The Machining Data shown below, is considered to be "safe starting conditions" and may need to be adjusted to obtain optimal tool performance.

If "chatter" is present, increase Feed up to 20% and reduce RPM by 10% - 20%.

Safety precautions must be implemented including safety glasses and machine shields to protect the operator and/or observers from hot flying chips.

Our Technical Team is ready to offer solutions for that difficult machining application. Whether you need tool specific speeds, feeds, depth of cuts, grade selection(s) or any questions and/or concerns regarding the application of MICRO 100 Solid Carbide Cutting Tools, they are there to help!

MATERIAL TYPES	Type of Cut	Axial D.O.C.	Radial D.O.C.	No. of Flutes	SFM (Vc)	Cutter Diameter Chip Load per Tooth (Fz)						
						1/8	1/4	3/8	1/2	5/8	3/4	1
Cast Materials / Irons												
Gray Cast Irons												
	Slotting	D x 1	D x 1	4	400	.0006	.0012	.0019	.0025	.0031	.0038	.0050
	Roughing	D x 1.5	D x .5	4	500	.0007	.0015	.0023	.0030	.0037	.0046	.0060
	Roughing	D x 1.5	D x .5	5	500	-	.0014	.0021	.0028	.0035	.0043	.0056
	Finishing	D x 1.5	D x .01	5	650	-	.0014	.0021	.0028	.0035	.0043	.0056
Ductile Cast Irons												
	Slotting	D x 1	D x 1	4	300	.0006	.0012	.0018	.0023	.0029	.0035	.0046
	Roughing	D x 1.5	D x .5	4	400	.0007	.0014	.0021	.0028	.0035	.0042	.0056
	Roughing	D x 1.5	D x .5	5	400	-	.0013	.0020	.0027	.0033	.0040	.0054
	Finishing	D x 1.5	D x .01	5	520	-	.0013	.0020	.0027	.0033	.0040	.0054
Malleable Cast Irons												
	Slotting	D x .75	D x 1	4	250	.0004	.0008	.0012	.0015	.0019	.0023	.0030
	Roughing	D x 1	D x .75	4	325	.0005	.0011	.0016	.0022	.0027	.0033	.0044
	Roughing	D x 1	D x .75	5	325	-	.0010	.0015	.0021	.0026	.0032	.0042
	Finishing	D x 1.5	D x .01	5	425	-	.0010	.0015	.0021	.0026	.0032	.0042
Steels												
Low Carbon Steels												
≤38 HRc 1018, 12L14, 8620	Slotting	D x 1	D x 1	4	350	.0008	.0016	.0024	.0032	.0040	.0048	.0064
	Roughing	D x 1.5	D x .5	4	425	.0010	.0020	.0030	.0040	.0050	.0060	.0080
	Roughing	D x 1.5	D x .5	5	425	-	.0019	.0028	.0038	.0047	.0057	.0076
	Finishing	D x 1.5	D x .01	5	550	-	.0019	.0028	.0038	.0047	.0057	.0076
Medium Carbon Steels												
≤38 HRc 4140, 4340	Slotting	D x 1	D x 1	4	325	.0006	.0013	.0020	.0027	.0034	.0040	.0054
	Roughing	D x 1.5	D x .5	4	375	.0008	.0017	.0026	.0035	.0044	.0053	.0070
	Roughing	D x 1.5	D x .5	5	375	-	.0016	.0025	.0034	.0042	.0051	.0068
	Finishing	D x 1.5	D x .01	5	490	-	.0016	.0025	.0034	.0042	.0051	.0068
Tool & Die Steels												
≤38 HRc A2, D2, H13, P20	Slotting	D x 1	D x 1	4	325	.0006	.0013	.0020	.0027	.0034	.0040	.0054
	Roughing	D x 1.5	D x .5	4	375	.0008	.0017	.0026	.0035	.0044	.0053	.0070
	Roughing	D x 1.5	D x .5	5	375	-	.0016	.0025	.0034	.0042	.0051	.0068
	Finishing	D x 1.5	D x .01	5	485	-	.0016	.0025	.0034	.0042	.0051	.0068
Tool Steels												
>38 HRc	Slotting	D x 1	D x 1	4	225	.0005	.0010	.0015	.0020	.0025	.0030	.0040
	Roughing	D x 1.5	D x .5	4	275	.0006	.0012	.0017	.0023	.0029	.0035	.0046
	Roughing	D x 1.5	D x .5	5	275	-	.0011	.0016	.0022	.0028	.0034	.0044
	Finishing	D x 1.5	D x .01	5	355	-	.0011	.0016	.0022	.0028	.0034	.0044

L

The Machining Data shown below, is considered to be "safe starting conditions" and may need to be adjusted to obtain optimal tool performance.

If "chatter" is present, increase Feed up to 20% and reduce RPM by 10% - 20%.

Safety precautions must be implemented including safety glasses and machine shields to protect the operator and/or observers from hot flying chips.

Our Technical Team is ready to offer solutions for that difficult machining application. Whether you need tool specific speeds, feeds, depth of cuts, grade selection(s) or any questions and/or concerns regarding the application of MICRO 100 Solid Carbide Cutting Tools, they are there to help!

MATERIAL TYPES	Type of Cut	Axial D.O.C.	Radial D.O.C.	No. of Flutes	SFM (Vc)	Cutter Diameter Chip Load per Tooth (Fz)						
						1/8	1/4	3/8	1/2	5/8	3/4	1
Stainless Steels												
Steels - Easy Machining Difficulty												
302, 303, 410, 416	Slotting	D x 1	D x 1	4	300	.0006	.0012	.0019	.0025	.0031	.0038	.0050
	Roughing	D x 1.5	D x .5	4	375	.0007	.0015	.0023	.0030	.0037	.0046	.0060
	Roughing	D x 1.5	D x .5	5	375	-	.0014	.0021	.0028	.0035	.0043	.0056
	Finishing	D x 1.5	D x .01	5	485	-	.0014	.0021	.0028	.0035	.0043	.0056
Steels - Medium Machining Difficulty												
304, 316, Invar, Kovar	Slotting	D x .75	D x 1	4	275	.0006	.0012	.0019	.0025	.0031	.0038	.0050
	Roughing	D x 1.5	D x .5	4	350	.0007	.0015	.0023	.0030	.0037	.0046	.0060
	Roughing	D x 1.5	D x .5	5	350	-	.0014	.0021	.0028	.0035	.0043	.0056
	Finishing	D x 1.5	D x .01	5	450	-	.0014	.0021	.0028	.0035	.0043	.0056
Steels - Maximum Machining Difficulty												
13-8 PH, 15-5 PH, 17-4 PH, 316L	Slotting	D x .5	D x 1	4	250	.0006	.0012	.0019	.0025	.0031	.0038	.0050
	Roughing	D x 1	D x .5	4	300	.0007	.0015	.0023	.0030	.0037	.0046	.0060
	Roughing	D x 1	D x .5	5	300	-	.0014	.0021	.0028	.0035	.0043	.0056
	Finishing	D x 1.5	D x .01	5	390	-	.0014	.0021	.0028	.0035	.0043	.0056
Hardened Alloys												
Hard Temperature Alloys												
	Slotting	D x .25	D x 1	4	70	.0004	.0008	.0012	.0015	.0019	.0024	.0030
	Roughing	D x 1	D x .25	4	95	.0005	.0009	.0014	.0018	.0022	.0028	.0036
	Roughing	D x 1	D x .25	5	95	-	.0009	.0014	.0018	.0022	.0028	.0036
	Finishing	D x 1.5	D x .01	5	125	-	.0009	.0014	.0018	.0022	.0028	.0036
Titanium Alloys												
	Slotting	D x .5	D x 1	4	250	.0004	.0007	.0011	.0015	.0018	.0023	.0030
	Roughing	D x 1	D x .5	4	300	.0005	.0010	.0015	.0020	.0025	.0030	.0040
	Roughing	D x 1	D x .5	5	300	-	.0009	.0013	.0018	.0023	.0028	.0036
	Finishing	D x 1.5	D x .01	5	390	-	.0009	.0013	.0018	.0023	.0028	.0036

L