

ROUGHER / FINISHER M10 END MILLS

Chipbreaking geometry for use in ferrous materials

4 Serrated Flutes With chipbreaking geometry

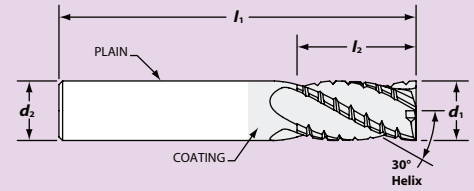
M104



Coatings:

- AlTiN
- TiCN
- None (MG)

Any PVD coating may be applied to an uncoated tool in this series. See page 162 for coating options.



in $d_1 +0.000 / -0.002$ $d_2 -0.0001$ to -0.0004 mm $d_1 +0.000 / -0.050$ $d_2 -0.0025$ to -0.0100

- Carbon & tool steels ≤ 48 HRC ✓✓✓
 - Cast irons ✓✓✓
- ✓ Good ✓✓ Very Good ✓✓✓ Excellent

Metric

d_1 Cutter Dia	d_2 Shank Dia	l_2 Length of Cut	l_1 Overall Length	Style Code	AlTiN EDP Number	List Price
6	6	13	57	RR	62464	35.44
		29	75	LL	34280	48.72
8	8	19	63	RR	62465	44.31
		29	75	LL	34281	57.80
10	10	22	72	RR	62466	57.96
		40	88	LL	37515	79.12
12	12	26	83	RR	62467	85.68
		50	100	LL	34283	105.58
16	16	32	92	RR	62468	138.08
		57	125	LL	34284	212.73
20	20	38	104	RR	62469	184.80
		57	125	LL	34285	315.74

Inch

d_1 Cutter Dia	d_2 Shank Dia	l_2 Length of Cut	l_1 Overall Length	Style Code	AlTiN EDP Number	List Price	TiCN EDP Number	List Price	MG EDP Number	List Price
1/8	1/8	1/4	1-1/2	SR	33290	17.96	33076	17.96	33060	16.48
		1/2	1-1/2	RR	30423	18.38	33130	18.38	33145	16.90
3/16	3/16	3/8	2	SR	33296	26.14	33077	26.14	33061	24.46
		5/8	2	RR	30462	27.35	33132	27.35	33147	25.62
1/4	1/4	1/2	2	SS	91779	29.72	33078	29.72	33062	26.98
		3/4	2-1/2	RR	98991	33.44	33134	33.44	33148	30.29
		1-1/8	3	LL	33299	52.29	33051	52.29	33085	47.93
5/16	5/16	1/2	2	SS	33163	35.70	33079	35.70		
		13/16	2-1/2	RR	30551	41.06	33136	41.06	33150	36.38
		1-1/8	3	LL	33101	59.90	33052	59.90		
3/8	3/8	5/8	2	SS	33103	47.09	33080	47.09	33064	42.58
		1	2-1/2	RR	33153	50.98	33138	50.98	33152	46.10
		1-1/8	3	LL	33300	70.14	33053	70.14	33087	64.05
1/2	1/2	5/8	2-1/2	SS	33181	71.92	33081	71.92		
		1	3	RR	98961	78.02	33140	78.02	33154	71.92
		2	4	LL	30434	107.57	33054	107.57		
5/8	5/8	1-1/4	3-1/2	RR	33157	136.40	33142	136.40	33156	124.69
		2-1/4	5	LL	97343	197.14	33055	197.14		
3/4	3/4	1	3	SS	33297	190.78	33083	190.78		
		1-1/2	4	RR	33159	199.55	33144	199.55	33158	184.43
		2-1/4	5	LL	33301	261.50	33056	261.50		
1	1	1-1/2	4	RR	33161	294.16	33146	294.16		
		2-1/4	5	LL	33302	403.30	33057	403.30		

Style Code Reference

LL—Long LOC, Long OAL RR—Regular LOC, Regular OAL SR—Short LOC, Regular OAL SS—Short LOC, Short OAL

Application Guide • Speed & Feed

Work Material	Type of Cut	Axial DOC	Radial DOC	No. of Flutes	Speed (SFM)	Feed (Inches Per Tooth)							Speed (m/min)	Feed (mm Per Tooth)						
						1/8	1/4	3/8	1/2	5/8	3/4	1		3,0	6,0	9,0	12,0	16,0	19,0	25,0
Low Carbon Steels ≤ 38 HRC 1018, 12L14, 8620	Slot	1 x D	1 x D	4	350	.0006	.0012	.0018	.0025	.0031	.0037	.0050	107	.0152	.0305	.0457	.0635	.0787	.0940	.1270
	Rough	1 x D	.5 x D	4	425	.0007	.0015	.0022	.0030	.0037	.0045	.0060	130	.0178	.0381	.0559	.0762	.0940	.1143	.1524
Medium Carbon Steels ≤ 38 HRC 4140, 4340	Slot	.75 x D	1 x D	4	275	.0006	.0012	.0019	.0025	.0032	.0039	.0050	84	.0152	.0305	.0483	.0635	.0813	.0991	.1270
	Rough	1 x D	.5 x D	4	350	.0007	.0015	.0022	.0030	.0038	.0045	.0060	107	.0178	.0381	.0559	.0762	.0965	.1143	.1524
Tool and Die Steels ≤ 38 HRC A2, D2, O1, S7, P20, H13	Slot	.75 x D	1 x D	4	275	.0006	.0012	.0019	.0025	.0032	.0039	.0050	84	.0152	.0305	.0483	.0635	.0813	.0991	.1270
	Rough	1 x D	.5 x D	4	350	.0007	.0015	.0022	.0030	.0038	.0045	.0060	107	.0178	.0381	.0559	.0762	.0965	.1143	.1524
Cast Iron - Gray	Slot	1 x D	1 x D	4	350	.0006	.0012	.0018	.0023	.0029	.0035	.0046	107	.0152	.0305	.0457	.0584	.0737	.0889	.1168
	Rough	1 x D	.5 x D	4	450	.0007	.0014	.0021	.0028	.0035	.0042	.0056	137	.0178	.0356	.0533	.0711	.0889	.1067	.1422
Cast Iron - Ductile	Slot	.75 x D	1 x D	4	275	.0005	.0010	.0015	.0020	.0025	.0030	.0040	84	.0127	.0254	.0381	.0508	.0635	.0762	.1016
	Rough	1 x D	.5 x D	4	375	.0006	.0012	.0018	.0025	.0031	.0038	.0050	114	.0152	.0305	.0457	.0635	.0787	.0965	.1270
Cast Iron - Malleable	Slot	.5 x D	1 x D	4	225	.0003	.0006	.0009	.0012	.0015	.0018	.0024	69	.0076	.0152	.0229	.0305	.0381	.0457	.0610
	Rough	1 x D	.5 x D	4	300	.0005	.0010	.0015	.0020	.0025	.0030	.0040	91	.0127	.0254	.0381	.0508	.0635	.0762	.1016

D = tool diameter Reduce feed rates by 20% when using long length tools Starting parameters shown