

# GARR TOOL Milling Guide for High Rc Finishers in Hardened Steel

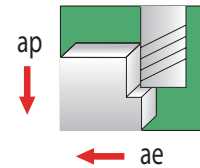
## Fractional

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

DIAMETER	38 - 45 HRc		45 - 50 HRc		50 - 55 HRc		55 - 60 HRc		60 - 65 HRc		65 - 70 HRc	
	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)
1/8"	13750	.0009"	7650	.0008"	5350	.0006"	3820	.0005"	2300	.0004"	1850	.0003"
3/16"	9200	.0012"	5100	.0010"	3570	.0008"	2550	.0007"	1530	.0006"	1225	.0004"
1/4"	6900	.0015"	3850	.0012"	2675	.0010"	1910	.0008"	1150	.0007"	925	.0006"
3/8"	4600	.0018"	2550	.0015"	1800	.0012"	1275	.0010"	765	.0009"	615	.0008"
1/2"	3450	.0022"	1950	.0018"	1350	.0014"	955	.0012"	575	.0012"	460	.0010"
5/8"	2750	.0027"	1550	.0022"	1100	.0020"	765	.0018"	460	.0015"	370	.0013"
3/4"	2300	.0030"	1275	.0027"	900	.0025"	640	.0022"	390	.0017"	310	.0017"
1"	1720	.0033"	960	.0030"	675	.0027"	480	.0025"	290	.0023"	230	.0019"

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

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



## High Speed Machining

DIAMETER	38 - 45 HRc		45 - 50 HRc		50 - 55 HRc		55 - 60 HRc		60 - 65 HRc		65 - 70 HRc	
	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)	RPM	CPT (Fz)
1/8"	36670	.0006"	30600	.0005"	24500	.0004"	18340	.0004"	13750	.0003"	11460	.0002"
3/16"	24450	.0009"	20400	.0008"	16300	.0006"	12230	.0005"	9200	.0004"	7650	.0003"
1/4"	18340	.0012"	15300	.0010"	12230	.0008"	9200	.0007"	6900	.0005"	5750	.0004"
3/8"	12225	.0015"	10200	.0012"	8150	.0010"	6100	.0008"	4600	.0007"	3850	.0006"
1/2"	9170	.0018"	7650	.0015"	6100	.0012"	4600	.0010"	3450	.0009"	2870	.0008"
5/8"	7335	.0022"	6100	.0018"	4900	.0014"	3700	.0012"	2750	.0011"	2300	.0010"
3/4"	6115	.0027"	5100	.0022"	4100	.0020"	3100	.0018"	2300	.0014"	1900	.0013"
1"	4585	.0030"	3820	.0027"	3100	.0025"	2300	.0022"	1720	.0019"	1450	.0017"

Profiling / Side Cutting	
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 = 1/2" (.02 x .500") = .010" 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.**