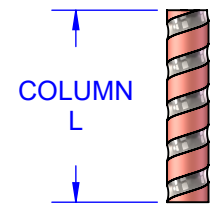
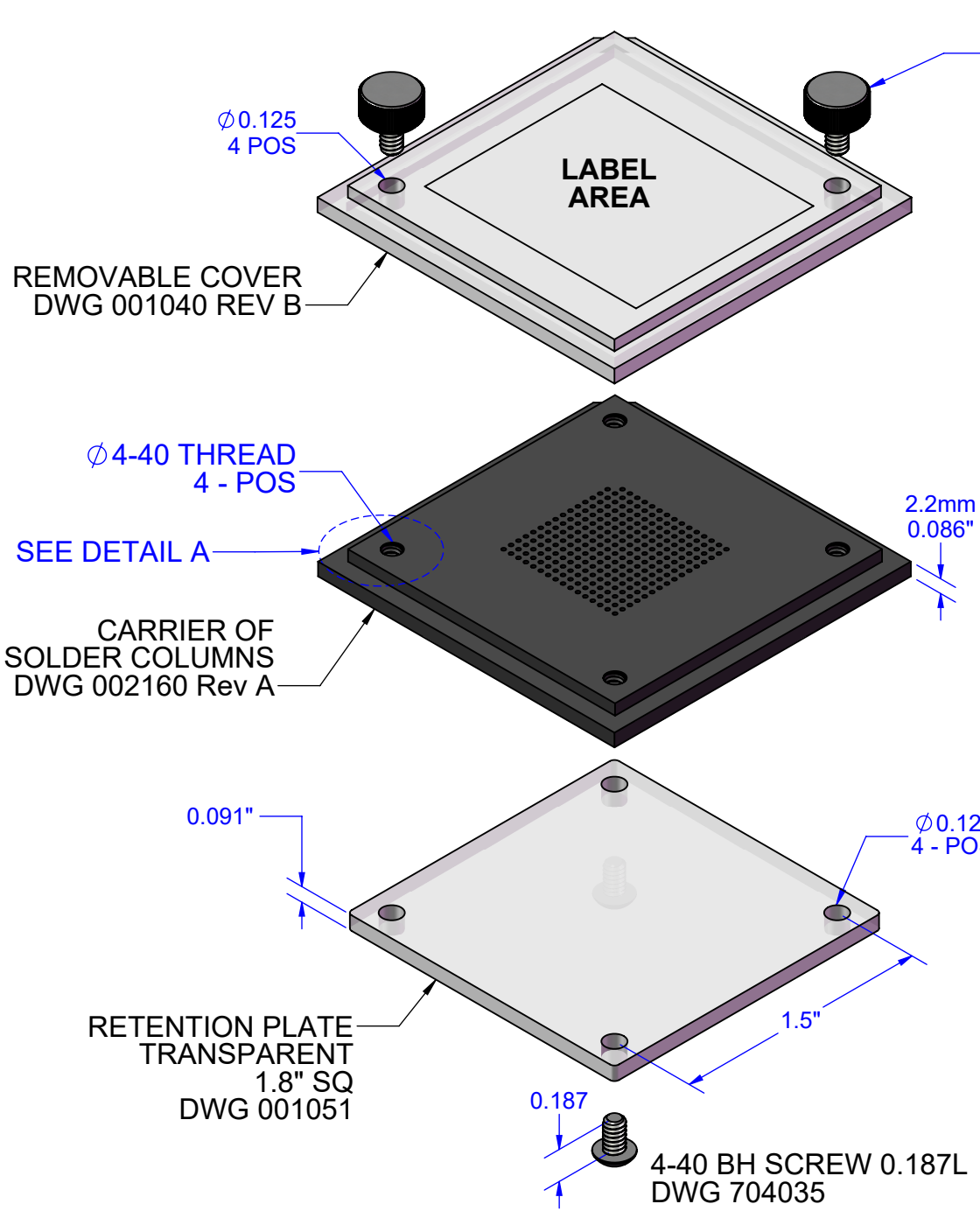
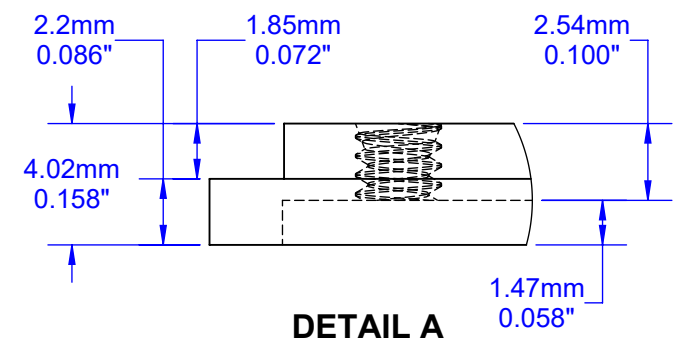


ASSEMBLY EXPLODED VIEW FLIP-PACK[®] SYSTEM

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



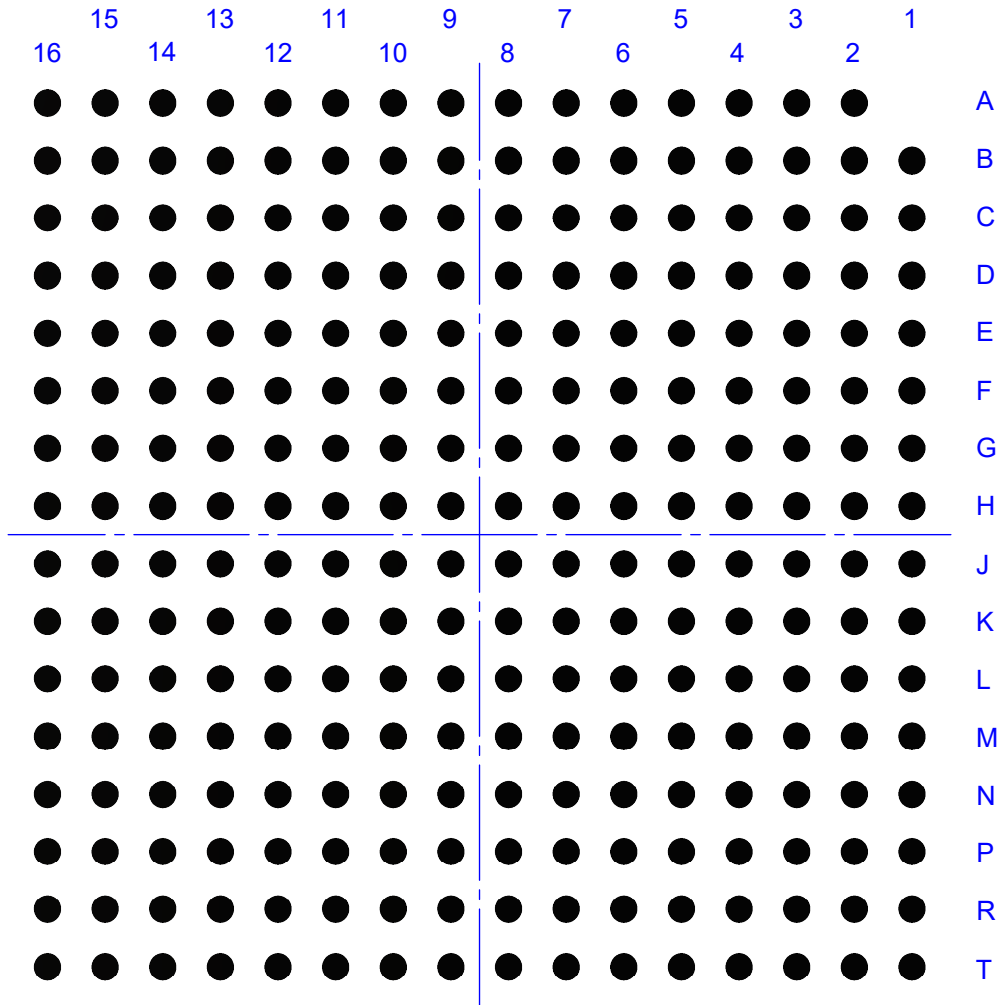
| DIMENSION TABLE | | | |
|------------------|------------------|------------------|--------|
| H | L MAX | W | DWG |
| 4.02mm 0.158" | 2.54mm 0.100" | 1.82mm 0.072" | 120254 |



| | | | | | |
|-------------|-----------|--|--------|--------------------|---------------|
| APPROVALS | DATE | TopLine[®] | | | |
| DRAWN T. Au | 2/14/2022 | | | | |
| ENG M. Hart | 2/14/2022 | TITLE FP255A FLIP-PACK [®] CCGA COLUMN CARRIER | | | |
| MFG | | SCALE 1.25:1 | SIZE A | DRAWING NO. 002160 | 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 | | |
| FP83C255F20x91A | 255 | 1.27mm | 16x16 | Pb80 | Cu Ribbon | SnPb | 0.51mm | 2.31mm | 002160 | 832160 |
| FP90U255F20x91A | | | | Pb90 | Plain | | | 2.31mm | | 902160 |
| FP17P255F20x50A | | | | MCS | Micro Coil | | | 1.27mm | | 172160 |



**BOTTOM
COUNTERSINK SIDE**

EXAMPLES OF COLUMNS

FP83



Pb80/Sn20
Cu RIBBON

FP90



Pb90/Sn10

FP17P



Micro-Coil
Spring



TITLE FP255A FLIP-PACK®
CCGA COLUMN CARRIER

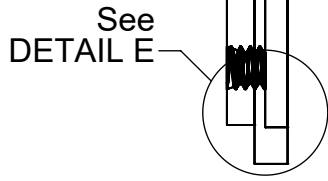
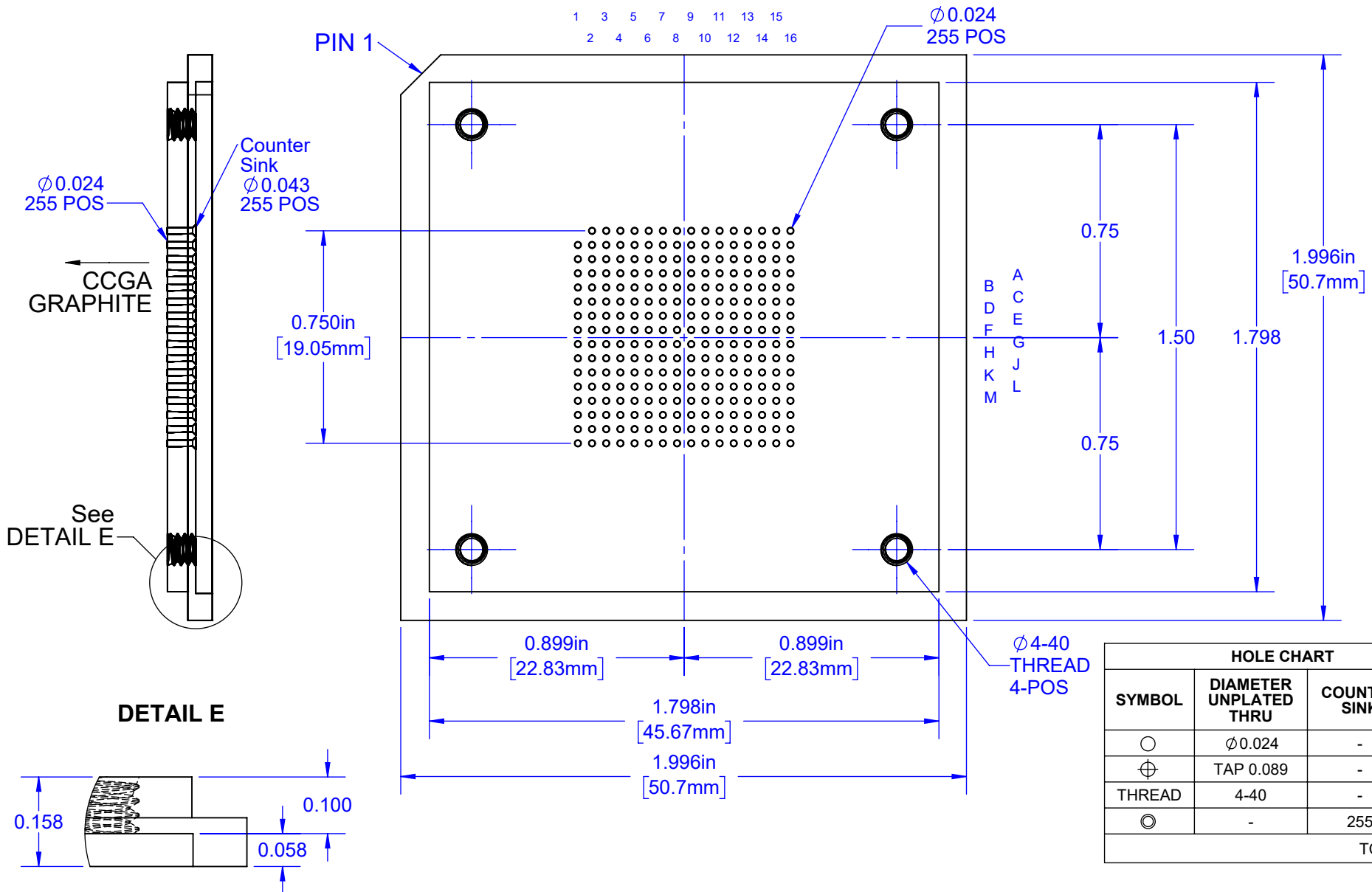
| | | | |
|---------------|-----------|-----------------------|----------|
| SCALE NONE | SIZE A | DRAWING NO. 002160 | REV A |
|---------------|-----------|-----------------------|----------|

SIDE

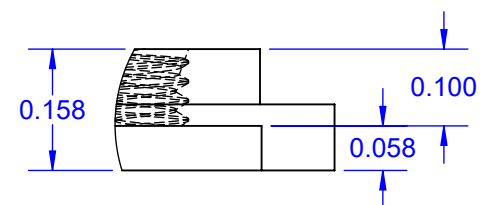
TOP VIEW

TOP VIEW

1 3 5 7 9 11 13 15
2 4 6 8 10 12 14 16



DETAIL E



| HOLE CHART | | | |
|------------|------------------------|--------------|-----|
| SYMBOL | DIAMETER UNPLATED THRU | COUNTER SINK | QTY |
| ○ | $\phi 0.024$ | - | 255 |
| ⊕ | TAP 0.089 | - | 4 |
| THREAD | 4-40 | - | 4 |
| ◎ | - | 255 | 0 |
| TOTAL | | | 514 |

TopLine®

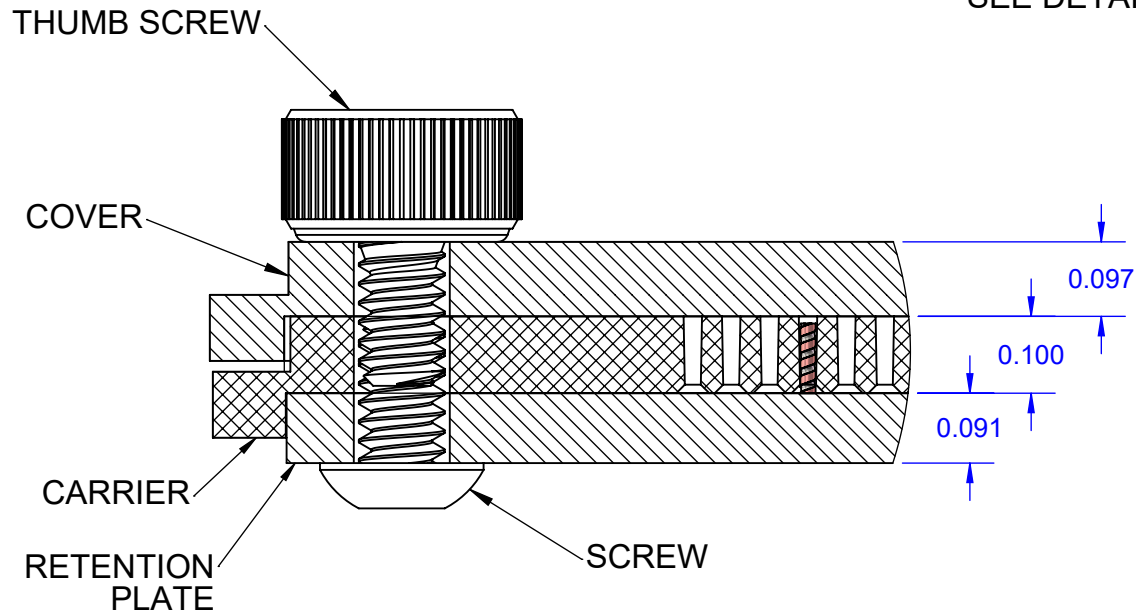
TITLE FP255A FLIP-PACK®
CCGA COLUMN CARRIER

| | | | |
|--------------|-----------|-----------------------|----------|
| SCALE 2:1 | SIZE A | DRAWING NO. 002160 | REV A |
|--------------|-----------|-----------------------|----------|

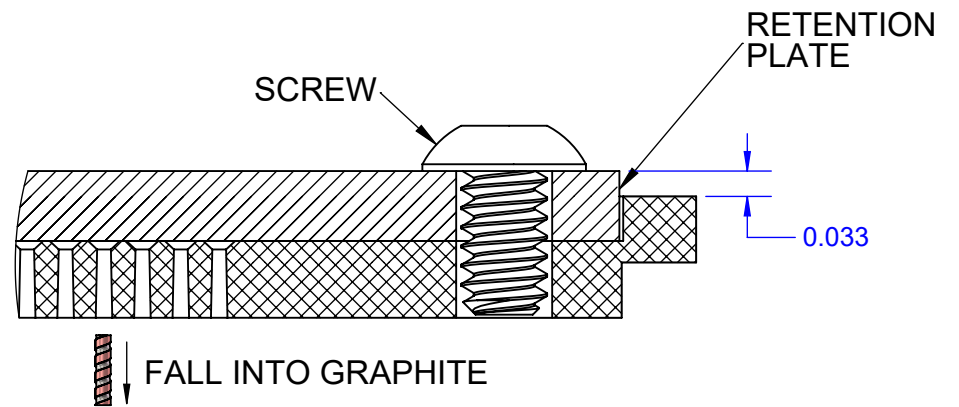
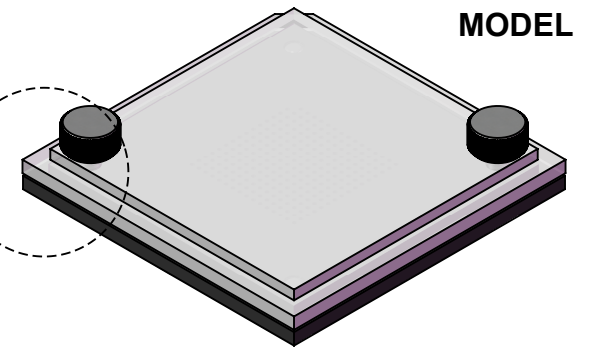
DO NOT SCALE DRAWING SHEET 3 OF 11

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

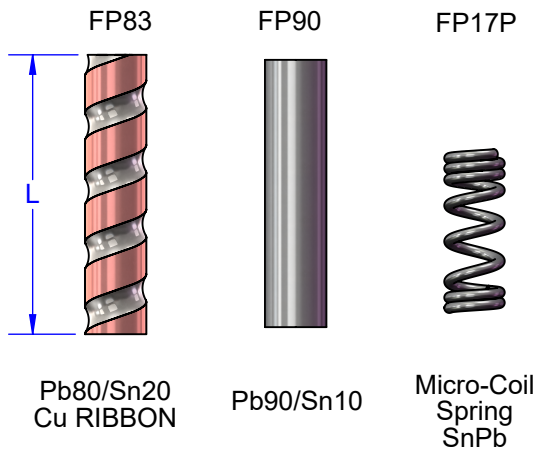
DETAIL D WITH COVER PLATE



SEE DETAIL D



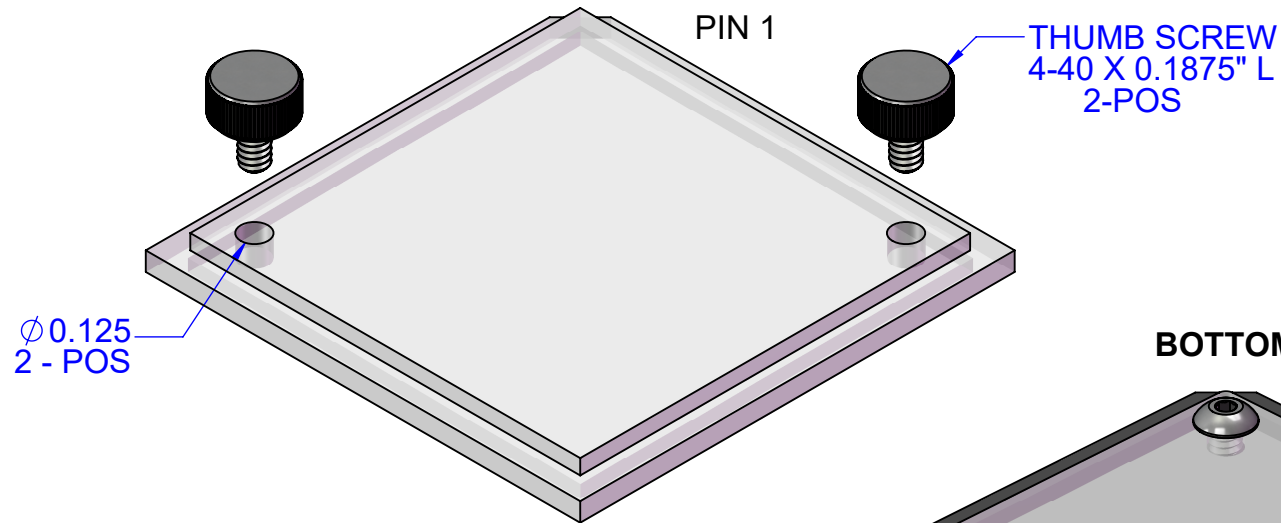
EXAMPLE OF COLUMNS



| | | | |
|---|-----------|-----------------------|---------------|
| TopLine® | | | |
| TITLE FP255A FLIP-PACK® CCGA COLUMN CARRIER | | | |
| SCALE 4:1 | SIZE A | DRAWING NO. 002160 | REV A |
| DO NOT SCALE DRAWING | | | SHEET 4 OF 11 |

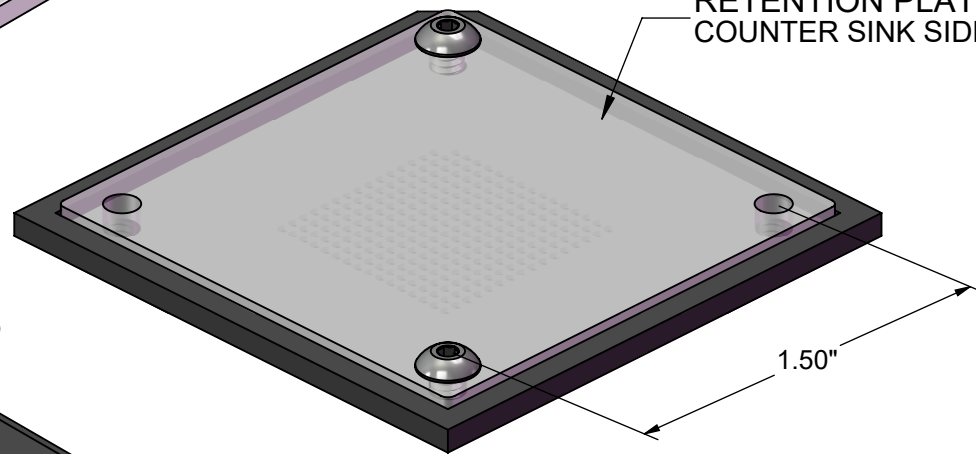
FLIP PACK® MODEL

COVER 001040 REV B



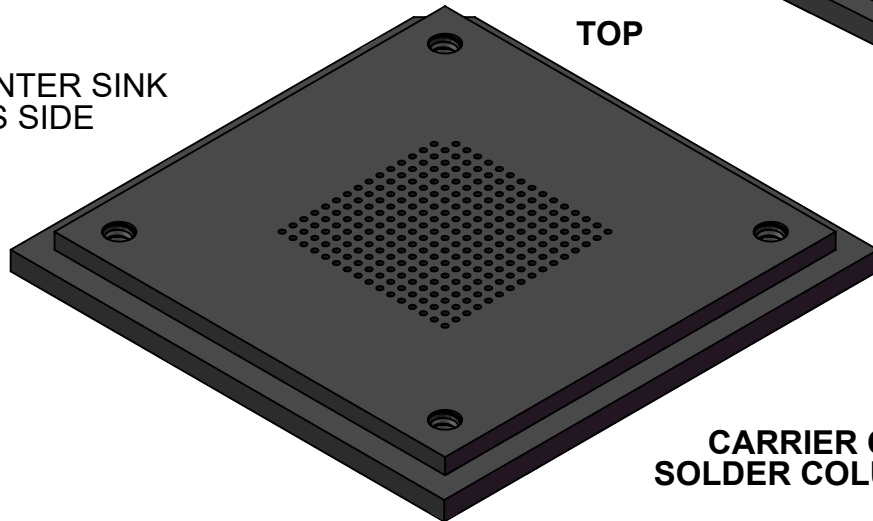
BOTTOM

RETENTION PLATE 001051
COUNTER SINK SIDE

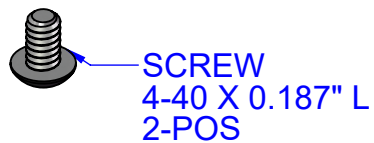


NO COUNTER SINK
THIS SIDE

TOP



CARRIER OF
SOLDER COLUMNS



TopLine®

TITLE FP255A FLIP-PACK®
CCGA COLUMN CARRIER

| | | | |
|-------|------|-------------|-----|
| SCALE | SIZE | DRAWING NO. | REV |
| 2:1 | A | 002160 | A |

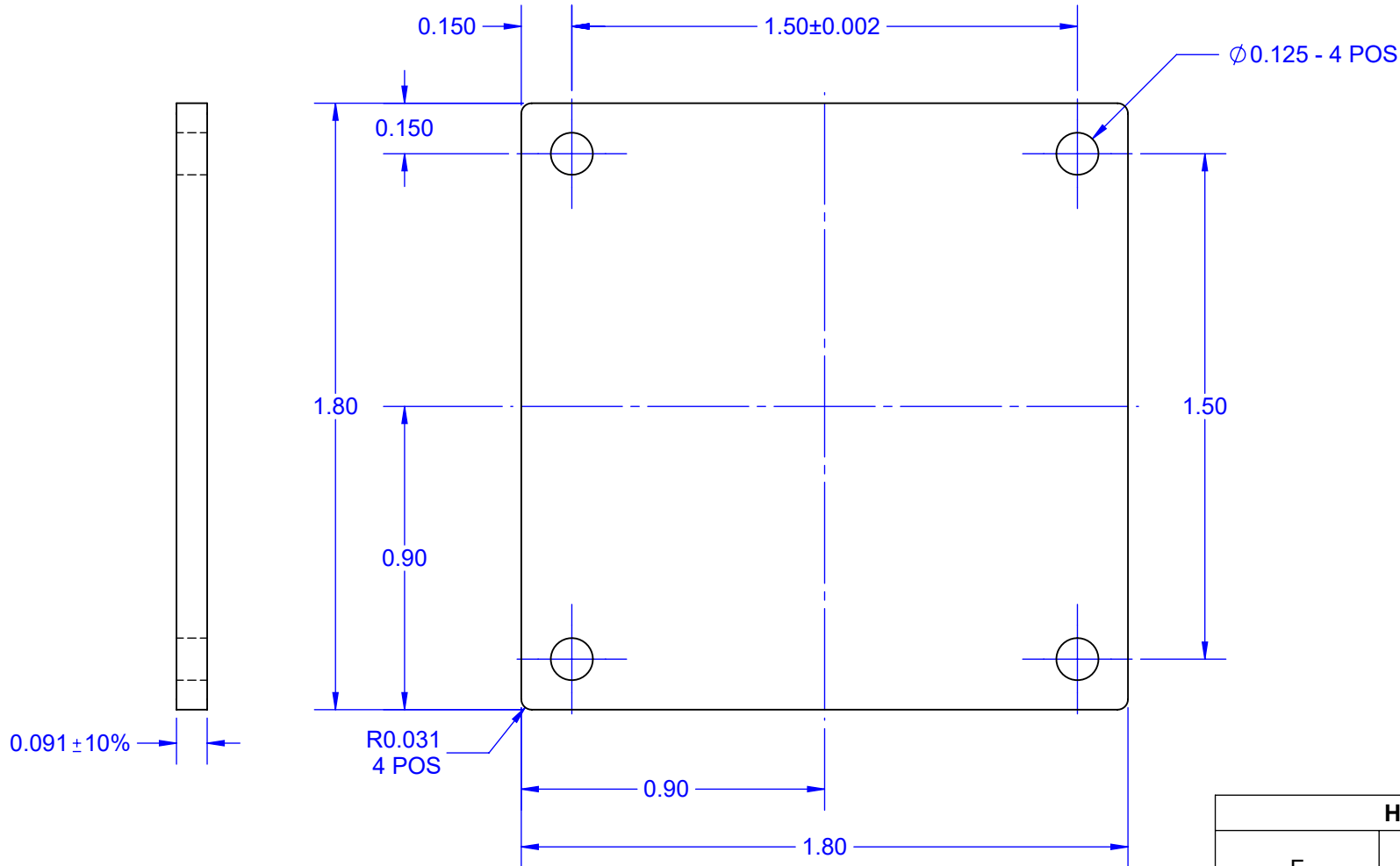
DO NOT SCALE DRAWING

SHEET 5 OF 11

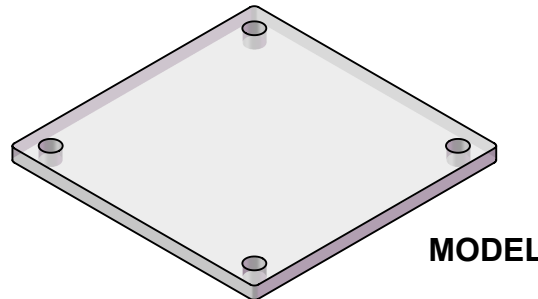
BOTTOM RETENTION PLATE

SIDE VIEW

TOP VIEW



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



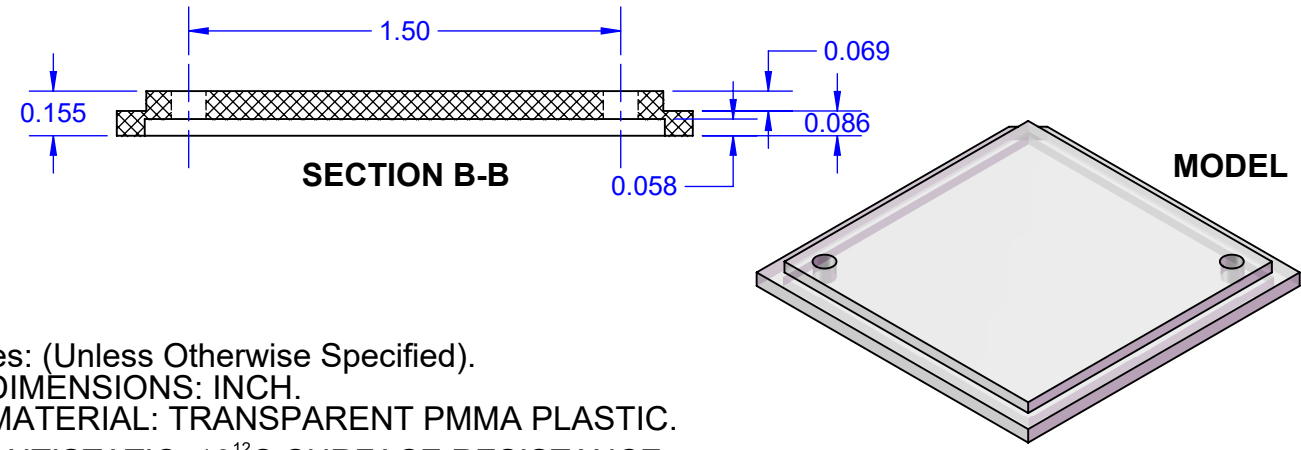
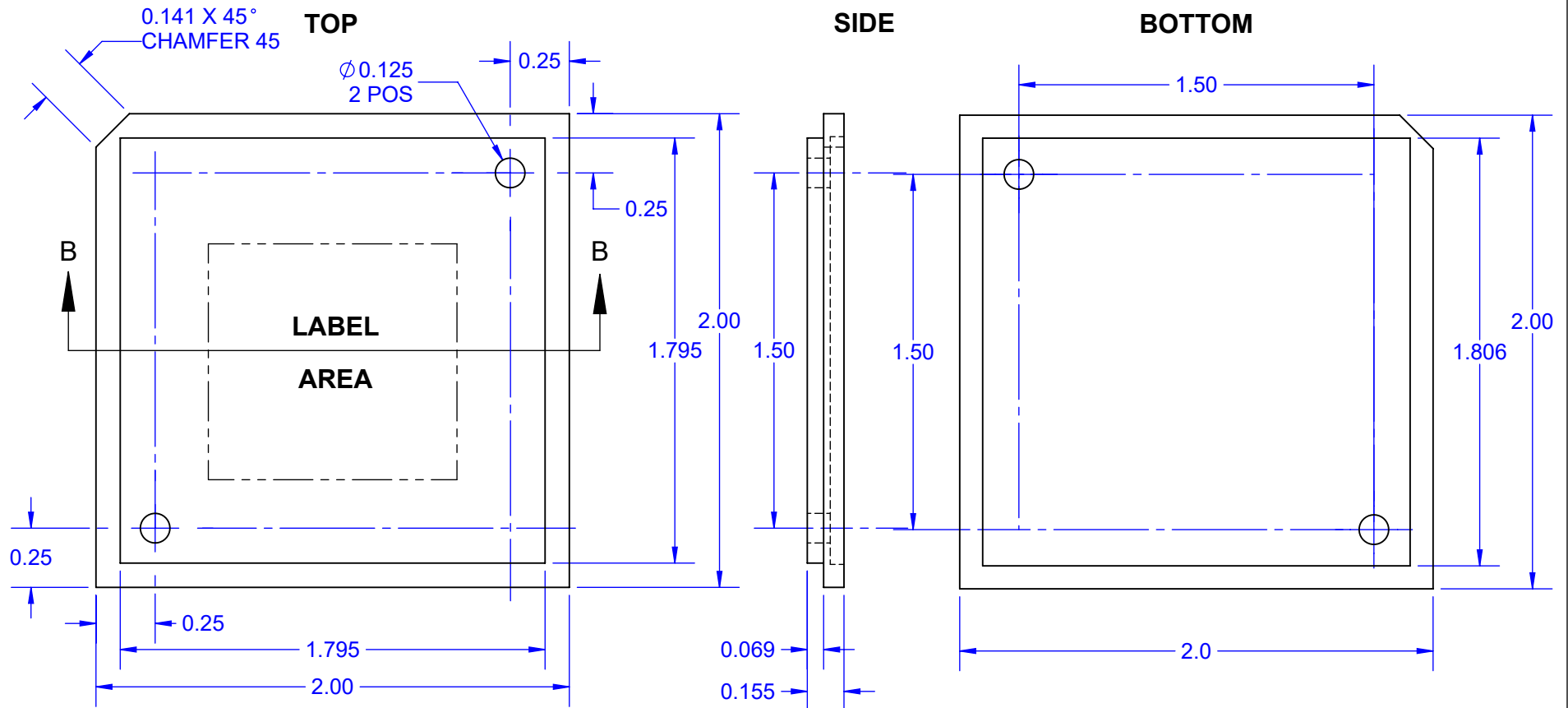
MODEL

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 2:1 | SIZE A | DRAWING NO. 001051 | REV A |
| DO NOT SCALE DRAWING | | | SHEET 6 OF 11 |

COVER 001040 REV B

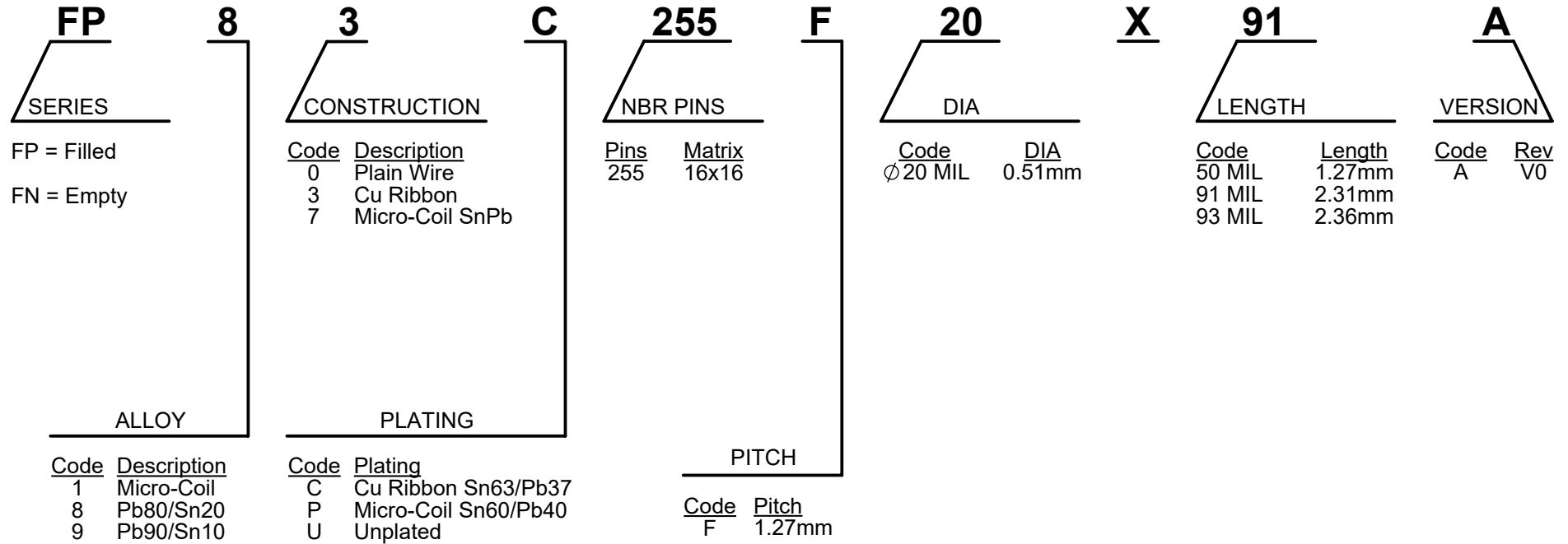


| HOLE CHART | | |
|------------|-------------------|-----------|
| SYMBOL | DIAMETER UNPLATED | QTY HOLES |
| + | Ø0.125 | 2 |

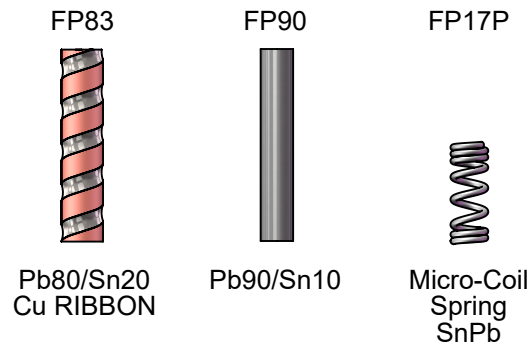
- Notes: (Unless Otherwise Specified).
 1) DIMENSIONS: INCH.
 2) MATERIAL: TRANSPARENT PMMA PLASTIC.
 3) ANTISTATIC: $10^{12} \Omega$ SURFACE RESISTANCE.

| | | | |
|---|-----------|-----------------------|---------------|
| TopLine® | | | |
| 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



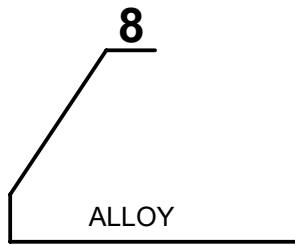
EXAMPLES OF COLUMNS



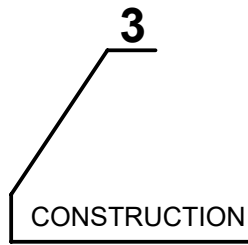
NOTE: COLUMN TO BE TRIMMED TO 2.21mm AFTER ATTACHMENT.

| | | | |
|---|-----------|-----------------------|---------------|
| TopLine® | | | |
| TITLE FP255A FLIP-PACK® CCGA COLUMN CARRIER | | | |
| SCALE 10:1 | SIZE A | DRAWING NO. 002160 | REV A |
| DO NOT SCALE DRAWING | | | SHEET 8 OF 11 |

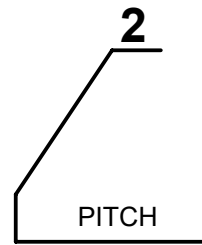
FLIP-PACK® DRAWING NUMBERING SYSTEM



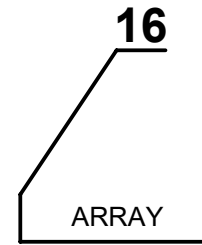
| <u>Code</u> | <u>Description</u> |
|-------------|--------------------|
| 00 | Empty |
| 1 | Micro-Coil |
| 8 | Pb80/Sn20 |
| 9 | Pb90/Sn10 |



| <u>Code</u> | <u>Description</u> |
|-------------|--------------------|
| 0 | Plain Wire |
| 3 | Cu Ribbon |
| 7 | Micro-Coil SnPb |

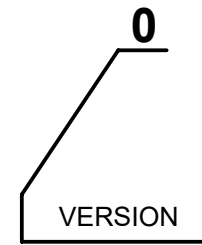


| <u>Code</u> | <u>Pitch</u> |
|-------------|--------------|
| 2 | 1.27mm |



| <u>Code</u> | <u>Matrix</u> |
|-------------|---------------|
| 16 | 16x16 |

DEPOPULATED
1-PIN



| <u>Code</u> | <u>Rev</u> |
|-------------|------------|
| 0 | 255 Pins |

EXAMPLES OF COLUMNS

FP83



Pb80/Sn20
Cu RIBBON

FP90



Pb90/Sn10

FP17P



Micro-Coil
Spring

TopLine®

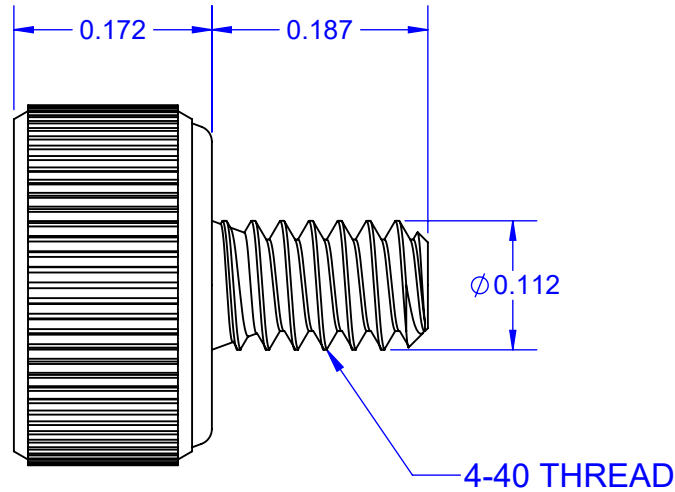
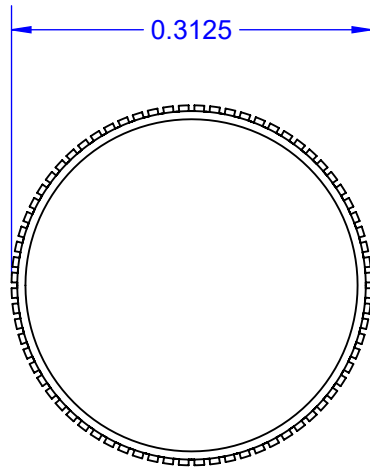
TITLE FP255A FLIP-PACK®
CCGA COLUMN CARRIER

| | | | |
|---------------|-----------|-----------------------|----------|
| SCALE 10:1 | SIZE A | DRAWING NO. 002160 | REV A |
|---------------|-----------|-----------------------|----------|

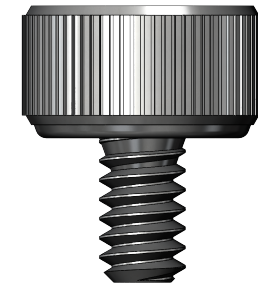
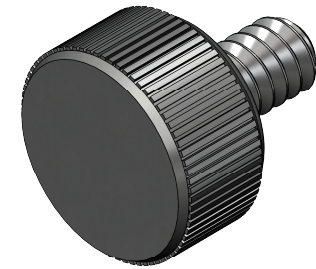
DO NOT SCALE DRAWING

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®

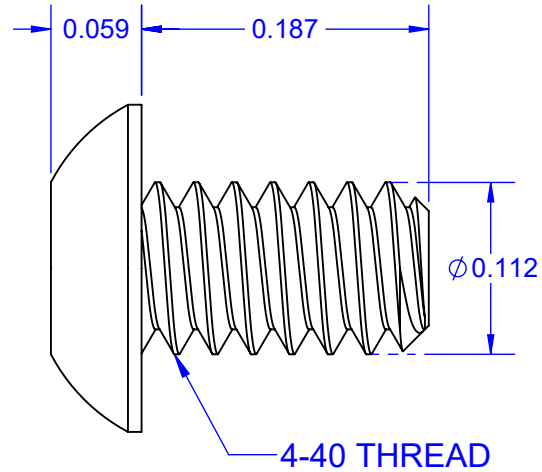
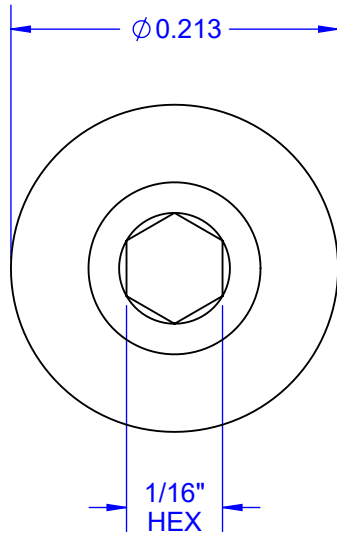
TITLE KNURL THUMB SCREW
4-40 PLASTIC HEAD

| | | | |
|--------------|-----------|-----------------------|----------|
| SCALE 6:1 | SIZE A | DRAWING NO. 704018 | REV A |
|--------------|-----------|-----------------------|----------|

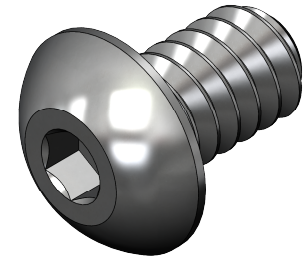
DO NOT SCALE DRAWING

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 |