector with guide pins, jackscrews, and shields.



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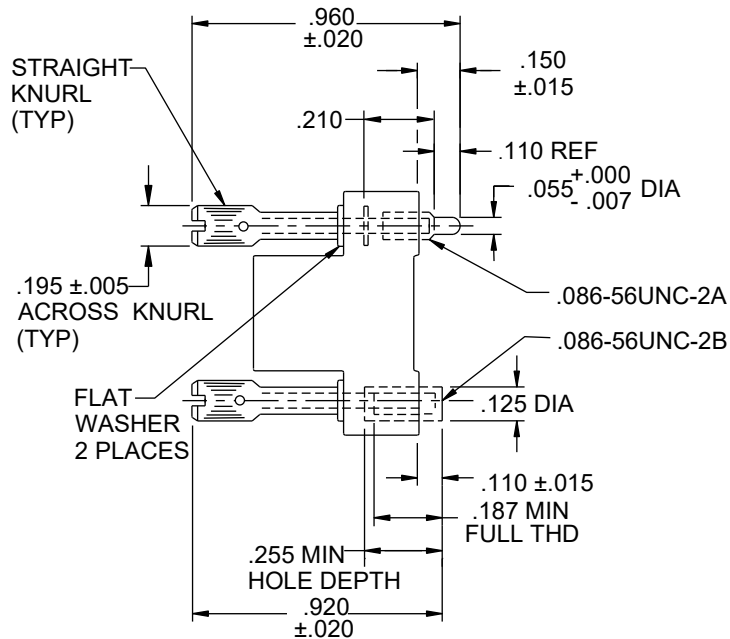
Configuration B. Connector with guide pins.



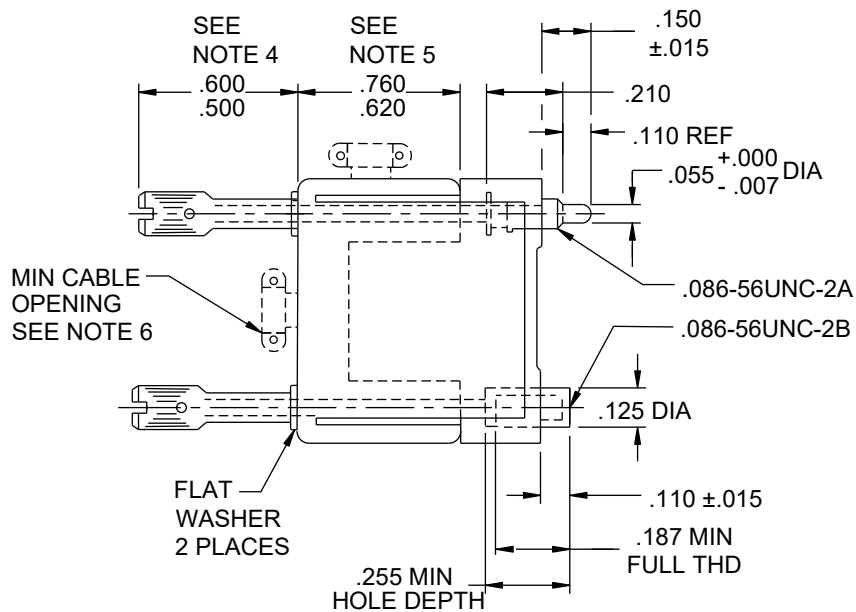
Configuration C. Connector with fixed jackscrews.

FIGURE 1. Connector with guide pins, jackscrews, and shields – Continued.

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Configuration D. Connector with short turnable jackscrews.



Configuration E. Connector with long turnable jackscrews and shield.

FIGURE 1. Connector with guide pins, jackscrews, and shields – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	.13	.086	2.18	.187	4.75	.600	15.24
.007	.18	.090	2.29	.195	4.95	.620	15.75
.015	.38	.093	2.36	.200	5.08	.625	15.88
.020	.51	.110	2.79	.210	5.33	.700	17.78
.046	1.17	.125	3.18	.255	6.48	.920	23.37
.055	1.40	.132	3.35	.500	12.70	.960	24.38
.078	1.98	.150	3.81	.585	14.86		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are $\pm .003$ (0.08 mm).
4. .730 (18.54 mm) maximum for 14 contact connector with side opening shield.
.630 (16.00 mm) maximum for 50 contact connector.
5. 1.20 (30.48 mm) maximum for 44 contact arrangements.
1.52 (38.61 mm) maximum for 50 contact arrangements.
6.

Number of <u>contacts</u>	Minimum cable <u>openings</u>
4	.07 (1.8 mm) sq. inch
7	.07 (1.8 mm) sq. inch
14	.19 (4.8 mm) sq. inch
20	.22 (5.6 mm) sq. inch
26	.26 (6.6 mm) sq. inch
34	.34 (8.6 mm) sq. inch
44	.34 (8.6 mm) sq. inch
50	.34 (8.6 mm) sq. inch

FIGURE 1. Connector with guide pins, jackscrews, and shields – Continued.

[illegible]

FIGURE 2. Insert arrangements.

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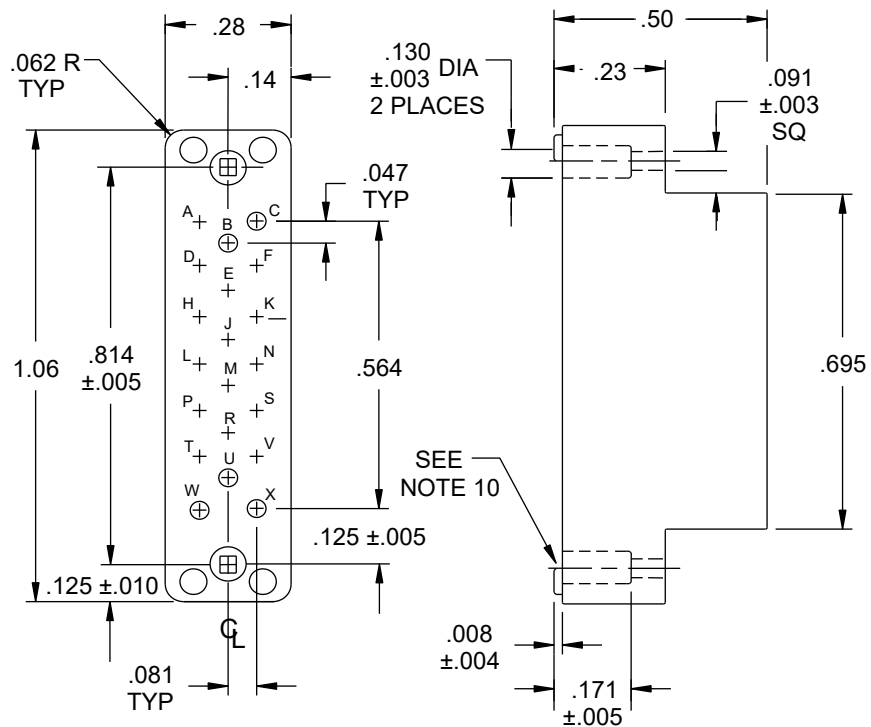
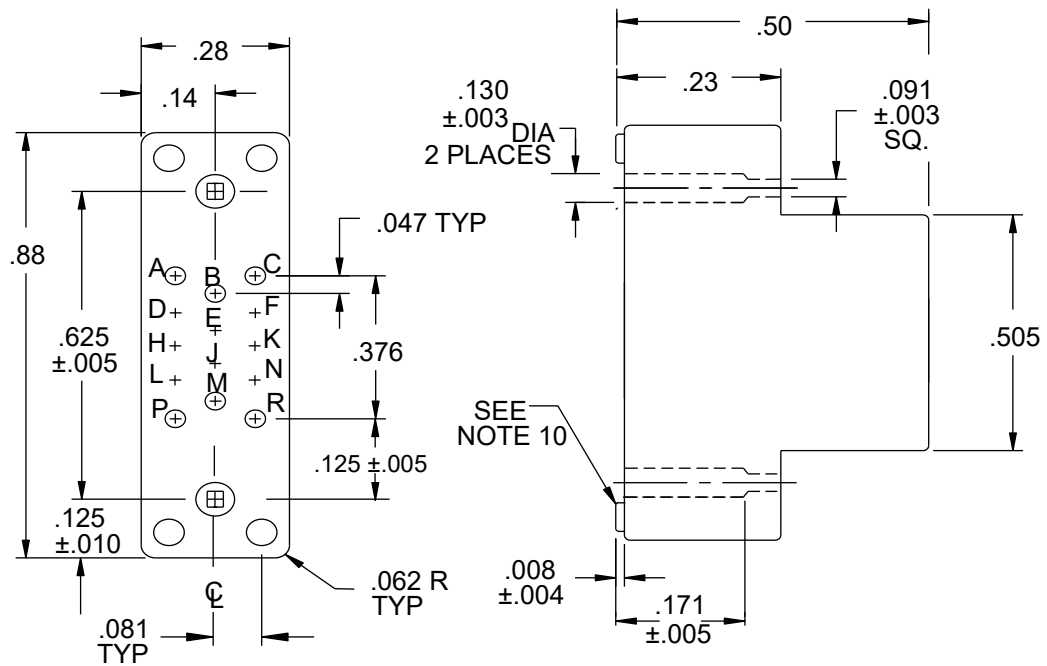
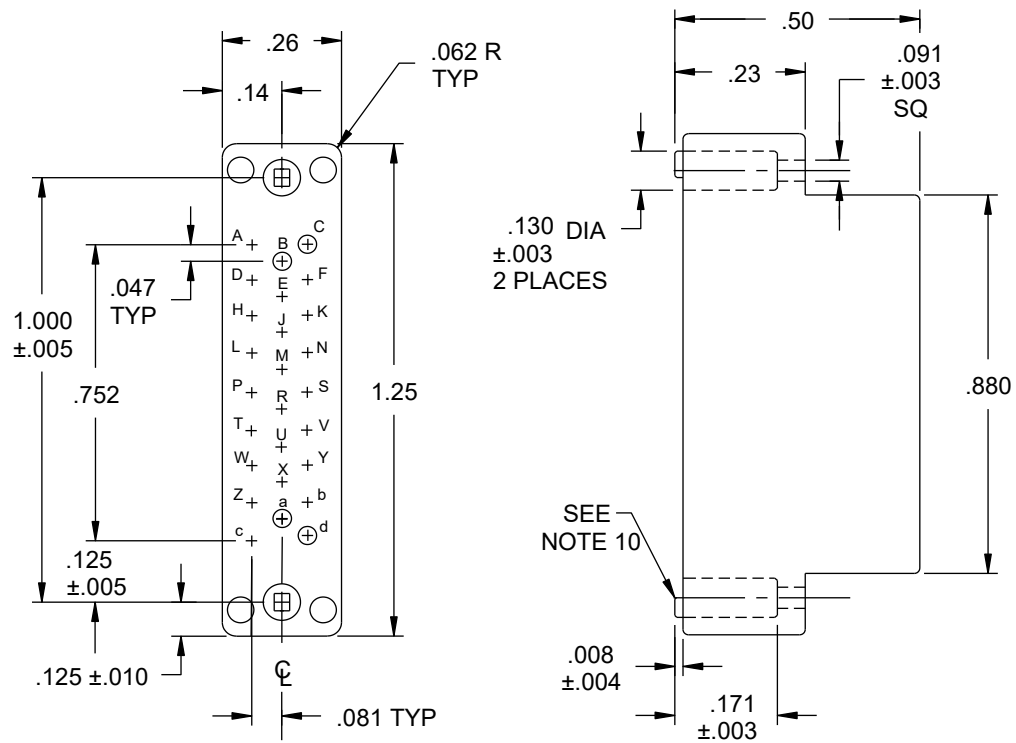


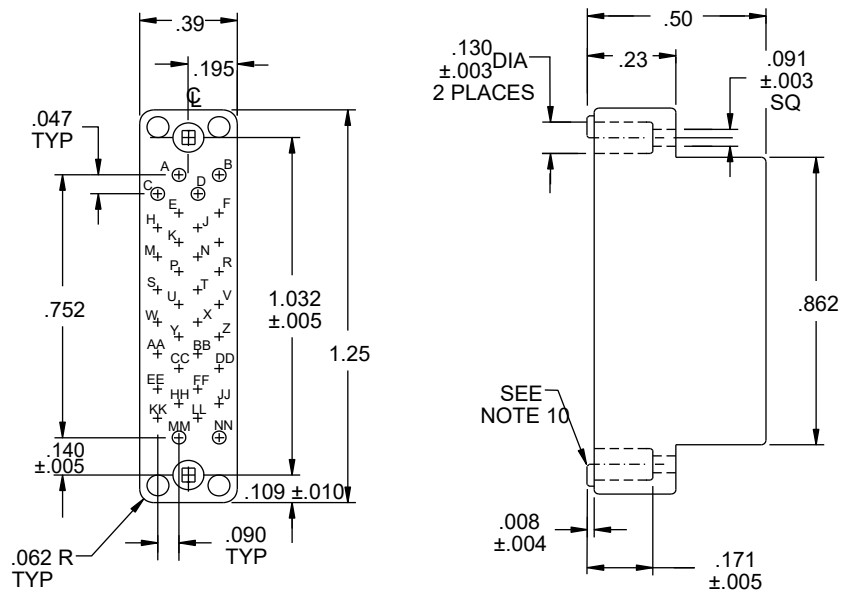
FIGURE 2. Insert arrangements – Continued.

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Configuration E. Insert with 26 contacts.

R



Configuration F. Insert with 34 contacts.

FIGURE 2. Insert arrangements – Continued.

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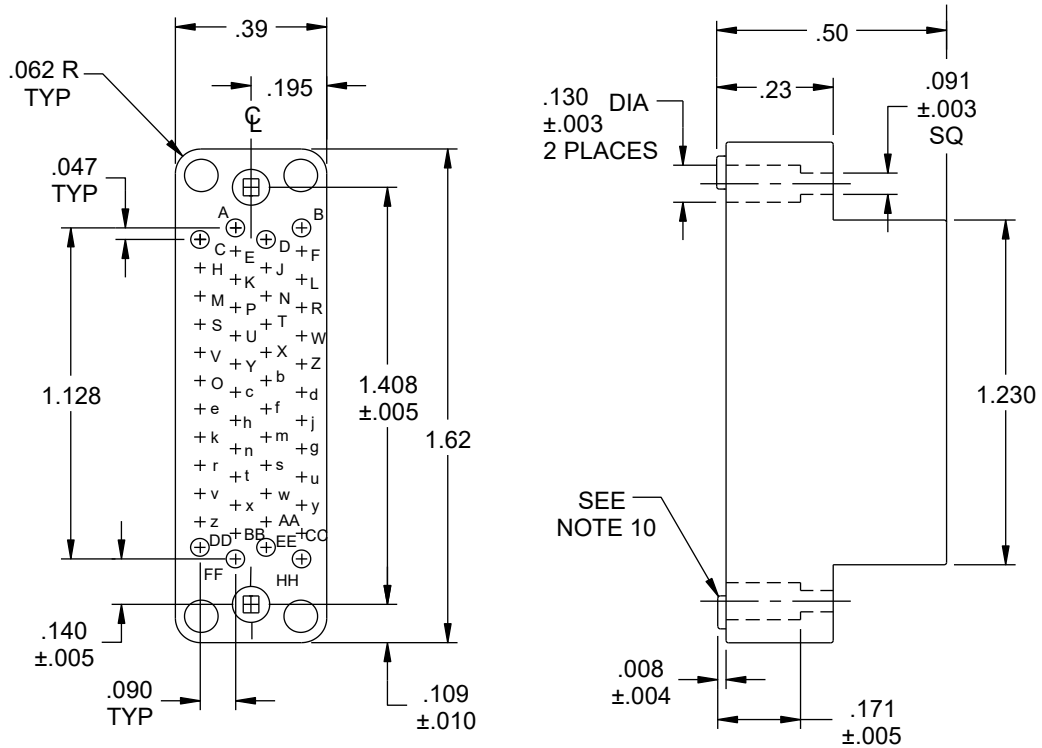
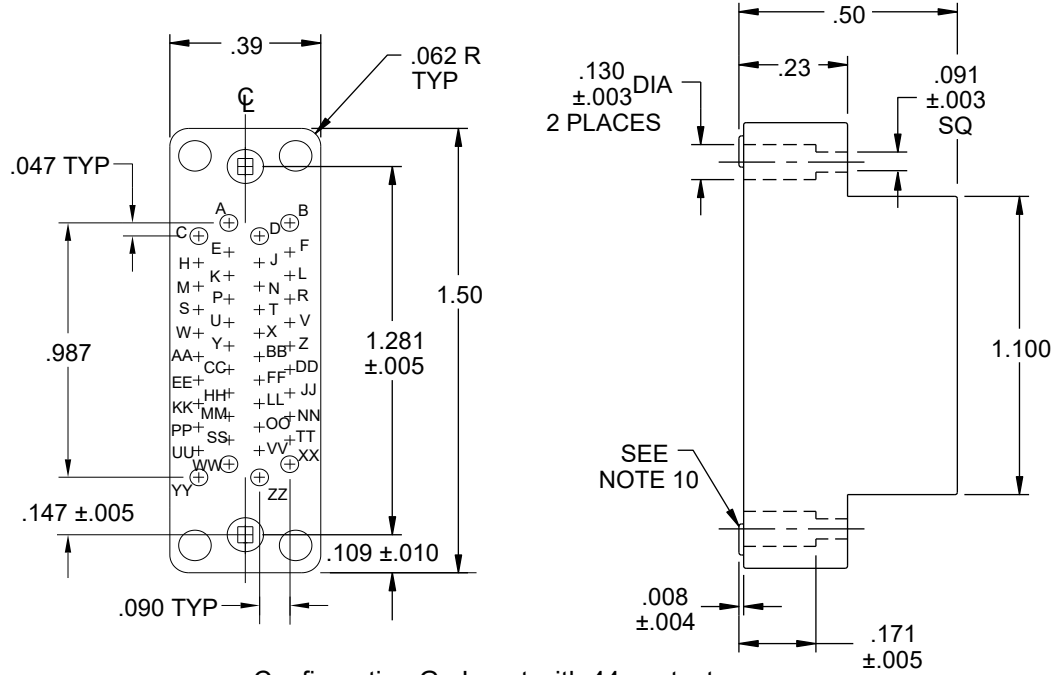


FIGURE 2. Insert arrangements – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.003	.08	.090	2.29	.23	5.8	.625	15.88	1.100	27.94
.004	.10	.091	2.31	.270	6.86	.695	17.65	1.128	28.65
.005	.13	.105	2.67	.28	7.1	.752	19.10	1.230	31.24
.008	.20	.109	2.77	.282	7.16	.78	19.8	1.25	31.8
.010	.25	.125	3.18	.376	9.55	.814	20.68	1.281	32.54
.031	.79	.130	3.30	.382	9.70	.862	21.89	1.408	35.76
.0405	1.029	.140	3.56	.39	9.9	.88	22.4	1.50	38.1
.045	1.14	.146	3.71	.50	12.7	.987	25.07	1.62	41.1
.047	1.19	.171	4.34	.505	12.83	1.000	25.40		
.062	1.57	.195	4.95	.562	14.27	1.032	26.21		
.081	2.06	.21	5.3	.564	14.33	1.06	26.9		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are $\pm .02$ (.51 mm) for two place decimals and $\pm .015$ (.38 mm) for three place decimals.
4. Tolerance between any two adjacent contact centers shall be $\pm .004$ (.10 mm). Tolerance between any two contact centers, other than adjacent contacts, shall be $\pm .006$ (.15 mm).
5. Contact letter identification may be located on either side of the contact hole. All letters shall appear on the front and rear face of each insert.
6. Inserts shall be used with guide pin assemblies or jackscrew assemblies.
7. Insert material: Shall be in accordance with MIL-DTL-28748.
8. Installing and removal tools: M81969/18-02 and /20-02 per SAE AS81969/18 and /20.
9. Crimp tool: M25520/2-01. Positioner: Astro 640092, Daniels K280, or equivalent.
10. Shape of .008 pads optional.
11. Mating face of socket insert shown; pin insert is reverse image.
12. Contacts: SAE-AS39029/35.

FIGURE 2. Insert arrangements – Continued.

Technical drawing showing a cross-section of a mechanical assembly. The drawing includes the following dimensions and tolerances:

- Overall width: $.490 \text{ MIN}$
- Top surface width: $.315$
- Top surface width (lower section): $.305$
- Top surface thickness: $.080$
- Top surface thickness (lower section): $.075$
- Left side diameter: $.080 \text{ DIA}$
- Left side diameter (lower section): $.077$
- Right side diameter: $.075 \text{ DIA}$
- Right side diameter (lower section): $.075$
- Bottom left diameter: $.062 \text{ DIA}$
- Bottom left diameter (lower section): $.059$
- Bottom right diameter: $.075 \text{ DIA}$
- Bottom right diameter (lower section): $.075$
- Angles: $59^\circ - 62^\circ$ and $43^\circ - 47^\circ$
- Label: MATING FACE

NOTES:

- FIGURE 3. Insert hole configuration.

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REQUIREMENTS:

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

Mating connectors: See MIL-DTL-28748/7 and MIL-DTL-28748/13.

Resistance to test probe damage .145 ± .015 depth of insertion.

Part number: As shown in the following example:

EXAMPLE OF PART NUMBER:

(See part number code)

<u>M28748/14</u>	<u>A</u>	<u>0</u>	<u>0</u>	<u>E</u>	<u>1A</u>
Basic number of specification sheet	Insert arrangement (Fig. 2)	Shield and shield clamp location or retaining plate (Fig. 1)	Shell type	Jackscrews or guide pins (Fig.1)	Contacts

PART NUMBER CODE

<u>Insert arrangement figure 2 configuration</u>	<u>Number of contacts</u>	<u>Shield and shield clamp location or retaining plate</u>	<u>Shell type</u>
		<u>Shield</u>	
A-	4	1 – Top opening per	0 – None included
B-	7	configuration E	
C-	14	of figure 1	
D-	20	2 – Side opening per	
E-	26	configuration E	
F-	34	of figure 1	
G-	44	0 – None included	
H-	50		

Jackscrews
or

guide pins

L – Long jackscrews: Configuration E, figure 1
F – Fixed jackscrews: Configuration C, figure 1
S – Short jackscrews: Configuration D, figure 1
G – Guide pins: Configuration B, figure 1

Jack and guide location: The jackscrew (turning or fixed) or guidepin shall be located by the “A” socket contact.

Contacts: M39029/35-441

1A – 100 percent size 22

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Amendment notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. 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.

Reference documents. In addition to MIL-DTL-28748, this document references the following:

MIL-DTL-28748/7
MIL-DTL-28748/13
SAE-AS39029/35
SAE-AS81969/18
SAE-AS81969/20

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

Review activities:

Army – AR, AT, AV, CR4, MI
Navy – AS, MC, OS, SH

(Project 5935-2021-083)

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.dla.mil>.