4 FLUTE

SFM					
MATERIAL / TYPE	**Rc HARDNESS**	**4 FLUTE STUB LENGTH**	**4 FLUTE REG LENGTH**	**4 FLUTE LONG LENGTH**	**4 FLUTE EXTRA LONG**
COBALT BASE ALLOYS					
STELLITE, HS-21,	UNDER 32	275 - 350	275 - 350	200 - 275	200 - 275
HAYNES 25/188, X-40, L-605	OVER 32	175 - 250	175 - 250	125 - 175	125 - 175
NICKEL BASE ALLOYS					
INCONEL-625/718, WASPALLOY,	UNDER 32	200 - 300	200 - 300	150 - 200	150 - 200
RENE, HASTELLOY	OVER 32	125 - 200	125 - 200	90 - 125	90 - 125
IRON BASE ALLOYS					
INCOLOY 800-802, MULTIMET N-155,	UNDER 32	250 - 350	250 - 350	200 - 300	200 - 300
TIMKIN 16-25-6, CARPENTER 22-b3	OVER 32	200 - 250	200 - 250	150 - 200	150 - 200
MONEL					
MONEL-65% NICKEL	–	275 - 350	275 - 350	200 - 300	200 - 300
TITANIUM ALLOYS					
COMMERCIALLY PURE, 6Al-4V,	–	–	–	–	–
ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	–	250 - 400	250 - 400	150 - 300	150 - 300
STAINLESS STEEL (PRECIPITATION)					
12/8, 15/5, 17/4, AM-350/355	UNDER 32	250 - 300	250 - 300	175 - 210	175 - 210
	OVER 32	200 - 250	200 - 250	140 - 175	140 - 175
STAINLESS STEEL (AUSTENITIC)					
200 SERIES, 302, 303, 304, 316	–	290 - 375	290 - 375	200 - 260	200 - 260
STAINLESS STEEL (AUSTENITIC)					
304L, 316L	UNDER 32	250 - 300	250 - 300	175 - 210	175 - 210
	OVER 32	200 - 250	200 - 250	140 - 175	140 - 175
STAINLESS STEEL (MARTENSITIC)					
403, 410, 416, 440	–	250 - 300	250 - 300	175 - 210	175 - 210
HIGH STRENGTH TOOL STEELS					
4140, 4340, 6150, 5210, A2,	UNDER 32	250 - 350	250 - 350	175 - 210	175 - 210
D2, P20, H11, H13, S2, 01	OVER 32	150 - 200	150 - 200	100 - 140	100 - 140
CARBON STEELS					
1000's, 1100's, 1300'S	–	560 - 595	560 - 595	300 - 500	300 - 500
DUCTILE					
DUCTILE CAST IRONS	–	560 - 595	560 - 595	400 - 500	400 - 500
CAST IRONS					
GRAY CAST IRONS	–	560 - 595	560 - 595	400 - 500	400 - 500

Speed and feed chart parameters are for 4 flute full diameter slotting

Recommended slotting up to 1 x Diameter
Tool holding important for maximizing tool life. Minimize TIR
Max ramp angle recommended 3° or less

4 FLUTE

I.P.T. (INCH PER TOOTH)										
MATERIAL / TYPE	**1/8"**	**3/16"**	**1/4"**	**5/16"**	**3/8"**	**7/16"**	**1/2"**	**5/8"**	**3/4"**	**1"**
COBALT BASE ALLOYS										
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	.0004 - .0008	.0005 -.0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
NICKEL BASE ALLOYS										
INCONEL-625/718, WASPALLOY, RENE, HASTELLOY	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
IRON BASE ALLOYS										
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
MONEL										
MONEL-65% NICKEL	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0015 - .0017	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
TITANIUM ALLOYS										
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0015 - .0017	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
STAINLESS STEEL (PRECIPITATION)										
12/8, 15/5, 17/4, AM-350/355	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
200 SERIES, 302, 303, 304, 316	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
304L, 316L	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (MARTENSITIC)										
403, 410, 416, 440	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
HIGH STRENGTH TOOL STEELS										
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, 01	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
CARBON STEELS										
1000's, 1100's, 1300'S	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
DUCTILE										
DUCTILE CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
CAST IRONS										
GRAY CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056

Chip Thinning recommended for 4 Flute to optimize tool life:

5% of Diameter Radial engaged: Multiply Feed 3X
10% of Diameter Radial engaged: Multiply Feed 2X
20% of Diameter Radial engaged: Multiply Feed 1.5X