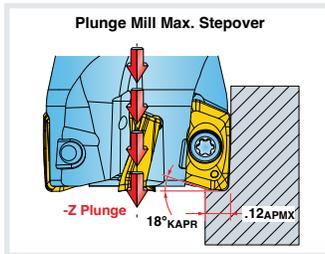
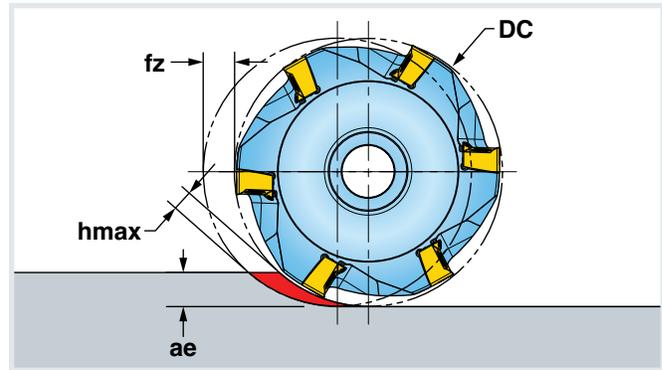


90° & Plunge • Operating Guidelines



CHIP THINNING

When a_e is less than 25%, **Chip Thinning Calculator** is recommended to ensure h_{max} is within f_z range. ▶



Materials				Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder «-----» Tougher						Coolant	
ISO	Material Group	Type	Examples			DLC	Carbide						
						IN3310	IN10K	IN2510	IN2540	IN2505	IN2530	IN2036	
P	1-5	Non-Alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.003-.006								No
	6-9	Low-Alloy Steel	4140, 4340, P20, 8620, 300M	350-700					3	2	1		
	10-11	Hi-Alloy Steel	H13, A2, D2,M2, T1	300-600									
M	12-13	Stainless Steel (ferritic & martensitic)	410, 416, 440	350-600	.003-.005								Yes
	14	Stainless Steel (austenitic)	303, 304, 316, 15-5, 17-4	300-550					4	3	2	1	May not be required at high speeds
K	15-16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.003-.006								No
	17-18	Nodular Cast Iron	60-40-18, 100-70-03	400-800				1		2	3		
N	21-30	Aluminum	7075, 6061	1000-10000	.001-.007		1						Yes
				5000-15000		1							
S	31-35	Hi-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	65-150	.003-.005					2	3	1	Yes
	36-37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	85-200						3	2	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.