

B

B

1. Make variables #width, #height, and #depth
2. Create sketch 1
3. Extrude sketch 1 to #depth
4. Create sketch 2 on back of part
5. Extrude sketch 2 to #depth * 2
6. Create sketch 3 on back of part
7. Extrude (remove) sketch 3 thru all
8. Add corner fillets R #depth
9. Add R.25 fillet at hub
10. Make configuration table

The diagram shows a mechanical part with the following dimensions and features:

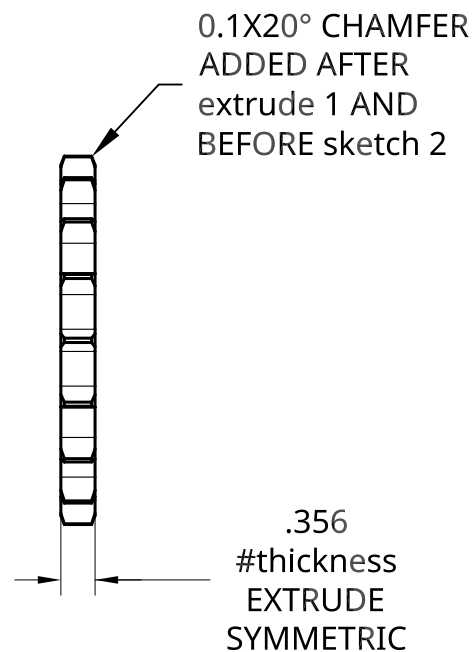
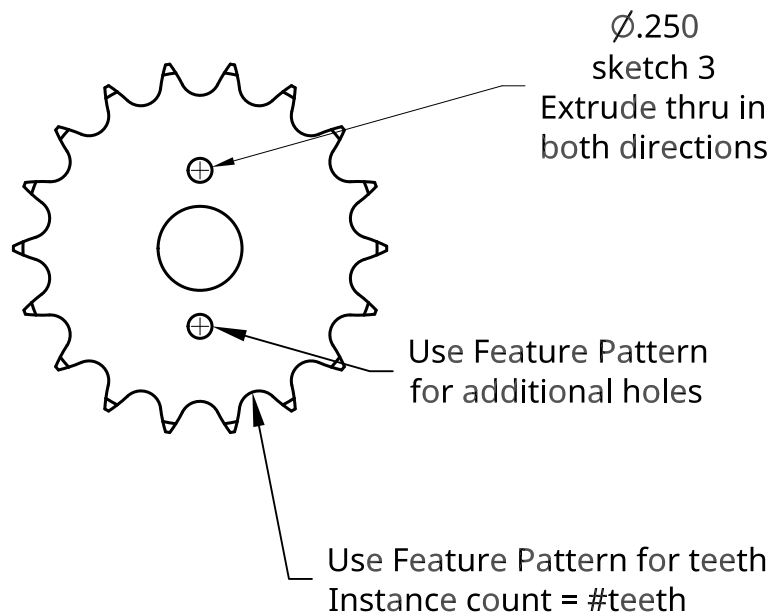
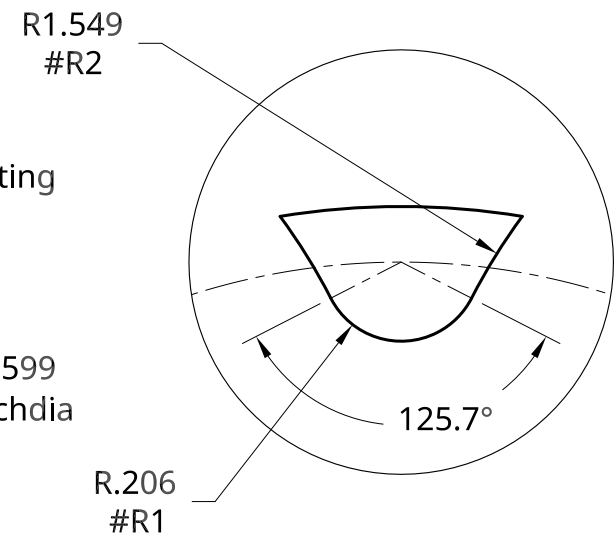
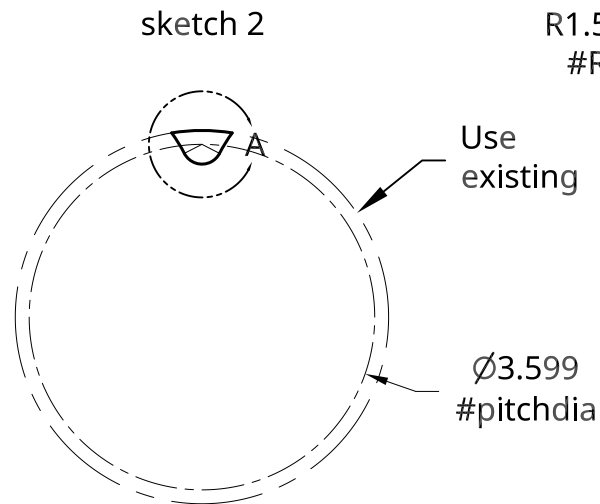
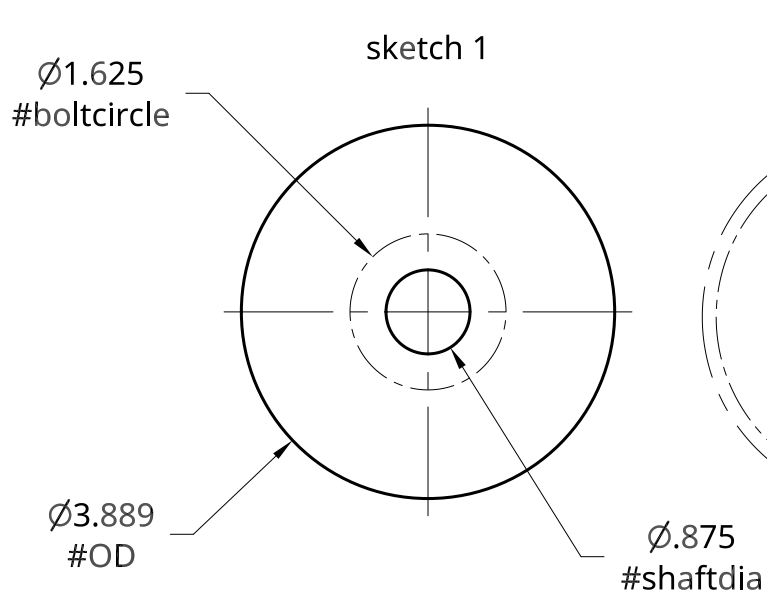
- 1.00**: Dimension for the top horizontal section.
- extrude 1 (using sketch 1) #depth**: Label for the top horizontal section.
- R.25**: Radius dimension for the fillet on the left side.
- 2.00**: Dimension for the bottom horizontal section.
- extrude 2 (using sketch 2) #depth * 2**: Label for the bottom horizontal section.

A

A

2

1



Variable	Formula
size	50
pitch	#size/80
teeth	18
shaftdia	.875
R1	$0.272 * \text{#pitch} + 0.036$
R2	$2.07 * \text{#pitch} + 0.255$
thickness	$0.57 * \text{#pitch}$
diaroller	$0.628 * \text{#pitch} + 0.012$
pitchdia	$\text{#pitch} / \sin(180\text{deg}/\text{#teeth})$
OD	$\text{#pitchdia} + 0.625 * \text{#pitch} - 0.25 * \text{#diaroller}$
boltcircle	$2 * \text{#shaftdia} - 0.125$

2

1

Variable	Formula
size	1212
dia	(#size % 100)/8
thick	(#size - 8 * #dia)/3200
cutoff	0.06

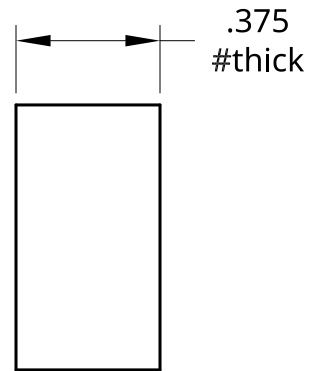
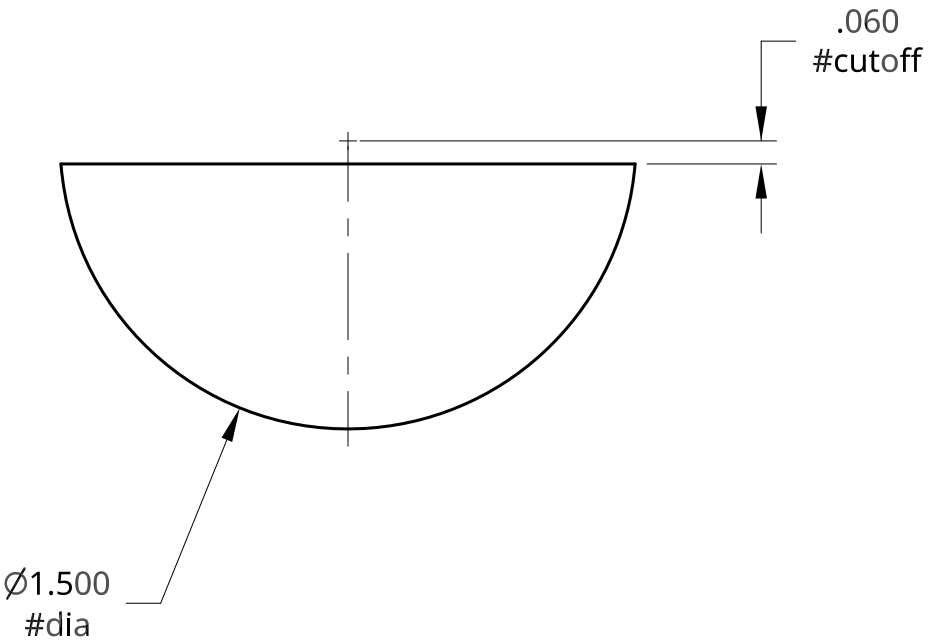
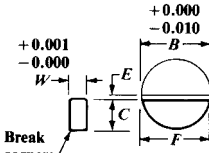
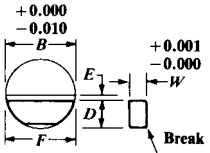


Table 8. ANSI Standard Woodruff Keys *ANSI B17.2-1967 (R1998)*

<div><div></div><div></div></div>							
Key No.	Nominal Key Size <i>W X B</i>	Actual Length <i>F</i> +0.000 -0.010	Height of Key				Distance Below Center <i>E</i>
			<i>C</i>		<i>D</i>		
			Max.	Min.	Max.	Min.	
202	$\frac{1}{16} \times \frac{1}{4}$	0.248	0.109	0.104	0.109	0.104	$\frac{1}{64}$
202.5	$\frac{1}{16} \times \frac{3}{16}$	0.311	0.140	0.135	0.140	0.135	$\frac{1}{64}$
302.5	$\frac{3}{32} \times \frac{3}{16}$	0.311	0.140	0.135	0.140	0.135	$\frac{1}{64}$
203	$\frac{1}{16} \times \frac{3}{8}$	0.374	0.172	0.167	0.172	0.167	$\frac{1}{64}$
303	$\frac{3}{32} \times \frac{3}{8}$	0.374	0.172	0.167	0.172	0.167	$\frac{1}{64}$
403	$\frac{1}{8} \times \frac{3}{8}$	0.374	0.172	0.167	0.172	0.167	$\frac{1}{64}$
204	$\frac{1}{16} \times \frac{1}{2}$	0.491	0.203	0.198	0.194	0.188	$\frac{3}{64}$
304	$\frac{3}{32} \times \frac{1}{2}$	0.491	0.203	0.198	0.194	0.188	$\frac{3}{64}$
404	$\frac{1}{8} \times \frac{1}{2}$	0.491	0.203	0.198	0.194	0.188	$\frac{3}{64}$
305	$\frac{3}{32} \times \frac{3}{8}$	0.612	0.250	0.245	0.240	0.234	$\frac{1}{16}$
405	$\frac{1}{8} \times \frac{3}{8}$	0.612	0.250	0.245	0.240	0.234	$\frac{1}{16}$
505	$\frac{3}{32} \times \frac{3}{8}$	0.612	0.250	0.245	0.240	0.234	$\frac{1}{16}$
605	$\frac{3}{16} \times \frac{3}{8}$	0.612	0.250	0.245	0.240	0.234	$\frac{1}{16}$
406	$\frac{1}{8} \times \frac{3}{4}$	0.740	0.313	0.308	0.303	0.297	$\frac{1}{16}$
506	$\frac{3}{32} \times \frac{3}{4}$	0.740	0.313	0.308	0.303	0.297	$\frac{1}{16}$
606	$\frac{3}{16} \times \frac{3}{4}$	0.740	0.313	0.308	0.303	0.297	$\frac{1}{16}$
806	$\frac{1}{4} \times \frac{3}{4}$	0.740	0.313	0.308	0.303	0.297	$\frac{1}{16}$
507	$\frac{3}{32} \times \frac{7}{8}$	0.866	0.375	0.370	0.365	0.359	$\frac{1}{16}$
607	$\frac{3}{16} \times \frac{7}{8}$	0.866	0.375	0.370	0.365	0.359	$\frac{1}{16}$
707	$\frac{7}{32} \times \frac{7}{8}$	0.866	0.375	0.370	0.365	0.359	$\frac{1}{16}$
807	$\frac{1}{4} \times \frac{7}{8}$	0.866	0.375	0.370	0.365	0.359	$\frac{1}{16}$
608	$\frac{3}{16} \times 1$	0.992	0.438	0.433	0.428	0.422	$\frac{1}{16}$
708	$\frac{7}{32} \times 1$	0.992	0.438	0.433	0.428	0.422	$\frac{1}{16}$
808	$\frac{1}{4} \times 1$	0.992	0.438	0.433	0.428	0.422	$\frac{1}{16}$
1008	$\frac{3}{16} \times 1$	0.992	0.438	0.433	0.428	0.422	$\frac{1}{16}$
1208	$\frac{3}{8} \times 1$	0.992	0.438	0.433	0.428	0.422	$\frac{1}{16}$
609	$\frac{3}{16} \times 1\frac{1}{8}$	1.114	0.484	0.479	0.475	0.469	$\frac{5}{64}$
709	$\frac{7}{32} \times 1\frac{1}{8}$	1.114	0.484	0.479	0.475	0.469	$\frac{5}{64}$
809	$\frac{1}{4} \times 1\frac{1}{8}$	1.114	0.484	0.479	0.475	0.469	$\frac{5}{64}$
1009	$\frac{3}{16} \times 1\frac{1}{8}$	1.114	0.484	0.479	0.475	0.469	$\frac{5}{64}$
610	$\frac{3}{16} \times 1\frac{1}{4}$	1.240	0.547	0.542	0.537	0.531	$\frac{5}{64}$
710	$\frac{7}{32} \times 1\frac{1}{4}$	1.240	0.547	0.542	0.537	0.531	$\frac{5}{64}$
810	$\frac{1}{4} \times 1\frac{1}{4}$	1.240	0.547	0.542	0.537	0.531	$\frac{5}{64}$
1010	$\frac{3}{16} \times 1\frac{1}{4}$	1.240	0.547	0.542	0.537	0.531	$\frac{5}{64}$
1210	$\frac{3}{8} \times 1\frac{1}{4}$	1.240	0.547	0.542	0.537	0.531	$\frac{5}{64}$
811	$\frac{1}{4} \times 1\frac{3}{8}$	1.362	0.594	0.589	0.584	0.578	$\frac{3}{32}$
1011	$\frac{3}{16} \times 1\frac{3}{8}$	1.362	0.594	0.589	0.584	0.578	$\frac{3}{32}$
1211	$\frac{3}{8} \times 1\frac{3}{8}$	1.362	0.594	0.589	0.584	0.578	$\frac{3}{32}$
812	$\frac{1}{4} \times 1\frac{1}{2}$	1.484	0.641	0.636	0.631	0.625	$\frac{7}{64}$
1012	$\frac{3}{16} \times 1\frac{1}{2}$	1.484	0.641	0.636	0.631	0.625	$\frac{7}{64}$
1212	$\frac{3}{8} \times 1\frac{1}{2}$	1.484	0.641	0.636	0.631	0.625	$\frac{7}{64}$

All dimensions are given in inches.

The Key numbers indicate normal key dimensions. The last two digits give the nominal diameter *B* in eighths of an inch and the digits preceding the last two give the nominal width *W* in thirty-seconds of an inch.