

INCH-POUND

MIL-DTL-28748/13C

27 February 2019

SUPERSEDING

MIL-C-28748/13B

9 February 1987

DETAIL SPECIFICATION SHEET

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

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

The requirements for acquiring the connectors described herein shall consist of this specification and the latest issue of MIL-DTL-28748.

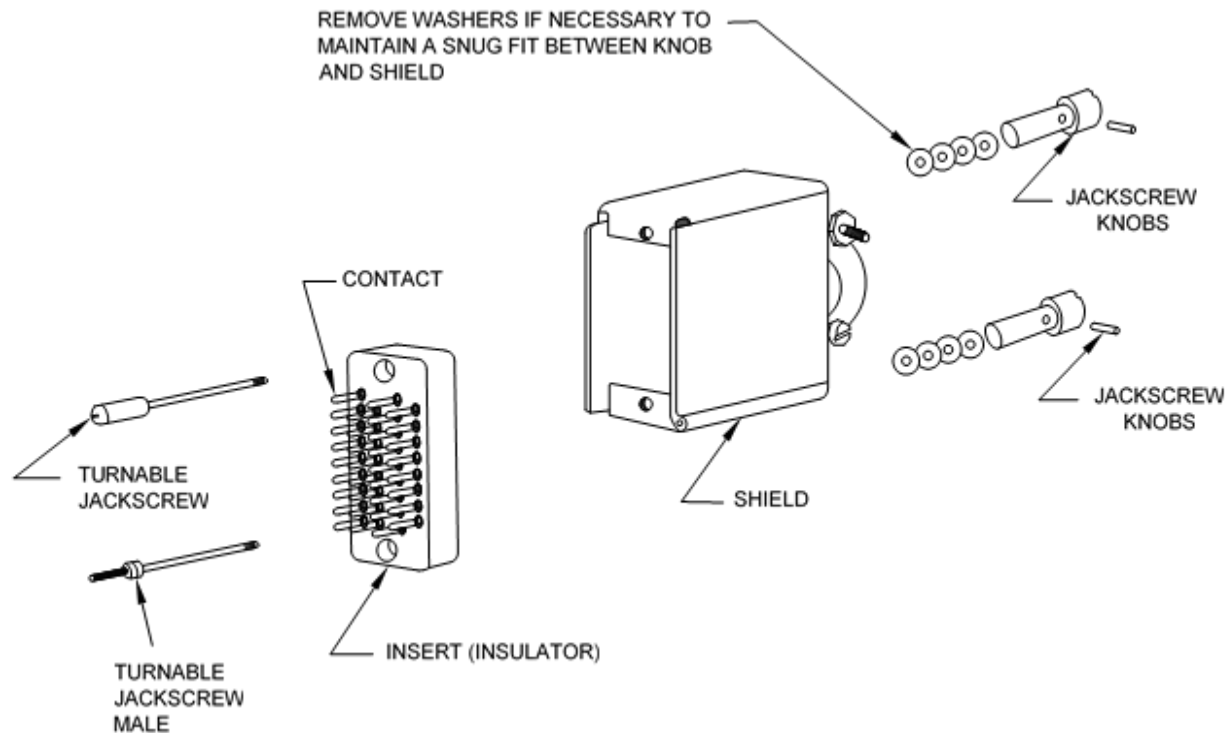
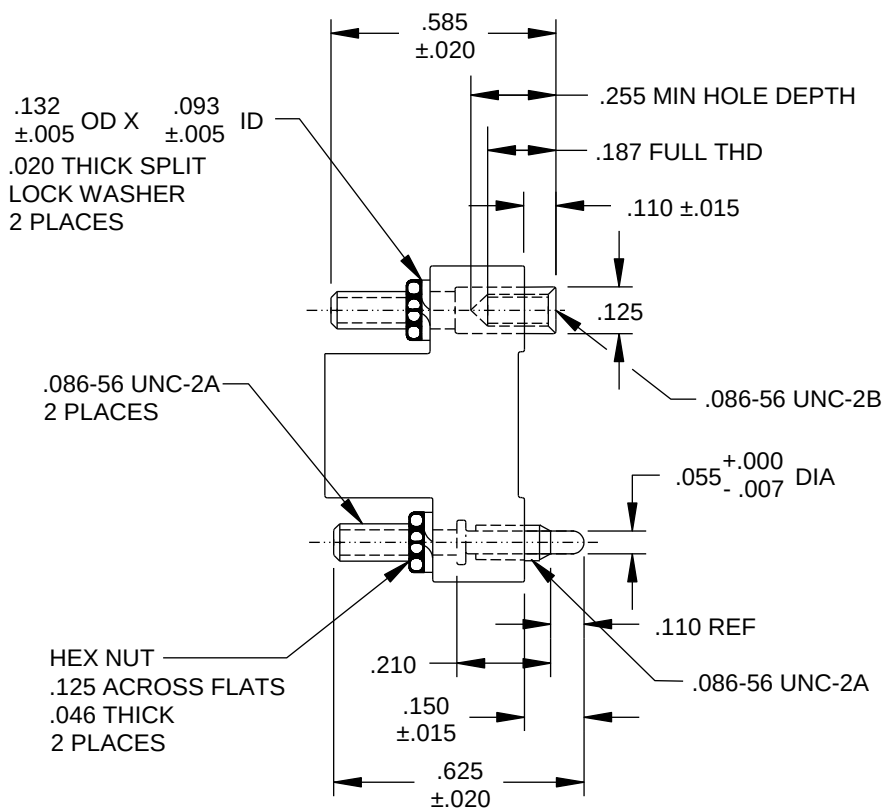
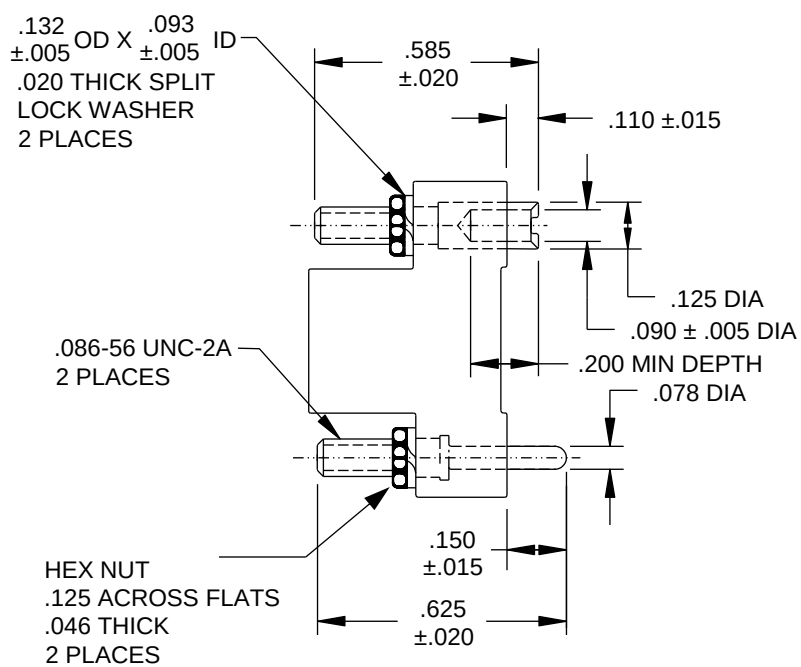
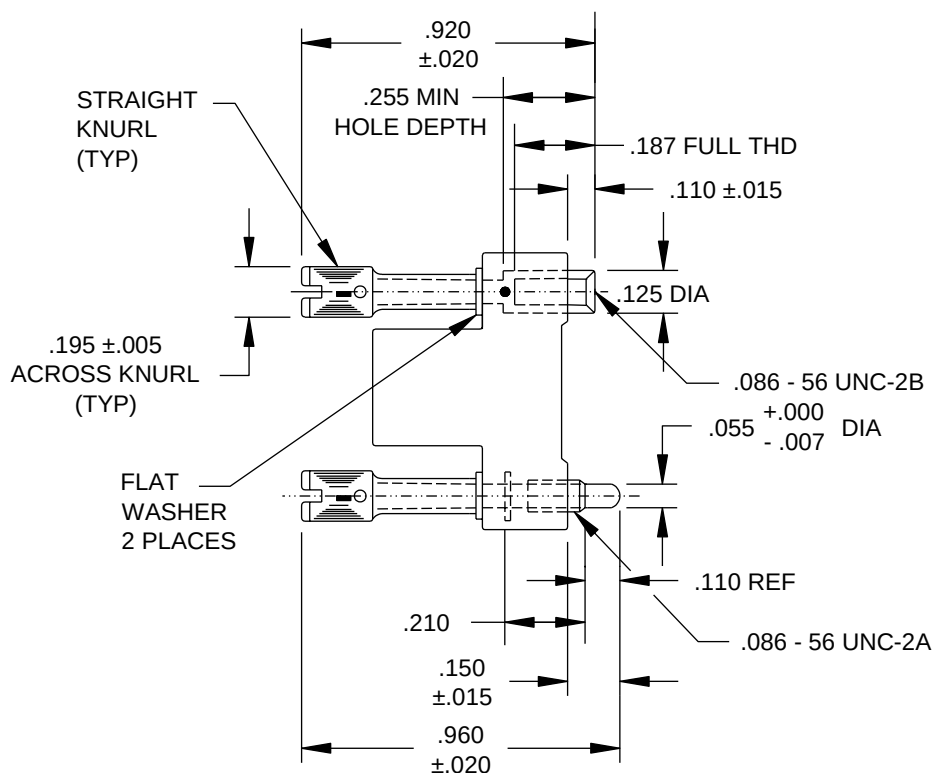
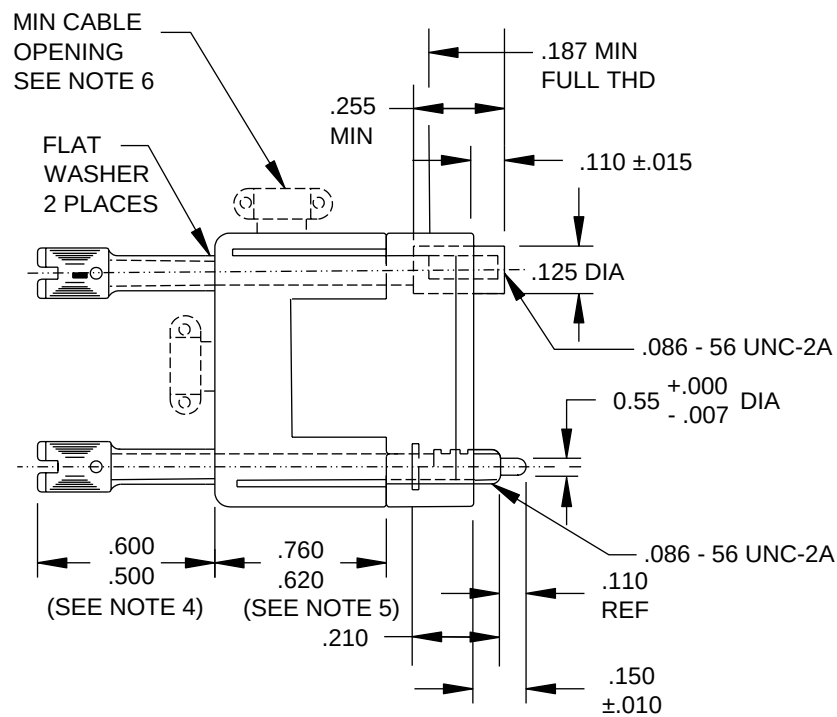
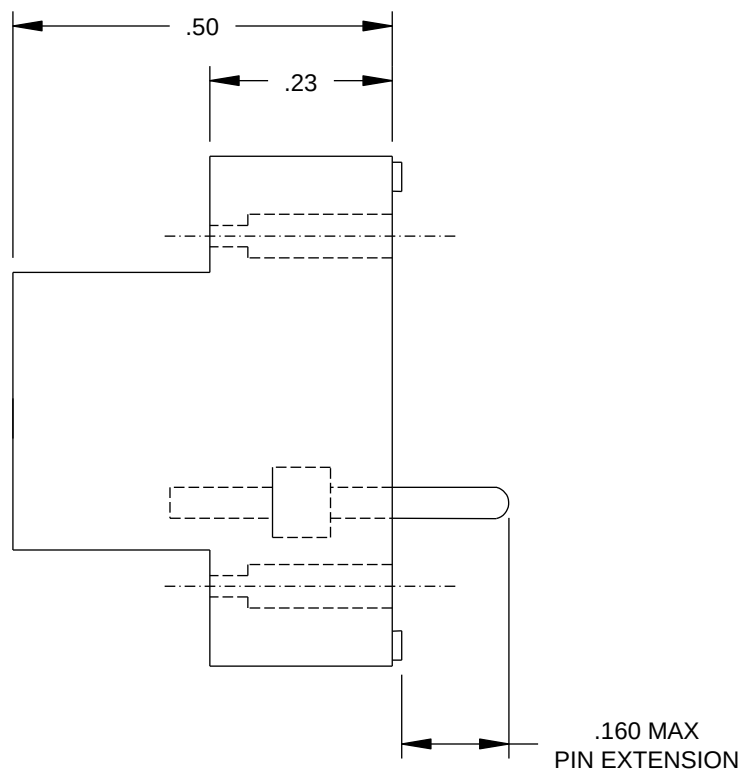


FIGURE 1. Connector with shields, jackscrews, and guide pins.



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

Configuration D. Connector with short turnable jackscrews.Configuration E. Connector with long turnable jackscrews and shield.FIGURE 1. Connector with shields, jackscrews, and guide pins – Continued.



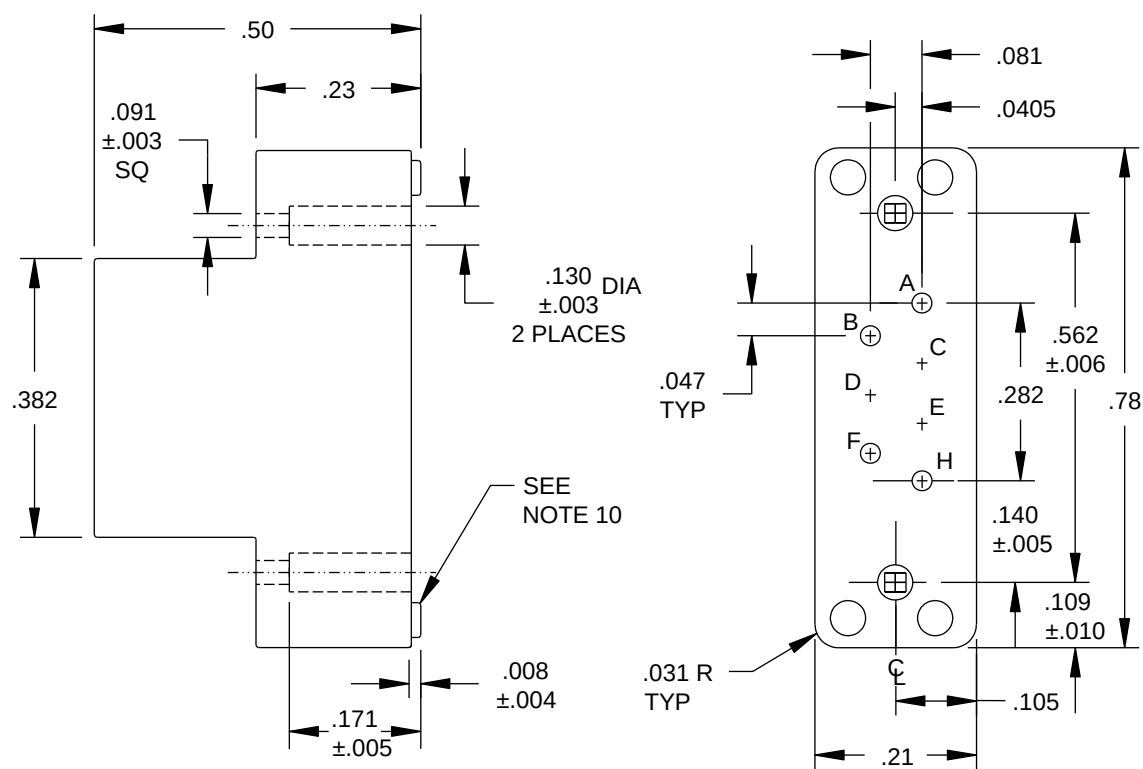
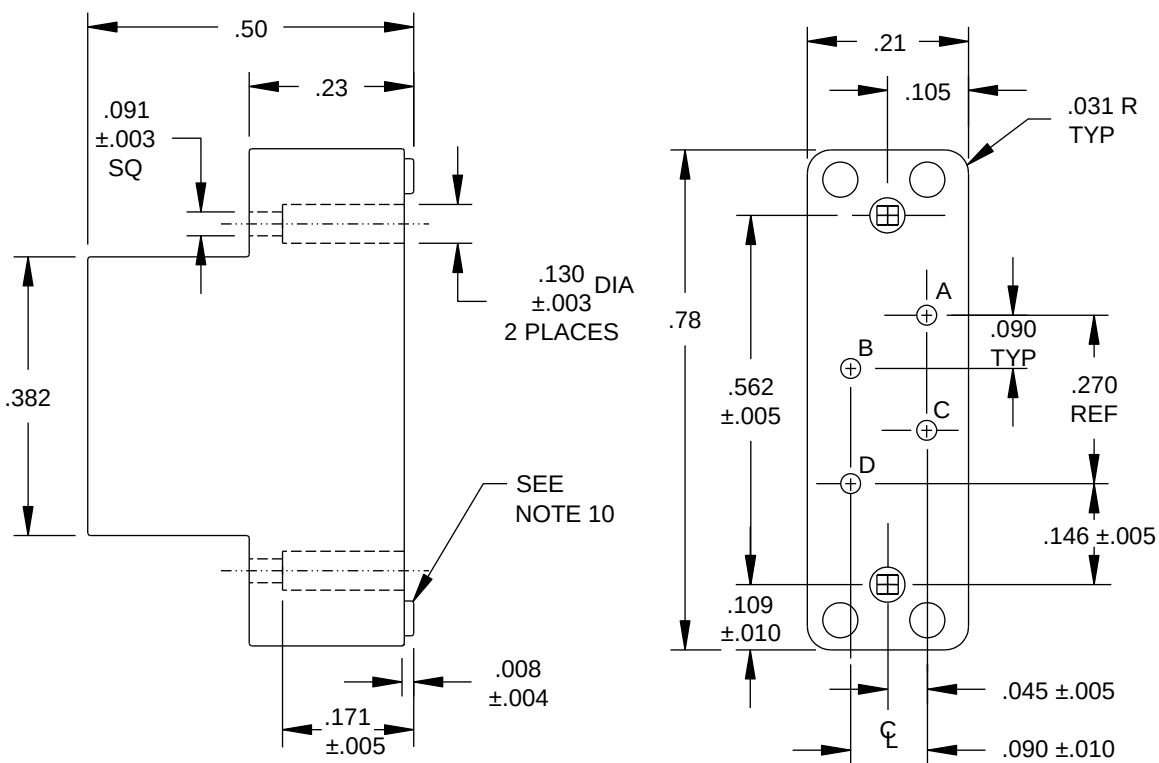
Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	.086	2.18	.160	4.06	.500	12.70
.007	0.18	.090	2.29	.187	4.75	.585	14.86
.015	0.38	.093	2.36	.195	4.95	.600	15.24
.020	0.51	.110	2.79	.200	5.08	.620	15.75
.046	1.17	.125	3.18	.210	5.33	.625	15.88
.055	1.40	.132	3.35	.23	5.8	.760	19.30
.078	1.98	.150	3.81	.255	6.48	.920	23.37
						.960	24.38

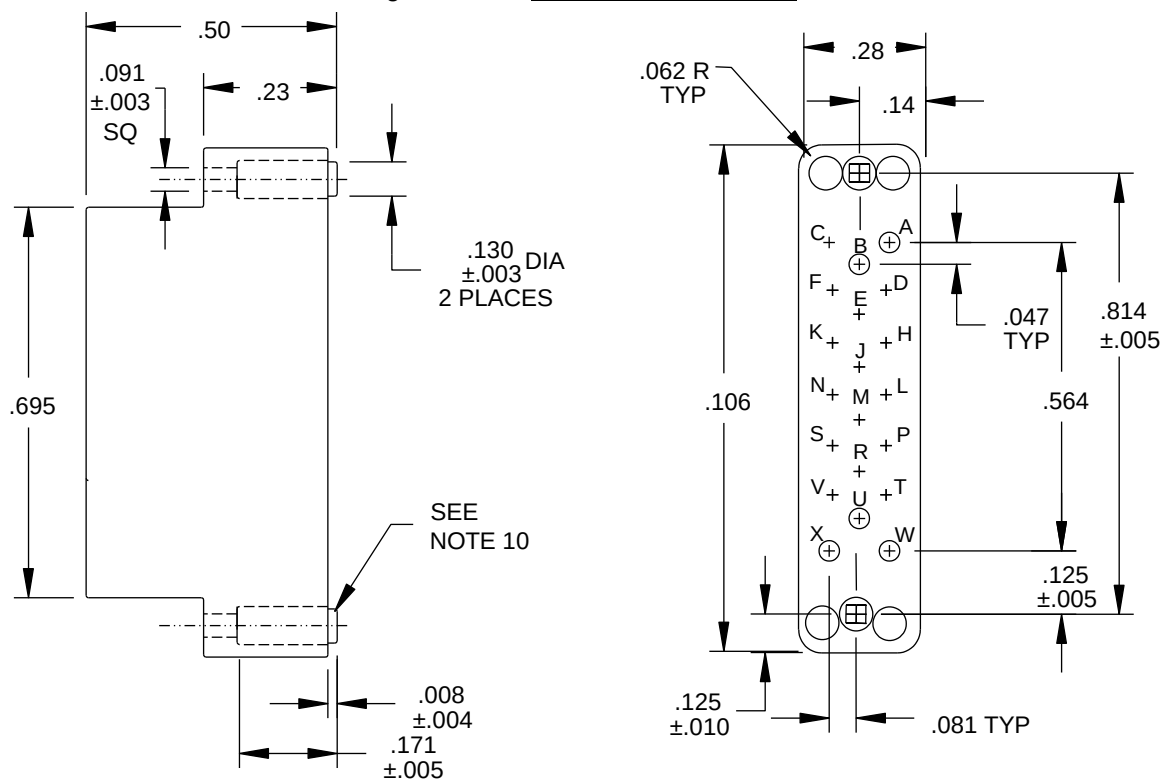
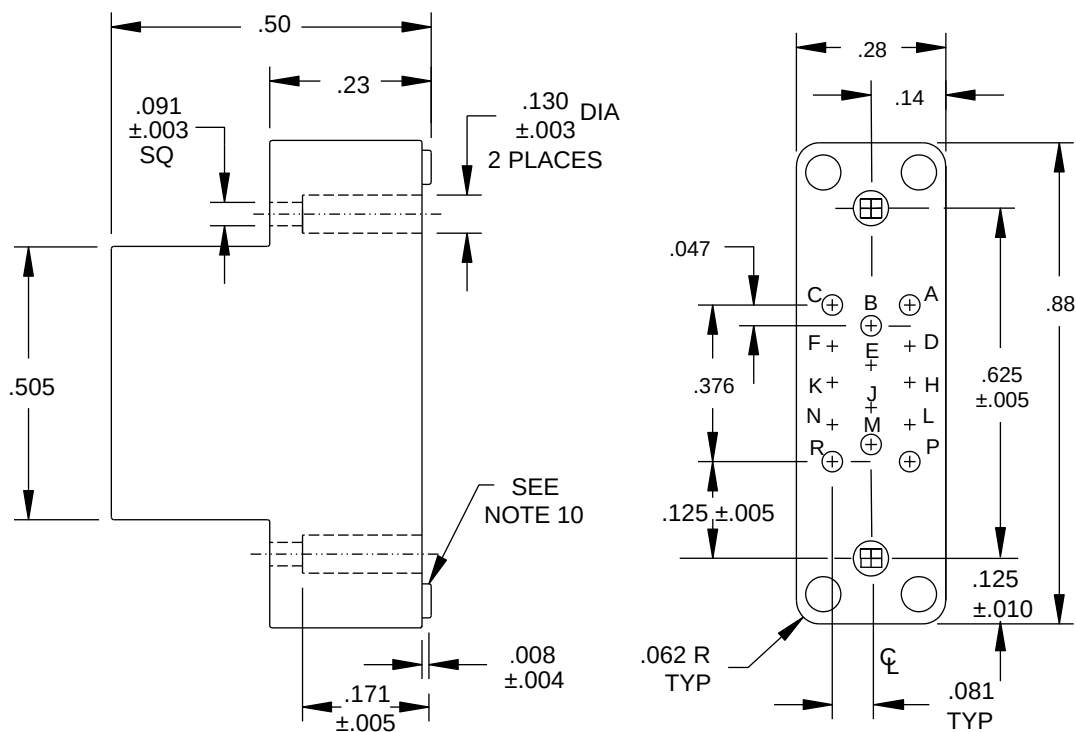
NOTES:

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 contacts	Minimum cable openings
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 shields, jackscrews, and guide pins – Continued.

FIGURE 2. Insert arrangements.

FIGURE 2. Insert arrangements – Continued.

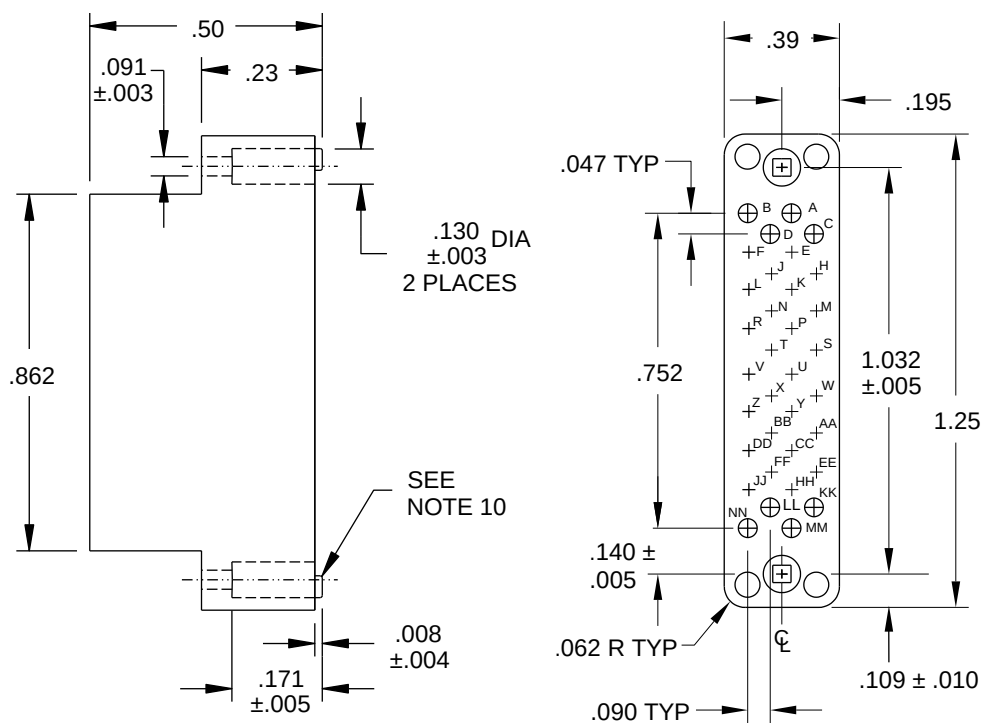
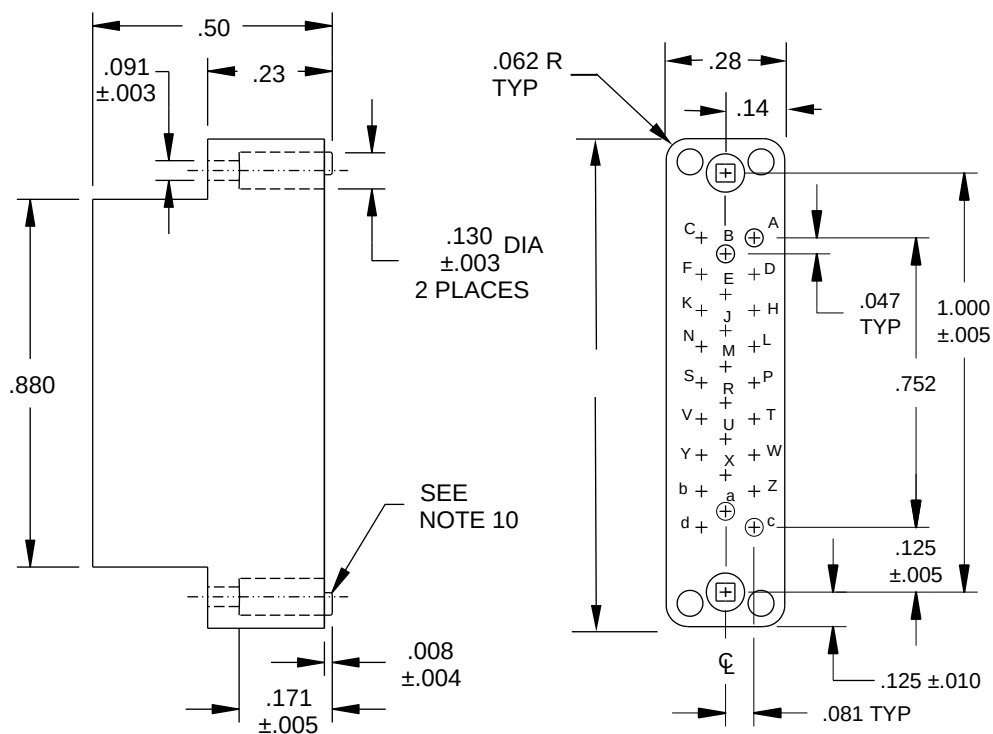
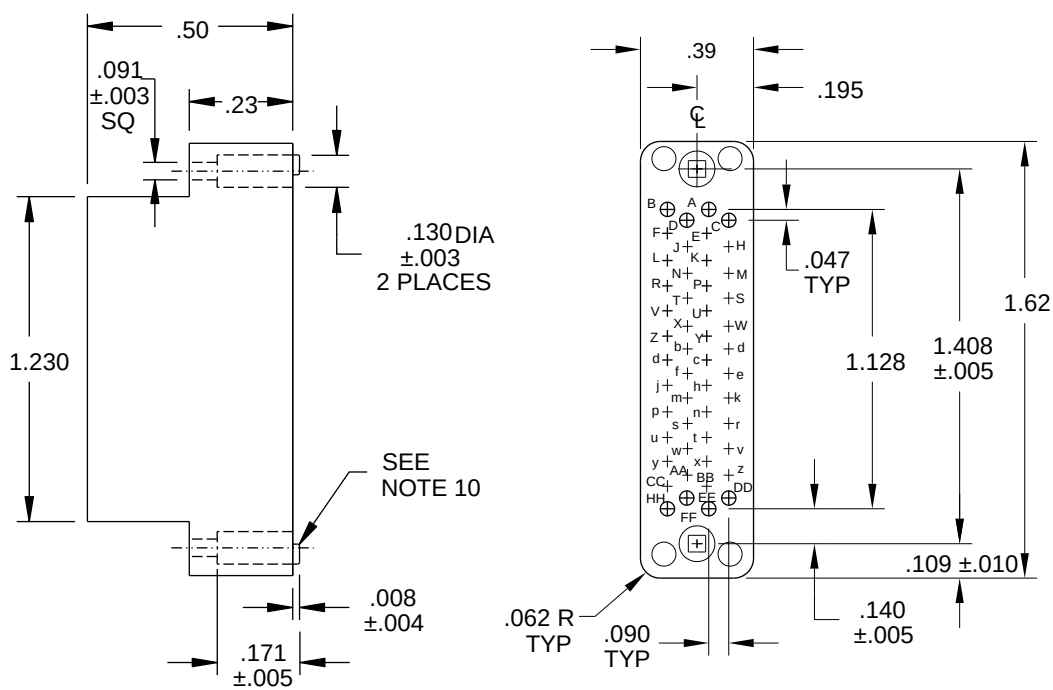
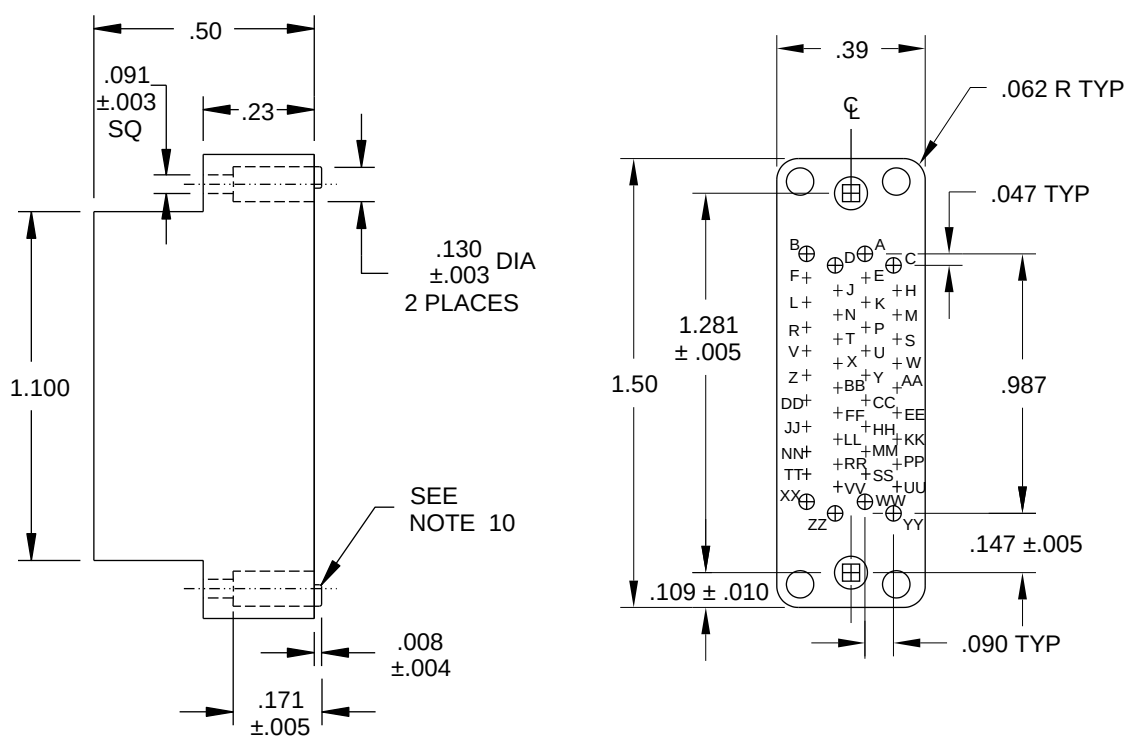


FIGURE 2. Insert arrangements – Continued.

FIGURE 2. Insert arrangements – Continued.

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.003	0.08	.105	2.67	.282	7.16	.814	20.68
.004	0.10	.109	2.77	.376	9.55	.862	21.89
.005	0.13	.125	3.18	.382	9.70	.88	22.4
.008	0.20	.130	3.30	.39	9.9	.987	25.07
.010	0.25	.140	3.56	.50	12.7	1.000	25.40
.031	0.79	.146	3.71	.505	12.83	1.032	26.21
.0405	1.029	.147	3.73	.562	14.27	1.06	26.9
.045	1.14	.171	4.34	.564	14.33	1.100	27.94
.047	1.19	.195	4.95	.625	15.88	1.128	28.65
.062	1.57	.21	5.3	.695	17.65	1.230	31.24
.081	2.06	.23	5.8	.752	19.10	1.25	31.8
.090	2.29	.270	6.86	.78	19.8	1.281	32.54
.091	2.31	.28	7.1			1.408	35.76
						1.50	38.1
						1.62	41.1

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are $\pm .02$ (0.51 mm) for two place decimals and $\pm .015$ (0.38 mm) for three place decimals.
4. Tolerance between any two adjacent contact centers shall be $\pm .004$ (0.10 mm). Tolerance between any two contact centers, other than adjacent contacts, shall be $\pm .006$ (0.15 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: M22520/2-01. Positioner: Astro 640092 and Daniels K187, or equivalent.
10. Shape of .008 pads optional.
11. Mating fact of pin insert shown; socket insert is reverse image.
12. Contacts: SAE-AS39029/34.

FIGURE 2. Insert arrangements – Continued.

REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2.

Mating connectors: See MIL-DTL-28748/8 and MIL-DTL-28748/14.

Part number: As shown in the following example:

(See part number code)

<u>M28748/13</u>	<u>A</u>	<u>1</u>	<u>0</u>	<u>L</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> Shield	<u>Shell type</u>
A-	4	1 – Top opening per configuration E	0 – None included
B-	7	of figure 1	
C-	14	2 – Side opening per configuration E	
D-	20	of figure 1	
E-	26	0 – None included	
F-	34		
G-	44		
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 jacksocket (turning or fixed) or guide socket shall be located by the "A" pin contact.

Contacts: M39029/34-440

1A – 100 percent size 22

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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

MIL-DTL-28748/8
MIL-DTL-28748/14
SAE-AS39029/34
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 5935-2019-020)

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>.