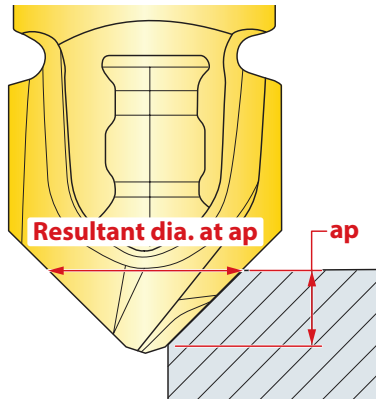


OPERATING GUIDELINES - MILLING 45M, 45N, 45P, 46N, 47N, 48N

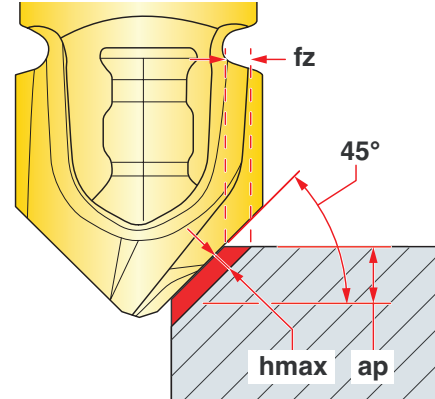


RPM Calculation



Calculation is to be made using the resultant diameter at ap.

Chip Thinning



Chip Thinning Calculator is recommended to ensure hmax falls within fz range.

Material	Brinnell Hardness	SFM	fz Feed per Tooth	Coolant
Steel	Low Carbon 1018, 8620	150-250	.002-.004	No
	High Carbon F-6180	250-400		
	Alloyed Steel 4140, 4340	150-300		
	Tool Steel A-6, D-1, D-2	Up to 300		
Stainless Steel	300 Series, 304, 316	-	.002-.004	May not be needed at high speeds
	400 Series 15-5 PH	Up to 320		Yes
	13-8 PH	-		
Cast Iron	Gray	150-250	.002-.005	No
	Nodular	150-250	.002-.004	
Aluminum	6061 T-6, 7075 T-6, 2024	-	.003-.006	Yes
Nickel Alloys	Inconel, Hastelloy, Waspalloy	-	.002-.004	Yes
Titanium	6AL-4V	-	.002-.004	Yes

OPERATING GUIDELINES - SPOT/C'SINK 45M, 45N, 45P, 46N, 47N, 48N



Material	Brinnell Hardness	SFM	f Feed per Revolution	Coolant
Steel	Low Carbon 1018, 8620	150-250	.003-.008	No
	High Carbon F-6180	250-400		
	Alloyed Steel 4140, 4340	150-300		
Stainless Steel	300 Series, 304, 316	-	.003-.006	May not be needed at high speeds
	400 Series 15-5 PH	Up to 320		Yes
	13-8 PH	-		
Cast Iron	Gray	150-250	.003-.010	No
	Nodular	150-250		
Titanium	6AL-4V	-	.002-.005	Yes

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.