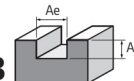


DP Standard / DP Torus / R-Like, 4 Flute - 918, 981, 919, 991, K38, K47, K52, K53



Ramping	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Ramping Depth	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		3°		3°		2°		5°		3°		10°		10°		8°		2°		1°	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.002		0.001		0.001		0.001		0.003		0.001		0.003		0.003		0.003		0.001		0.001
2		0.005		0.004		0.006		0.006		0.003		0.005		0.006		0.004		0.005		0.004		0.003		0.004
3		0.008		0.007		0.009		0.009		0.005		0.008		0.009		0.009		0.009		0.009		0.005		0.006
4		0.012		0.011		0.013		0.013		0.007		0.012		0.013		0.012		0.012		0.012		0.007		0.008
5		0.015		0.014		0.017		0.017		0.009		0.015		0.017		0.016		0.016		0.016		0.009		0.010
6		0.018		0.017		0.021		0.021		0.011		0.018		0.021		0.020		0.020		0.020		0.011		0.012
8	200	0.025	140	0.024	70	0.028	70	0.028	50	0.014	200	0.025	65	0.028	250	0.027	220	0.027	210	0.026	50	0.014	35	0.016
10		0.032		0.031		0.035		0.035		0.025		0.032		0.035		0.034		0.034		0.034		0.025		0.026
12		0.040		0.039		0.045		0.045		0.030		0.040		0.045		0.042		0.042		0.042		0.030		0.031
14		0.046		0.045		0.051		0.051		0.035		0.046		0.051		0.048		0.048		0.048		0.035		0.036
16		0.052		0.051		0.058		0.058		0.040		0.052		0.058		0.054		0.054		0.054		0.040		0.042
18		0.058		0.056		0.063		0.063		0.045		0.058		0.063		0.060		0.060		0.060		0.045		0.047
20		0.063		0.062		0.070		0.070		0.050		0.063		0.070		0.066		0.066		0.066		0.050		0.052

DP Standard / DP Torus / R-Like, 4 Flute - 918, 981, 919, 991, K38, K47, K52, K53



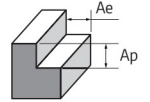
Slotting	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		0.80 × D		0.80 × D		0.40 × D		1.00 × D		0.80 × D		1.00 × D		1.00 × D		1.00 × D		0.40 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.003		0.003		0.003		0.003		0.003		0.003		0.003		0.005		0.004		0.004		0.004		0.004
2		0.006		0.006		0.006		0.006		0.007		0.006		0.006		0.007		0.006		0.006		0.009		0.009
3		0.009		0.009		0.009		0.010		0.011		0.009		0.009		0.011		0.010		0.010		0.014		0.014
4		0.012		0.012		0.012		0.014		0.016		0.012		0.013		0.016		0.015		0.015		0.019		0.019
5		0.016		0.016		0.016		0.018		0.020		0.016		0.017		0.021		0.020		0.020		0.024		0.024
6		0.019		0.019		0.019		0.022		0.025		0.019		0.021		0.026		0.026		0.026		0.030		0.030
8	200	0.026	160	0.026	150	0.026	120	0.030	80	0.034	170	0.026	110	0.028	330	0.037	300	0.036	280	0.038	60	0.040	30	0.040
10		0.033		0.034		0.033		0.038		0.044		0.033		0.035		0.048		0.047		0.047		0.051		0.051
12		0.041		0.041		0.041		0.047		0.054		0.041		0.043		0.060		0.061		0.061		0.063		0.063
14		0.047		0.047		0.047		0.054		0.062		0.047		0.049		0.068		0.070		0.070		0.072		0.072
16		0.054		0.053		0.054		0.061		0.069		0.054		0.055		0.075		0.078		0.078		0.080		0.080
18		0.060		0.058		0.060		0.067		0.076		0.060		0.061		0.083		0.080		0.080		0.088		0.088
20		0.066		0.064		0.066		0.073		0.082		0.066		0.067		0.090		0.086		0.086		0.096		0.096



Recommended Cutting Data

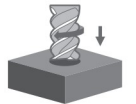
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

DP Standard / DP Torus / R-Like, 4 Flute - 918, 981, 919, 991, K38, K47, K52, K53



Side Milling	P01		P02		P03		M01		M02		K01		K02		N01		N02		N03		S01		S02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium		Copper Alloy		Titanium Alloy		Nickel Alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		-		Si < 9%		Si ≥ 9%		-		-		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	0.25 × D		0.20 × D		0.18 × D		0.18 × D		0.15 × D		0.25 × D		0.18 × D		0.30 × D		0.30 × D		0.30 × D		0.15 × D		0.10 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.005		0.006		0.005		0.004		0.005		0.007		0.004		0.006		0.005		0.004		0.005		0.004
2		0.009		0.009		0.009		0.009		0.011		0.010		0.009		0.009		0.008		0.009		0.011		0.008
3		0.017		0.014		0.014		0.014		0.017		0.016		0.014		0.014		0.014		0.014		0.018		0.013
4		0.023		0.020		0.019		0.020		0.024		0.022		0.019		0.020		0.019		0.021		0.024		0.018
5		0.030		0.025		0.024		0.025		0.030		0.029		0.025		0.027		0.026		0.027		0.031		0.025
6		0.036		0.031		0.031		0.031		0.037		0.036		0.030		0.034		0.034		0.035		0.039		0.033
8	280	0.049	230	0.043	190	0.042	160	0.043	100	0.049	250	0.049	140	0.041	400	0.046	380	0.046	360	0.050	70	0.053	40	0.046
10		0.062		0.056		0.056		0.056		0.062		0.063		0.052		0.060		0.059		0.062		0.066		0.061
12		0.075		0.070		0.070		0.070		0.076		0.075		0.069		0.076		0.074		0.076		0.080		0.075
14		0.086		0.079		0.080		0.078		0.085		0.085		0.075		0.087		0.085		0.086		0.090		0.081
16		0.094		0.087		0.090		0.086		0.093		0.095		0.082		0.097		0.095		0.091		0.101		0.089
18		0.103		0.092		0.098		0.092		0.102		0.103		0.089		0.106		0.102		0.099		0.111		0.094
20		0.113		0.098		0.104		0.099		0.107		0.112		0.094		0.115		0.110		0.106		0.122		0.102

DP Standard / DP Torus / R-Like, 4 Flute - 918, 981, 919, 991, K38, K47, K52, K53



Plunging	P01		P02		K01		N01		N02		N03	
Working Material	Carbon Steel		Alloy Steel		Grey Cast iron		Wrought Aluminium		Cast Aluminium		Copper Alloy	
Properties	-		520 < Rm < 1200		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, Ae (mm)	-		-		-		-		-		-	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1		0.007		0.008		0.007		0.009		0.009		0.008
2		0.018		0.016		0.018		0.018		0.018		0.017
3		0.028		0.024		0.028		0.028		0.028		0.027
4		0.038		0.033		0.038		0.038		0.037		0.036
5		0.048		0.042		0.048		0.048		0.047		0.046
6		0.059		0.052		0.059		0.058		0.057		0.056
8	120	0.080	110	0.070	120	0.080	150	0.078	140	0.077	130	0.075
10		0.101		0.090		0.101		0.099		0.098		0.097
12		0.126		0.113		0.126		0.121		0.121		0.120
14		0.144		0.129		0.144		0.140		0.139		0.138
16		0.162		0.144		0.162		0.158		0.157		0.156
18		0.179		0.158		0.179		0.176		0.174		0.173
20		0.196		0.170		0.196		0.193		0.191		0.189



Recommended Cutting Data
 Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.