



DEEPTWIST™ OPERATING GUIDELINES

ISO	Materials		Tensile Strength N/mm ²	HB Hardness	Vc Cutting Speed SFM	Feed rate fn (IPR) per Drill Dia. DC								
	Mat'l Group	Condition				10 - 11.9 mm .394 - .469"	12 - 13.9 mm .472 - .547"	14 - 15.9 mm .551 - .626"	16 - 19.9 mm .630 - .783"	20 - 25.9 mm .787 - 1.020"				
P	1	Carbon Steel High Carbon Cutting Steel	0.1 - 0.25 %C	Non-hardened	420	125	197 - 361	.004-.007	.004-.008	.005-.009	.005-.010	.006-.011		
	2		0.25 - 0.25 %C	Non-hardened	650	190	197 - 328							
	3		0.25 - 0.25 %C	Hardened & Tempered	850	250	197 - 328							
	4		0.55 - 0.80 %C	Non-hardened	750	220	164 - 295							
	5		0.55 - 0.80 %C	Hardened & Tempered	100	300	131 - 295							
	6	Low Alloyed (Alloying element <5%)	Non-hardened		600	200	164 - 328	.004-.007	.004-.008	.005-.009	.005-.009	.005-.010		
	7		Hardened & Tempered		930	275	164 - 295							
	8		Hardened & Tempered		1000	300	131 - 295							
	9		Hardened & Tempered		1200	350	98 - 164							
	10	High Alloyed Cast Iron Tool Steel	Non-hardened		680	200	131 - 295	.004-.007	.004-.007	.004-.008	.004-.009	.004-.009		
	11		Hardened & Tempered		1100	325	98 - 197							
M	Stainless Steel	Ferritic		680	200	98 - 164	.004-.006	.004-.006	.004-.007	.004-.008	.004-.009			
		Martensitic		820	240	98 - 164								
		Austenitic		600	180	98 - 164								
K	Grey Cast Iron	Ferritic/Pearlitic			180	197 - 328	.006-.010	.007-.011	.008-.013	.008-.014	.009-.016			
		Pearlitic			260	197 - 328								
	Nodular Cast Iron	Ferritic			160	197 - 420								
		Pearlitic			250	197 - 361								
	Malleable Cast Iron	Ferritic			130	230 - 394								
		Pearlitic			230	197 - 361								
N	Aluminum Alloy Forging	Non-aged			60	230 - 558	.006-.010	.009-.014	.011-.016	.013-.019	.014-.022			
		Soluted, Aged			100									
	Aluminum Alloy Casting	<=12% Si	Non-aged									75		
			Soluted, Aged									90		
		>12% Si	High silicon									130	197 - 427	
	Copper Alloy	>1% Pb		Free cutting copper									110	
				Brass, Red brass									90	230 - 558
				Electrolytic copper									100	
	Non-Metallic	Duroplastics, fiber plastics												
		Hard rubber												
S	Heat-Resistant Super Alloy	Fe base	Non-aged			200	.003-.004	.003-.005	.004-.006	.004-.006	.004-.007			
			Soluted, Aged			280								
		Ni / Co base	Non-aged			250								
			Soluted, Aged			350								
			Casted			320								
	Titanium Alloy	α	Rm400									66 - 131		
		α-β	Rm1050									66 - 131		
H	Hardened Steel	Hardened			55 HRC	66 - 131	.003-.005	.003-.006	.004-.006	.004-.007	.005-.008			
		Hardened			60 HRC									
	Chilled Cast Iron	Cast			400									
		Hardened			55 HRC									

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases.