

Using the extreme conditions of a flute:

using simple 1/2 values vs precise cords

Barrel diameter =	1.000		
.375 flute	0.375	circumference	1.178
Assuming half of the diameter =			0.585
number of flutes =	4.000		
added cord section =			2.340
Subtracted cord section from original =			1.500
Actual additional surface cord length =			0.840
Using a	29.000	inch barrel at	1.000
Surface area of the	1.000	=	91.106 square inch
Surface area of the fluted barrel =			167.635
			percent increase =

This is the extreme condition at max depth flutes.

Using a more standard 6 flute cut .094" dp

with precise cord values

$$y = 2 * (\text{SQRT}((r^2) - ((r-z)^2)))$$

this is needed to determine the radian value produced by

r inches    y inches    z

0.188	0.163	0.094
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z= cutter depth

Finding the angle formed by the cutter on the barrel surface:

0.163	0.500	0.325	0.331	0.331	angle	radians
0.163	0.188	0.867	1.049	1.049	angle	radians

Finding the cord

cord length = (angle in radians) \* radius of cutter (and barr

barrel	0.331	0.500	0.166	cord length of base	1.000	barrel
cutter	1.049	0.188	0.197	cord length of base of cutter	0.094	dp
number of cords =	6.000			increased cord length of flute =	0.033	
				total increased cord length of flutes =	0.195	

Using a	29.000	inch barrel at	1.000
Surface area of the	1.000	=	91.106 square inches

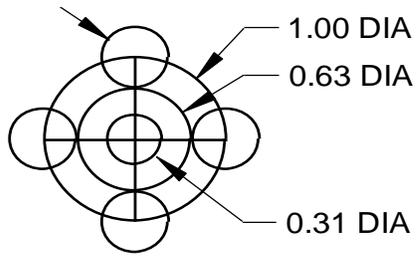
Using a	29.000	with the noted flutes at	1.195	= new equivalent diam
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Surface area of the fluted barrel =	108.899
percent increase =	19.530

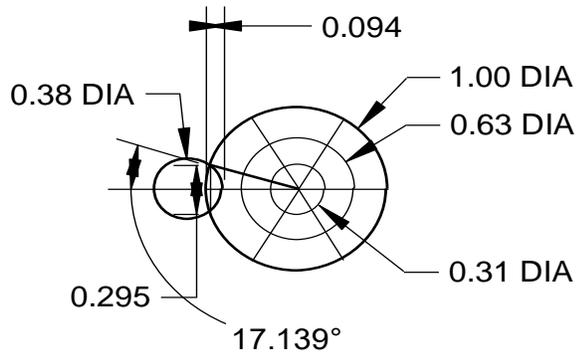
Therefore 6.000 flutes 0.094 dp will increase surface area by around 19.530

0.38 DIA 

Typical 1" 300WM/Rum barrel di



typical 1500 RPM/turn barrel of  
5/8" would be the smallest typical  
The 4 circles are the radiused fil  
Using a 3/8 Ball end mill.  
4 cuts at max depth



6 cuts at .094 depth

ies

84.000 percent

the flute cutter

el in this case)

eter

percent

percent

diameter

diameter

the diameter for this caliber.  
minutes.