

SPEED & FEED GUIDE



Optimum Performance

Series 2220, 2223

440V 440VBN 4 FLUTE

Material	Axial ↓	Radial →	SFM	1/8		1/4		3/8		1/2		5/8		3/4		
				RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	
P	Carbon Steel 10XX, 11XX, 12XX, 13XX	1 x D	1 x D	220	3362	10	2241	17	2241	17	1681	18	1345	18	1121	16
		1.25 x D	.3 x D	264	4034	15	2689	25	2689	25	2017	26	1614	25	1345	23
		1.5 x D	.1 x D	343	5244	31	3496	55	3496	55	2622	57	2098	55	1748	50
	Alloy Steel 4140, 8620	1 x D	1 x D	180	2750	8	1834	14	1834	14	1375	14	1100	14	917	13
		1.25 x D	.3 x D	225	3438	12	2292	20	2292	20	1719	21	1375	21	1146	19
		1.5 x D	.1 x D	270	4126	24	2750	41	2750	41	2063	43	1650	41	1375	38
	Tool Steel A2, A3, D2, H11, H13	1 x D	.5 x D	180	2750	6	1630	10	1834	10	1375	11	1100	10	917	9
		1.25 x D	.3 x D	225	3438	10	2037	18	2292	18	1719	19	1375	18	1146	17
		1.5 x D	.1 x D	270	4126	17	2445	29	2750	29	2063	30	1650	29	1375	26
M	SS 300 & 400 Series 303, 304, 316, 420, 416	.75 x D	1 x D	140	2139	5	1426	9	1426	9	1070	10	856	9	713	8
		1.25 x D	.3 x D	185	2827	8	1885	14	1885	14	1413	15	1131	14	942	13
		1.5 x D	.1 x D	230	3519	17	2346	30	2346	30	1760	31	1408	30	1173	28
	Precipitation SS 15-5, 16-6, 17-4, 17-5	0.5	1 x D	115	1757	4	1171	7	1171	7	879	7	703	7	586	7
		1.25 x D	.3 x D	180	2750	8	1834	13	1834	13	1375	14	1100	13	917	12
		1.5 x D	.1 x D	250	3820	18	2547	31	2547	31	1910	32	1528	31	1273	28
K	Cast Iron - Grey, GG-10 to GG-40	1 x D	1 x D	100	1528	4	1019	7	1019	7	764	8	611	7	509	7
		1.25 x D	.3 x D	125	1910	6	1273	11	1273	11	955	11	764	11	637	10
		1.5 x D	.1 x D	163	2483	13	1655	23	1655	23	1242	24	993	23	828	22
	Cast Iron- Ductile GGG-40, to GGG-70	.75 x D	1 x D	155	2368	6	1579	11	1579	11	1184	11	947	11	789	10
		1.25 x D	.3 x D	180	2750	8	1834	15	1834	15	1375	15	1100	15	917	14
		1.5 x D	.1 x D	216	3300	17	2200	29	2200	29	1650	31	1320	30	1100	27
S	High Temp Alloys Inconel 718, Hastalloy, Waspalloy, A286, CoCr	.25 x D	.4 x D	70	1070	2	713	4	713	4	535	4	428	4	357	4
		1.25 x D	.2 x D	80	1222	3	815	6	815	6	611	6	489	6	407	5
		1.5 x D	.07 x D	125	1910	8	1273	15	1273	15	955	15	764	15	637	13
	Titanium Alloy Ti-6Al4V Grades (5-38)	0.5	1 x D	180	2750	6	1834	10	1834	10	1375	10	1100	10	917	9
		1.25 x D	.3 x D	225	3438	9	2292	15	2292	15	1719	16	1375	15	1146	14
		1.5 x D	.1 x D	360	5501	23	3667	40	3667	40	2750	42	2200	40	1834	37

PERFORMANCE

Premium Carbide End Mills for Ferrous Materials



Series 250		440V 4FL Square & Radius			
Diameter	Shank Dia.	LOC	OAL	Radius	EDP
1/4	1/4	3/8	2	-	316148
1/4	1/4	3/8	2	0.020	316152
1/4	1/4	3/4	2-1/2	-	316154
1/4	1/4	3/4	2-1/2	0.020	316158
1/4	1/4	1-1/4	3	-	316160
1/4	1/4	1-1/4	3	0.020	316163
5/16	5/16	7/16	2	-	316167
5/16	5/16	7/16	2	0.020	316169
5/16	5/16	13/16	2-1/2	-	316171
5/16	5/16	13/16	2-1/2	0.020	316175
5/16	5/16	1-3/8	3	-	316177
5/16	5/16	1-3/8	3	0.020	316179
3/8	3/8	1/2	2	-	316183
3/8	3/8	1/2	2	0.020	316187
3/8	3/8	1/2	2	0.030	316189
3/8	3/8	1	2-1/2	-	316191
3/8	3/8	1	2-1/2	0.020	316194
3/8	3/8	1	2-1/2	0.030	316196
3/8	3/8	1-1/2	2-1/2	-	316198
3/8	3/8	1-1/2	2-1/2	0.020	316200
3/8	3/8	1-1/2	2-1/2	0.030	316203
1/2	1/2	5/8	2-1/2	-	316207
1/2	1/2	5/8	2-1/2	0.030	316209
1/2	1/2	5/8	2-1/2	0.060	316213
1/2	1/2	1-1/4	3	-	316216
1/2	1/2	1-1/4	3	0.030	316219
1/2	1/2	1-1/4	3	0.060	316223
1/2	1/2	2	4	-	316227
1/2	1/2	2	4	0.030	316230
1/2	1/2	2	4	0.060	316234
5/8	5/8	3/4	3	-	316236
5/8	5/8	3/4	3	0.030	316239
5/8	5/8	3/4	3	0.060	316242
5/8	5/8	1-5/8	3-1/2	-	316246
5/8	5/8	1-5/8	3-1/2	0.030	316249
5/8	5/8	1-5/8	3-1/2	0.060	316253
5/8	5/8	2-1/4	5	-	316257
5/8	5/8	2-1/4	5	0.030	316260
5/8	5/8	2-1/4	5	0.060	316262
3/4	3/4	1	3	-	316266

More About the Series 250

Performance edge treatment

Features a variable helix and unequal index design that reduces chatter and enables more aggressive and stable milling



★ Best ☆ Good

PERFORMANCE

Premium Carbide End Mills for Ferrous Materials



Series 250 440V | 4FL | Square & Radius

Diameter	Shank Dia.	LOC	OAL	Radius	EDP
3/4	3/4	1	3	0.030	316270
3/4	3/4	1	3	0.060	316272
3/4	3/4	1-5/8	4	-	316274
3/4	3/4	1-5/8	4	0.030	316276
3/4	3/4	1-5/8	4	0.060	316278
3/4	3/4	2-1/4	5	-	316281
3/4	3/4	2-1/4	5	0.030	316283
3/4	3/4	2-1/4	5	0.060	316285
1	1	1-1/4	3	-	316287
1	1	1-1/4	3	0.030	316290
1	1	1-1/4	3	0.060	316294
1	1	2	4	-	316296
1	1	2	4	0.030	316298
1	1	2	4	0.060	316302
1	1	3-1/4	5	-	316304
1	1	3-1/4	5	0.030	316306
1	1	3-1/4	5	0.060	316309

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