

Units: Inches

Material: Aluminum 7075 - T6

Quantity: 1

Notes: 1. All drilled and tapped through holes on plate face to within $\pm 0.003''$ of center of $\varnothing 3''$ through hole
 2. Break all corners
 3. All inside corners, radius less than or equal to $1/8''$

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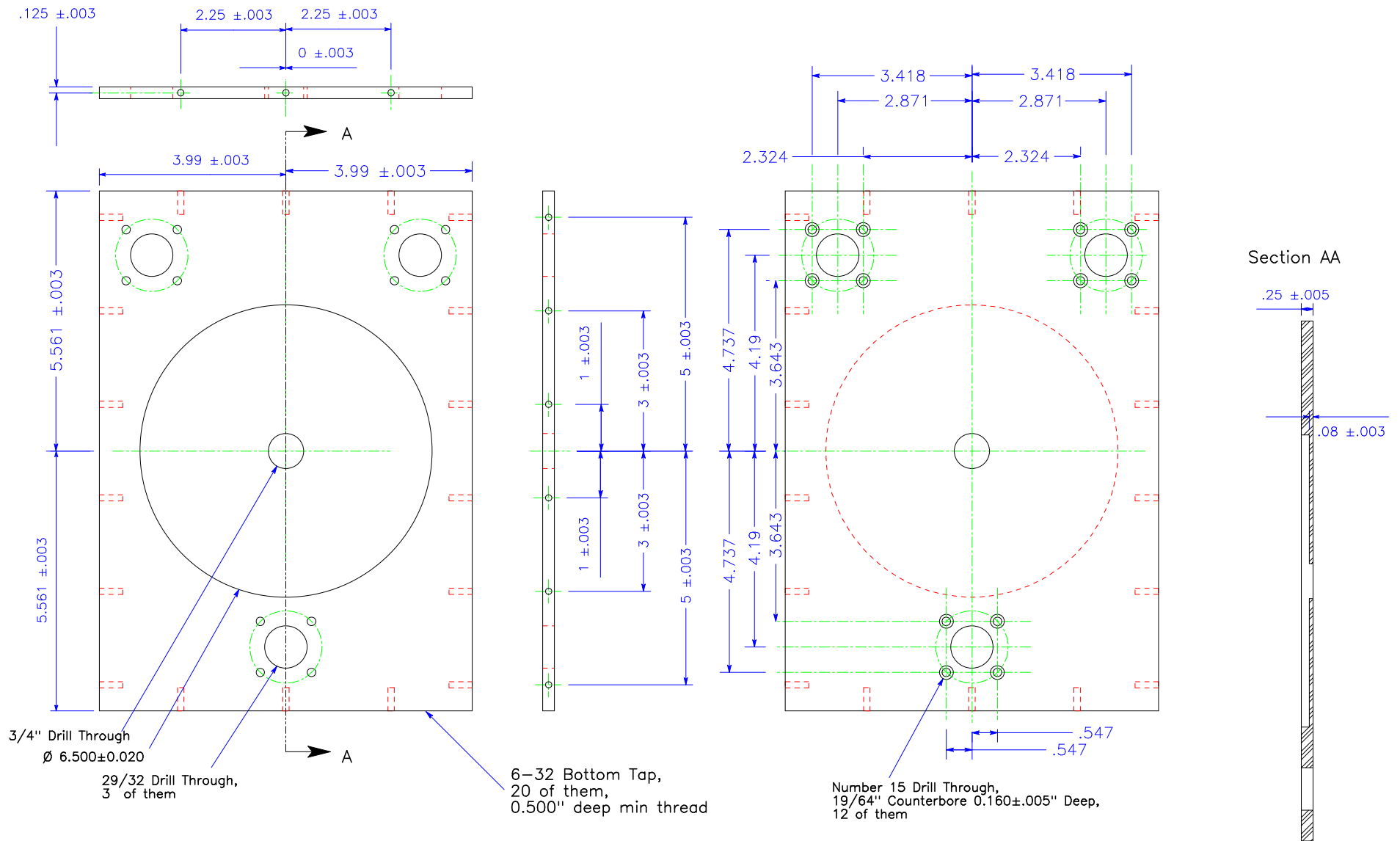
University of Maryland
 Physics Department
 Condensed Matter Physics
 College Park, MD 20742

Title

Oxford Cold Shield

Drawing Number

Bottom Mounting
 Plate



Units: Inches

Material: Aluminum 7075 – T6

Quantity: 1

Notes: 1. All through holes in plate face to within ± 0.003 "
 radially of center of $\phi 3/4$ " through hole
 2. Break all corners

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Title

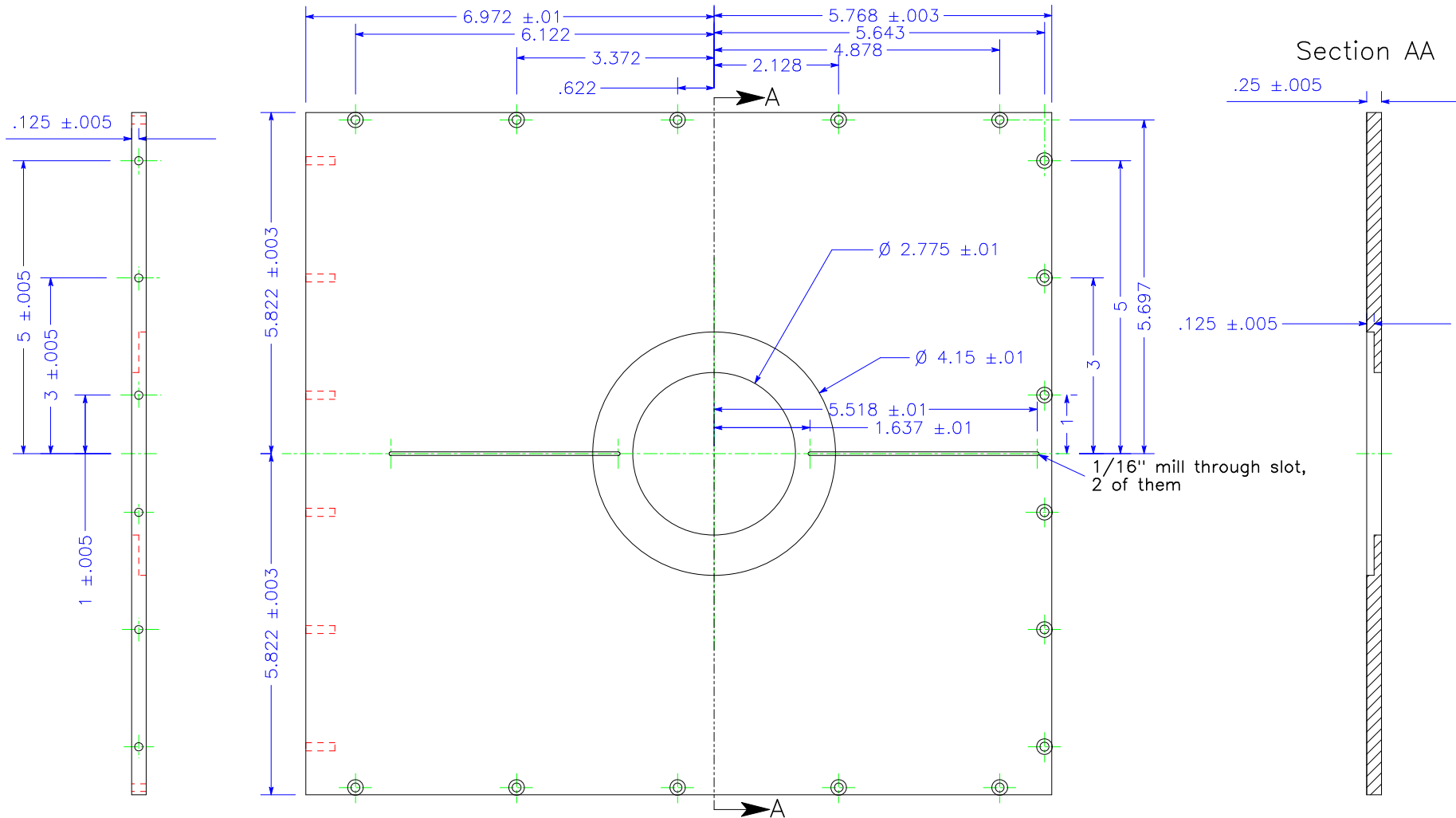
Oxford Cold Shield

Drawing Number

Shield Bottom Plate

6-32 Bottom Tap,
6 of them,
0.500" deep min thread

Number 25 Drill through,
Counterbore $\varnothing 17/64"$,
0.150±0.010" deep,
16 of them



Units: Inches

Material: Aluminum 7075-T6

Quantity: 2

- Notes:
1. All holes in plate face to within $\pm 0.003"$ radially of center of $\varnothing 2.775"$ through hole
 2. Break all corners

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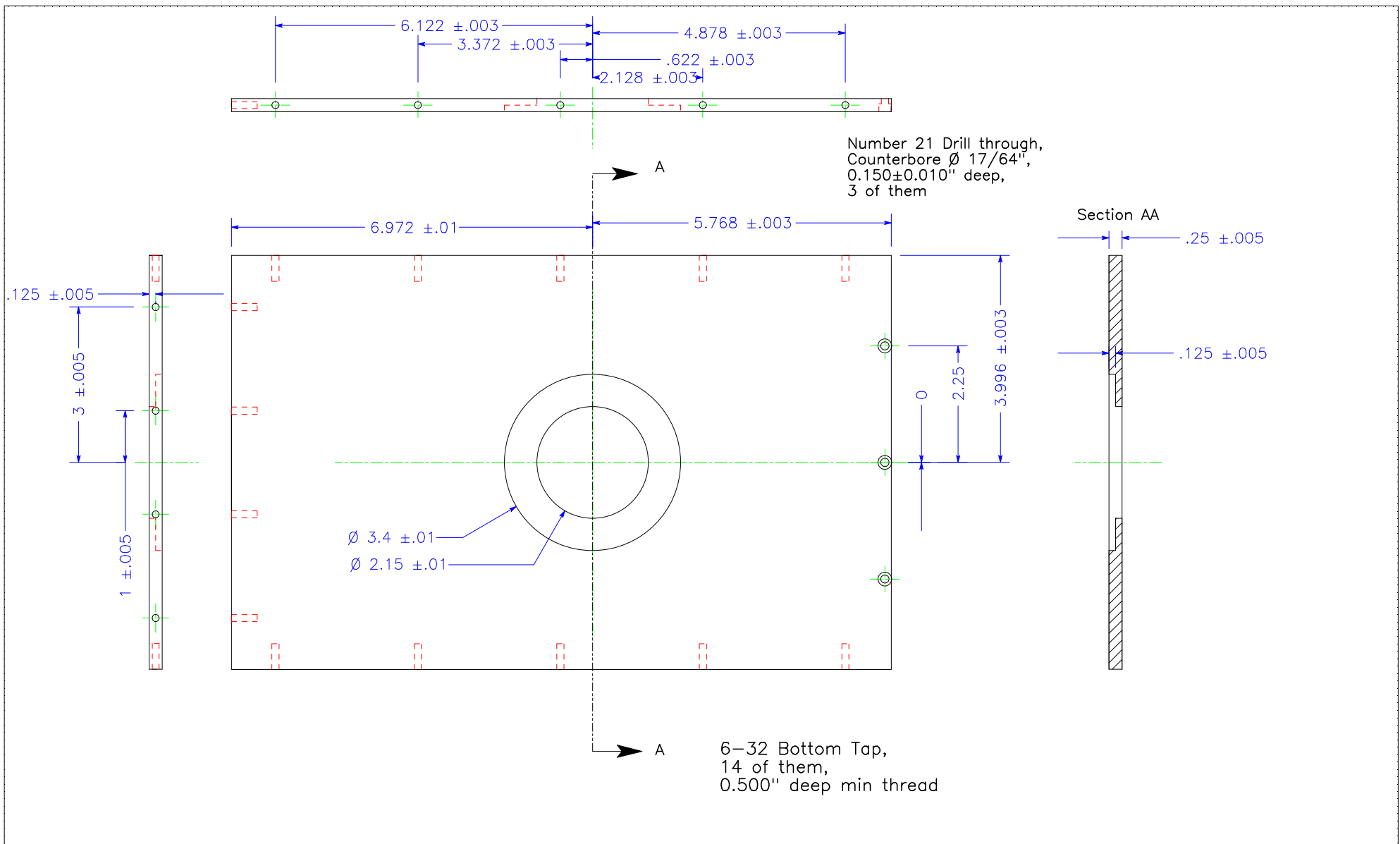
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Title

Oxford Cold Shield

Drawing Number

Shield Front & Back
Plates



Units: Inches

Material: Aluminum 7075 – T6

Quantity: 2

- Notes:
1. All holes in plate face to within ± 0.003 " radially of center of $\varnothing 2.15$ " through hole
 2. Break all corners

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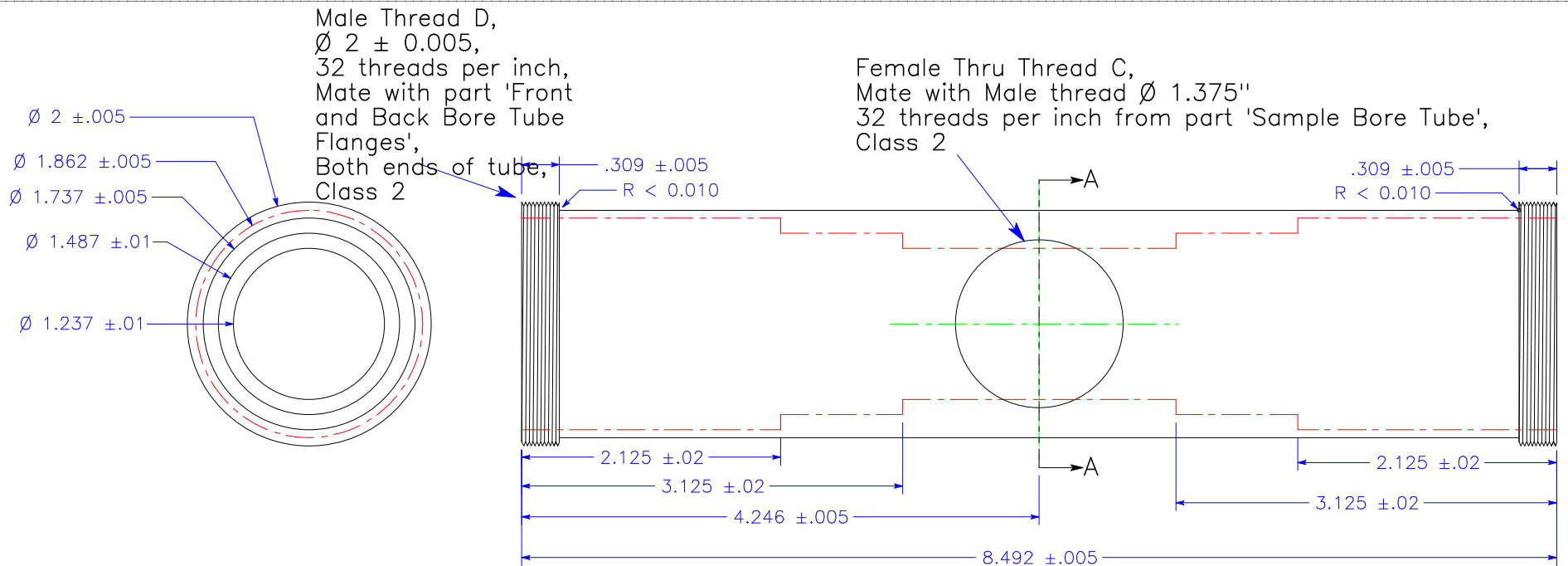
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Title

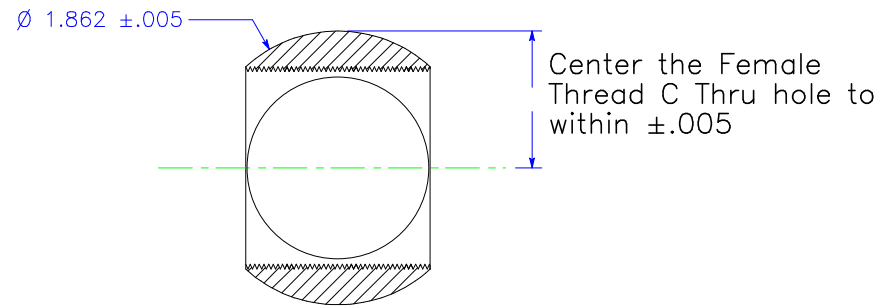
Oxford Cold Shield

Drawing Number

Shield Side Plates



Section AA



Units: Inches

Material: Aluminum 7075-T6

Quantity: 1

Notes: 1. Break all edges
 2. Radius of all inside corners < 1/16", except where explicitly labelled

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Title

Oxford Cold Shield

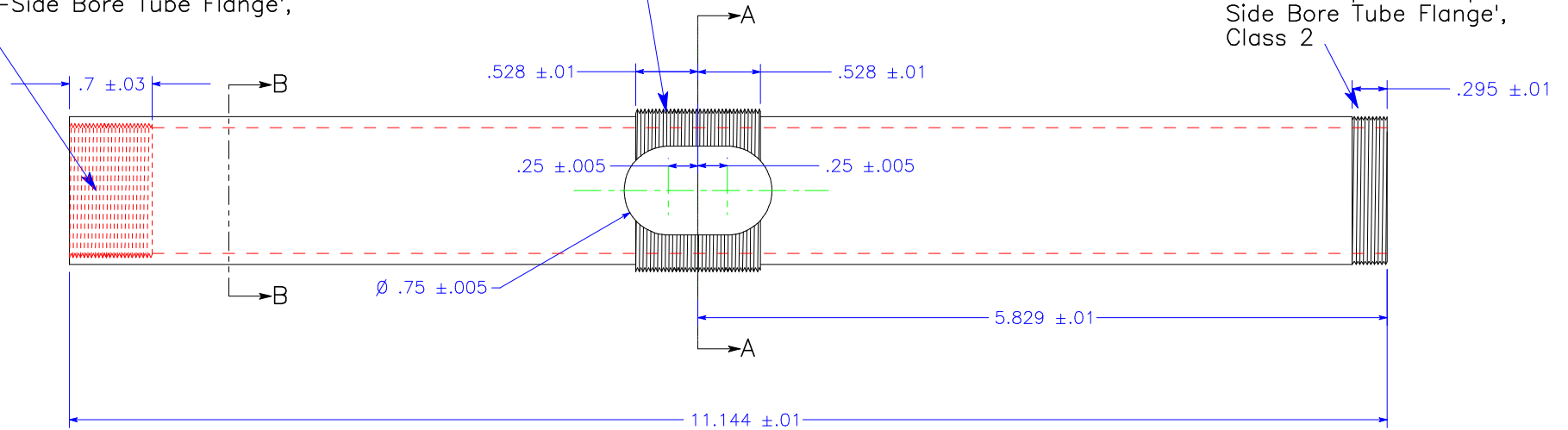
Drawing Number

Optical Bore Tube

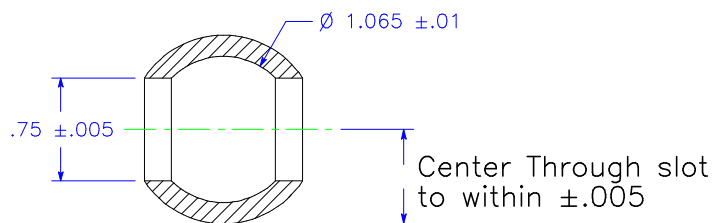
Female Thread A,
 $\varnothing 1.065 \pm 0.01$ ID,
 32 threads per inch,
 Mate with Male Thread A from part
 'Clamp-Side Bore Tube Flange',
 Class 2

Male Thread C,
 $\varnothing 1.375 \pm 0.005$,
 32 threads per inch,
 Mate with part 'Optical Bore Tube',
 Class 2

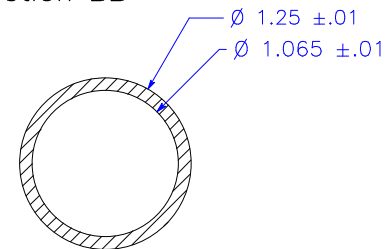
Male Thread B,
 $\varnothing 1.25 \pm 0.010$,
 32 threads per inch,
 Mate with part 'Sample-Side
 Bore Tube Flange',
 Class 2



Section AA



Section BB



Units: Inches

Material: Aluminum 7075-T6

Quantity: 1

Notes: 1. Break all edges
 2. Radius of all inside corners $< 1/32$ "

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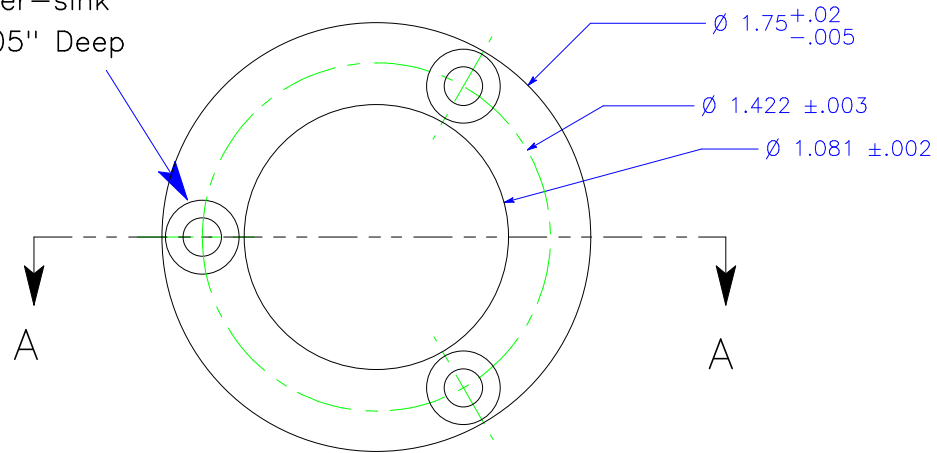
Title

Oxford Cold Shield

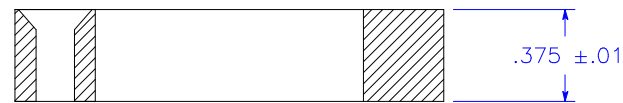
Drawing Number

Sample Bore Tube

Number 25 Drill
Through,
82° counter-sink
0.102±.005" Deep



Section AA



Units: Inches

Material: Aluminum 7075-T6
Quantity: 3

Notes: 1. Break all corners

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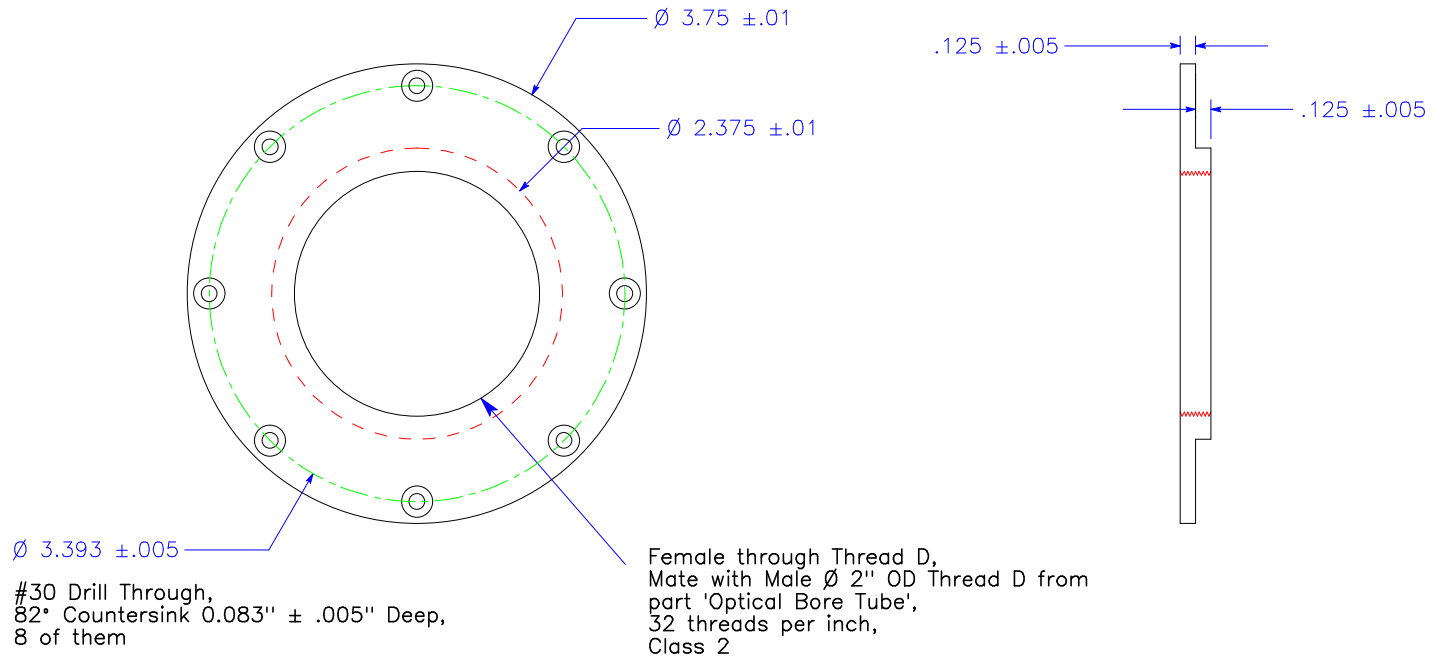
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Title

Oxford Cold Shield

Drawing Number

Bottom Spheres
Retaining Ring



Units: Inches
 Material: Brass 360
 Quantity: 2

Notes: 1. Radii of all inside corners < 0.015"
 2. Break all corners

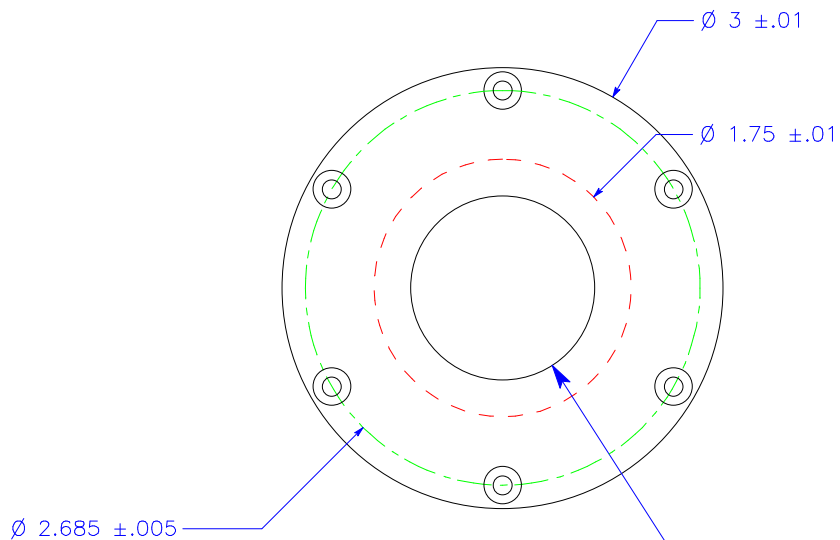
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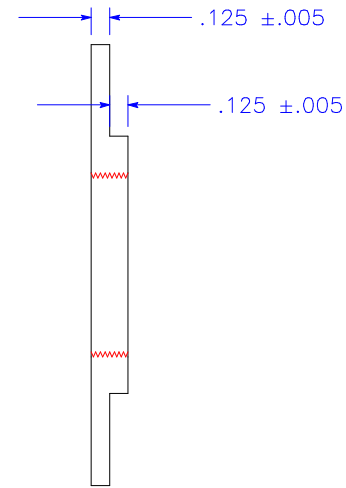
Title
 Oxford Cold Shield

Drawing Number
 Front and Back Bore
 Tube Flanges



Ø 2.685 ±.005
 #30 Drill Through,
 82° Countersink 0.083" ± .005" Deep,
 6 of them

Female through Thread B,
 Mate with Male Ø 1.25" OD Thread B
 from part 'Sample Bore Tube',
 32 threads per inch,
 Class 2



Units: Inches
 Material: Brass 360
 Quantity: 1

Notes: 1. Radii of all inside corners < 0.015"
 2. Break all corners

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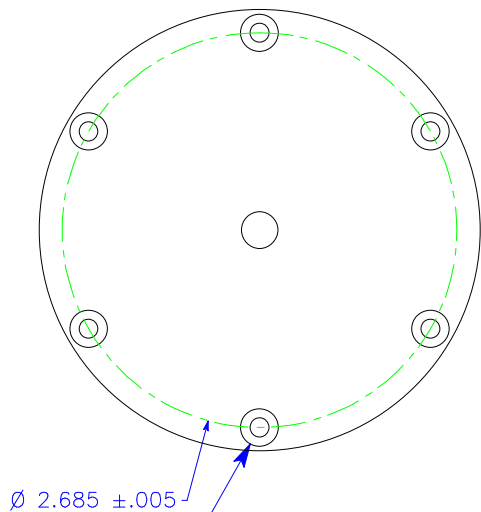


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Title
 Oxford Cold Shield

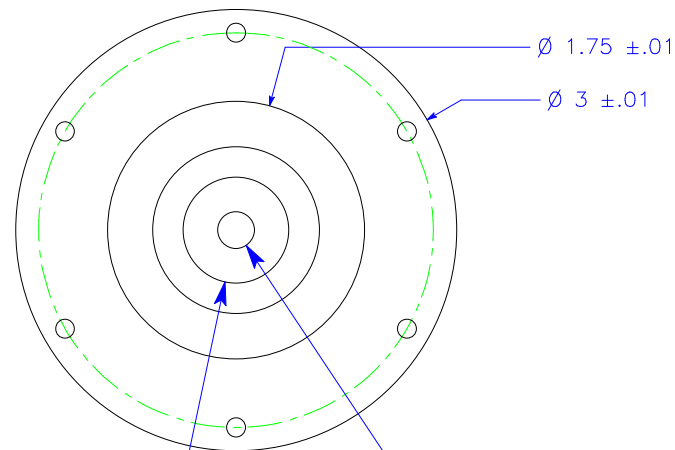
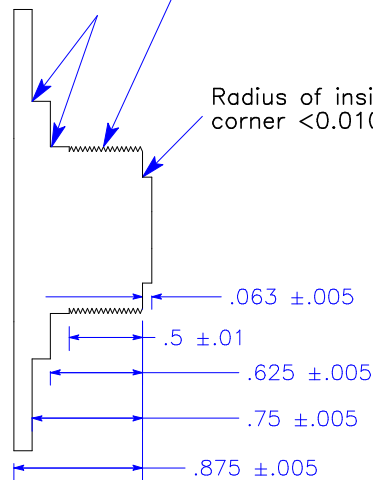
Drawing Number
 Sample-Side Bore
 Tube Flange

Male Thread A,
32 threads per inch,
Mate with Female Thread A from part
'Sample Bore Tube',
Class 2



#30 Drill Through,
82° Countersink 0.083" \pm .005" Deep,
6 of them

Radii of inside
corners <0.015"



1/4" Drill Through

Clearance fit with ID part 'Collet Support Tube',
diameter clearance of 0.000" to 0.005"

Units: Inches

Material: Brass 360

Quantity: 1

Notes: 1. Break all corners

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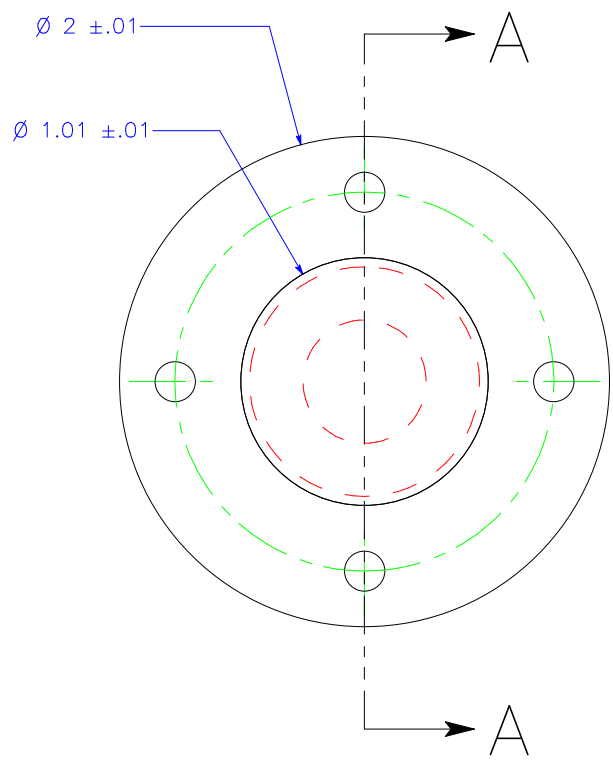
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Title

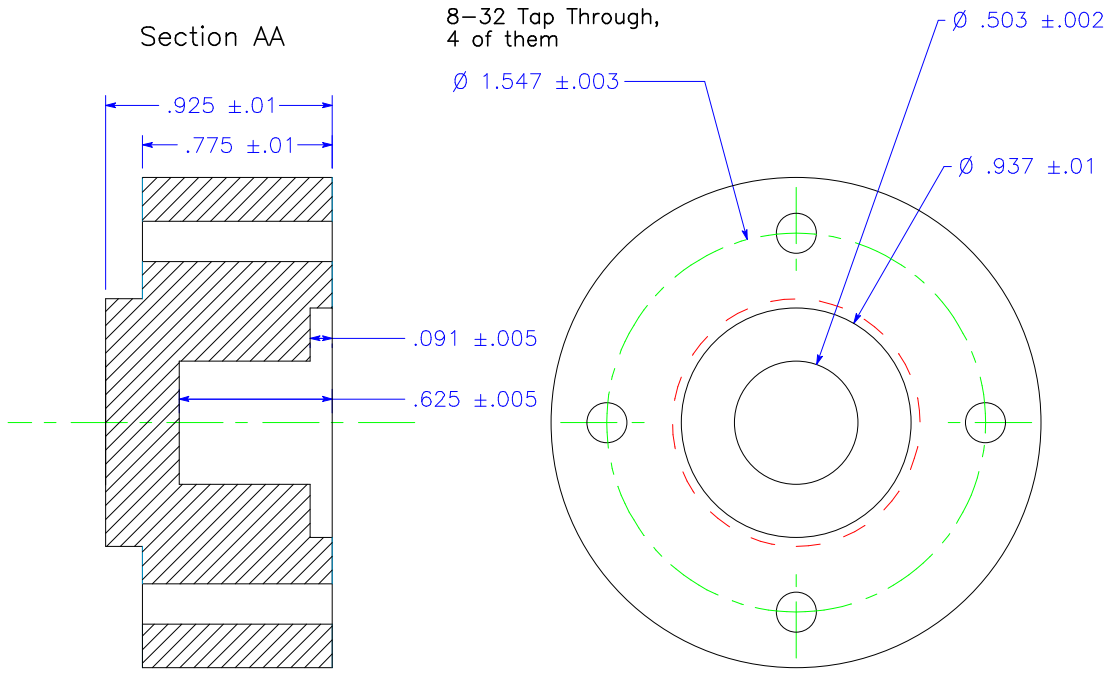
Oxford Cold Shield

Drawing Number

Clamp-Side Bore
Tube Flange



Section AA



Units: Inches
 Material: Aluminum 7075-T6
 Quantity: 1

Notes: 1. Break all edges
 2. Radius of all inside corners <math>< 1/32''</math>

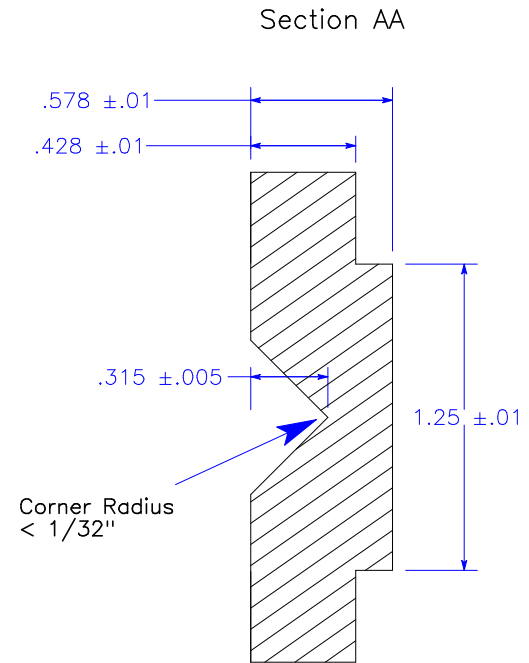
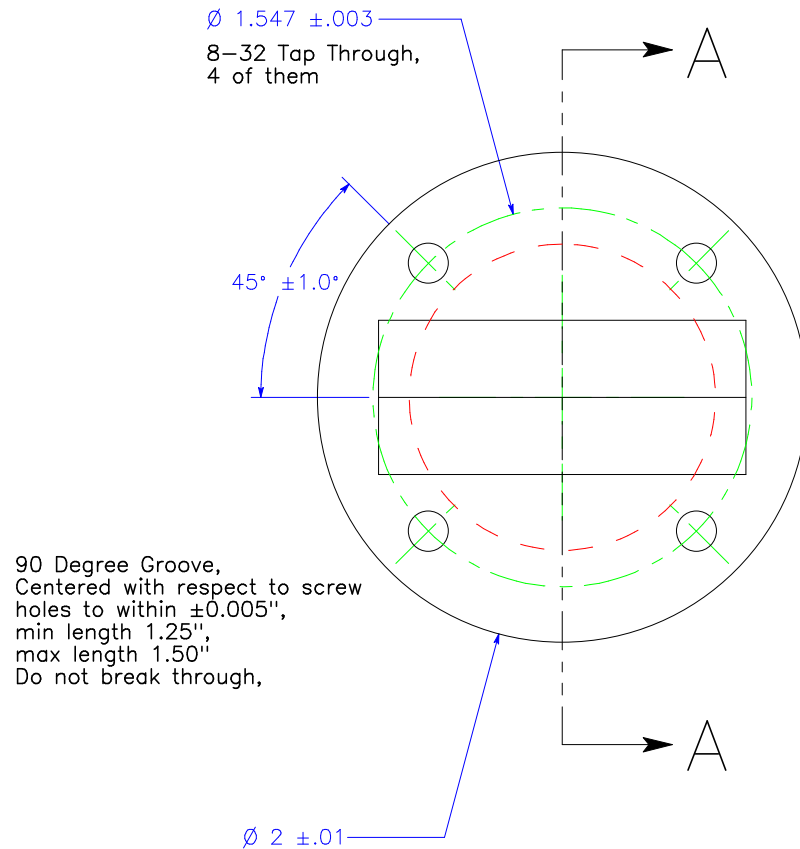
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Title
 Oxford Cold Shield

Drawing Number
 Sphere Housing,
 Single



Units: Inches
 Material: Aluminum 7075-T6
 Quantity: 1
 Notes: 1. Break all edges

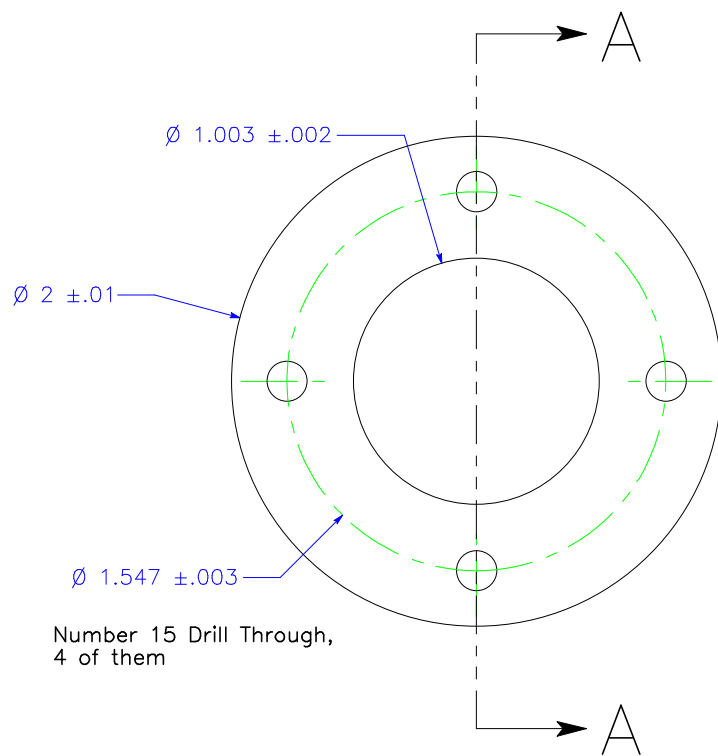
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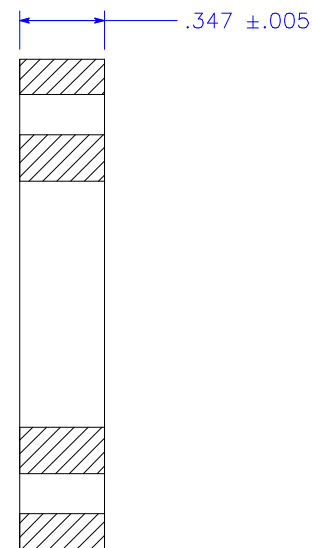


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Drawing Number
 Sphere Housing,
 Double - Top



Section AA



Units: Inches
 Material: Aluminum 7075-T6
 Quantity: 1
 Notes: 1. Break all edges

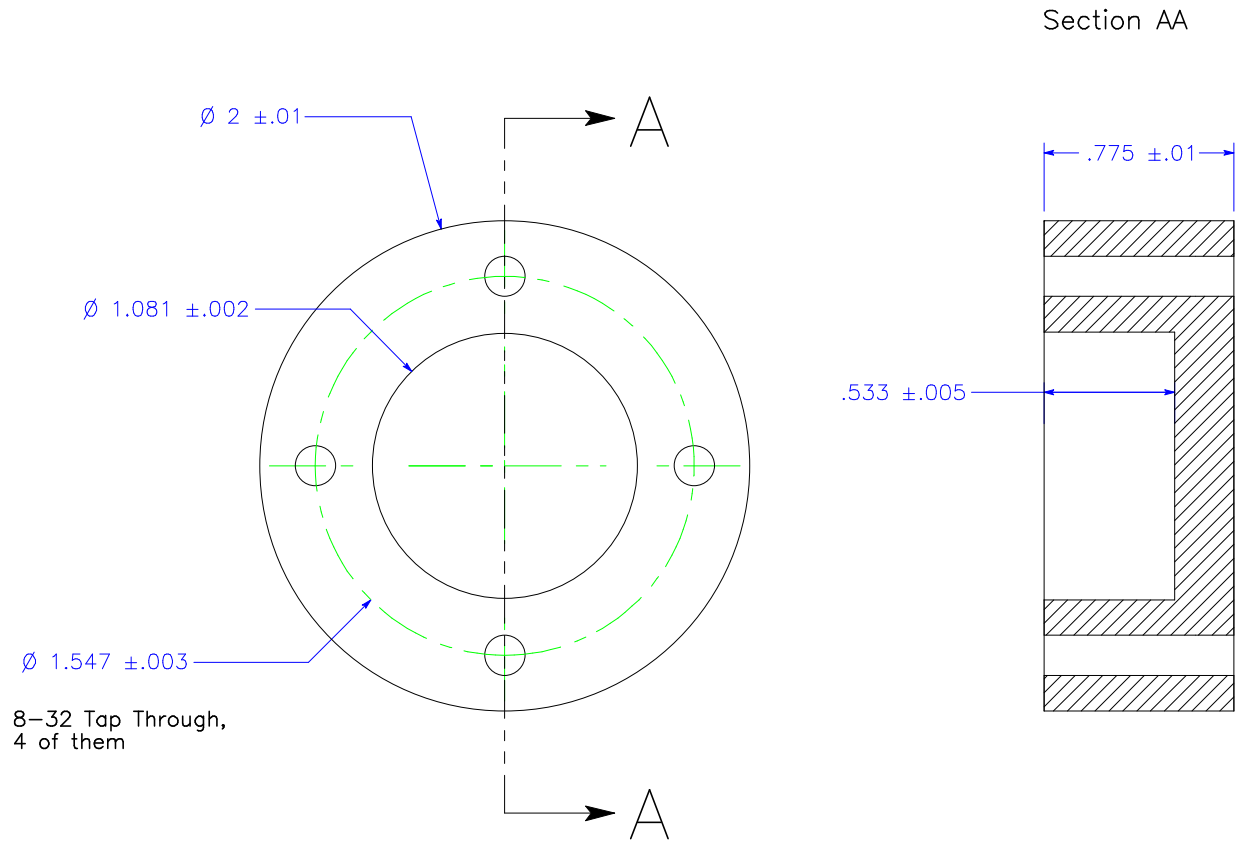
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Title
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Drawing Number
 Sphere Housing,
 Double - Bottom



Units: Inches
 Material: Aluminum 7075-T6
 Quantity: 1

Notes: 1. Break all edges
 2. Radius of all inside corners < 1/32"

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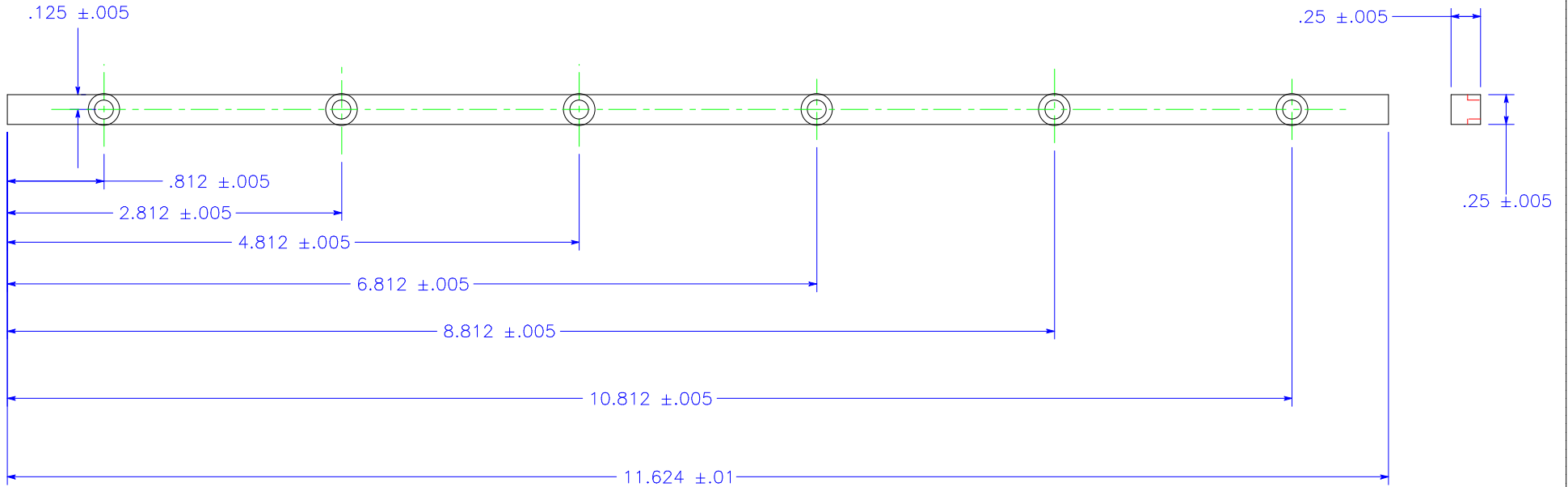


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Title
 Oxford Cold Shield

Drawing Number
 Sphere Housing,
 Triple

Number 21 Drill through,
 Counterbore $\varnothing 17/64''$,
 $0.140 \pm 0.005''$ deep,
 6 of them



Units: Inches
 Material: Copper
 Quantity: 2

Notes: 1. Break all edges

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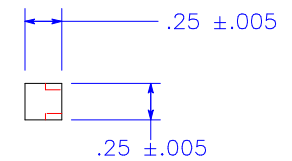
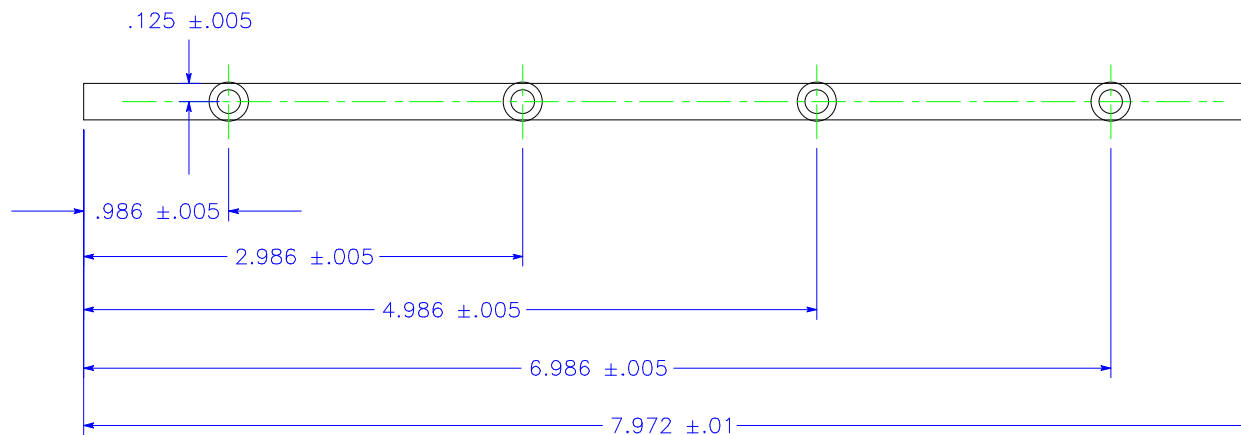


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Title
 Oxford Cold Shield

Drawing Number
 Thermal Strap, Front
 and Back Shield

Number 21 Drill through,
 Counterbore \varnothing $17/64''$,
 $0.140 \pm 0.005''$ deep,
 4 of them



Units: Inches
 Material: Copper
 Quantity: 2

Notes: 1. Break all edges

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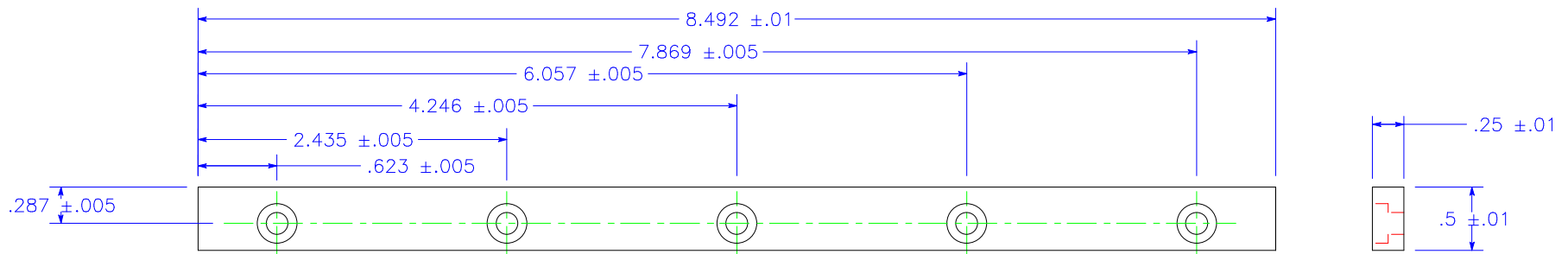


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Title
 Oxford Cold Shield

Drawing Number
 Thermal Strap, Side
 Shields

11/64" Drill Through,
 5/16" Counter Bore 0.125±.005 Deep,
 5 of them



Units: Inches
 Material: Copper
 Quantity: 2

Notes: 1. Break all edges

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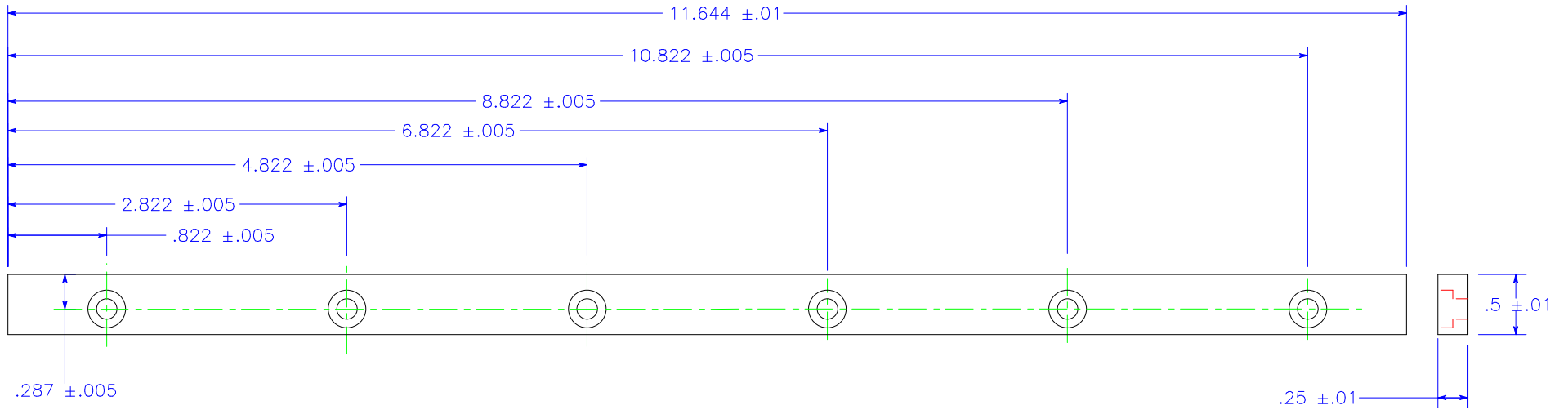


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Title
 Oxford Cold Shield

Drawing Number
 Thermal Strap,
 Reservoir Sides

11/64" Drill Through,
 5/16" Counter Bore 0.125±.005 Deep,
 6 of them



Units: Inches

Material: Copper

Quantity: 2

Notes: 1. Break all edges

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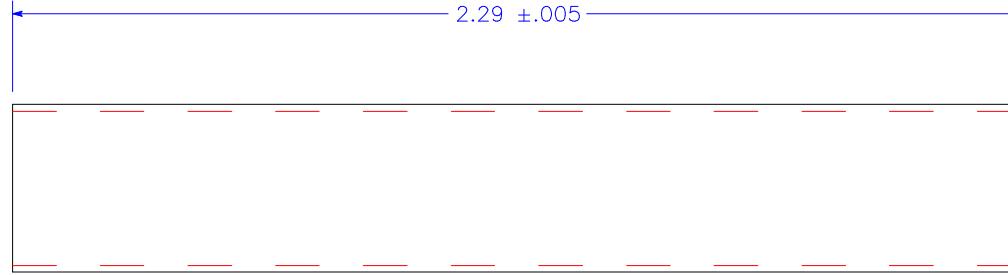
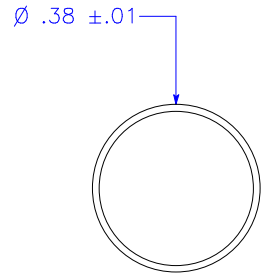
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Title

Oxford Cold Shield

Drawing Number

Therm. Strap, Res.
 Front & Back



Units: Inches

Material: Supplied 3/8" OD 321 Stainless Steel tube, ~.012" Wall
 Quantity: 1

Notes: 1. Do NOT break edges
 2. Grind/cut tube square to specified length

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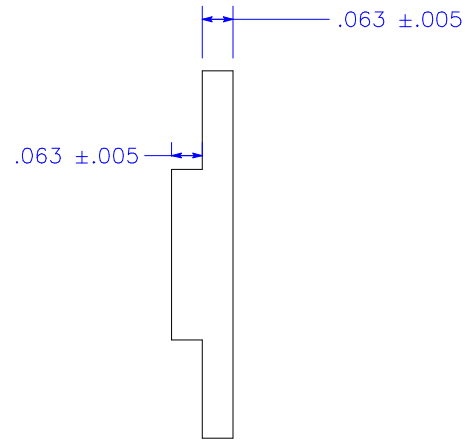
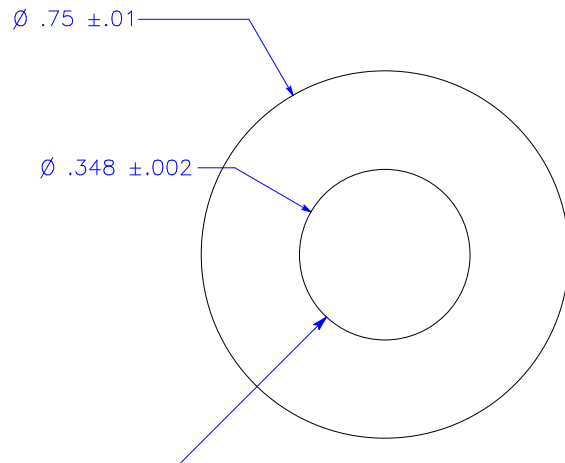
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Title

Oxford Cold Shield

Drawing Number

Tension Tube



Clearance fit with ID of part 'Tension Tube',
diameter clearance of 0.002" to 0.010"

Units: Inches

Material: Stainless Steel, 316

Quantity: 1

Notes: 1. Radius of all inside corners < 0.010"
2. break all edges

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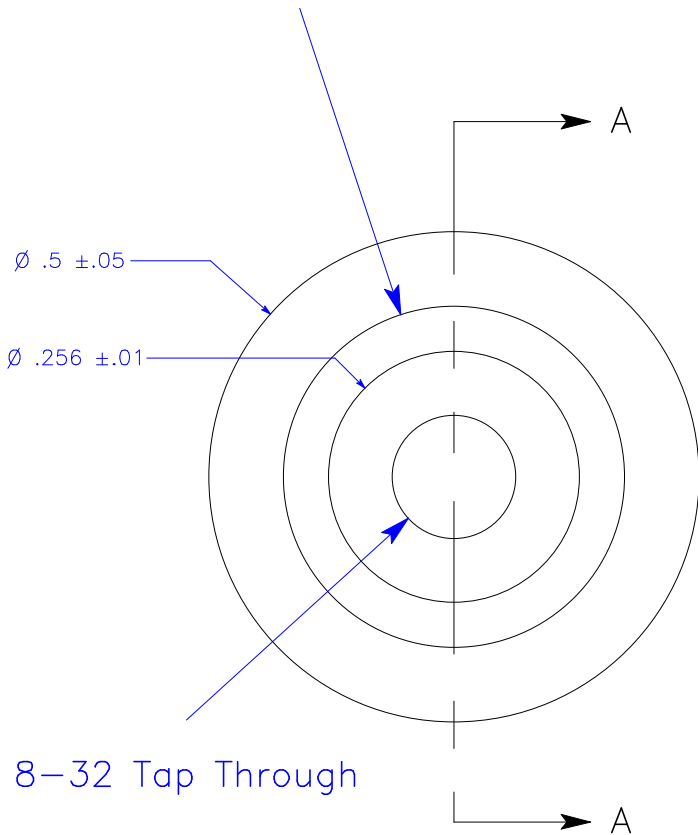
Title

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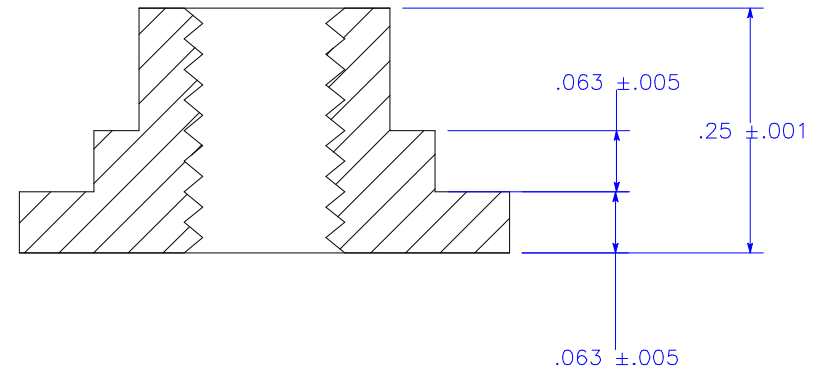
Drawing Number

Top Tension Tube
End

Clearance fit with ID of part 'Tension Tube',
diameter clearance of 0.002" to 0.010"



Section AA



Units: Inches

Material: Stainless Steel. 316

Quantity: 1

Notes: 1. Radius of all inside corners <0.010" 2.

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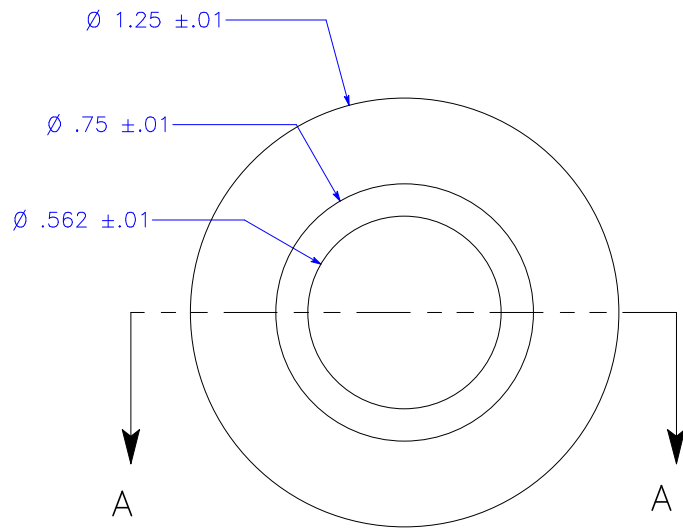
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Title

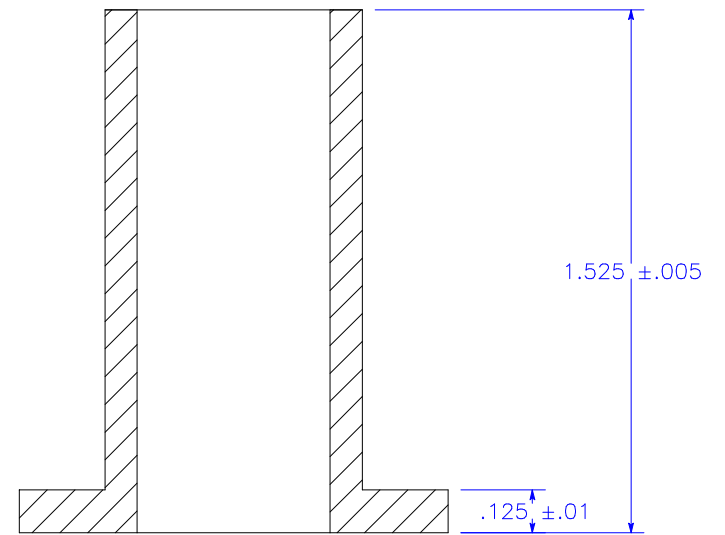
Oxford Cold Shield

Drawing Number

Bottom Tension Tube
End



Section AA



Units: Inches

Material: Brass 360

Quantity: 1

Notes: 1. Break all edges
2. Radius of inside corner $< 1/32''$

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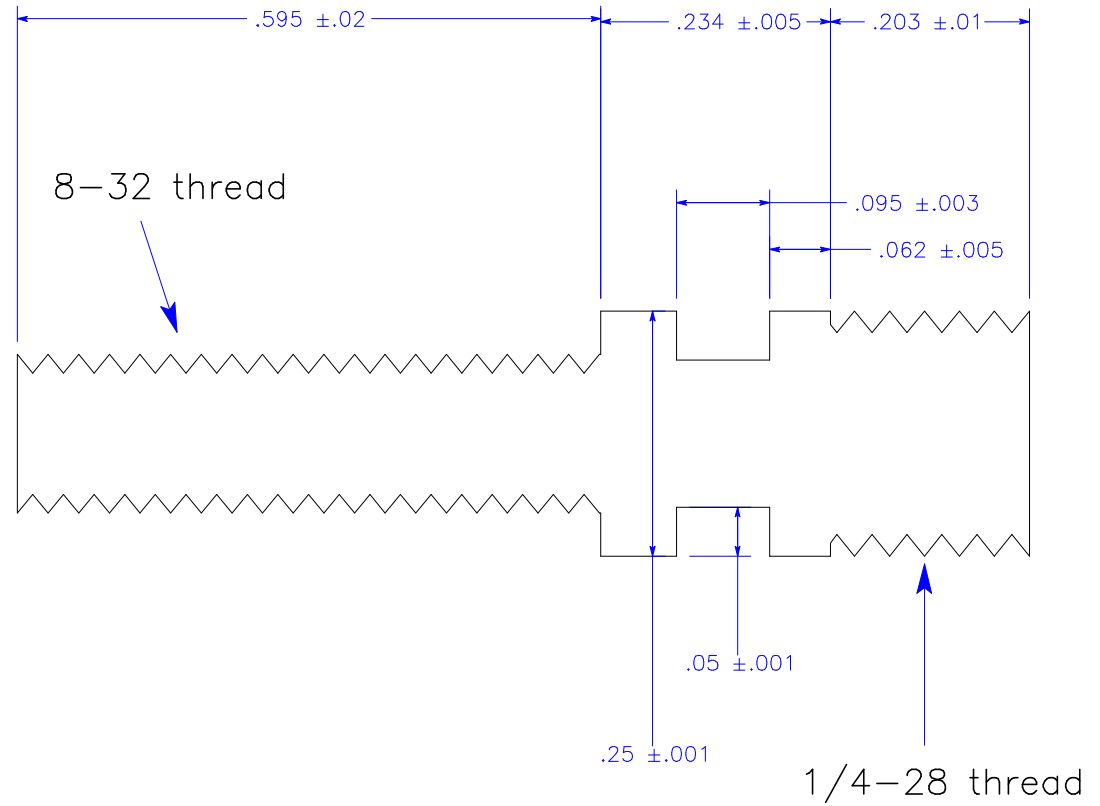
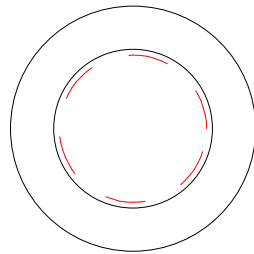
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Title

Oxford Cold Shield

Drawing Number

Stand-Off, Tension
Tube



Units: Inches

Material: Stainless Steel, 316

Quantity: 1

Notes: 1. Break all edges
2. Radius of inside corners $< 0.010''$

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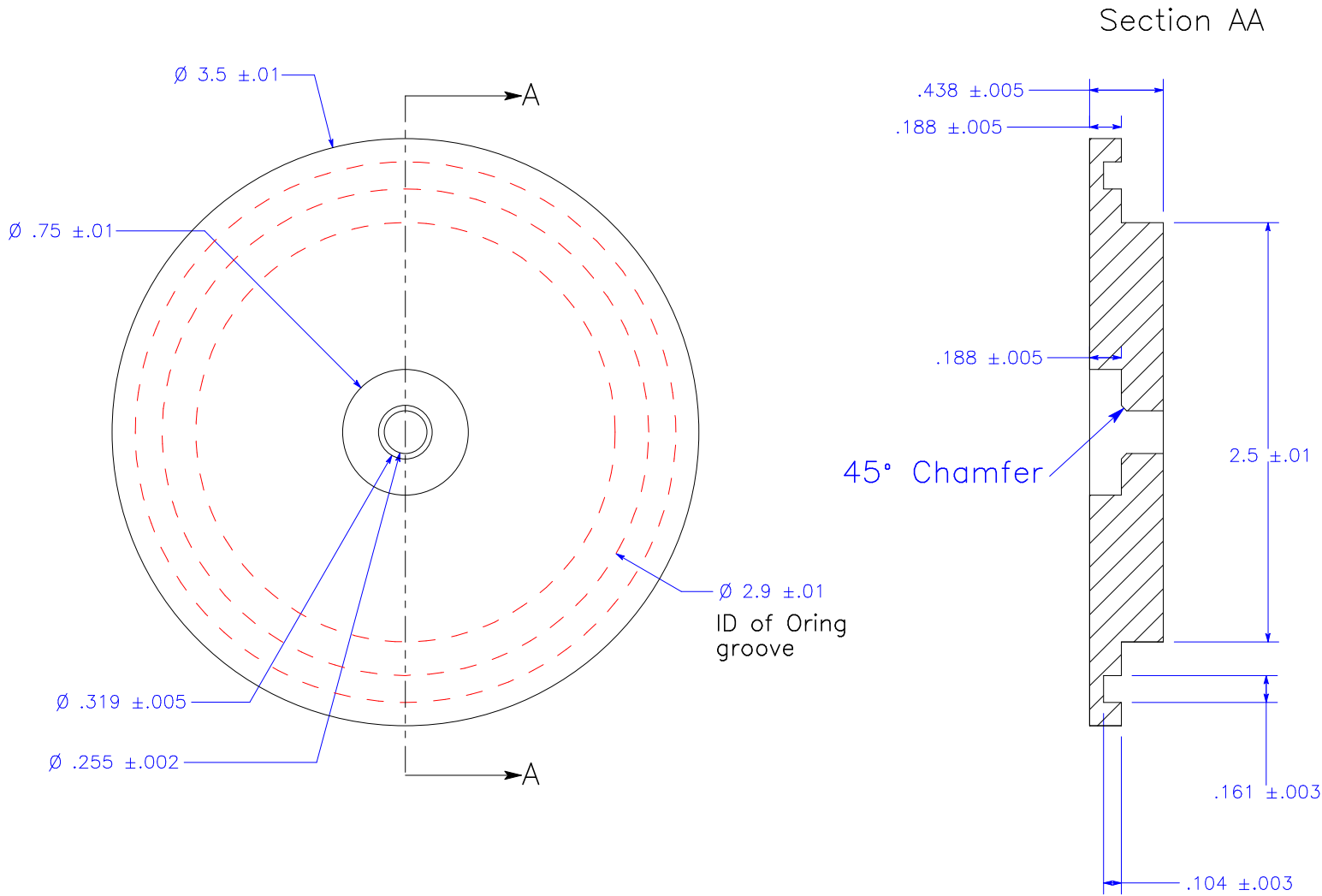
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Title

Oxford Cold Shield

Drawing Number

Tension tube Vac.
Feed Through



Units: Inches

Material: Stainless Steel, 316

Quantity: 1

Notes: 1. Break all edges
2. Radius of all inside corners < 0.025"

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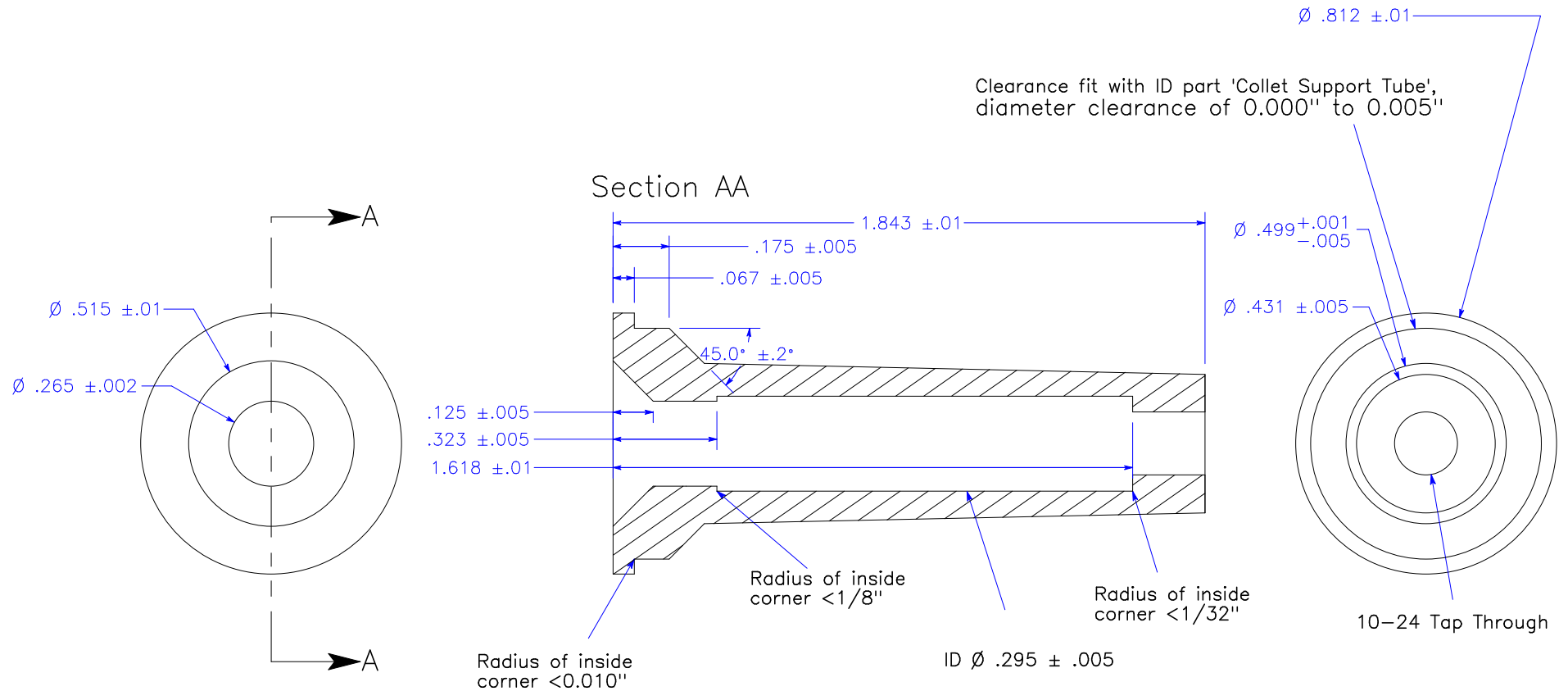
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Title

Oxford Cold Shield

Drawing Number

Bottom Vacuum
Flange



Units: Inches
 Material: Stainless Steel, 316

Notes: 1. Break all edges

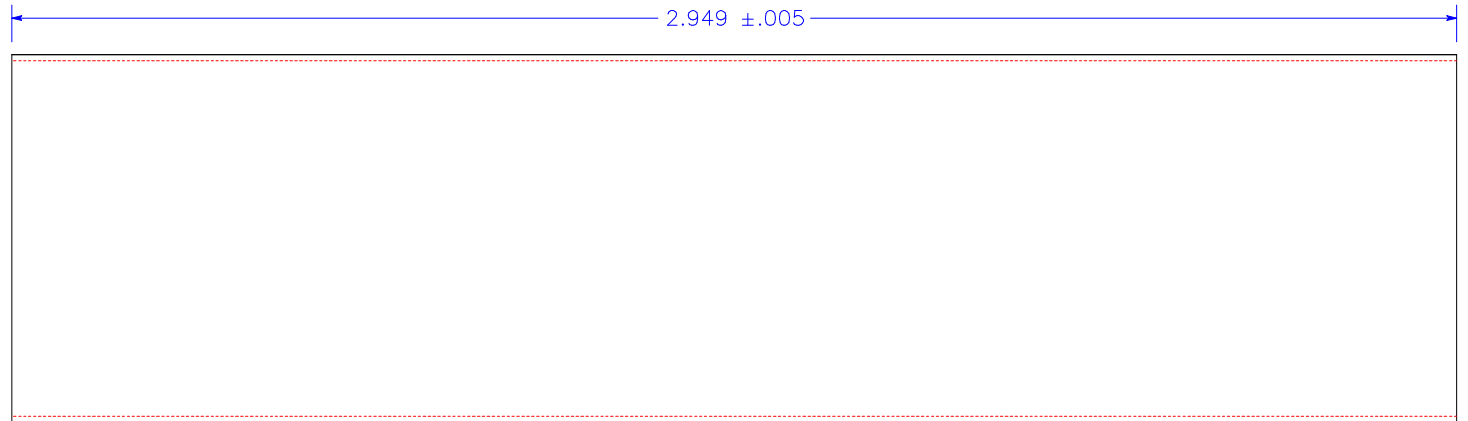
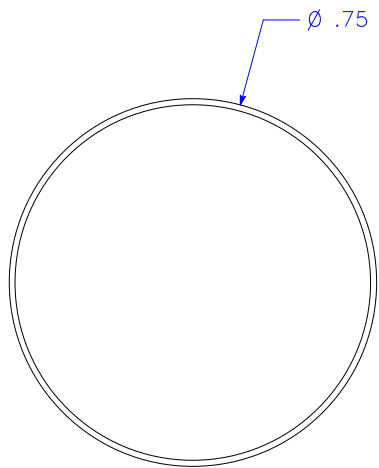
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Title
 Oxford Cold Shield

Drawing Number
 Sample Pin Collet



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Units: Inches

Material: Provided tube, Stainless Steel, 321

Quantity: 1

Notes: 1. Grind/cut tube square to specified length

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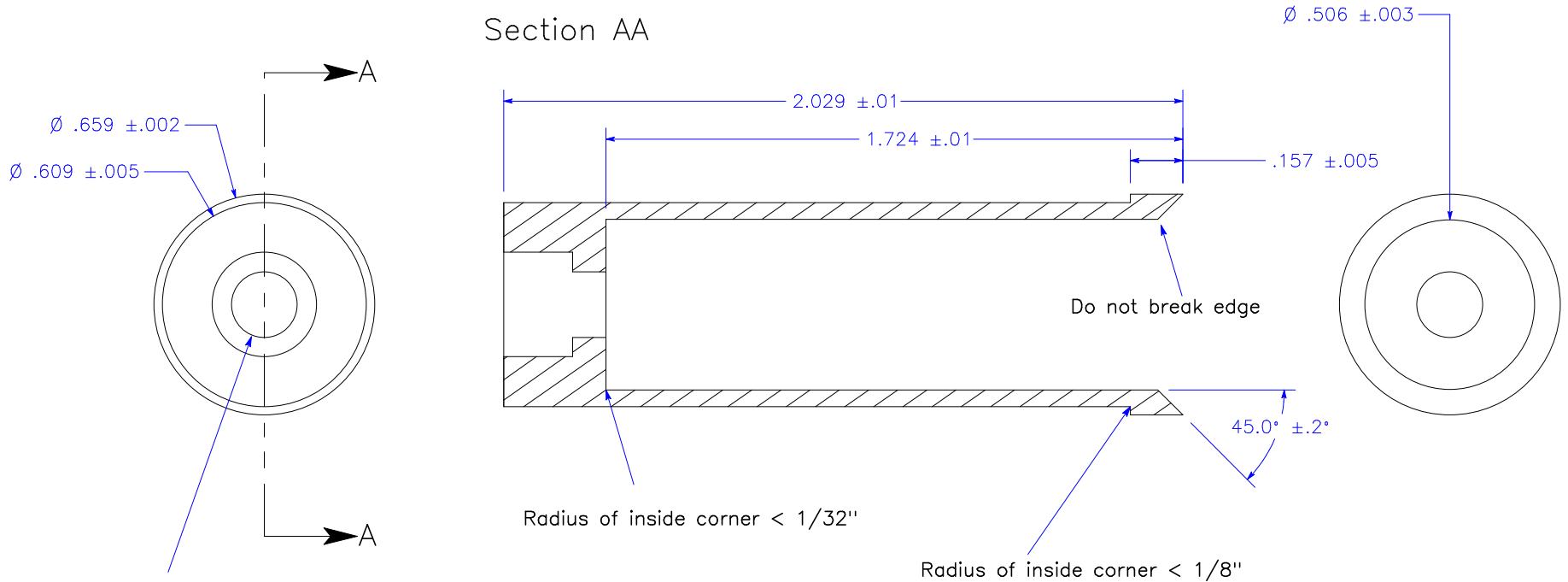
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Title

Oxford Cold Shield

Drawing Number

Collet Support Tube



#9 Drill Through,
5/16" CounterBore 0.205±.005" Deep

Units: Inches

Material: Brass 360

Quantity: 1

Notes: 1. Do NOT Break specified edge; break all other edges

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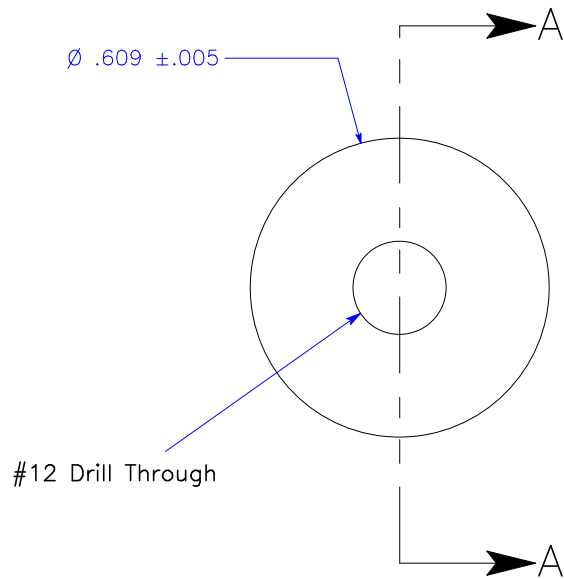
University of Maryland
Physics Department
Condensed Matter Physics
College Park, MD 20742

Title

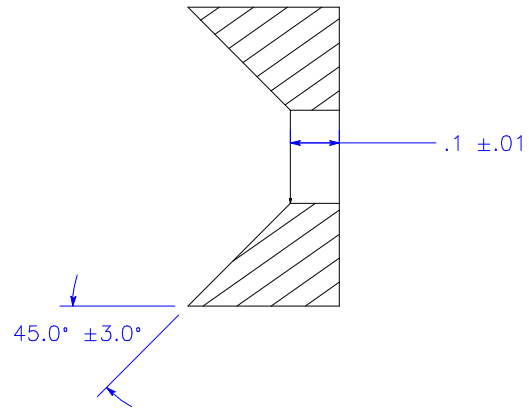
Oxford Cold Shield

Drawing Number

Collet Sleeve



Section AA



Units: Inches

Material: Brass 360

Quantity: 1

Notes: 1. Break all corners

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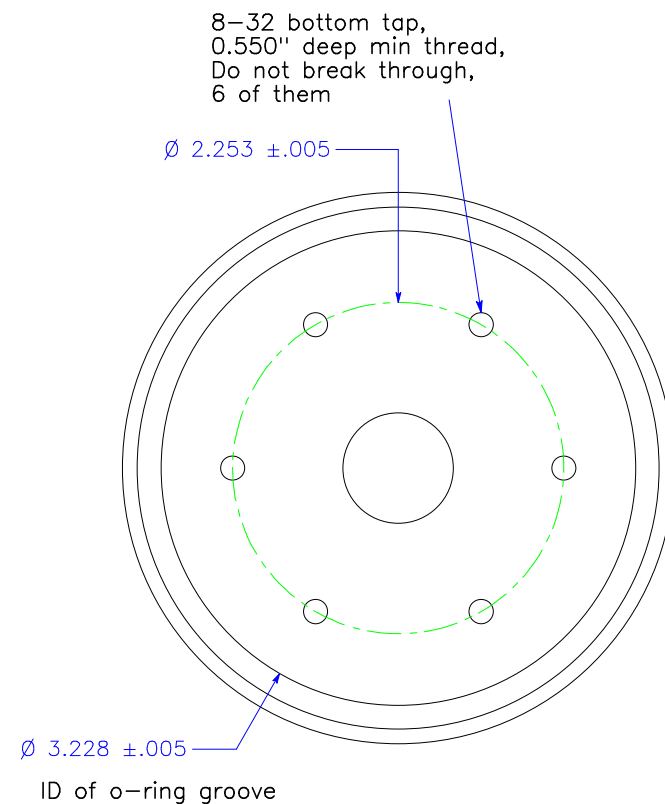
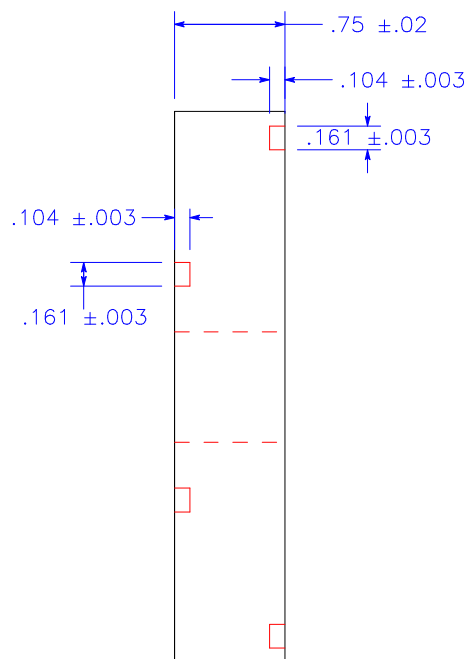
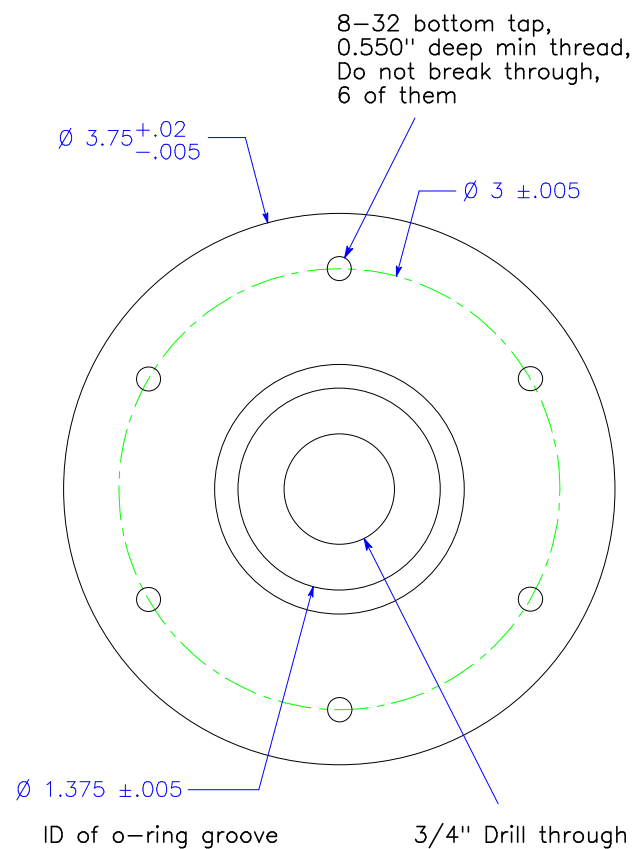
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Title

Oxford Cold Shield

Drawing Number

Collet Actuator Guide



Units: Inches

Material: Stainless Steel, 316

Quantity: 1

Notes: 1. 8-32 tapped holes on opposite faces are misaligned by 30 degrees \pm 15 degrees.

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Oxford Cold Shield

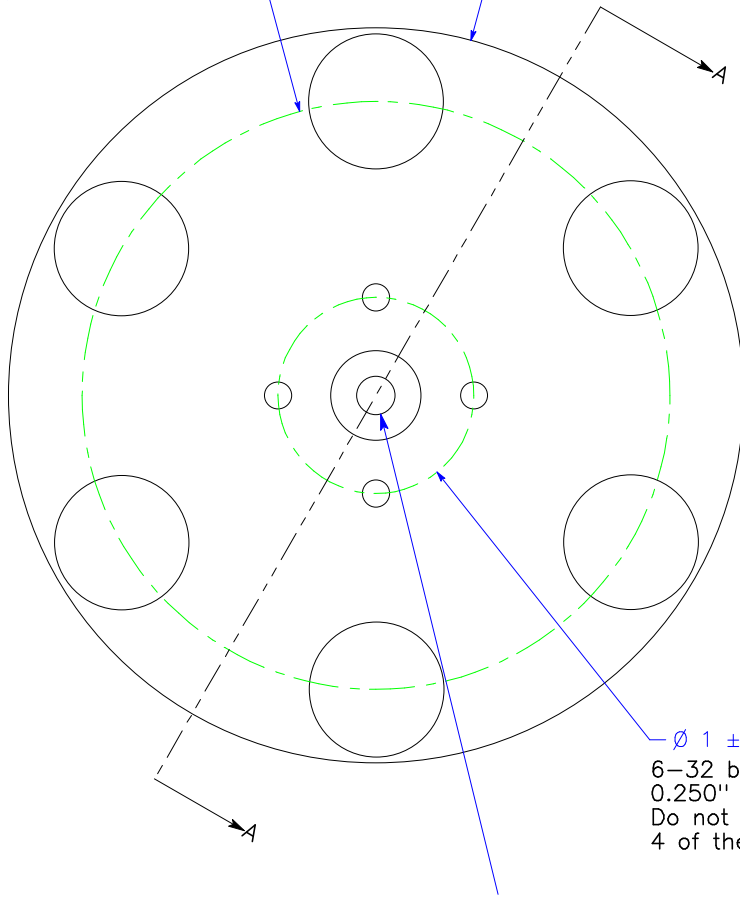
Drawing Number

Clamp-Side Vacuum
Flange, inner piece

11/16" Drill Through,
6 of them

$\varnothing 3 \pm .01$

$\varnothing 3.75 \pm .01$

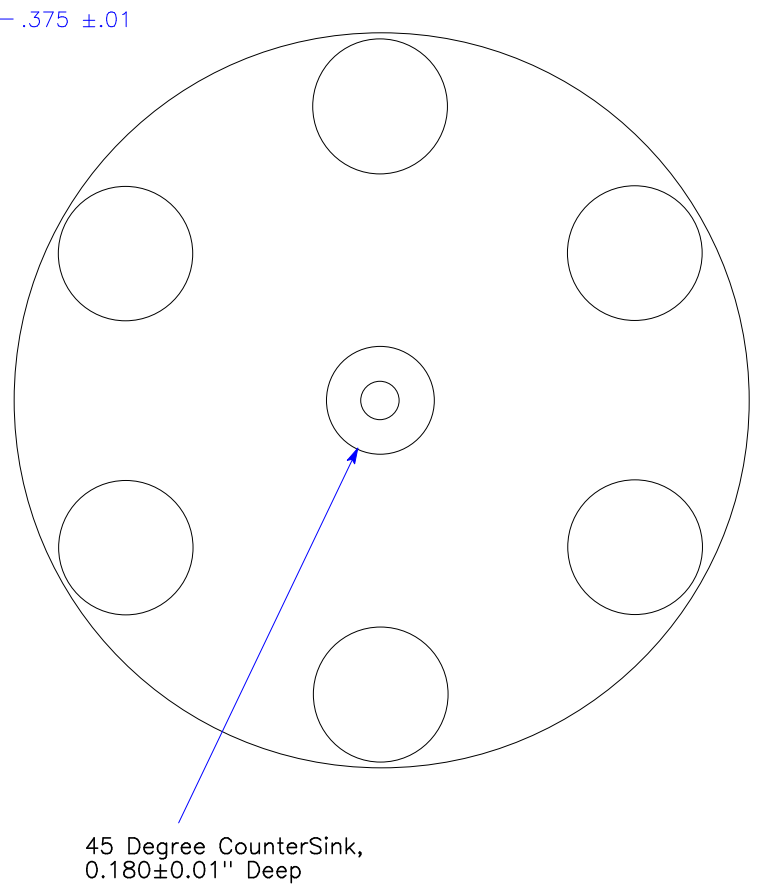


$\varnothing 1 \pm .005$

6-32 bottom tap,
0.250" deep min thread,
Do not break through
4 of them

#9 Drill Through,
45 Degree CounterSink,
0.138±0.002" Deep

Section AA



.375 ±.01

45 Degree CounterSink,
0.180±0.01" Deep

Units: Inches

Material: Stainless Steel, 316

Quantity: 1

Notes: 1. Break all edges

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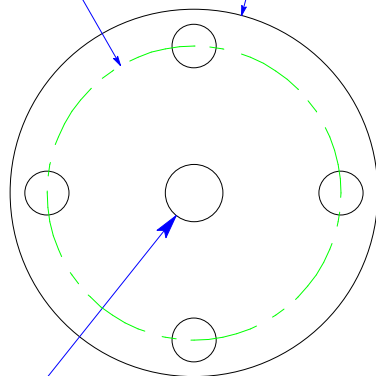
Drawing Number

Clamp-Side Vacuum
Flange, middle piece

#25 Drill Through,
4 of them

$\varnothing 1 \pm .005$

$\varnothing 1.25 \pm .01$



#9 Drill Through

$.125 \pm .01$



Units: Inches

Material: Brass 360

Quantity: 1

Notes: 1. Break all edges

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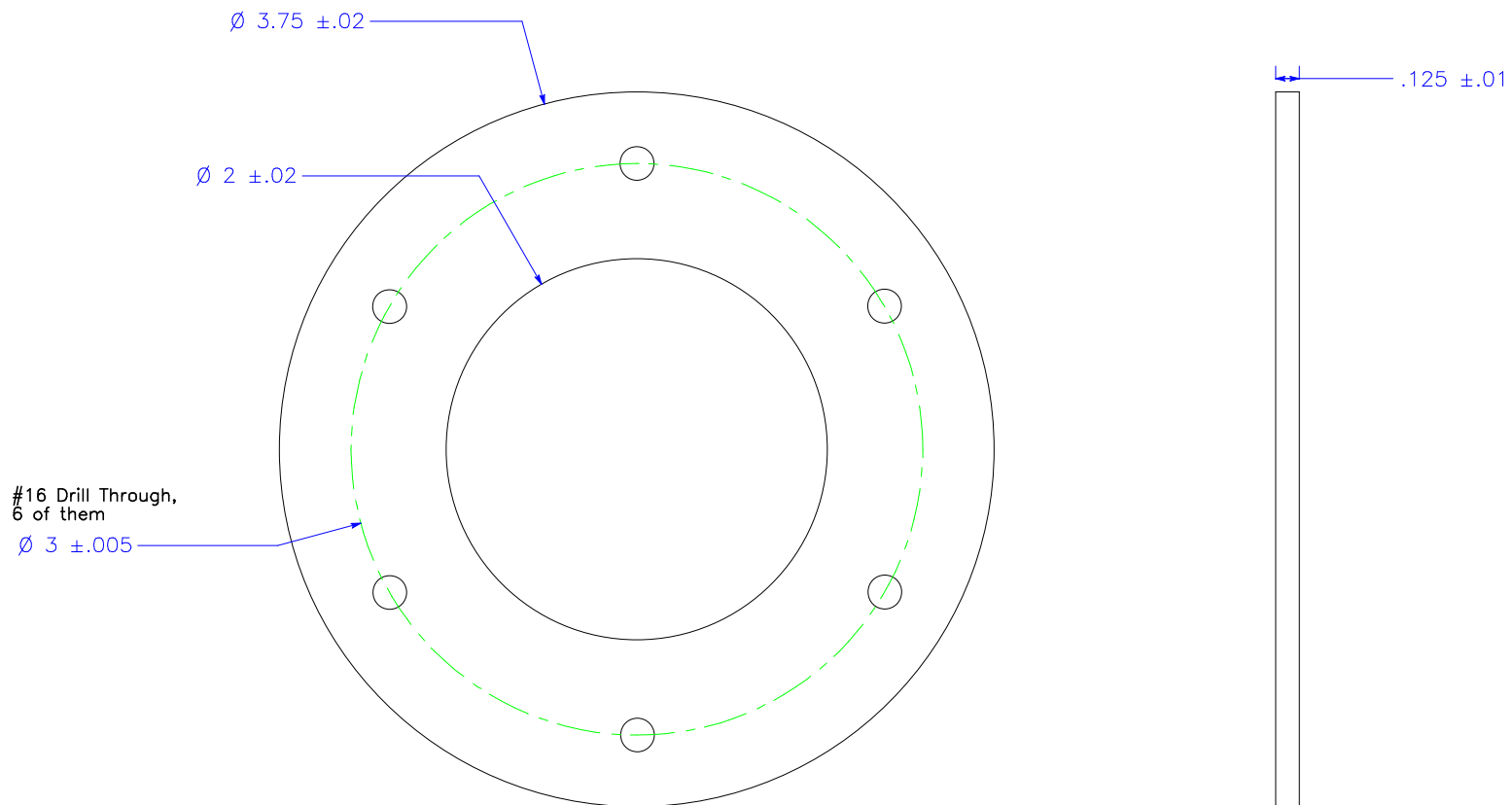
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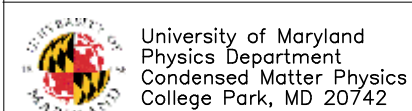
Drawing Number

Clamp-Side Vacuum
Flange, outer



Units: Inches
 Material: Stainless Steel, 316
 Quantity: 1
 Notes: 1. Break all edges

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Title
 Oxford Cold Shield

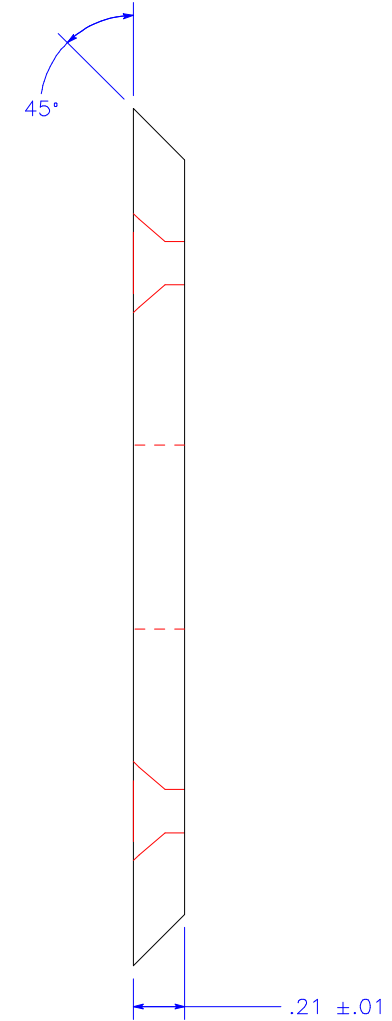
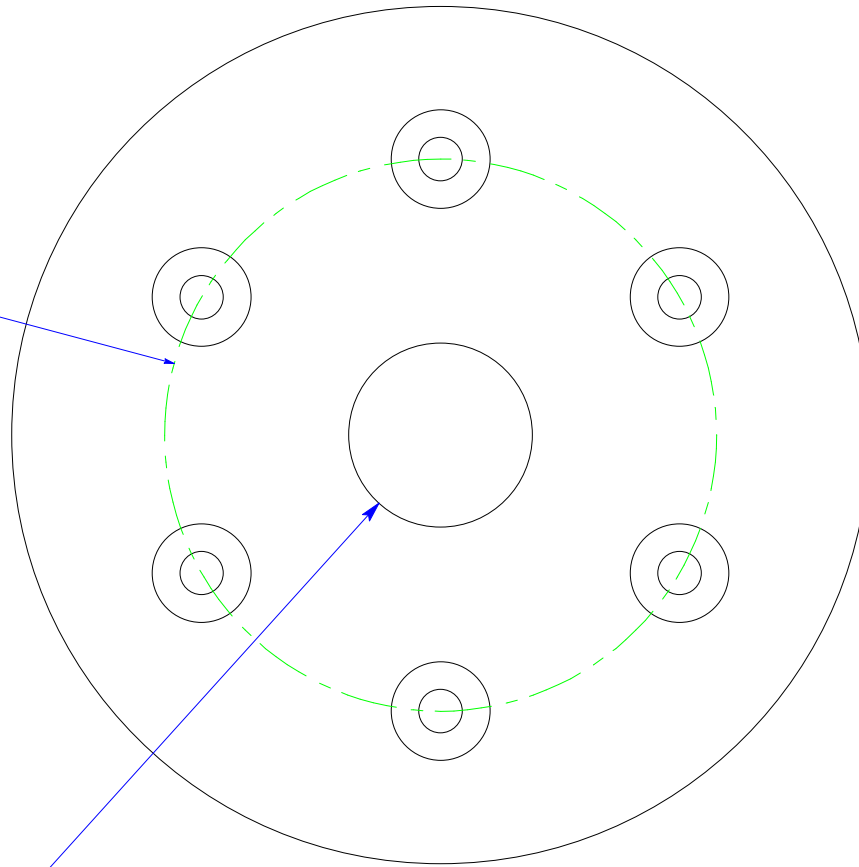
Drawing Number
 Clamp-Side Vacuum
 Flange, Screw Ret.

Outer diameter determined by magnet housing modification, See notes

#16 Drill Through,
82 degree countersink,
0.130±0.005" Deep,
6 of them

Ø 2.253 ±.005

3/4" Drill Through



Units: Inches

Material: Aluminum, 6061

Quantity: 1

Notes: 1. Outer diameter is nominally about 3.5", but is determined by magnet housing modification (inside countersink of clamp-side hole). This piece must be either flush with the inside of the housing or recessed to a max of 0.020" with respect to the inside of the housing

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Drawing Number

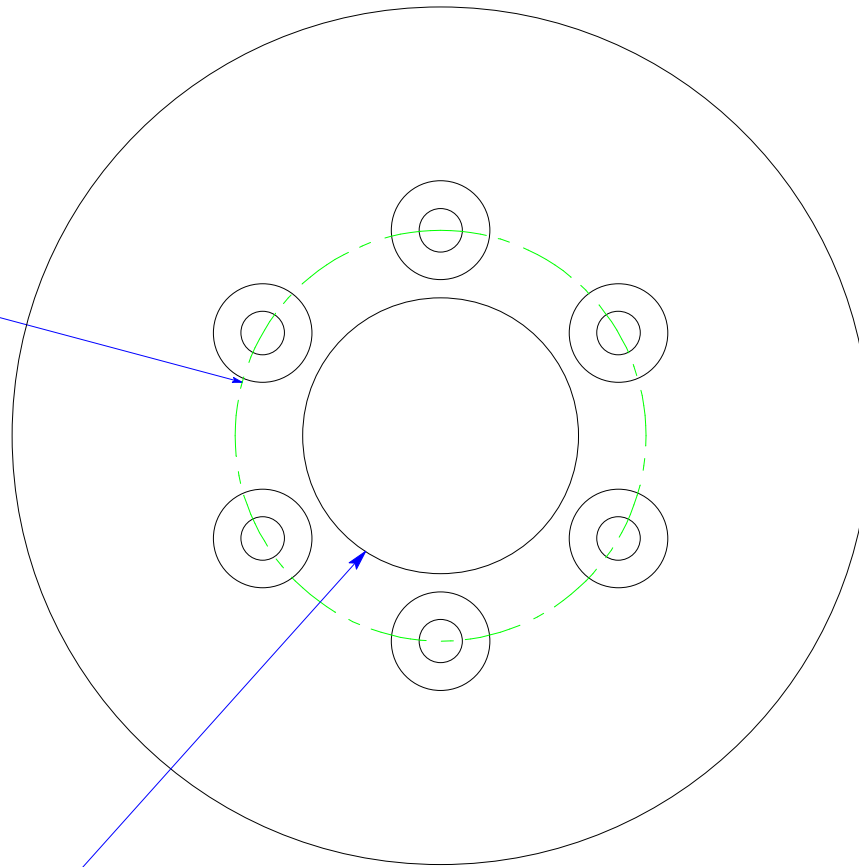
Clamp-Side Vacuum
Flange, Retainer

Outer diameter determined by magnet housing modification, See notes

#16 Drill Through,
82 degree countersink,
0.120±0.005" Deep,
6 of them

∅ 1.677 ±.005

1.125" Drill Through



45°

.21 ±.01



Units: Inches

Material: Aluminum, 6061

Quantity: 1

Notes: 1. Outer diameter is nominally about 3.5", but is determined by magnet housing modification (inside countersink of clamp-side hole). This piece must be either flush with the inside of the housing or recessed to a max of 0.020" with respect to the inside of the housing

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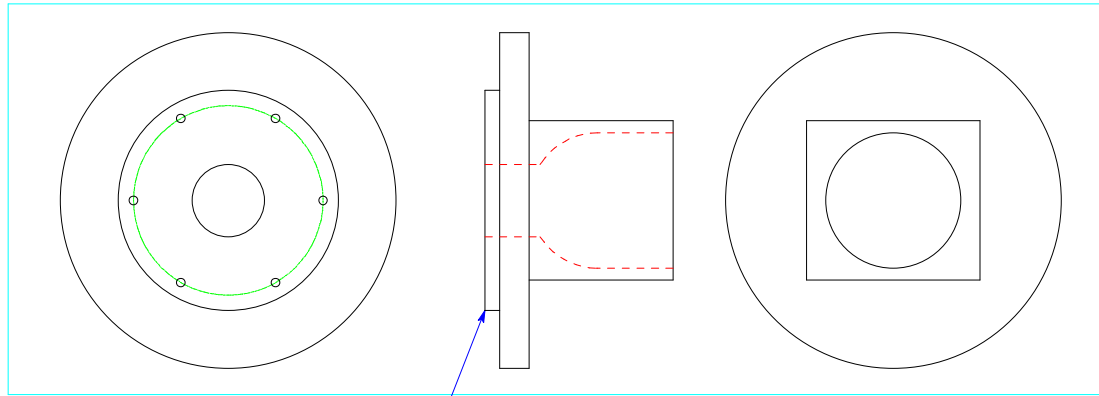
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Drawing Number

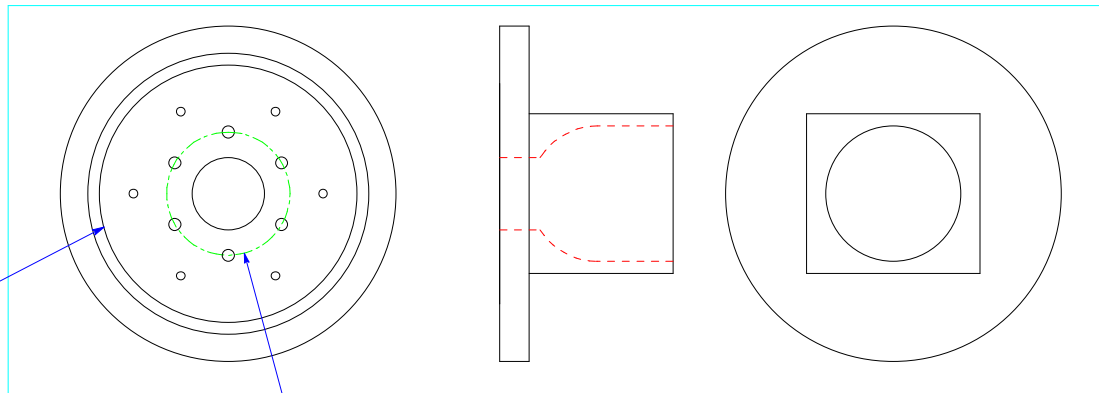
Sample-Side Vac.
Flange, Retainer

Before modification



Cut off protrusion,
flush with existing
flange surface or
recessed up to 0.02"

After Modification



Add oring groove,
ID $\varnothing 3.500 \pm 0.020$ ",
0.104 \pm .003" Deep,
0.161 \pm .003" Wide

$\varnothing 1.677 \pm .005$

8-32 Bottom Tap,
0.350" Min thread
Drill 0.450" Deep Max (Do not break through),
6 of them

Units: Inches

Material: Provided, Aluminum ball-valve housing

Quantity: 1

Notes: 1.

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Oxford Cold Shield

Drawing Number

Sample-Side Vac.
Flange, Valve Mod.