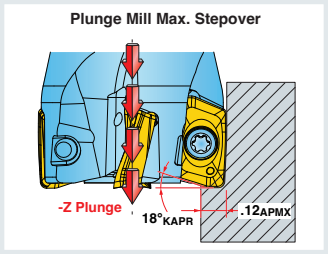
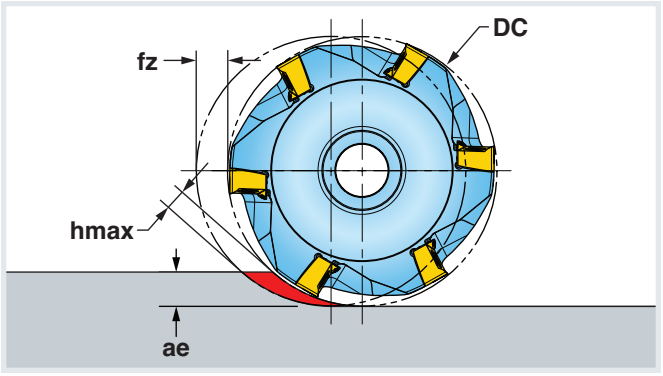
90° & Plunge • Operating Guidelines



CHIP THINNING

When ae is less than 25%, **Chip Thinning Calculator** is recommended to ensure hmax is within fz range.



Materials				Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder «----------» Tougher					Coolant
ISO	Material Group	Type	Examples			IN10K	IN2510	IN2505	IN2530	IN2036	
P	1–5	Non-Alloy Steel	1018, A36, 1045, A572, 1070	400–1000	.003–.006	–	–	2	1	–	No
	6–9	Low-Alloy Steel	4140, 4340, P20, 8620, 300M	350–700							
	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	–	–	3	2	1	Yes
	14	Stainless Steel (austenitic)	303, 304, 316, 15-5, 17-4	300–550							May not be required at high speeds
K	15–16	Gray Cast Iron	CLS. 20, 30, 45	500–1000	.003–.006	–	1	2	–	–	No
	17–18	Nodular Cast Iron	60-40-18, 100-70-03	400–800							
N	21–30	Aluminum	7075, 6061	1000–10000	.001–.007	1	–	–	–	–	Yes
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.