

END MILLS



Speeds & Feeds - 4 Fl. Square End, TiAlN Coated Carbide End Mills

Side Milling - 4 fl. Reg Length, 4 fl. Double End Stub Length

- Notes:
- Reduce Speeds and Feeds 25% for 4 fl. LONG LENGTH
 - Reduce Speeds and Feeds 50% for 4 fl. EXTRA LONG LENGTH
 - For slot milling, reduce Feeds 20% to 50%.

Hardness		Tensile Strength: Up to 750N/mm2				Up to 30 HRC		30 to 38 HRC		38 to 45 HRC			
Work Material		Cast Iron		Mild Steels, Carbon Steels		Alloy Steels, Tool Steels, Ti Alloys (Annealed)		Hardened Steels, Prehardened Steels, Ti Alloys (Solution Treated and Aged)		Hardened Steels, Prehardened Steels, Stainless Steels, Inconel, Ni Based Alloys		Aluminum Alloys	
Depth of Cut													
Dia. (in)	(mm)	200 SFM		215 SFM		165 SFM		150 SFM		120 SFM		590 SFM	
		Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1/32	0.5	40,000	29.88	40,000	14.75	31,550	13.63	29,125	5.63	24,250	4.38	62,500	49.25
	0.8	26,437	29.88	29,050	14.75	19,875	13.63	18,250	5.63	15,250	4.38	62,500	49.25
	1	19,500	29.88	21,750	14.75	15,750	13.63	14,250	5.63	11,250	4.38	55,500	49.25
3/64		17,675	29.88	19,600	14.75	14,237	13.63	12,881	5.63	10,181	4.38	50,343	49.25
1/16	1.5	13,893	29.88	15,131	14.75	11,118	13.63	10,056	5.63	7,987	4.38	39,637	49.25
5/64	2	10,112	29.88	10,668	14.75	7,993	13.63	7,225	5.63	5,781	4.38	28,918	49.25
3/32		8,712	29.88	9,150	15.75	6,868	13.63	6,206	5.50	4,950	4.25	24,775	50.75
7/64		7,400	29.88	7,750	16.88	5,825	13.63	5,256	5.38	4,175	4.25	20,906	52.25
1/8	3	6,362	30.75	6,662	18.00	5,006	13.63	4,512	5.38	3,587	4.13	17,962	53.63
9/64		5,681	32.88	5,981	19.25	4,475	13.63	4,031	5.38	3,231	4.13	16,168	54.75
5/32	4	5,000	35.00	5,300	20.50	3,937	13.63	3,562	5.38	2,868	4.13	14,381	56.00
11/64		4,587	35.13	4,856	21.13	3,618	14.00	3,275	5.38	2,625	4.13	13,206	56.50
3/16		4,200	35.13	4,443	21.50	3,318	14.50	3,006	5.38	2,387	4.13	12,075	57.00
13/64	5	3,862	35.13	4,075	22.00	3,056	14.75	2,756	5.38	2,187	4.13	11,100	57.50
7/32		3,587	35.13	3,775	22.38	2,856	14.75	2,556	5.38	2,037	4.13	10,350	57.88
1/4	6	3,150	35.13	3,300	22.75	2,500	14.75	2,218	5.38	1,787	4.13	9,100	58.50
9/32		2,825	35.13	2,975	22.88	2,231	14.75	1,975	5.38	1,618	4.13	8,150	58.75
5/16	8	2,493	35.13	2,643	23.00	1,962	14.75	1,737	5.38	1,437	4.13	7,200	59.00
11/32		2,275	35.38	2,425	24.25	1,806	14.75	1,612	5.38	1,318	4.13	6,600	59.00
3/8		2,068	35.75	2,218	25.50	1,656	14.75	1,500	5.38	1,206	4.13	6,037	59.00
13/32	10	1,893	36.13	2,037	26.25	1,525	14.75	1,387	5.38	1,106	4.13	5,537	60.00
7/16		1,775	36.38	1,887	26.38	1,425	14.75	1,293	5.38	1,031	4.13	5,150	62.25
1/2	12	1,562	38.63	1,637	28.13	1,243	15.25	1,125	5.38	900	4.13	4,481	65.00
9/16		1,400	42.88	1,468	31.13	1,100	16.38	993	5.38	793	4.13	3,962	65.00
5/8	16	1,256	44.38	1,318	32.13	987	17.25	900	5.38	712	4.13	3,550	65.00
11/16		1,143	48.00	1,200	32.38	900	17.38	812	5.38	643	4.13	3,243	65.00
3/4	20	1,025	49.25	1,075	32.88	800	17.38	725	5.13	581	4.13	2,925	65.00
7/8	22	887	44.38	937	29.50	700	15.75	637	4.63	506	3.75	2,518	61.38
1	25	787	39.00	825	25.88	612	13.63	550	4.13	450	3.25	2,218	54.38

Speeds & Feeds - TiAlN Coated Carbide Roughing End Mills - Side Milling

Hardness		Tensile Strength: Up to 750N/mm2				Up to 30 HRC		30 to 38 HRC		38 to 45 HRC	
Work Material		Cast Iron		Mild Steels, Carbon Steels		Alloy Steels, Tool Steels, Ti Alloys (Annealed)		Hardened Steels, Prehardened Steels		Hardened Steels, Stainless Steels	
Depth of Cut											
Dia. (in)	(mm)	420 SFM		350 SFM		300 SFM		225 SFM		175 SFM	
		Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1/4	6	6,350	29.9	5,300	25.2	4,500	14.2	3,450	11.0	2,650	8.3
5/16	8	4,750	29.9	4,000	25.2	3,400	16.1	2,600	12.2	2,000	9.4
3/8	10	3,800	29.9	3,200	25.2	2,700	16.9	2,050	13.0	1,600	10.2
1/2	12	3,200	30.3	2,650	25.2	2,250	17.7	1,700	13.4	1,350	10.6
5/8	16	2,400	30.3	2,000	25.2	1,700	18.9	1,300	14.2	1,000	11.0
3/4	20	1,900	29.9	1,600	24.0	1,350	18.5	1,050	13.8	800	10.2
1	25	1,500	29.9	1,150	24.0	1,000	18.5	800	13.8	600	10.2

Speeds & Feeds - TiAlN Coated Carbide Roughing End Mills - Slotting

Hardness		Tensile Strength: Up to 750N/mm2				Up to 30 HRC		30 to 38 HRC		38 to 45 HRC	
Work Material		Cast Iron		Mild Steels, Carbon Steels		Alloy Steels, Tool Steels, Ti Alloys (Annealed)		Hardened Steels, Prehardened Steels		Hardened Steels, Stainless Steels	
Depth of Cut											
Dia. (in)	(mm)	350 SFM		300 SFM		250 SFM		190 SFM		160 SFM	
		Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1/4	6	5,300	25.2	4,500	21.3	3,700	11.8	2,900	9.1	2,400	7.5
5/16	8	4,000	25.2	3,400	21.3	2,800	13.4	2,200	10.2	1,800	8.7
3/8	10	3,200	25.2	2,700	21.3	2,250	14.2	1,750	11.0	1,450	9.1
1/2	12	2,650	25.2	2,250	21.3	1,850	14.6	1,450	11.4	1,200	9.4
5/8	16	2,000	25.2	1,700	21.3	1,400	15.4	1,100	12.2	900	9.8
3/4	20	1,600	25.2	1,350	20.1	1,100	15.4	900	11.8	700	9.1
1	25	1,150	25.2	950	20.1	800	15.4	700	11.8	500	9.1