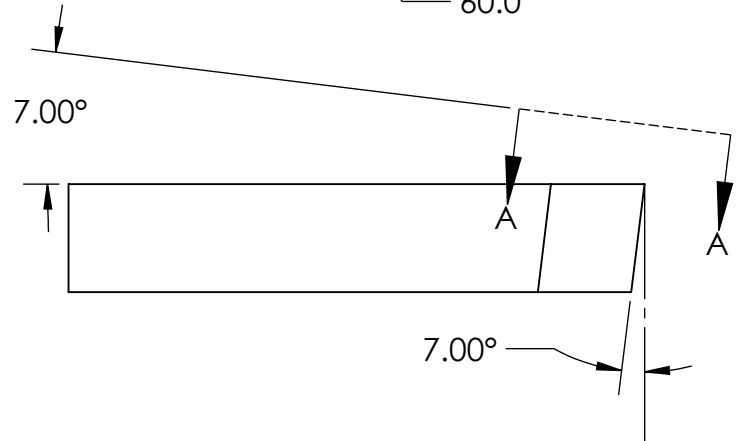


**SECTION A-A**

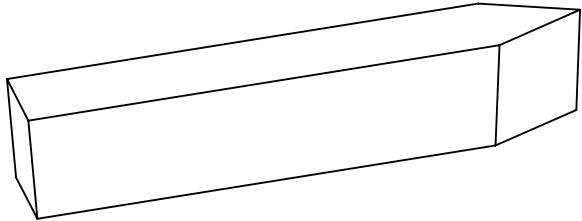


FORMULA:  $A = 30^\circ$   
 $B = 7^\circ$   
 $C = 30.186^\circ$   
 $C \times 2 = 60.372^\circ$

$$\tan C = \frac{\tan A}{\cos B}$$

**NOTES:**

1. IN THIS EXAMPLE A MAGNETIC SINE PLATE WOULD BE INCLINED TO AN ANGLE OF  $30.186^\circ$  AND THE CUTTING TOOL ROTATED TO A  $7^\circ$  ANGLE ON THE CHUCK OF THE MAG SINE.
2. ALTERNATIVELY, A  $30.186^\circ$  ANGLE IS DRESSED ON THE GRINDING WHEEL AND THE CUTTING TOOL IS ROTATED TO A  $7^\circ$  ANGLE ON THE MAGNETIC CHUCK OF THE GRINDER.
3. SEE SHEET 2 FOR FORMULA DERIVATION.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
 TOLERANCES FOR BOTH SYSTEMS ARE:

<b>ENGLISH:</b>		<b>METRIC:</b>		<b>ALL ANGLES</b>
FRACTIONS	DECIMALS	DECIMALS	DECIMALS	
$\pm 1/32$	.XX $\pm .01$	X.X $\pm 0.1$	X.XX $\pm 0.01$	X $\pm 1^\circ$
	.XXX $\pm .002$			.XX $\pm .05^\circ$
	.XXXX $\pm .0002$			

**Raystown Precision Tool**  
 1822 Washington Street  
 Huntingdon, PA 16652

**THREADING TOOL, COMPOUND ANGLE**

A		Initial Release	NWE	4/15/15		
<b>PART #</b>	<b>REV #</b>	<b>ECN</b>	<b>CHANGE DESCRIPTION</b>	<b>REV. BY</b>	<b>ECN DATE</b>	<b>CHECKED</b>

<b>MATERIAL</b>	XXXXXX
<b>FINISH</b>	✓ 32
<b>DRAWN BY</b>	NWE
<b>DATE</b>	XX/XX/2015
<b>APPROVED</b>	
<b>DATE</b>	
<b>DO NOT SCALE DRAWING</b>	

<b>SIZE</b>	<b>DWG. NO.</b>	<b>REV.</b>
A	RPT2001	A
<b>SCALE</b>	<b>FILE</b>	<b>SHEET</b>
: XX		1 OF 2

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DERIVING THE FORMULA:

$$\tan C^\circ = \frac{\tan A^\circ}{\cos B^\circ}$$

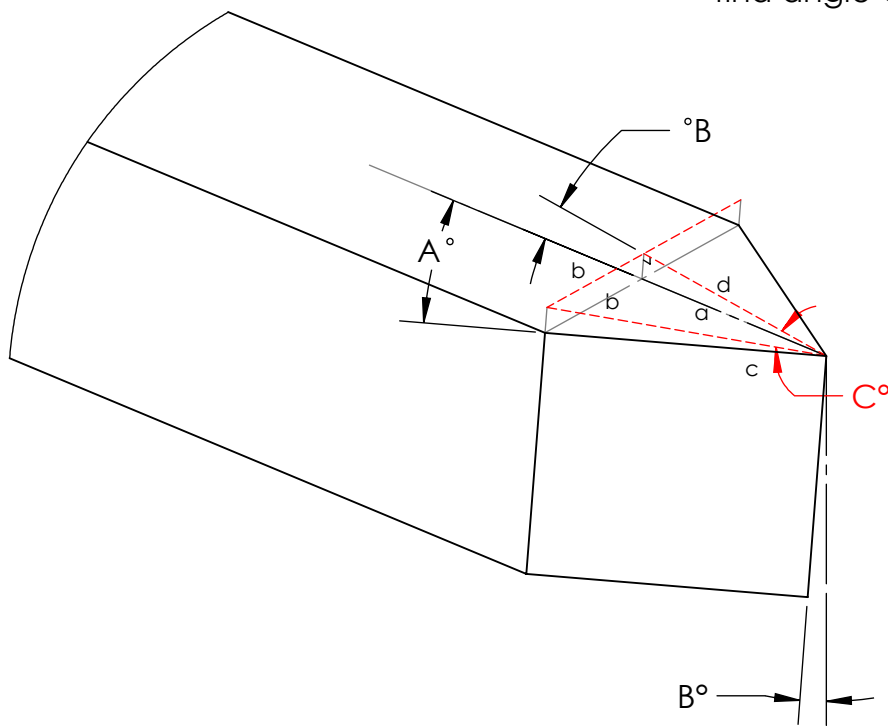
1. Sketch a plane perpendicular to angle B as shown by red construct lines.
2. Label each line segment appropriately.
3. Common sides must be used to solve to find angle C.

$$\cos B^\circ = d/a$$

$$\tan A^\circ = b/a$$

$$\tan C^\circ = b/d$$

$$\tan C = \frac{\tan A * a}{\cos B * a} = \frac{\tan A}{\cos B}$$



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
TOLERANCES FOR BOTH SYSTEMS ARE:

ENGLISH:		METRIC:		ALL ANGLES
FRACTIONS	DECIMALS	DECIMALS	DECIMALS	
± 1/32	.XX ± .01	X.X ± 0.1	X.X ± 0.1	X ± .1°
	.XXX ± .002	X.XX ± 0.01	X.XX ± 0.01	.XX ± .05°
	.XXXX ± .0002			

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1822 Washington Street  
Huntingdon, PA 16652

**THREADING TOOL, COMPOUND ANGLE**

MATERIAL	XXXXXX	FINISH	√ 32	DRAWN BY	NWE	DATE	XX/XX/2015
DO NOT SCALE DRAWING				APPROVED		DATE	

SIZE	DWG. NO.	REV.
A	RPT2001	A
SCALE: XX	FILE:	SHEET 2 OF 2

PART #	REV #	ECN	CHANGE DESCRIPTION	REV. BY	ECN DATE	CHECKED
A			Initial Release	NWE	4/15/15	

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