

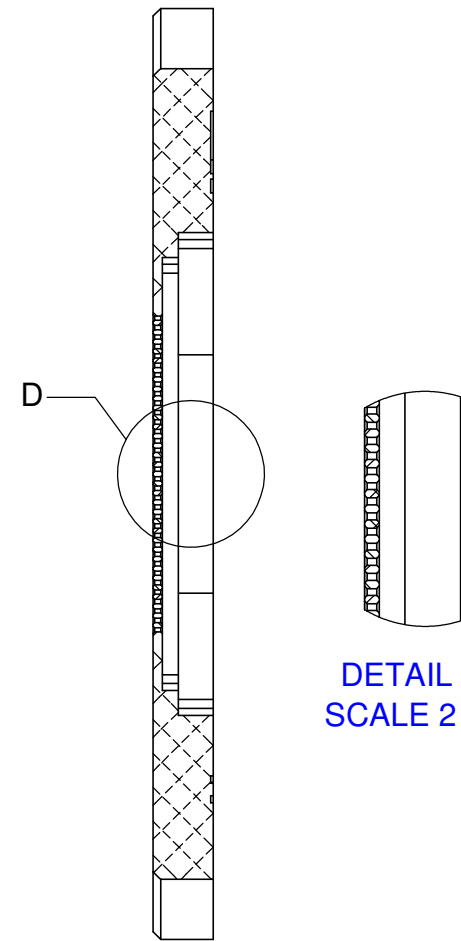
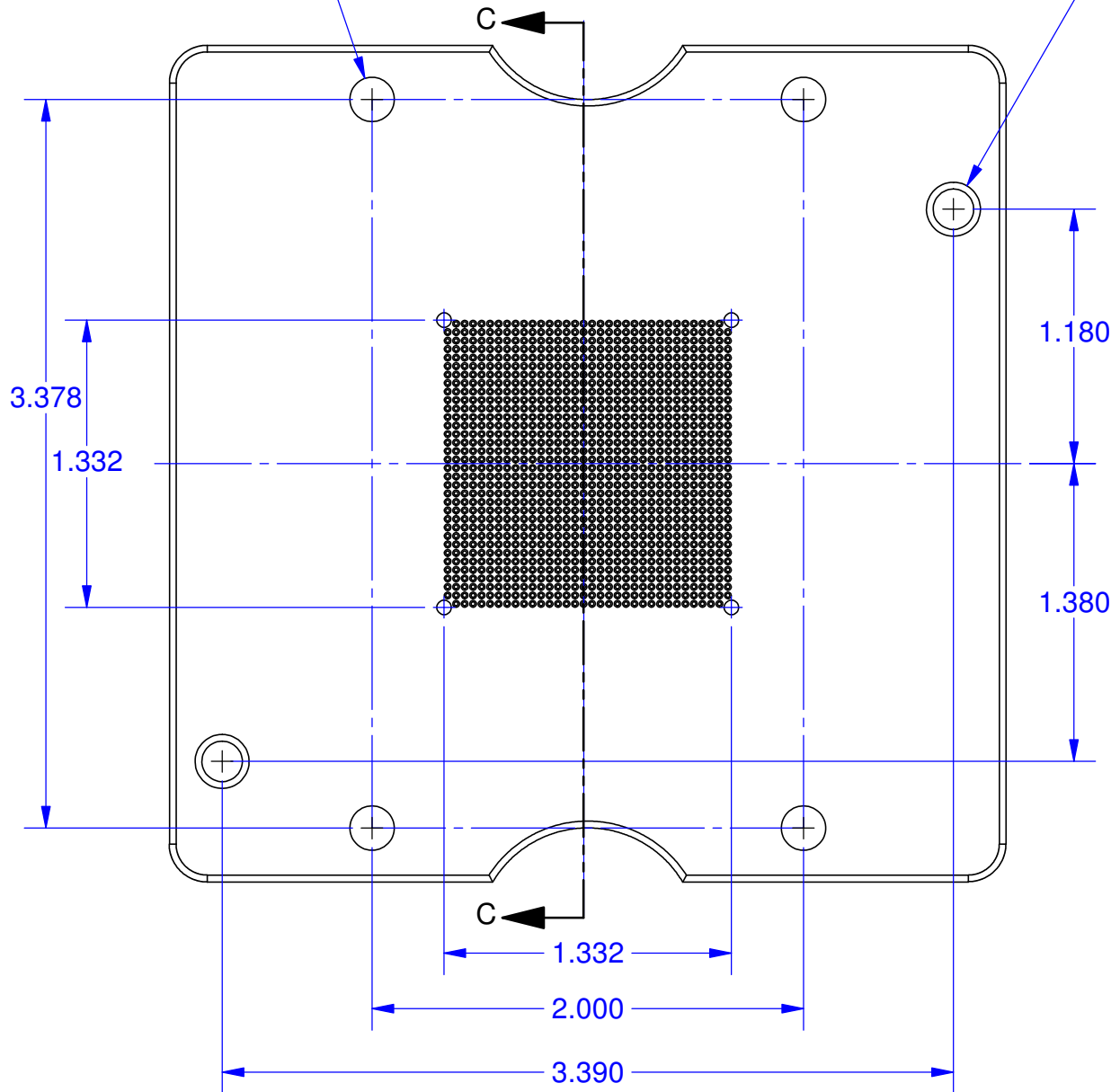
NOTES: (UNLESS OTHERWISE SPECIFIED).  
 1) DIMENSIONS: INCH [MM].

APPROVALS		DATE	<b>TopLine®</b>			
DRAWN	R. Le	11/1/2018	TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
ENG	M. Hart	11/1/2018				
MFG			SCALE	SIZE	DRAWING NO.	REV
QA			1:1	A	713460	A
CUST			DO NOT SCALE DRAWING		SHEET 1 OF 15	
REVISED						

BOTTOM VIEW  
TOP GRAPHITE

4X  $\phi$ .206 THRU ALL

$\phi$ .188 THRU ALL  
 $\phi$ .2503<sup>+.0002</sup><sub>-.0000</sub>  $\nabla$ .193

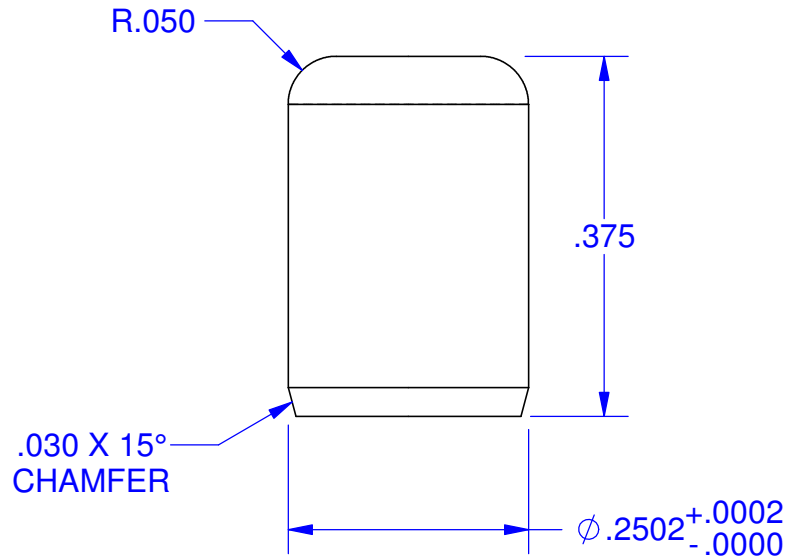
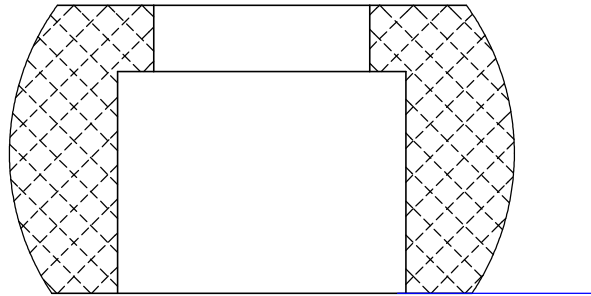


DETAIL D  
SCALE 2 : 1

SECTION C-C

<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1.25:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 15

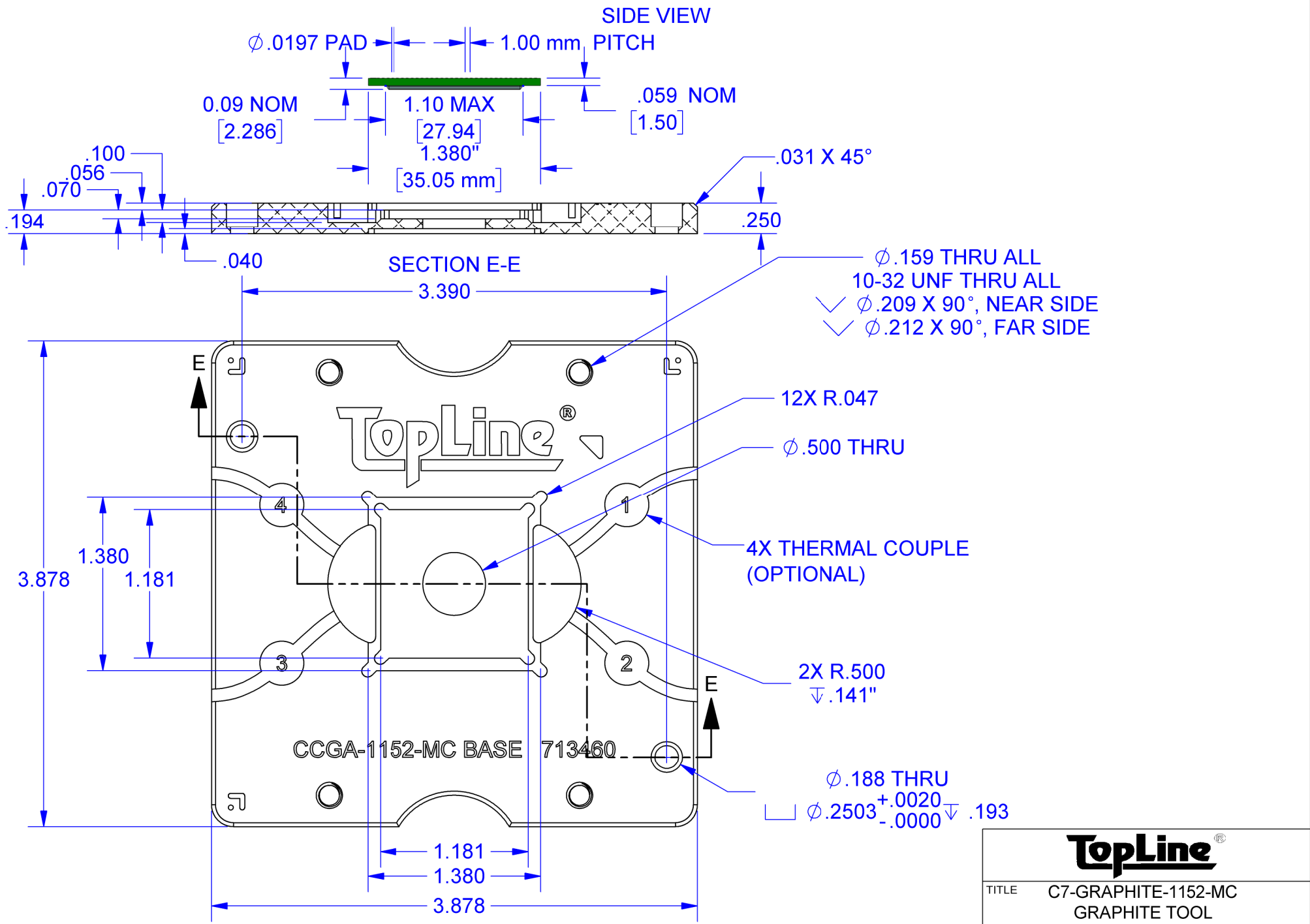
ALIGNMENT PIN  
DWG 70256X



DETAIL P  
SEE SHEET 1

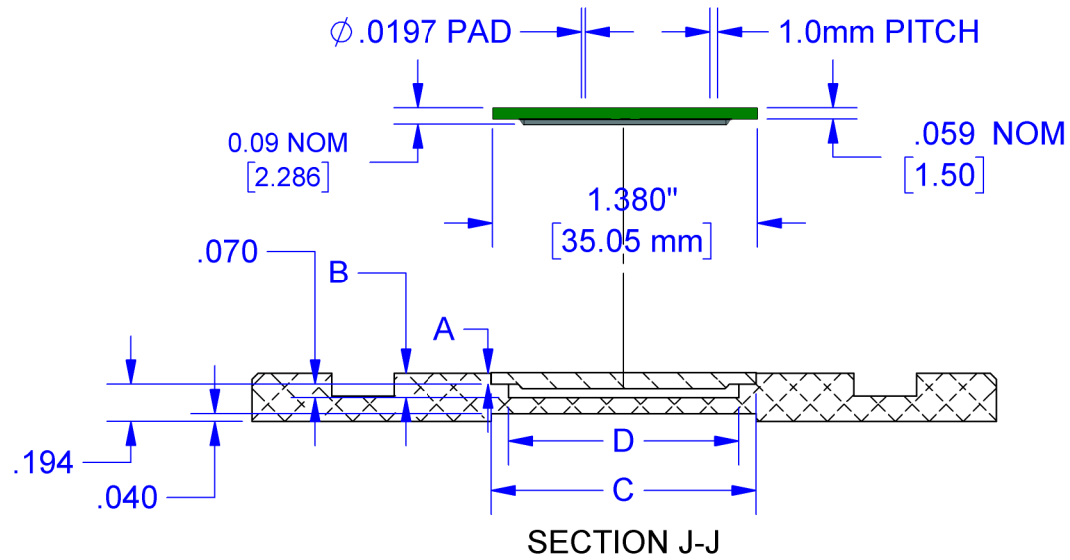
NOTES: (UNLESS OTHERWISE SPECIFIED).  
1) DIMENSIONS: INCH [MM].

<b>TopLine</b> ®			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 6:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 3 OF 15

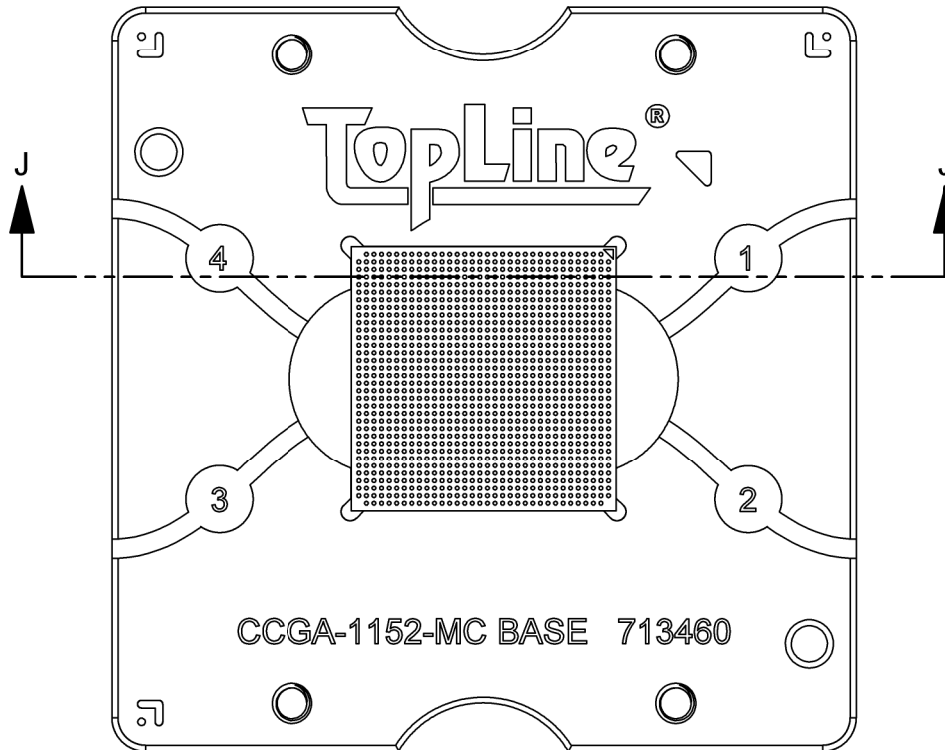


<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 4 OF 15

### BASE ASSEMBLY



REF	DESCRIPTION	INCH
A	POCKET DEPTH PERIMETER	0.056
B	POCKET DEPTH FOR + LID	0.104
C	POCKET X/Y	1.382
D	LID DOWNSET X/Y	1.182



<b>TopLine<sup>®</sup></b>			
TITLE		C7-GRAPHITE-1152-MC GRAPHITE TOOL	
SCALE	SIZE	DRAWING NO.	REV
1:1	A	713460	A
DO NOT SCALE DRAWING			SHEET 5 OF 15

BOTTOM VIEW  
BASE GRAPHITE

Ø .500 THRU ALL

4X R.047  
VACUUM CHASE  
(OPTIONAL)

3.378

1.378

Ø .159 THRU ALL

10-32 UNF THRU ALL

✓ Ø .209 X 90°, BOTTOM SIDE

✓ Ø .212 X 90°, TOP SIDE

1.378

2.000

**TopLine**®

TITLE C7-GRAPHITE-1152-MC  
GRAPHITE TOOL

SCALE	SIZE	DRAWING NO.	REV
1.5:1	A	713460	A

DO NOT SCALE DRAWING

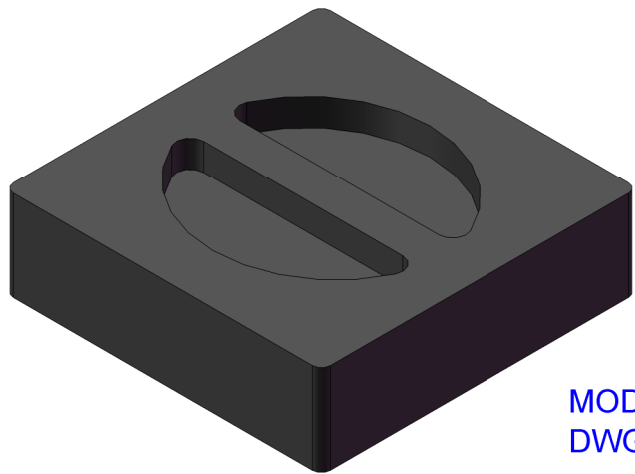
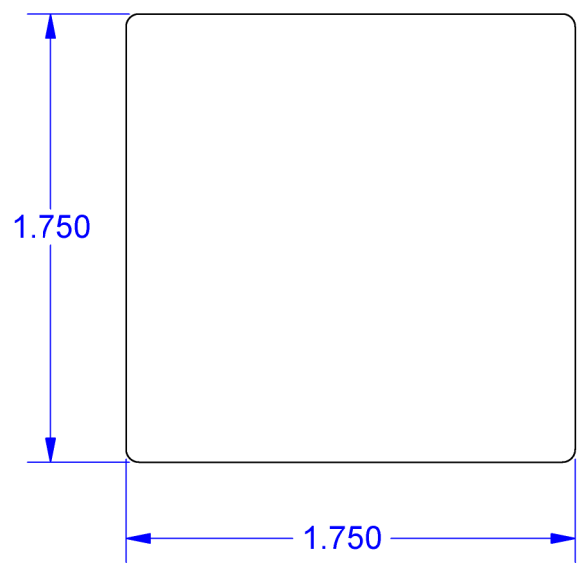
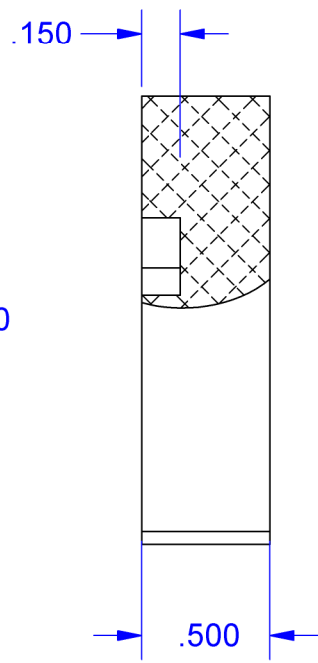
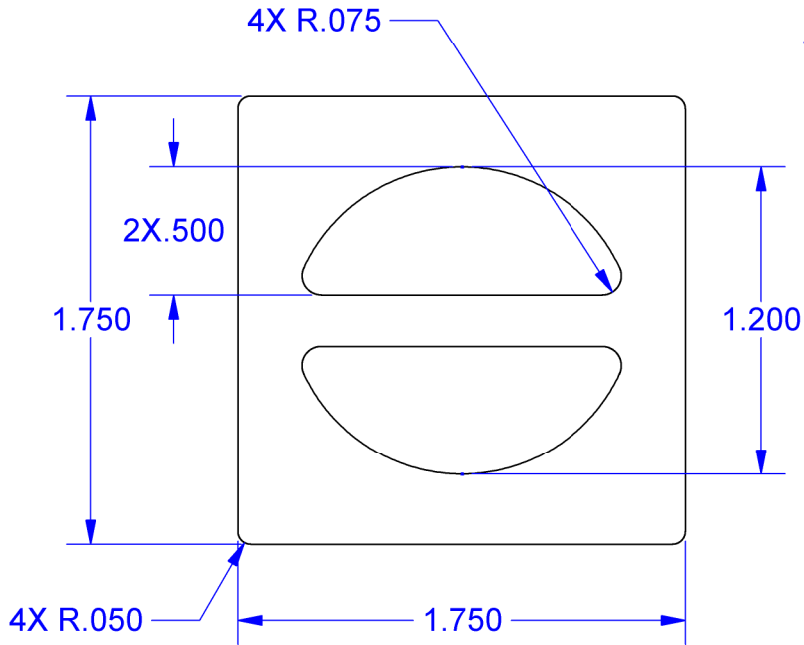
SHEET 6 OF 15

**C7-WEIGHT-A  
700150**

TOP VIEW

SIDE VIEW

BOTTOM VIEW



**MODEL  
DWG 700150**

**NOTES: (UNLESS OTHERWISE SPECIFIED).**

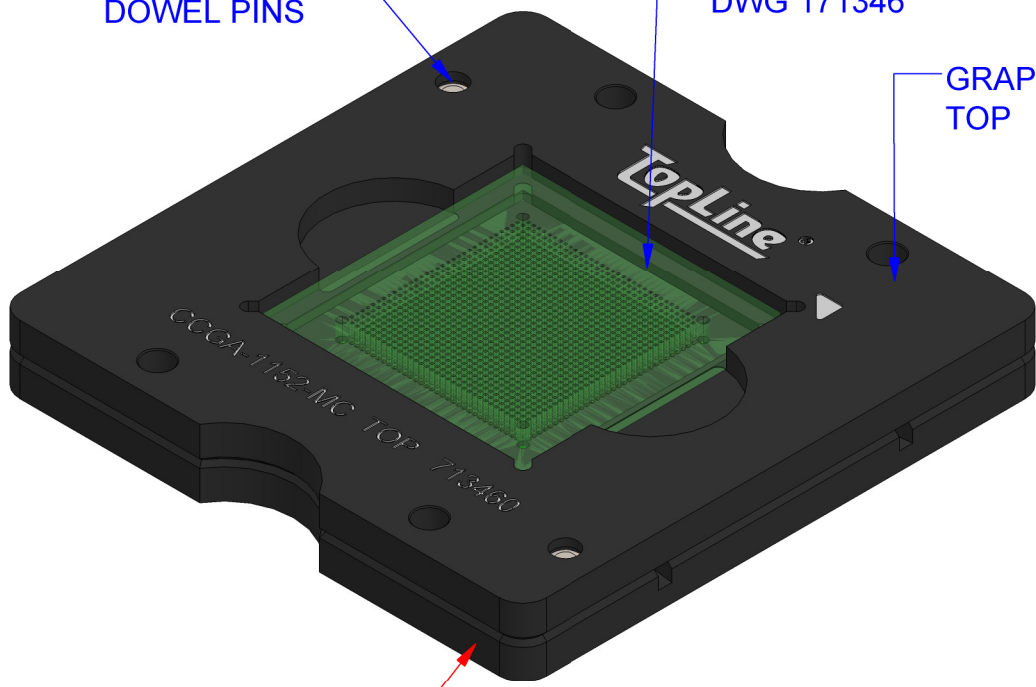
- 1) DIMENSIONS: INCHES.
- 2) MATERIAL: GRAPHITE.
- 3) OMNI-DIRECTIONAL.
- 4) APPLICATION: APPLIES PRESSURE TO COLUMNS.

<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 2:1.5	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 7 OF 15

ALIGNMENT  
DOWEL PINS

FLIP-PACK®  
DWG 171346

GRAPHITE  
TOP



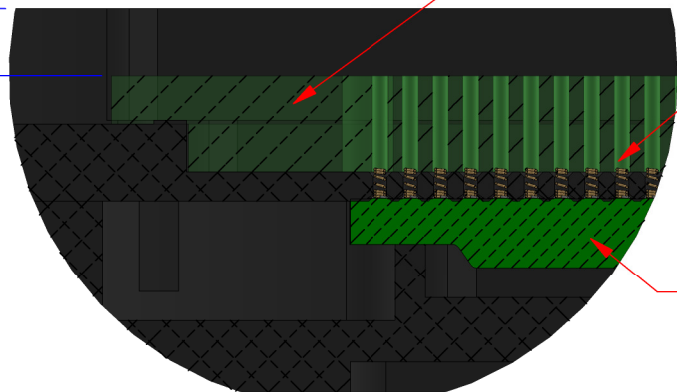
GRAPHITE  
BASE

FLIP PACK (R)

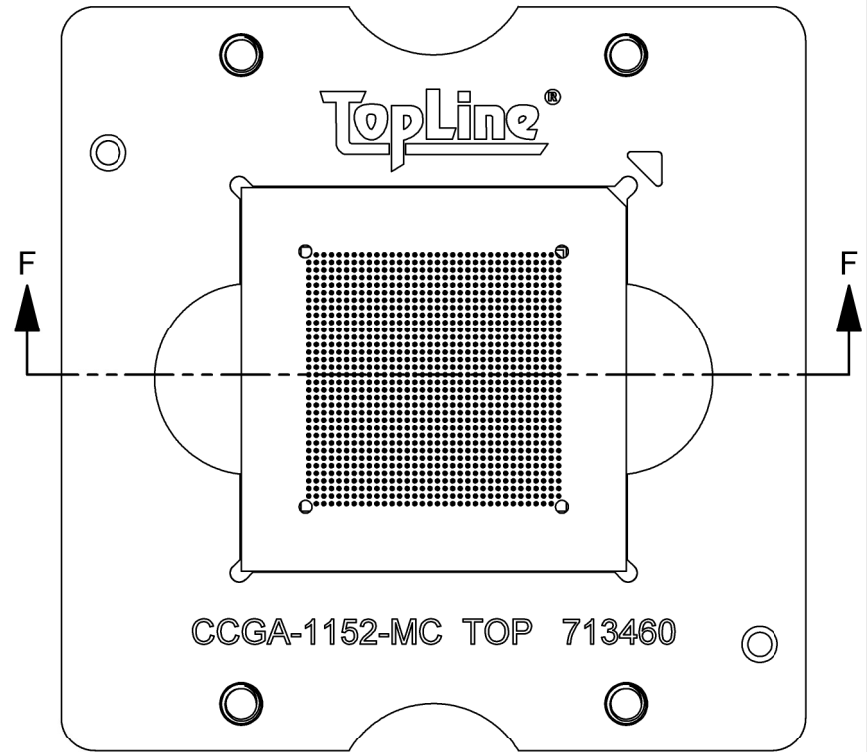
COLUMNS

SUBSTRATE

.087

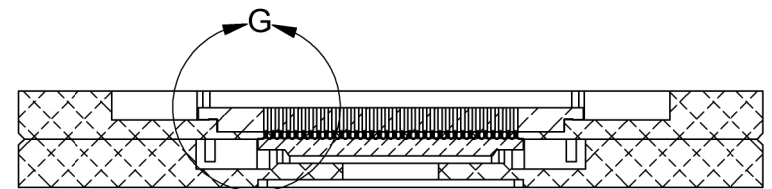


DETAIL G  
SCALE 4 : 1



CCGA-1152-MC TOP 713460

TWO SECTIONS  
GRAPHITE  
SEATED TOGETHER



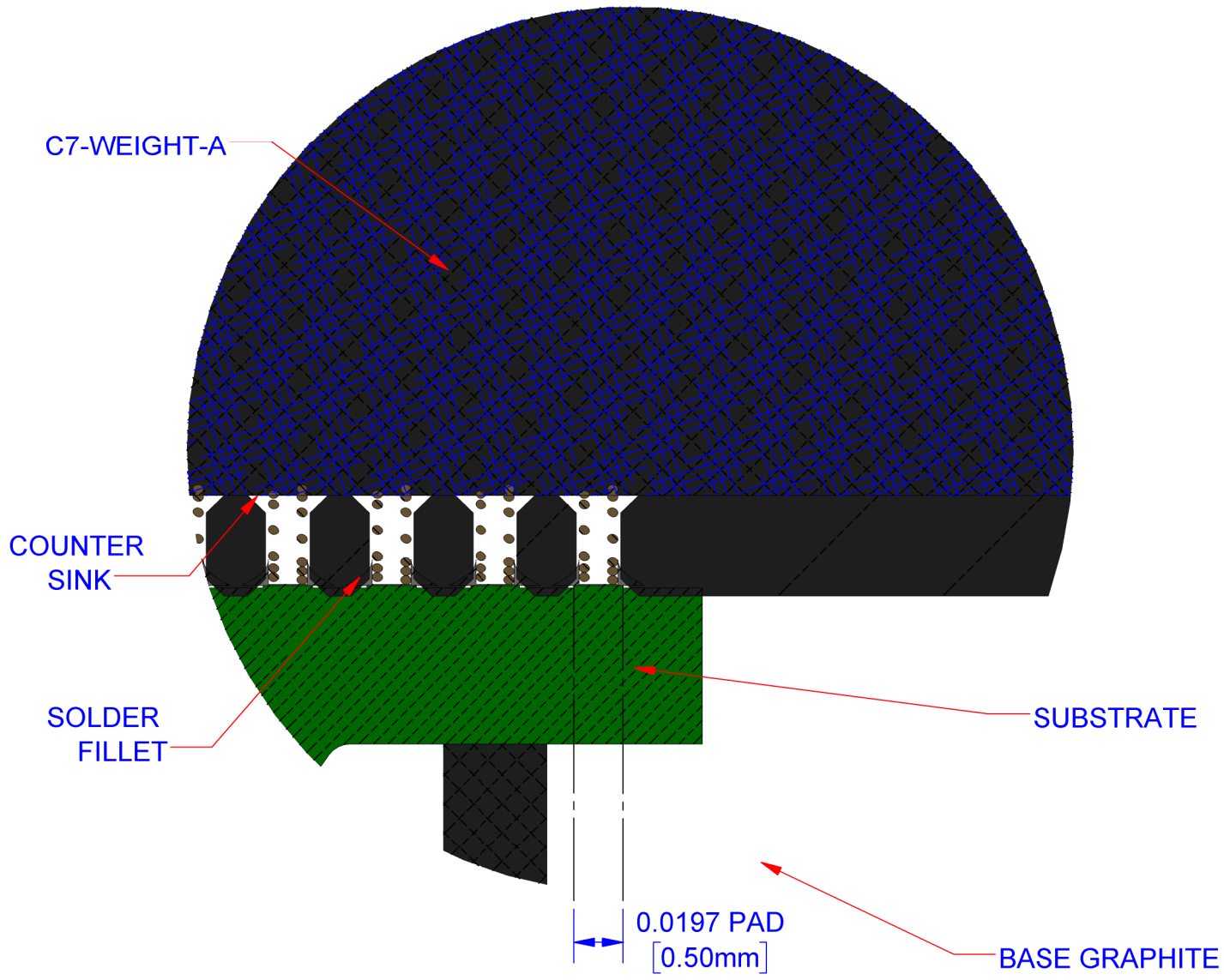
SECTION F-F

**TopLine**®

TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 8 OF 15



STACK-UP DIAGRAM



0.0197 PAD  
[0.50mm]

DETAIL Q  
SEE SHEET 12

<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 16:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 9 OF 15

# EXPLODED SIDE VIEW

FLIP-PACK<sup>®</sup>  
U.S. PATENT 9,629,259

COLUMNS  
X 1152

H

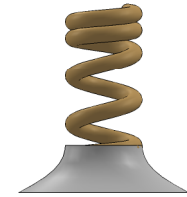
GRAPHITE  
TOP

CCGA

PADS

LID (COVER)

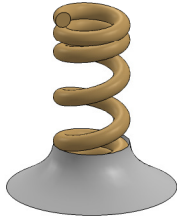
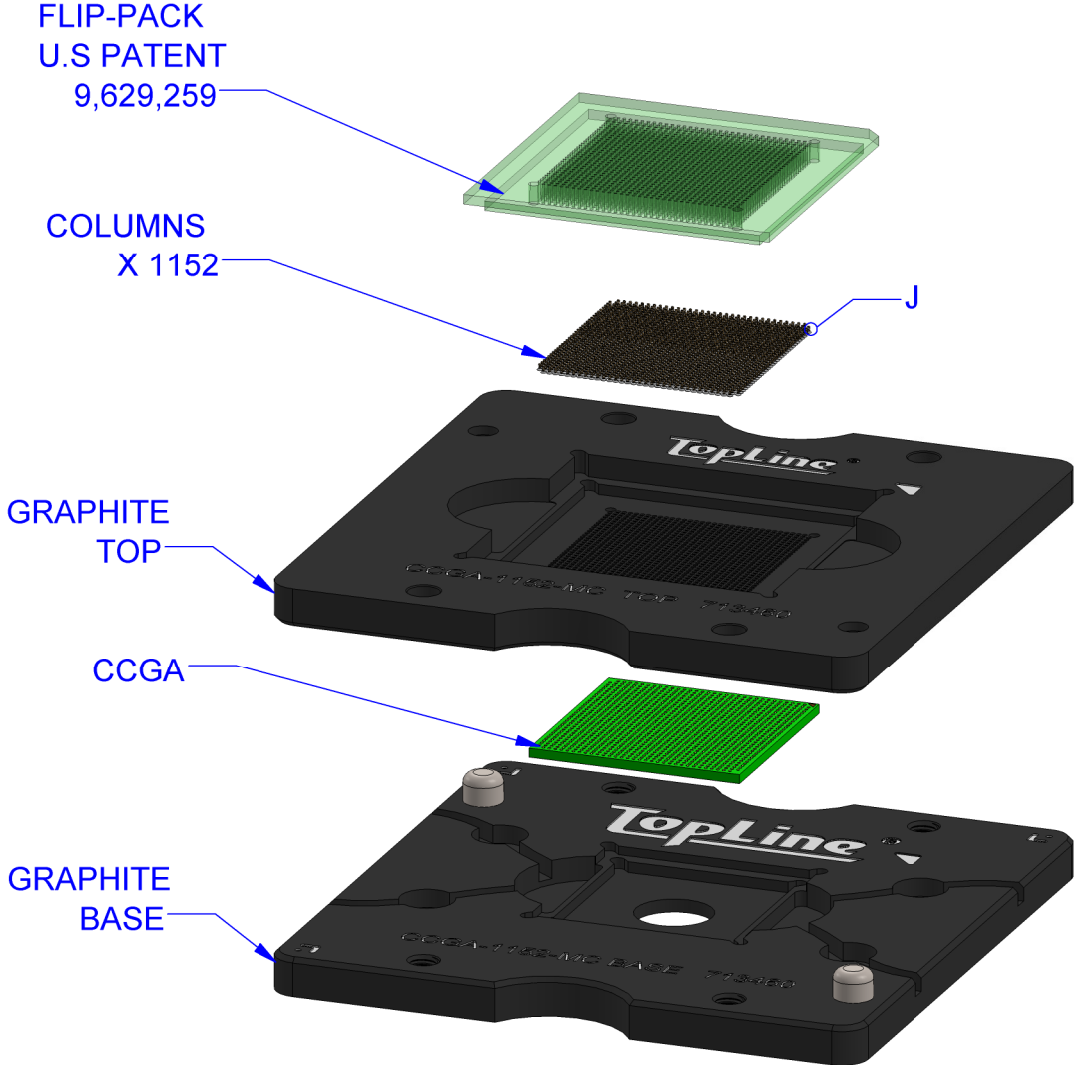
GRAPHITE  
BASE



DETAIL H  
SCALE 25 : 1

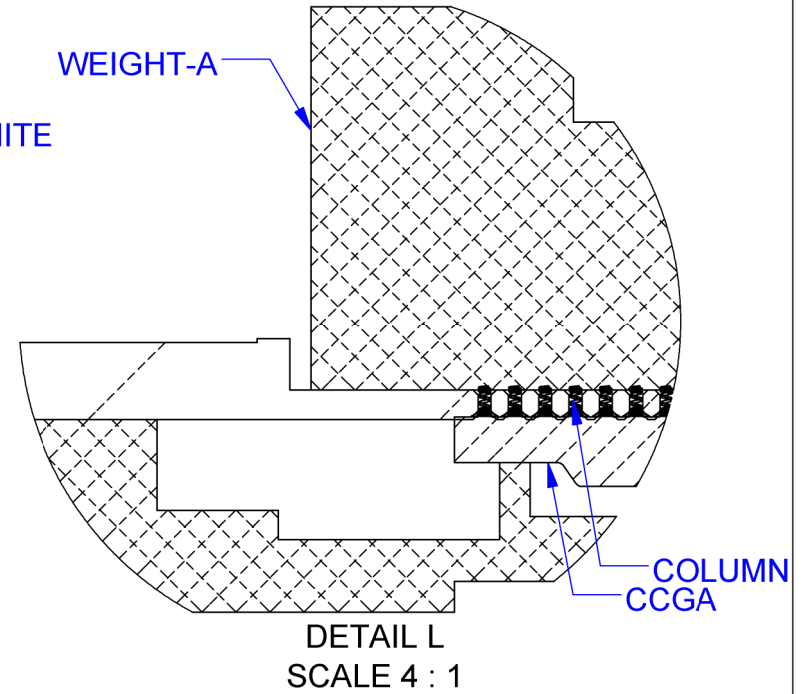
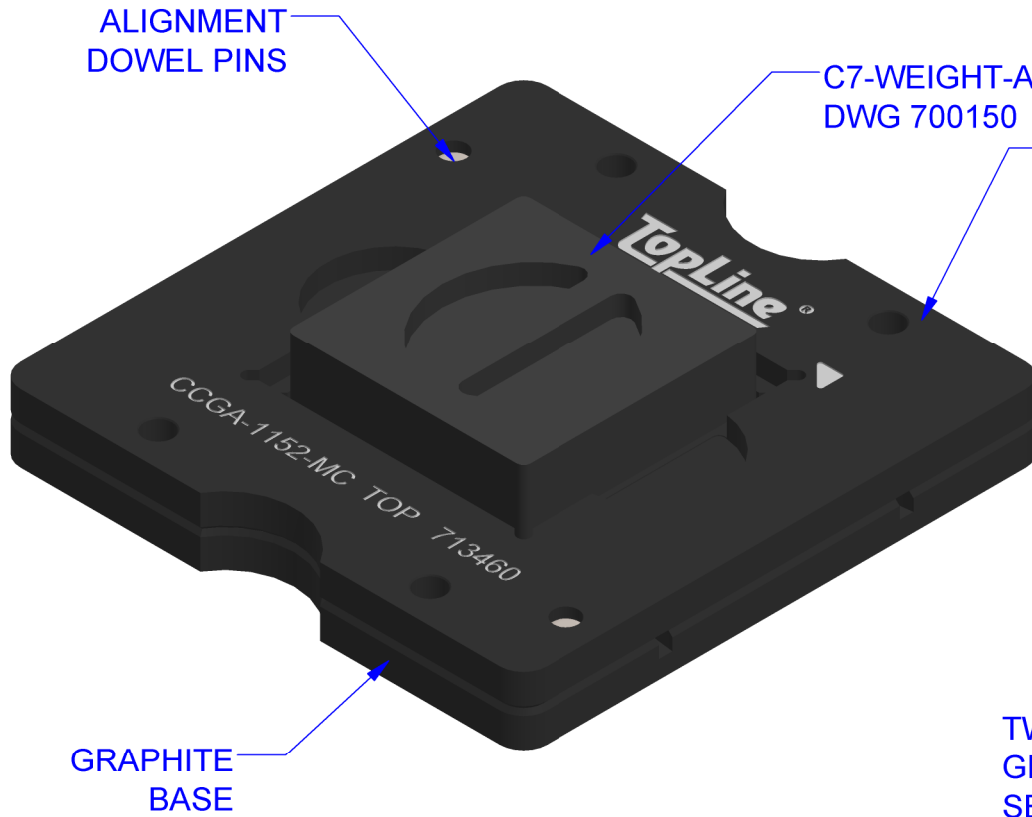
<b>TopLine<sup>®</sup></b>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING		SHEET 10 OF 15	

**EXPLODED ISOMETRIC VIEW**

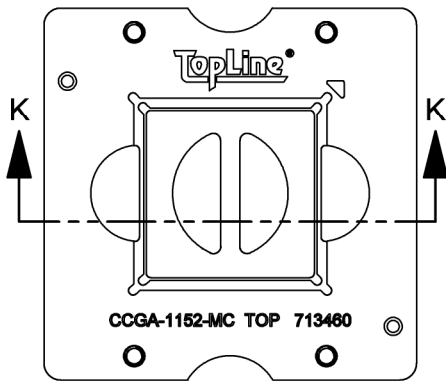


**DETAIL J  
SCALE 25 : 1**

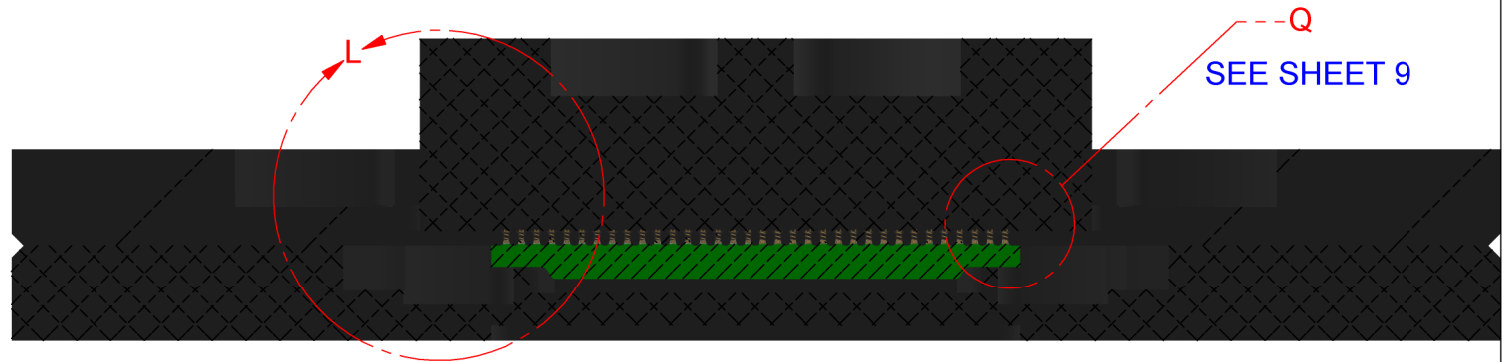
<b>TopLine<sup>®</sup></b>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 0.85:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 11 OF 15



TWO SECTIONS  
GRAPHITE  
SEATED TOGETHER



SCALE= 1:2



SECTION K-K  
SCALE 2 : 1

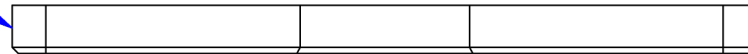
<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 12 OF 15

EXPLODED SIDE VIEW

C7-WEIGHT-A  
DWG 700150

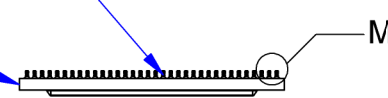


GRAPHITE  
TOP

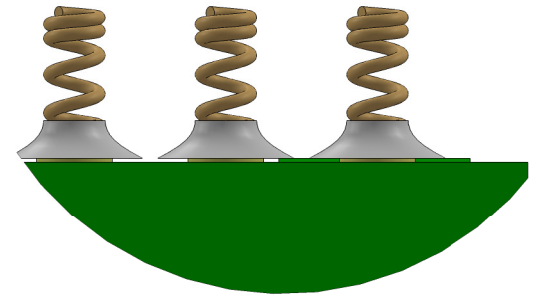


COLUMNS  
X 1152

CCGA



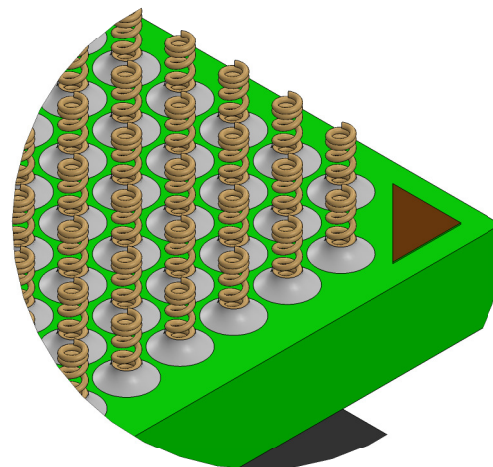
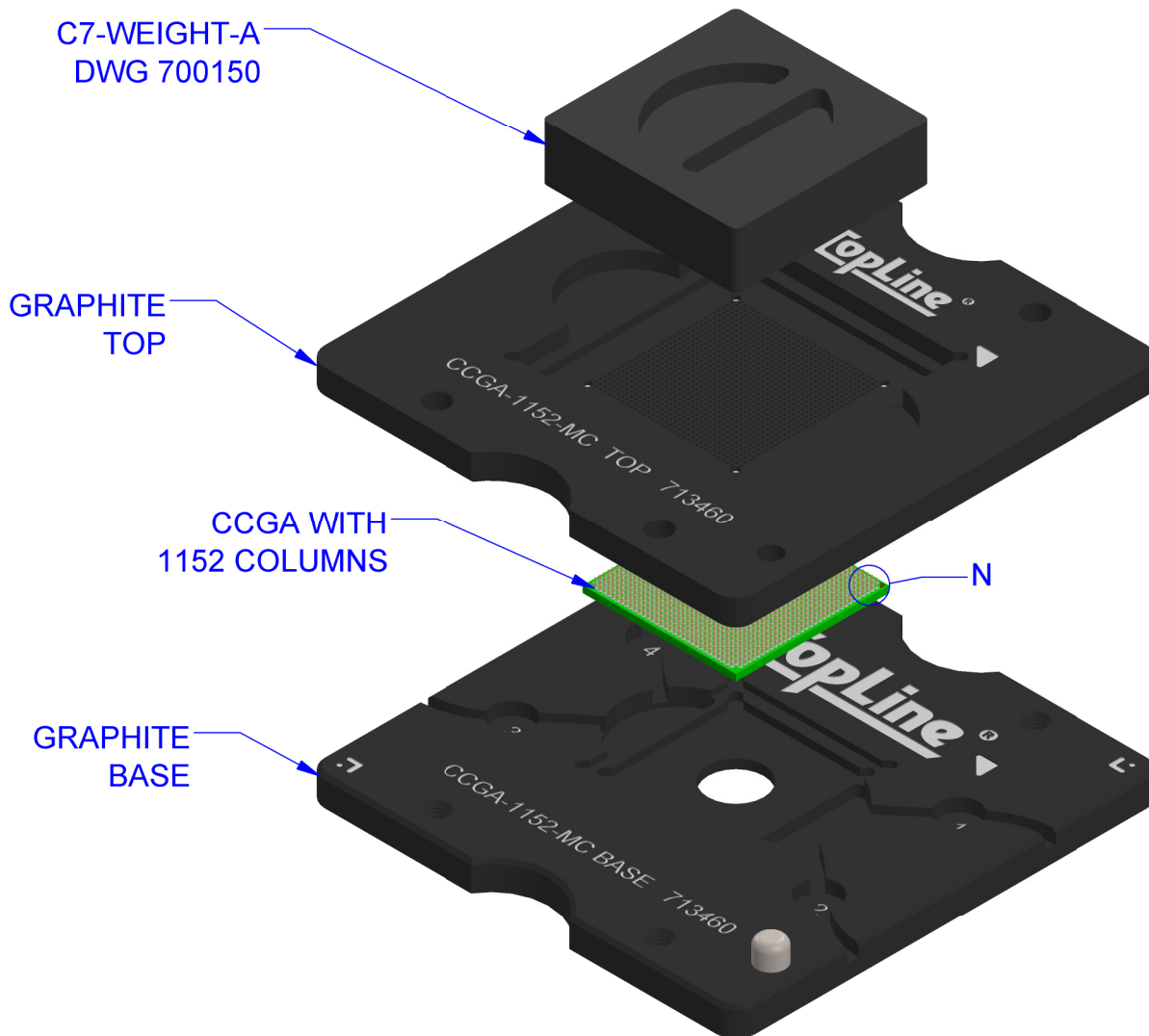
GRAPHITE  
BASE



DETAIL M  
SCALE 20 : 1  
Sn63Pb37 FILLET  
AFTER REFLOW

<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 1:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 13 OF 15

EXPLODED ISOMETRIC VIEW



DETAIL N  
SCALE 10 : 1  
Sn63Pb37 FILLET  
AFTER REFLOW

<b>TopLine</b> <sup>®</sup>			
TITLE C7-GRAPHITE-1152-MC GRAPHITE TOOL			
SCALE 0.85:1	SIZE A	DRAWING NO. 713460	REV A
DO NOT SCALE DRAWING			SHEET 14 OF 15

**TopLine**<sup>®</sup>

TITLE C7-GRAPHITE-1152-MC  
GRAPHITE TOOL

SCALE 4:1	SIZE A	DRAWING NO. 713460	REV A
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DO NOT SCALE DRAWING

SHEET 15 OF 15