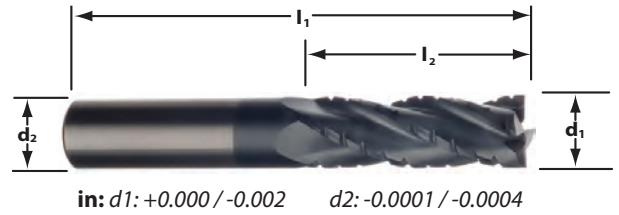


# M104 truCORE



For machining low carbon and tool steels under 40 HRC. The M104 Rougher/Finisher has a unique chipbreaker geometry that allows for high feed rates, excellent chip control and finishes superior to most 4-flute roughing end mills. The ALTiN coating offers superior heat resistance and hardness for increased tool life.



Cutter Dia d1	Shank Dia d2	Length of Cut L2	Overall Length L1	Order Code SQ
1/8	1/8	1/4	1-1/2	33290
		1/2	1-1/2	30423
3/16	3/16	3/8	2	33296
		5/8	2	30462
1/4	1/4	1/2	2	91779
		3/4	2-1/2	98991
		1-1/8	3	33299
5/16	5/16	1/2	2	33163
		13/16	2-1/2	30551
3/8	3/8	5/8	2	33103
		1	2-1/2	33153
		1-1/8	3	33300
1/2	1/2	5/8	2-1/2	33181
		1	3	98961
		2	4	30434
5/8	5/8	1-1/4	3-1/2	33157
		2-1/4	5	97343
3/4	3/4	1	3	33297
		1-1/2	4	33159
		2-1/4	5	33301
1	1	1-1/2	4	33161
		2-1/4	5	33302

## M104 Application Guide – Speed & Feed (inch)

ISO Code	Work Material	Type of Cut	Axial DOC	Radial DOC	Number of Flutes	Speed (SFM)	Feed (Inch per Tooth)								
							1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
P	Low Carbon Steels 1018, 12L14, 8620	Slotting	1 x D	1 x D	4	350	.0015	.0009	.0012	.0015	.0018	.0024	.0030	.0036	.0048
		Peripheral -Rough	≤ 2 x D	.4 x D	4	425	.0008	.0011	.0015	.0019	.0023	.0030	.0038	.0045	.0060
		Peripheral -Rough	> 2 - 3 x D	.4 x D	4	400	.0007	.0011	.0014	.0018	.0021	.0028	.0035	.0042	.0056
		Peripheral -Rough	> 3 - 4 x D	.35 x D	4	385	.0007	.0010	.0013	.0016	.0020	.0026	.0033	.0039	.0052
		*Helical Ramp Angle	1 - 2 deg.	1 x D	4	350	.0005	.0007	.0010	.0012	.0014	.0019	.0024	.0029	.0038
	Medium Carbon Steels <38 HRC 4140, 4340	Slotting	.75 x D	1 x D	4	275	.0011	.0009	.0012	.0014	.0017	.0023	.0029	.0035	.0046
		Peripheral -Rough	≤ 2 x D	.4 x D	4	350	.0007	.0011	.0015	.0018	.0022	.0029	.0036	.0044	.0058
		Peripheral -Rough	> 2 - 3 x D	.4 x D	4	335	.0007	.0010	.0014	.0017	.0020	.0027	.0034	.0041	.0054
		Peripheral -Rough	> 3 - 4 x D	.35 x D	4	315	.0006	.0009	.0013	.0016	.0019	.0025	.0031	.0038	.0050
		*Helical Ramp Angle	1 - 2 deg.	1 x D	4	275	.0005	.0007	.0009	.0012	.0014	.0018	.0023	.0028	.0037
Tool & Die Steels < 38 HRC A2, D2, H13, P20	Slotting	1 x D	1 x D	4	275	.0006	.0009	.0012	.0015	.0018	.0024	.0030	.0036	.0048	
	Peripheral -Rough	≤ 2 x D	.3 x D	4	350	.0007	.0011	.0015	.0018	.0022	.0029	.0036	.0044	.0058	
	Peripheral -Rough	> 2 - 3 x D	.3 x D	4	335	.0007	.0010	.0014	.0017	.0020	.0027	.0034	.0041	.0054	
	Peripheral -Rough	> 3 - 4 x D	.25 x D	4	315	.0006	.0009	.0013	.0016	.0019	.0025	.0031	.0038	.0050	
	*Helical Ramp Angle	1 - 2 deg.	1 x D	4	275	.0005	.0007	.0010	.0012	.0014	.0019	.0024	.0029	.0038	
M	Martensitic Stainless Steels 416, 410, 440C	Slotting	.75 x D	1 x D	4	250	.0005	.0008	.0011	.0013	.0016	.0021	.0026	.0032	.0042
		Peripheral -Rough	≤ 2 x D	.3 x D	4	300	.0007	.0010	.0013	.0016	.0020	.0026	.0033	.0039	.0052
		Peripheral -Rough	> 2 - 3 x D	.3 x D	4	285	.0006	.0009	.0013	.0016	.0019	.0025	.0031	.0038	.0050
		Peripheral -Rough	> 3 - 4 x D	.25 x D	4	270	.0006	.0009	.0012	.0014	.0017	.0023	.0029	.0035	.0046
		*Helical Ramp Angle	1 - 2 deg.	1 x D	4	250	.0004	.0006	.0008	.0011	.0013	.0017	.0021	.0025	.0034

≈ Approximately Equals      × Multiply  
 ≤ Less Than or Equal To      < Less Than  
 ≥ Greater Than or Equal To      = Equals