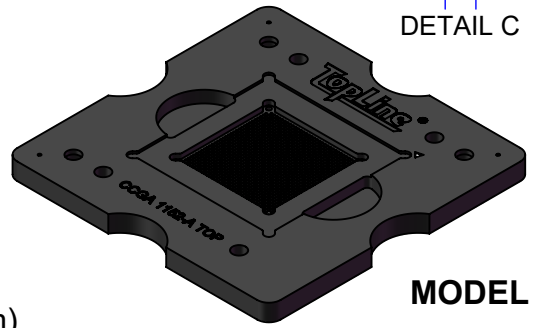


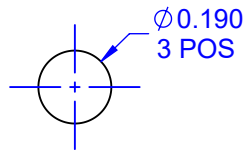
DETAIL A
SCALE 3 : 1



- NOTES:
 1. DIMENSIONS in INCHES.
 2. MICROSEMI (ACTEL) CG1152.
 3. COLUMN DIAMETER ϕ 0.020 (ϕ 0.51mm).
 4. PIN-PACK (FLIP-PACK) 2.0.

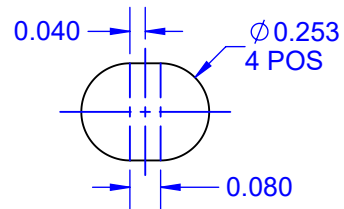
APPROVALS	DATE	TopLine®			
DRAWN T.Au	01/08/16				
ENG M. Hart	01/08/16	TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		1:1.25	A	713480	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 13
REVISED					

VIEWED FROM TOP

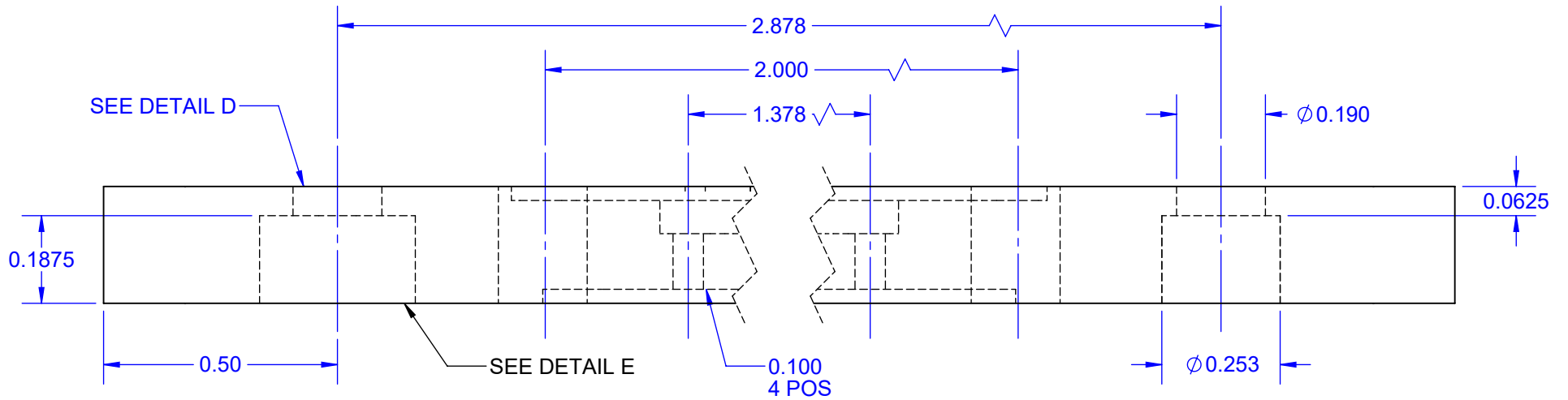


DETAIL D

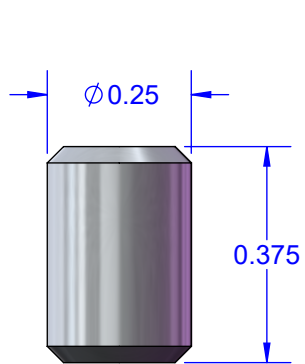
VIEWED FROM BOTTOM



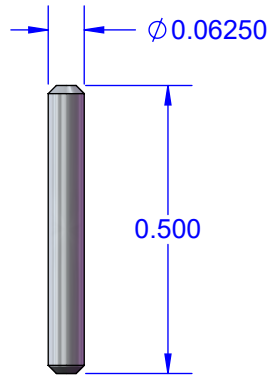
DETAIL E



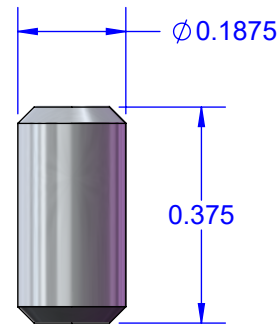
SECTION VIEW



1/4-Inch PEG POSITIONING



1/16-Inch PIN EXTRACTION



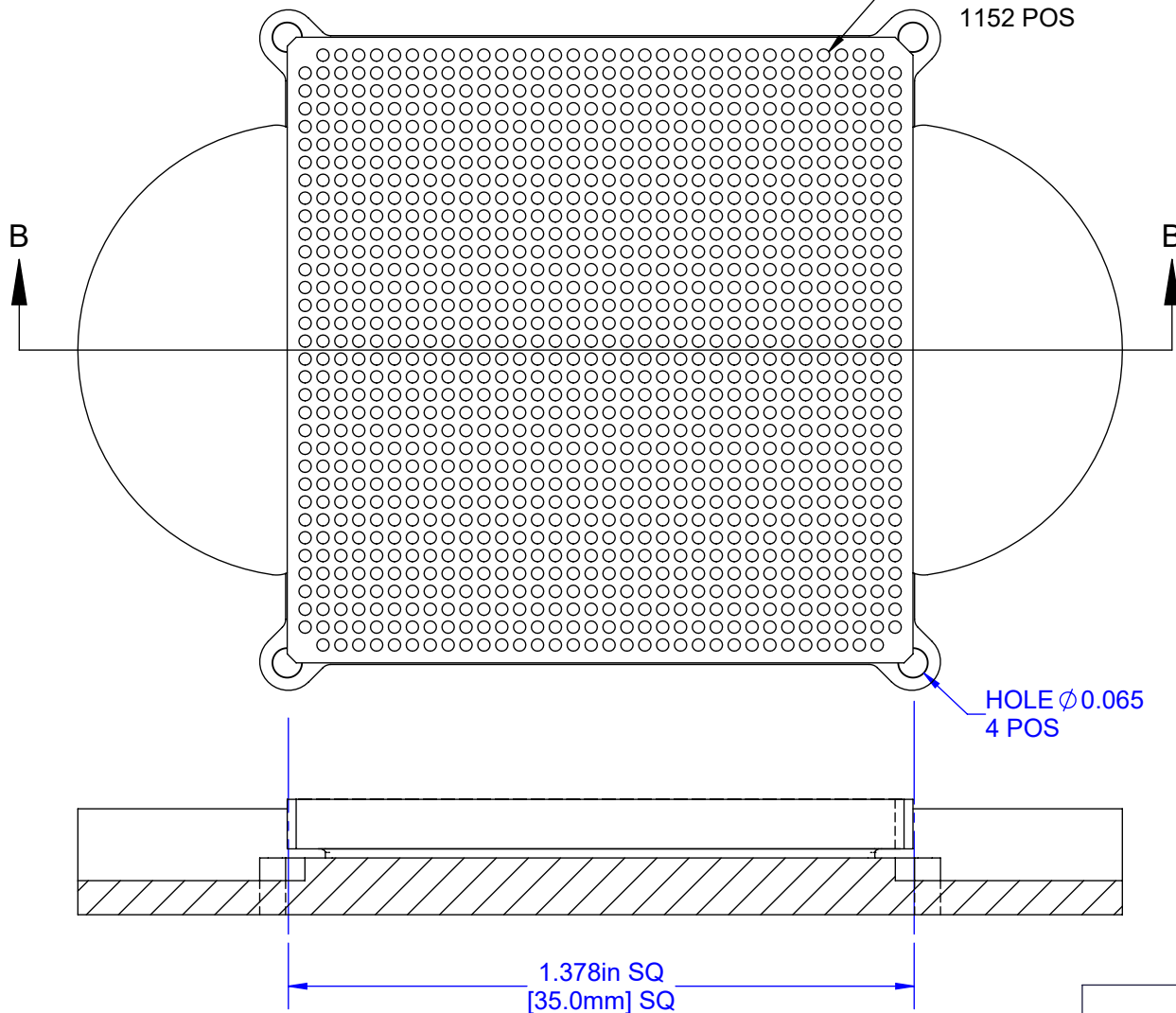
3/16-Inch PEG POSITIONING

TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 3:1	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 13

**DETAIL B
ARRAY
34 x 34 MATRIX**

VIEWED FROM TOP

LGA PADS $\phi 0.030$ [$\phi 0.80\text{mm}$]
 GRAPHITE ARRAY $\phi 0.024$ [$\phi 0.61\text{mm}$]
 COLUMNS $\phi 0.020$ [$\phi 0.51\text{mm}$]
 1152 POS



TopLine®

TITLE C7-GRAPHITE-1152A
COLUMN ATTACHMENT TOOLS

SCALE 2.5:1	SIZE A	DRAWING NO. 713480	REV A
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DO NOT SCALE DRAWING

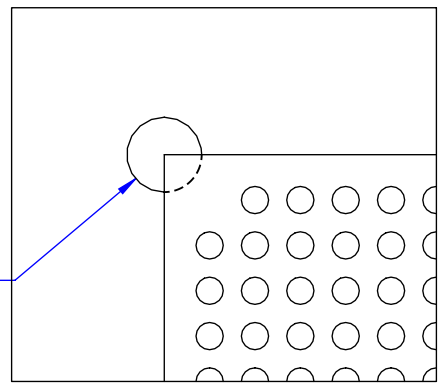
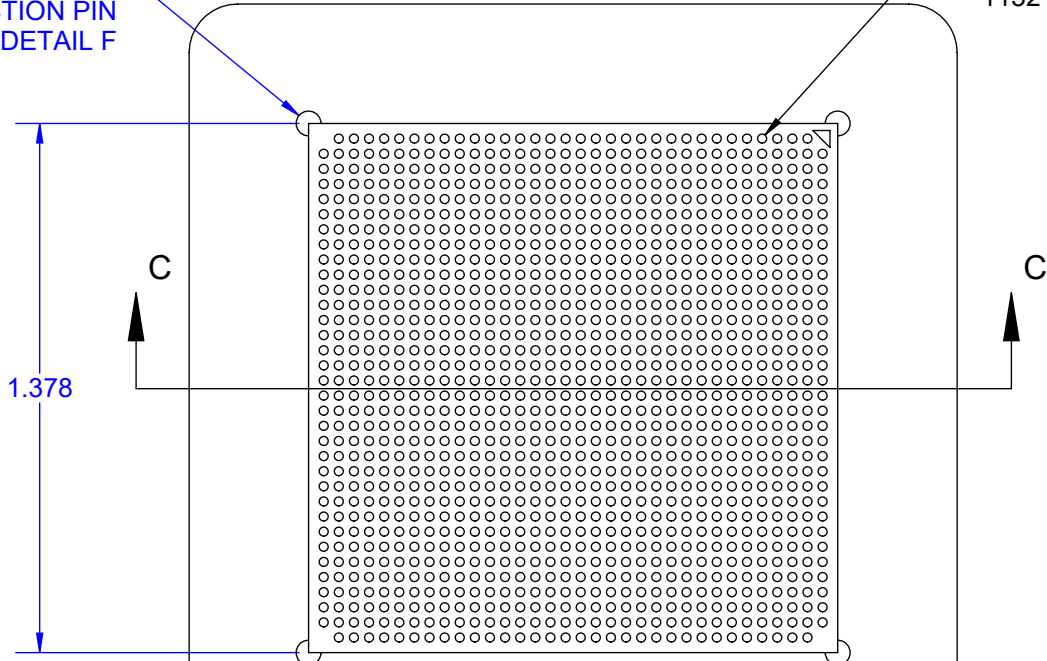
SHEET 3 OF 13

DETAIL E 34 x 34 MATRIX

BOTTOM VIEW
OF TOP GRAPHITE
RIGHT READING

LGA PADS $\phi 0.020$ [$\phi 0.51\text{mm}$]
GRAPHITE ARRAY $\phi 0.016$ [0.406mm]
1152 POS

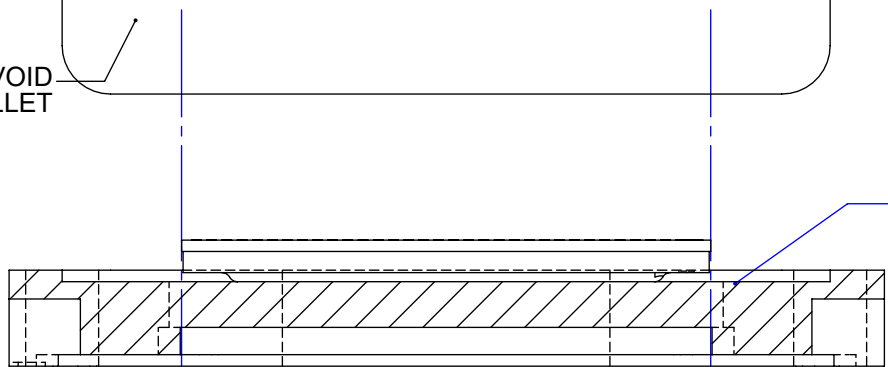
$\phi 0.065$ HOLES
4 PLACES
 $\phi 0.0625 \times 0.500$
EXTRACTION PIN
SEE DETAIL F



$\phi 0.065$ HOLES
4 PLACES

RECESSED AREA TO AVOID
CONTACT WITH FILLET

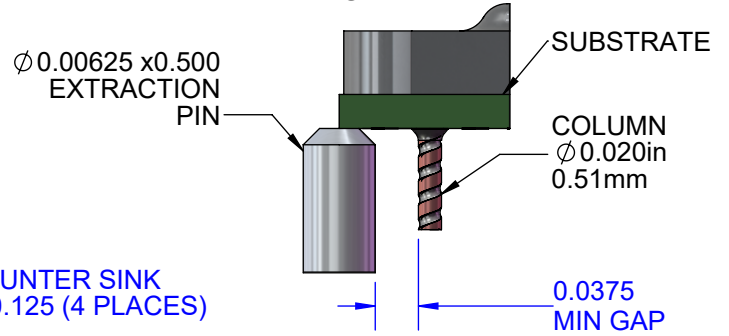
DIRECTION OF
EXTRACTION PEGS



1.378in SQ
[35.0mm SQ]
SECTION C-C

COUNTER SINK
 $\phi 0.125$ (4 PLACES)

DETAIL F
SIDE VIEW



$\phi 0.00625 \times 0.500$
EXTRACTION PIN

SUBSTRATE

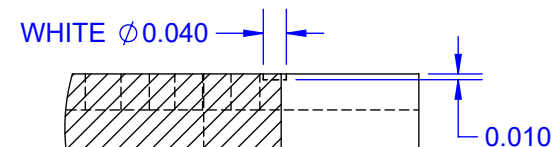
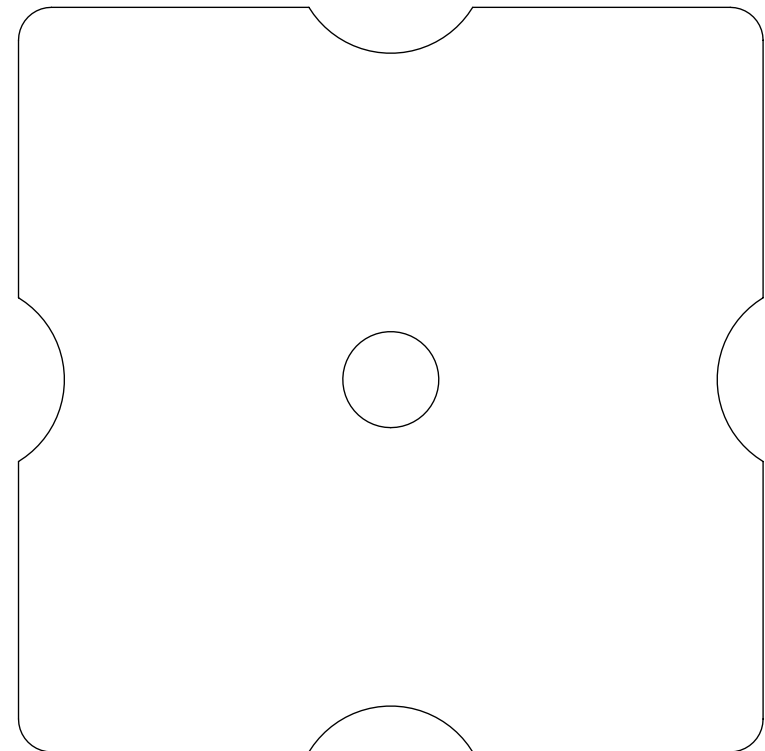
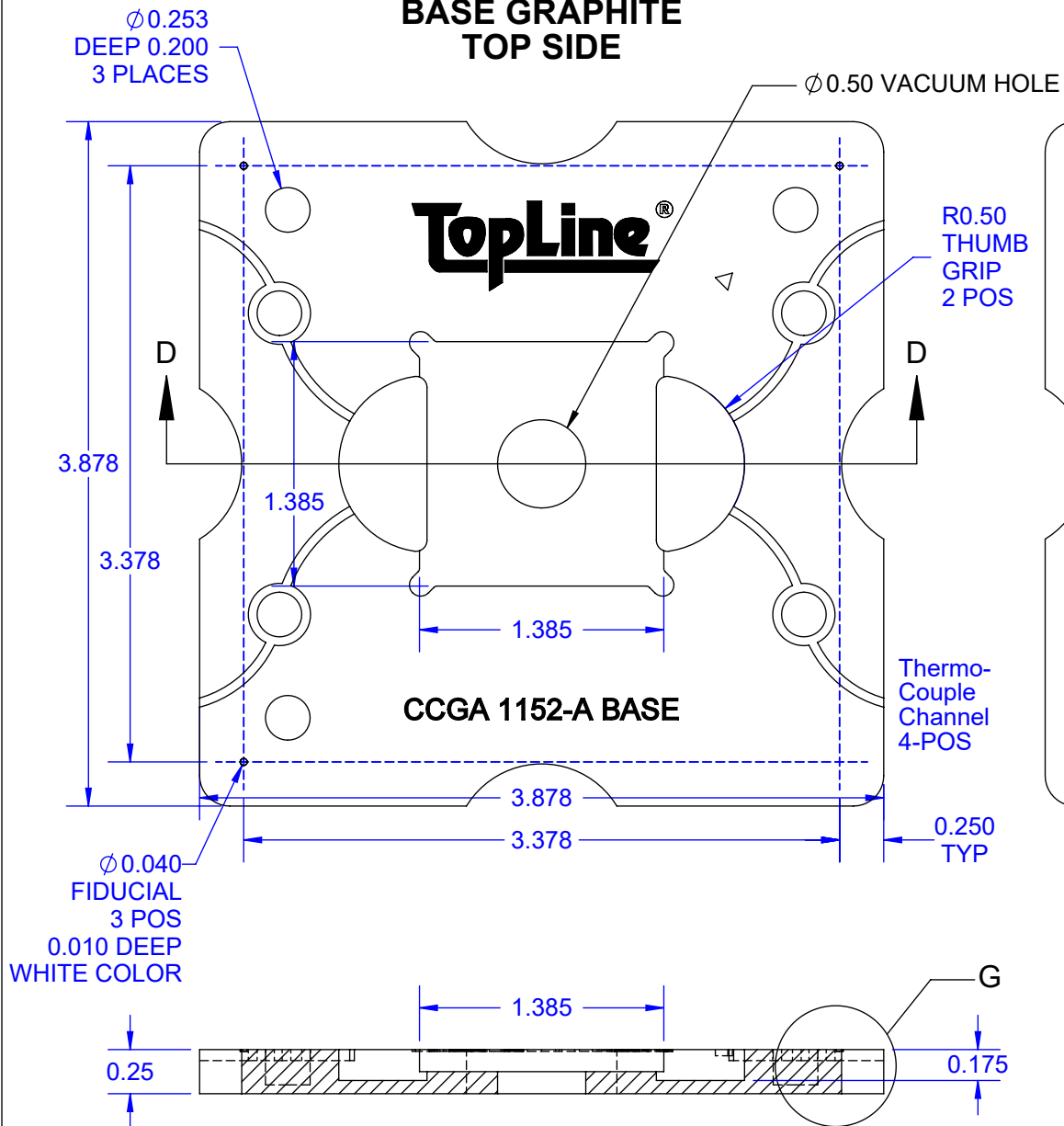
COLUMN
 $\phi 0.020\text{in}$
 0.51mm

0.0375
MIN GAP

TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 2:1	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 4 OF 13

**BASE GRAPHITE
TOP SIDE**

**BASE GRAPHITE
BOTTOM SIDE**

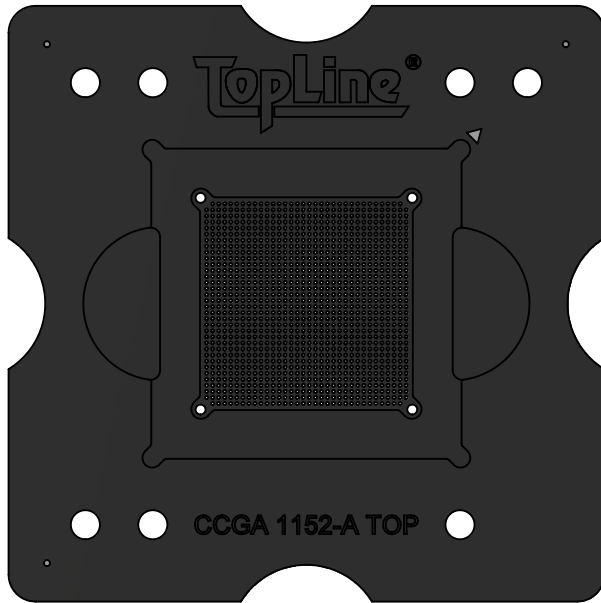


FIDUCIAL - DETAIL G
SCALE 3:1

NOTES:
1. DIMENSIONS in INCHES.

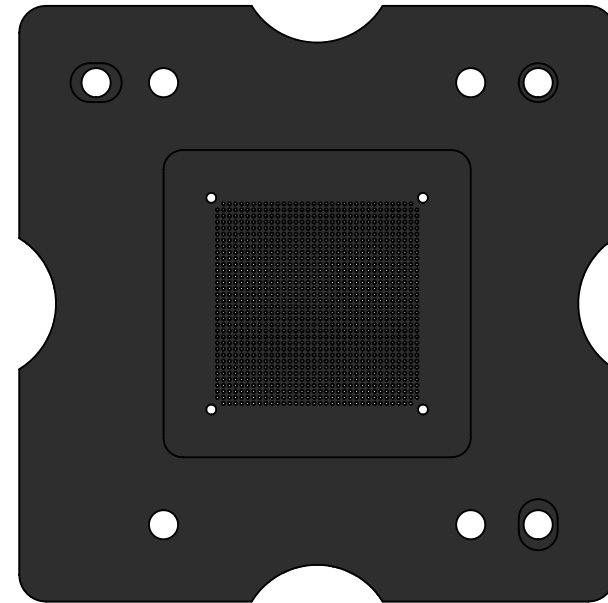
TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 1:1	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 5 OF 13

UPPER GRAPHITE
TOP SIDE
SHOWN WITHOUT PIN-PACK™

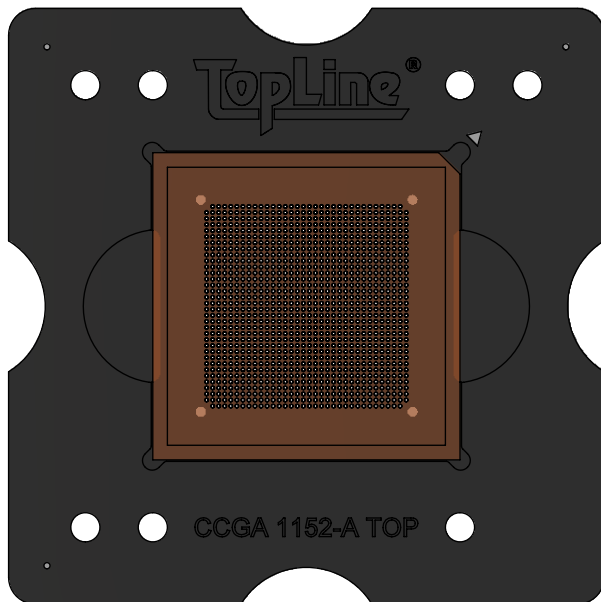


MODELS

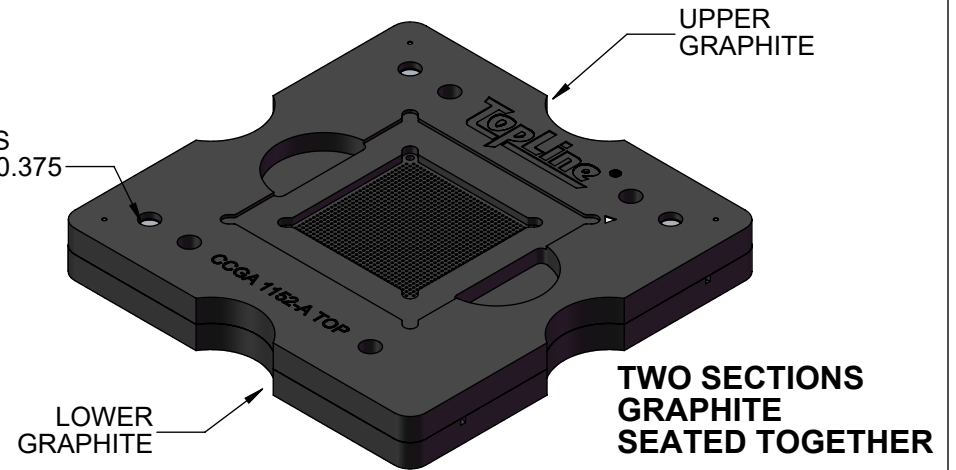
UPPER GRAPHITE
BOTTOM VIEW
RIGHT READING



UPPER GRAPHITE
TOP SIDE
SHOWN WITH PIN-PACK™



3x PEGS
0.250 x 0.375



TopLine®

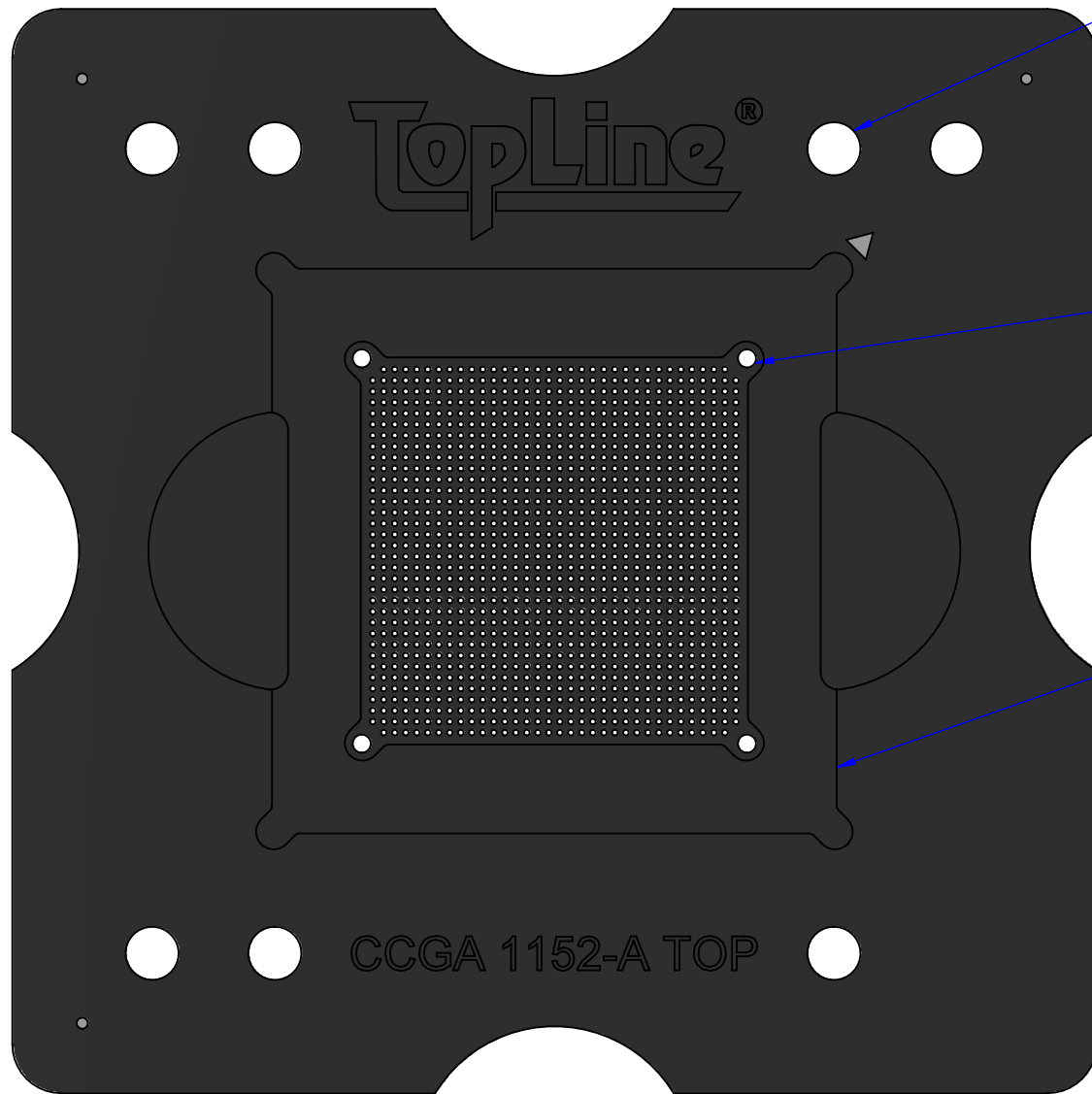
TITLE C7-GRAPHITE-1152A
COLUMN ATTACHMENT TOOLS

SCALE 1:1.25	SIZE A	DRAWING NO. 713480	REV A
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DO NOT SCALE DRAWING

SHEET 6 OF 13

UPPER GRAPHITE
TOP SIDE
SHOWN WITHOUT PIN-PACK™



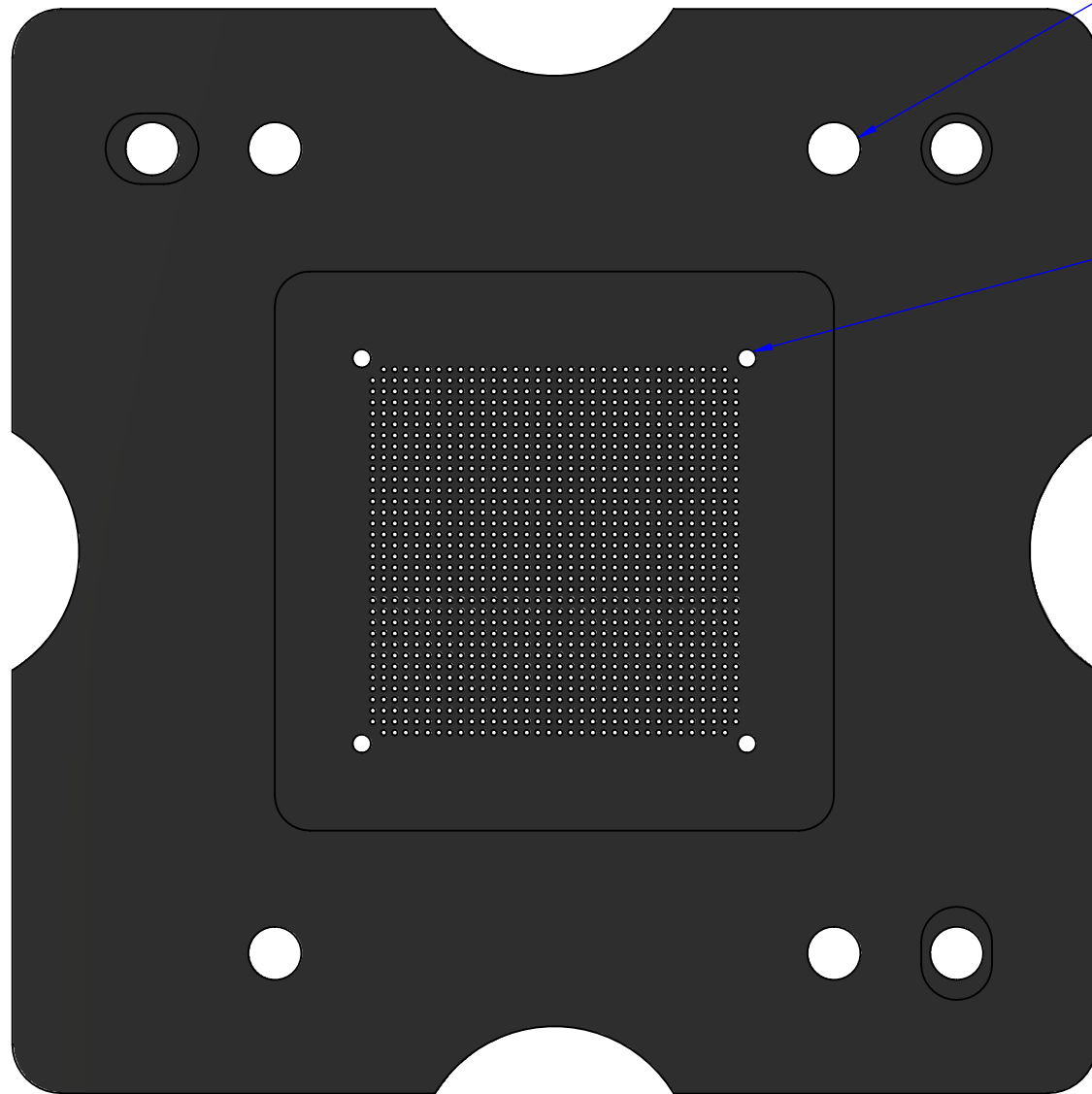
FOR EXTRACTION
POSITIONING PEG
4-POS

EXTRACTION PIN

PIN-PACK
FLIP-PACK 2.0

TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 1:1.25	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 7 OF 13

UPPER GRAPHITE
BOTTOM VIEW
RIGHT READING



FOR EXTRACTION
POSITIONING PEG
4-POS

FOR EXTRACTION PIN
4-POS

TopLine[®]

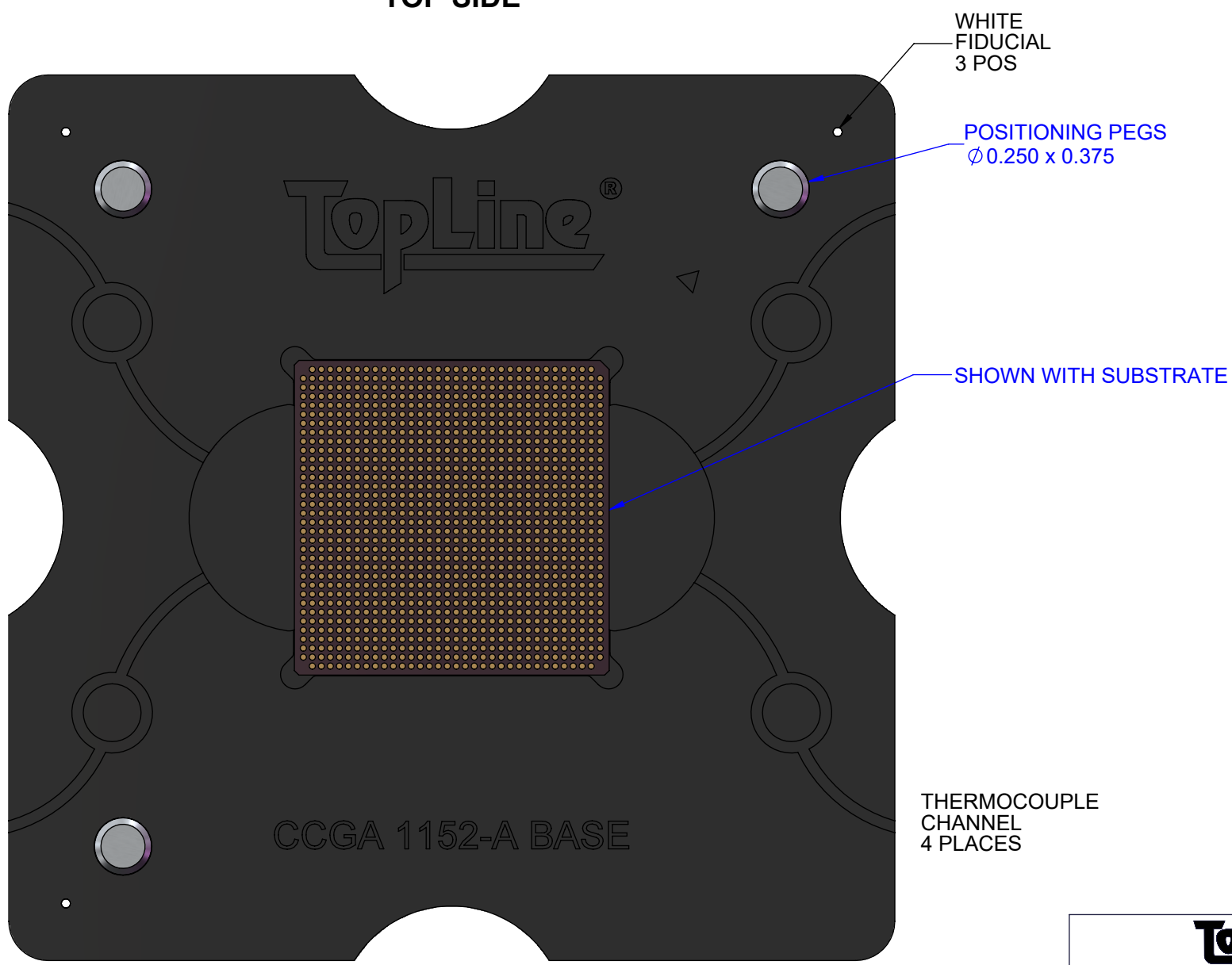
TITLE C7-GRAPHITE-1152A
COLUMN ATTACHMENT TOOLS

SCALE 1:1.25	SIZE A	DRAWING NO. 713480	REV A
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DO NOT SCALE DRAWING

SHEET 8 OF 13

**BASE GRAPHITE
TOP SIDE**



WHITE
FIDUCIAL
3 POS

POSITIONING PEGS
Ø 0.250 x 0.375

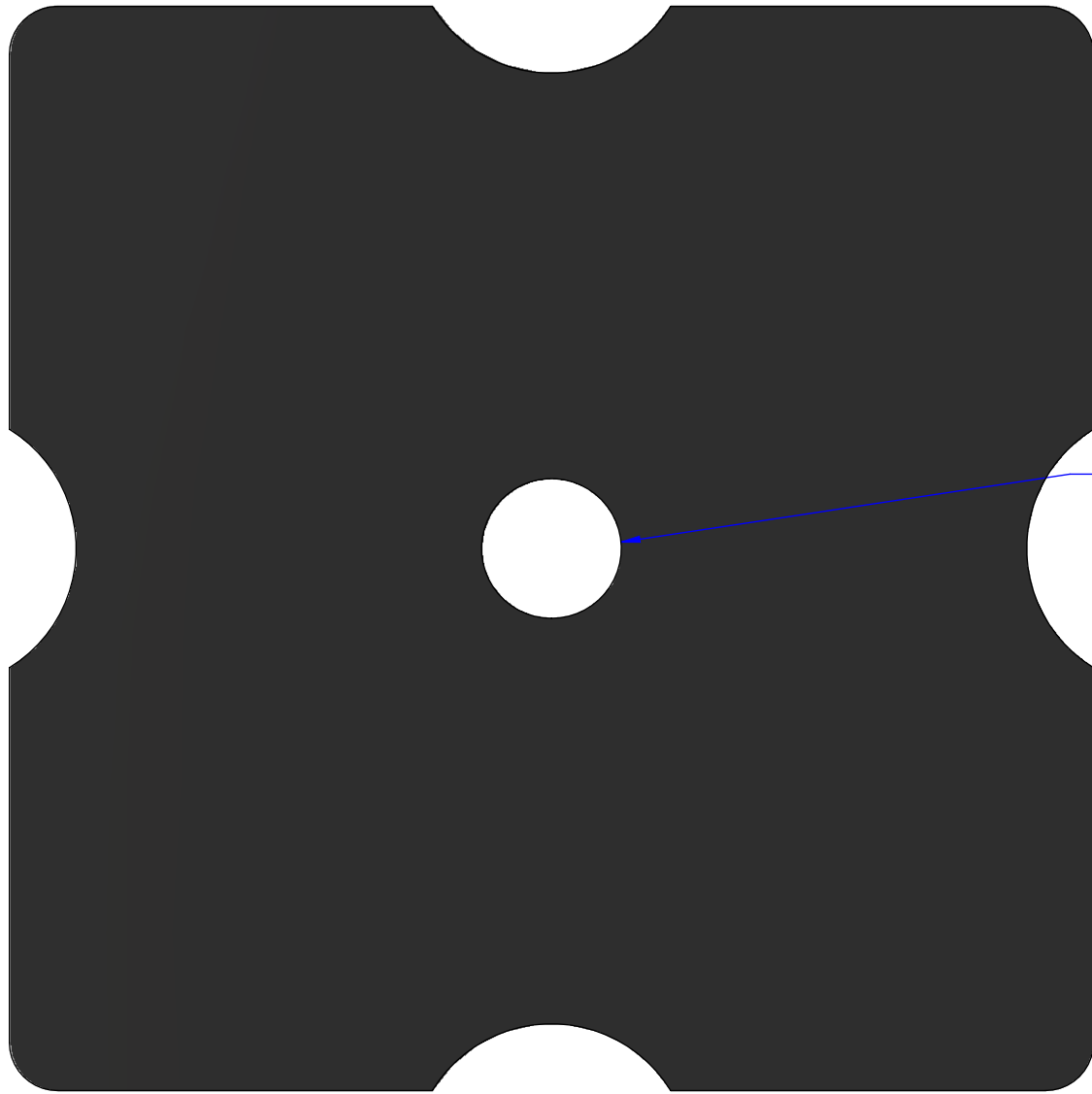
SHOWN WITH SUBSTRATE

THERMOCOUPLE
CHANNEL
4 PLACES

NOTE 1. APPLY SOLDER PASTE TO SUBSTRATE PADS BEFORE COVERING WITH TOP GRAPHITE.

TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 3:2	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 9 OF 13

**BASE GRAPHITE
BOTTOM SIDE**



FINGER HOLE

TopLine[®]

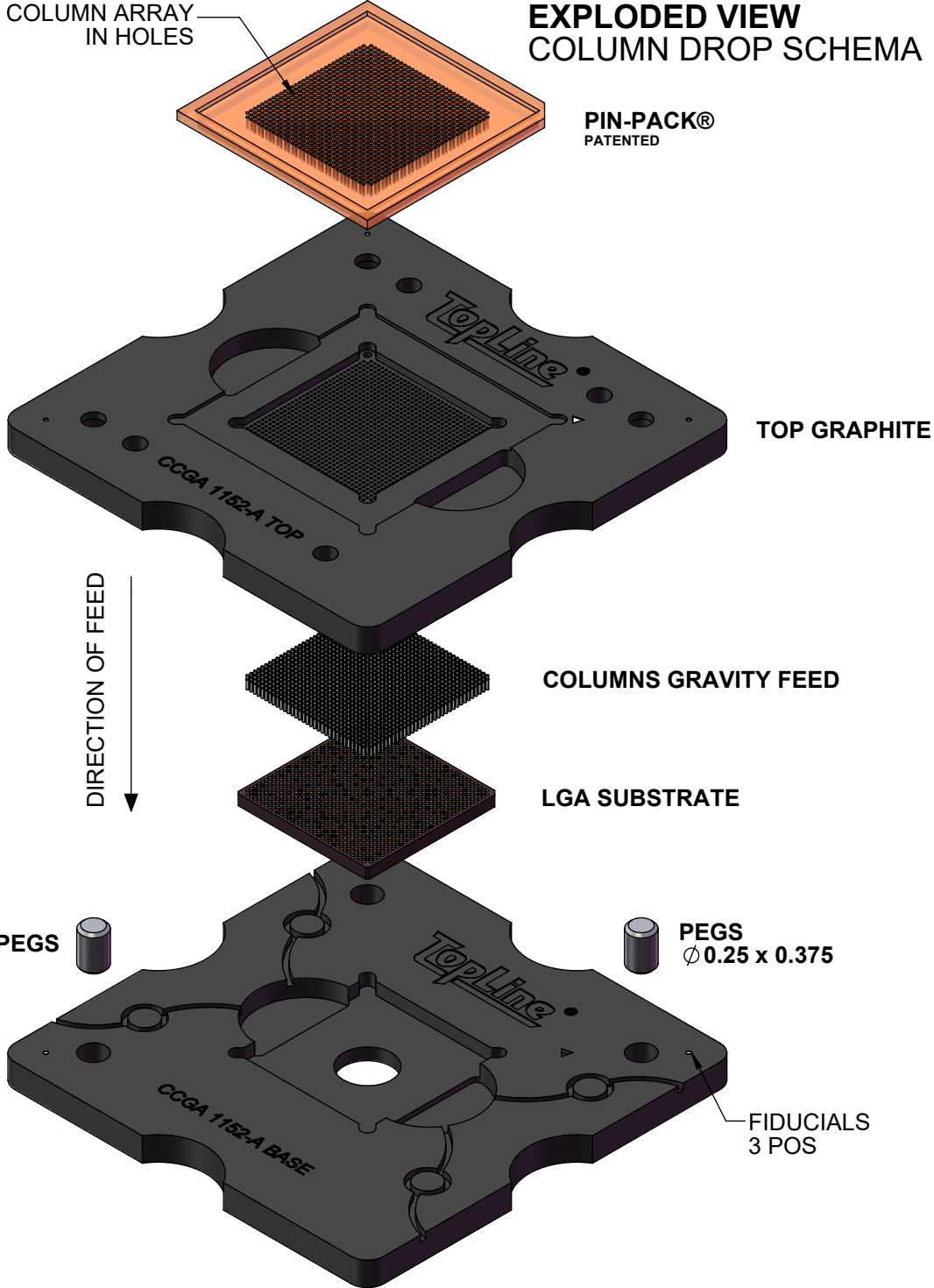
TITLE C7-GRAPHITE-1152A
COLUMN ATTACHMENT TOOLS

SCALE 3:2	SIZE A	DRAWING NO. 713480	REV A
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DO NOT SCALE DRAWING

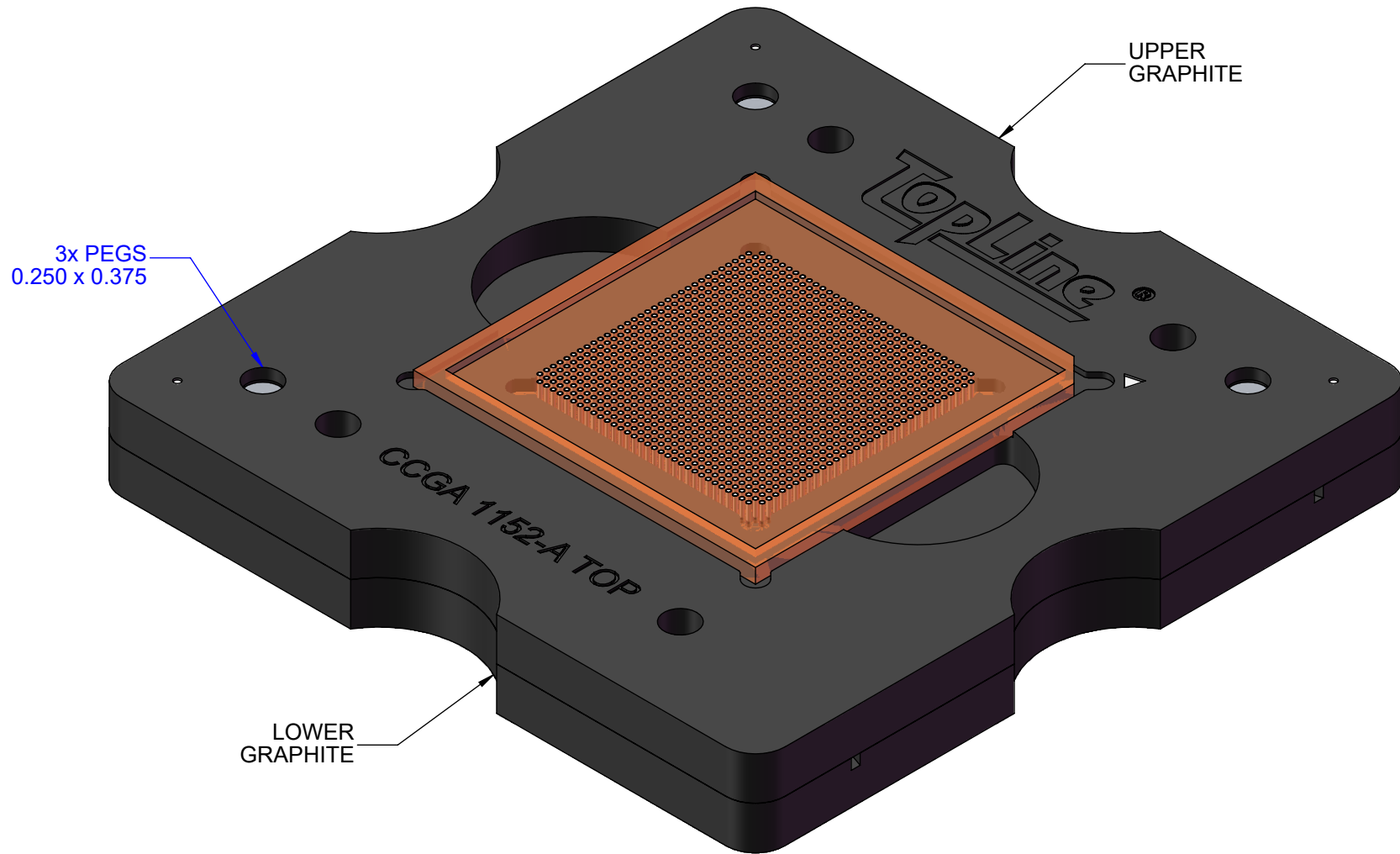
SHEET 10 OF 13

EXPLODED VIEW COLUMN DROP SCHEMA



TopLine®			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 1:1.25	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 11 OF 13

FLIP-PACK SEATED
IN GRAPHITE SET



TopLine [®]			
TITLE C7-GRAPHITE-1152A COLUMN ATTACHMENT TOOLS			
SCALE 3:2	SIZE A	DRAWING NO. 713480	REV A
DO NOT SCALE DRAWING			SHEET 12 OF 13

TOOL PART NUMBERS & ACCESSORIES

MODEL NUMBER	DESCRIPTION	LGA X/Y SIZE	LGA Z - HEIGHT	PAD MATRIX	PITCH	DWG
C7-GRAPHITE-1152A	GRAPHITE SET CERAMIC 1152	35.0mm SQ 1.378-inch	3.2mm 0.126"	34x34	1.0mm	713480
C7-BASE-1152-3.2A	GRAPHITE BASE	35.0mm SQ 1.378-inch	3.2mm 0.126"	34x34	1.0mm	335320
C7-TOP-1152A-E20	GRAPHITE TOP	35.0mm SQ 1.378-inch	3.2mm 0.126"	34x34	1.0mm	513480
PEG-.25X.375	ALIGNMENT PEG	6.35 x 9.52mm 0.25 x 0.375-inch	ALL	ALL	ALL	702551
PP83C1152E20x91A	Pin-Pack Pb80/Sn20 Copper	0.51 x 2.31mm 0.020 x 0.091-inch	ALL	34x34	1.0mm	831342
PP90U1152E20x91A	Pin-Pack Pb90/Sn10 PLAIN	0.51 x 2.31mm 0.020 x 0.091-inch	ALL	34x34	1.0mm	901342

TopLine®

TITLE C7-GRAPHITE-1152A
COLUMN ATTACHMENT TOOLS

SCALE NONE	SIZE A	DRAWING NO. 713480	REV A
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DO NOT SCALE DRAWING

SHEET 13 OF 13