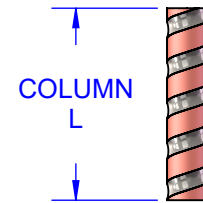
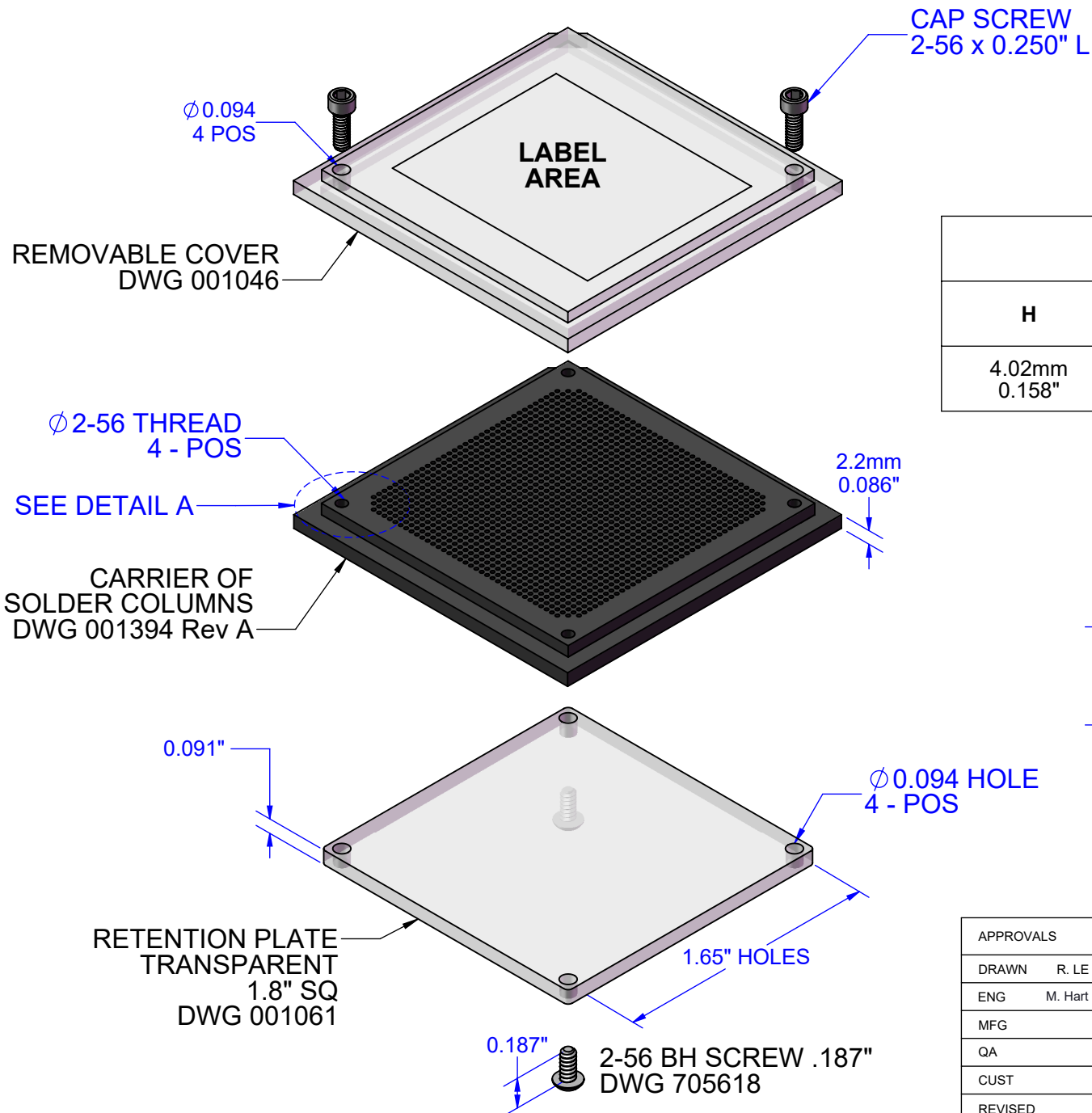
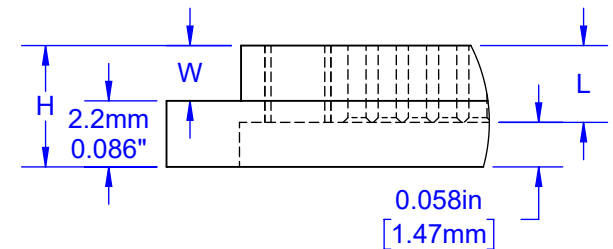


# ASSEMBLY EXPLODED VIEW FLIP-PACK<sup>®</sup> SYSTEM

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

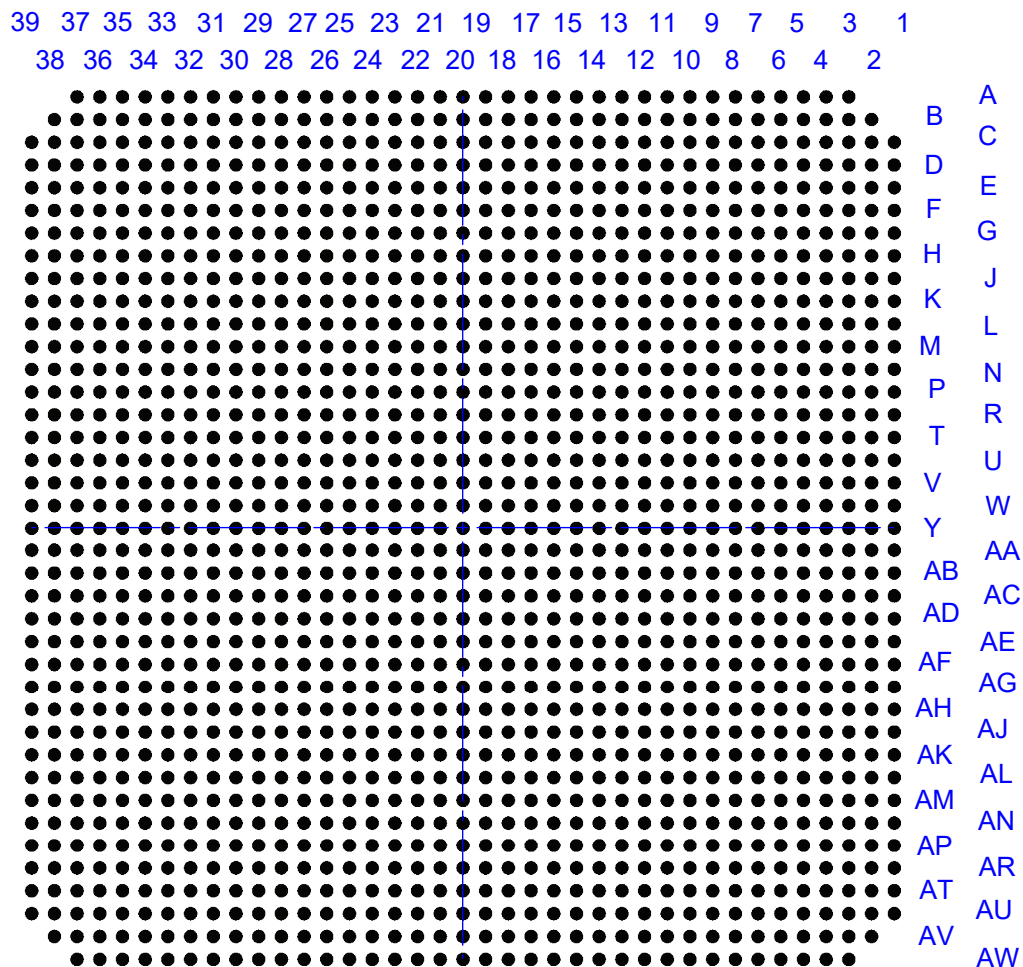


DETAIL A

APPROVALS	DATE	<b>TopLine<sup>®</sup></b>			
DRAWN R. LE	1/7/2023				
ENG M. Hart	1/7/2023	TITLE FP1509 FLIP-PACK <sup>®</sup> CCGA COLUMN CARRIER			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		1.25:1	A	001394	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 11
REVISED					

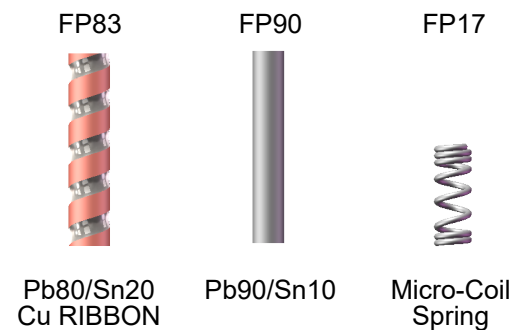
### PART NUMBER TABLE

FLIP-PACK®	Pins	Pitch	Matrix	COLUMN					Empty DWG	Filled DWG
				Alloy	Construction	Plating	Ø Dia	Length		
PF83C1509E20x93A FP90U1509E20x91A FP17P1509E20x50A	1509	1.0mm	39x39	Pb80 Pb90 MCS	Cu Ribbon Plain Micro Coil	SnPb	0.51mm	2.36mm 2.31mm 1.27mm	001394	831394 901394 171394



**BOTTOM  
COUNTERSINK SIDE**

#### EXAMPLES OF COLUMNS

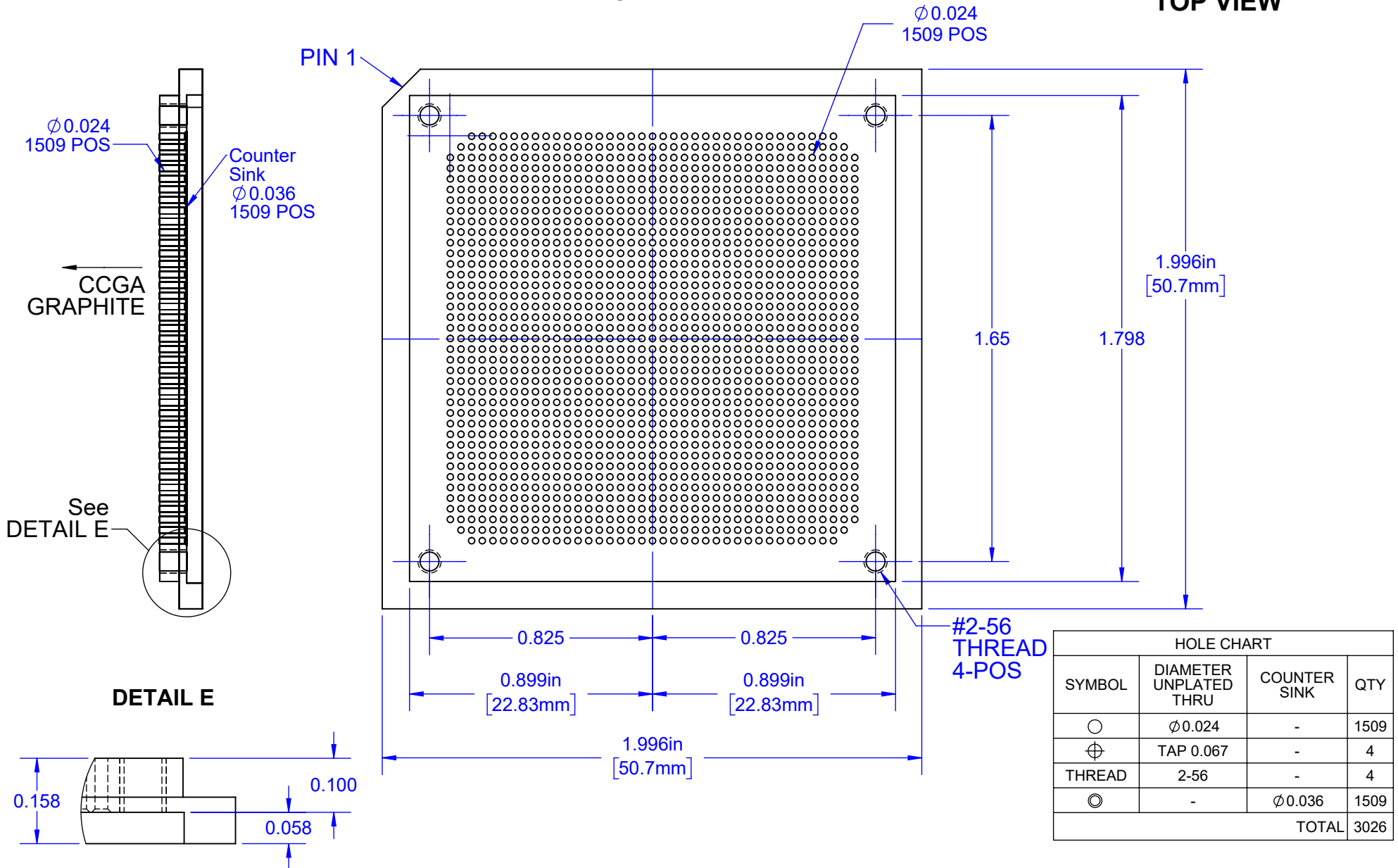


<b>TopLine®</b>			
TITLE    FP1509 FLIP-PACK® CCGA COLUMN CARRIER			
SCALE NONE	SIZE A	DRAWING NO. 001394	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 11

**SIDE**

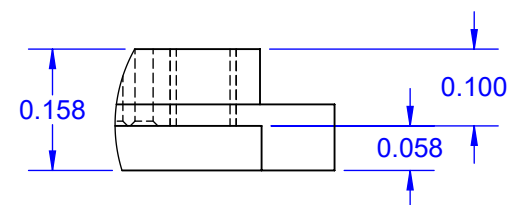
**TOP VIEW**

**TOP VIEW**



See  
DETAIL E

**DETAIL E**

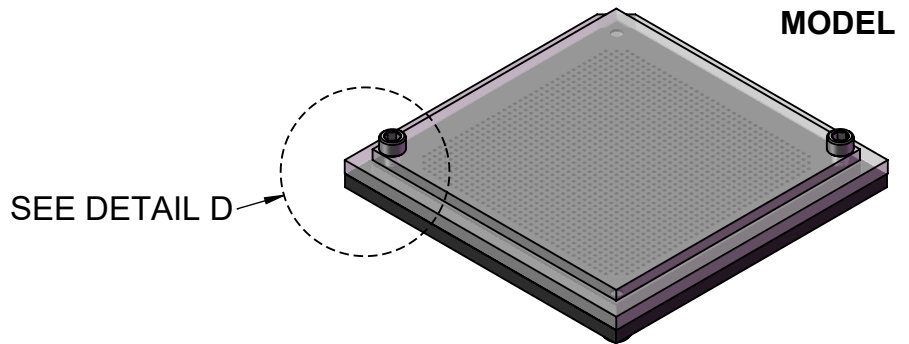
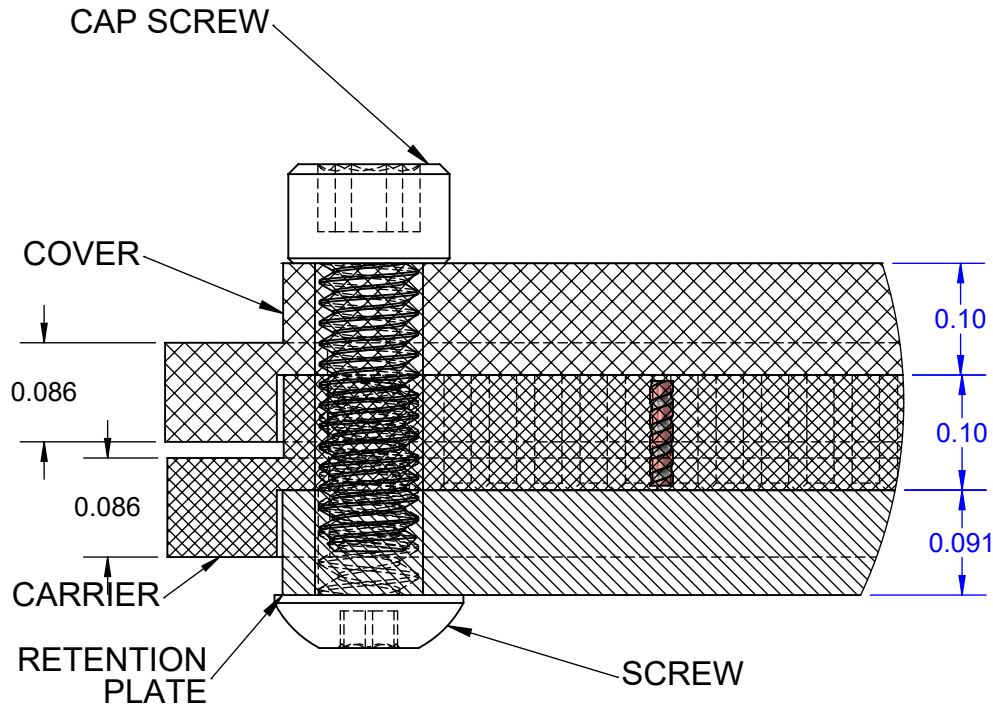


HOLE CHART			
SYMBOL	DIAMETER UNPLATED THRU	COUNTER SINK	QTY
○	$\phi 0.024$	-	1509
⊕	TAP 0.067	-	4
THREAD	2-56	-	4
◎	-	$\phi 0.036$	1509
TOTAL			3026

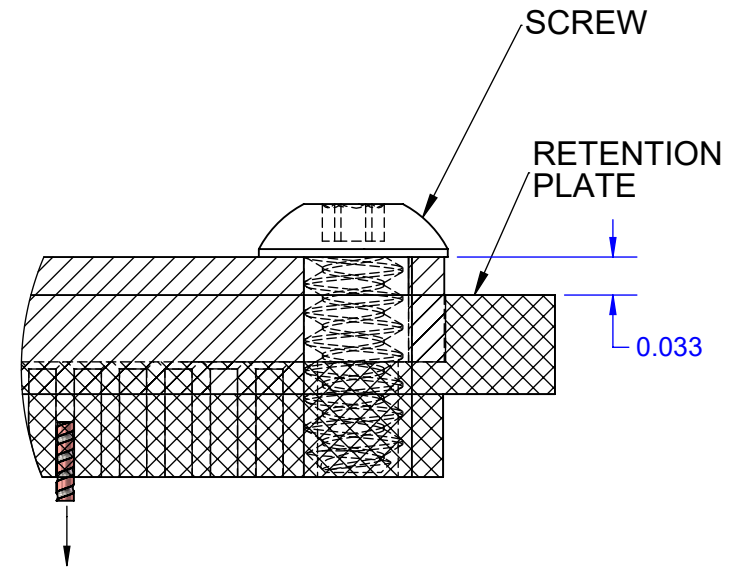
<b>TopLine®</b>			
TITLE FP1509 FLIP-PACK® CCGA COLUMN CARRIER			
SCALE 2:1	SIZE A	DRAWING NO. 001394	REV A
DO NOT SCALE DRAWING			SHEET 3 OF 11

Notes: (Unless Otherwise Specified).  
 1) MATERIAL: BLACK PLASTIC, CONDUCTIVE.  
 2) DIMENSIONS : INCHES [MM].

### DETAIL D WITH COVER PLATE

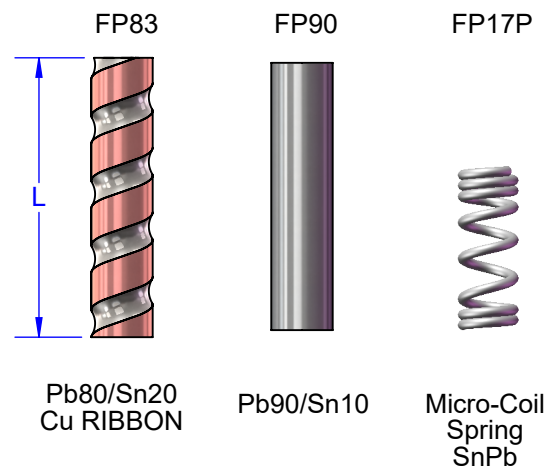


SEE DETAIL D



FALL INTO GRAPHITE

### EXAMPLE OF COLUMNS



<b>TopLine®</b>			
TITLE FP1509 FLIP-PACK® CCGA COLUMN CARRIER			
SCALE 7:1	SIZE A	DRAWING NO. 713980-7	REV A
DO NOT SCALE DRAWING			SHEET 4 OF 11

# FLIP PACK<sup>®</sup> MODEL

COVER 001046

PIN 1

CAP SCREW  
2-56 X 0.250" L  
2-POS

Ø0.094  
2 - POS

COVER

BOTTOM

RETENTION PLATE 001061  
COUNTER SINK SIDE

NON-COUNTER SINK

TOP

1.65"

CARRIER OF  
SOLDER COLUMNS

SCREW  
2-56 X 0.156" L  
2-POS

**TopLine<sup>®</sup>**

TITLE FP1509 FLIP-PACK<sup>®</sup>  
CCGA COLUMN CARRIER

SCALE	SIZE	DRAWING NO.	REV
2:1	A	713980-7	B

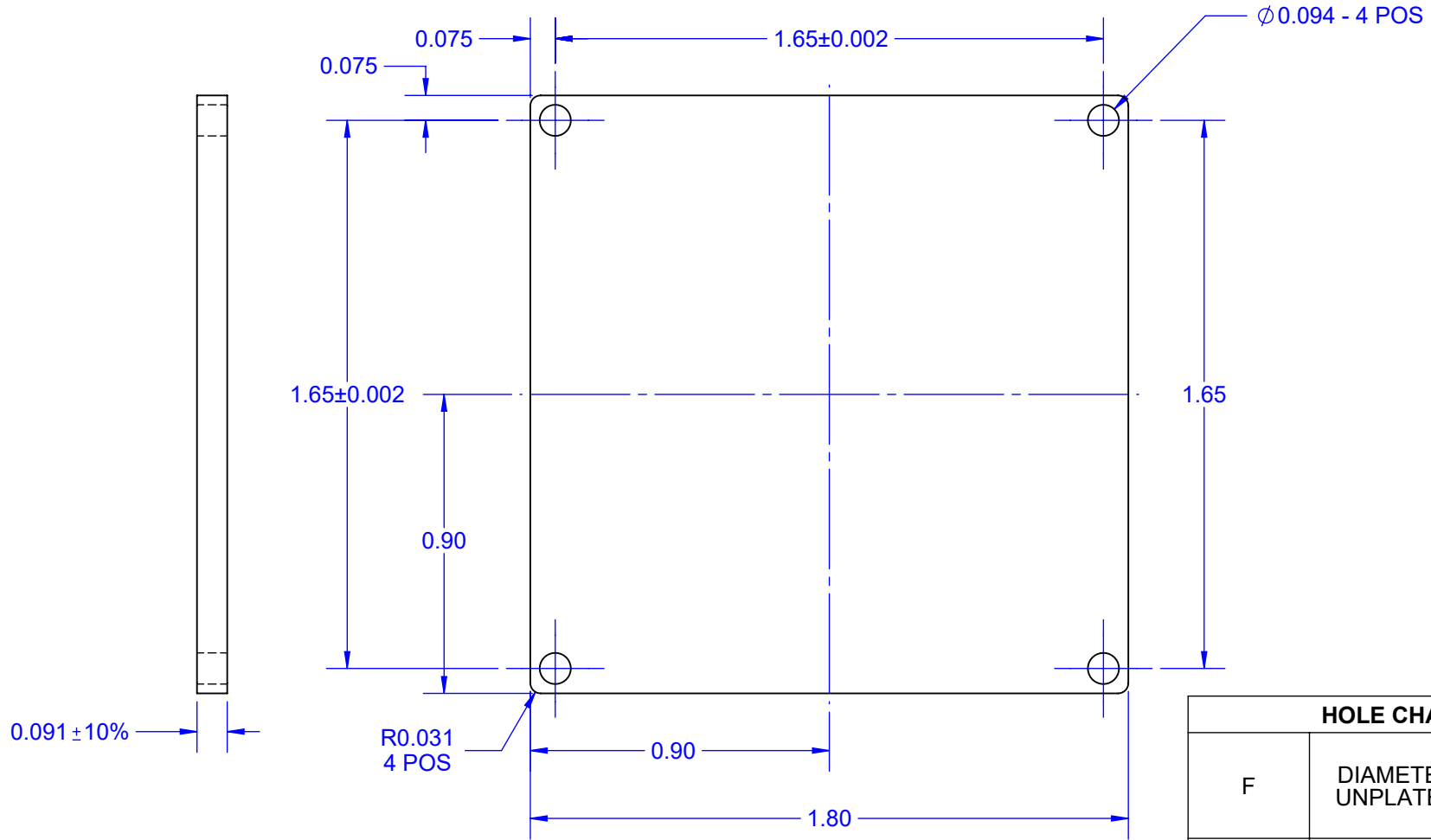
DO NOT SCALE DRAWING

SHEET 5 OF 11

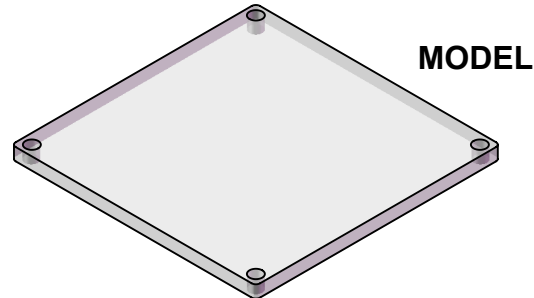
# BOTTOM RETENTION PLATE DWG 001061

**SIDE VIEW**

**TOP VIEW**



HOLE CHART		
F	DIAMETER UNPLATED	QTY HOLES
+	Ø0.094	4

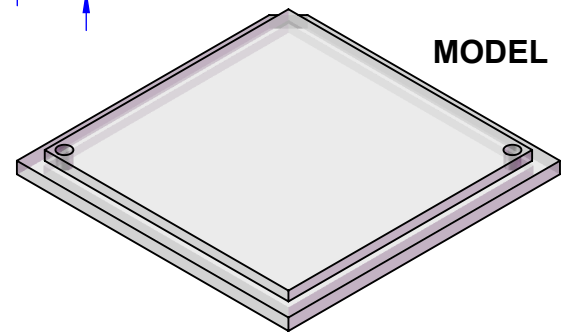
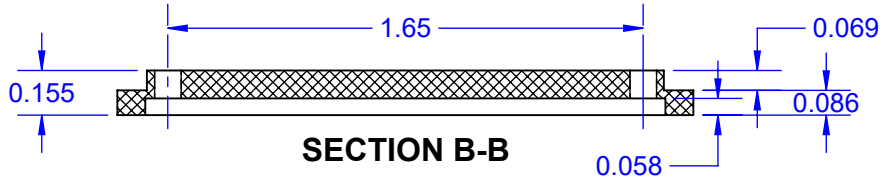
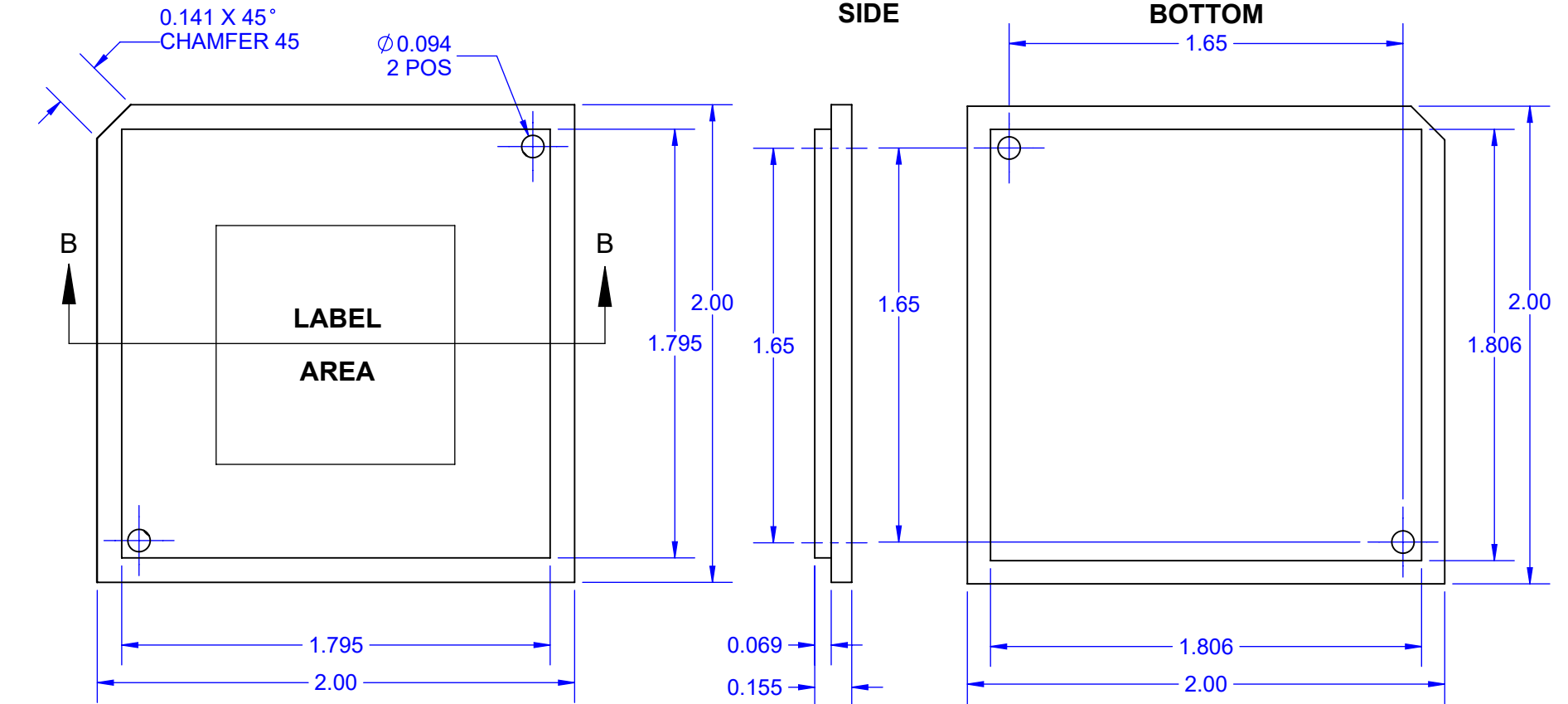


**MODEL**

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

<b>TopLine®</b>			
TITLE FP1.8-BOTTOM-1.65B BOTTOM RETENTION PLATE			
SCALE 2:1	SIZE A	DRAWING NO. 001394	REV A
DO NOT SCALE DRAWING			SHEET 6 OF 11

# COVER 001046

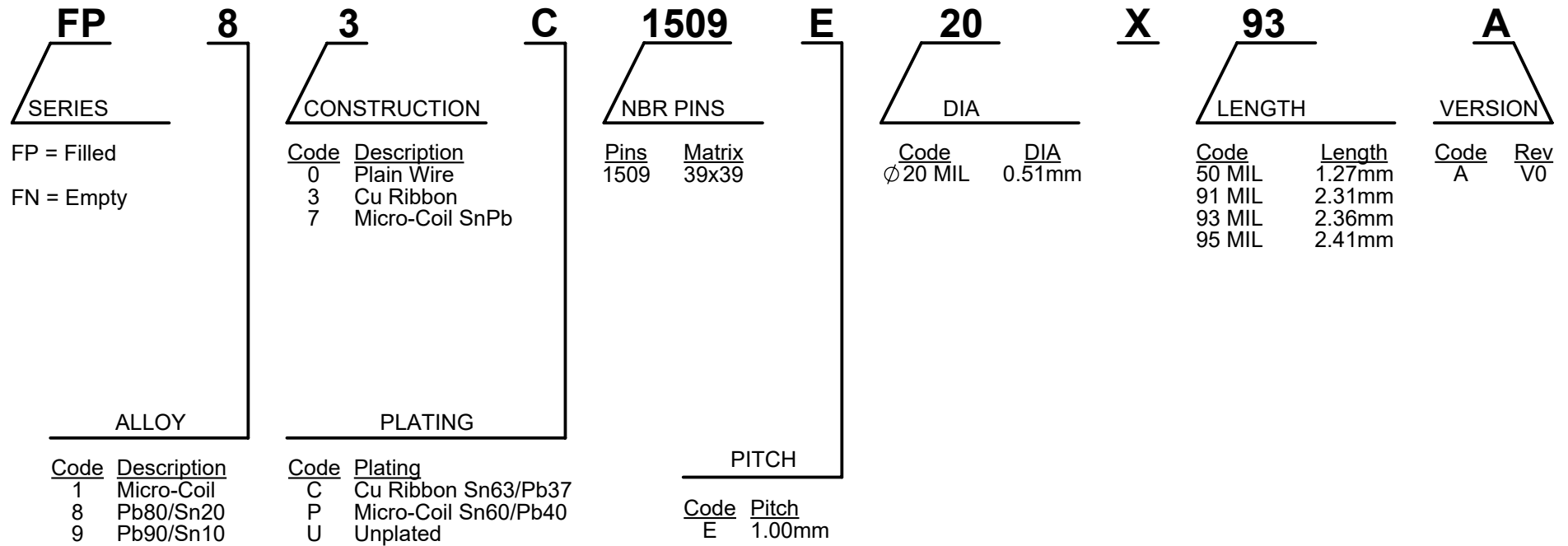


HOLE CHART		
SYMBOL	DIAMETER UNPLATED	QTY HOLES
+	Ø 0.094	2

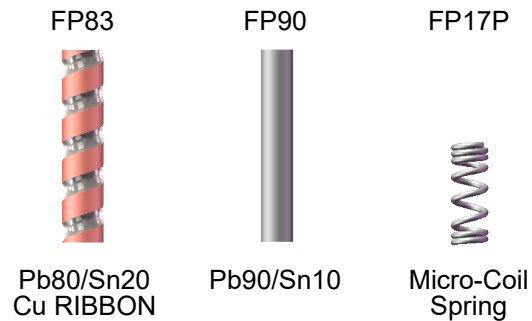
- Notes: (Unless Otherwise Specified).  
 1) DIMENSIONS: INCH.  
 2) MATERIAL: TRANSPARENT PMMA PLASTIC.  
 3) ANTISTATIC:  $10^{12} \Omega$  SURFACE RESISTANCE.

<b>TopLine®</b>			
TITLE FP1509 FLIP-PACK® CCGA COLUMN CARRIER			
SCALE 3:2	SIZE A	DRAWING NO. 001394	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 FP1509 FLIP-PACK®  
CCGA COLUMN CARRIER

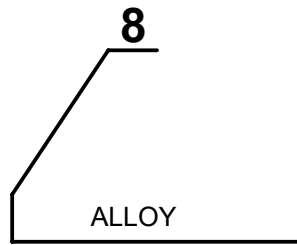
SCALE	SIZE	DRAWING NO.	REV
10:1	A	001394	B

DO NOT SCALE DRAWING

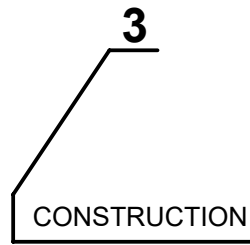
SHEET 8 OF 11



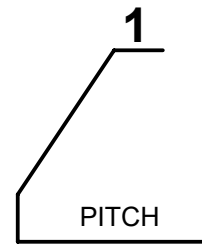
# FLIP-PACK® DRAWING NUMBERING SYSTEM



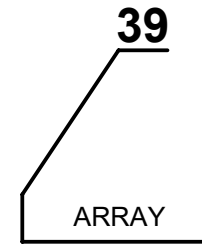
Code	Description
00	Empty
1	Micro-Coil
8	Pb80/Sn20
9	Pb90/Sn10



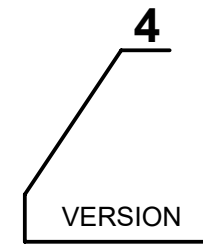
Code	Description
0	Plain Wire
3	Cu Ribbon
7	Micro-Coil SnPb



Code	Pitch
1	1.00mm



Code	Matrix
39	39x39



Code	Rev
4	1509 pins

## EXAMPLES OF COLUMNS

FP83



Pb80/Sn20  
Cu RIBBON

FP90



Pb90/Sn10

FP17P



Micro-Coil  
Spring

**TopLine®**

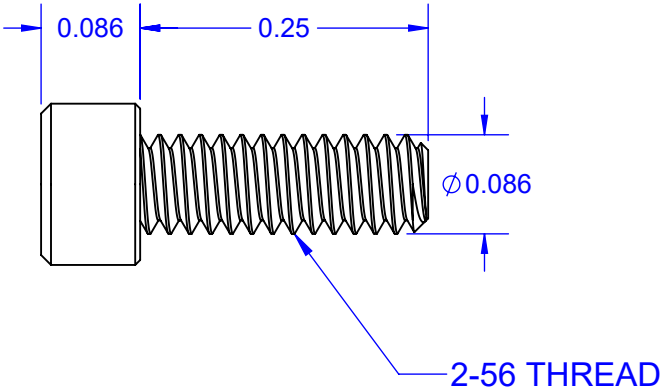
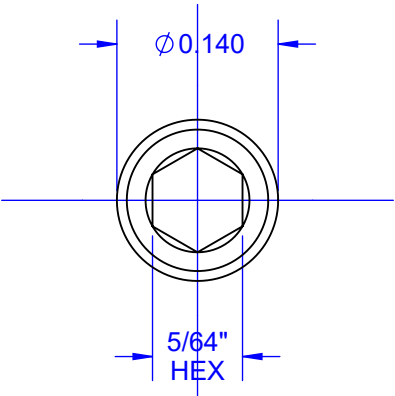
TITLE FP1509 FLIP-PACK®  
CCGA COLUMN CARRIER

SCALE 10:1	SIZE A	DRAWING NO. 001394	REV B
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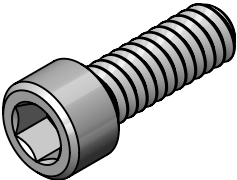
DO NOT SCALE DRAWING

SHEET 9 OF 11

# HARDWARE CAP SCREW



## MODELS

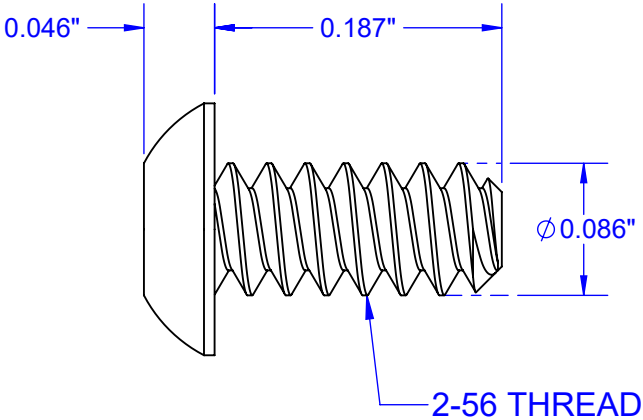
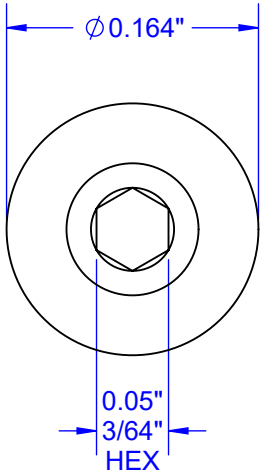


- NOTES:  
 1. DIMENSIONS INCHES (UNLESS OTHERWISE SPECIFIED).  
 2. SHAFT MATERIAL 18-8 STAINLESS STEEL.  
 3. HEAD: PLASTIC.  
 4. COLOR: BLACK.

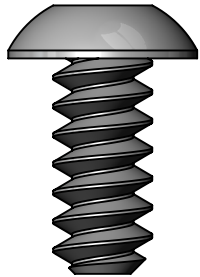
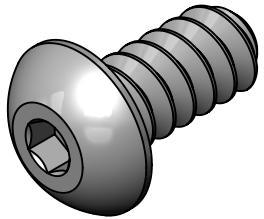
DRILL TABLE						
HEAD COLOR	THREAD	MAX OD	TAP DRILL Start Hole	CL HOLE Close Fit	L SHAFT	DWG
STAINLESS	2-56	0.086"	0.067"	0.094"	0.250"	705625

<b>TopLine®</b>			
TITLE		CAP SCREW 2-56 x 1/4"	
SCALE	SIZE	DRAWING NO.	REV
6:1	A	705625	A
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
STAINLESS	BLACK	2-56	0.086"	0.067"	0.187"	705618

<b>TopLine®</b>			
TITLE <b>BUTTON HEAD CAP SCREW</b> 2-56 x .187" (3/64-HEX)			
SCALE 8:1	SIZE A	DRAWING NO. 705618	REV A
DO NOT SCALE DRAWING			SHEET 11 OF 11