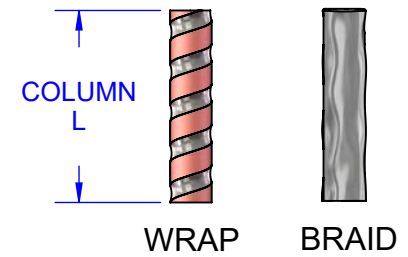
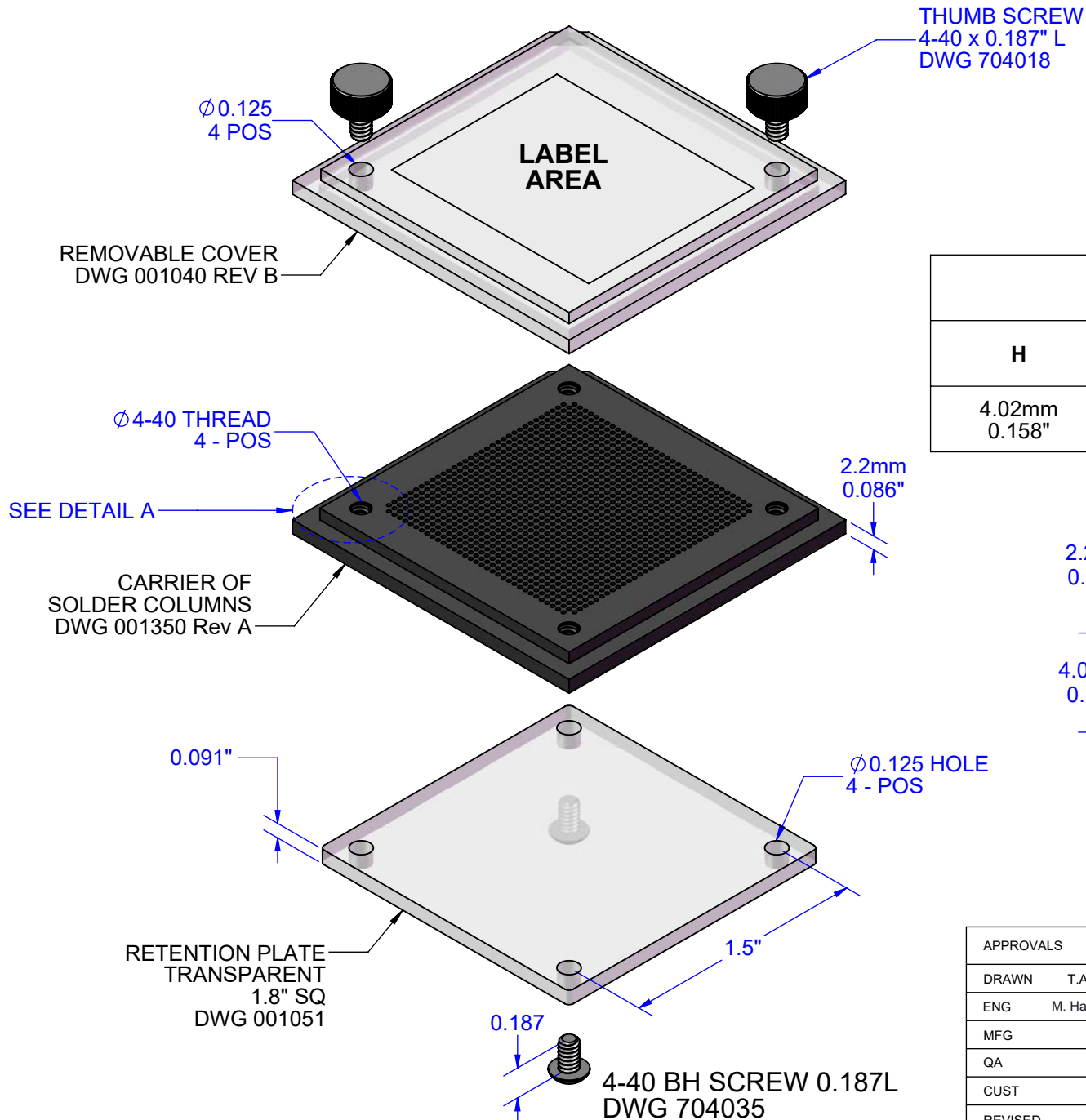
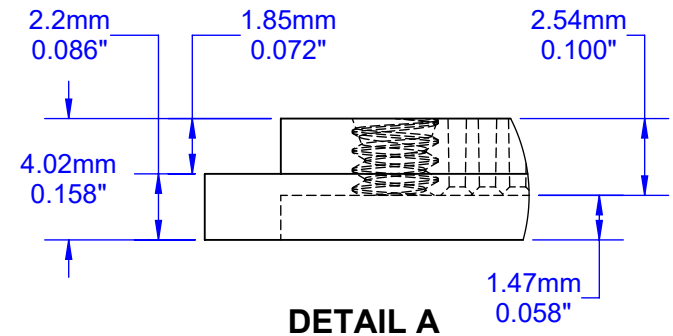


# ASSEMBLY EXPLODED VIEW

U.S. PATENT No.  
9,108,262 and 9,629,259



DIMENSION TABLE			
H	L MAX	W	DWG
4.02mm 0.158"	2.54mm 0.100"	1.82mm 0.072"	120254

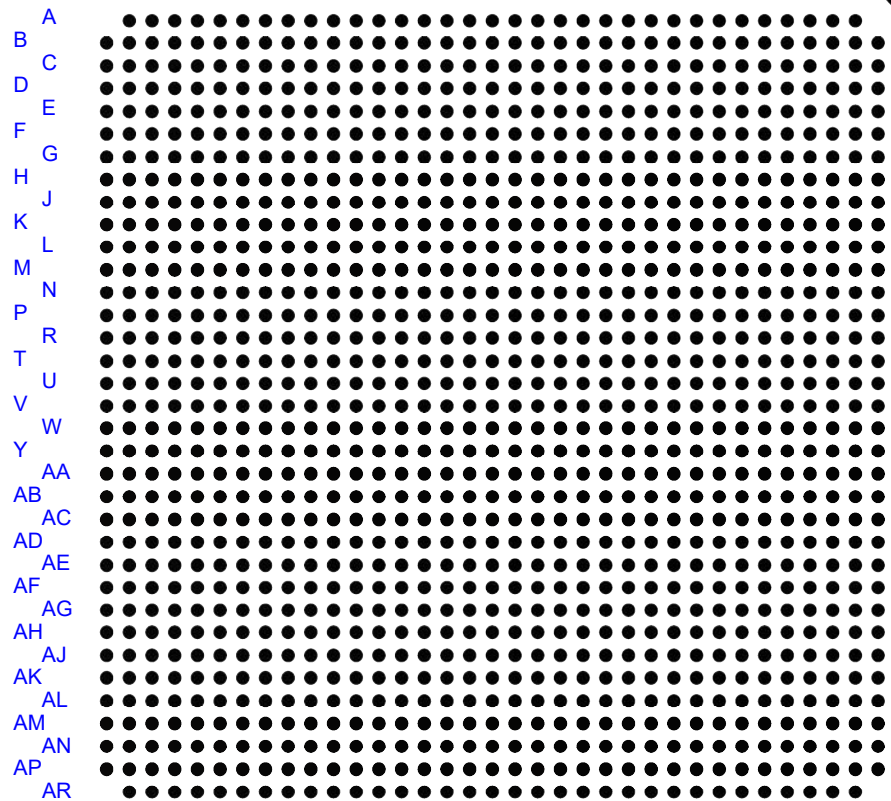


APPROVALS	DATE	<b>TopLine®</b>			
DRAWN T. Au	4/6/2025				
ENG M. Hart	4/6/2025	TITLE FP1221A FLIP-PACK® CCGA COLUMN CARRIER			
MFG		SCALE 1.25:1	SIZE A	DRAWING NO. 001350	REV A
QA		DO NOT SCALE DRAWING			SHEET 1 OF 11
CUST					
REVISED					

**PART NUMBER TABLE**

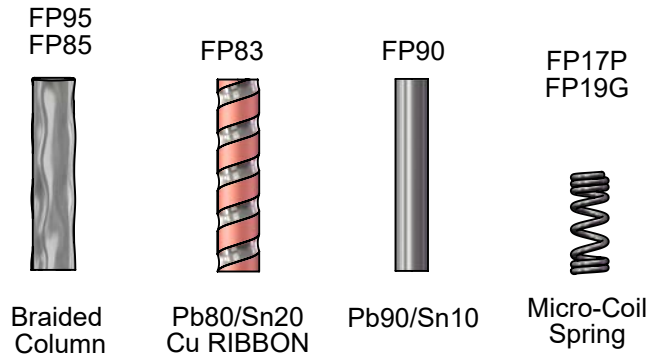
FLIP-PACK®	Pins	Pitch	Matrix	COLUMN					Empty DWG	Filled DWG
				Alloy	Construction	Plating	Ø Dia	Length		
FP83C1221E20x93A	1221	1.0mm	35x35	Pb80	Cu Ribbon		0.51mm	2.36mm	001350	831350
FP85B1221E20x93A				Pb80	Braided	SnPb	0.51mm	2.36mm		851350
FP95B1221E20x93A				Pb90	Braided		0.51mm	2.36mm		951350

35 33 31 29 27 25 23 21 19 17 15 13 11 9 7 5 3 1  
34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2



**BOTTOM  
COUNTERSINK SIDE**

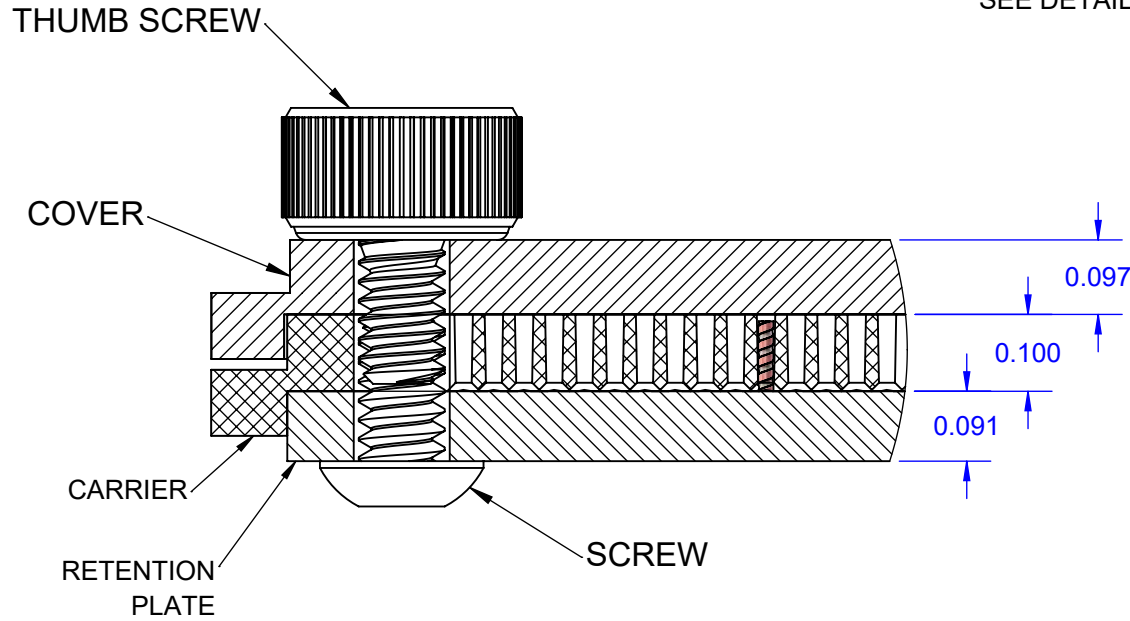
**EXAMPLES OF COLUMNS**



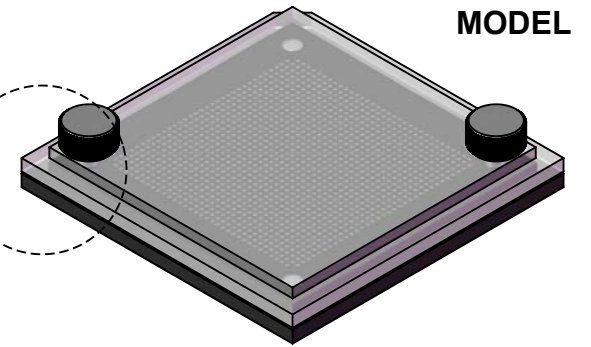
<b>TopLine®</b>			
TITLE    FP1221A FLIP-PACK® CCGA COLUMN CARRIER			
SCALE NONE	SIZE A	DRAWING NO. 001350	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 11



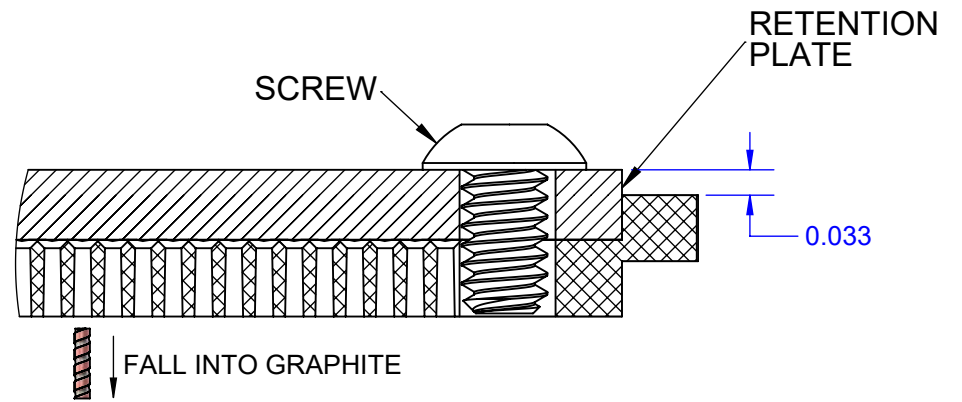
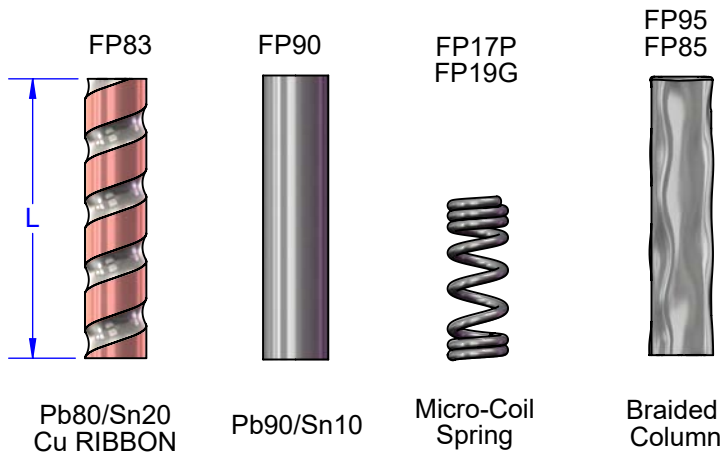
# DETAIL D WITH COVER PLATE



SEE DETAIL D



## EXAMPLE OF COLUMNS



**TopLine®**

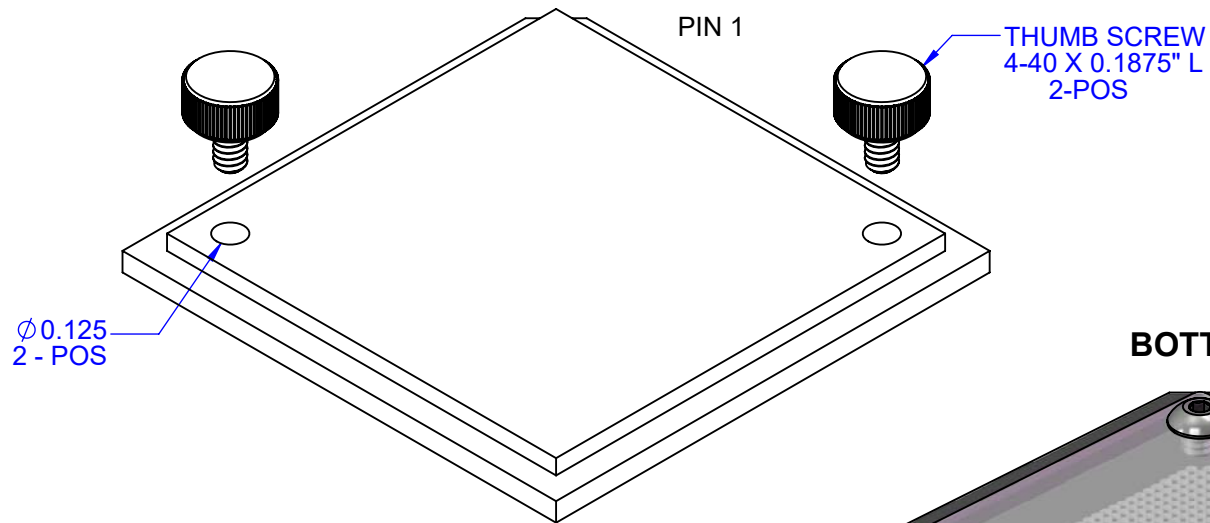
TITLE FP1221A FLIP-PACK®  
CCGA COLUMN CARRIER

SCALE 4:1	SIZE A	DRAWING NO. 001350	REV A
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DO NOT SCALE DRAWING SHEET 4 OF 11

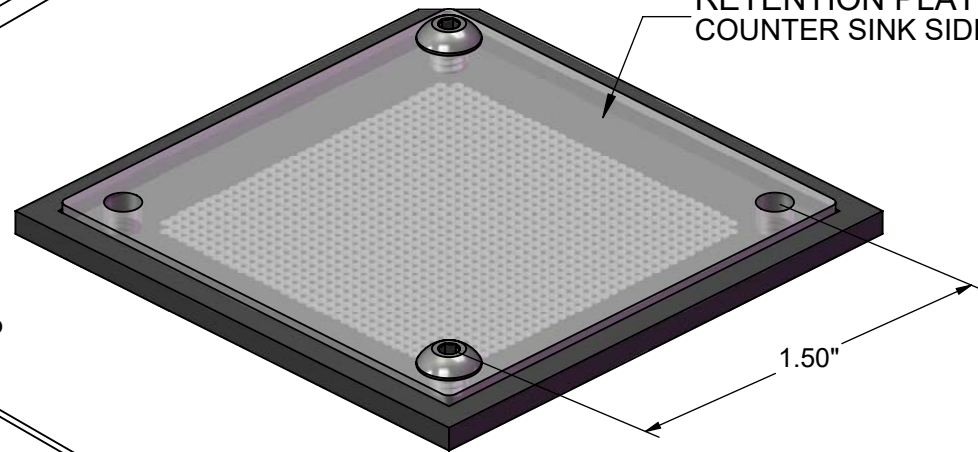
# FLIP PACK® MODEL

COVER 001040 REV B



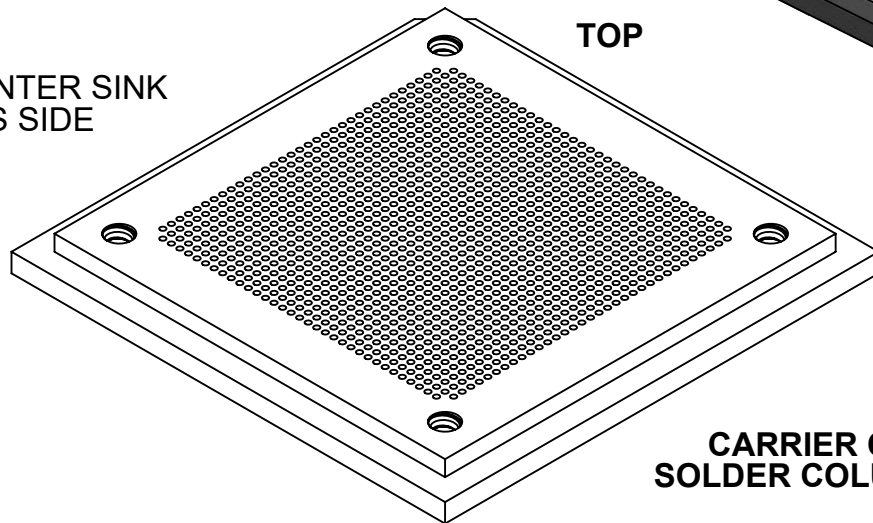
BOTTOM

RETENTION PLATE 001051  
COUNTER SINK SIDE

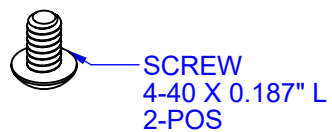


NO COUNTER SINK  
THIS SIDE

TOP



CARRIER OF  
SOLDER COLUMNS



**TopLine®**

TITLE FP1221A FLIP-PACK®  
CCGA COLUMN CARRIER

SCALE 2:1	SIZE A	DRAWING NO. 001350	REV A
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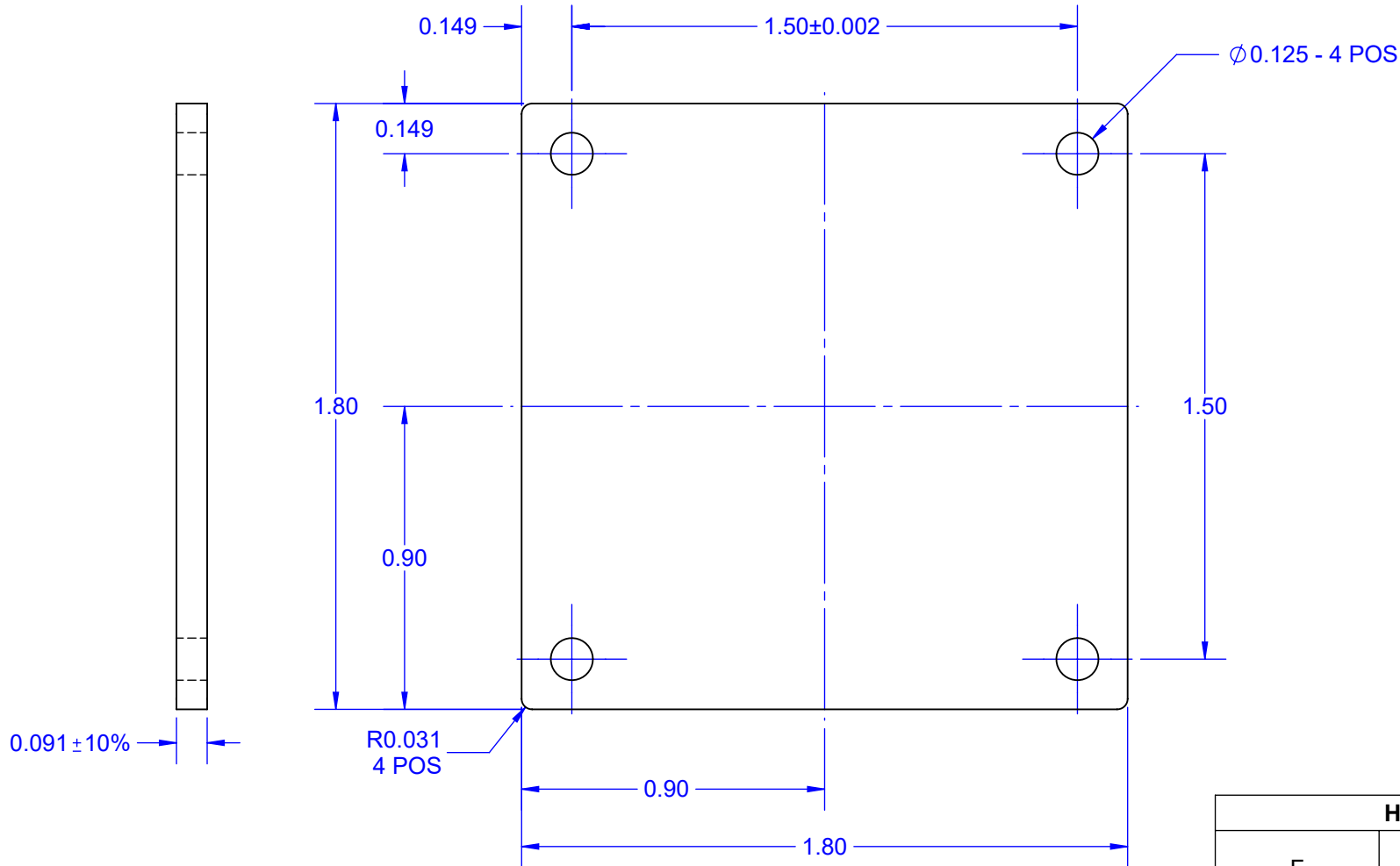
DO NOT SCALE DRAWING

SHEET 5 OF 11

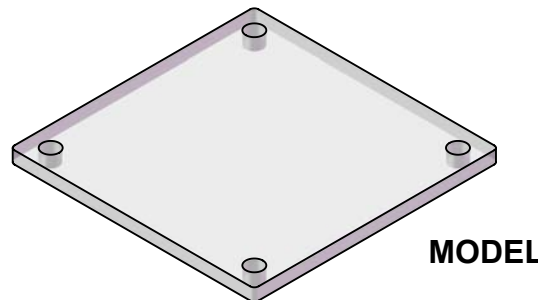
# BOTTOM RETENTION PLATE

SIDE VIEW

TOP VIEW



HOLE CHART		
F	DIAMETER UNPLATED	QTY HOLES
+	$\phi 0.125$	4



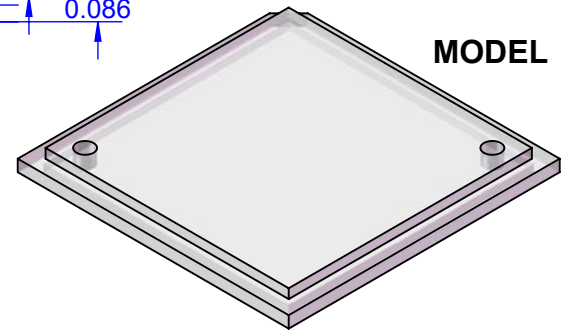
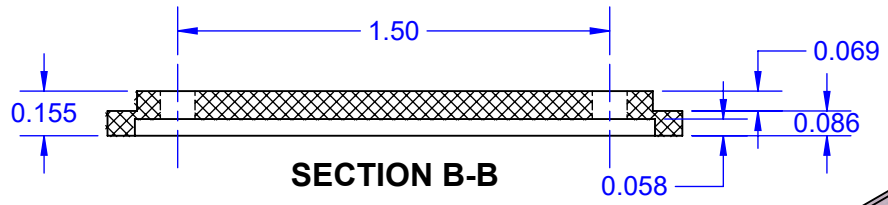
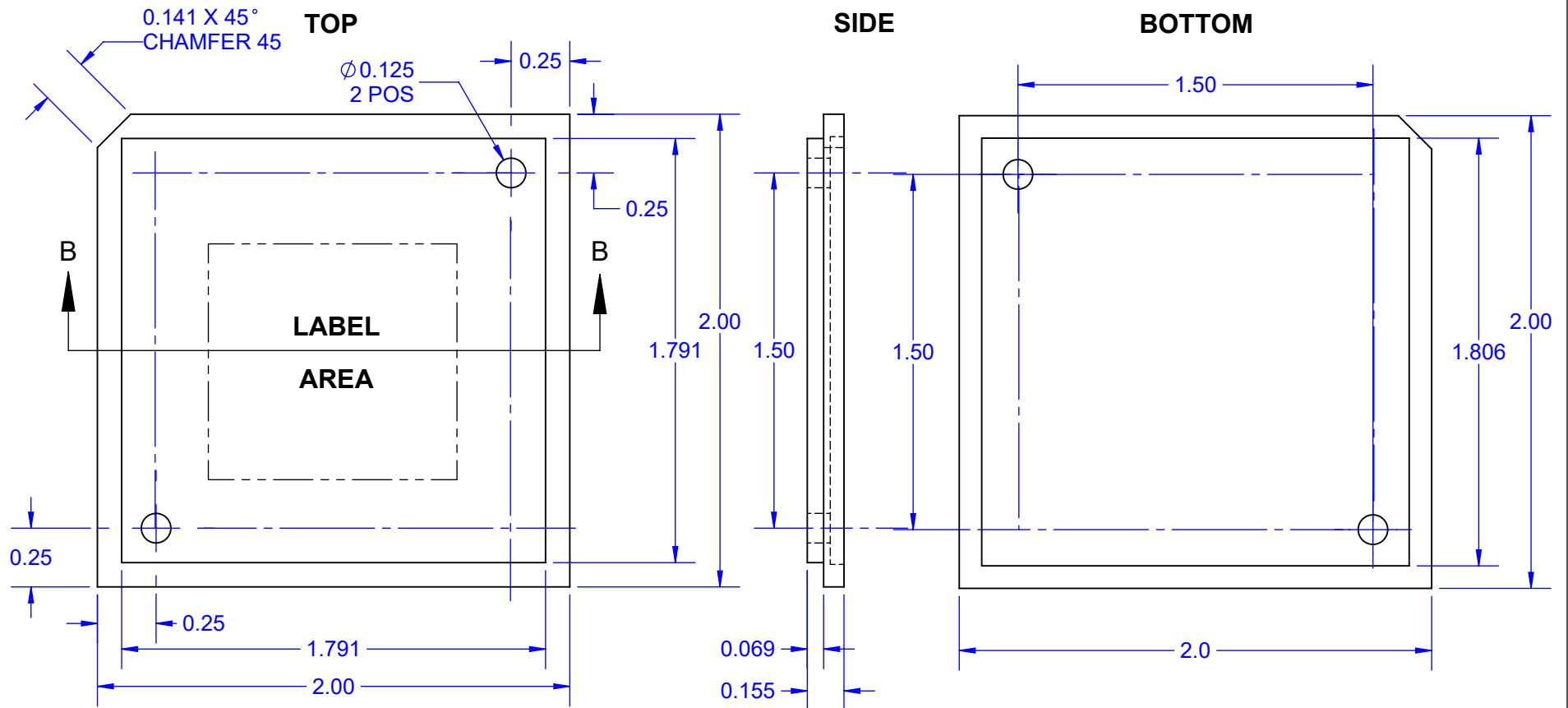
MODEL

NOTES: (Unless Otherwise Specified).

- 1) DIMENSIONS INCH.
- 2) MATERIAL: CLEAR PC-300 POLYCARBONATE.
- 3) STATIC DISIPATIVE  $10^6 \sim 10^8 \Omega$ . (ESD SAFE).
- 4) HOLE BREAK OUT ALLOWED.

TITLE			
FP1.8-BOTTOM-1.5B BOTTOM RETENTION PLATE			
SCALE	SIZE	DRAWING NO.	REV
2:1	A	001051	A
DO NOT SCALE DRAWING			SHEET 6 OF 11

# COVER 001040 REV B

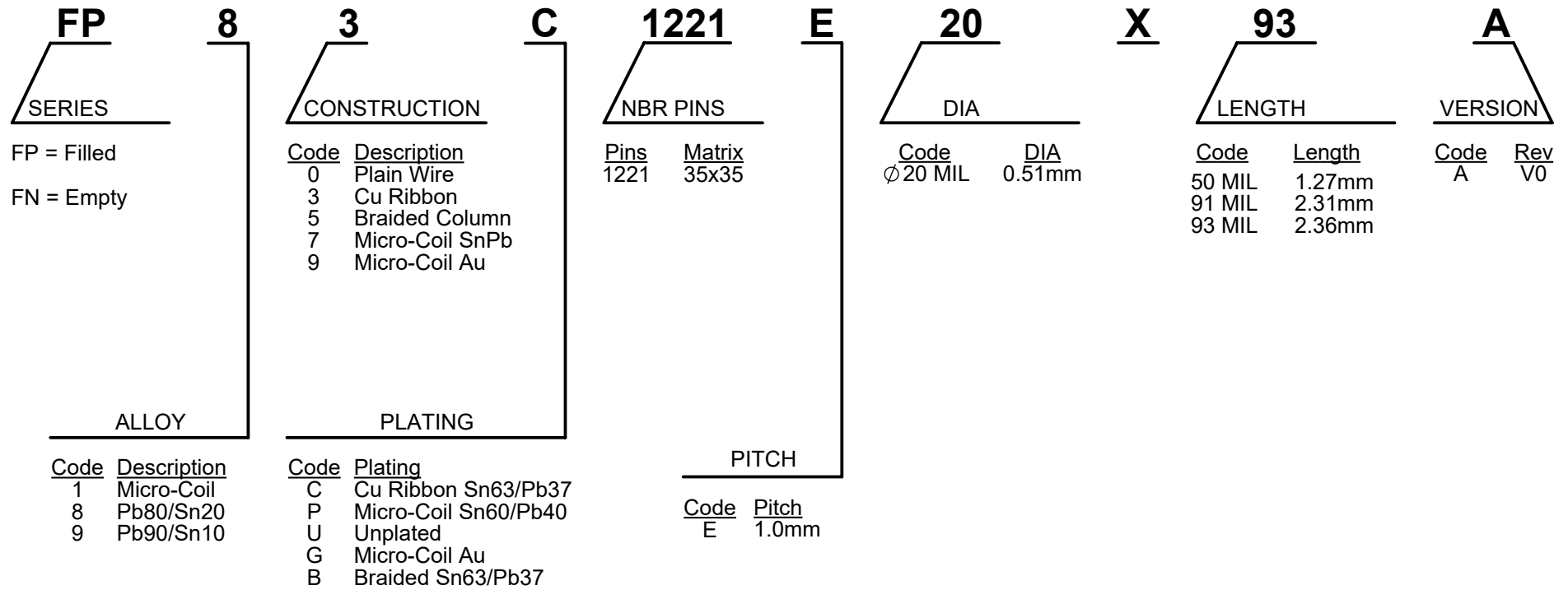


HOLE CHART		
SYMBOL	DIAMETER UNPLATED	QTY HOLES
+	Ø0.125	2

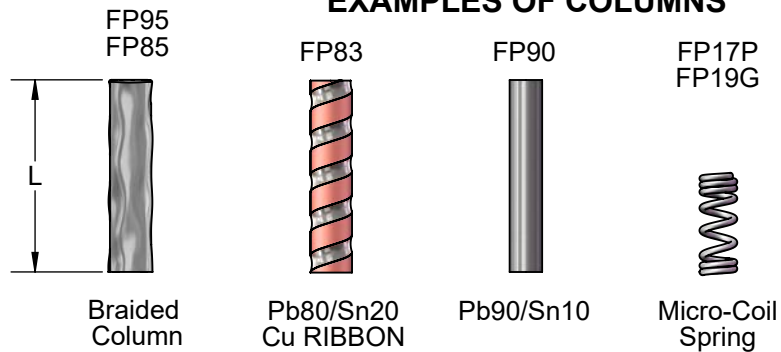
Notes: (Unless Otherwise Specified).  
 1) DIMENSIONS: INCH.  
 2) MATERIAL: TRANSPARENT PMMA PLASTIC.  
 3) ANTISTATIC: 10<sup>12</sup>Ω SURFACE RESISTANCE.

<b>TopLine®</b>			
TITLE FLIP-PACK® TOP COVER 2-INCH 1.50 SPACE			
SCALE 3:2	SIZE A	DRAWING NO. 001040	REV B
DO NOT SCALE DRAWING			SHEET 7 OF 11

# FLIP-PACK® PART NUMBERING SYSTEM



## EXAMPLES OF COLUMNS



NOTE: COLUMN TO BE TRIMMED TO 2.21mm AFTER ATTACHMENT.

**TopLine®**

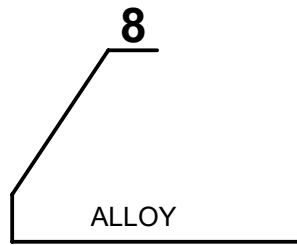
TITLE FP1221A FLIP-PACK®  
CCGA COLUMN CARRIER

SCALE	SIZE	DRAWING NO.	REV
10:1	A	001350	A

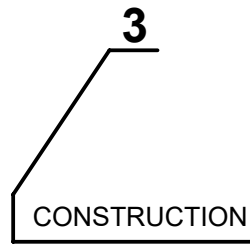
DO NOT SCALE DRAWING

SHEET 8 OF 11

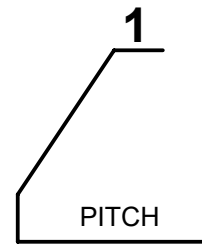
# FLIP-PACK® DRAWING NUMBERING SYSTEM



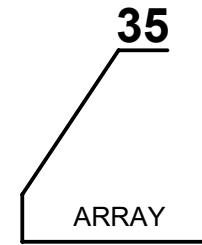
Code	Description
00	Empty
1	Micro-Coil
8	Pb80/Sn20
9	Pb90/Sn10



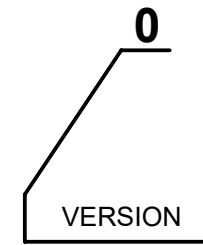
Code	Description
0	Plain Wire
3	Cu Ribbon
5	Braided Column
7	Micro-Coil SnPb
9	Micro-Coil Au



Code	Pitch
1	1.0mm

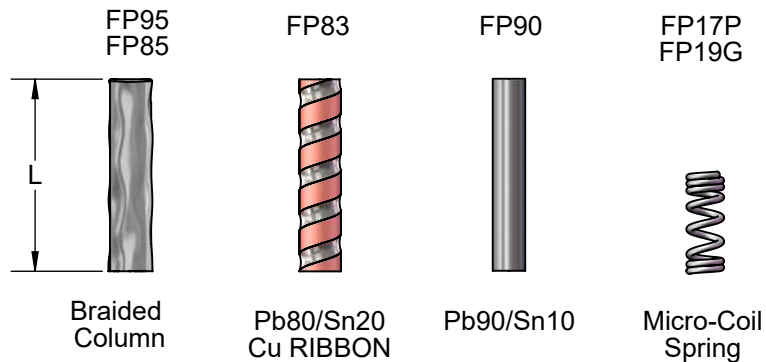


Code	Matrix
35	35x35



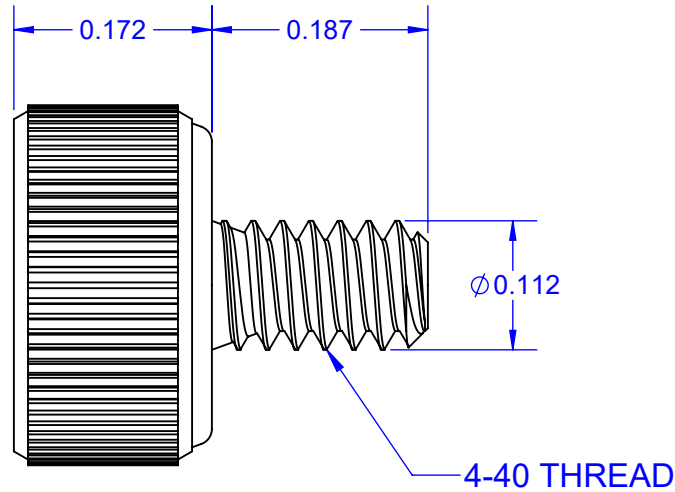
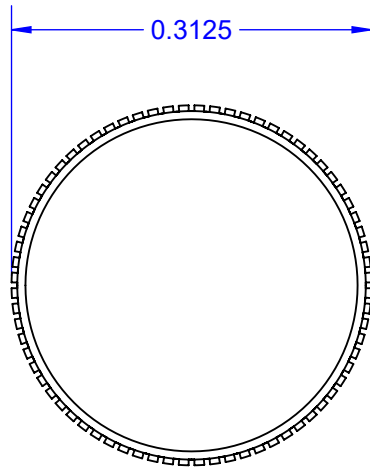
Code	Rev
0	∅0.51mm L=2.36mm

## EXAMPLES OF COLUMNS

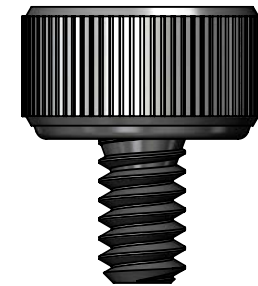
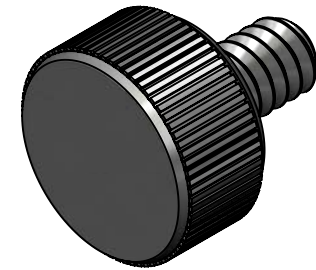


<b>TopLine®</b>			
TITLE    FP1221A FLIP-PACK® CCGA COLUMN CARRIER			
SCALE	SIZE	DRAWING NO.	REV
10:1	A	001350	A
DO NOT SCALE DRAWING			SHEET 9 OF 11

# HARDWARE PLASTIC KNURLED HEAD THUMB SCREW



## MODELS



- NOTES:**
1. DIMENSIONS INCHES (UNLESS OTHERWISE SPECIFIED).
  2. SHAFT MATERIAL 18-8 STAINLESS STEEL.
  3. HEAD: PLASTIC.
  4. COLOR: BLACK.

### DRILL TABLE

HEAD COLOR	THREAD	MAX OD	TAP DRILL Start Hole	CL HOLE Loose Fit	L SHAFT	DWG
BLACK	4-40	0.112"	0.089"	0.136"	0.187	704018

**TopLine®**

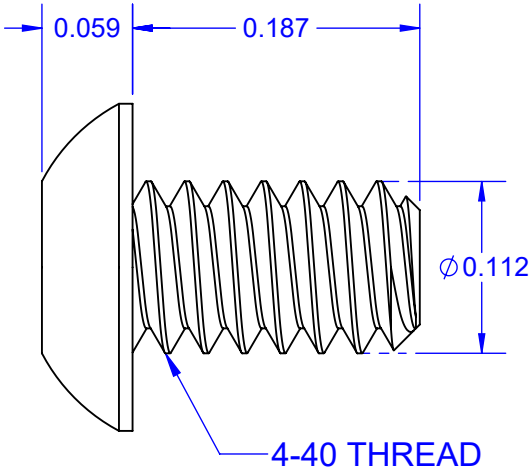
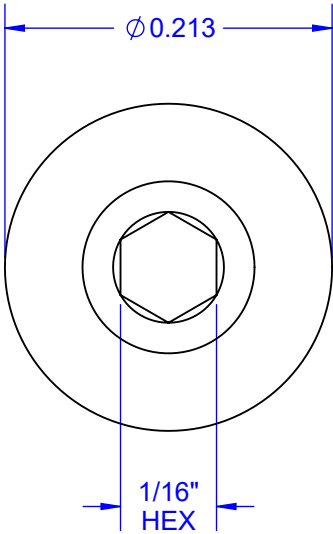
TITLE    **KNURL THUMB SCREW  
4-40 PLASTIC HEAD**

SCALE 6:1	SIZE A	DRAWING NO. 704018	REV A
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DO NOT SCALE DRAWING

SHEET 10 OF 11

# BUTTON HEAD SCREW



## MODELS



- NOTES: (UNLESS OTHERWISE SPECIFIED)  
 1. DIMENSIONS INCHES.  
 2. MATERIAL: SEE TABLE.  
 3. COLOR: SEE TABLE.

DRILL TABLE						
MATERIAL	COLOR	THREAD	MAX OD	TAP DRILL Start Hole	L	DWG
8-18	STAINLESS	4-40	0.112"	0.089"	0.187"	704035

TITLE    BUTTON HEAD CAP SCREW 4-40x .187" (1/16 HEX)			
SCALE 8:1	SIZE A	DRAWING NO. 704035	REV A
DO NOT SCALE DRAWING			SHEET 11 OF 11