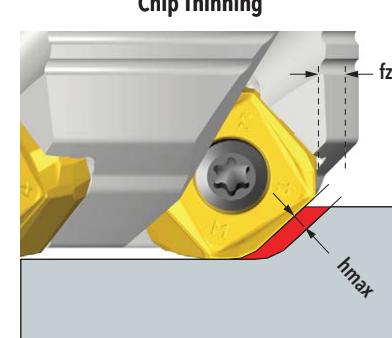


## 11 mm (45°) • Operating Guidelines



\* Chip Thinning Calculator is recommended to ensure hmax is greater than .003"

Materials				Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder «-----> Tougher						Coolant			
ISO	Material Group #VDI 3323	Type	Examples			Ceramic	Carbide								
						IN71N	IN2510	IN2505	IN2530	IN2036	IN6537				
<b>P</b>	1-5	Non-Alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.005-.015							No			
	6-9	Low-Alloy Steel	4140, 4340, P20, 8620, 300M	350-700					3	2					
	10-11	High-Alloy Steel	H13, A2, D2, M2, T1	300-600							1				
<b>M</b>	12 - 13	Stainless Steel (Ferritic & Martensitic)	410, 416, 440	400-700	.005-.010				3	2	1	May not be required at high speeds			
	14	Stainless Steel (Austenitic)	303, 304, 316, 15-5, 17-4	300-600											
<b>K</b>	15-16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.005-.016		1	2				3	No		
	1800-3000			.005-.010	1										
	17-18	Nodular Cast Iron	60-40-18, 100-70-03	400-800	.005-.016		1	2				3			
	1500-2500			.005-.010	1										
<b>S</b>	31 - 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	75-120	.005-.015				3	2	1		Yes		
	36 - 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100-150					2	3	1				

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. Additionally, DOC and WOC may need to be revised to optimize the tools performance.