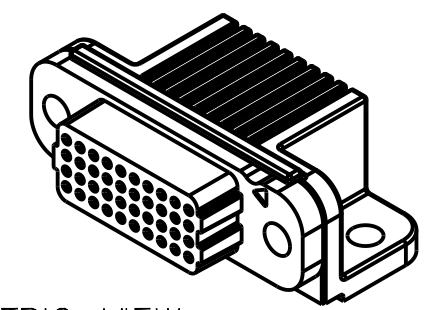


CONNECTOR PART NUMBER BUILD  
SAMPLE PART NUMBER: VSRAF-04-10-50-00



ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER VSRAF-04-10-50-00 SHOWN)

VSRAF-XX-XX-XX-XX-X

HARDWARE OPTIONS	
BLANK	NO HARDWARE <sup>2</sup>
G	GUIDE SOCKET <sup>3</sup>
N	FIXED JACKNUT
J	TURNING JACKSCREW
L	LOCKING SCREW

TERMINATION	
00	PRESS-FIT
01	PASTE-IN-HOLE (PIH)
02	PLATED-THRU-HOLE (PTH) .078" LENGTH
03	PLATED-THRU-HOLE (PTH) .109" LENGTH
04	PLATED-THRU-HOLE (PTH) .140" LENGTH
05	PLATED-THRU-HOLE (PTH) .156" LENGTH
06	PLATED-THRU-HOLE (PTH) .172" LENGTH

CONTACT PLATING	
50	50μIN Au

COLUMNS	
10	10 COLUMNS
20	20 COLUMNS
30	30 COLUMNS
40	40 COLUMNS
50	50 COLUMNS

ROWS	
04	4 ROWS
05	5 ROWS
06	6 ROWS
08	8 ROWS
10	10 ROWS

MATERIAL AND FINISHES		
SOCKET CONTACTS	MATERIAL SOCKET END	BeCu PER ASTM B194
	FINISH SOCKET END	50μIN MIN LOCALIZED Au PER ASTM B488 TYPE II, CODE C OVER 50 μIN MIN Ni PER ASTM B689 TYPE 1
	MATERIAL TERMINATION END	PIH & PTH: BRASS ALLOY PER ASTM B36 PRESS-FIT: BeCu PER ASTM B768
	FINISH TERMINATION END	PIH & PTH: 10μIN MIN LOCALIZED Au FLASH PER ASTM B488 TYPE I, CODE A OR C OVER 50μIN MIN Ni PER ASTM B689 TYPE 1 PRESS-FIT: 50μIN MIN LOCALIZED Au PER ASTM B488 TYPE II, CODE C OVER 50μIN MIN Ni PER ASTM B689 TYPE 1
MOLDED INSULATORS EMBEDMENT	MATERIAL	GLASS-FILLED LIQUID CRYSTAL POLYMER (LCP) PER ASTM D5138
HARDWARE	MATERIAL	STAINLESS STEEL PER ASTM A484/A484M, ASTM A582/A582M, OR ASTM A320
	FINISH	PASSIVATED PER SAE AMS-2700
WASHERS	MATERIAL	STAINLESS STEEL PER SAE NASM35333 (ASTM A240),
	FINISH	PASSIVATED PER NASM35333 (SAE AMS-2700)

PERFORMANCE	
CONTACT RATING	2 AMPERES MAXIMUM, SEE AIRBORN PTB66 FOR MORE INFO
OPERATING TEMPERATURE	-55° C TO 125° C, SEE AIRBORN PTB66 FOR MORE INFO
CONTACT ENGAGEMENT FORCE	6.0oz MAX*
CONTACT SEPARATION FORCE	0.5oz MIN*
CONNECTOR MATING FORCE	10oz X (# OF CONTACTS) MAX TESTED PER MIL-DTL-83513
CONNECTOR UNMATING FORCE	10oz X (# OF CONTACTS) MAX TESTED PER MIL-DTL-83513
DWV (SEA LEVEL)	600V, RMS, 60Hz, SEE AIRBORN PTB61 FOR MORE INFO
RECOMMENDED MAX OPERATING VOLTAGE	200V, RMS, 60Hz, SEE AIRBORN PTB61 FOR MORE INFO
INSULATION RESISTANCE	5,000 MEGAOHMS MINIMUM @ 500 VDC, TESTED PER MIL-DTL-83513
DURABILITY	2,500 CONNECTOR MATING CYCLES, EXCEEDS MIL-DTL-83513
SINUSOIDAL VIBRATION	20 g, TESTED PER MIL-DTL-83513
SHOCK	50 g, TESTED PER MIL-DTL-83513
OUTGASSING	MAX TML OF 1% AND MAX CVCM OF .1% PER MIL-DTL-83513

\*FORCES TESTED ON SOCKET ONLY. MAX PIN SIZE USED FOR CONTACT ENGAGEMENT FORCE AND MIN PIN SIZE USED FOR CONTACT SEPARATION FORCE.

NOTES:

- SEE AIRBORN SPEC ESL5001 FOR ADDITIONAL APPLICATION INFORMATION.
- SEE SHEET 8 FOR REPLACEMENT HARDWARE KITS.
- NO HARDWARE SUPPLIED WITH BLANK HARDWARE OPTION CONNECTORS.
- PACKAGING: CONNECTORS SUPPLIED IN THERMOFORMED TRAYS, HARDWARE SUPPLIED UNINSTALLED
- NO PCB MOUNTING HARDWARE SUPPLIED WITH CONNECTORS.
- MATES WITH CONNECTOR SERIES: VSM, VSRAF, VSX (MALE), VRD (MALE), VRW (MALE).



MATERIAL: SEE NOTES	UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE: Decimals: .XX ± .010 Concentricity: .002 T.I.R. Decimals: .XXX ± .005 Angles: ± 3° Decimals: .XXXX ± .0005 Radius: Parts are to be symmetrical about centerline within ± .002 Surfaces to be flat, perpendicular parallel within .002 T.I.R. Dimensions are in inches/DQ NOT SCALE PRINT Surface finish to be 32/ or better		<b>AirBorn</b> Little Falls, Minnesota 56345		Cage Code 10400
HEAT TREAT: Per Spec.: Certification required: NO	APPLICATION: verSI SERIES		DRAWING STATE: Released <input checked="" type="checkbox"/> RELEASED This drawing is not authorized for production unless it is released		SIZE C
FINISH: SEE NOTES Per Spec.: Certification required: NO	A INITIAL RELEASE KTR 072418 W57940 KTR 072418	DR. KTR 041718	verSI SERIES RIGHT ANGLE FEMALE NON-RUGGEDIZED PRODUCT DRAWING		
MAKE FROM: NEXT ASSY: N/A	REV DESCRIPTION DR. BY DATE ECO NO. APPD. BY	REL. KTR 041718	APPD. TJW 041818	DWG # VSRAF-XX-XX-XX-XX-X	REV. A SHEET 1/8

FORMAT: CFRM/PRO.FRM A.7

D

C

B

A

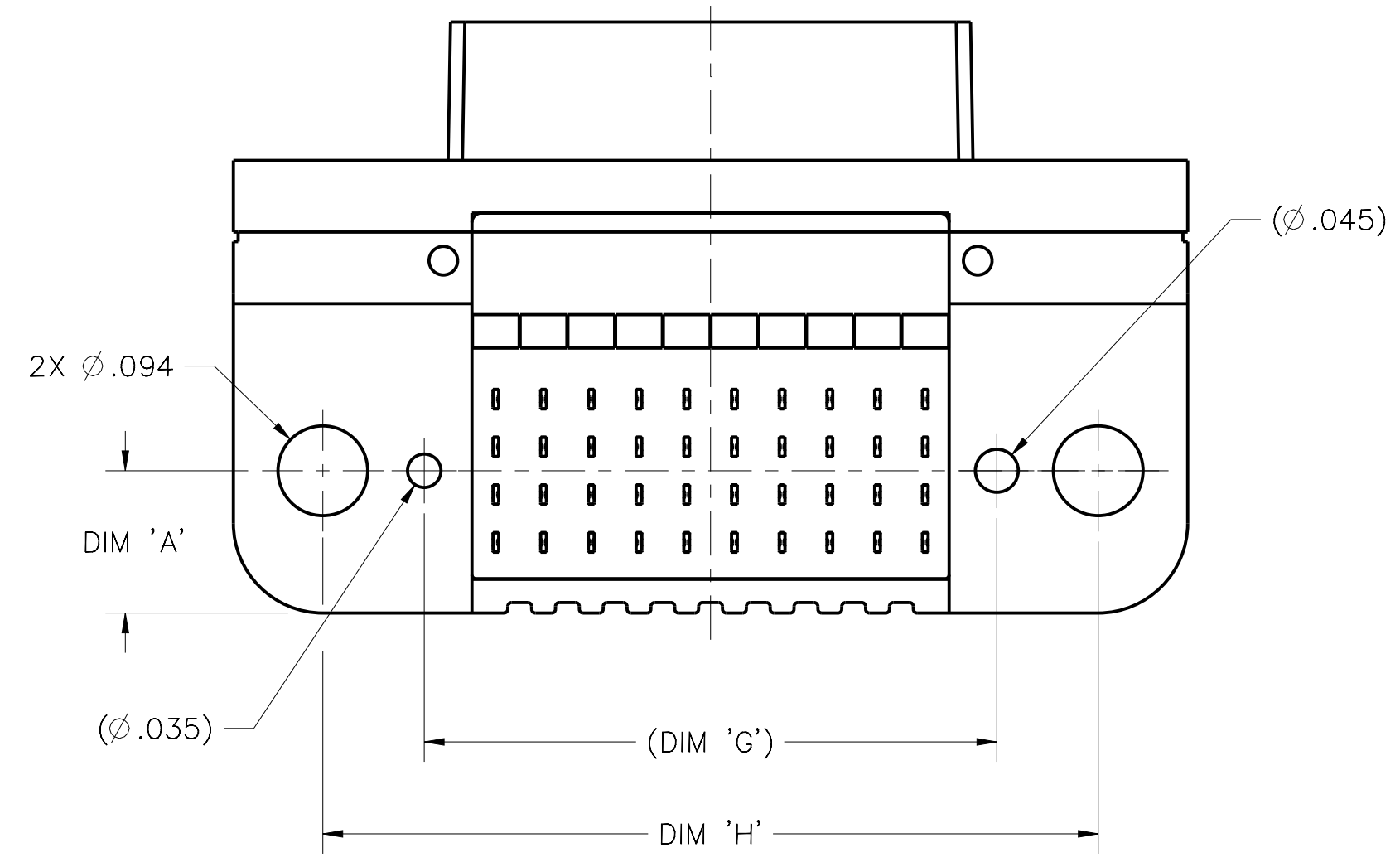
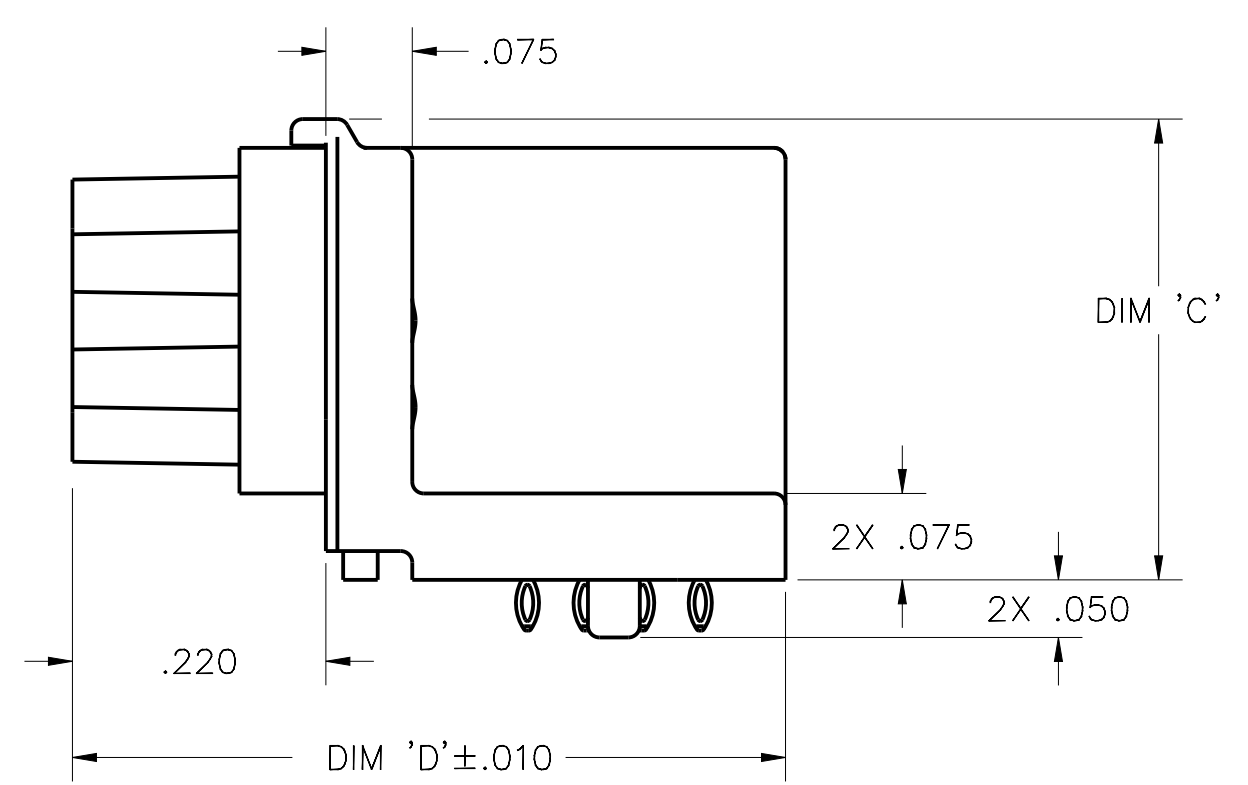
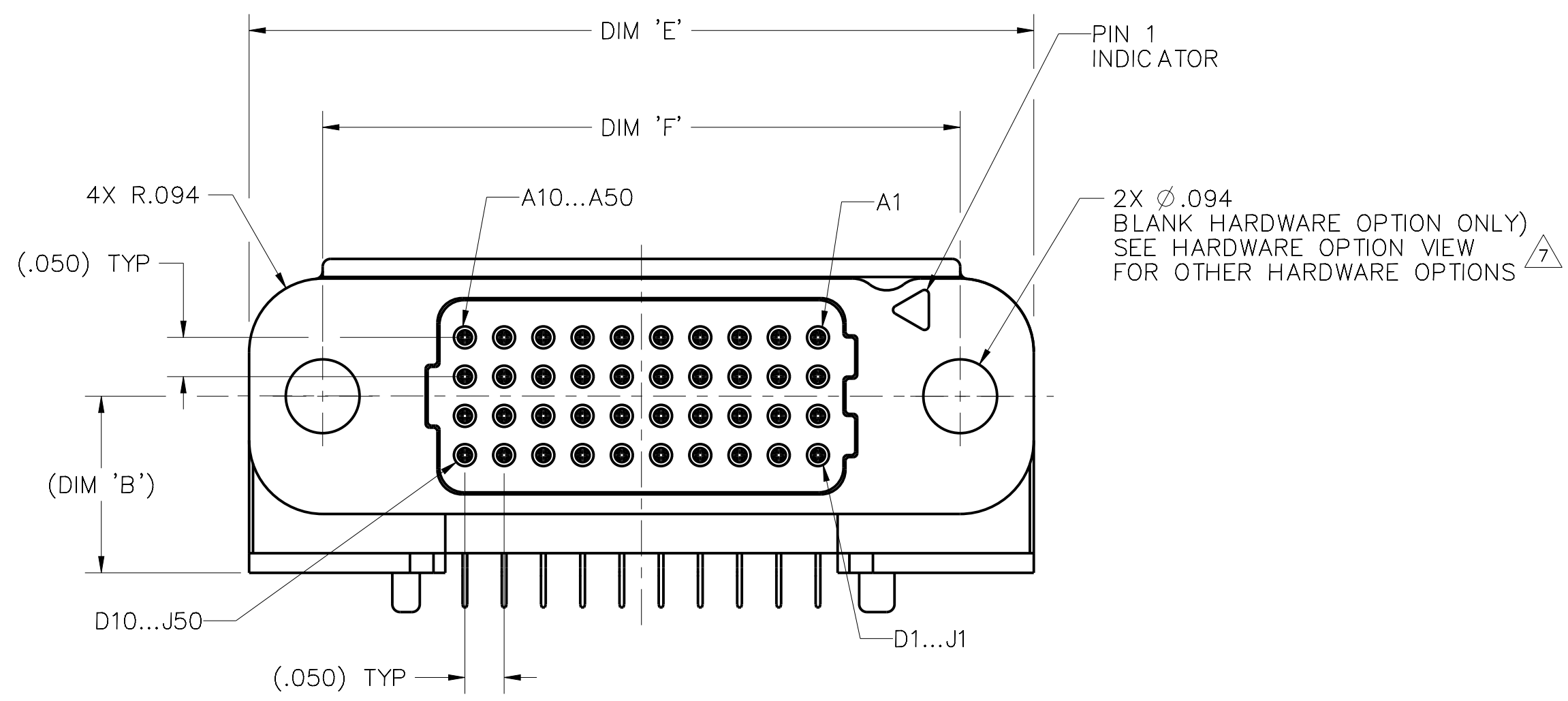
4

3

2

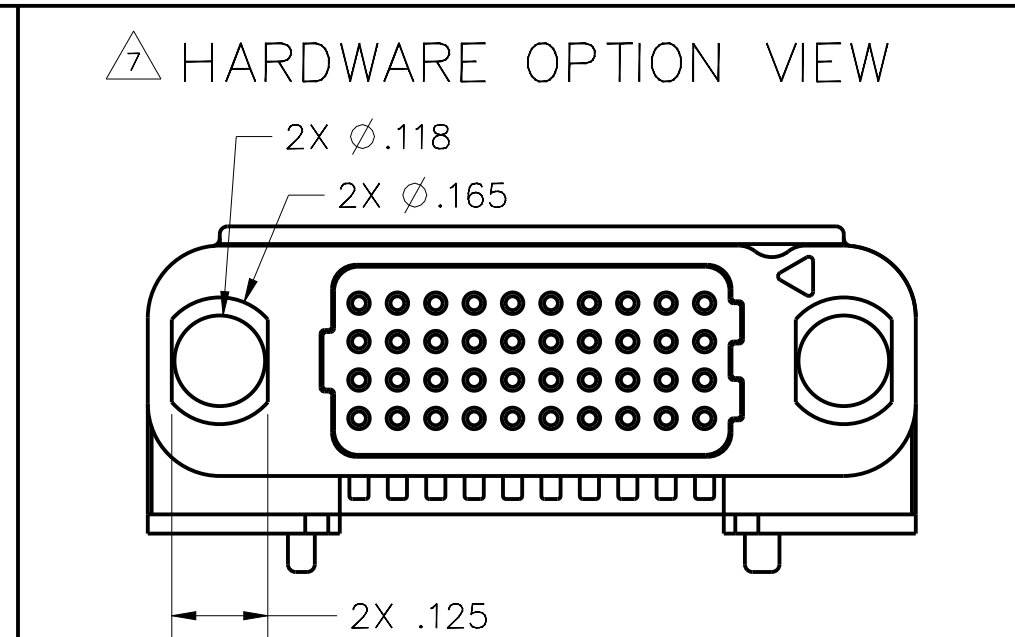
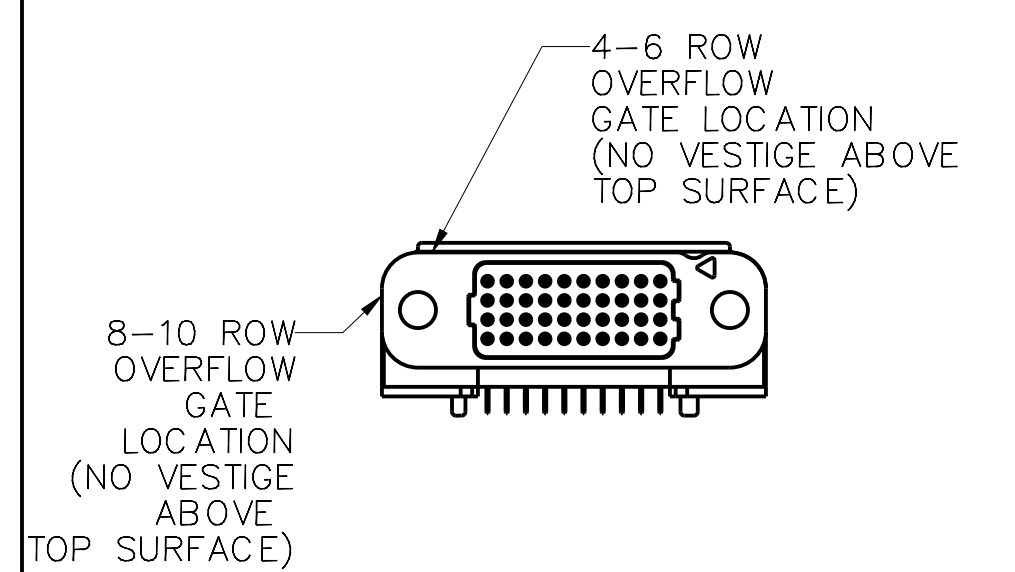
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### CONNECTOR DIMENSIONS (BLANK HARDWARE OPTION SHOWN)



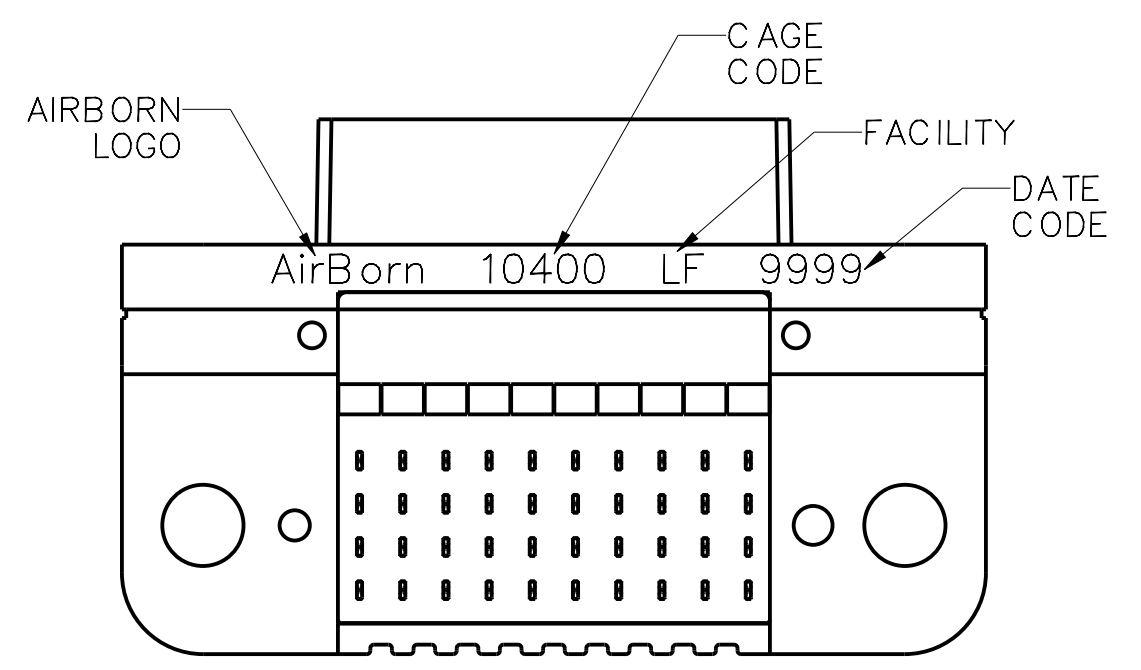
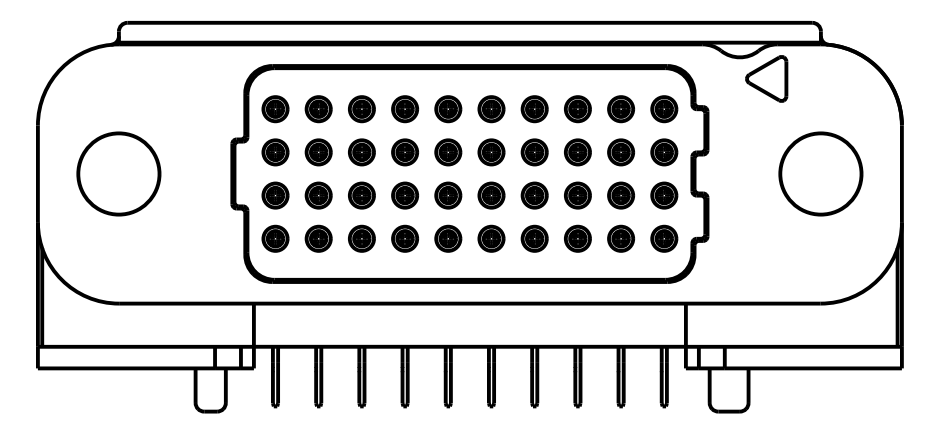
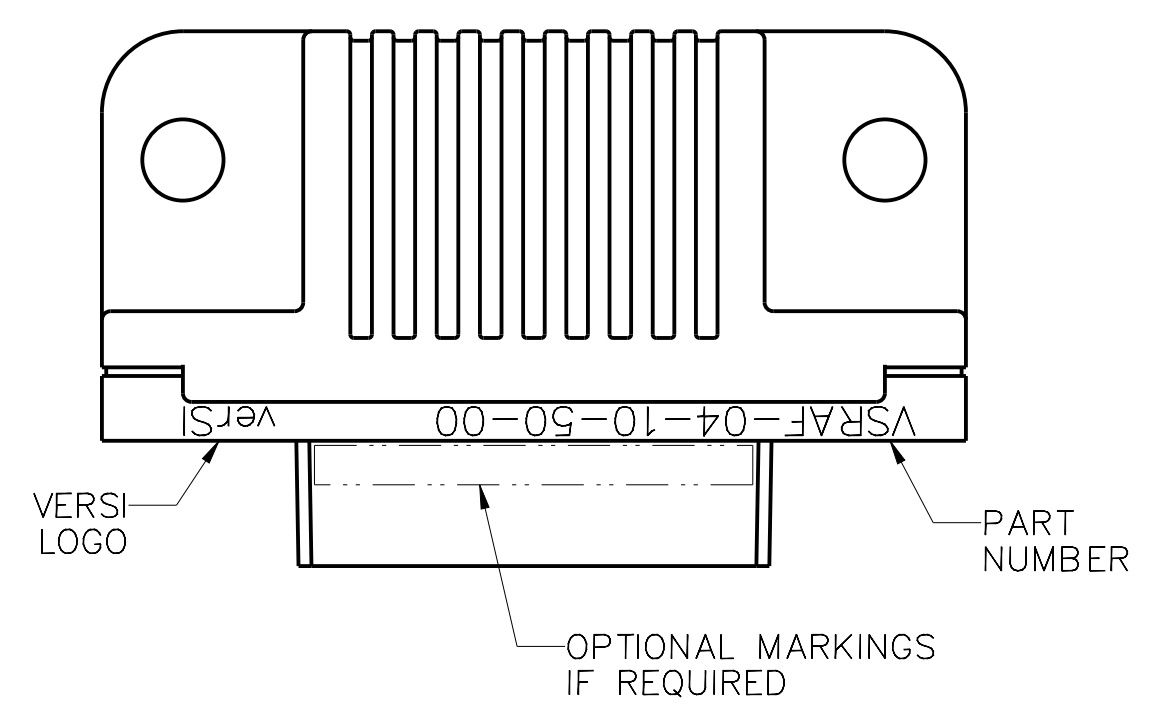
ROWS	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'
04	.149	.225	.400	.619
05	.174	.250	.450	.669
06	.199	.275	.500	.719
08	.249	.325	.600	.819
10	.299	.375	.700	.919

COLUMNS	DIM 'E'	DIM 'F'	DIM 'G'	DIM 'H'
10	1.000	.813	.600	.813
20	1.500	1.313	1.100	1.313
30	2.000	1.813	1.600	1.813
40	2.500	2.313	2.100	2.313
50	3.000	2.813	2.600	2.813



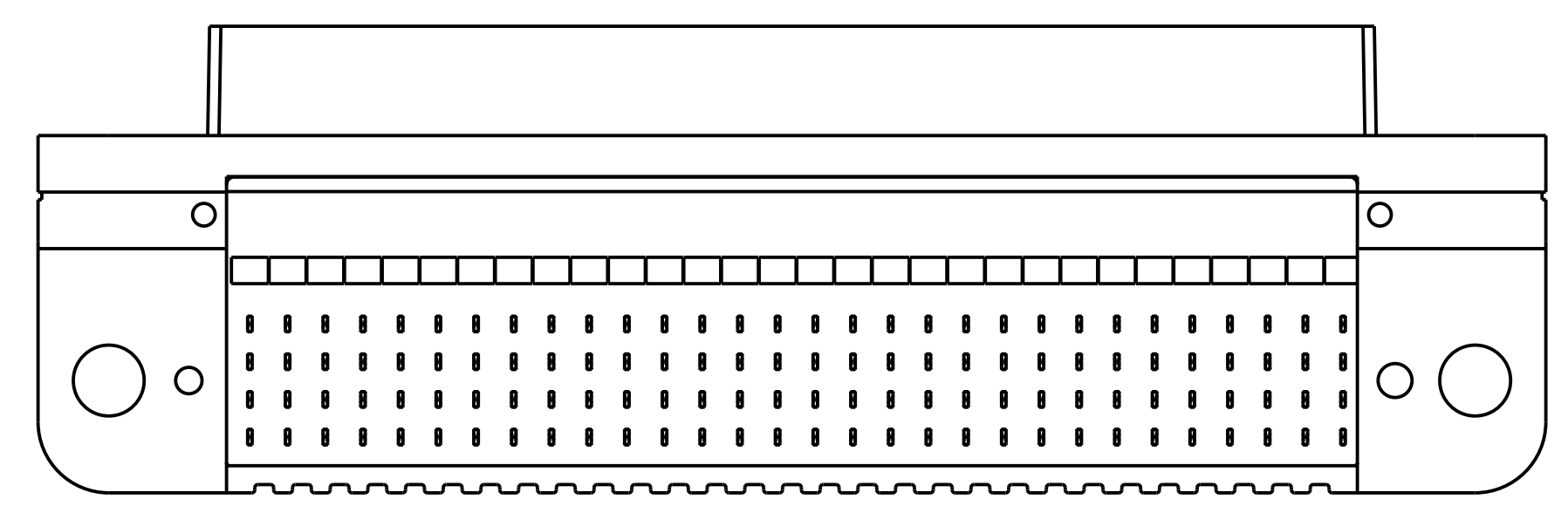
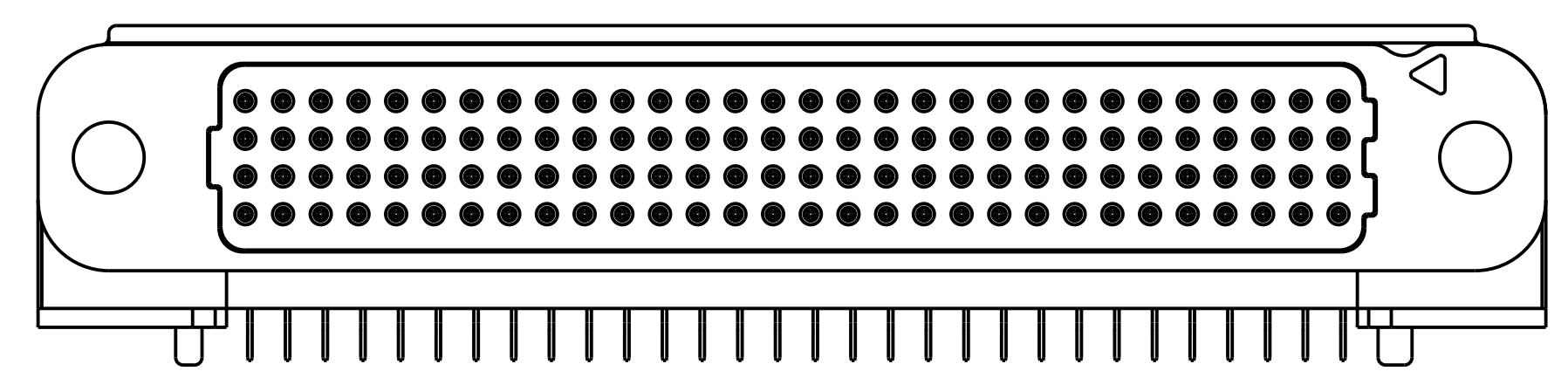
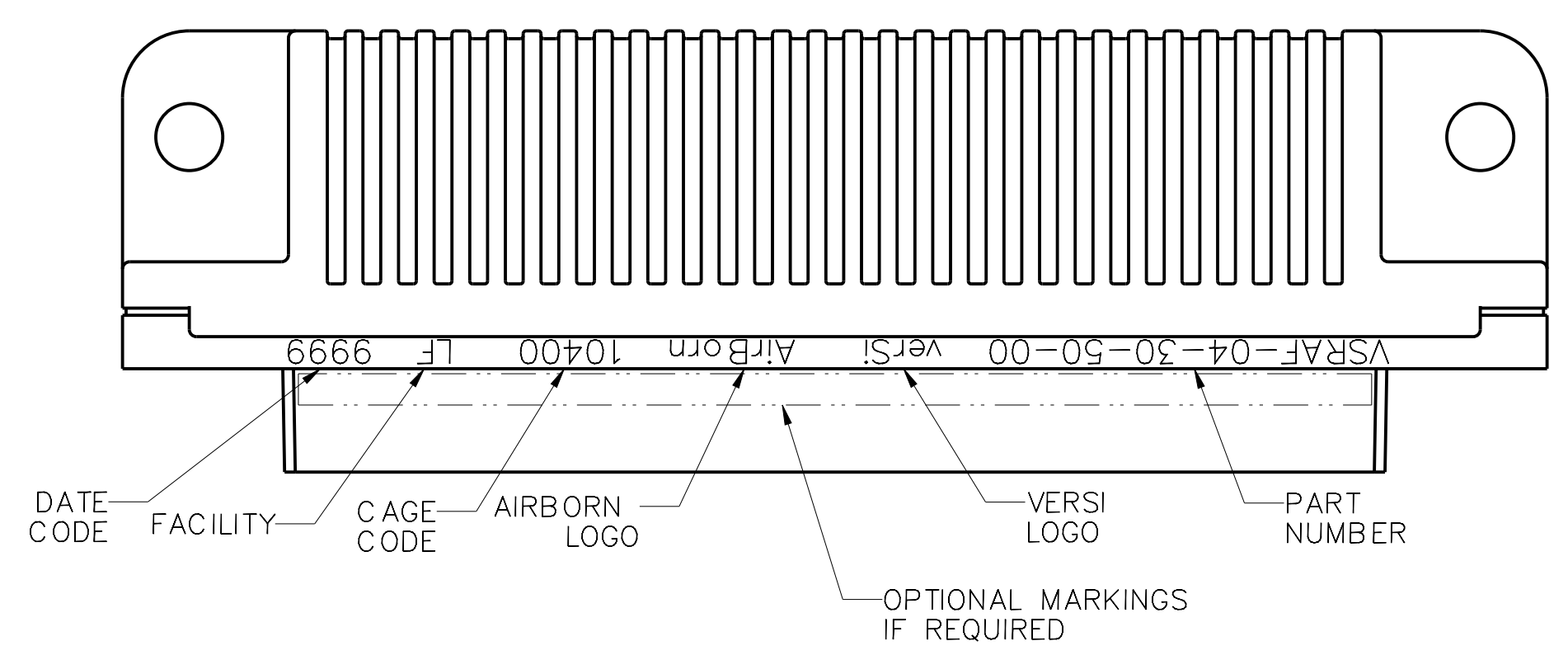
FORMAT: CFINTPRG.FRM A.7

PART MARKINGS  
 (10 & 20 COLUMNS)



(VSRAF-04-10-XX-XX-X SHOWN)

PART MARKINGS  
 (30, 40 & 50 COLUMNS)



(VSRAF-04-30-XX-XX-X SHOWN)

FORMAT: CFINTPROG.FRM A.7



verSI SERIES RIGHT ANGLE FEMALE  
 NON-RUGGEDIZED  
 PRODUCT DRAWING

DRAWING STATE: *Released*  **RELEASED**  
 This drawing is not authorized for production unless it is released  
 DWG # VSRAF-XX-XX-XX-XX-X REV. A SHEET 3/8

SIZE C

D

C

B

A

4

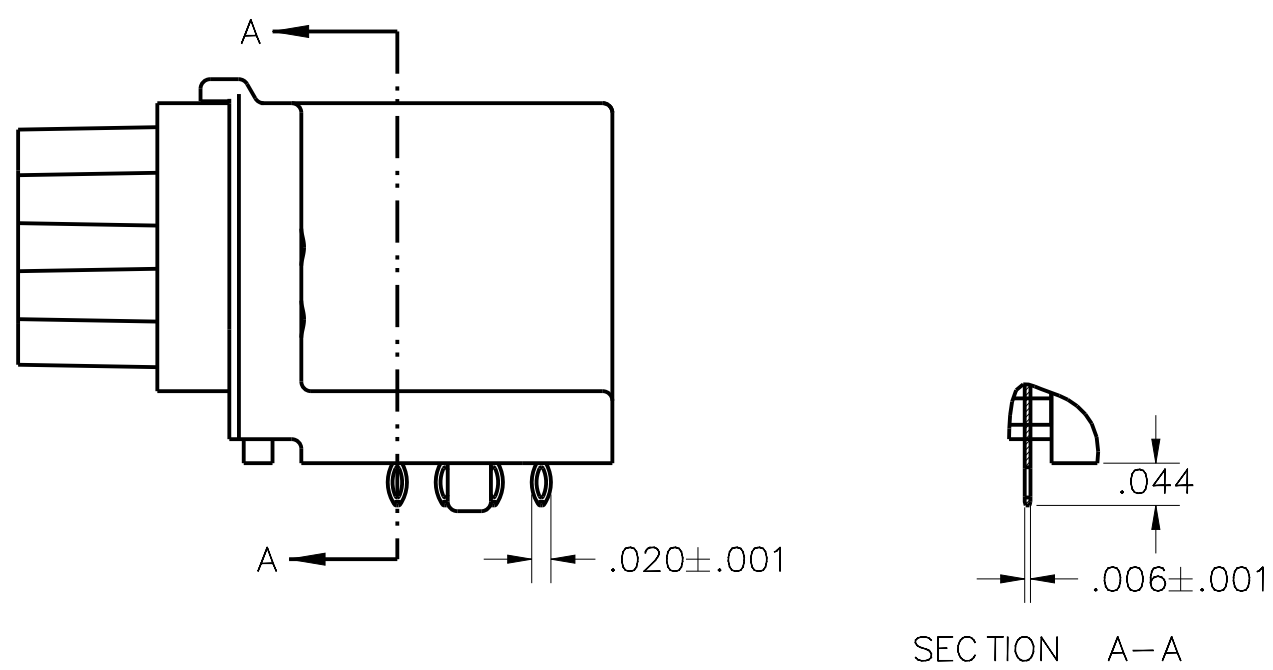
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2

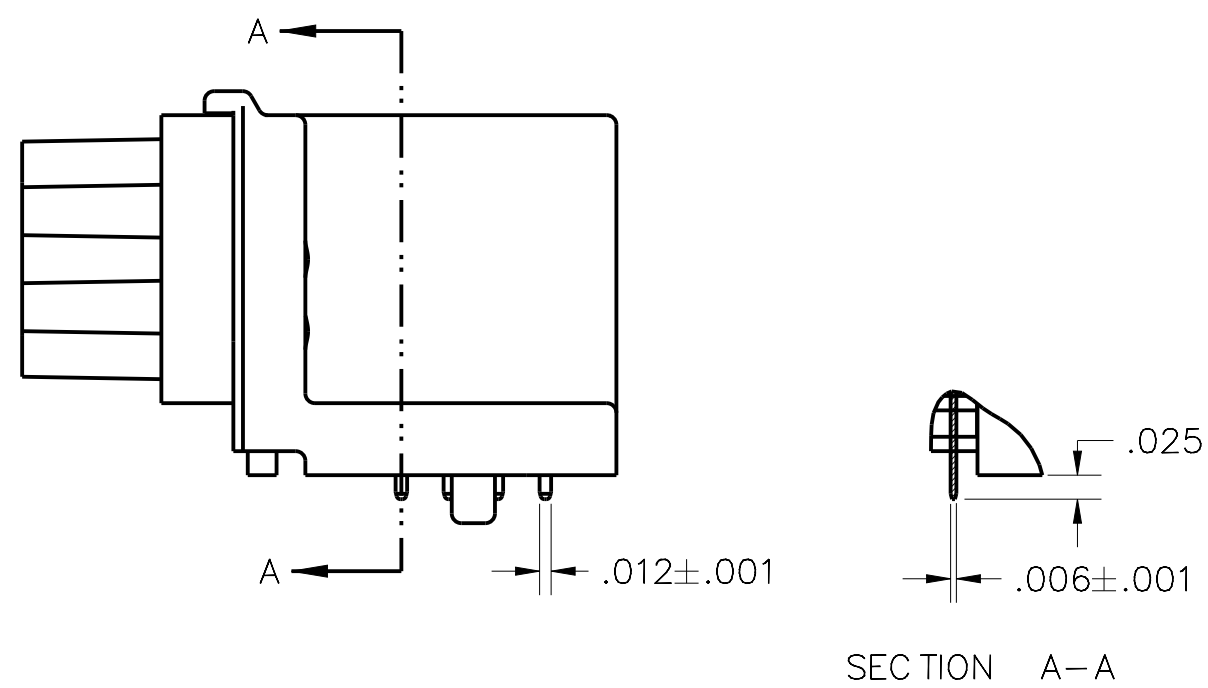
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TERMINATION DIMENSIONS

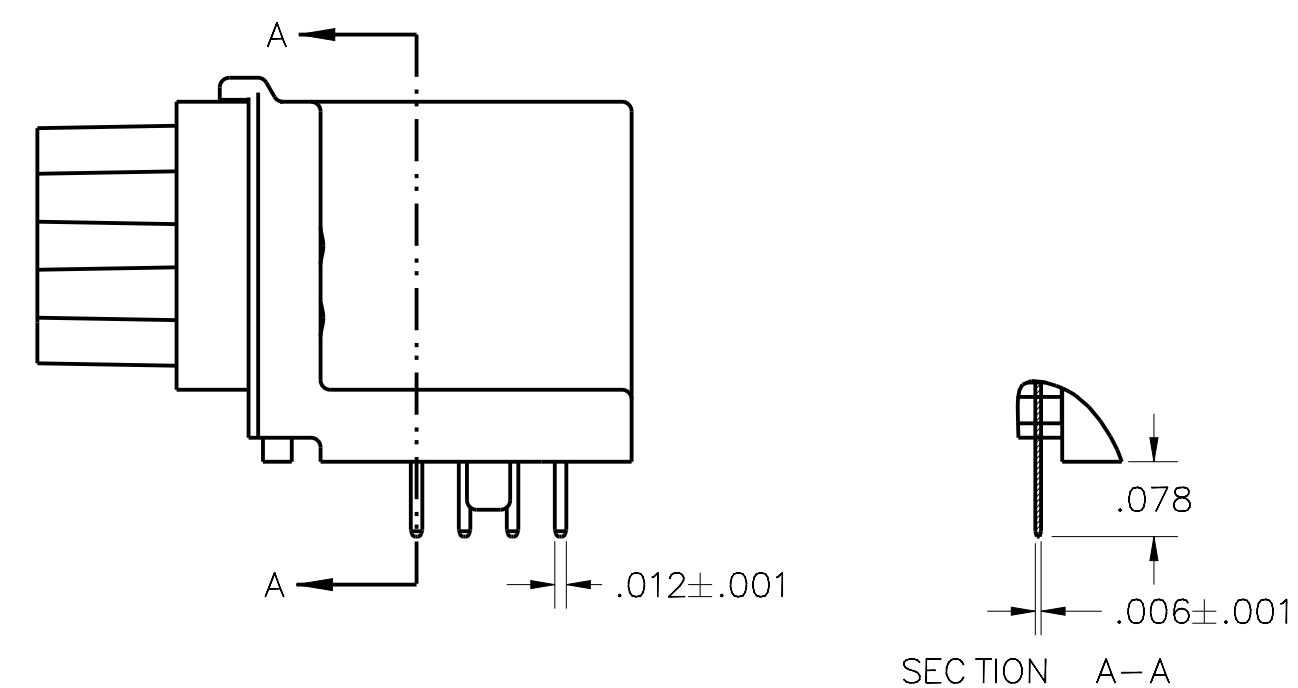
TERMINATION TYPE 00  
PRESS FIT



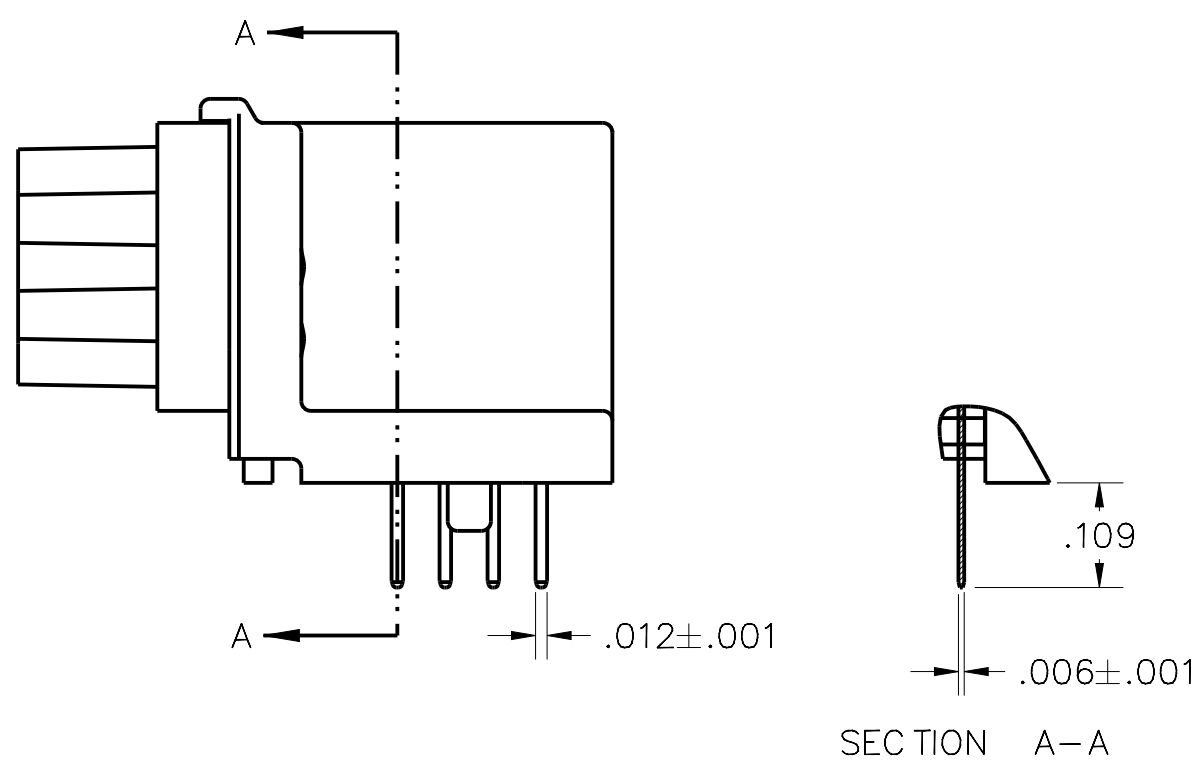
TERMINATION TYPE 01  
PIH



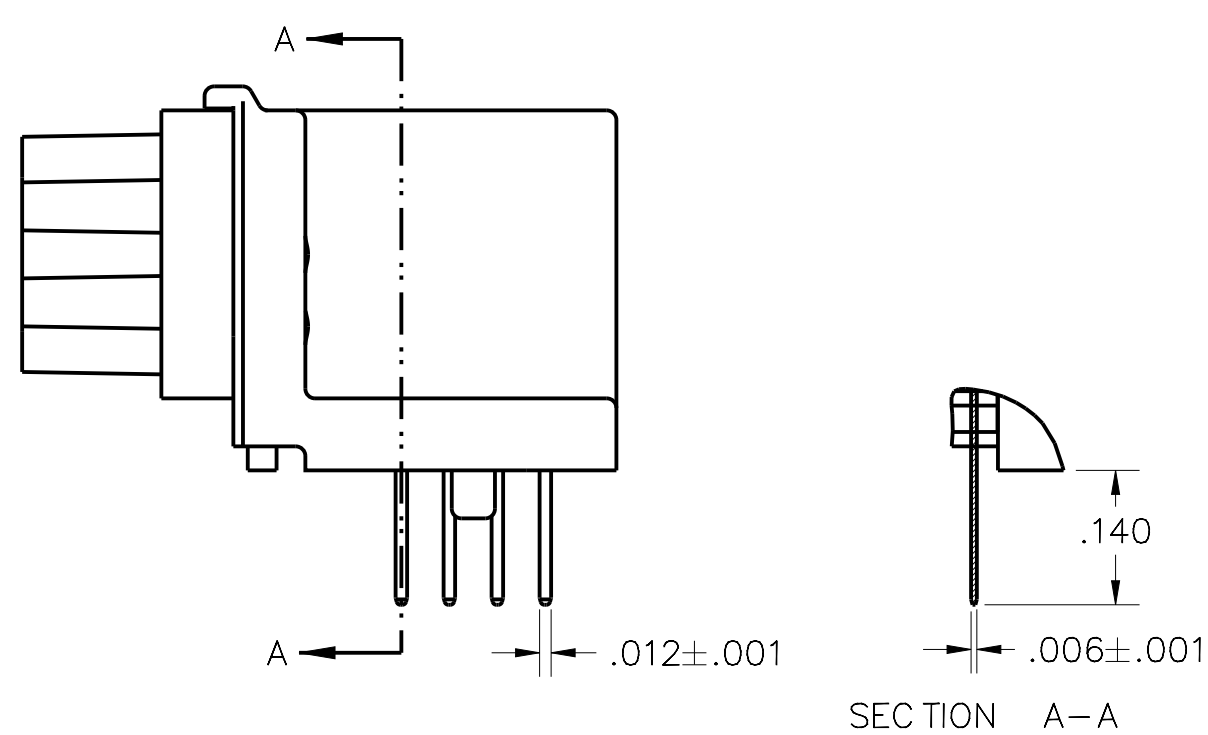
TERMINATION TYPE 02  
PTH .078" LENGTH



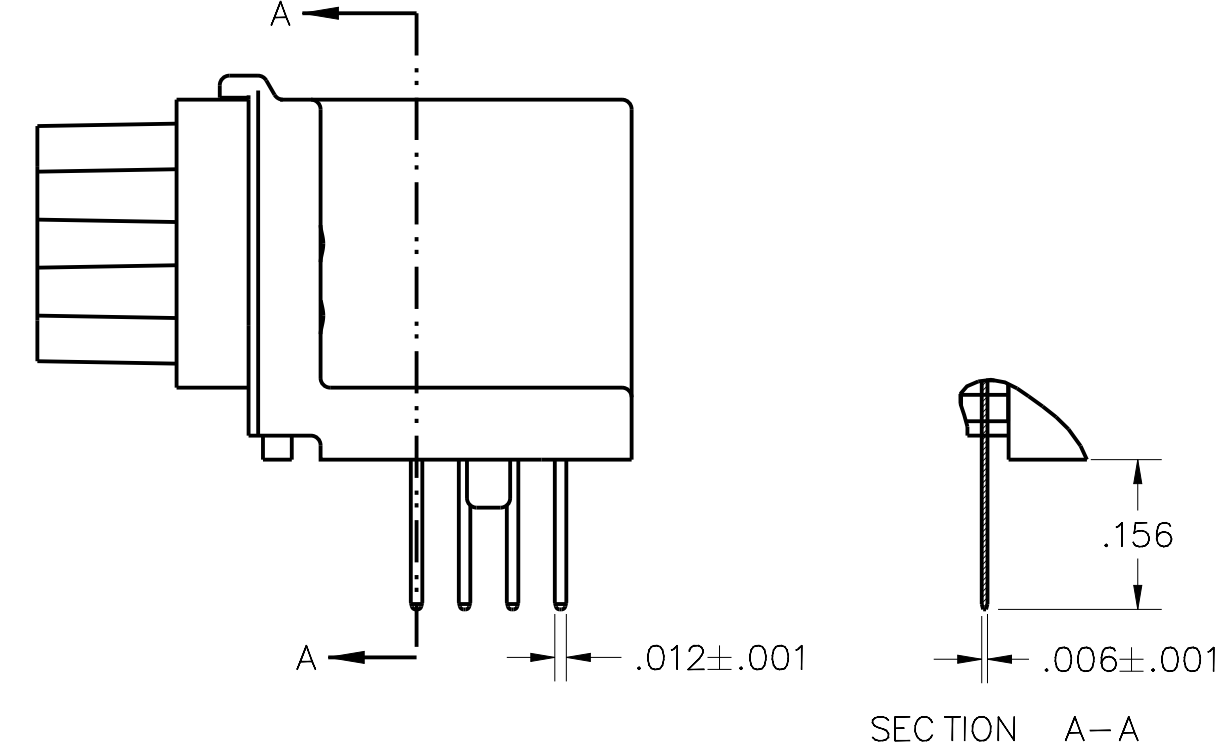
TERMINATION TYPE 03  
PTH .109" LENGTH



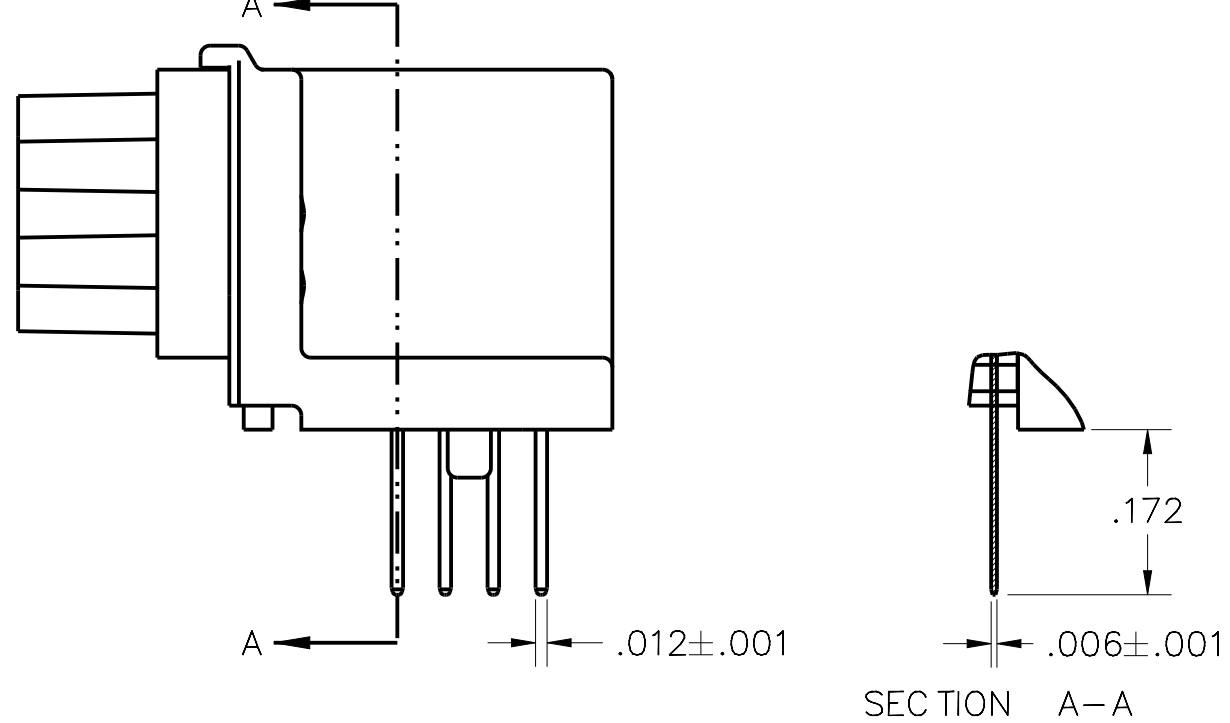
TERMINATION TYPE 04  
PTH .140" LENGTH



TERMINATION TYPE 05  
PTH .156" LENGTH



TERMINATION TYPE 06  
PTH .172" LENGTH



RECOMMENDED PCB THICKNESS FOR EACH TERMINATION TYPE	
TERMINATION	PCB THICKNESS
-00	.062" MIN
-01	.025" MIN
-02	.068" MAX
-03	.099" MAX
-04	.130" MAX
-05	.146" MAX
-06	.162" MAX

FORMAT: CFINTPRG.FRM A.7

4

3

2

1

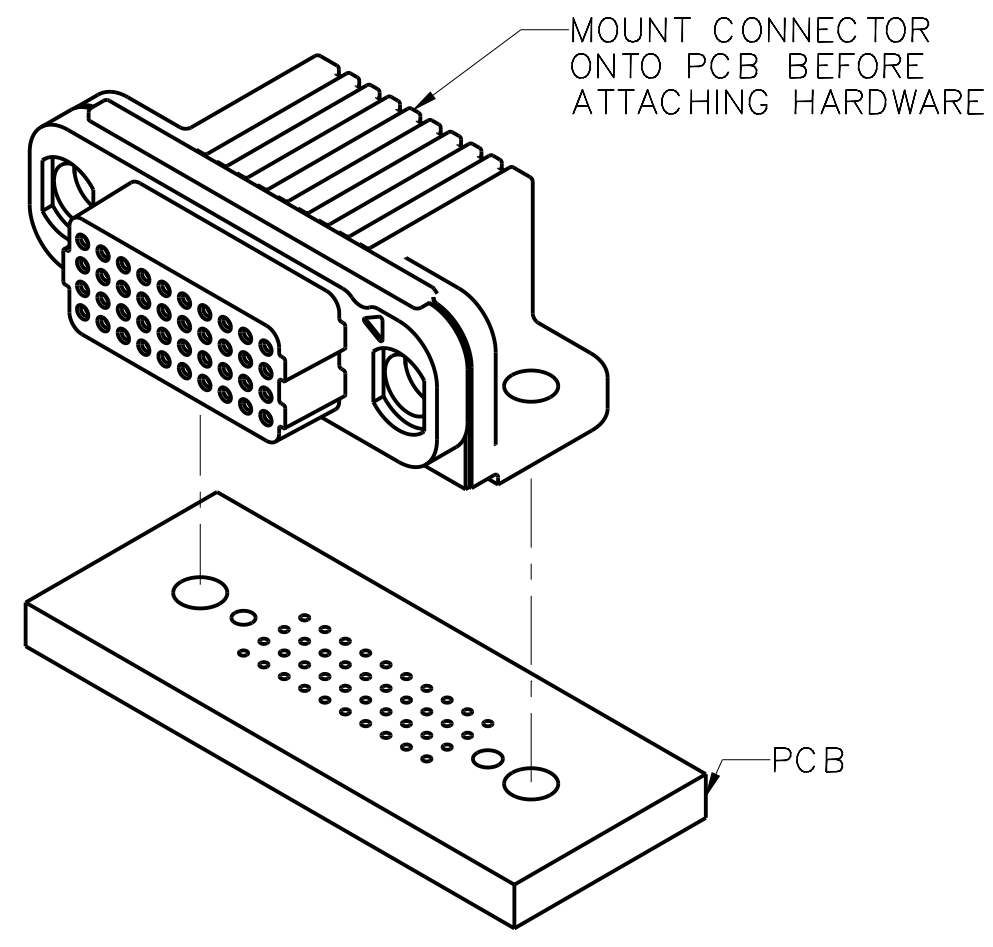
D

C

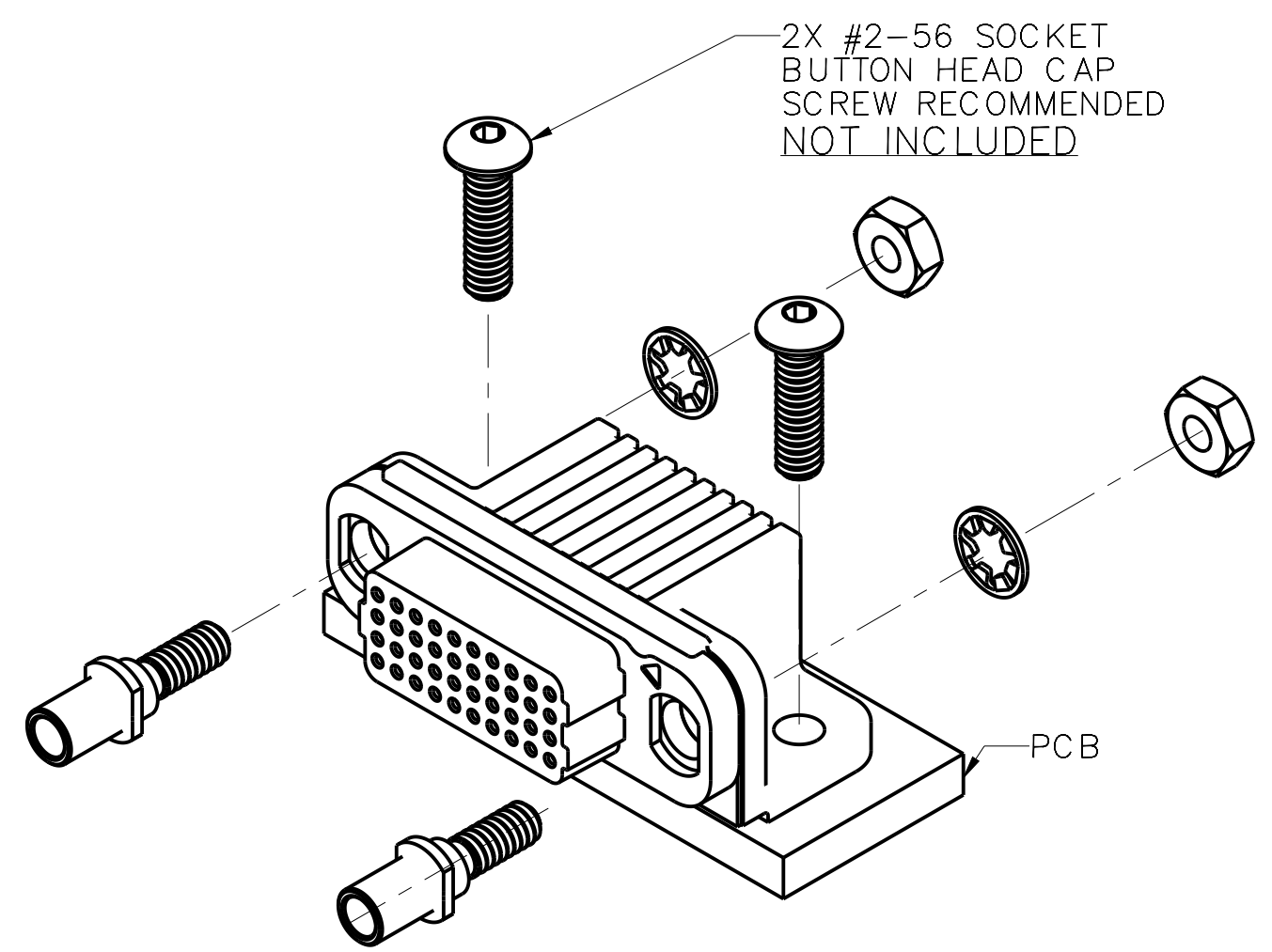
B

A

### PCB MOUNTING INSTRUCTIONS (G HARDWARE OPTION SHOWN)

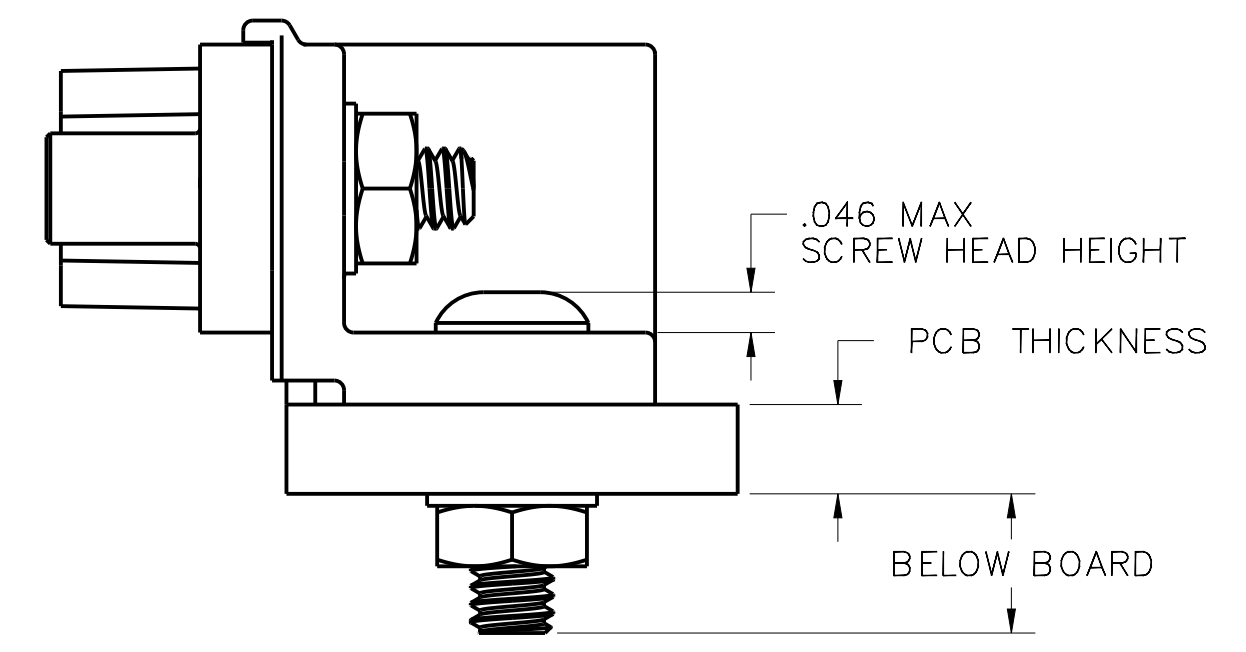


STEP 1:  
 PTH OR PIH: SOLDER CONNECTOR ONTO PCB  
 PRESS-FIT: PRESS CONNECTOR ONTO PCB  
 (SEE ESL5001 FOR MORE DETAILS ON INSTALLING THE CONNECTOR ONTO THE PCB)



STEP 2:  
 ATTACH HARDWARE  
 (SEE ESL5001 FOR ADDITIONAL DETAILS AND HARDWARE TORQUE SPECIFICATIONS)

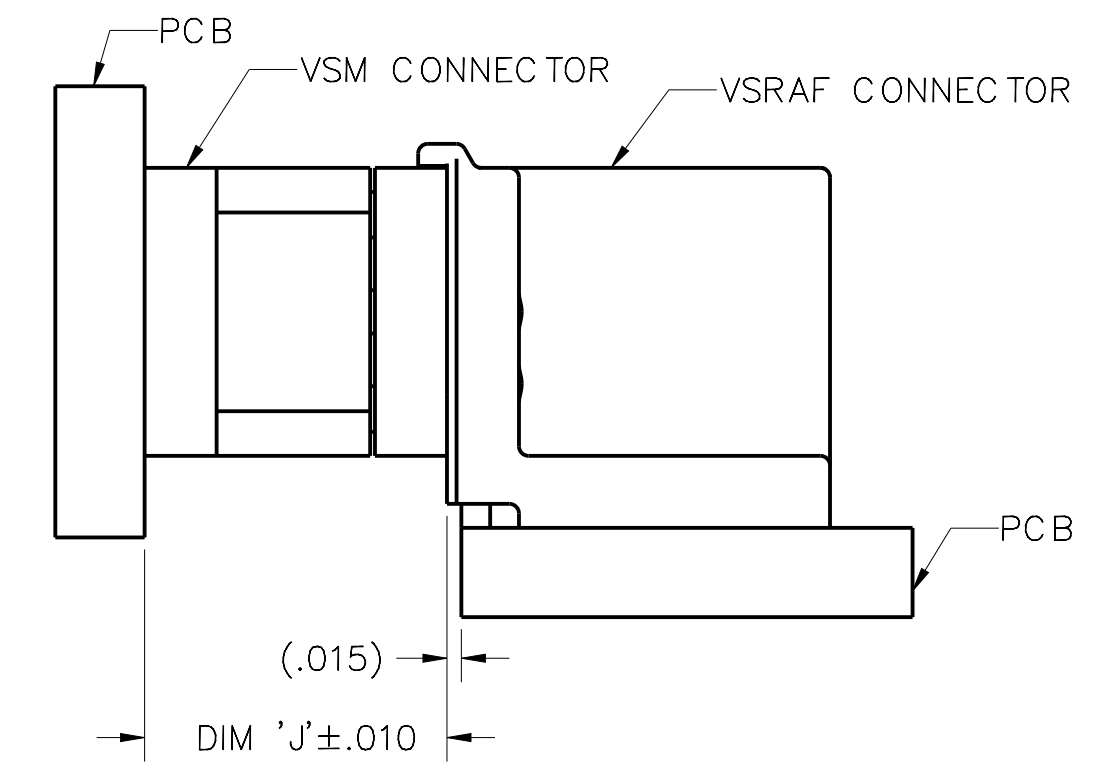
### RECOMMENDED PCB MOUNTING HARDWARE MOUNTING HARDWARE NOT INCLUDED



#### RECOMMENDED SCREWS FOR COMMON PCB THICKNESSES

PCB THICKNESS	BUTTON HEAD CAP SCREW	BELOW BOARD
.062	#2-56 X 1/4"	(.114)
.094	#2-56 X 5/16"	(.145)

### VSRAF CONNECTOR MATED TO VSM CONNECTOR



VSM BOARD SPACING	*DIM 'J'
.315 [8mm]	.315 NOMINAL (.350 MAX)
.394 [10mm]	.394 NOMINAL (.429 MAX)
.473 [12mm]	.472 NOMINAL (.507 MAX)
.630 [16mm]	.630 NOMINAL (.665 MAX)
.788 [20mm]	.787 NOMINAL (.822 MAX)
.985 [25mm]	.984 NOMINAL (1.02 MAX)

\*MAX VALUES FOR DIM 'J' ARE AT MAXIMUM ALLOWABLE SEPARATION BETWEEN MATED CONNECTORS



verSI SERIES RIGHT ANGLE FEMALE  
 NON-RUGGEDIZED  
 PRODUCT DRAWING

DRAWING STATE: *Released*  **RELEASED**  
 This drawing is not authorized for production unless it is released  
 DWG # VSRAF-XX-XX-XX-XX-X REV. A SHEET 5/8

4

3

2

1

FORMAT: CFINTPROG.FRM A.7

D

C

B

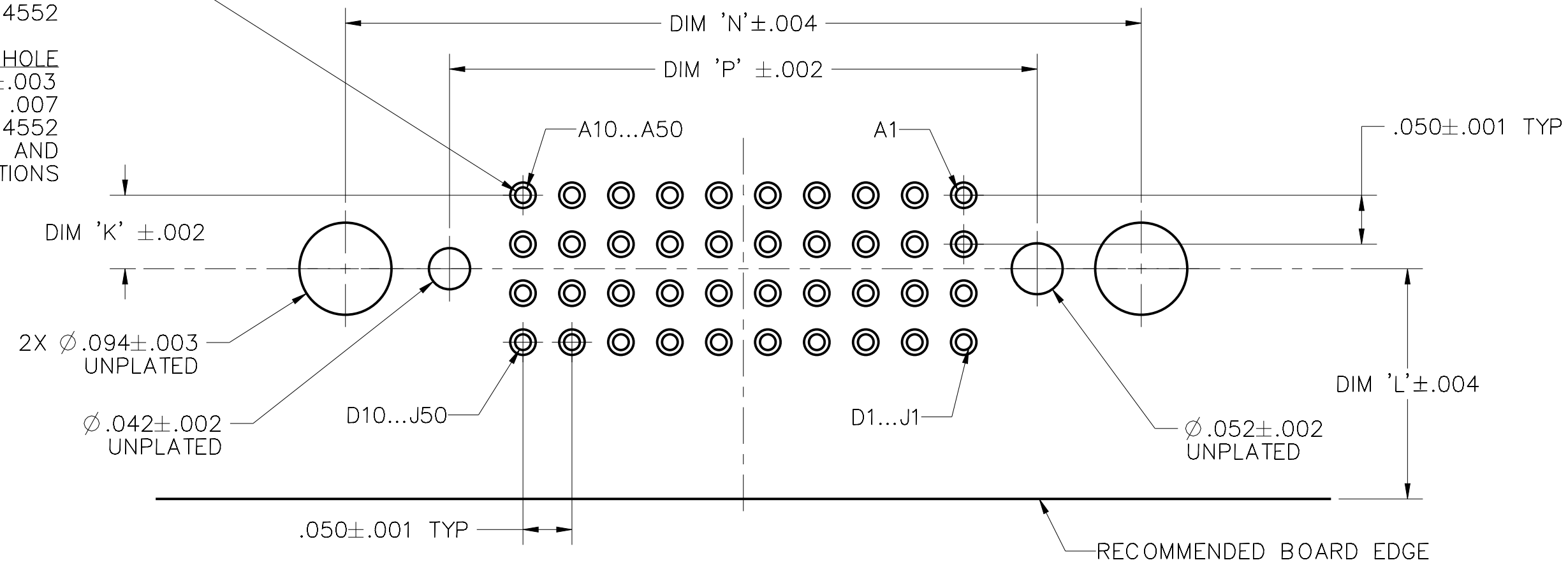
A

SIZE C

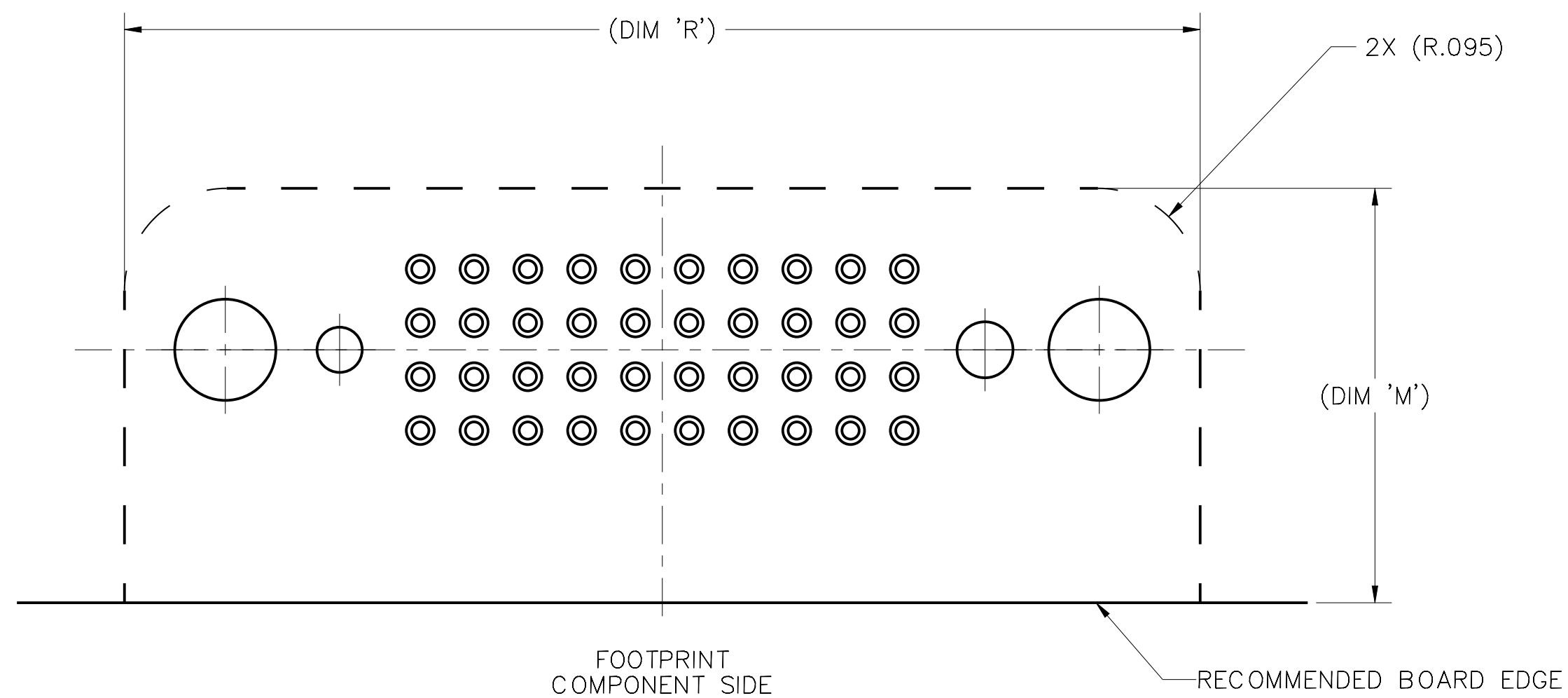
# RECOMMENDED PCB LAYOUT

**PRESS-FIT**  
 DRILL THRU  $\varnothing .020 \pm .001$   
 FINISHED HOLE SIZE  $\varnothing .016 \pm .002$   
 ANNULAR RING WIDTH .005 TO .007  
 ENIG FINISH PER IPC-4552

**PASTE-IN-HOLE AND PLATED-THRU-HOLE**  
 FINISHED HOLE SIZE  $\varnothing .019 \pm .003$   
 ANNULAR RING WIDTH .005 TO .007  
 ENIG FINISH PER IPC-4552  
 SEE ESL5001 FOR PASTE STENCIL AND  
 REFLOW RECOMMENDATIONS



RECOMMENDED BOARD LAYOUT  
 COMPONENT SIDE

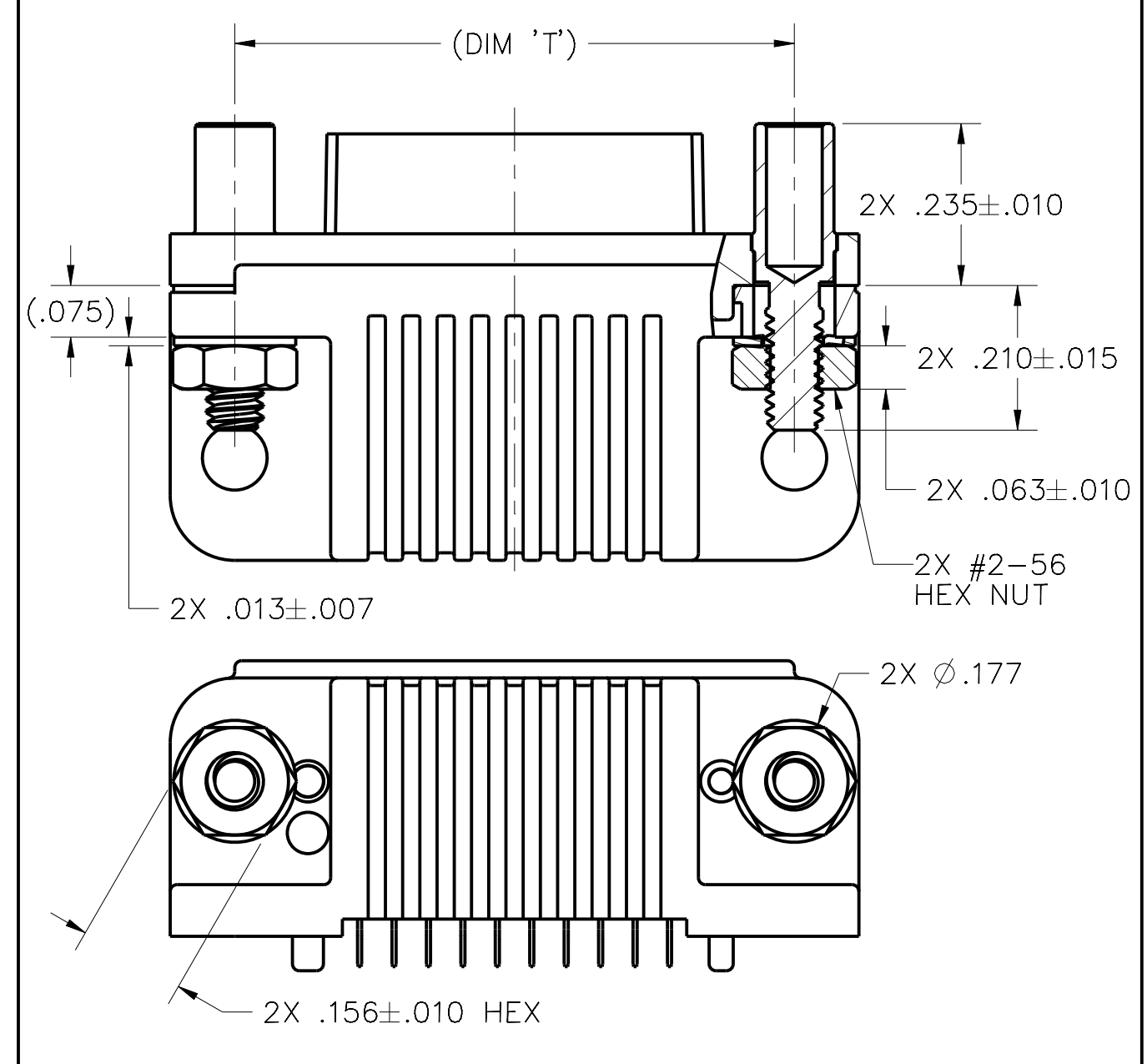


FOOTPRINT  
 COMPONENT SIDE

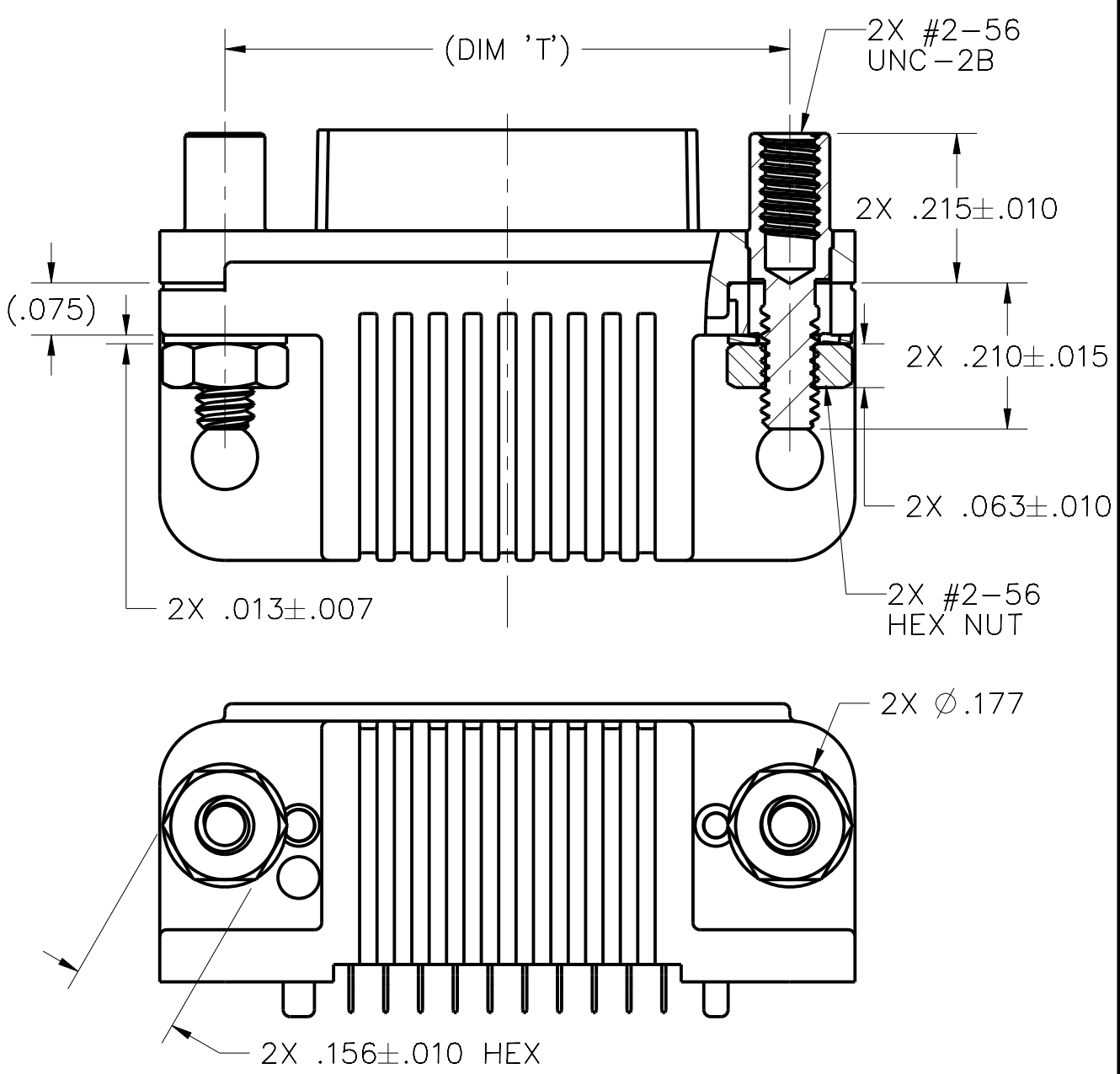
ROWS	DIM 'K'	DIM 'L'	DIM 'M'
04	.075	.235	.385
05	.100	.260	.435
06	.125	.285	.485
08	.175	.335	.585
10	.225	.385	.685

COLUMNS	DIM 'N'	DIM 'P'	DIM 'R'
10	.813	.600	1.000
20	1.313	1.100	1.500
30	1.813	1.600	2.000
40	2.313	2.100	2.500
50	2.813	2.600	3.000

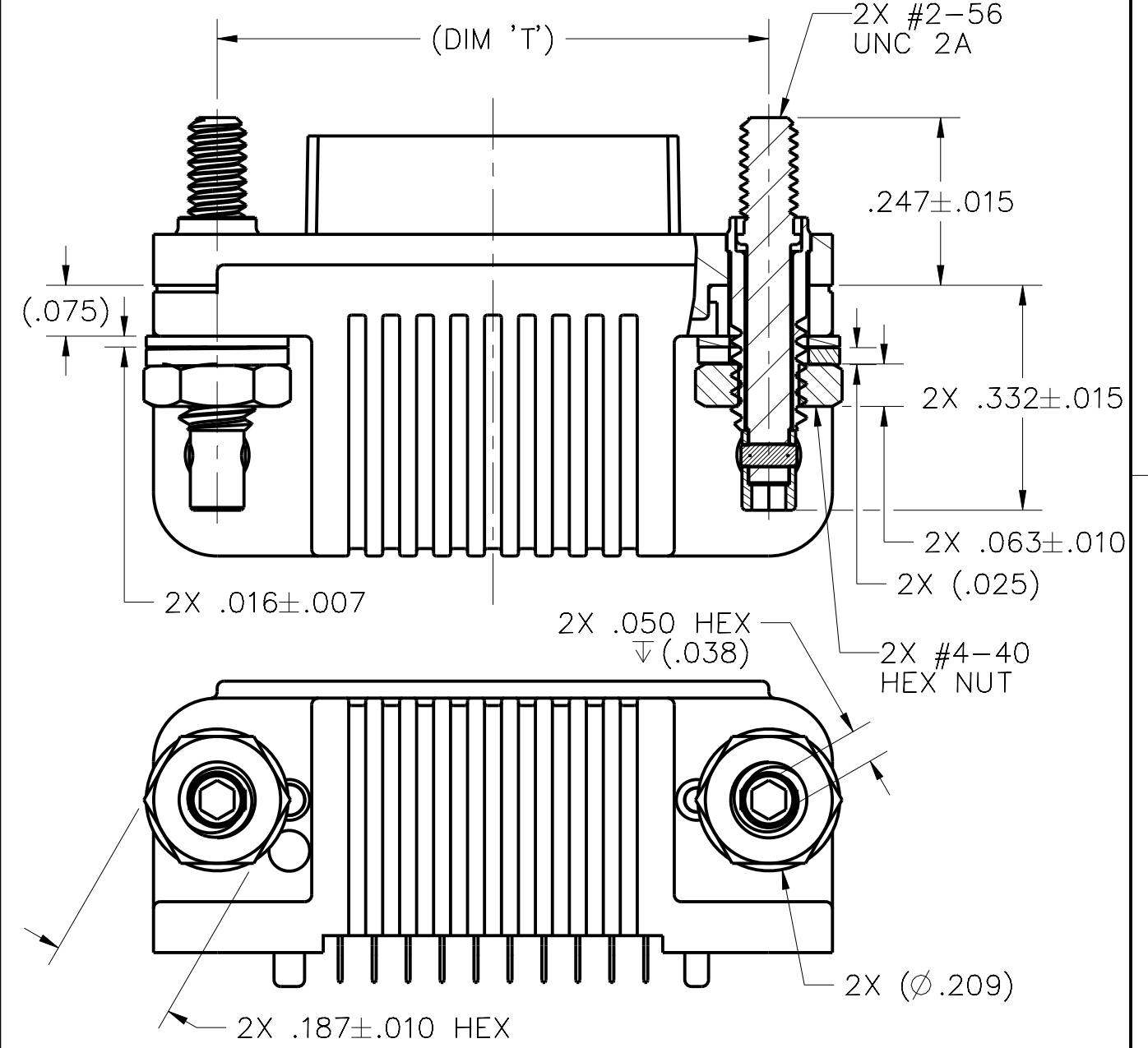
GUIDE SOCKET DIMENSIONS (HARDWARE OPTION G)



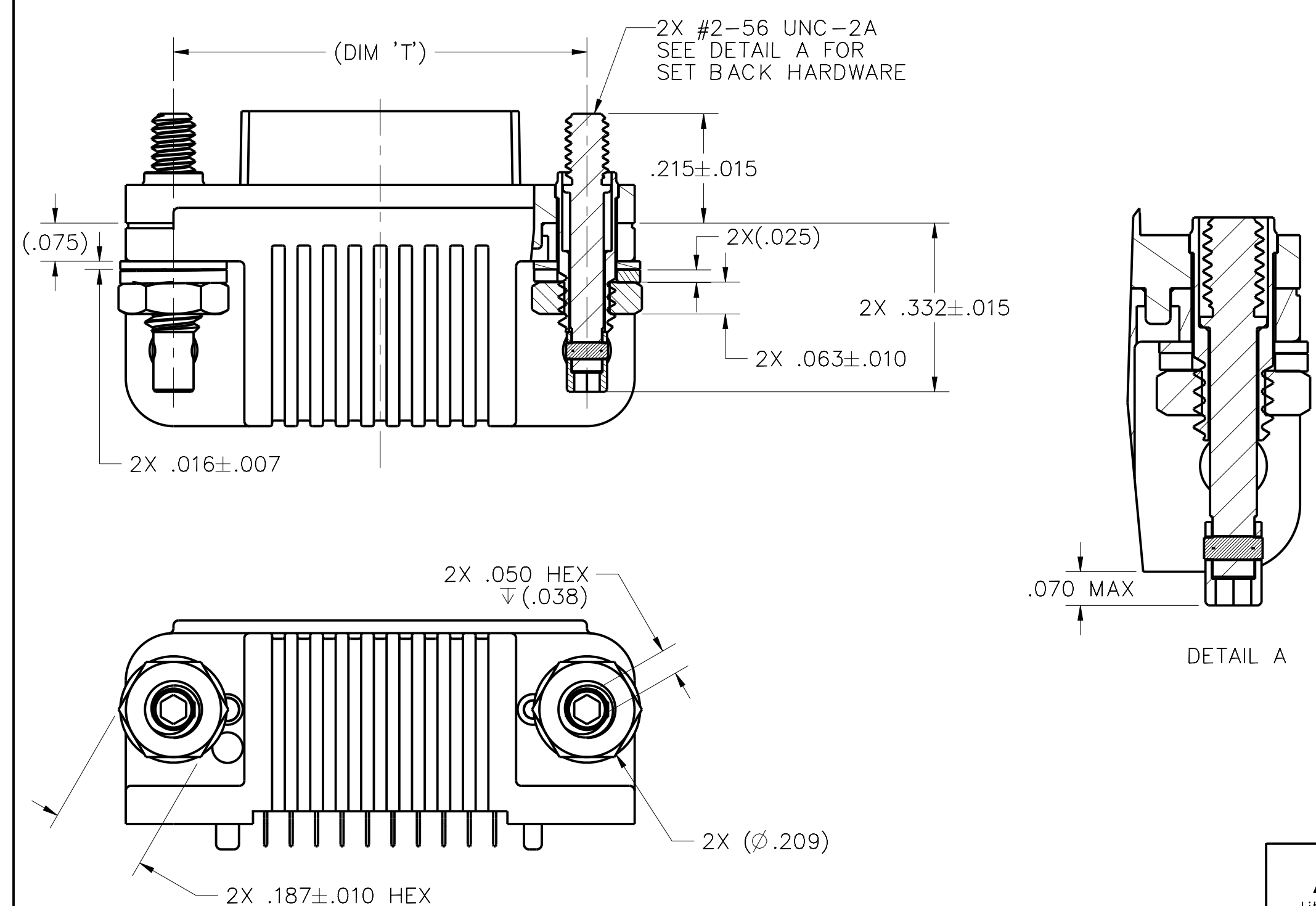
JACKNUT DIMENSIONS (HARDWARE OPTION N)



JACKSCREW DIMENSIONS (HARDWARE OPTION J)



LOCKING SCREW DIMENSIONS (HARDWARE OPTION L)



COLUMNS	DIM 'T'
10	.813
20	1.313
30	1.813
40	2.313
50	2.813

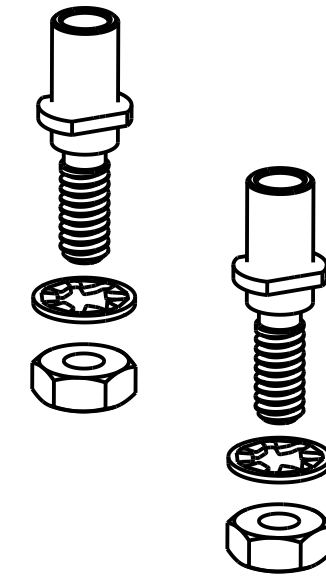
FORMAT: CFMTPROG.FRM A.7

HARDWARE KIT PART NUMBER BUILD  
 SAMPLE PART NUMBER: VSRAF-00-00-00-00-G

VSRAF-00-00-00-00-00-X

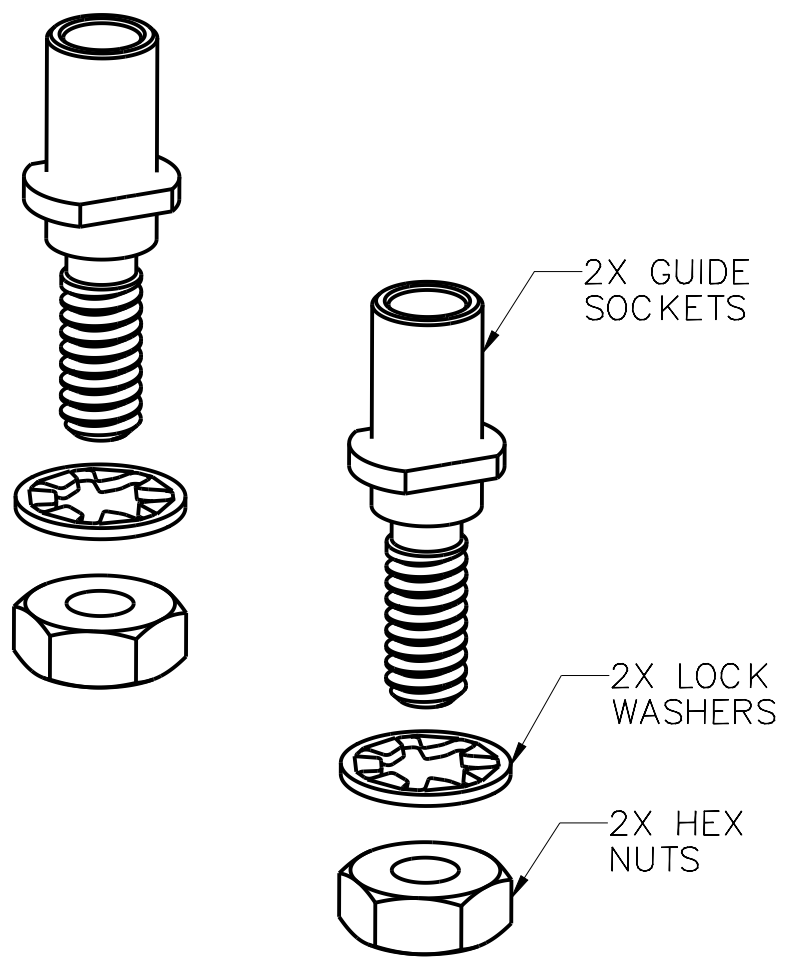
HARDWARE OPTIONS	
G	GUIDE SOCKET
N	FIXED JACKNUT
J	TURNING JACKSCREW
L	LOCKING SCREW

HARDWARE KITS CANNOT BE INSTALLED  
 ON CONNECTOR WITH BLANK HARDWARE  
 OPTION.

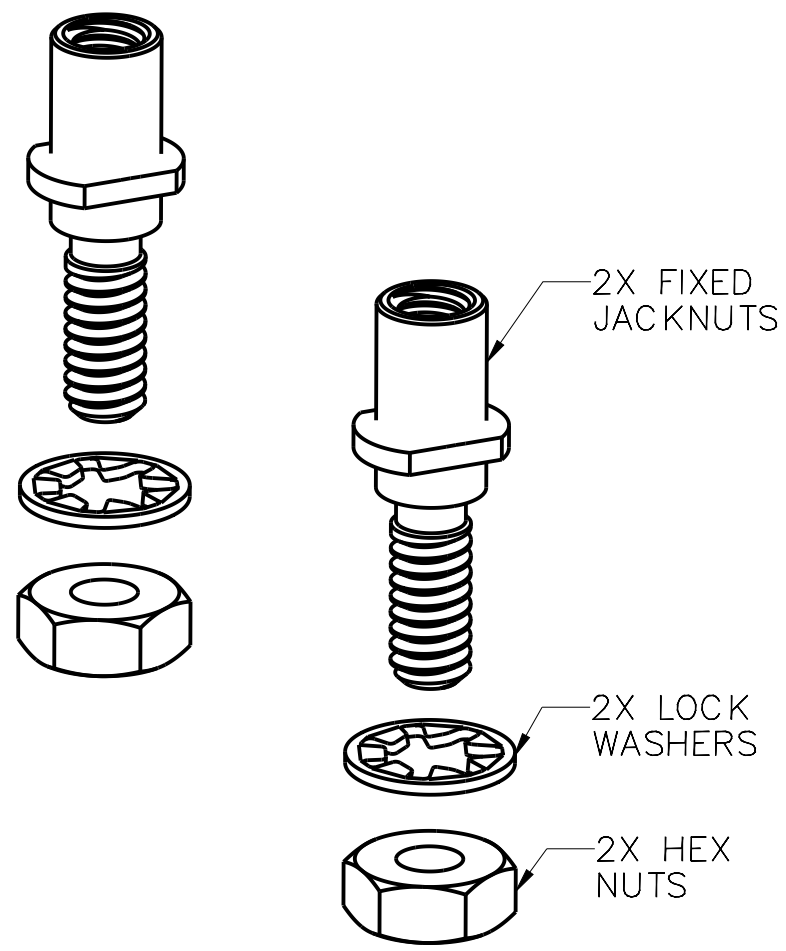


ISOMETRIC VIEW  
 FOR REFERENCE ONLY  
 (PART NUMBER VSRAF-00-00-00-00-G SHOWN)

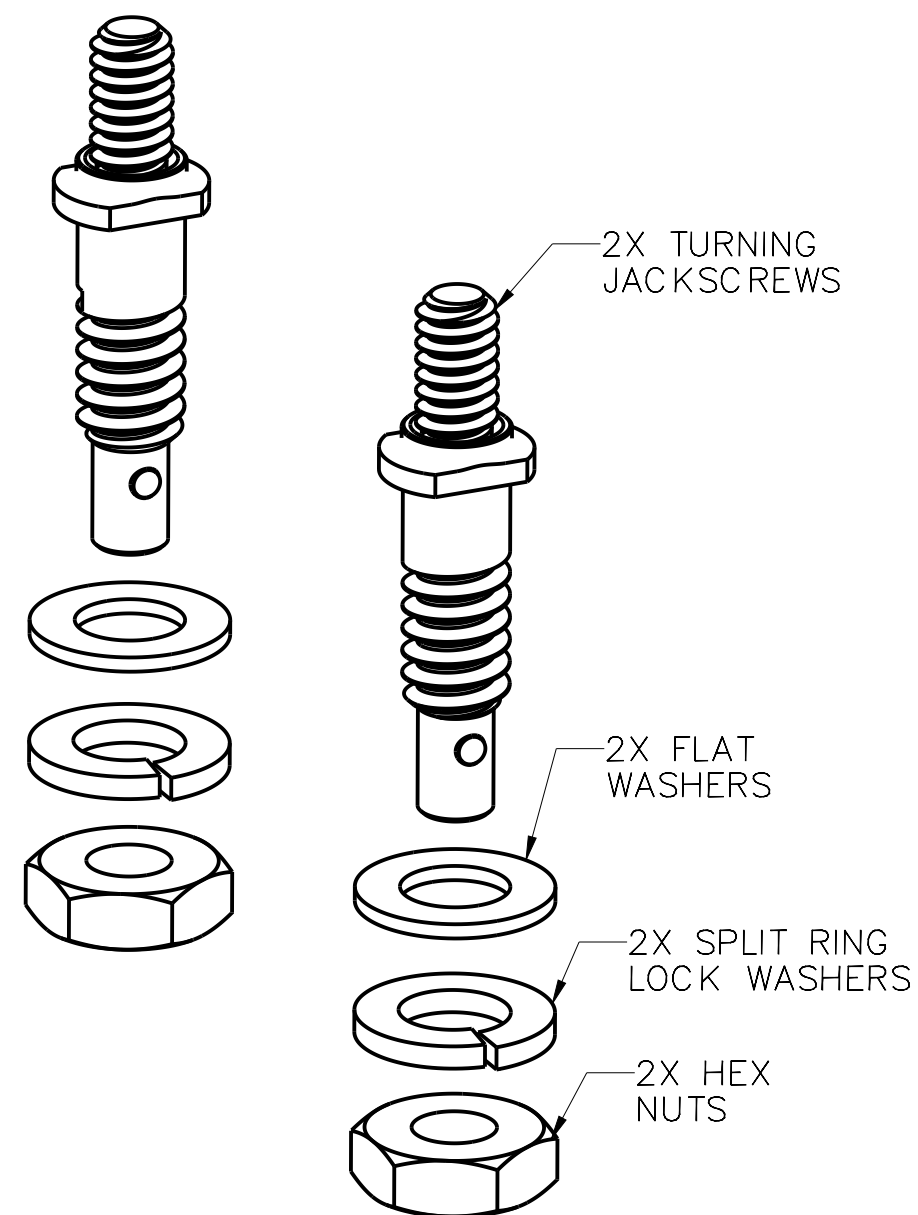
GUIDE SOCKET KIT  
 (G HARDWARE OPTION)



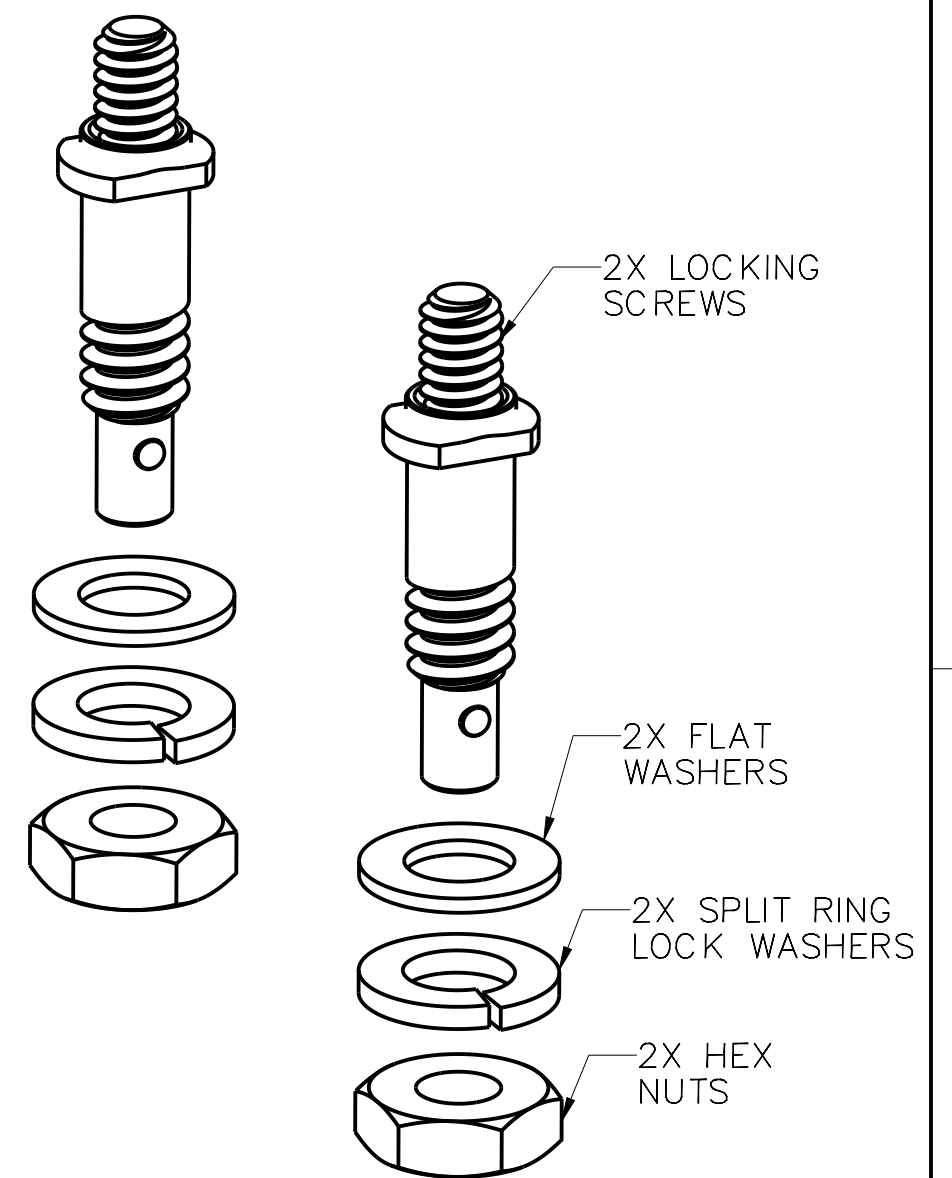
FIXED JACKNUT KIT  
 (N HARDWARE OPTION)



TURNING JACKSCREW KIT  
 (J HARDWARE OPTION)



LOCKING SCREW KIT  
 (L HARDWARE OPTION)



verSI SERIES RIGHT ANGLE FEMALE  
 NON-RUGGEDIZED  
 PRODUCT DRAWING

DRAWING STATE: *Released*  **RELEASED**  
 This drawing is not authorized for production unless it is released  
 DWG # VSRAF-XX-XX-XX-XX-X REV. A SHEET 8 / 8

SIZE C

D

C

B

A

4

3

2

1

FORMAT: CFINTPRG.FRM A.7



# Mouser Electronics

Authorized Distributor

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[VSRAF-05-20-50-03](#)