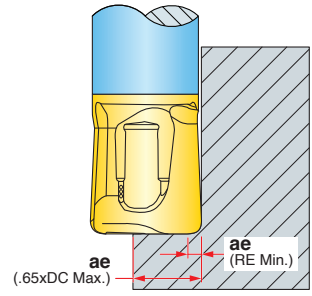


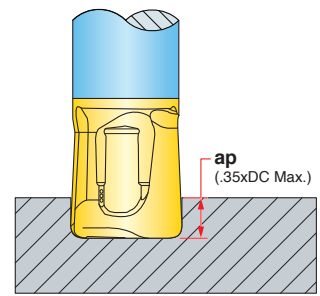


CHIP SURFER™ OPERATING GUIDELINES: 45V/45V-P

When plunge milling, radial stepovers (ae) may range from RE (minimum) to .65 x DC (maximum).



When spotfacing (full diameter), depth of cut (ap) should not exceed .35 x DC.



*Feed / Rev is based on Two-Effective (do not double).

Materials				Plunge Mill Vc Cutting Speed SFM	Spotface Vc Cutting Speed SFM	DC Cutting Dia. (inch)	f* Feed/Rev (inch)	Coolant
ISO	Mat'l Group #VDI 3323	Type	Examples					
P	1 - 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	450-700	170-450	0.312	.004-.008	No
						0.375	.004-.009	
						0.500	.005-.010	
						0.625	.006-.012	
	6 - 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	400-650	140-350	0.312	.004-.008	
						0.375	.004-.009	
						0.500	.005-.010	
						0.625	.006-.012	
	10 - 11	High-alloy Steel	H13, A2, D2, M2, T1	400-600	130-300	0.312	.004-.007	
						0.375	.004-.008	
						0.500	.005-.009	
						0.625	.005-.010	
M	12 - 14	Stainless Steel	410, 416, 440, 303, 304, 316, 15-5, 17-4	200-450	100-230	0.312	.004-.006	May be requ'd at high speeds
						0.375	.005-.007	
						0.500	.006-.008	
						0.625	.006-.009	
K	15 - 18	Iron	CLS. 20, 30, 45, 60-40-18, 100-70-03	500-800	265-550	0.312	.004-.010	No
						0.375	.004-.011	
						0.500	.005-.012	
						0.625	.005-.013	
N	21 - 30	Non Ferrous & Non Metallic	7075, 6061, Duroplastics	800-3000	265-725	0.312	.004-.010	Yes
						0.375	.005-.011	
						0.500	.006-.012	
						0.625	.007-.013	
S	31 - 37	High-Temp, Ti	Inconel, Hastelloy, 6Al-4V, 5Al-5Mo-5V-3Cr	65-250	70-165	0.312	.002-.004	Yes
						0.375	.003-.005	
						0.500	.004-.006	
						0.625	.005-.007	

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.