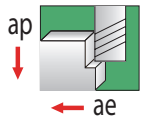
GARR TOOL Milling Guide for High Rc Finishers in Hardened Steel

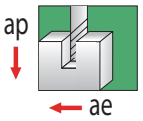
(Reference Series: 545MA, 545BA, 545RA, VRX)

	38 - 45 HRC		45 - 50 HRC		50 - 55 HRC		55 - 60 HRC		60 - 65 HRC		65 - 70 HRC	
	M/Min. = 135		M/Min. = 75		M/Min. = 50		M/Min. = 40		M/Min. = 25		M/Min. = 20	
DIAMETER	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)
3.0mm	14500	.025	8100	.020	5650	.015	4050	.010	2400	.008	1950	.007
4.0mm	10900	.030	6100	.025	4200	.020	3000	.015	1800	.010	1450	.008
6.0mm	7300	.035	4050	.030	2800	.025	2000	.020	1200	.015	970	.010
8.0mm	5450	.040	3000	.035	2100	.030	1500	.025	900	.020	725	.015
12.0mm	3650	.055	2000	.045	1400	.035	1000	.030	600	.025	480	.020
16.0mm	2700	.065	1500	.055	1050	.050	750	.045	450	.030	360	.025
18.0mm	2400	.075	1350	.065	950	.060	675	.055	400	.045	320	.030
20.0mm	2150	.078	1200	.070	850	.065	600	.058	360	.050	290	.040
25.0mm	1750	.080	1000	.075	700	.070	500	.060	300	.055	250	.045

	Profiling / Side Milling
Axial (ap)	1xD
Radial (ae)	5% of Dia.



	Slotting / Pocket Milling
Axial (ap)	5% of Dia.
Radial (ae)	1xD



High Speed Machining

	38 - 45 HRC		45 - 50 HRC		50 - 55 HRC		55 - 60 HRC		60 - 65 HRC		65 - 70 HRC	
	M/Min. = 365		M/Min. = 305		M/Min. = 240		M/Min. = 180		M/Min. = 135		M/Min. = 115	
DIAMETER	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)
3.0mm	38800	.020	32300	.015	25800	.008	19400	.008	14500	.007	12100	.005
4.0mm	29100	.025	24200	.020	19400	.015	14500	.010	10900	.008	9100	.007
6.0mm	19400	.030	16100	.025	12900	.020	9700	.015	7300	.010	6050	.008
8.0mm	14500	.035	12100	.030	9700	.025	7250	.020	5450	.015	4500	.010
12.0mm	9700	.045	8075	.035	6450	.030	4850	.025	3650	.020	3000	.015
16.0mm	7250	.055	6050	.045	4850	.035	3600	.030	2700	.025	2300	.020
18.0mm	6450	.065	5400	.055	4300	.050	3200	.045	2400	.030	2000	.025
20.0mm	5800	.070	4850	.060	3850	.055	2900	.050	2150	.040	1800	.028
25.0mm	4650	.075	3870	.065	3100	.060	2300	.055	1750	.045	1450	.030

	Profiling / Side Milling
Axial (ap)	1xD
Radial (ae)	2% of Dia.

	Slotting / Pocket Milling
Axial (ap)	2% of Dia.
Radial (ae)	1xD

D = Tool Diameter

Example: 2% of Dia., when D = 12mm (.02 x 12mm) = .24mm per pass

Preferable method is to run tools with air blast to keep chips away from the cutting edge.
If air is not available, either coolant spray or dry machining is acceptable.

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.