

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	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 barrel)

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
				increased cord length of flute =	0.033
number of cords =	6.000			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

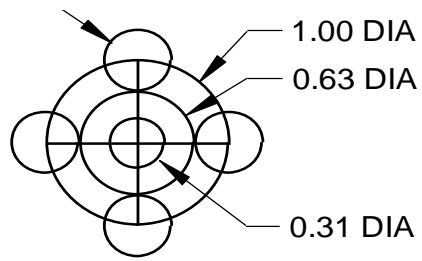
Using a	29.000	with the noted flutes at	1.195	= new equivalent diam
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Surface area of the fluted barrel =	108.899
percent increase =	19.530

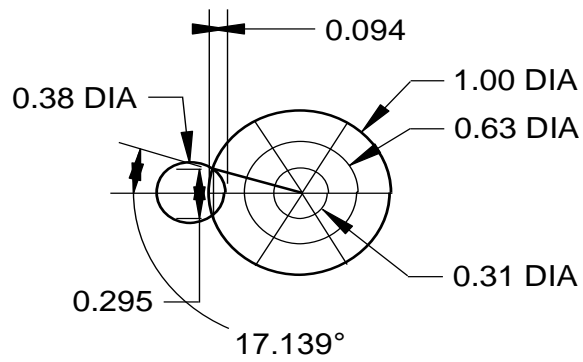
Therefore	6.000 flutes	0.094 dp will increase surface area by around	19.530
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0.38 DIA

Typical 1" 300WM/Rum barrel di



typical 1500VPM/Run barrel at
 5/8" would be the smallest typical
 The 4 circles are the radiused fl
 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

iameter

diameter

l diameter for this caliber.

lutes.