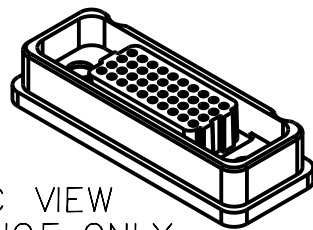


CONNECTOR PART NUMBER BUILD
SAMPLE PART NUMBER: VRF-04-10-50-00



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

VRF-XX-XX-XX-XX-XX

HARDWARE OPTIONS		
BLANK	NO HARDWARE	5
G	GUIDE SOCKET	3
G1	GUIDE SOCKET	4
J	TURNING JACKSCREW	3
J1	TURNING JACKSCREW	4
L	LOCKING SCREW	3
L1	LOCKING SCREW	4
N	FIXED JACKNUT	3
N1	FIXED JACKNUT	4
E	NO HARDWARE/EMI GASKET	5
GE	GUIDE SOCKET/EMI GASKET	3
G1E	GUIDE SOCKET/EMI GASKET	4
JE	TURNING JACKSCREW/EMI GASKET	3
J1E	TURNING JACKSCREW/EMI GASKET	4
LE	LOCKING SCREW/EMI GASKET	3
L1E	LOCKING SCREW/EMI GASKET	4
NE	FIXED JACKNUT/EMI GASKET	3
N1E	FIXED JACKNUT/EMI GASKET	4

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
10	SURFACE MOUNT (SMT) NON-ROHS COMPLIANT
11	SURFACE MOUNT (SMT) ROHS COMPLIANT

CONTACT PLATING	
50	50 μIN 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	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
	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 SMT NON-ROHS: 10μIN MIN LOCALIZED Au FLASH PER ASTM B488 TYPE I, CODE A OR C OVER 50μIN MIN Ni PER ASTM B689 TYPE 1. TIN DIPPED WITH Sn63Pb37 SOLDER SMT ROHS: 10μIN MIN LOCALIZED Au FLASH PER ASTM B488 TYPE I, CODE A OR C OVER 50μIN MIN Ni PER ASTM B689 TYPE 1. TIN DIPPED WITH 42Sn/57.6Bi/0.4Ag SOLDER
MOLDED INSULATORS	MATERIAL	GLASS-FILLED LIQUID CRYSTAL POLYMER (LCP) PER ASTM D5138
SHELL	MATERIAL	ALUMINUM ALLOY 6061-T6 PER SAE AMS-4027 OR 6061-T6511 PER SAE AMS-QQ-A-200/8
	FINISH	500μIN MIN ELECTROLESS Ni PER SAE AMS-2404, CLASS 3
EMBEDMENT	MATERIAL	FREY ENG. CO. INSULATING COMPOUND CF3003-80 OR EQUIVALENT
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)
EMI GASKET	MATERIAL	CONDUCTIVE ELASTOMER PER MIL-DTL-83528 TYPE D

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 CVM 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.

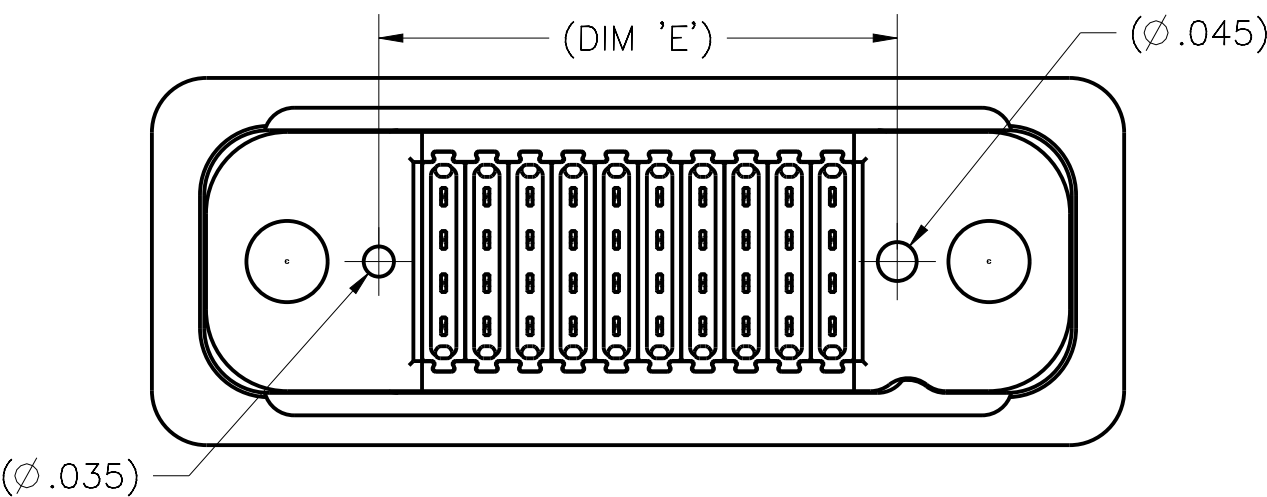
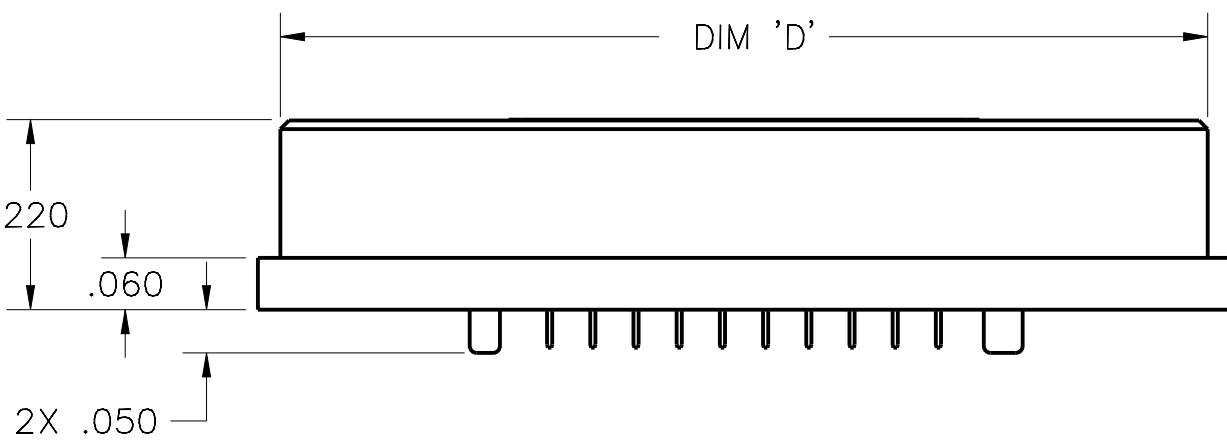
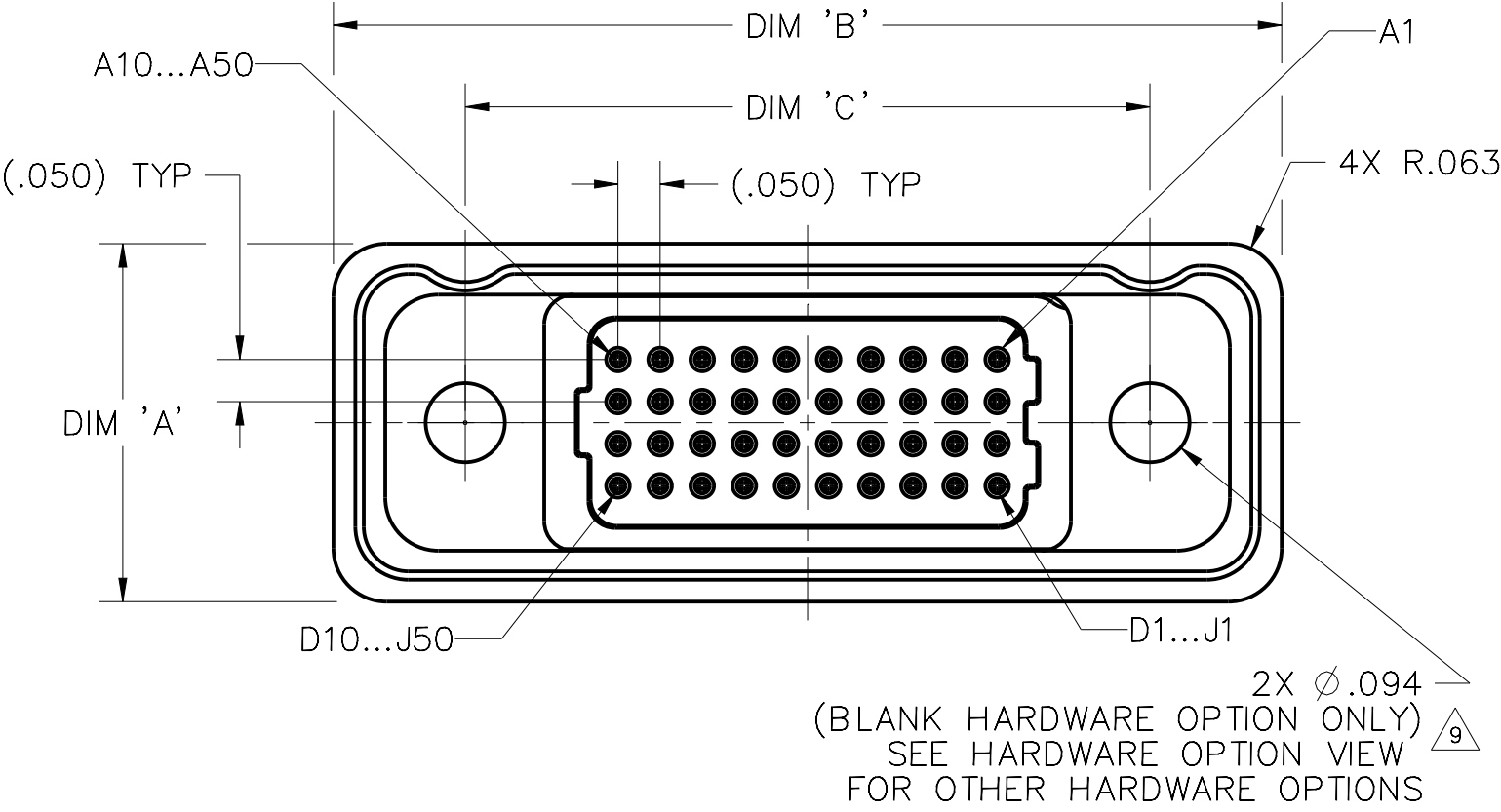
NOTES:

- SEE AIRBORN SPEC ESL5001 FOR ADDITIONAL APPLICATION INFORMATION.
- SEE SHEET 8 FOR REPLACEMENT HARDWARE KITS. SEE SHEET 9 FOR REPLACEMENT GASKETS.
- USE FOR UP TO .125 PCB THICKNESS.
- USE FOR .125 TO .250 PCB THICKNESS.
- NO HARDWARE SUPPLIED WITH BLANK HARDWARE OPTION CONNECTORS.
- ONLY AVAILABLE FOR 4 ROW CONNECTORS.
- PACKAGING: PARTS SUPPLIED IN THERMOFORMED TRAYS, SHELL AND HARDWARE SUPPLIED UNINSTALLED.
- MATES WITH CONNECTOR SERIES: VRM, VRRAM, 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/DO NOT SCALE PRINT Surface finish to be 32 or better		AirBorn Little Falls, Minnesota 56345		Cage Code 10400	
HEAT TREAT: Per Spec.: Certification required: NO		APPLICATION: verSI SERIES		DRAWING STATE: Released This drawing is not authorized for production unless it is released		☒ RELEASED	
FINISH: SEE NOTES Per Spec.: Certification required: NO		A	INITIAL RELEASE	KTR 072418	W57940	verSI SERIES VERTICAL FEMALE RUGGEDIZED PRODUCT DRAWING	
MAKE FROM: N/A NEXT ASSY: N/A		REV	DESCRIPTION	DR. BY DATE	ECO NO. APPD. BY	DWG # VRF-XX-XX-XX-XX-XX	
		► = CRITICAL CHARACTERISTIC ● = MAJOR CHARACTERISTIC	THIRD ANGLE PROJECTION	REL. KTR 041918	APPD. TJW 041918	REV. A SHEET 1/9	

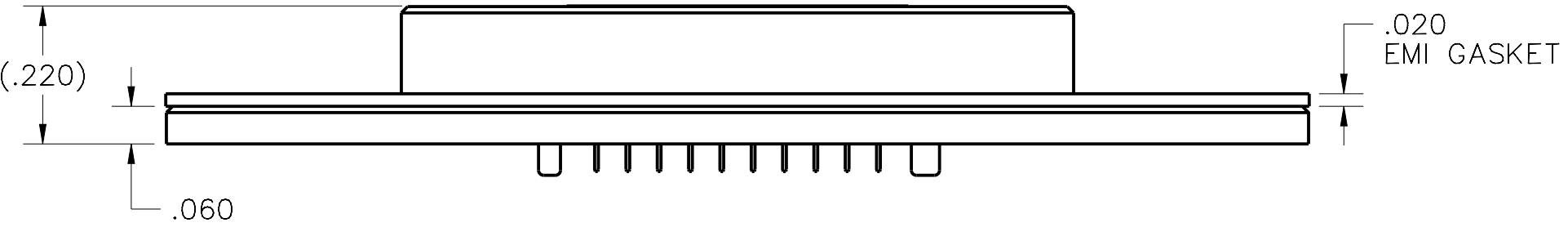
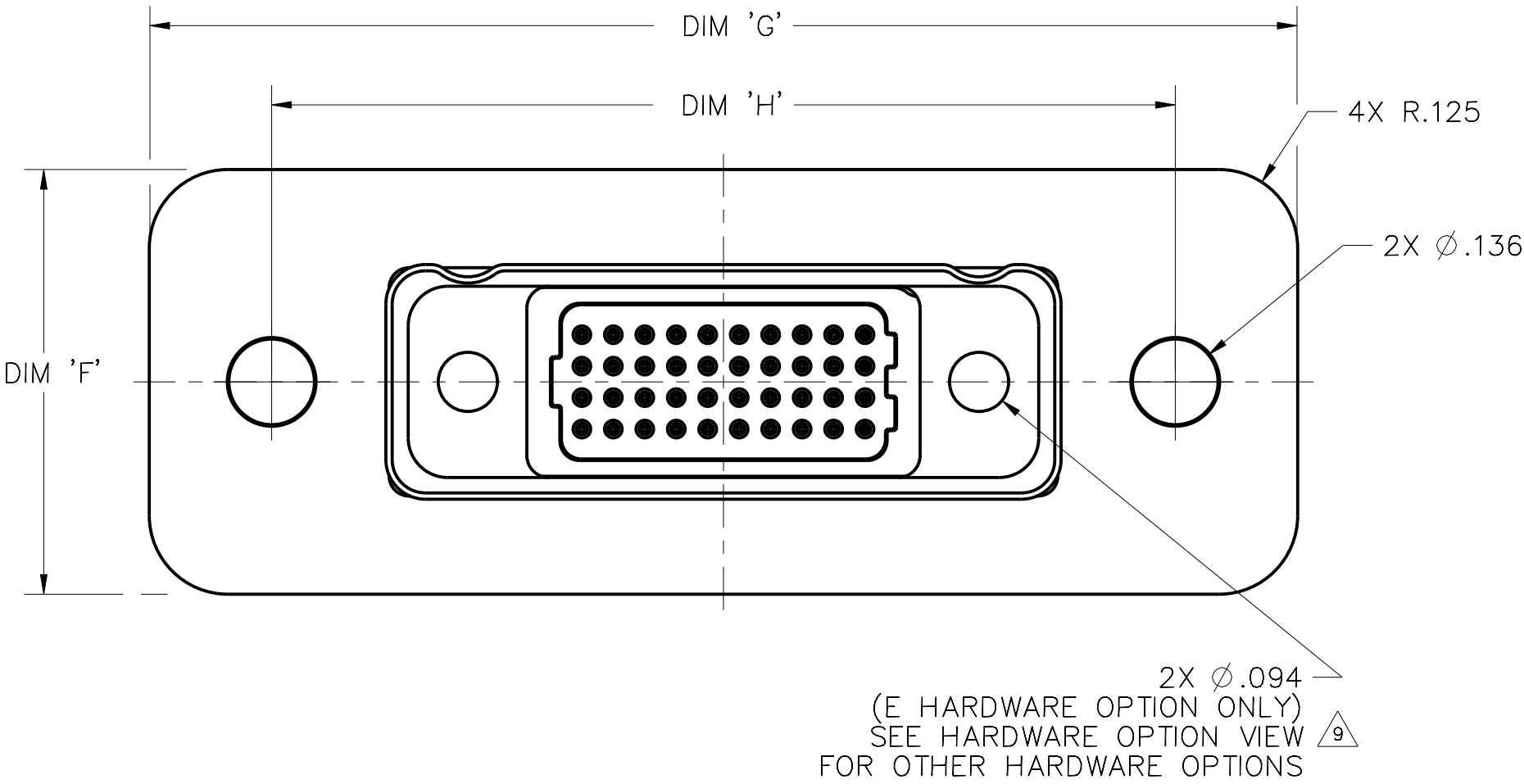
CONNECTOR DIMENSIONS
(NON EMI GASKET HARDWARE OPTIONS)



ROWS	DIM 'A'
04	.425
05	.475
06	.525
08	.625
10	.725

COLUMNS	DIM 'B'	DIM 'C'	DIM 'D'	DIM 'E'
10	1.125	.813	1.073	.600
20	1.625	1.313	1.573	1.100
30	2.125	1.813	2.073	1.600
40	2.625	2.313	2.573	2.100
50	3.125	2.813	3.073	2.600

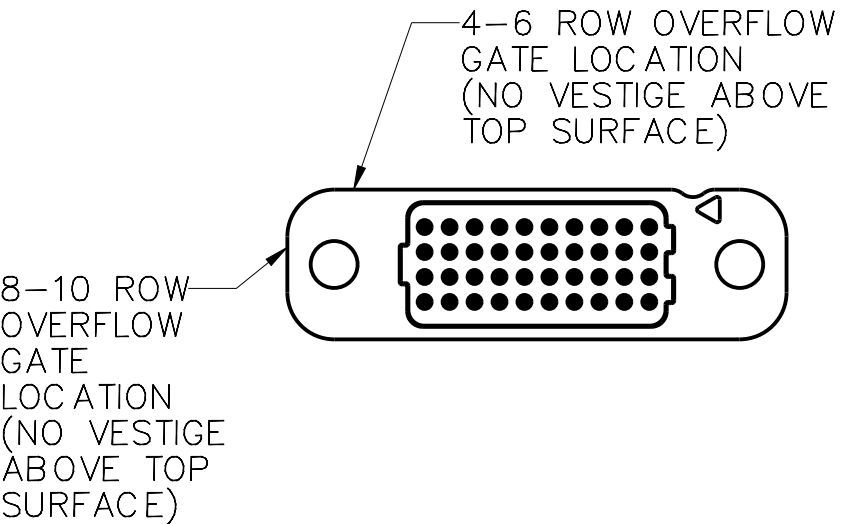
CONNECTOR DIMENSIONS
(EMI GASKET HARDWARE OPTIONS)



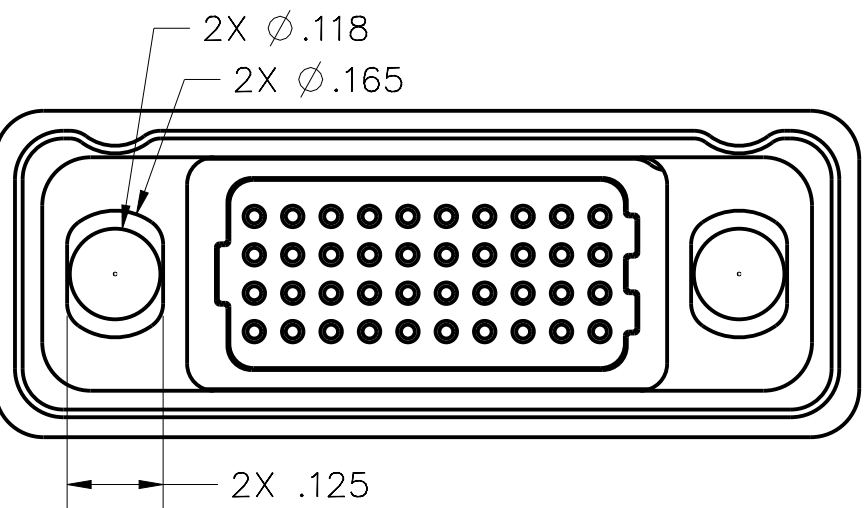
ROWS	DIM 'F'
04	.673
05	.723
06	.773
08	.873
10	.973

COLUMNS	DIM 'G'	DIM 'H'
10	1.823	1.436
20	2.323	1.936
30	2.823	2.436
40	3.323	2.936
50	3.823	3.436

VRF SHOWN WITHOUT SHELL



HARDWARE OPTION VIEW

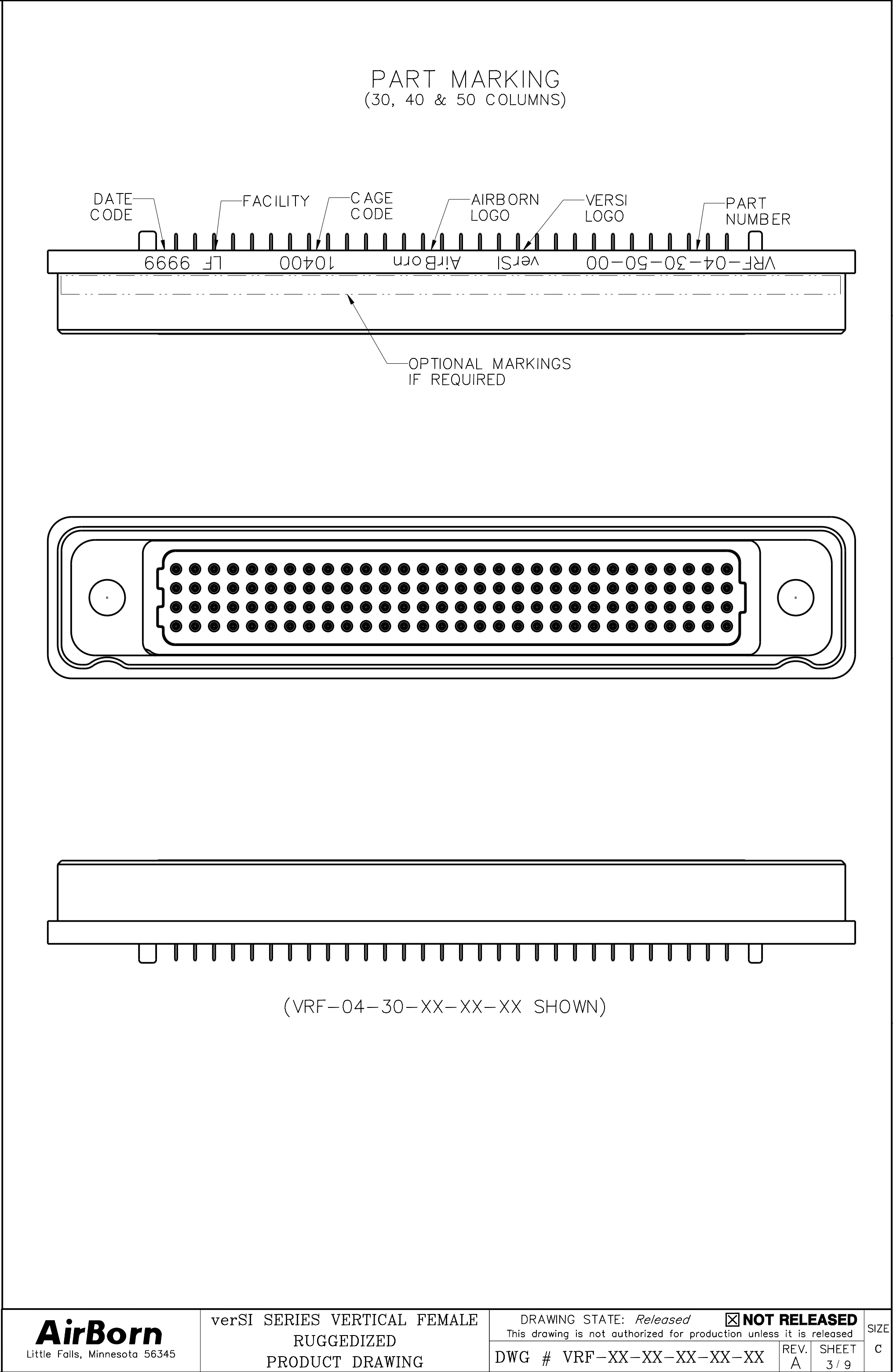
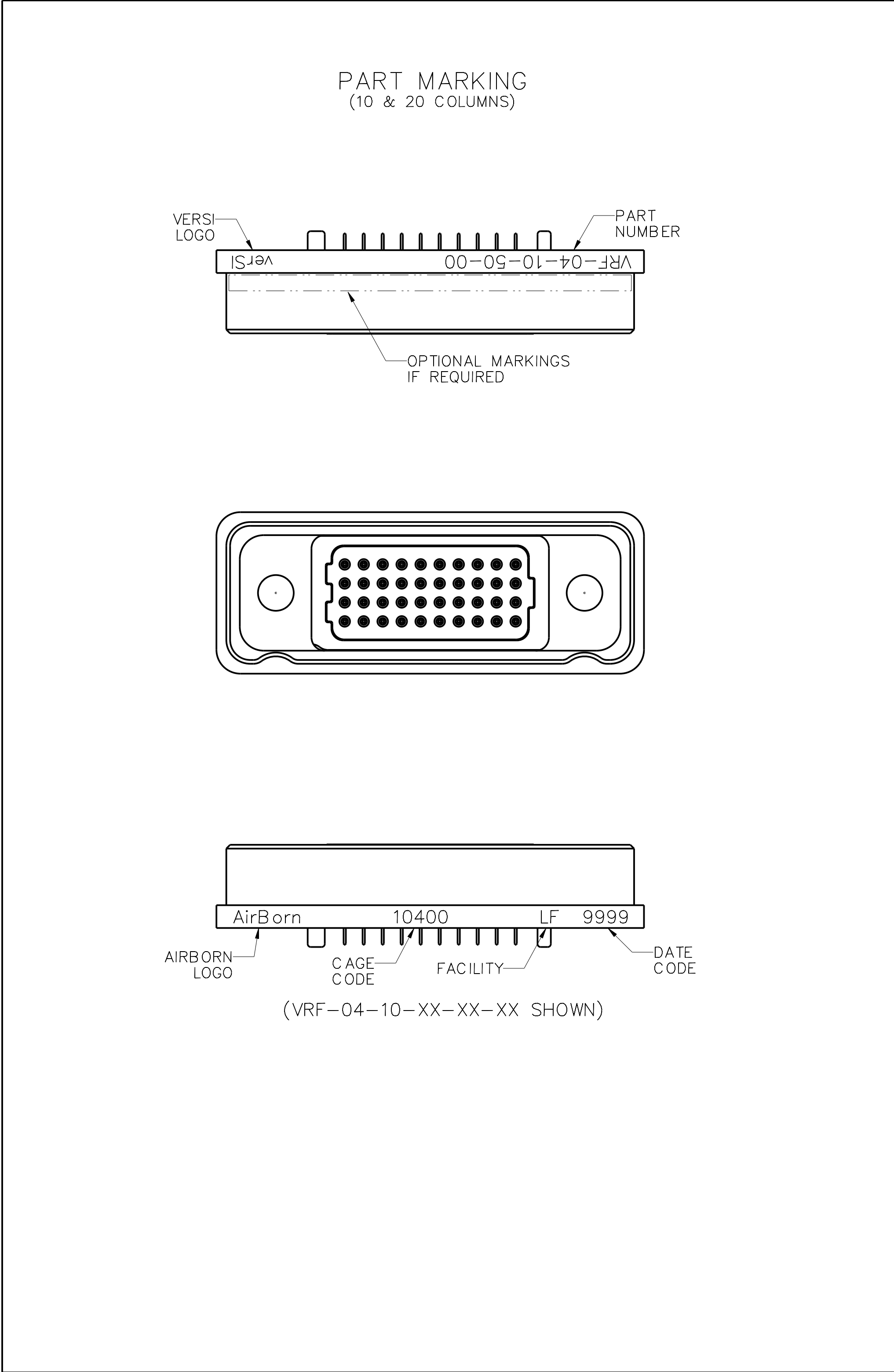


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Little Falls, Minnesota 56345

verSI SERIES VERTICAL FEMALE
RUGGEDIZED
PRODUCT DRAWING

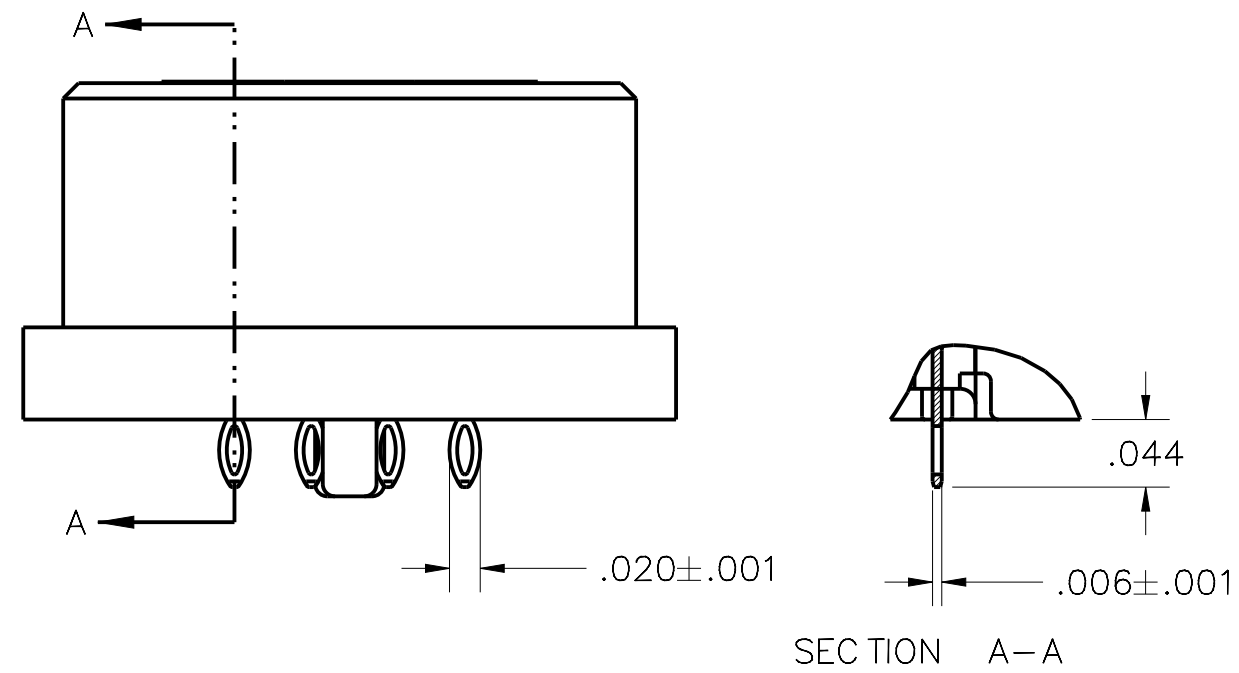
DRAWING STATE: *Released* ☒ **RELEASED**
This drawing is not authorized for production unless it is released
DWG # VRF-XX-XX-XX-XX-XX REV. A SHEET 2 / 9

SIZE
C

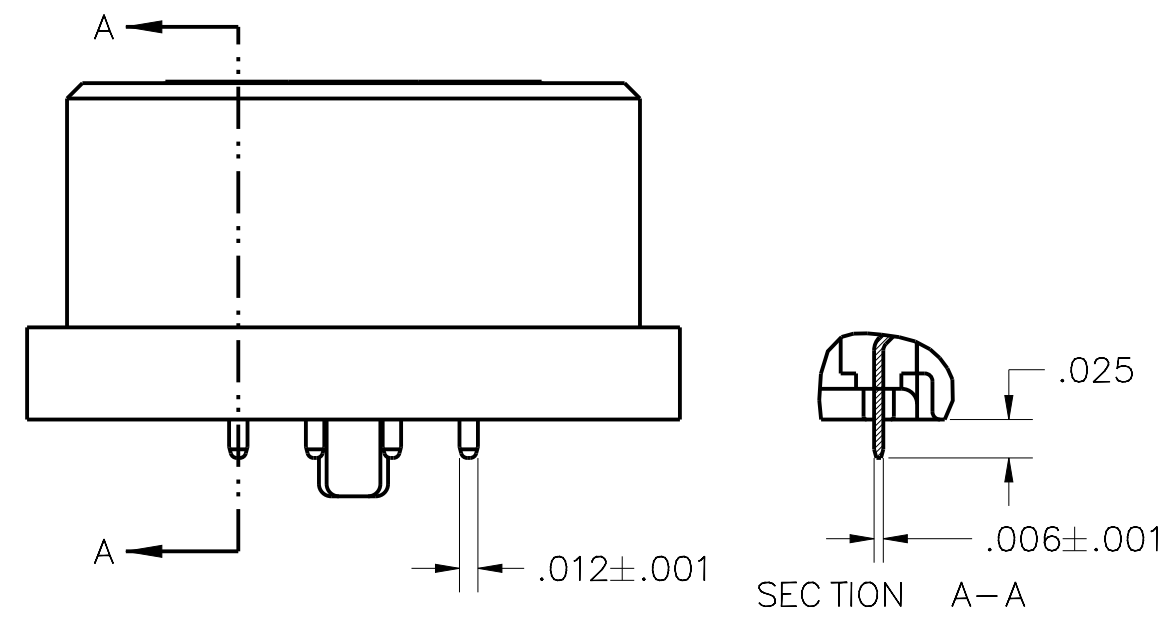


TERMINATION DIMENSIONS

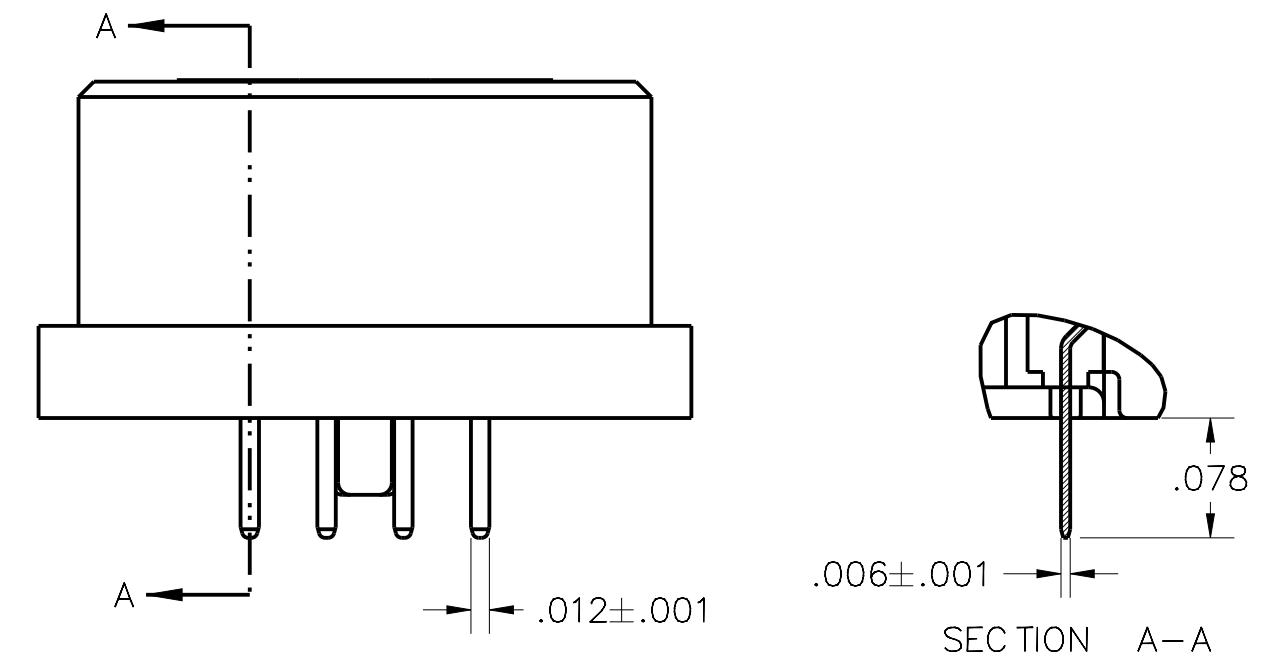
TERMINATION TYPE 00
PRESS-FIT



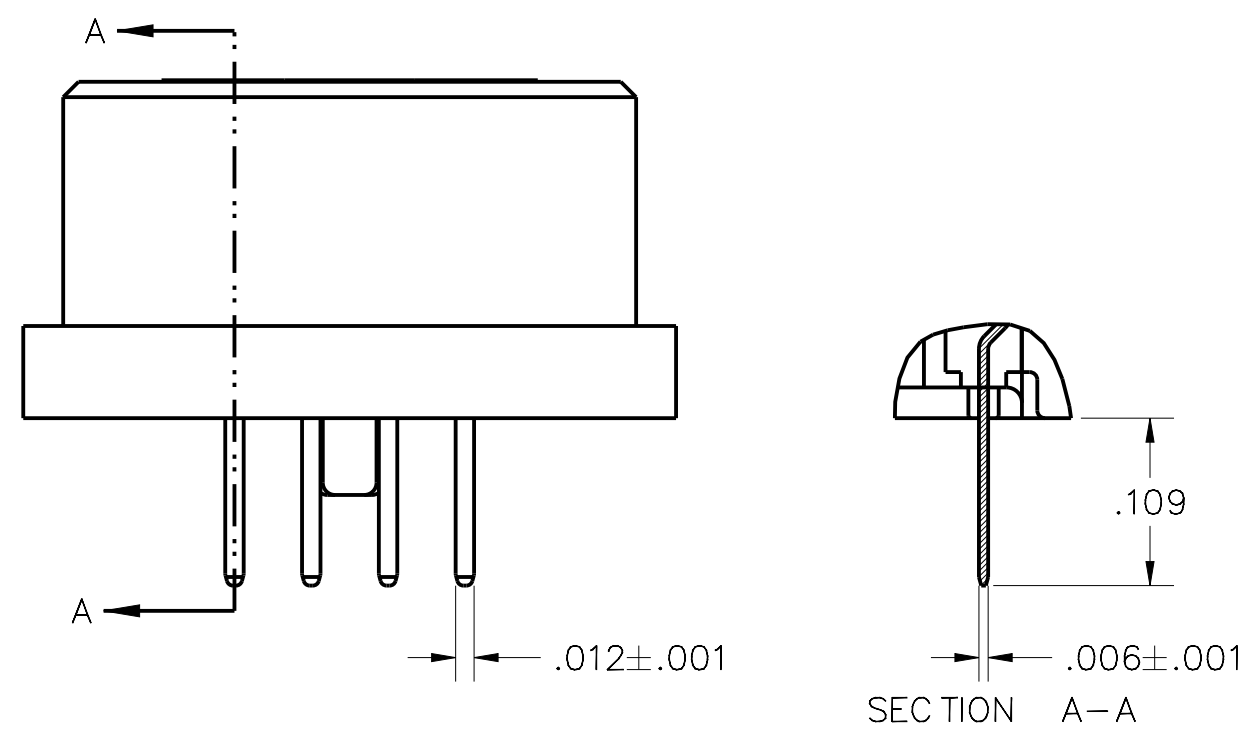
TERMINATION TYPE 01
PIH



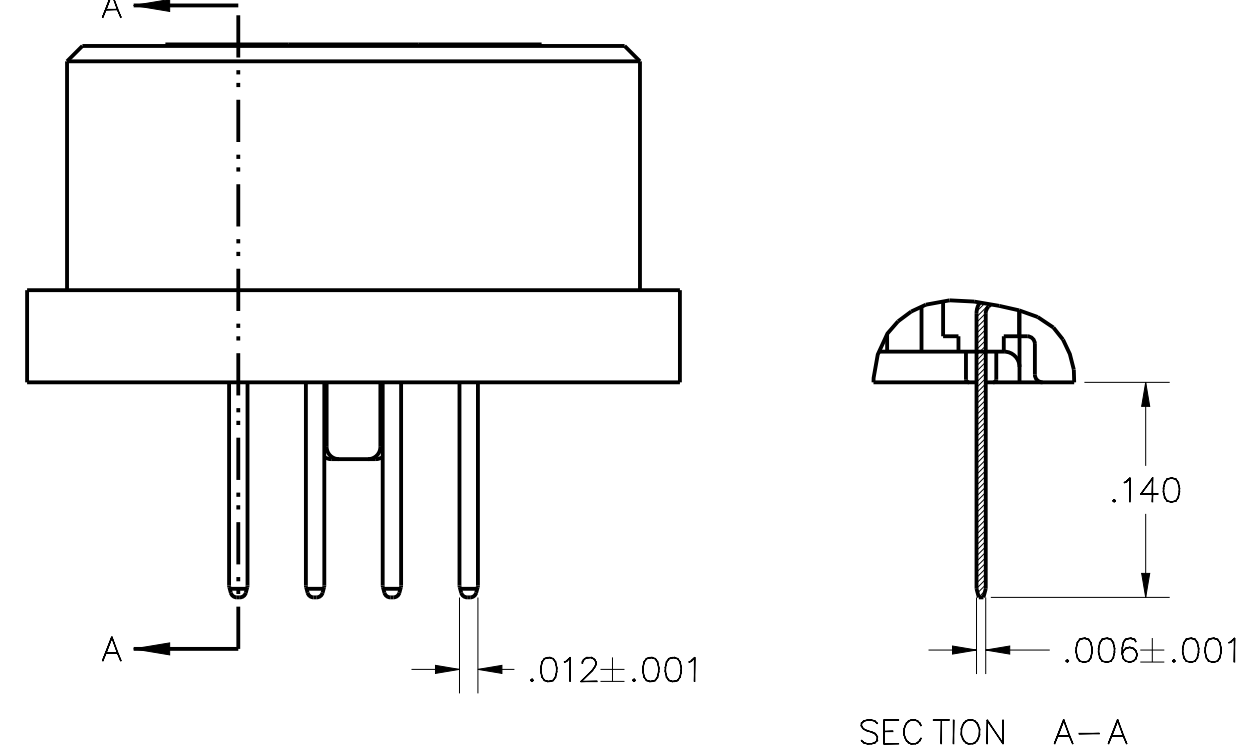
TERMINATION TYPE 02
PTH .078" LENGTH



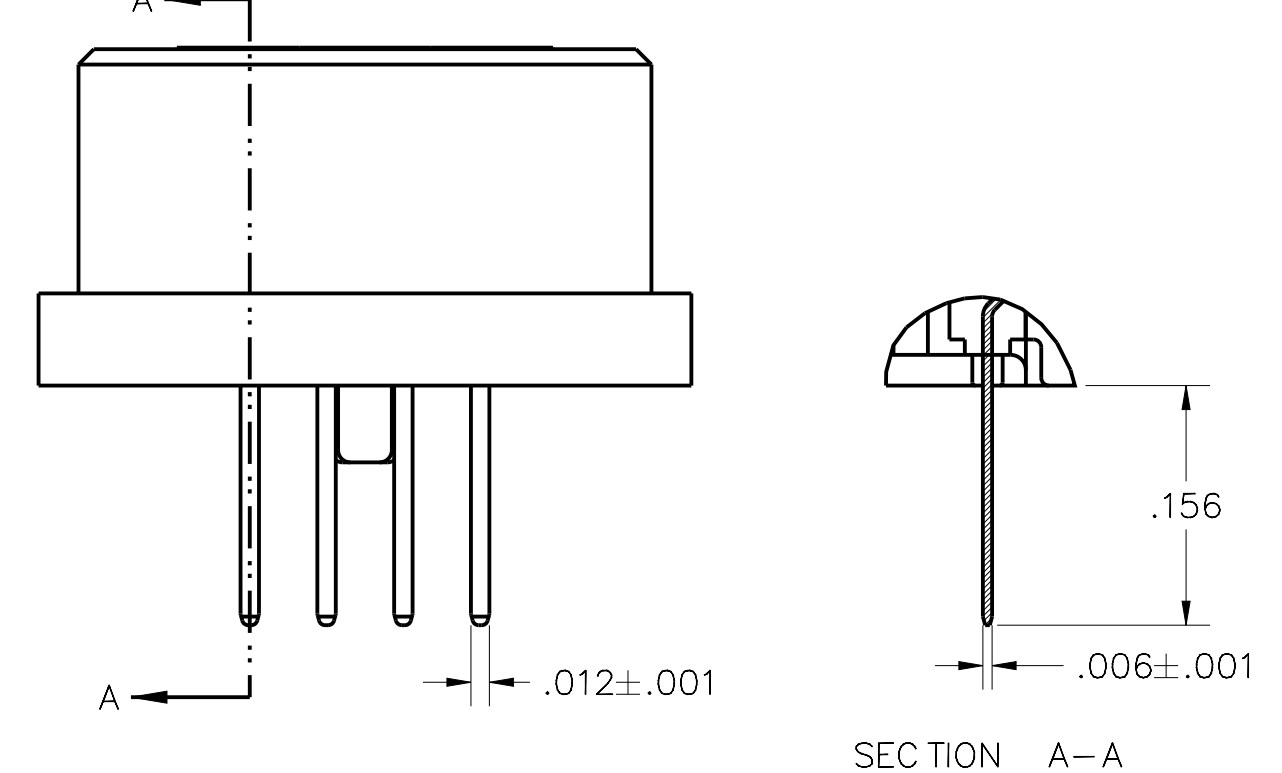
TERMINATION TYPE 03
PTH .109" LENGTH



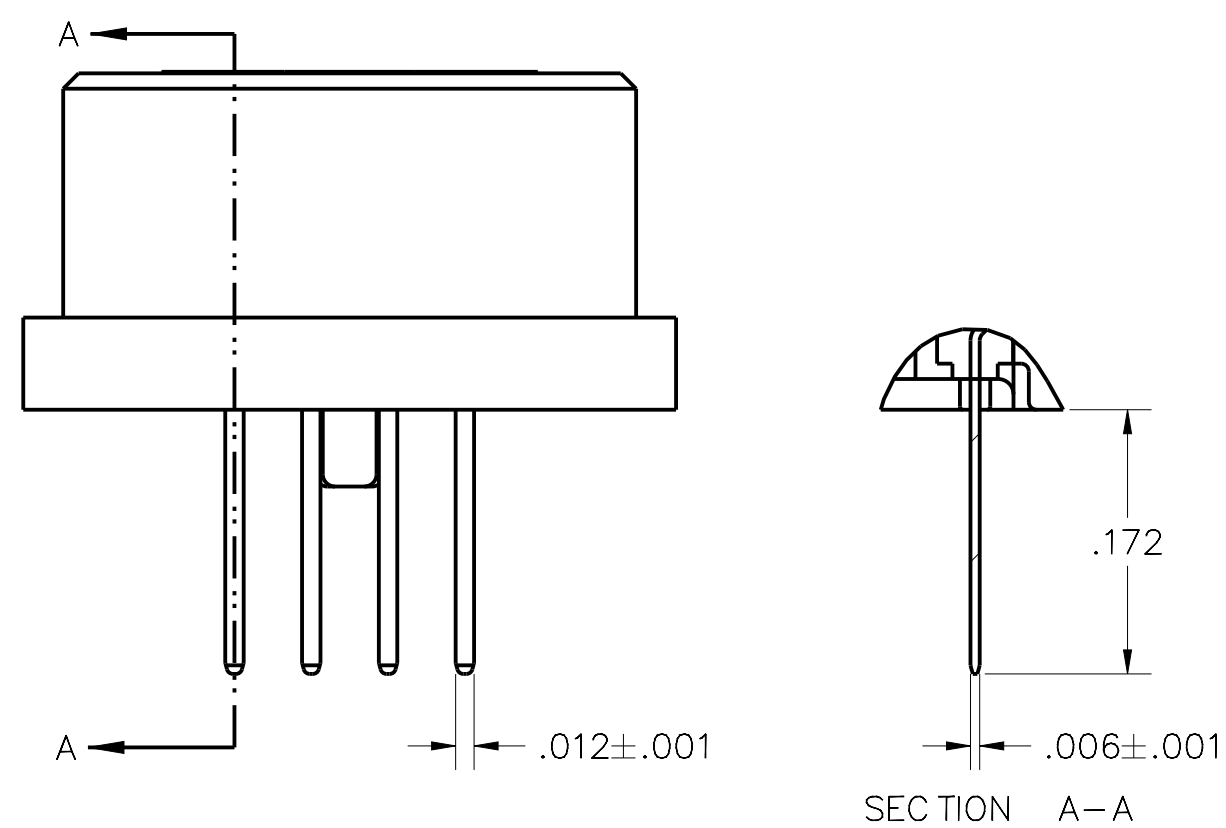
TERMINATION TYPE 04
PTH .140" LENGTH



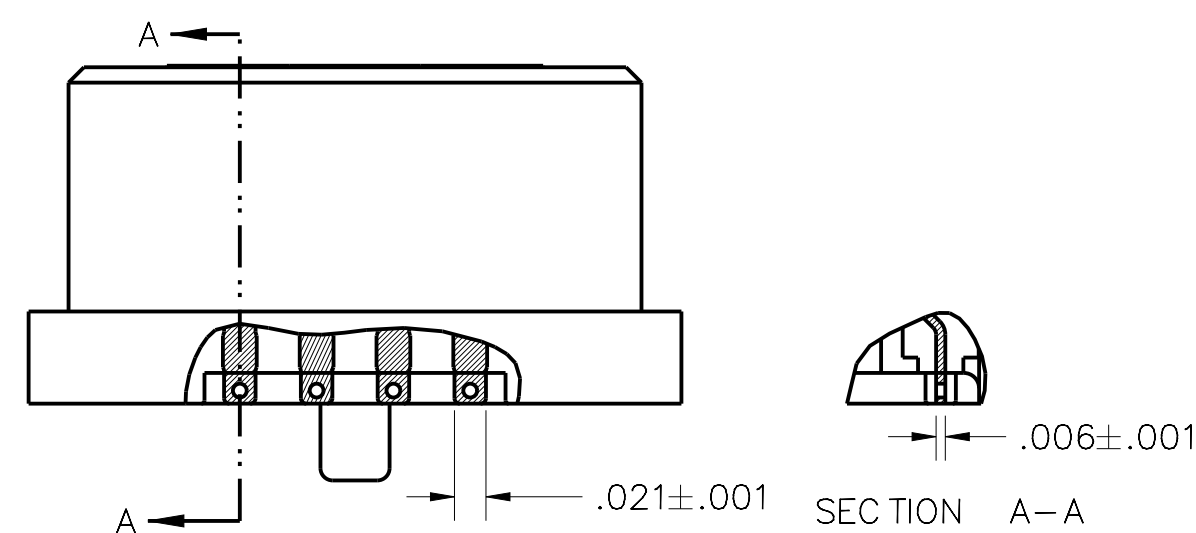
TERMINATION TYPE 05
PTH .156" LENGTH



TERMINATION TYPE 06
PTH .172" LENGTH

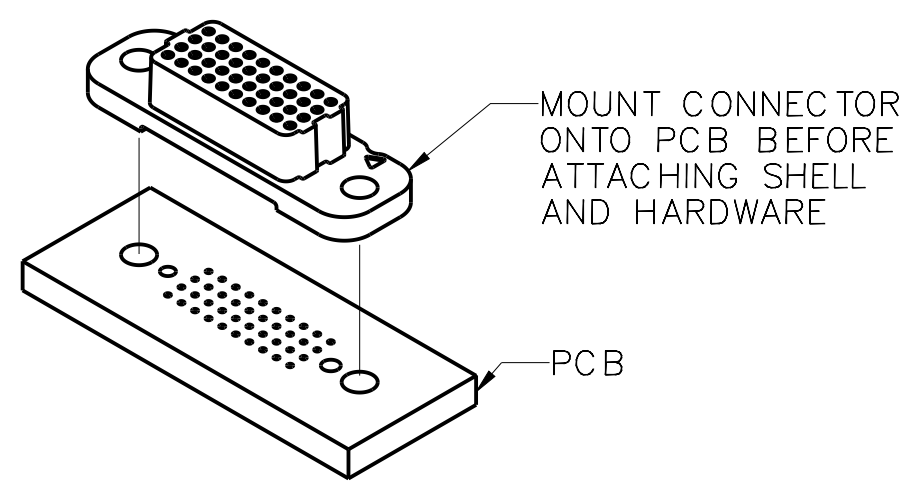


TERMINATION TYPE 10 & 11
SMT

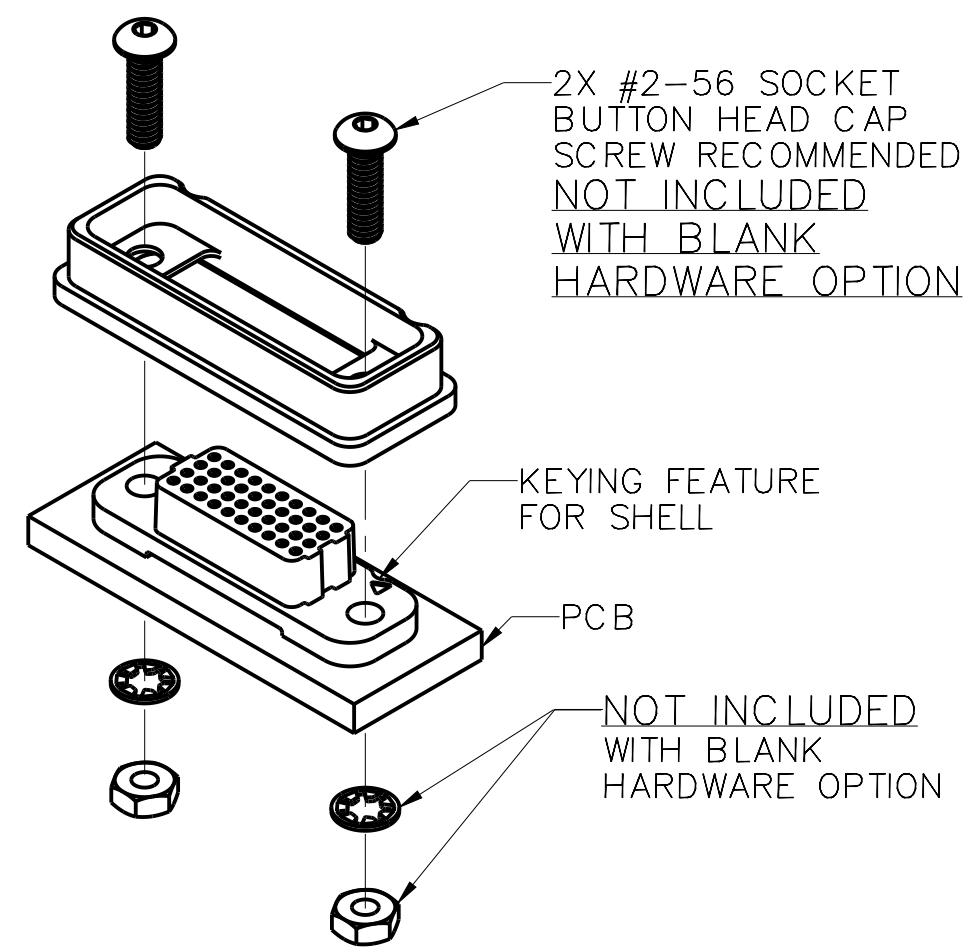


RECOMMENDED PCB THICKNESS FOR EACH TERMINATION TYPE	
TERMINATION	PCB THICKNESS
-00	.062" MIN
-01	.025" MIN
-02	.068" MAX
-03	.099" MAX
-04	.130" MAX
-05	.146" MAX
-06	.162" MAX

PCB MOUNTING INSTRUCTIONS
(BLANK HARDWARE OPTION SHOWN)

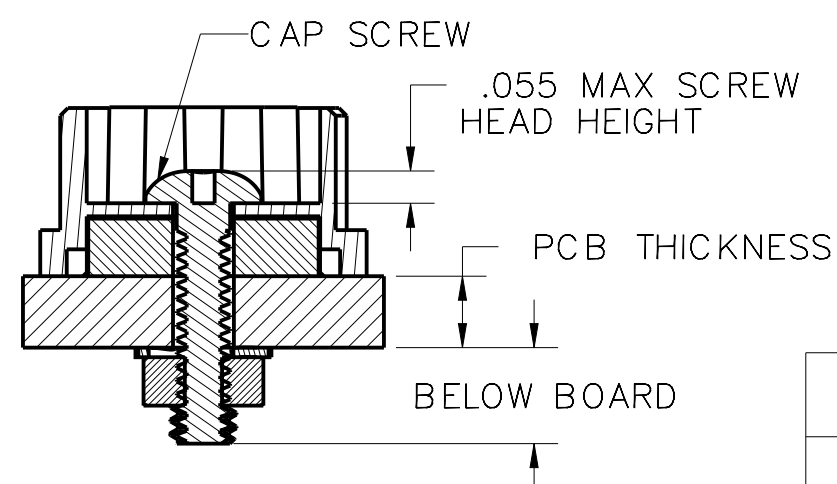


STEP 1:
PTH, PIH & SMT: SOLDER CONNECTOR ONTO PCB
PRESS-FIT: PRESS CONNECTOR ONTO PCB
(SEE ESL5001 FOR MORE DETAILS ON INSTALLING THE CONNECTOR ONTO THE PCB)



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

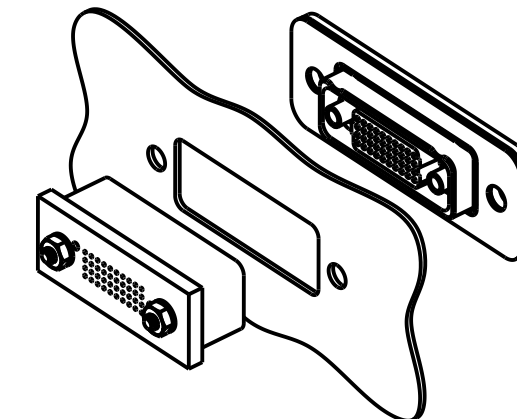
RECOMMENDED PCB MOUNTING HARDWARE
MOUNTING HARDWARE NOT INCLUDED
WITH BLANK HARDWARE OPTION



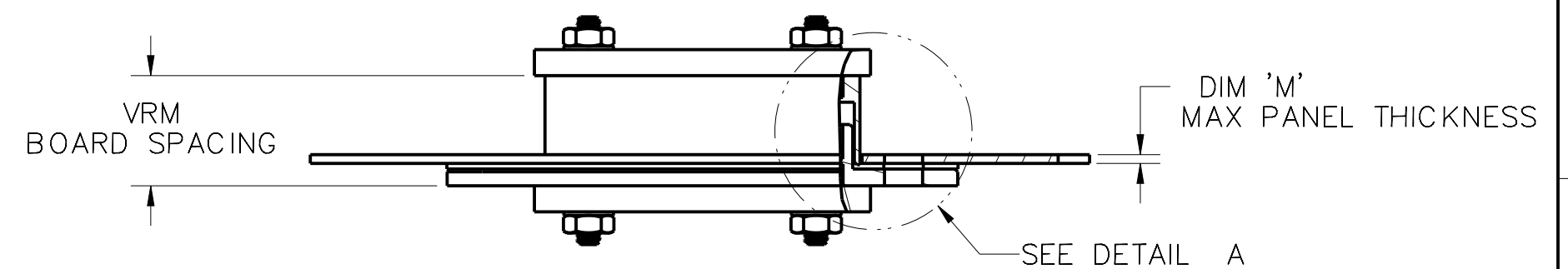
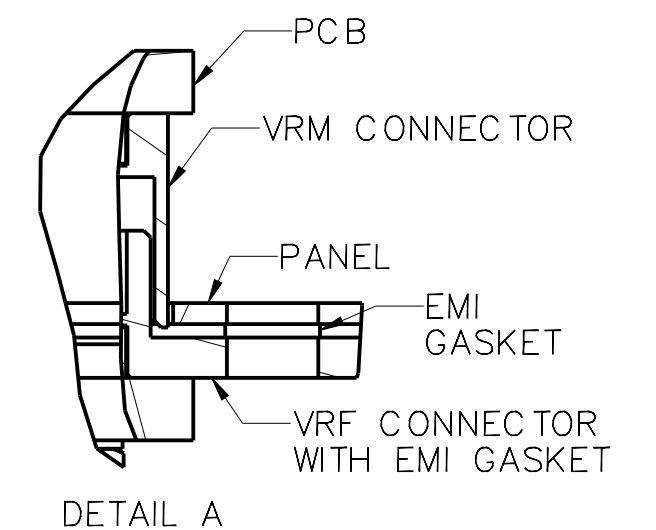
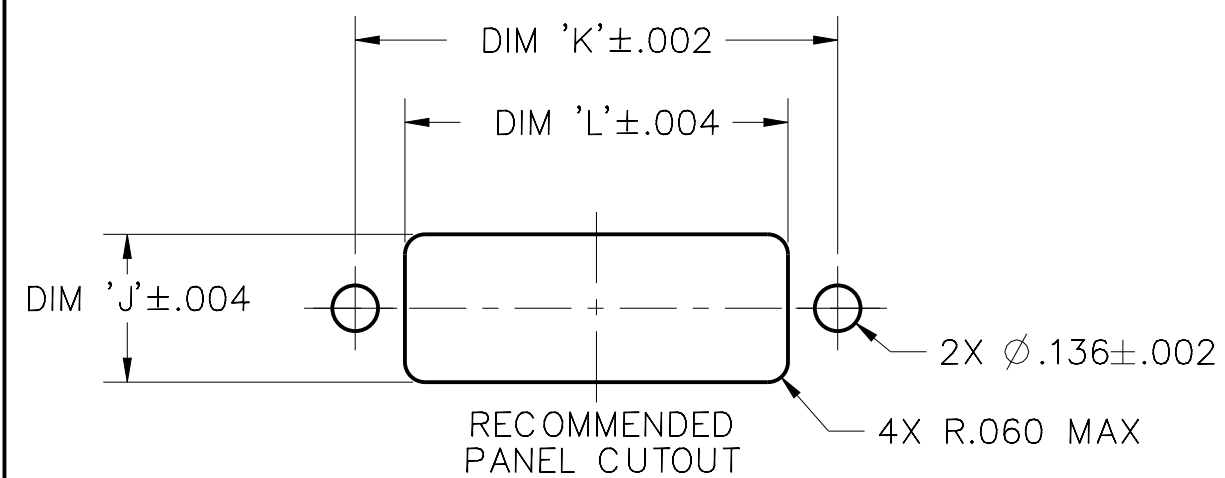
RECOMMENDED SCREWS FOR
COMMON PCB THICKNESSES

PCB THICKNESS	BUTTON HEAD CAP SCREW	BELOW BOARD
.062	#2-56 X 1/4"	(.094)
.094	#2-56 X 5/16"	(.125)

PANEL MOUNTING INSTRUCTIONS
(EMI GASKET HARDWARE OPTIONS)



ISOMETRIC VIEW
FOR REFERENCE ONLY



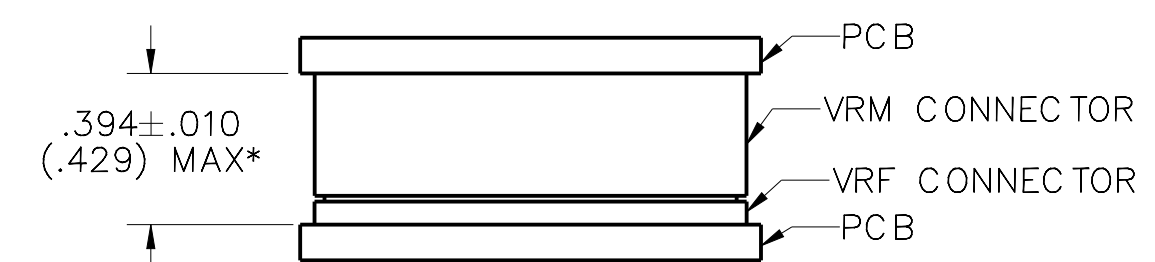
ROWS	DIM 'J'
04	.440
05	.490
06	.540
08	.640
10	.740

COLUMNS	DIM 'K'	DIM 'L'
10	1.436	1.140
20	1.936	1.640
30	2.436	2.140
40	2.936	2.640
50	3.436	3.140

VRM BOARD SPACING	DIM 'M'
.315 [8mm]	.235
.394 [10mm]	.314
.473 [12mm]	.392
.630 [16mm]	.550
.788 [20mm]	.707
.985 [25mm]	.904

SEE SHEET 9 FOR REPLACEMENT GASKETS

VRF CONNECTOR MATED TO VRM CONNECTOR



(10MM BOARD SPACING SHOWN)
SEE VRM-XX-XX-XXX-XX-XX-XX DRAWING
FOR MORE BOARD SPACING OPTIONS

*MAX VALUE IS AT MAXIMUM
ALLOWABLE SEPARATION BETWEEN MATED CONNECTORS

AirBorn
Little Falls, Minnesota 56345

verSI SERIES VERTICAL FEMALE
RUGGEDIZED
PRODUCT DRAWING

DRAWING STATE: Released ☒ RELEASED
This drawing is not authorized for production unless it is released
DWG # VRF-XX-XX-XX-XX-XX REV. A SHEET 5 / 9

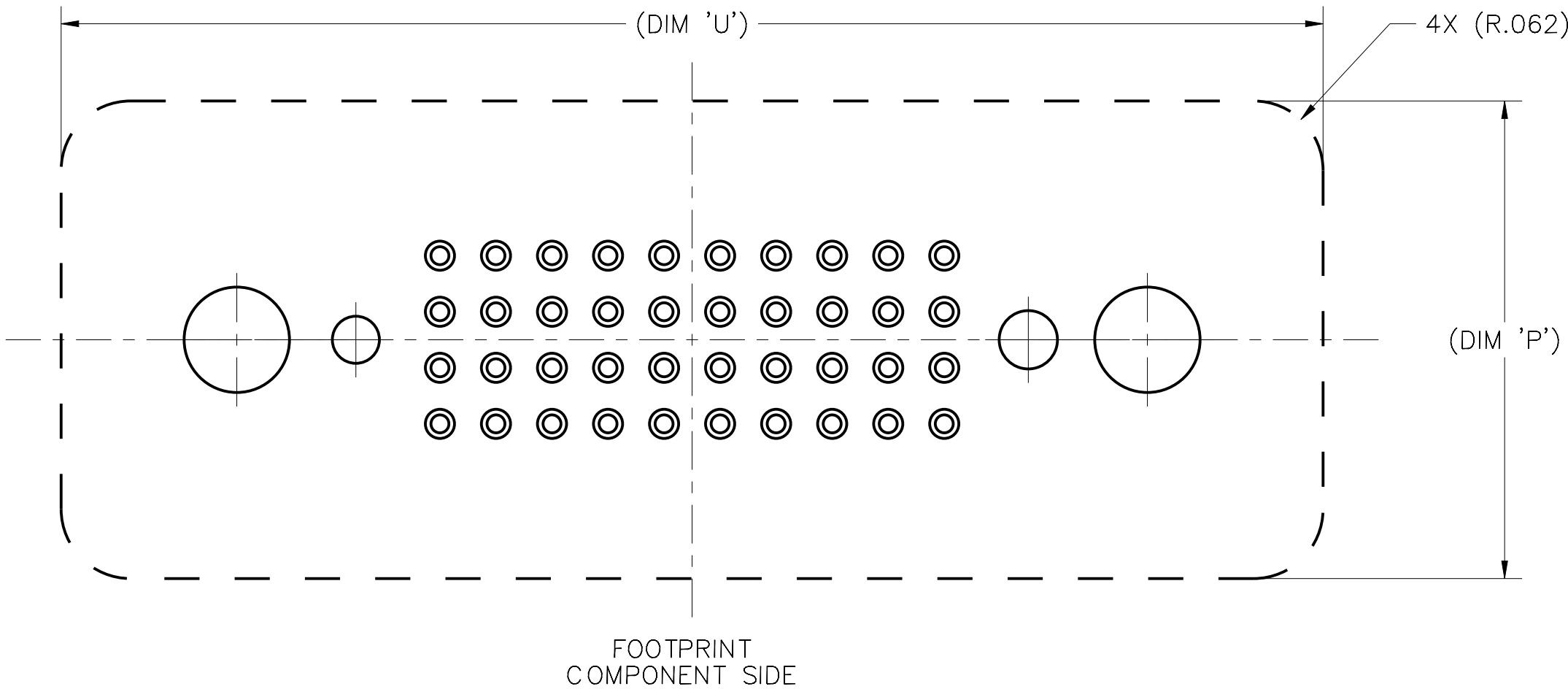
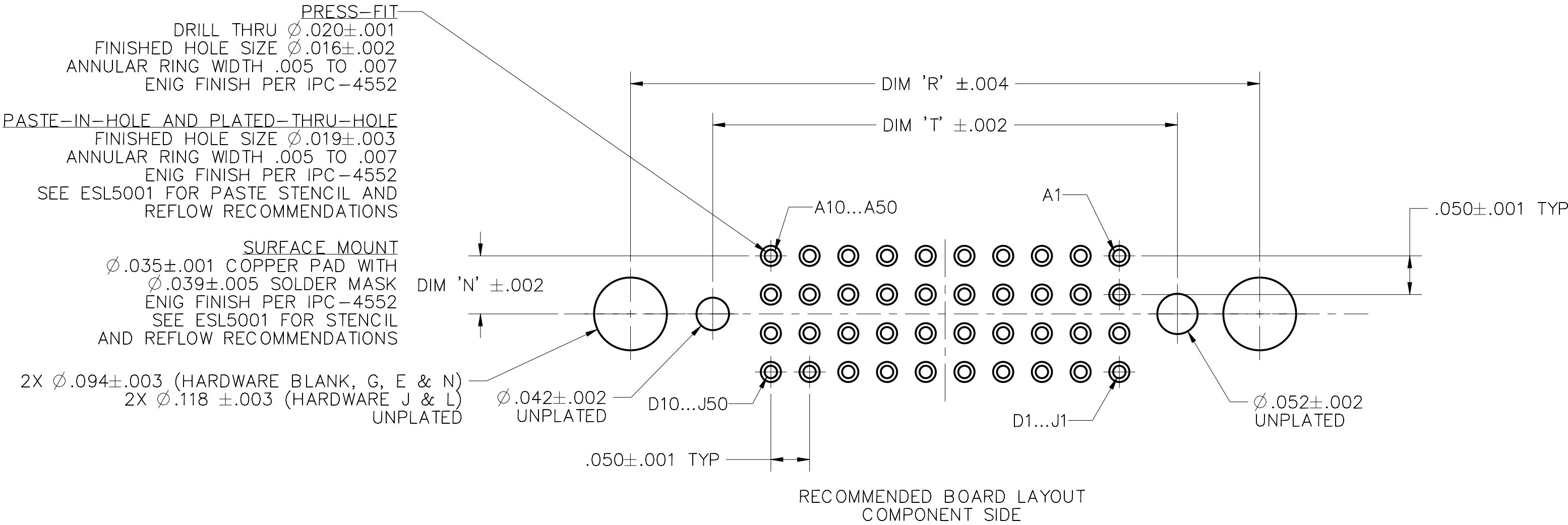
4

3

2

1

RECOMMENDED PCB LAYOUT



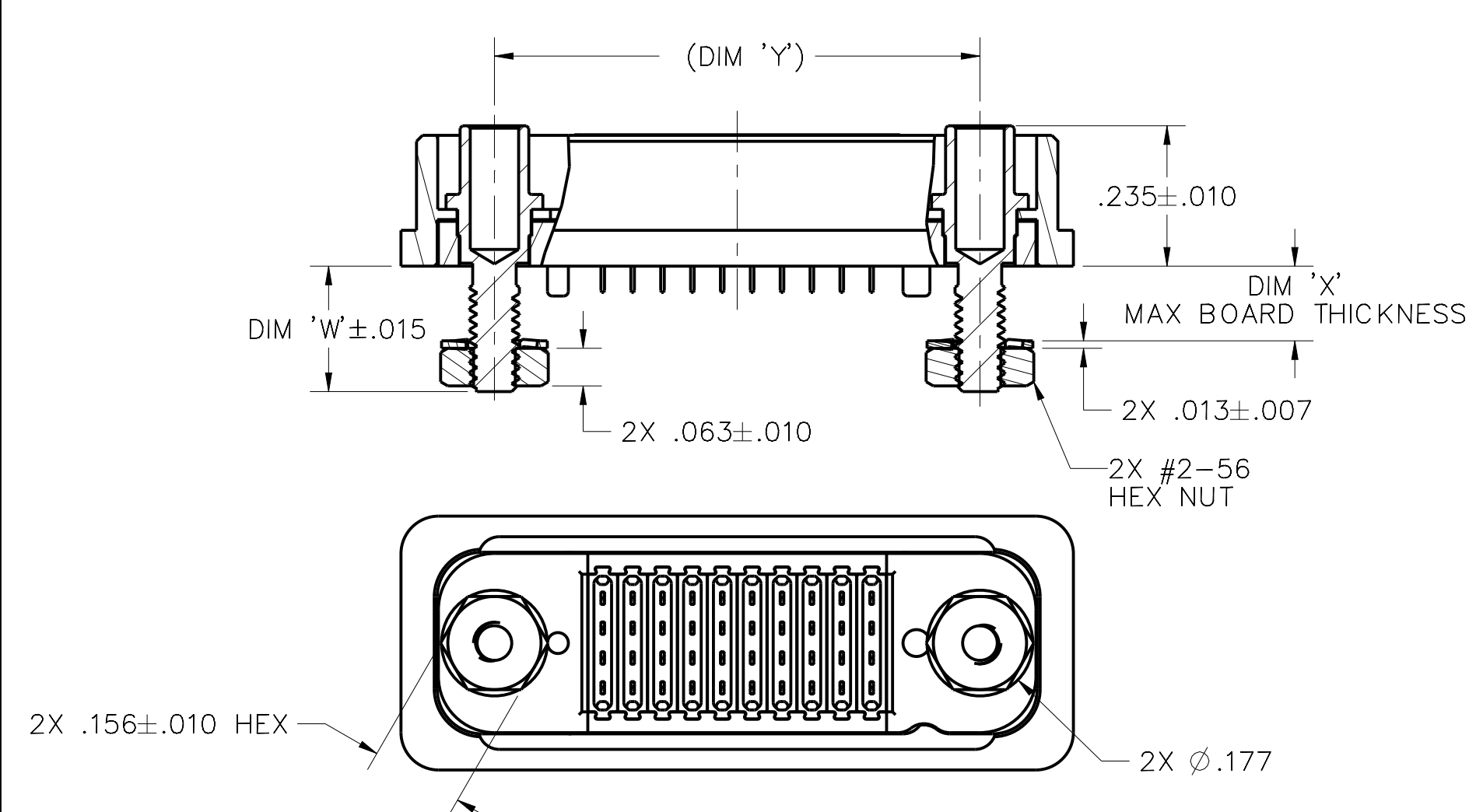
NON EMI GASKET HARDWARE OPTIONS

ROWS	DIM 'N'	DIM 'P'	COLUMNS	DIM 'R'	DIM 'T'	DIM 'U'
04	.075	.425	10	.813	.600	1.125
05	.100	.475	20	1.313	1.100	1.625
06	.125	.525	30	1.813	1.600	2.125
08	.175	.625	40	2.313	2.100	2.625
10	.225	.725	50	2.813	2.600	3.125

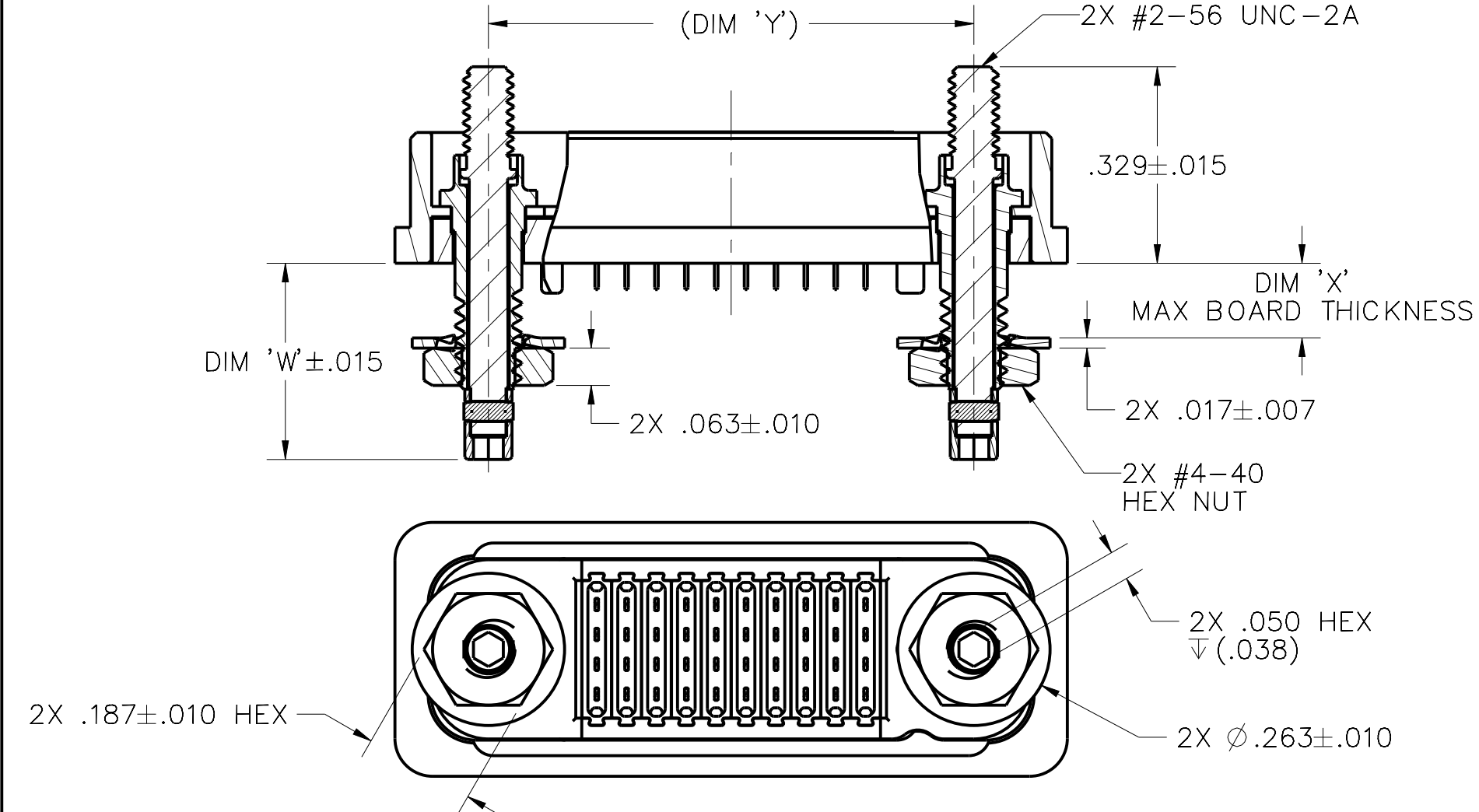
EMI GASKET HARDWARE OPTIONS

ROWS	DIM 'N'	DIM 'P'	COLUMNS	DIM 'R'	DIM 'T'	DIM 'U'
04	.075	.673	10	.813	.600	1.823
05	.100	.723	20	1.313	1.100	2.323
06	.125	.773	30	1.813	1.600	2.823
08	.175	.873	40	2.313	2.100	3.323
10	.225	.973	50	2.813	2.600	3.823

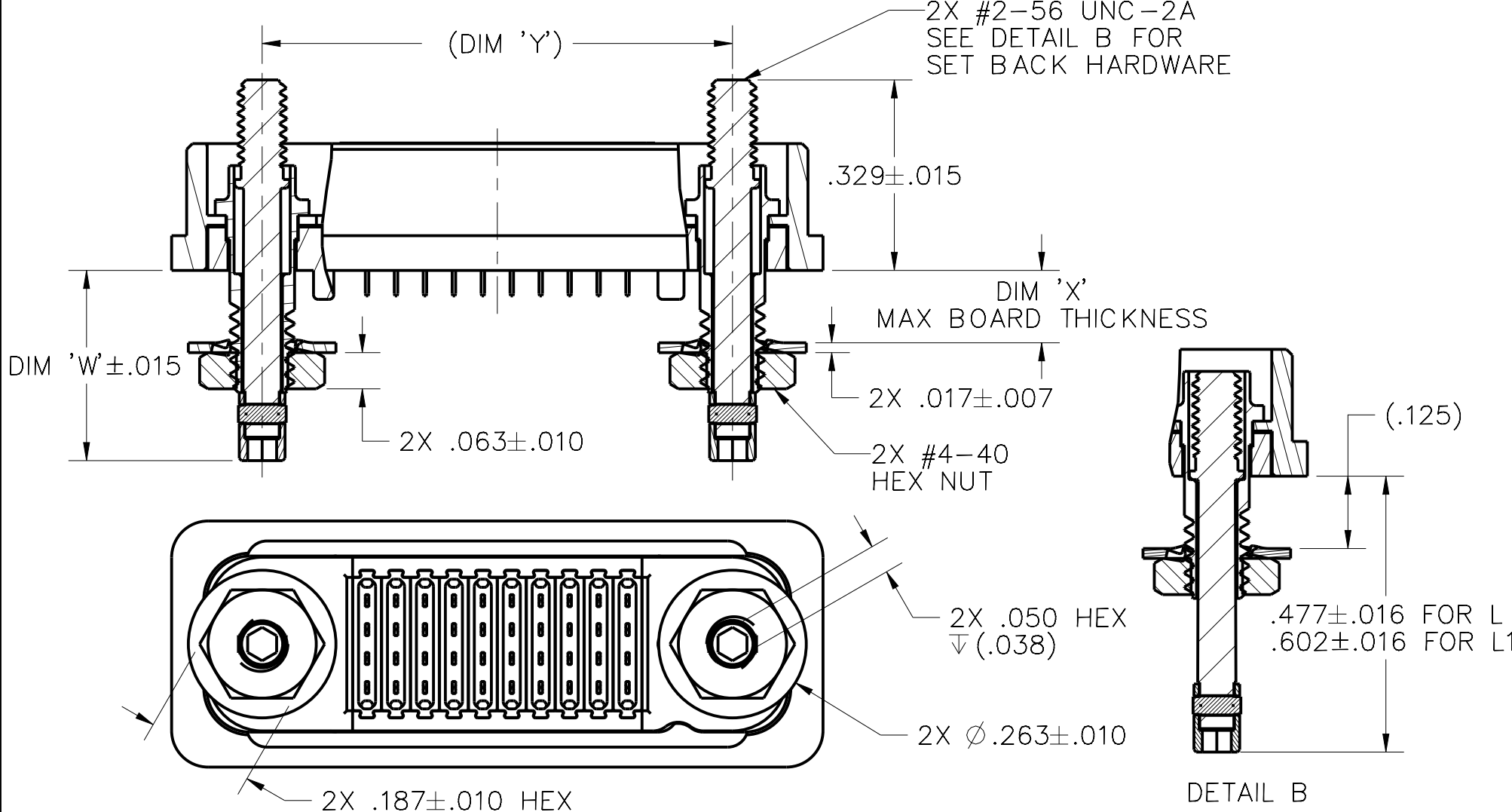
GUIDE SOCKET DIMENSIONS (HARDWARE OPTIONS G & G1)



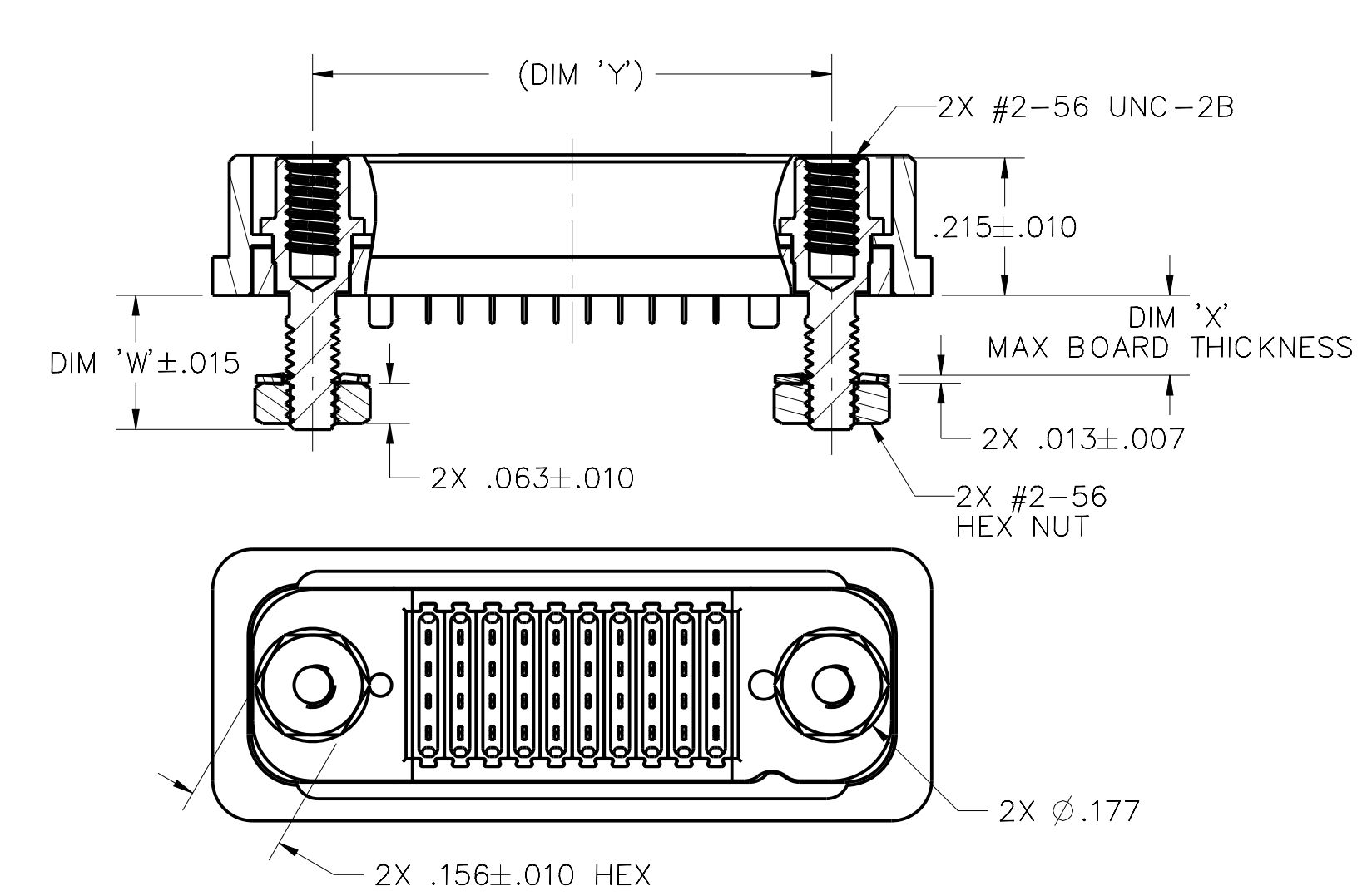
TURNING JACKSCREW DIMENSIONS (HARDWARE OPTIONS J & J1)



LOCKING SCREW DIMENSIONS (HARDWARE OPTIONS L & L1)



FIXED JACKNUT DIMENSIONS (HARDWARE OPTIONS N & N1)



HARDWARE OPTIONS	DESCRIPTION	DIM 'W'	DIM 'X'
G	GUIDE SOCKET	.210	.125
G1	GUIDE SOCKET	.335	.250
J	TURNING JACKSCREW	.329	.125
J1	TURNING JACKSCREW	.454	.250
L	LOCKING SCREW	.329	.125
L1	LOCKING SCREW	.454	.250
N	FIXED JACKNUT	.210	.125
N1	FIXED JACKNUT	.335	.250

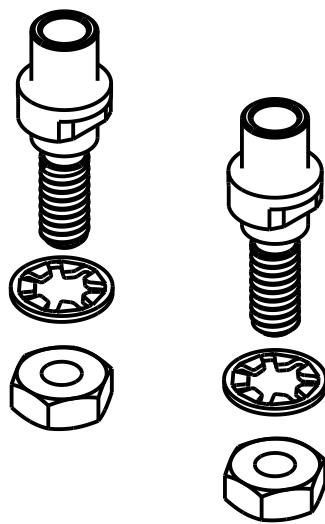
COLUMNS	DIM 'Y'
10	.813
20	1.313
30	1.813
40	2.313
50	2.813

HARDWARE KIT PART NUMBER BUILD

SAMPLE PART NUMBER: VRF-00-00-00-00-G

VRF-00-00-00-00-XX

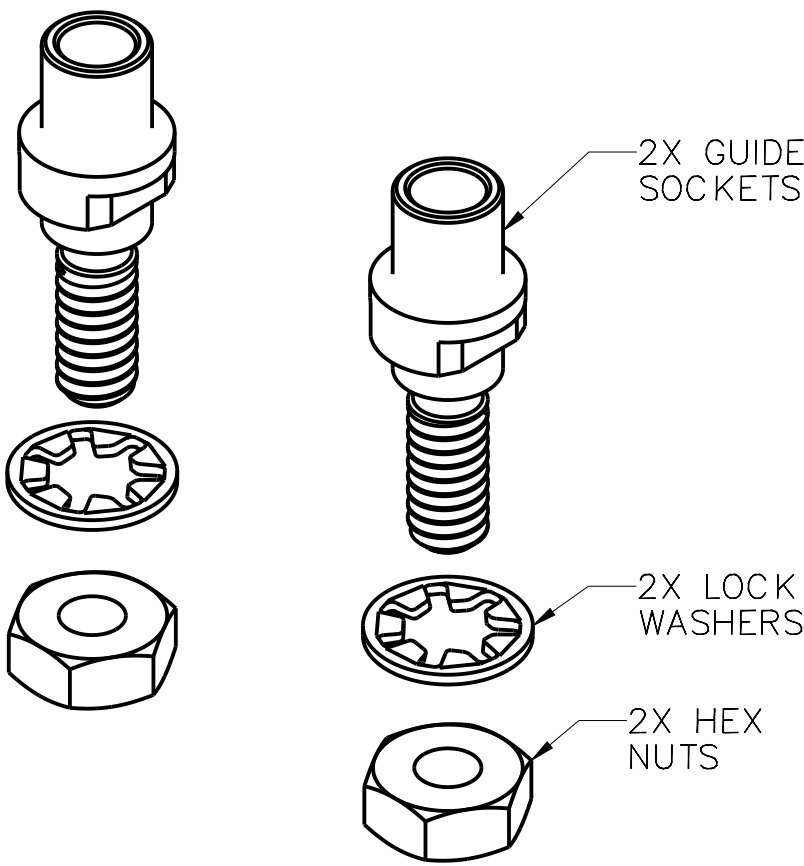
HARDWARE OPTIONS	
G	GUIDE SOCKET
G1	GUIDE SOCKET
J	TURNING JACKSCREW
J1	TURNING JACKSCREW
L	LOCKING SCREW
L1	LOCKING SCREW
N	FIXED JACKNUT
N1	FIXED JACKNUT



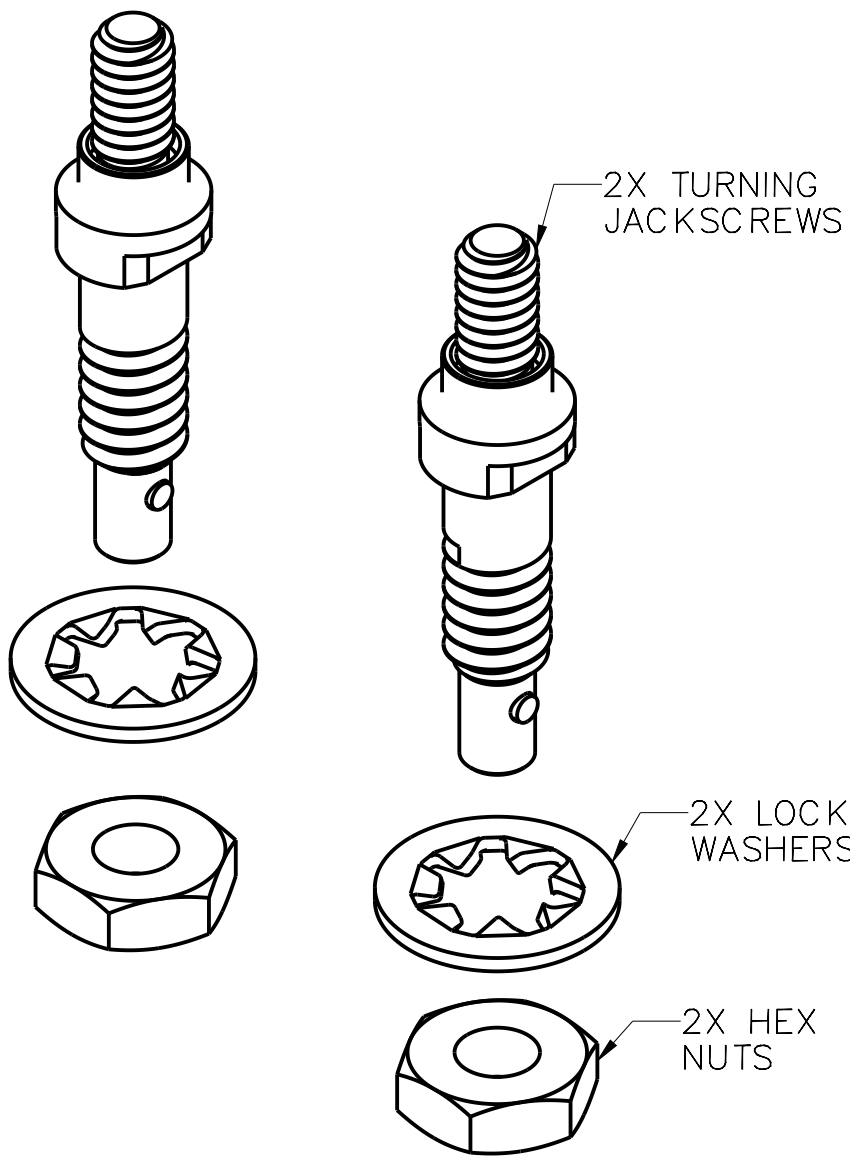
ISOMETRIC VIEW
FOR REFERENCE ONLY
(PART NUMBER VRF-00-00-00-00-G SHOWN)

HARDWARE KITS CANNOT BE INSTALLED
ON CONNECTORS WITH BLANK OR E HARDWARE
OPTIONS

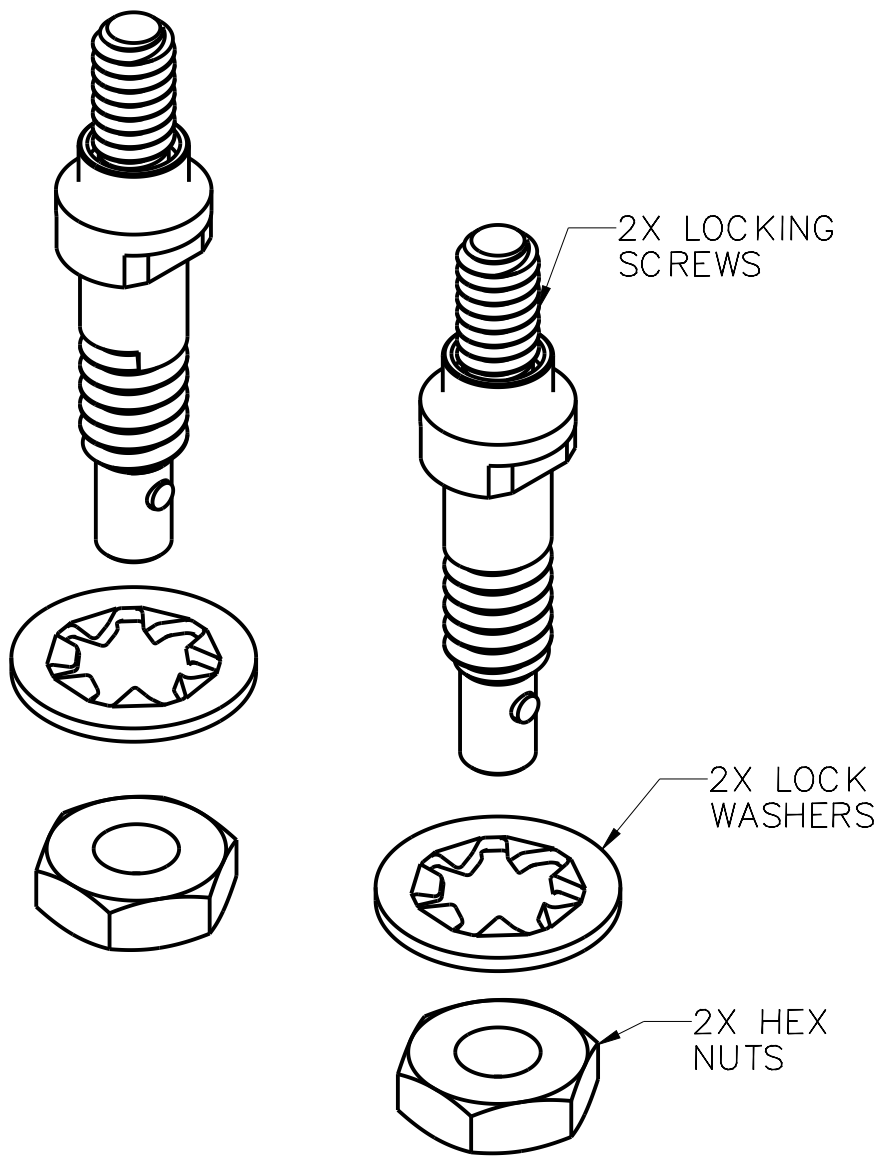
GUIDE SOCKET KIT
(G & G1 HARDWARE OPTIONS)



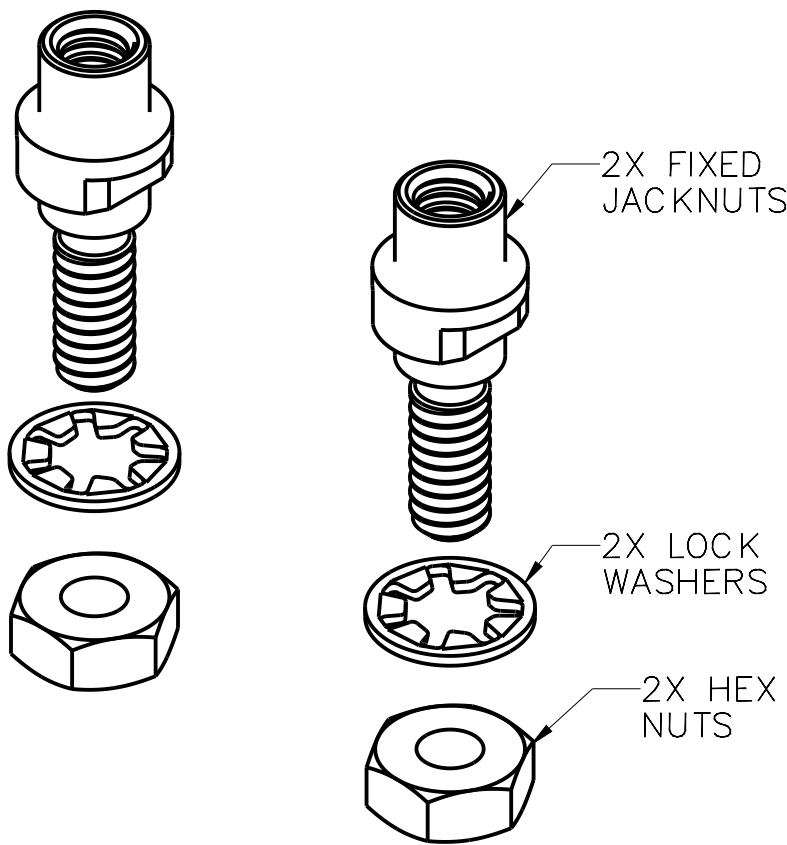
TURNING JACKSCREW KIT
(J & J1 HARDWARE OPTIONS)



LOCKING SCREW KIT
(L & L1 HARDWARE OPTIONS)



FIXED JACKNUT KIT
(N & N1 HARDWARE OPTIONS)



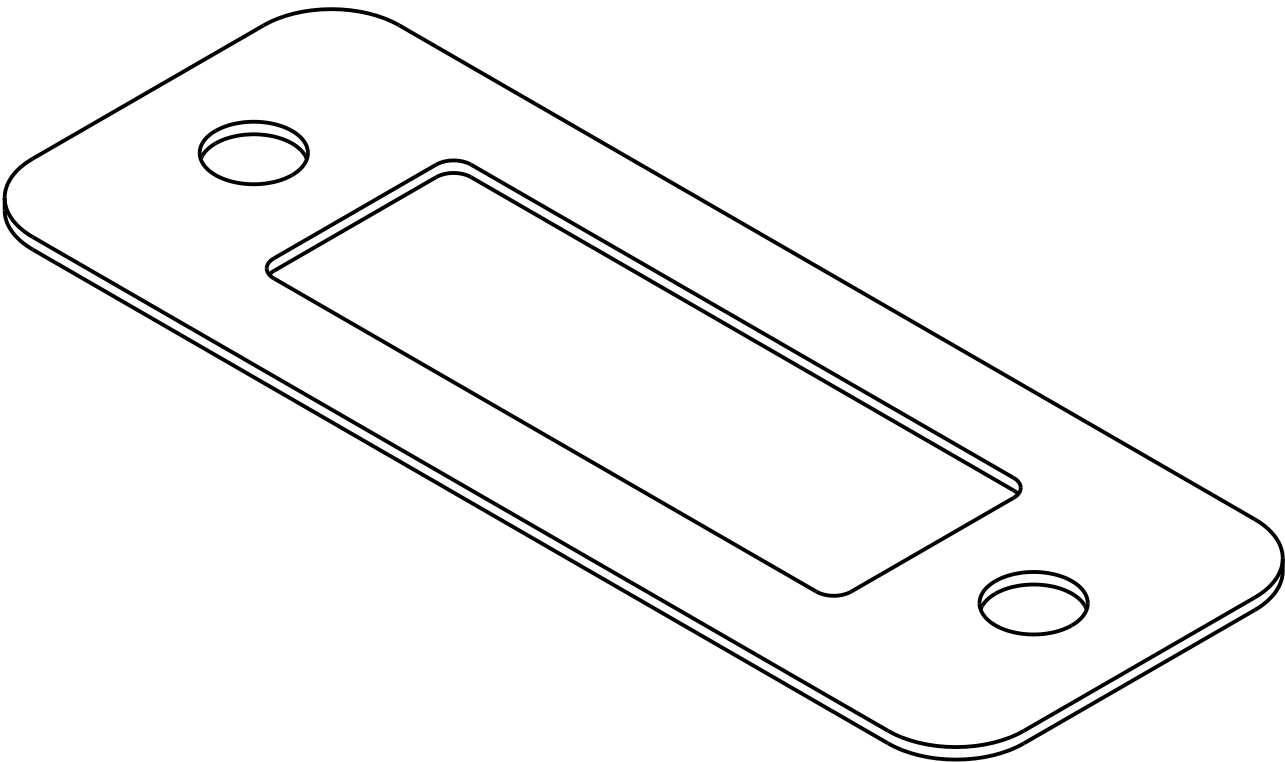
GASKET PART NUMBER BUILD
SAMPLE PART NUMBER: VGF-04-10-E

VGF-XX-XX-E

OPTION	
E	EMI GASKET

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



ISOMETRIC VIEW
FOR REFERENCE ONLY
(PART NUMBER VGF-04-10-E SHOWN)

FORMAT: CERNPRO.FRM A.7

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[AirBorn:](#)

[VRF-08-20-50-04-G1](#) [VRF-04-40-50-03-G](#) [VRF-08-20-50-04-N1](#) [VRF-04-10-50-03-N](#) [VRF-06-10-50-06-G1](#)