

8

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NOTES: UNLESS OTHERWISE SPECIFIED

1. DECIPHER PART NUMBER ON PURCHASE ORDER TO DETERMINE TARGET BLANK SIZE AND PATTERN TYPE.

PART NUMBER FORMAT:

1st CHARACTER = T (FOR "TARGET"): DOES NOT CHANGE.  
2nd CHARACTER = b: TARGET BLANK SIZE. SELECT FROM TABLE BELOW.  
3rd CHARACTER(S) = PATTERN TYPE. SELECT FROM IMAGES BELOW.

2. STANDARD TOLERANCES FOR LASER CUT TARGET FEATURES ARE:

- ± .0005 FOR DIMENSIONS .0050 OR GREATER
- ± .0004 FOR DIMENSIONS .0040 TO .0049
- ± .0003 FOR DIMENSIONS .0030 TO .0039
- ± .0002 FOR DIMENSIONS SMALLER THAN .0030 (OR AS STATED)

3. TARGET FEATURE CENTRATION WITH RESPECT TO TARGET BLANK OUTER DIAMETER IS ± .0015 INCHES.

4. ALL TARGET PATTERN DIMENSIONS IN PART NUMBER (EXCLUDING ANGLE) ARE DENOTED WITH 4 DIGITS, NO LEADING ZERO, AND A DECIMAL POINT PLACED ANYWHERE WITHIN THAT RANGE.

5. ALL ANGLES IN PART NUMBER ARE DENOTED WITH 3 DIGITS, ONE DECIMAL PLACE, AND LEADING ZEROS AS NEEDED.

6. MINIMUM PINHOLE SIZE IS  $\phi$  .0007; FOR PINHOLES LESS THAN  $\phi$  .0007 CONTACT SBIR SALES FOR CUSTOM QUOTE.

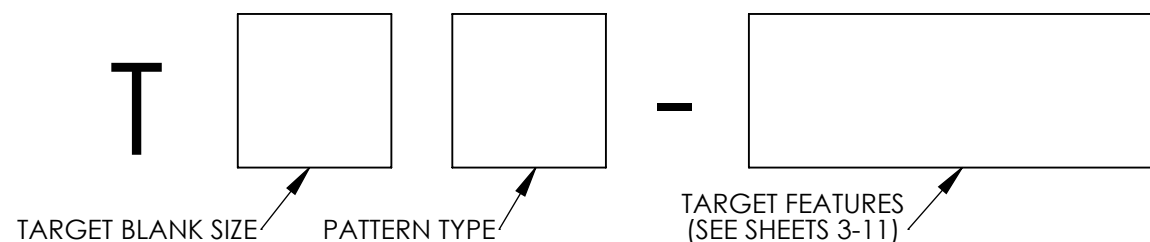
7. MINIMUM SEPARATED BAR FEATURE IS .0016 WIDE; FOR FEATURES BETWEEN .0007 AND .0016 INCH CONTACT SBIR SALES FOR CUSTOM QUOTE.

8. MINIMUM SLIT WIDTH IS .0007; FOR FEATURES LESS THAN .0007 CONTACT SBIR SALES FOR CUSTOM QUOTE.

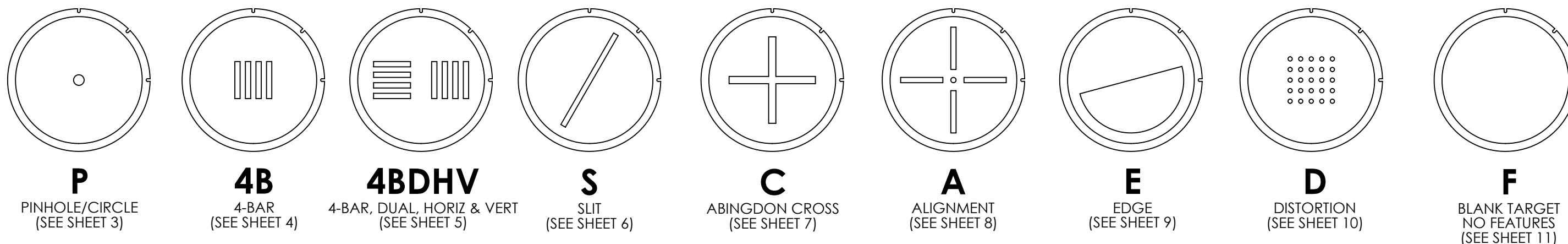
9. PINHOLES PER ROW "N" AND PINHOLES PER COLUMN "N" SHALL BE THE SAME VALUE "N".

DRAWN	CHECKED	CHECKED DATE	RELEASED	RELEASED DATE	REVISED PER ECO	REV
TG					060322	A
CB					062020	B
AO					062772	C

### PART NUMBER FORMAT



### TARGET PATTERN TYPES



### TARGET BLANK SELECTION

TARGET BLANK SIZE 2nd CHARACTER "b"	REF ONLY: FOR SBIR TARGET WHEELS	REF ONLY: CLEAR APERTURE
2	312i	$\phi$ 2.000
3	313i, 316i, 317i	$\phi$ 3.000
4	314 (LEGACY)	$\phi$ 1.438
5	315i	$\phi$ 5.000

### EXAMPLES OF VALID PART NUMBERS

T24B-.0035  
 T2A-.0157-.2600-.7874-.0157  
 T3D-9X9-.0251-.2000  
 T44B-.0820  
 T5S-.0050-.5100-00.0

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES INTERPRET DWGS IAW ASME Y14.100M AND ASME Y14.5-1994 TOLERANCES ARE: .XX .01 .XXX .005 .XXXX .0005 FRAC. 1/16 ANG. 1/2	DRAWN T.GARCIA	DATE 10-12-2022		
	CHECKED	DATE		
	RELEASED	DATE		
	RELEASED PER ECO NO.	060259	TITLE DOC,SPEC SHEET,TARGET,LASER CUT	CAGE CODE: 0B0B2
DO NOT SCALE FROM DRAWING	SIZE B	NUMBER 319-002-420	SHEET 1 OF 11	REV C

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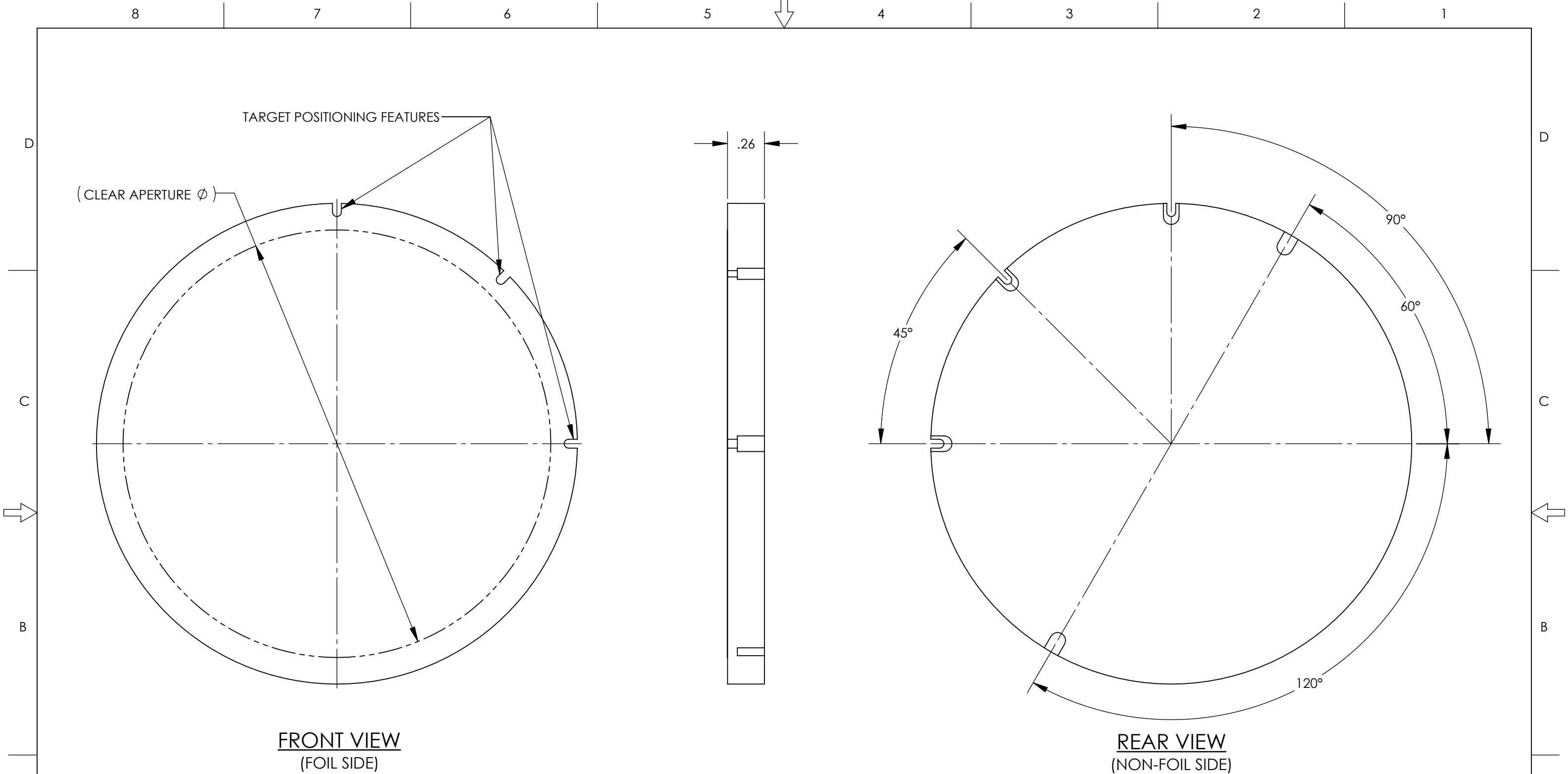
5

4

3

2

1

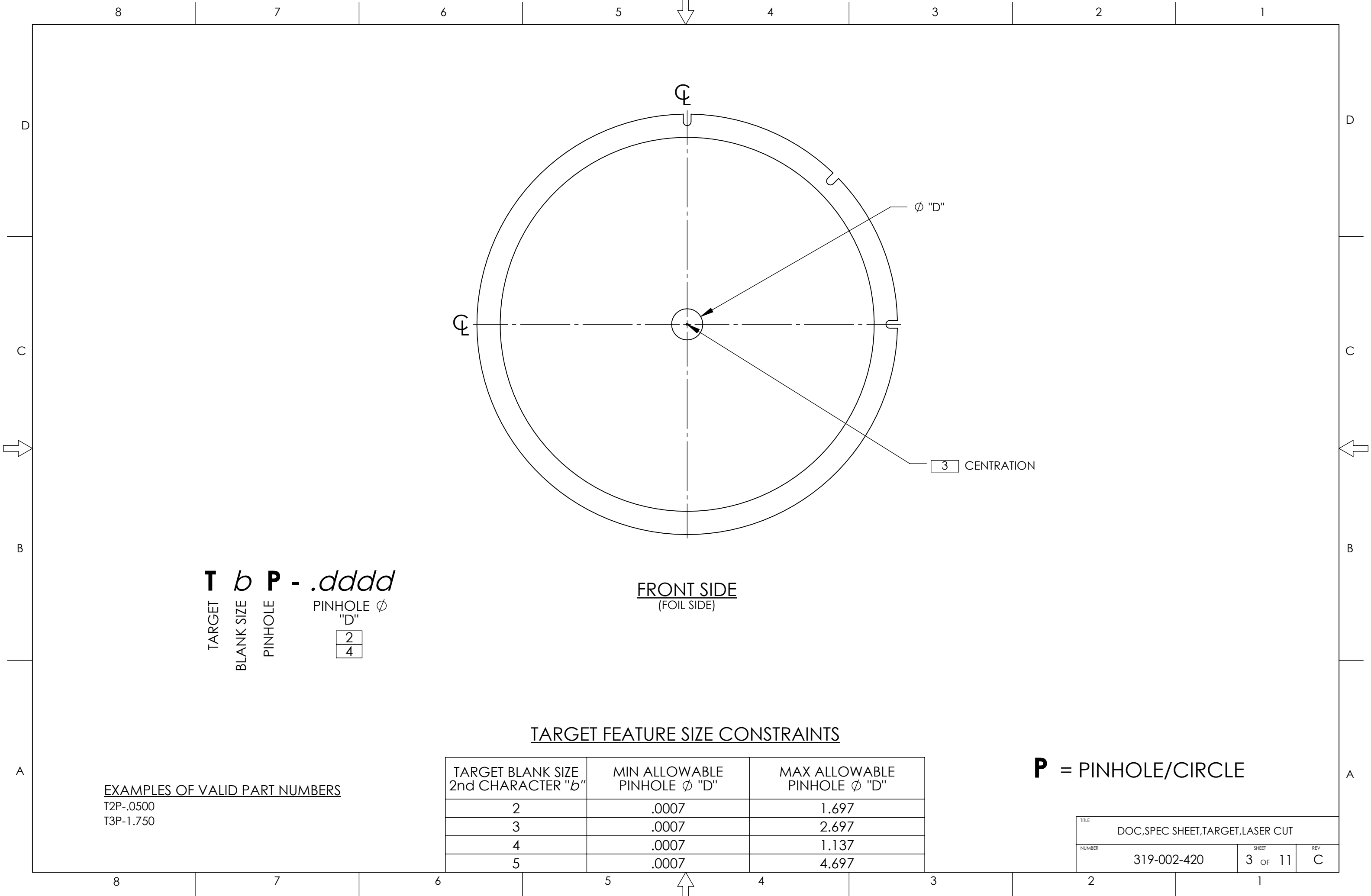


TARGET BLANK SELECTION

TARGET BLANK SIZE 2nd CHARACTER "b"	REF ONLY: FOR SBIR TARGET WHEELS	REF ONLY: OUTER DIAMETER	REF ONLY: CLEAR APERTURE	REF ONLY: EMISSIVE SURFACE AREA (SQUARE INCHES)
2	312i	$\phi$ 2.186	$\phi$ 2.000	3.141
3	313i, 316i, 317i	$\phi$ 3.373	$\phi$ 3.000	7.069
4	314 (LEGACY)	$\phi$ 1.623	$\phi$ 1.438	1.624
5	315i	$\phi$ 5.373	$\phi$ 5.000	19.635

**TARGET BLANK**

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 2 OF 11	REV C



**T** TARGET  
**b** BLANK SIZE  
**P** PINHOLE  
**- .dddd** PINHOLE  $\phi$  "D"  

2
4

FRONT SIDE  
(FOIL SIDE)

TARGET FEATURE SIZE CONSTRAINTS

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE PINHOLE $\phi$ "D"	MAX ALLOWABLE PINHOLE $\phi$ "D"
2	.0007	1.697
3	.0007	2.697
4	.0007	1.137
5	.0007	4.697

EXAMPLES OF VALID PART NUMBERS

T2P-.0500  
T3P-1.750

**P** = PINHOLE/CIRCLE

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 3 OF 11	REV C

8

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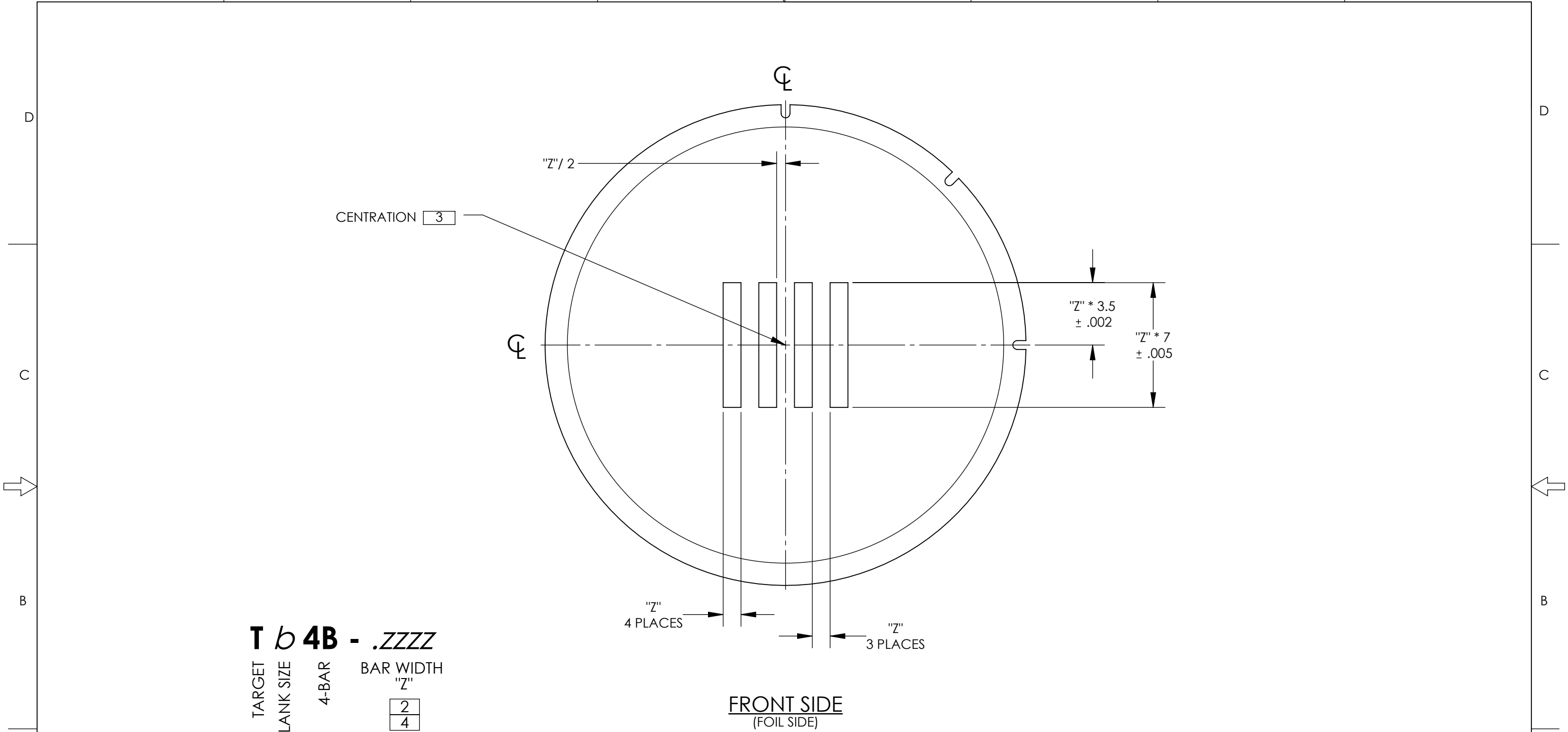
5

4

3

2

1



**T b 4B - .zzzz**

TARGET  
BLANK SIZE  
4-BAR  
BAR WIDTH  
"Z"

2
4

**FRONT SIDE**  
(FOIL SIDE)

TARGET FEATURE SIZE CONSTRAINTS

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE BAR WIDTH "Z"	MAX ALLOWABLE BAR WIDTH "Z"
2	.0016	.1714
3	.0016	.2724
4	.0016	.1149
5	.0016	.4745

**4B = 4-BAR**

EXAMPLES OF VALID PART NUMBERS

T24B-.0500  
T54B-.3937

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 4 OF 11	REV C

8

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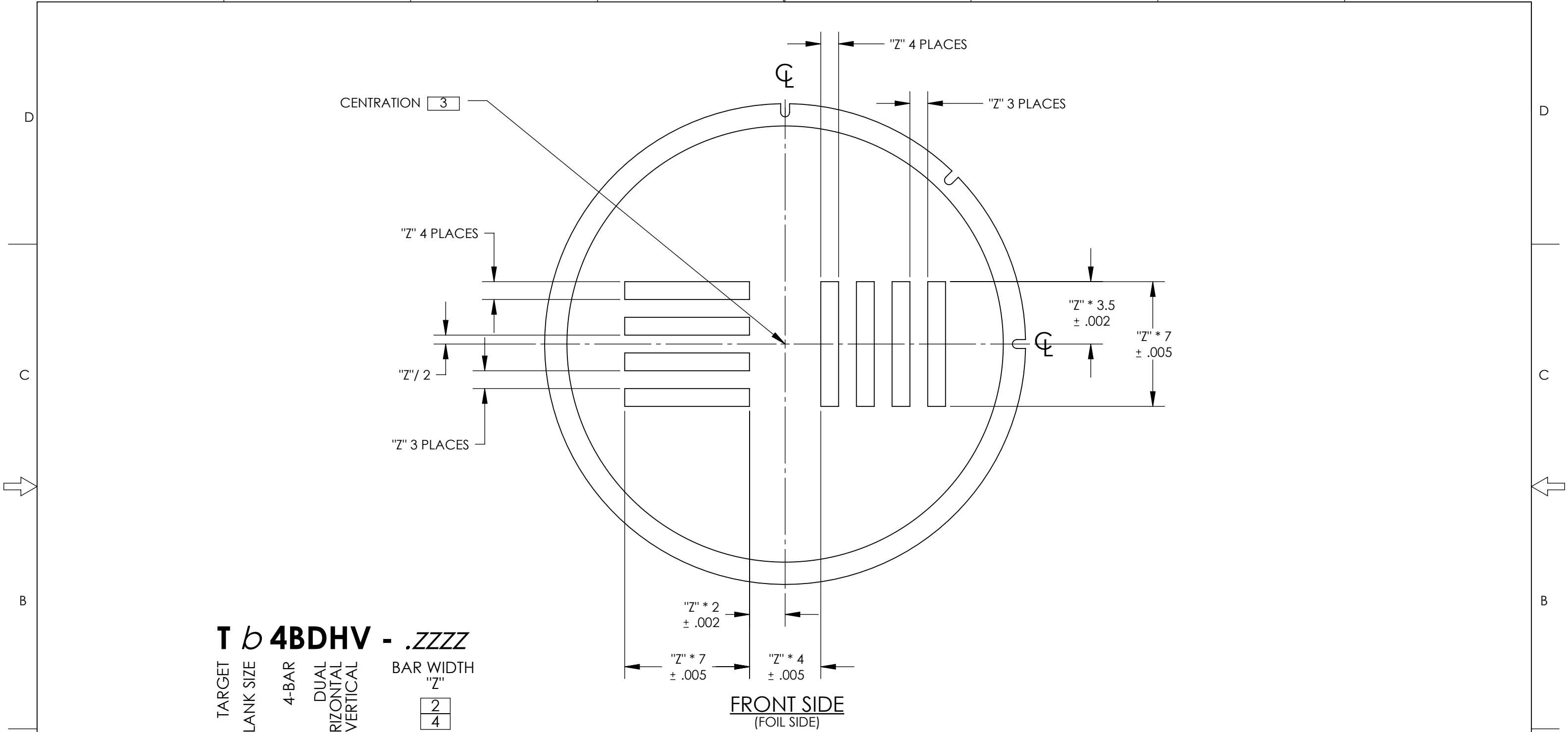
5

4

3

2

1



**T b 4BDHV - .ZZZZ**  
 TARGET  
 BLANK SIZE  
 4-BAR  
 DUAL  
 HORIZONTAL  
 AND VERTICAL  
 BAR WIDTH  
 "Z"  

2
4

**FRONT SIDE**  
(FOIL SIDE)

**TARGET FEATURE SIZE CONSTRAINTS**

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE BAR WIDTH "Z"	MAX ALLOWABLE BAR WIDTH "Z"
2	.0016	.0878
3	.0016	.1395
4	.0016	.0588
5	.0016	.2429

**4BDHV = 4-BAR,DUAL,HORIZ & VERT**

EXAMPLES OF VALID PART NUMBERS  
 T24BDHV-.0500  
 T54BDHV-.1969

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 5 OF 11	REV C

8

7

6

5

4

3

2

1

A

A

B

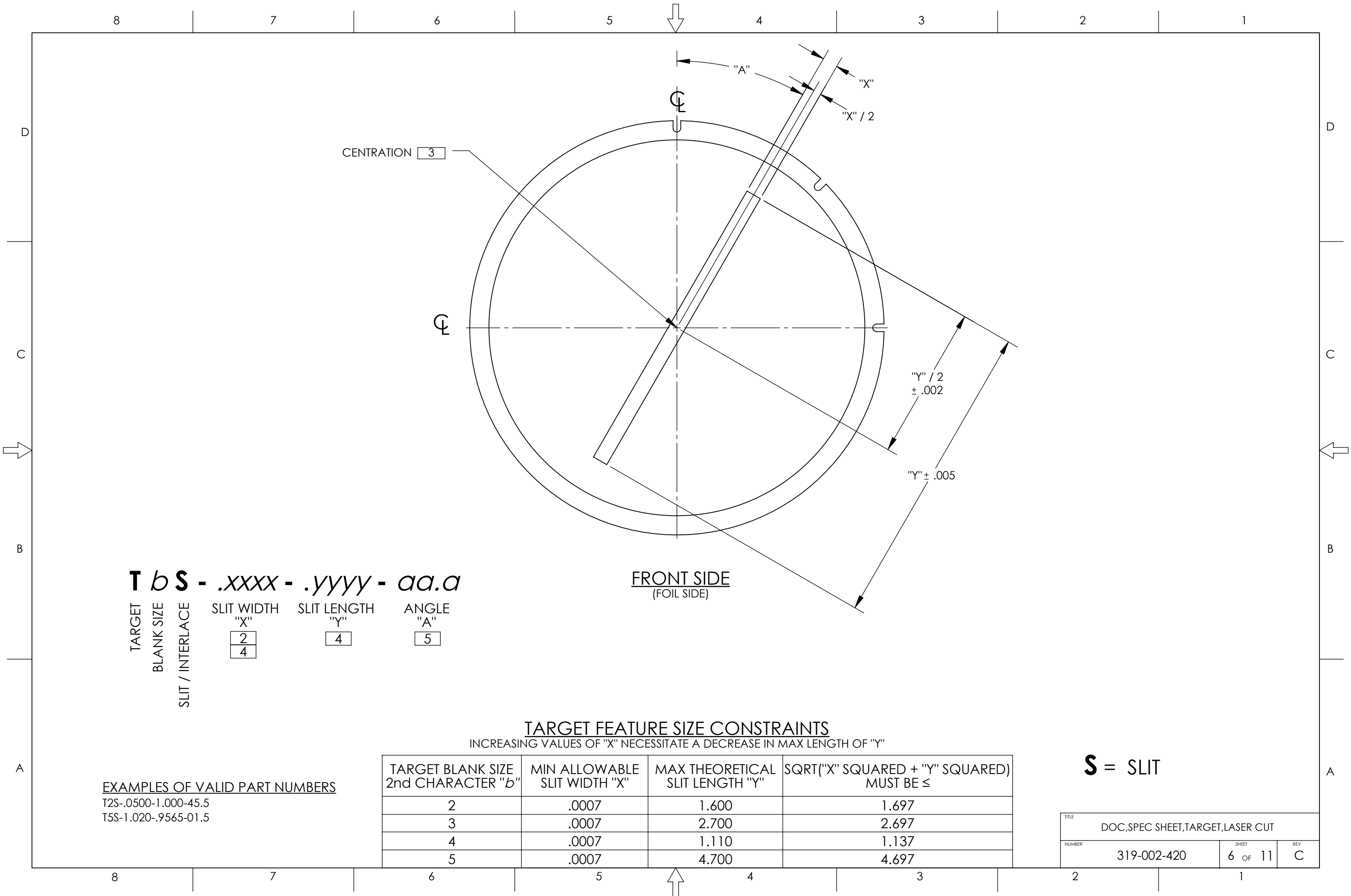
B

C

C

D

D



**T b S - .xxxx - .yyyy - aa.a**

TARGET  
BLANK SIZE  
SLIT / INTERLACE

SLIT WIDTH  
"X"  

2
4

SLIT LENGTH  
"Y"  

4
---

ANGLE  
"A"  

5
---

FRONT SIDE  
(FOIL SIDE)

**TARGET FEATURE SIZE CONSTRAINTS**

INCREASING VALUES OF "X" NECESSITATE A DECREASE IN MAX LENGTH OF "Y"

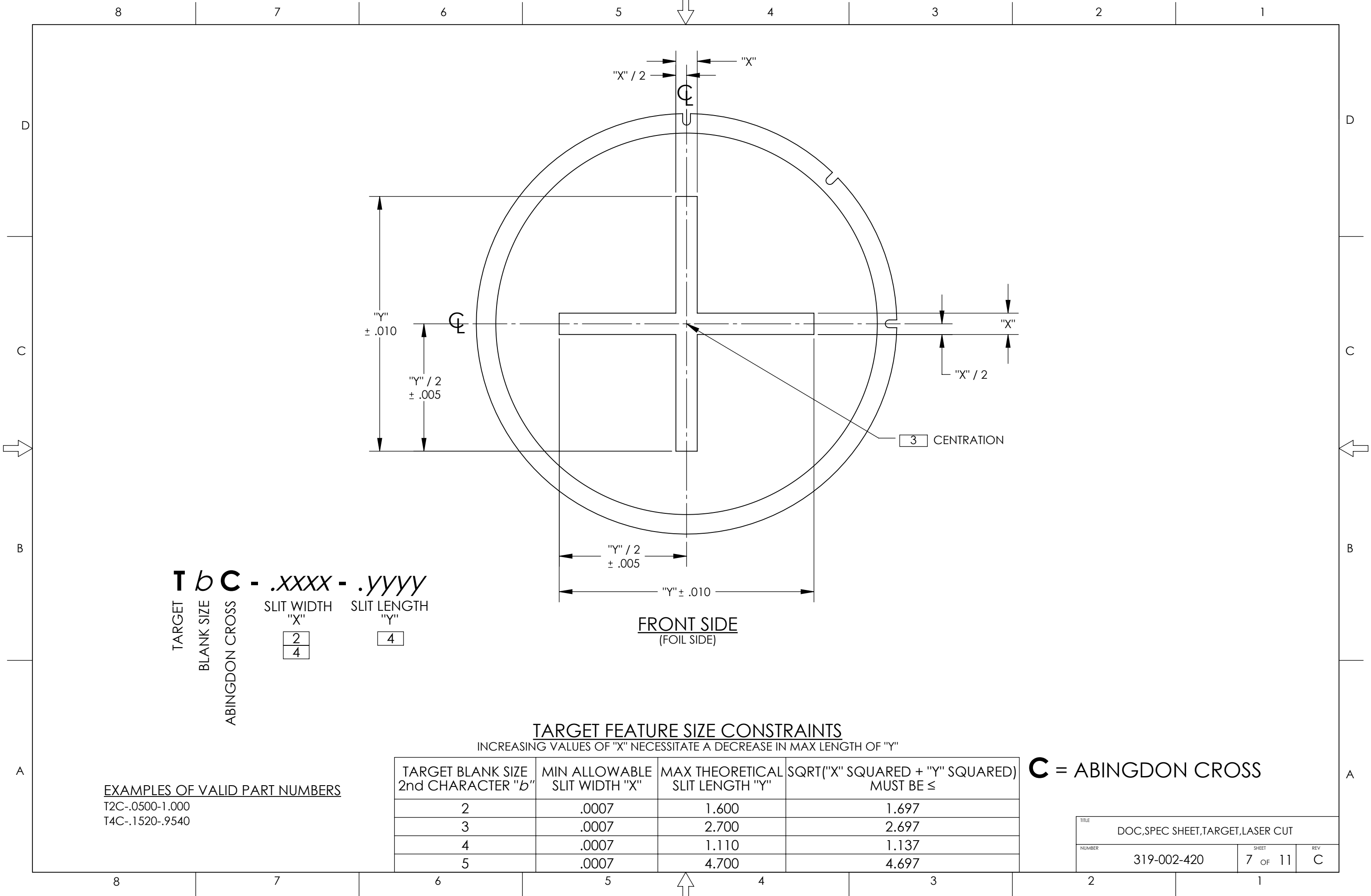
TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE SLIT WIDTH "X"	MAX THEORETICAL SLIT LENGTH "Y"	SQRT("X" SQUARED + "Y" SQUARED) MUST BE ≤
2	.0007	1.600	1.697
3	.0007	2.700	2.697
4	.0007	1.110	1.137
5	.0007	4.700	4.697

EXAMPLES OF VALID PART NUMBERS

T2S-.0500-1.000-45.5  
T5S-1.020-.9565-01.5

**S = SLIT**

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 6 OF 11	REV C



**T b C - .xxxx - .yyyy**  
 TARGET  
 BLANK SIZE  
 ABINGDON CROSS  
 SLIT WIDTH "X"  
 SLIT LENGTH "Y"

2
4

4
---

**FRONT SIDE**  
 (FOIL SIDE)

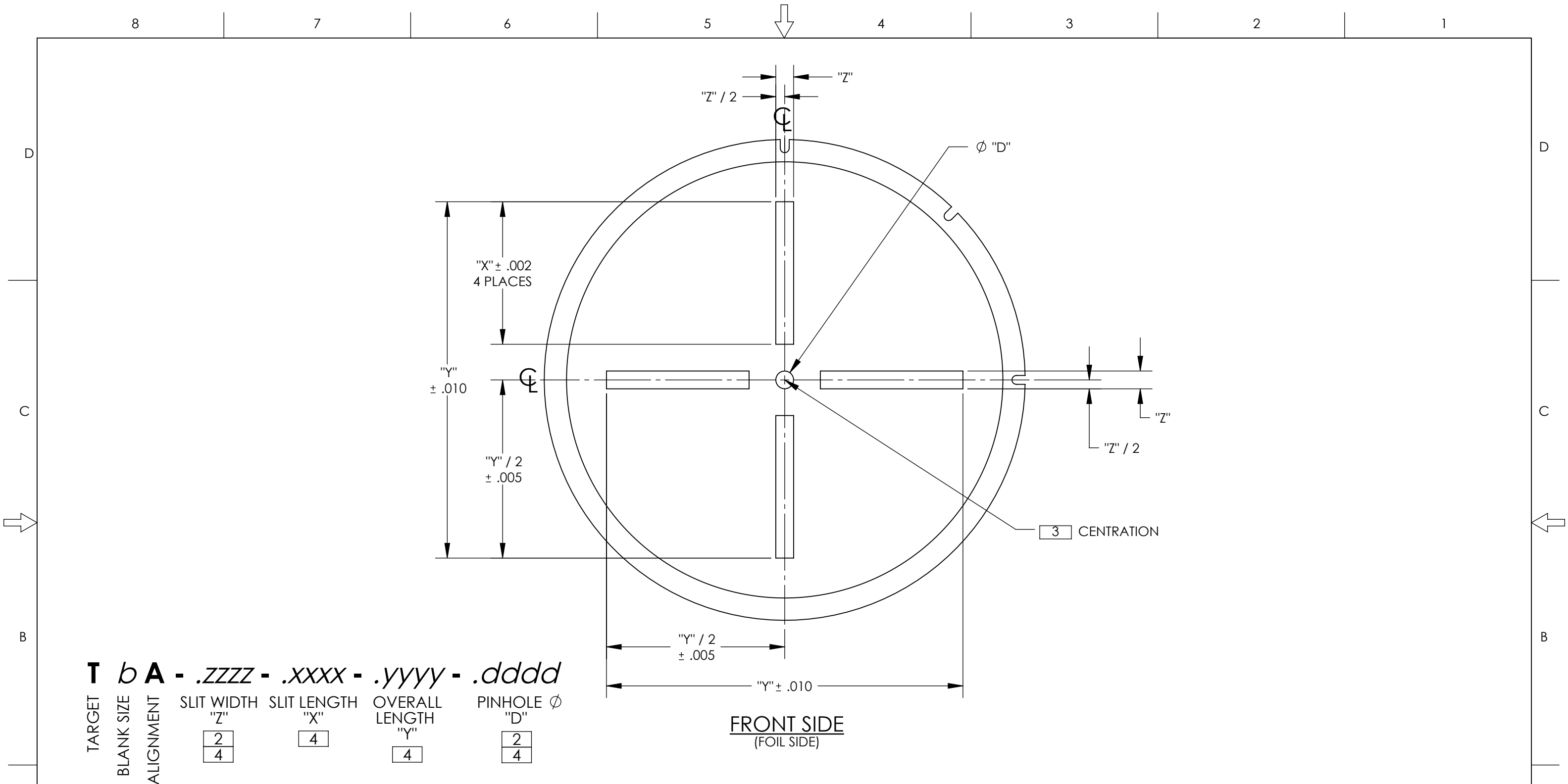
**TARGET FEATURE SIZE CONSTRAINTS**  
 INCREASING VALUES OF "X" NECESSITATE A DECREASE IN MAX LENGTH OF "Y"

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE SLIT WIDTH "X"	MAX THEORETICAL SLIT LENGTH "Y"	SQRT("X" SQUARED + "Y" SQUARED) MUST BE ≤
2	.0007	1.600	1.697
3	.0007	2.700	2.697
4	.0007	1.110	1.137
5	.0007	4.700	4.697

**C = ABINGDON CROSS**

EXAMPLES OF VALID PART NUMBERS  
 T2C-.0500-1.000  
 T4C-.1520-.9540

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 7 OF 11	REV C



**T b A - .zzzz - .xxxx - .yyyy - .dddd**

TARGET BLANK SIZE ALIGNMENT SLIT WIDTH "Z" SLIT LENGTH "X" OVERALL LENGTH "Y" PINHOLE  $\phi$  "D"

2	4	4	2
4			4

**TARGET FEATURE SIZE CONSTRAINTS**  
 INCREASING VALUES OF "X" NECESSITATE A DECREASE IN MAX LENGTH OF "Y"

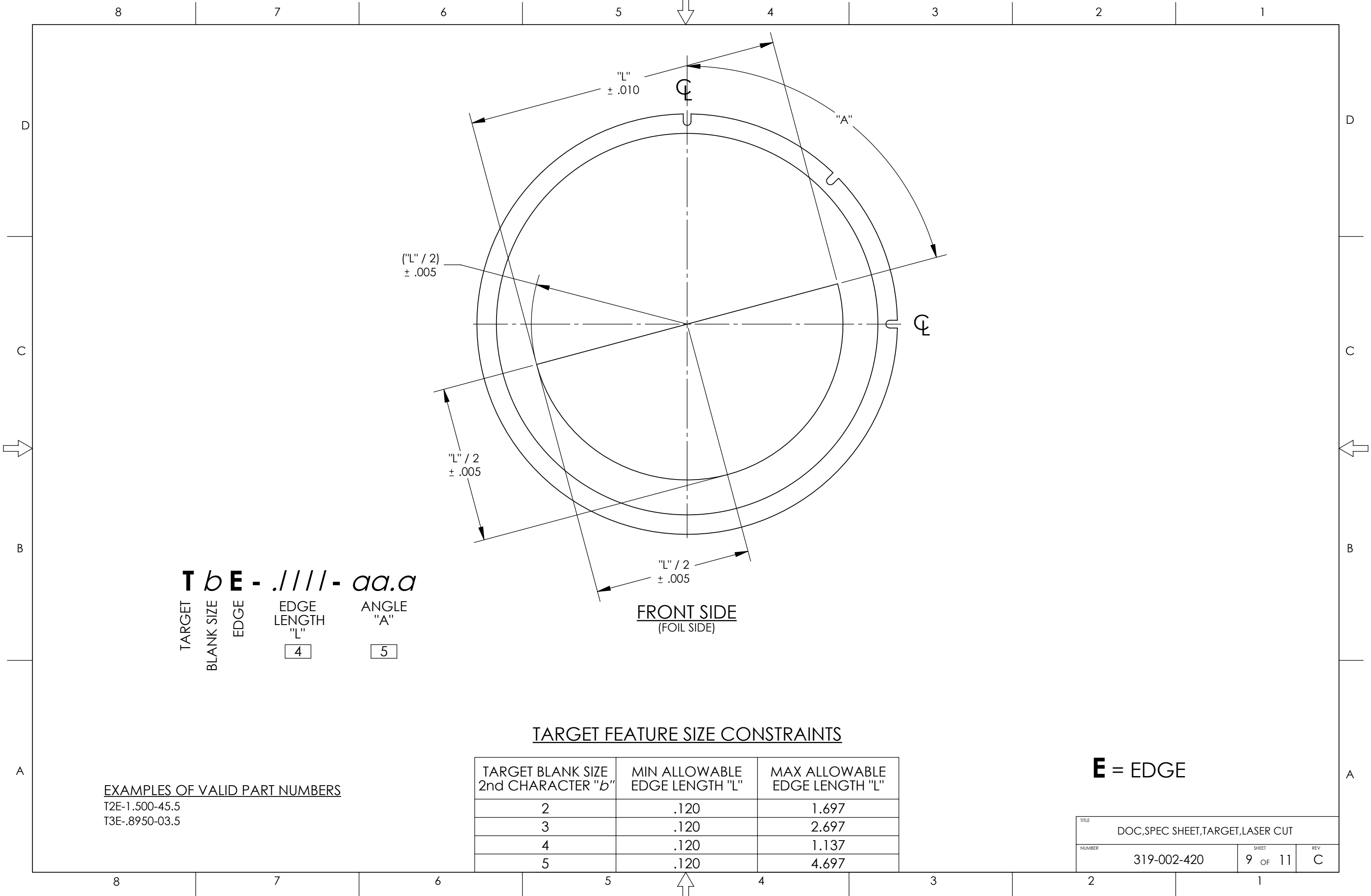
TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE SLIT WIDTH "Z"	MIN ALLOWABLE PINHOLE $\phi$ "D"	MAX THEORETICAL LENGTH "Y"	SQRT("Z" SQUARED + "Y" SQUARED) MUST BE $\leq$	("Y" - "D" - (2 * "X")) / 2 MUST BE $>$
2	.0007	.0007	1.697	1.697	.0016
3	.0007	.0007	2.697	2.697	.0016
4	.0007	.0007	1.137	1.137	.0016
5	.0007	.0007	4.697	4.697	.0016

**A = ALIGNMENT**

EXAMPLES OF VALID PART NUMBERS

T2A-.0500-.0750-1.000-.1000  
 T5A-.0015-1.050-3.111-.0525

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 8 OF 11	REV C



**T b E - .llll - aa.a**

TARGET  
BLANK SIZE  
EDGE

EDGE  
LENGTH  
"L"

ANGLE  
"A"

4      5

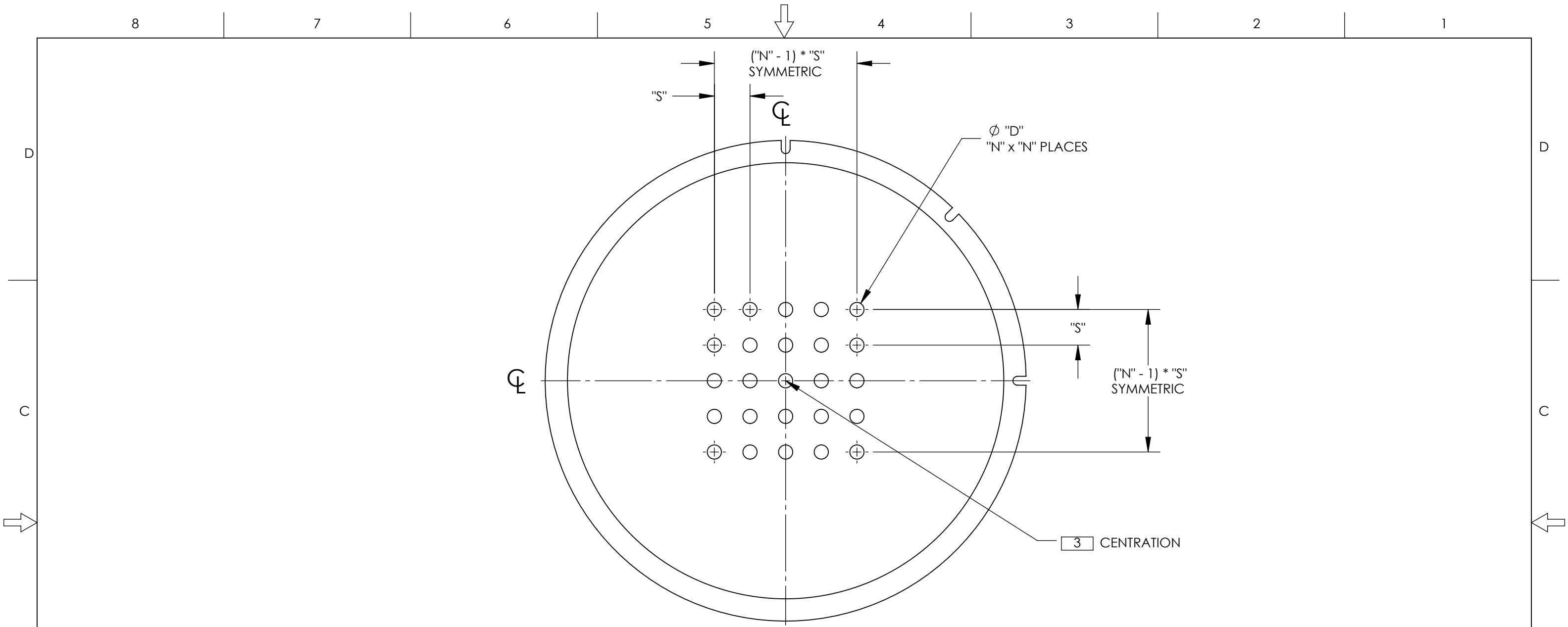
TARGET FEATURE SIZE CONSTRAINTS

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE EDGE LENGTH "L"	MAX ALLOWABLE EDGE LENGTH "L"
2	.120	1.697
3	.120	2.697
4	.120	1.137
5	.120	4.697

EXAMPLES OF VALID PART NUMBERS  
T2E-1.500-45.5  
T3E-.8950-03.5

**E = EDGE**

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 9 OF 11	REV C



**T b D - n X n - . d d d d - . s s s s**

TARGET  
BLANK SIZE  
DISTORTION  
BY  
PINHOLES PER ROW  
PINHOLES PER COLUMN  
PINHOLE  $\phi$  "D"  
CENTER TO CENTER SPACING "S"

$\frac{2}{4}$

$\frac{2}{4}$

9

9

FRONT SIDE  
(FOIL SIDE)

**TARGET FEATURE SIZE CONSTRAINTS**

TARGET BLANK SIZE 2nd CHARACTER "b"	MIN ALLOWABLE PINHOLE $\phi$ "D"	[ ("N" - 1) * "S" + "D" ] * 1.414 MUST BE $\leq$	"S" - "D" MUST BE $>$
2	.0007	1.697	.0016
3	.0007	2.697	.0016
4	.0007	1.137	.0016
5	.0007	4.697	.0016

EXAMPLES OF VALID PART NUMBERS  
T2D-5X5-.0500-.2000  
T4D-5X5-.0015-.0750

**D = DISTORTION**

TITLE DOC,SPEC SHEET,TARGET,LASER CUT			
NUMBER 319-002-420	SHEET 10 OF 11	REV C	

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4

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2

1



D

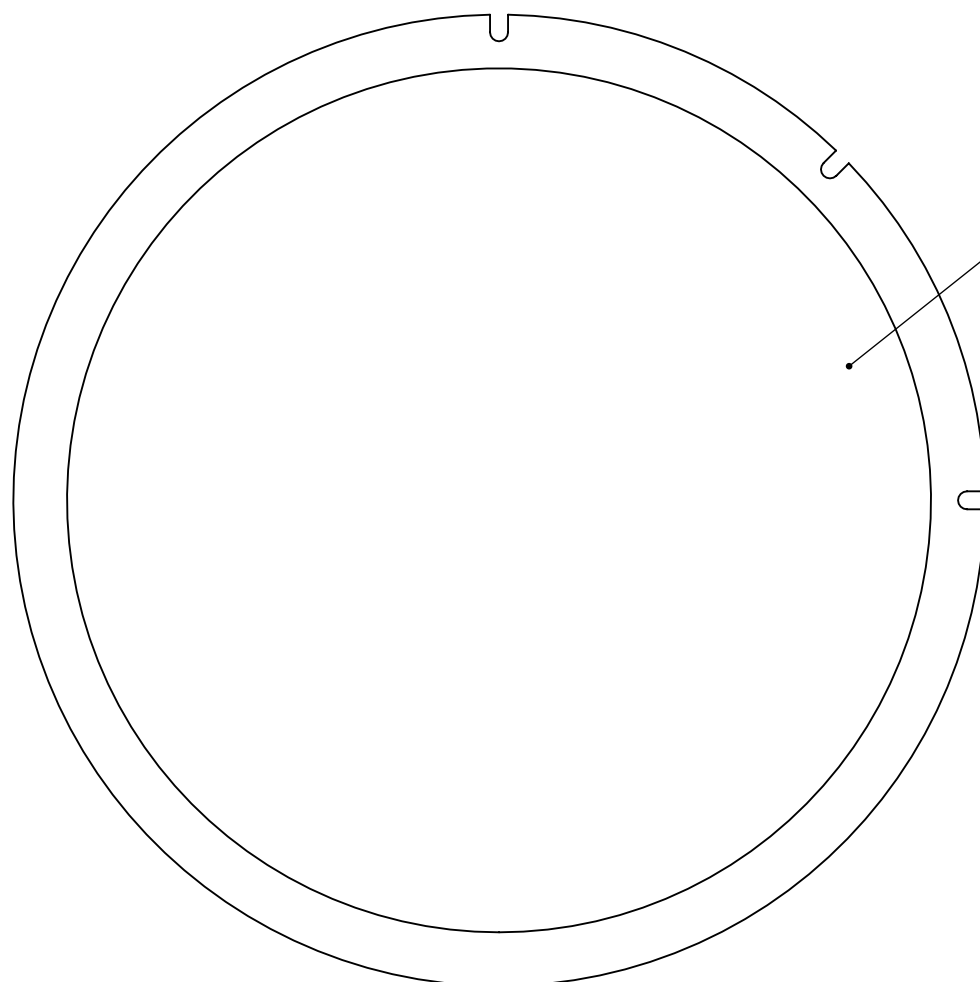
D

C

C

B

B



CUT FEATURES NOT PRESENT ON BLANK TARGETS

FRONT SIDE  
(FOIL SIDE)

**T b F - NONE**

TARGET  
BLANK SIZE  
BLANK

**F = BLANK**

A

A

VALID PART NUMBERS

T2F-NONE  
T3F-NONE  
T4F-NONE  
T5F-NONE

TARGET BLANK SIZE 2nd CHARACTER "b"	REF ONLY: FOR SBIR TARGET WHEELS	REF ONLY: OUTER DIAMETER	REF ONLY: CLEAR APERTURE	REF ONLY: EMISSIVE SURFACE AREA (SQUARE INCHES)
2	312i	∅ 2.186	∅ 2.000	3.141
3	313i, 316i, 317i	∅ 3.373	∅ 3.000	7.069
4	314 (LEGACY)	∅ 1.623	∅ 1.438	1.624
5	315i	∅ 5.373	∅ 5.000	19.635

TITLE DOC,SPEC SHEET,TARGET,LASER CUT		
NUMBER 319-002-420	SHEET 11 OF 11	REV C

8

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6

5

4

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