

## Recommended Speeds and Feeds for ALTiN coated HI VELOCITY Endmills

CUTTING SPEEDS			1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
WORK MATERIAL	SFM		rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm	rpm - ipm
Titanium Alloys	HIGH	250	7640 - 15.3	5093 - 10.2	3820 - 9.2	3056 - 11.0	2547 - 11.2	1910 - 10.7	1528 - 9.2	1273 - 11.2	955 - 9.9
	LOW	212	6479 - 13.0	4319 - 8.6	3239 - 7.7	2591 - 9.3	2160 - 9.5	1620 - 9.0	1296 - 7.7	1080 - 9.5	810 - 8.4
IPT			0.0005	0.0005	0.0006	0.0009	0.0011	0.0014	0.0015	0.0022	0.0026
High Temp. Alloys	HIGH	125	3820 - 6.1	2547 - 4.1	1910 - 5.4	1528 - 6.8	1273 - 5.6	955 - 6.5	764 - 5.8	637 - 6.1	478 - 4.6
	LOW	106	3239 - 5.2	2160 - 3.4	1620 - 4.5	1296 - 5.7	1080 - 4.7	810 - 5.5	648 - 4.9	540 - 5.2	405 - 3.9
IPT			0.0004	0.0004	0.0007	0.0011	0.0011	0.0017	0.0019	0.0024	0.0024
<b>Alloy Steels</b>											
4140-4340	HIGH	575	17572 - 42.2	11715 - 46.8	8786 - 56.2	7029 - 56.2	5857 - 58.5	4393 - 54.5	3514 - 49.2	2929 - 43.3	2197 - 35.15
Below 36Rc	LOW	450	13752 - 33.0	9168 - 36.7	6876 - 44.0	5501 - 44.0	4584 - 45.8	3438 - 42.6	2750 - 38.5	2292 - 33.9	1719 - 27.5
IPT			0.0006	0.001	0.0016	0.002	0.0025	0.0031	0.0035	0.0037	0.004
4140-4340	HIGH	387	11827 - 28.4	7884 - 31.5	5913 - 37.8	4731 - 37.8	3942 - 39.4	2957 - 36.7	2365 - 33.1	1971 - 29.2	1478 - 23.6
Above 36Rc	LOW	325	9932 - 23.8	6621 - 26.5	4966 - 31.8	3937 - 31.8	3311 - 33.1	2483 - 30.8	1986 - 27.8	1655 - 24.5	1242 - 19.9
IPT			0.0006	0.001	0.0016	0.002	0.0025	0.0031	0.0035	0.0037	0.004
Grey Cast Iron	HIGH	700	21392 - 68.5	14242 - 45.8	10696 - 34.2	8557 - 41.1	7131 - 34.2	5348 - 38.5	4278 - 34.2	3565 - 34.2	2674 - 30.0
	LOW	575	17572 - 56.2	11715 - 37.5	8786 - 28.1	7029 - 33.7	5857 - 28.1	4393 - 31.6	3514 - 28.1	2929 - 28.1	2197 - 24.6
IPT			0.0008	0.0008	0.0008	0.0012	0.0012	0.0018	0.002	0.0024	0.0028
<b>Tool Steels</b>											
Below 36Rc	HIGH	575	17572 - 35.1	11715 - 32.8	8786 - 49.2	7029 - 53.4	5857 - 46.9	4393 - 46.9	3514 - 43.6	2929 - 37.5	2197 - 30.8
	LOW	450	13752 - 27.5	9168 - 25.7	6876 - 38.5	5501 - 41.8	4584 - 36.7	3438 - 34.4	2750 - 34.1	2292 - 29.3	1719 - 24.1
IPT			0.0005	0.0007	0.0014	0.0019	0.002	0.0025	0.0031	0.0032	0.0035
Above 36Rc	HIGH	262	8007 - 16.	5338 - 15.0	4003 - 22.4	3203 - 24.3	2669 - 21.4	2002 - 20.0	1601 - 19.9	1334 - 17.1	1001 - 14.0
	LOW	211	6448 - 12.9	4299 - 12.0	3224 - 18.0	2579 - 19.6	2149 - 17.2	1612 - 16.1	1290 - 16.0	1075 - 13.8	806 - 11.3
IPT			0.0005	0.0007	0.0014	0.0019	0.002	0.0025	0.0031	0.0032	0.0035
<b>Stainless Steels</b>											
Hard to Machine	HIGH	362	11063 - 17.7	7375 - 11.8	5531 - 13.3	4425 - 17.7	3688 - 14.8	2766 - 17.7	2213 - 15.9	1844 - 16.2	1383 - 12.2
	LOW	325	9932 - 15.9	6621 - 10.6	4966 - 11.9	3973 - 15.9	3311 - 13.2	2483 - 15.9	1986 - 14.3	1655 - 14.6	1242 - 10.9
IPT			0.0004	0.0004	0.0006	0.001	0.001	0.0016	0.0018	0.0022	0.0022
Mild to Machine	HIGH	375	11460 - 22.9	7640 - 15.3	5730 - 16.0	4584 - 20.2	3820 - 16.8	2865 - 19.5	2292 - 17.4	1910 - 17.6	1433 - 13.2
	LOW	337	10299 - 20.6	6866 - 13.7	5149 - 14.4	4119 - 18.1	3433 - 15.1	2575 - 17.5	2060 - 15.7	1716 - 15.8	1287 - 11.8
IPT			0.0005	0.0005	0.0007	0.0011	0.0011	0.0017	0.0019	0.0023	0.0023
Easy to Machine	HIGH	487	14883 - 35.7	9922 - 23.8	7441 - 23.8	5953 - 28.6	4961 - 23.8	3721 - 26.8	2977 - 23.8	2480 - 23.8	1860 - 17.9
	LOW	387	11827 - 28.4	7884 - 18.9	5913 - 18.9	4731 - 22.7	3942 - 18.9	2957 - 21.3	2365 - 18.9	1971 - 18.9	1478 - 14.2
IPT			0.0006	0.0006	0.0008	0.0012	0.0012	0.0018	0.002	0.0024	0.0024
Soft Steels	HIGH	762	23287 - 55.9	15524 - 49.7	11643 - 37.3	9315 - 44.7	7762 - 37.3	5822 - 41.9	4657 - 37.3	3881 - 37.3	2911 - 32.6
	LOW	637	19467 - 46.7	12978 - 41.5	9733 - 31.2	7787 - 37.4	6489 - 31.2	4867 - 35.0	3893 - 31.1	3244 - 31.1	2433 - 27.3
IPT			0.0006	0.0008	0.0008	0.0012	0.0012	0.0018	0.002	0.0024	0.0028
Die Steels	HIGH	387	11827 - 28.4	7884 - 31.5	5913 - 37.8	4731 - 37.8	3942 - 39.4	2957 - 36.7	2365 - 33.1	1971 - 29.2	1478 - 23.6
	LOW	325	9932 - 23.8	6621 - 26.5	4966 - 31.8	3937 - 31.8	3311 - 33.1	2483 - 30.8	1986 - 27.8	1655 - 24.5	1242 - 19.9
IPT			0.0006	0.001	0.0016	0.002	0.0025	0.0031	0.0035	0.0037	0.004

\* Above speed and feed recommendations are for *profile* milling (side cut) operations up to 20 % of the cutter diameter.

\* Decrease values by 20% for *slotting* operations.

\* Rates based on *HIGH* values are for optimum working conditions.



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