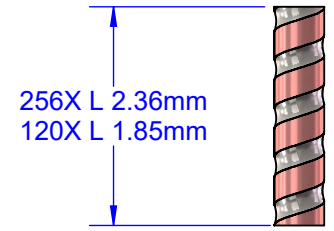
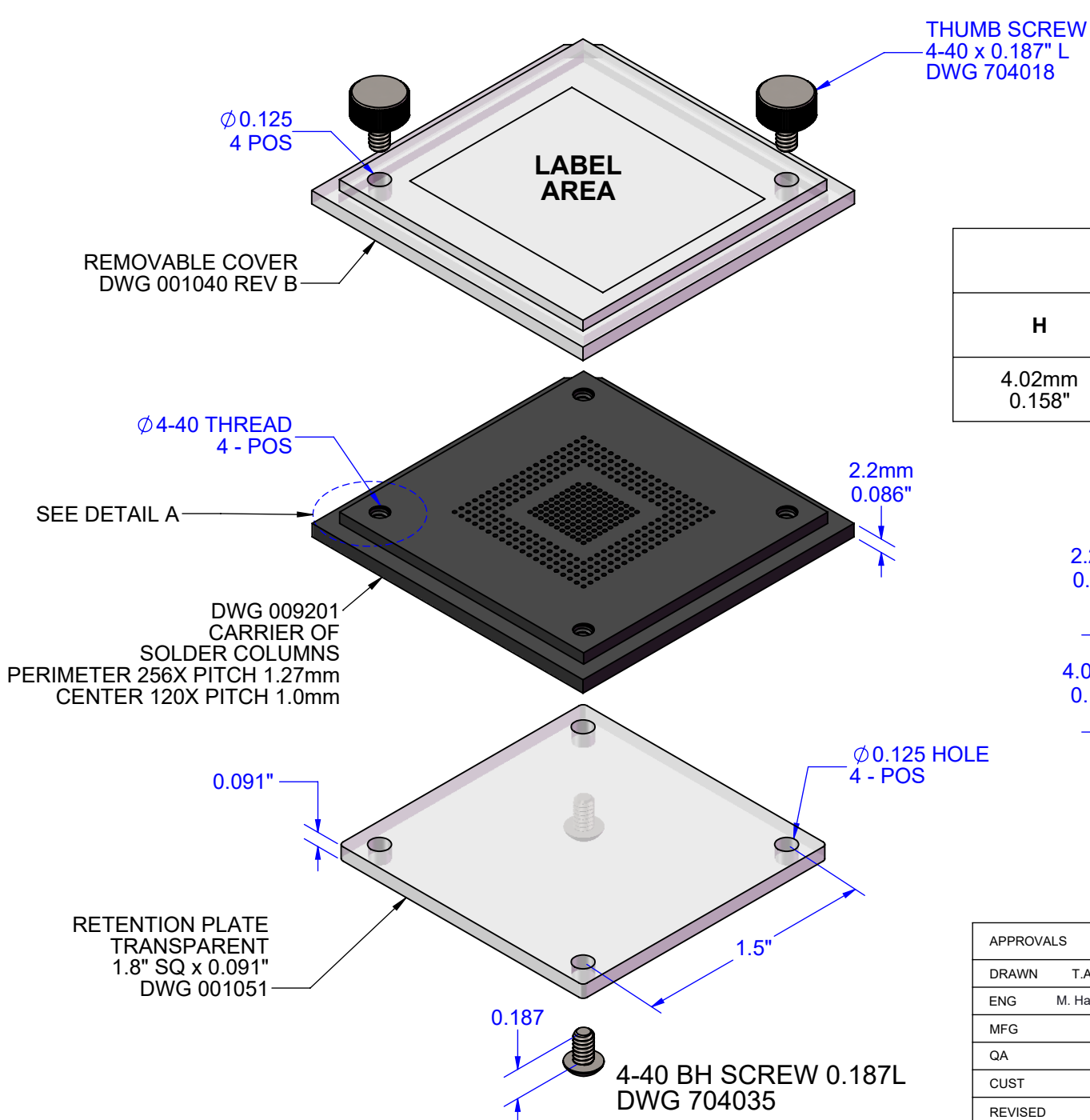
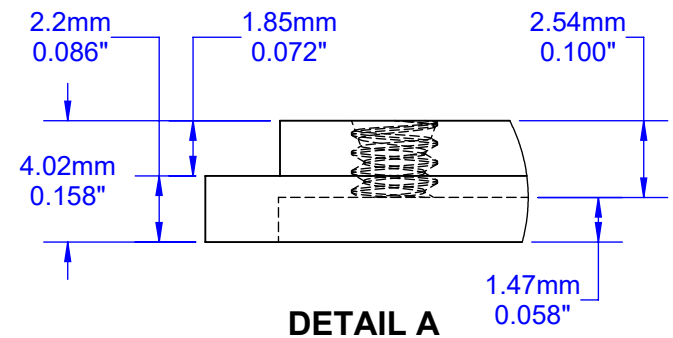


# ASSEMBLY EXPLODED VIEW FLIP-PACK® SYSTEM

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

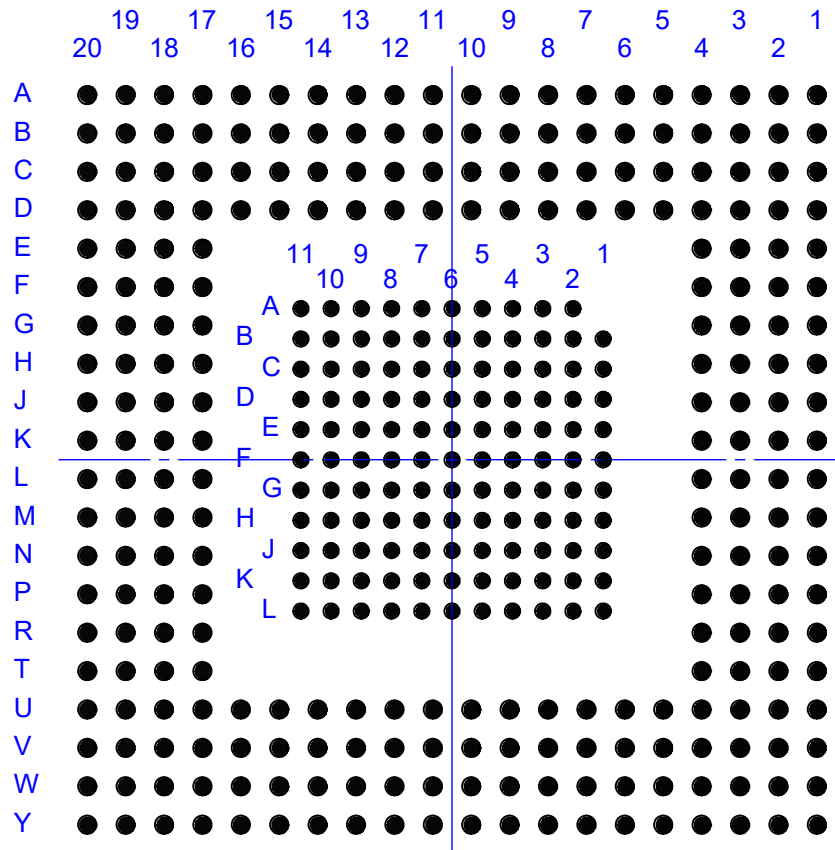


APPROVALS	DATE	<b>TopLine®</b>			
DRAWN T. Au	5/11/2022				
ENG M. Hart	5/11/2022	TITLE FP376A DUAL FLIP PACK COLUMNS			
MFG		SCALE 1.25:1	SIZE A	DRAWING NO. 009201	REV B
QA		DO NOT SCALE DRAWING			SHEET 1 OF 12
CUST					
REVISED					

### PART NUMBER TABLE

FLIP-PACK®	Pins	Pitch	Matrix	COLUMN					Empty DWG	Filled DWG
				Alloy	Construction	Plating	∅ Dia	Length		
FP83C376W20x93A	256	1.27mm	20x20	Pb80	Cu Ribbon	SnPb	0.51mm	2.36mm	009201	839201
	120	1.0mm	11x11	Pb80	Cu Ribbon	SnPb	0.51mm	1.85mm		
FP83C376W20x95A	256	1.27mm	20x20	Pb80	Cu Ribbon	SnPb	0.51mm	2.41mm	009201	839202
	120	1.0mm	11x11	Pb80	Cu Ribbon	SnPb	0.51mm	1.9mm		

### BOTTOM



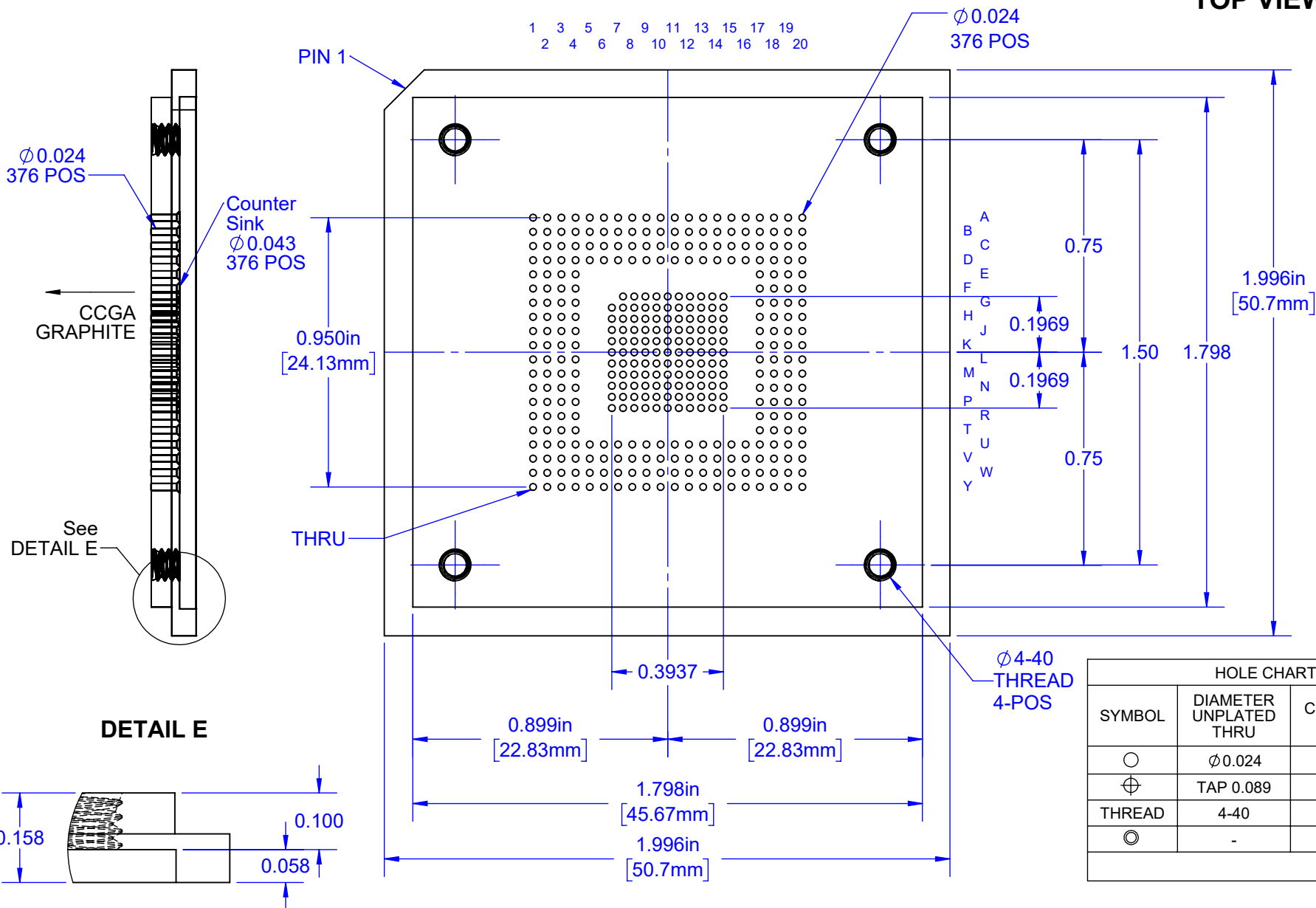
**DWG 009201 / 009202**  
**PERIMETER 256 COLUMNS - PITCH 1.27mm**  
**CENTER 120 COLUMNS - PITCH 1.0mm**

<b>TopLine®</b>			
TITLE      FP376A DUAL FLIP PACK COLUMNS			
SCALE NONE	SIZE A	DRAWING NO. 009201	REV B
DO NOT SCALE DRAWING			SHEET 2 OF 12

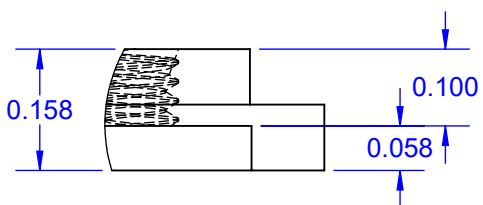
**SIDE**

**TOP VIEW**

**TOP VIEW**

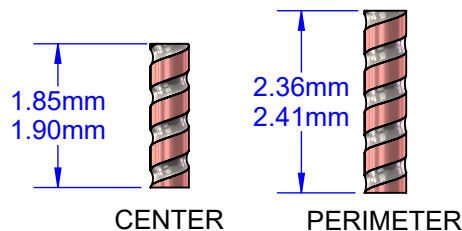


**DETAIL E**



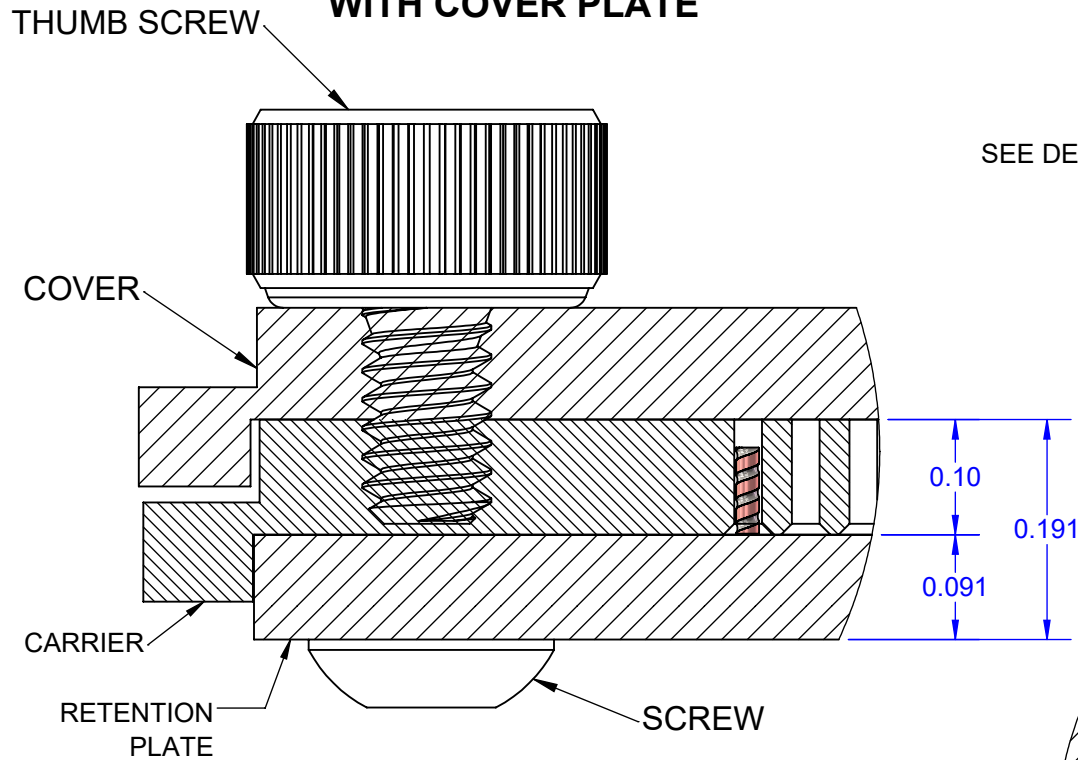
HOLE CHART			
SYMBOL	DIAMETER UNPLATED THRU	COUNTER SINK	QTY
○	Ø0.024	-	376
⊕	TAP 0.089	-	4
THREAD	4-40	-	4
◎	-	Ø0.043	376
			TOTAL 760

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

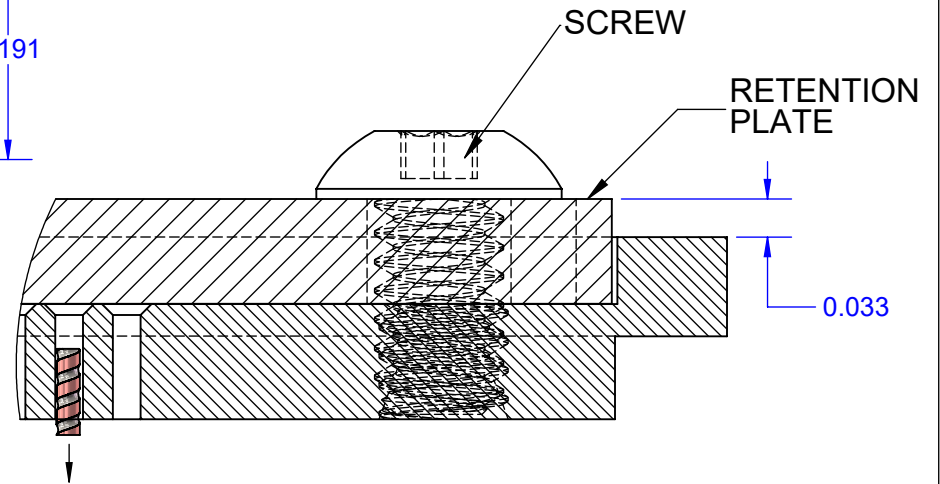
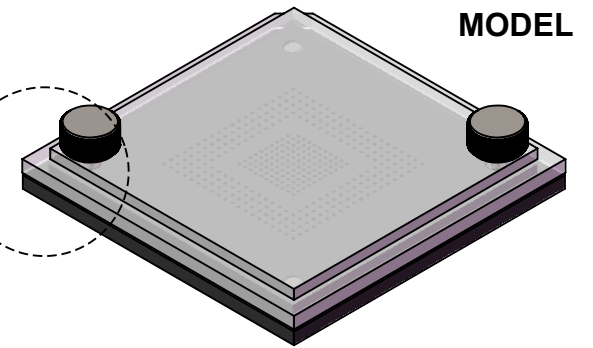


TopLine®			
TITLE			
FP376A DUAL FLIP PACK COLUMNS			
SCALE	SIZE	DRAWING NO.	REV
2:1	A	009201	B
DO NOT SCALE DRAWING			SHEET 3 OF 12

### DETAIL D WITH COVER PLATE



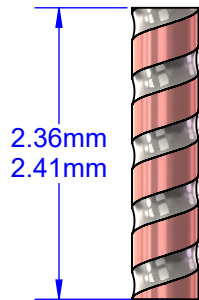
SEE DETAIL D



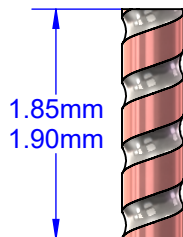
FALL INTO GRAPHITE

256X  
PERIMETER

120X  
CENTER



Pb80/Sn20  
Cu RIBBON



Pb80/Sn20  
Cu RIBBON

**TopLine**<sup>®</sup>

TITLE FP376A DUAL  
FLIP PACK COLUMNS

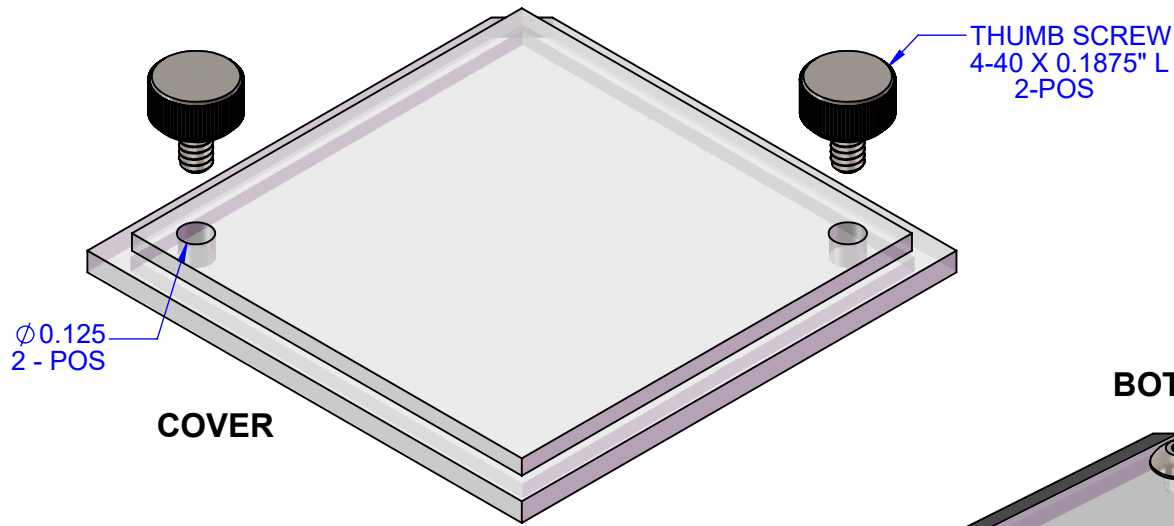
SCALE 7:1	SIZE A	DRAWING NO. 009201	REV B
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DO NOT SCALE DRAWING

SHEET 4 OF 12

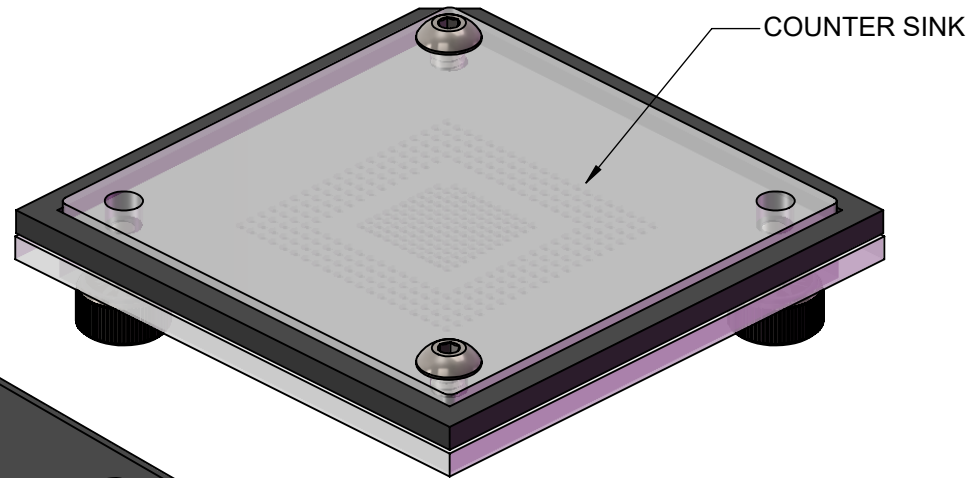
COVER 001040 REV B

FLIP PACK® MODEL



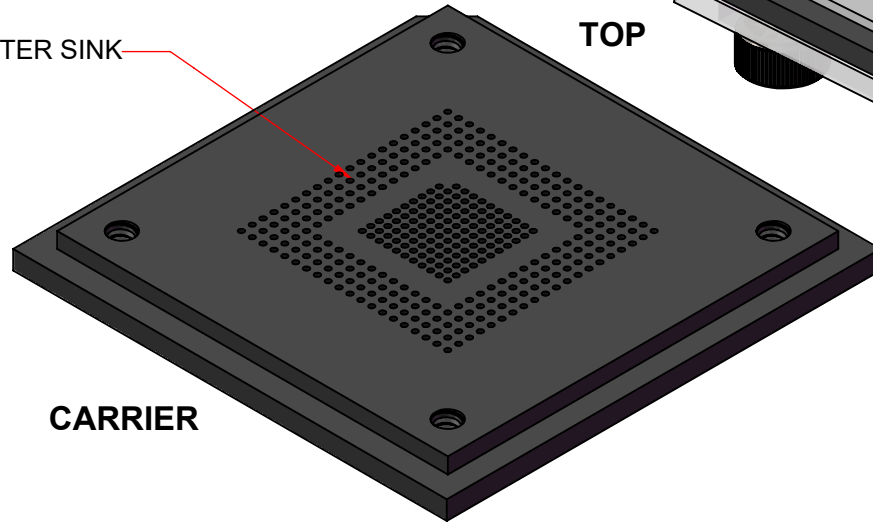
COVER

BOTTOM

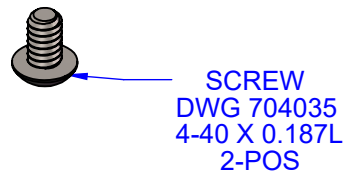


NON-COUNTER SINK

TOP



CARRIER



**TopLine®**

TITLE				FP376A DUAL FLIP PACK COLUMNS			
SCALE	SIZE	DRAWING NO.		REV			
2:1	A	009201		B			
DO NOT SCALE DRAWING			SHEET 5 OF 12				

# FLIP-PACK® PART NUMBERING SYSTEM

**FP**

SERIES

FP = FLIP-PACK®

**8**

ALLOY

Code	Description
8	Pb80/Sn20
9	Pb90/Sn10

**3**

CONSTRUCTION

Code	Description
0	Plain Wire
3	Cu Ribbon

PLATING

Code	Plating
C	Cu Ribbon Sn63/Pb37
U	Unplated

**C**

**376**

NBR PINS

Pins	Matrix
256	20x20
120	11x11

PITCH

Code	Pitch
W	1.27mm / 1.0mm DUAL PITCH

**W**

**20**

DIA

Code	DIA
Ø20 MIL	0.51mm

**X**

**93**

LENGTH

Code	Length
93 MIL	2.36mm
73 MIL	1.85mm

ALTERNATIVE

Code	Length
95 MIL	2.42mm
75 MIL	1.90mm

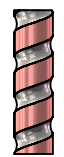
**A**

VERSION

Code	Rev
A	V0

## EXAMPLES OF COLUMNS

FP83C



Pb80/Sn20  
Cu RIBBON

FP90U

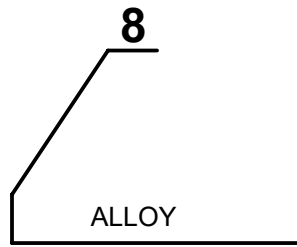


Pb90/Sn10  
PLAIN

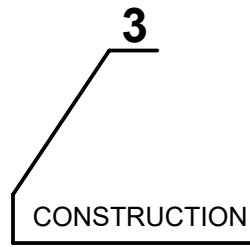
NOTE 1: SOLDER COLUMNS REQUIRE PLANARIZING TO FINISHED LENGTH.

TopLine®			
TITLE			
FP376A DUAL FLIP PACK COLUMNS			
SCALE	SIZE	DRAWING NO.	REV
10:1	A	009201	B
DO NOT SCALE DRAWING			SHEET 6 OF 12

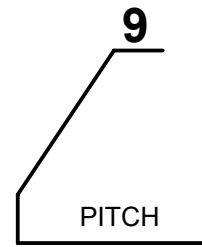
# FLIP-PACK<sup>®</sup> DRAWING NUMBERING SYSTEM



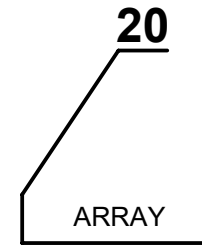
Code	Description
00	Empty
8	Pb80/Sn20
9	Pb90/Sn10



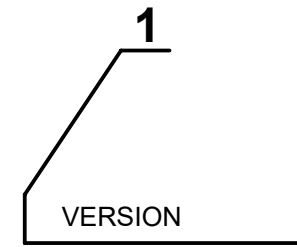
Code	Description
0	Plain Wire
3	Cu Ribbon



1.0mm / 1.27mm  
DUAL PITCH



Code	Matrix
20	20x20
11	11x11



Code	Column Length
1 =	2.36mm 1.85mm
2 =	2.41mm 1.90mm

## EXAMPLES OF COLUMNS

FP83C



Pb80/Sn20  
Cu RIBBON

FP90U



Pb90/Sn10  
PLAIN

**TopLine<sup>®</sup>**

TITLE FP376A DUAL  
FLIP PACK COLUMNS

SCALE	SIZE	DRAWING NO.	REV
10:1	A	009201	B

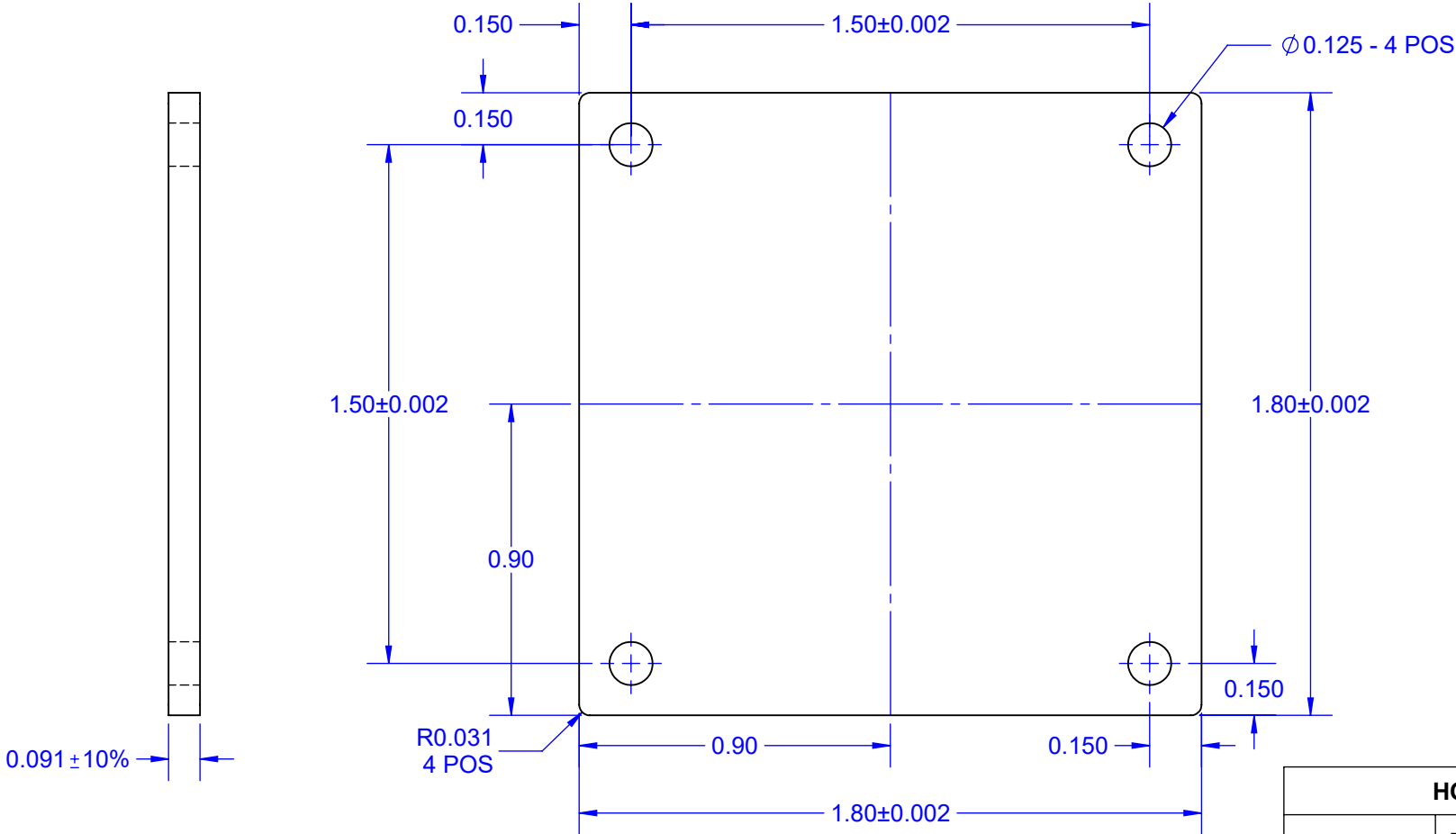
DO NOT SCALE DRAWING

SHEET 7 OF 12

# BOTTOM RETENTION PLATE

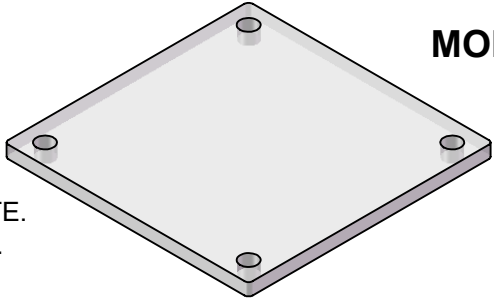
## SIDE VIEW

## TOP VIEW



HOLE CHART		
F	DIAMETER UNPLATED	QTY HOLES
+	Ø0.125	4

## MODEL

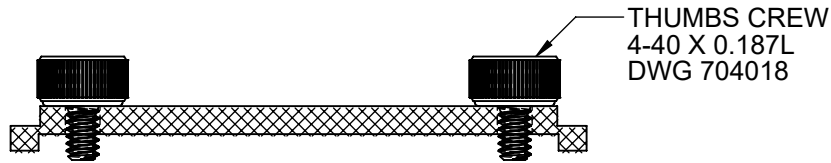
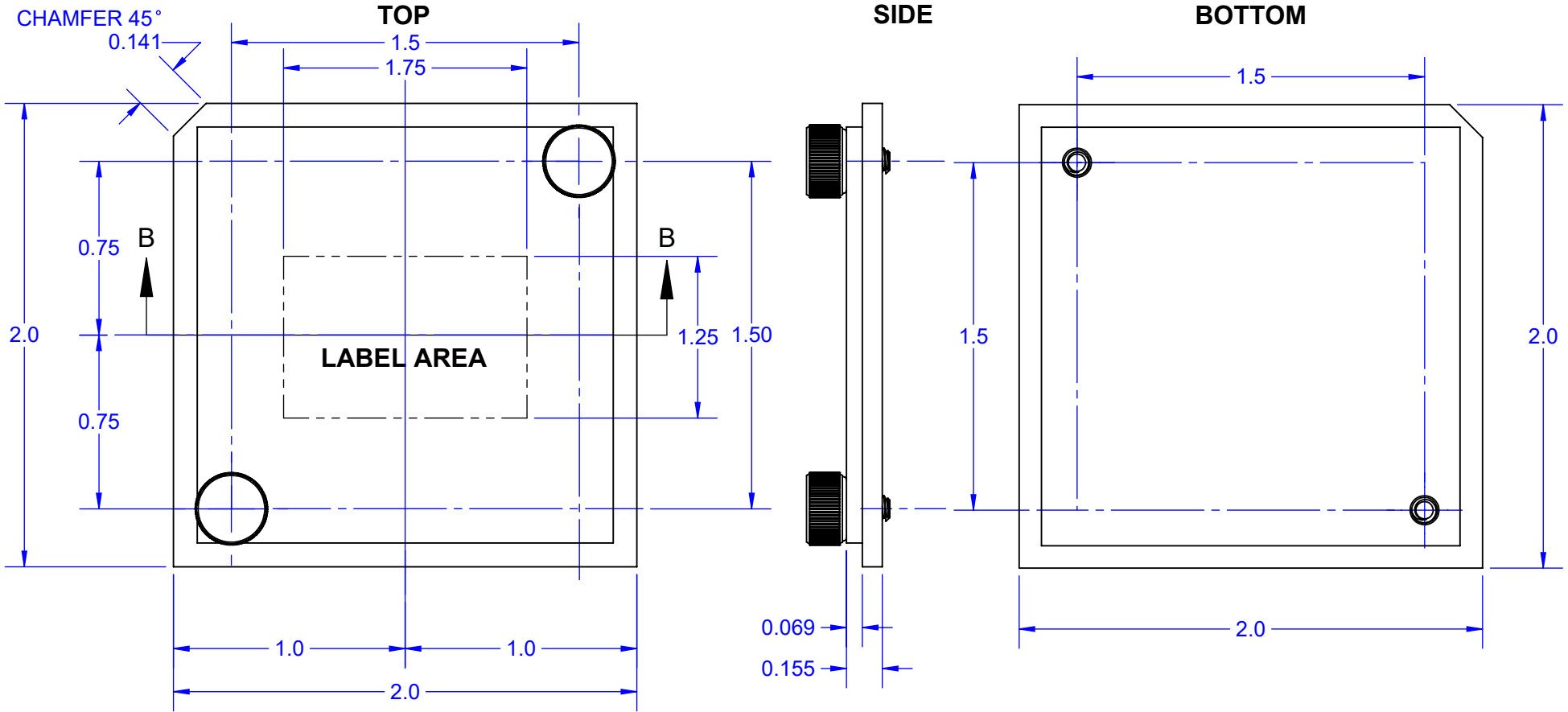


- NOTES: (Unless Otherwise Specified).
- 1) DIMENSIONS: INCH.
  - 2) MATERIAL: CLEAR PC-300 POLYCARBONATE.
  - 3) STATIC DISSIPATIVE  $10^6 \sim 10^8 \Omega$  (ESD SAFE).
  - 4) HOLE BREAK OUT ALLOWED.

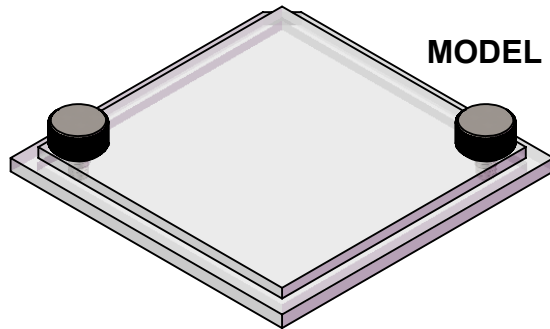
APPROVALS	DATE	<b>TopLine®</b>		
DRAWN T. Au	6/1/2018	TITLE FP1.8-BOTTOM-1.5B FLIP PACK COLUMNS		
ENG M. Hart	6/1/2018			
MFG		SCALE	SIZE	DRAWING NO.
QA		2:1	A	001051
CUST				REV A
REVISED		DO NOT SCALE DRAWING		SHEET 8 OF 12



# COVER 001040 REV B



**SECTION B-B**

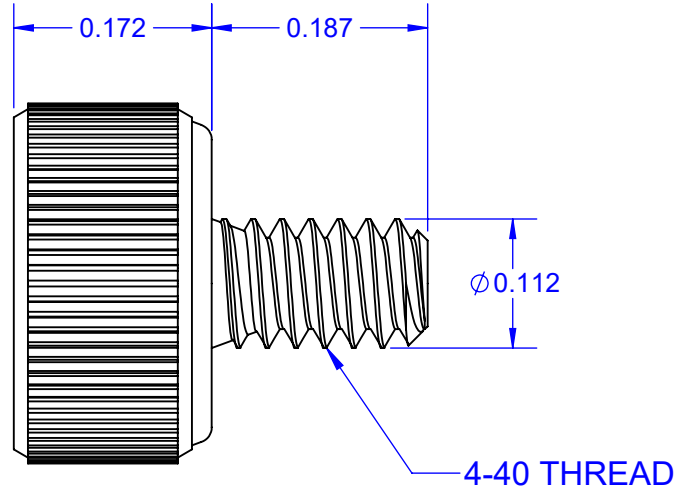
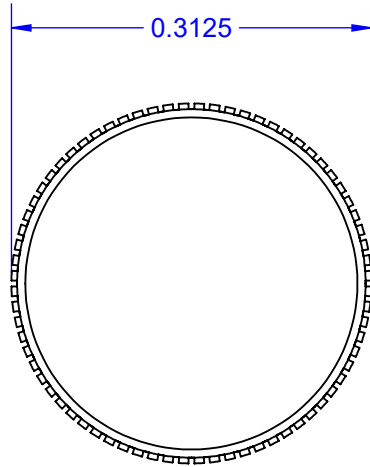


Notes: (Unless Otherwise Specified).

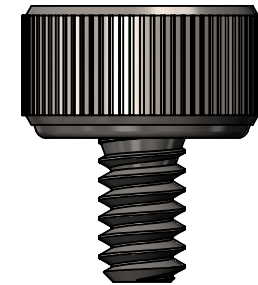
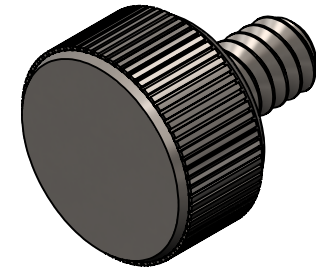
- 1) DIMENSIONS: INCH.
- 2) MATERIAL: TRANSPARENT PMMA PLASTIC.
- 3) ANTISTATIC:  $10^{12} \Omega$  SURFACE RESISTANCE.

<b>TopLine®</b>			
TITLE		FP376A DUAL FLIP PACK COLUMNS	
SCALE	SIZE	DRAWING NO.	REV
3:2	A	009201	B
DO NOT SCALE DRAWING			SHEET 9 OF 12

# 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.

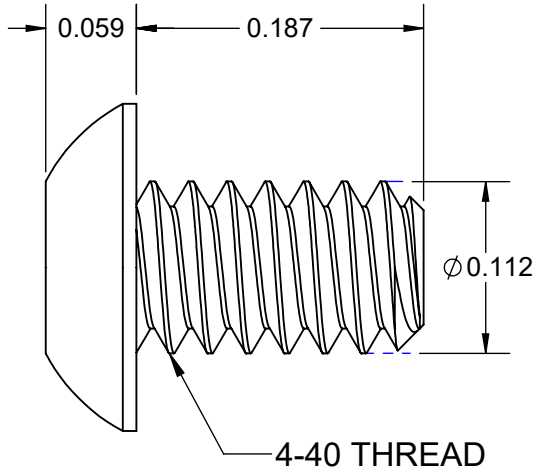
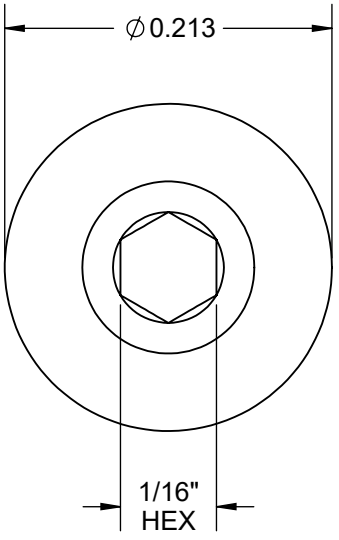
### DRILL TABLE

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

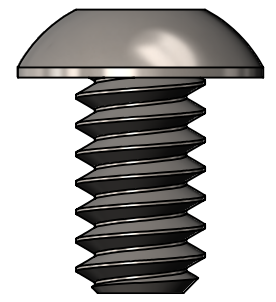
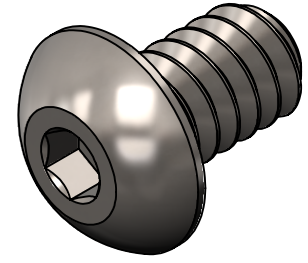
**TopLine®**

TITLE <b>KNURL THUMB SCREW 4-40 PLASTIC HEAD</b>			
SCALE 6:1	SIZE A	DRAWING NO. 704018	REV A

# HARDWARE CAP SCREW



## MODELS

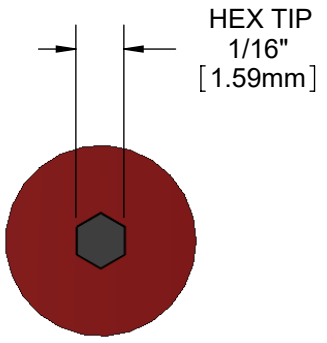
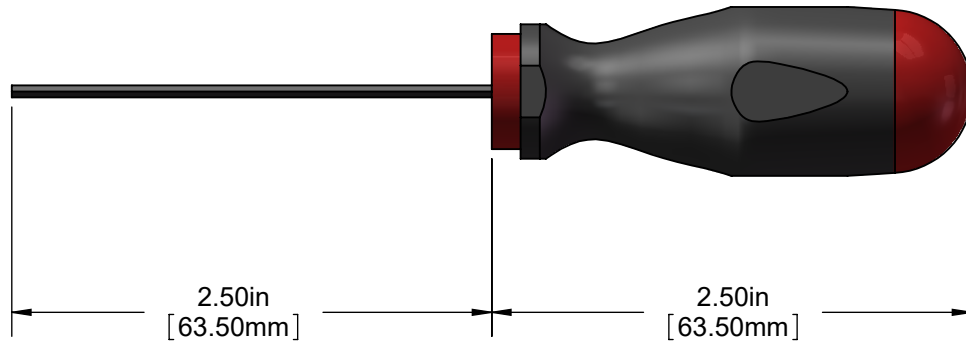
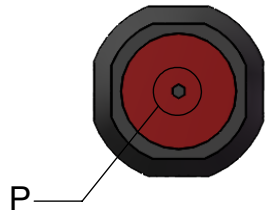


NOTES: (UNLESS OTHERWISE SPECIFIED)  
 1. DIMENSIONS INCHES.  
 2. MATERIAL: SEE TABLE.  
 3. COLOR: SEE TABLE.

DRILL TABLE						
MATERIAL	COLOR	THREAD	CL HOLE DIA	TAP HOLE DIA	L	DWG
STAINLESS	STAINLESS	4-40	0.125	0.089	0.156	704035

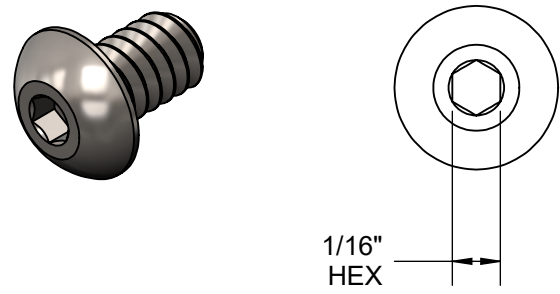
<b>TopLine®</b>			
TITLE <b>BUTTON HEAD SCREW</b> 4-40 THREAD			
SCALE 8:1	SIZE A	DRAWING NO. 704035	REV A
DO NOT SCALE DRAWING			SHEET 11 OF 12

# SCREW DRIVER HEX 1-16



DETAIL P  
SCALE 4 : 1

## EXAMPLE SCREW HEX 1/16" SCALE = 4:1



NOTES: (UNLESS OTHERWISE SPECIFIED).  
1) DIMENSIONS: INCH [MM].

<b>TopLine®</b>			
TITLE		SCREW DRIVER 1/16" HEX	
SCALE	SIZE	DRAWING NO.	REV
1:1	A	704000	A
DO NOT SCALE DRAWING			SHEET 12 OF 12