Special Offer on MaxQ+ Series 4 & 5 Flute End Mills

Buy 3 get 1 free of equal or lesser value

Order via your local distributor and reference promo code: MXP2023
Promotion valid from 07-01-2023 thru 09-30-2023

PTSolutions™

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Contact your local PTSolutions rep to take advantage of this offer

MaxQ+ Series

The MaxQ+ Series is LMT Onsrud's latest innovation to join the MaxQ line. These end mills are universal for P, M, and K materials for all your challenging applications. Experience versatility with the expansive offering of 4 flute, 5 flute, and ballnose options. Whether full slotting or finishing, the MaxQ+ eases machining.

Features and Benefits:

- Unique ENDURASpeed coating for maxiumum heat resistance, long tool life, and fewer tool changes
- Higher material removal rate (MRR) in light and medium applications
- Available in four and five flutes with a large selection of corner radii
- Ballnose offering

Applications - 4 Flute:

- Full Slotting
- Heavy Profiling
- HEM Profiling
- Semi-Finishing

Applications - 5 Flute:

- Full Slotting
- Heavy Profiling
- HEM Profiling
- Finishing

MaxQ+ Promotion

Part #	Cutting Diameter	LOC	Overall Length	Neck Length	Shank Diameter	Flutes	Corner Radius
MXP2650020	3/8	1/2	2 1/2	-	3/8	4	Square
MXP2650021	3/8	1/2	2 1/2	-	3/8	4	0.015
MXP2650022	3/8	1/2	2 1/2	-	3/8	4	0.030
MXP2650104	3/8	1/2	2 1/2	-	3/8	4	0.060
MXP2650023	3/8	1 1/8	3	-	3/8	4	Square
MXP2650024	3/8	1 1/8	3	-	3/8	4	0.015
MXP2650025	3/8	1 1/8	3	-	3/8	4	0.030
MXP2650107	3/8	1 1/8	3	-	3/8	4	0.060
MXP2650028	1/2	5/8	2 1/2	-	1/2	4	Square
MXP2650029	1/2	5/8	2 1/2	-	1/2	4	0.015
MXP2650030	1/2	5/8	2 1/2	-	1/2	4	0.030
MXP2650114	1/2	5/8	2 1/2	-	1/2	4	0.060
MXP2650034	1/2	1 1/4	3	-	1/2	4	Square
MXP2650035	1/2	1 1/4	3	-	1/2	4	0.015
MXP2650036	1/2	1 1/4	3	-	1/2	4	0.030
MXP2650122	1/2	1 1/4	3	-	1/2	4	0.060
MXP2650046	5/8	3/4	3	-	5/8	4	Square
MXP2650047	5/8	3/4	3	-	5/8	4	0.030
MXP2650136	5/8	3/4	3	-	5/8	4	0.060
MXP2650048	5/8	1 3/8	3 1/2	-	5/8	4	Square
MXP2650049	5/8	1 3/8	3 1/2	-	5/8	4	0.030
MXP2650140	5/8	1 3/8	3 1/2	-	5/8	4	0.060
MXP2650050	3/4	1 1/8	3	-	3/4	4	Square
MXP2650051	3/4	1 1/8	3	-	3/4	4	0.030
MXP2650052	3/4	1 1/8	3	-	3/4	4	0.060
MXP2650053	3/4	1 1/8	3	-	3/4	4	0.120
MXP2650059	3/4	1 5/8	4	-	3/4	4	Square
MXP2650060	3/4	1 5/8	4	-	3/4	4	0.030
MXP2650061	3/4	1 5/8	4	-	3/4	4	0.060
MXP2650062	3/4	1 5/8	4	-	3/4	4	0.120
MXP2650079	1	1 1/4	4	-	1	4	0.030
MXP2650189	1	1 1/4	4	-	1	4	0.060
MXP2650086	1	2	5	-	1	4	0.030
MXP2650203	1	2	5	-	1	4	0.060
MXP2650573	3/8	7/8	2 1/2	-	3/8	5	Square
MXP2650574	3/8	7/8	2 1/2	-	3/8	5	0.015
MXP2650575	3/8	7/8	2 1/2	-	3/8	5	0.030
MXP2650576	3/8	7/8	2 1/2	-	3/8	5	0.060
MXP2650579	3/8	1 1/4	3	-	3/8	5	Square
MXP2650580	3/8	1 1/4	3	-	3/8	5	0.015
MXP2650581	3/8	1 1/4	3	-	3/8	5	0.030
MXP2650582	3/8	1 1/4	3	-	3/8	5	0.060
MXP2650031	1/2	5/8	2 1/2	-	1/2	5	Square

MaxQ+ Promotion

Part #	Cutting Diameter	LOC	Overall Length	Neck Length	Shank Diameter	Flutes	Corner Radius
MXP2650032	1/2	5/8	2 1/2	-	1/2	5	0.015
MXP2650033	1/2	5/8	2 1/2	-	1/2	5	0.030
MXP2650118	1/2	5/8	2 1/2	-	1/2	5	0.060
MXP2650037	1/2	1 1/4	3	-	1/2	5	Square
MXP2650038	1/2	1 1/4	3	-	1/2	5	0.015
MXP2650039	1/2	1 1/4	3	-	1/2	5	0.030
MXP2650126	1/2	1 1/4	3	-	1/2	5	0.060
MXP2650601	5/8	3/4	3	-	5/8	5	Square
MXP2650602	5/8	3/4	3	-	5/8	5	0.030
MXP2650603	5/8	3/4	3	-	5/8	5	0.060
MXP2650607	5/8	1 3/8	3 1/2	-	5/8	5	Square
MXP2650608	5/8	1 3/8	3 1/2	-	5/8	5	0.030
MXP2650609	5/8	1 3/8	3 1/2	-	5/8	5	0.060
MXP2650054	3/4	1 1/8	3	-	3/4	5	Square
MXP2650055	3/4	1 1/8	3	-	3/4	5	0.030
MXP2650056	3/4	1 1/8	3	-	3/4	5	0.060
MXP2650147	3/4	1 1/8	3	-	3/4	5	0.090
MXP2650063	3/4	1 5/8	4	-	3/4	5	Square
MXP2650064	3/4	1 5/8	4	-	3/4	5	0.030
MXP2650065	3/4	1 5/8	4	-	3/4	5	0.060
MXP2650159	3/4	1 5/8	4	-	3/4	5	0.090
MXP2650193	1	1 1/4	4	-	1	5	Square
MXP2650081	1	1 1/4	4	-	1	5	0.030
MXP2650194	1	1 1/4	4	-	1	5	0.060
MXP2650082	1	1 1/4	4	-	1	5	0.120
MXP2650196	1	1 1/2	4	-	1	5	Square
MXP2650197	1	1 1/2	4	-	1	5	0.030
MXP2650198	1	1 1/2	4	-	1	5	0.060
MXP2650085	1	1 1/2	4	-	1	5	0.120
MXP2650518	3/8	1/2	2	-	3/8	4	Ball
MXP2650519	3/8	7/8	3	-	3/8	4	Ball
MXP2650524	1/2	5/8	2 1/2	-	1/2	4	Ball
MXP2650525	1/2	1 1/8	3	-	1/2	4	Ball
MXP2650537	3/4	1 5/8	4	-	3/4	4	Ball
MXP2650538	3/4	2 1/4	5	-	3/4	4	Ball
MXP2650542	1	1 1/4	4	-	1	4	Ball
MXP2650543	1	2 1/4	5	-	1	4	Ball
MXP2650550	3/8	1/2	4	2 1/8	3/8	5	Ball
MXP2650552	1/2	1 1/8	3	-	1/2	5	Ball
MXP2650553	1/2	1 5/8	4	-	1/2	5	Ball
MXP2650560	3/4	1 5/8	4	-	3/4	5	Ball
MXP2650564	1	2 1/4	5	-	1	5	Ball

MaxQ+ 4 Flute
Cutting Data Recommendations

ISO Grade	Material / Grade	Machinability Rating	SFM Hardness		Application	Recommended Starting Parameters (<32Rc)		
			< 32Rc	> 32Rc		Rad DOC % of DIA	Axial DOC % x DIA	SFM Starting (<32Rc)
P	**Carbon Steel** 10XX, 11XX, 12XX, 15XX	50 - 100%	340 - 480	120 - 200	Full Slotting	100%	125%	400
			280 - 520	120 - 200	Heavy Profile	25%	150%	450
			500 - 850	225 - 325	HEM* Profile	15%	200%	550
			280 - 360	160 - 240	Semi-Finishing	6-8%	200%	325
	Alloy Steel 13XX, 40XX, 41XX, 43XX, 44XX, 46XX, 47XX, 48XX	45 - 65%	220 - 375	80 - 160	Full Slotting	100%	125%	300
			240 - 400	120 - 180	Heavy Profile	25%	150%	375
			450 - 750	175 - 300	HEM* Profile	15%	200%	500
			300 - 360	160 - 200	Semi-Finishing	6-8%	200%	325
	Mold & Die Steel 300M, 4340, 52100, M50, A2, D2, H13, L2, M2, P20, S7, T15, W2	35 - 65%	180 - 260	60 - 120	Full Slotting	100%	100%	225
			180 - 300	60 - 120	Heavy Profile	25%	125%	275
			350 - 500	150 - 275	HEM* Profile	10%	200%	400
			240 - 320	100 - 180	Semi-Finishing	6-8%	200%	300
	Tool Steel PM STEELS	25 - 50%	100 - 220	-	Full Slotting	100%	125%	200
			140 - 260	-	Heavy Profile	25%	150%	230
			275 - 475	-	HEM* Profile	10%	200%	350
			200 - 280	-	Semi-Finishing	6-8%	200%	250
M	**Austenitic Stainless** 301, 302, 303, 304/304L/304H, 316/316L, 317L, 321/321H, 347/347H, Nitronic, 309/309S, 310/310S/310H, 330	40 - 65%	160 - 250	60 - 130	Full Slotting	100%	100%	225
			160 - 300	60 -130	Heavy Profile	25%	125%	275
			300 - 500	150 - 275	HEM* Profile	15%	200%	375
			160 - 235	115 - 180	Semi-Finishing	6-8%	200%	250
	Martensitic Stainless 403, 405, 409, 410/410S/410HT, 416/416HT, 420, 422, 430, 440C	25 - 75%	160 - 260	80 - 200	Full Slotting	100%	100%	225
			180 - 280	80 - 200	Heavy Profile	25%	125%	275
			275 - 450	125 - 250	HEM* Profile	10%	200%	400
			200 - 280	120 - 220	Semi-Finishing	6-8%	200%	250
	Precipitation Stainless 13-8 PH, 15-5 PH, 15-7 PH, 17-4 PH, 17-7 PH, S143	30 - 45%	130 - 180	80 - 160	Full Slotting	100%	100%	160
			145 - 225	80 - 100	Heavy Profile	25%	125%	175
			160 - 475	125 - 250	HEM* Profile	10%	200%	400
			200 - 275	120 - 220	Semi-Finishing	6-8%	200%	225
K	**Cast Iron Grey** 20A, 25A, 30A, 35A, 40A, 45A, 50A	35 - 70%	200 - 350	110 - 240	Full Slotting	100%	100%	275
			200 - 450	140 - 240	Heavy Profile	25%	125%	350
			300 - 550	350 - 500	HEM* Profile	10%	200%	500
			240 - 320	240 - 320	Semi-Finishing	6-8%	200%	300
	Cast Ductile/Nodular 40010, 60-40-18, 65-45-12, 32510, 32518	35 - 60%	100 - 240	80 - 140	Full Slotting	100%	100%	225
			200 - 300	100 - 150	Heavy Profile	25%	125%	275
			300 - 500	170 - 270	HEM* Profile	10%	200%	450
			220 - 320	140 - 200	Semi-Finishing	6-8%	200%	300
S	**Cobalt Base** Haynes 21, 25, L-605, Mar-M302, NASA Co-W-Re, Stellite, Ultimet	5 - 30%	60 - 100	30 - 80	Full Slotting	100%	30%	80
			60 - 100	30 - 80	Heavy Profile	20%	75%	80
			100 - 170	80 - 100	HEM* Profile	8%	125%	130
			70 - 100	70 - 90	Semi-Finishing	5-7%	150%	90
	Iron Base A-286, Discaloy, Incoloy 800-802, Multimet, 16-25-6	9 - 45%	50 - 80	30 - 60	Full Slotting	100%	20%	70
			70 - 120	30 - 60	Heavy Profile	20%	75%	100
			100 - 160	60 - 80	HEM* Profile	8%	125%	140
			70 - 100	50 - 70	Semi-Finishing	5-7%	150%	80
	Nickel Base Hastelloy, Haynes 242, Inconel 600, 625, 718, Invar, Kovar, Monel, Nimonic, Rene 41, 77, 95, Udimet, Waspaloy	9 - 45%	60 - 80	30 - 70	Full Slotting	100%	20%	70
			60 - 100	30 - 80	Heavy Profile	20%	75%	90
			100 - 150	70 - 120	HEM* Profile	8%	150%	125
			80 - 120	60 - 80	Semi-Finishing	5-7%	150%	100
	Titanium 6Al-4V, Commercially Pure, Titanium Aluminide	5 - 30%	100 - 140	70 - 110	Full Slotting	100%	50%	140
			100 - 160	80 - 120	Heavy Profile	20%	100%	180
			180 - 300	100 - 140	HEM* Profile	10%	150%	275
			160 - 360	80 - 120	Semi-Finishing	5-7%	150%	250
	Titanium Ti 10-2-3, Beta 21S, Ti 5553	5 - 30%	70 - 110	50 - 80	Full Slotting	100%	20%	70
			80 - 110	70 - 100	Heavy Profile	20%	100%	80
			100 - 150	80 - 120	HEM* Profile	8%	150%	100
			80 - 130	80 - 100	Semi-Finishing	5-7%	150%	110

***High Efficiency Machining**

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Recommended Starting Parameters (<32Rc)								
Chip Load Per Tooth (Inches)								
1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
.0006	.0009	.0012	.0015	.0018	.0022	.0027	.0032	.0037
.0008	.0012	.0017	.0021	.0024	.0029	.0036	.0042	.0051
.0011	.0016	.0022	.0027	.0033	.0040	.0049	.0058	.0067
.0009	.0014	.0018	.0023	.0027	.0033	.0041	.0048	.0056
.0006	.0009	.0012	.0015	.0018	.0022	.0027	.0032	.0037
.0008	.0012	.0017	.0021	.0024	.0029	.0036	.0042	.0051
.0011	.0016	.0021	.0026	.0032	.0039	.0047	.0056	.0065
.0008	.0013	.0017	.0021	.0025	.0031	.0038	.0045	.0052
.0003	.0005	.0009	.0011	.0013	.0017	.0021	.0025	.0029
.0004	.0007	.0012	.0015	.0018	.0024	.0029	.0035	.0040
.0007	.0011	.0020	.0024	.0028	.0037	.0046	.0054	.0063
.0005	.0008	.0014	.0017	.0020	.0026	.0032	.0038	.0044
.0004	.0006	.0008	.0012	.0016	.0020	.0024	.0028	.0032
.0006	.0008	.0011	.0017	.0021	.0027	.0032	.0037	.0044
.0009	.0013	.0017	.0026	.0035	.0043	.0052	.0061	.0069
.0006	.0009	.0012	.0018	.0024	.0030	.0036	.0042	.0048
.0005	.0006	.0010	.0014	.0018	.0022	.0026	.0030	.0035
.0007	.0008	.0014	.0019	.0024	.0029	.0035	.0039	.0048
.0009	.0011	.0018	.0025	.0033	.0039	.0047	.0055	.0064
.0008	.0009	.0015	.0021	.0027	.0032	.0039	.0045	.0053
.0003	.0005	.0008	.0011	.0014	.0018	.0022	.0026	.0030
.0004	.0007	.0010	.0015	.0019	.0024	.0029	.0035	.0042
.0008	.0013	.0019	.0028	.0035	.0045	.0055	.0066	.0075
.0005	.0008	.0011	.0017	.0021	.0027	.0033	.0040	.0045
.0003	.0004	.0008	.0012	.0015	.0019	.0022	.0026	.0030
.0004	.0006	.0011	.0017	.0020	.0025	.0029	.0034	.0042
.0007	.0009	.0017	.0026	.0033	.0041	.0048	.0056	.0065
.0003	.0004	.0008	.0012	.0015	.0019	.0022	.0026	.0030
.0004	.0006	.0011	.0015	.0019	.0023	.0028	.0032	.0036
.0006	.0008	.0015	.0021	.0025	.0031	.0037	.0042	.0050
.0010	.0015	.0028	.0038	.0048	.0058	.0069	.0079	.0090
.0006	.0009	.0017	.0023	.0029	.0035	.0041	.0047	.0054
.0004	.0005	.0008	.0012	.0016	.0020	.0024	.0028	.0032
.0006	.0007	.0011	.0017	.0021	.0027	.0032	.0037	.0044
.0010	.0013	.0020	.0030	.0040	.0050	.0060	.0070	.0080
.0006	.0008	.0012	.0018	.0024	.0030	.0036	.0042	.0048
.0002	.0003	.0005	.0008	.0010	.0013	.0016	.0019	.0022
.0003	.0005	.0008	.0012	.0014	.0019	.0023	.0027	.0033
.0006	.0008	.0014	.0022	.0028	.0036	.0044	.0053	.0061
.0003	.0005	.0008	.0012	.0015	.0020	.0024	.0029	.0033
.0003	.0004	.0008	.0012	.0015	.0019	.0022	.0026	.0030
.0005	.0006	.0012	.0018	.0022	.0027	.0032	.0037	.0045
.0007	.0010	.0019	.0029	.0036	.0046	.0053	.0062	.0072
.0005	.0006	.0012	.0018	.0023	.0029	.0033	.0039	.0045
.0002	.0003	.0005	.0008	.0010	.0013	.0016	.0019	.0022
.0003	.0005	.0008	.0012	.0014	.0019	.0023	.0027	.0033
.0005	.0007	.0012	.0019	.0024	.0031	.0038	.0046	.0053
.0003	.0005	.0008	.0012	.0015	.0020	.0024	.0029	.0033
.0003	.0004	.0008	.0012	.0016	.0020	.0023	.0027	.0031
.0005	.0006	.0012	.0018	.0023	.0029	.0033	.0038	.0047
.0007	.0009	.0017	.0026	.0035	.0043	.0050	.0059	.0067
.0005	.0006	.0012	.0018	.0024	.0030	.0035	.0041	.0047
.0002	.0003	.0005	.0008	.0010	.0013	.0016	.0019	.0022
.0003	.0005	.0008	.0012	.0014	.0019	.0023	.0027	.0033
.0005	.0007	.0012	.0019	.0024	.0031	.0038	.0046	.0053
.0003	.0005	.0008	.0012	.0015	.0020	.0024	.0029	.0033

MaxQ+ 5 Flute
Cutting Data Recommendations

ISO Grade	Material / Grade	Machinability Rating	SFM Hardness		Application	Recommended Starting Parameters (<32Rc)		
			< 32Rc	> 32Rc		Rad DOC % of DIA	Axial DOC % x DIA	SFM Starting (<32Rc)
P	**Carbon Steel** 10XX, 11XX, 12XX, 15XX	50 - 100%	340 - 480	120 - 200	Full Slotting	100%	125%	400
			280 - 520	120 - 200	Heavy Profile	25%	150%	450
			500 - 850	225 - 325	HEM* Profile	15%	200%	550
			280 - 360	160 - 240	Finishing	2-5%	200%	325
	Alloy Steel 13XX, 40XX, 41XX, 43XX, 44XX, 46XX, 47XX, 48XX	45 - 65%	220 - 375	80 - 160	Full Slotting	100%	125%	300
			240 - 400	120 - 180	Heavy Profile	25%	150%	375
			450 - 750	175 - 300	HEM* Profile	15%	200%	500
			300 - 360	160 - 200	Finishing	2-5%	200%	325
	Mold & Die Steel 300M, 4340, 52100, M50, A2, D2, H13, L2, M2, P20, S7, T15, W2	35 - 65%	180 - 260	60 - 120	Full Slotting	100%	100%	225
			180 - 300	60 - 120	Heavy Profile	25%	125%	275
			350 - 500	150 - 275	HEM* Profile	10%	200%	400
			240 - 320	100 - 180	Finishing	2-5%	200%	300
	Tool Steel PM STEELS	25 - 50%	100 - 220	-	Full Slotting	100%	125%	200
			140 - 260	-	Heavy Profile	25%	150%	230
			275 - 475	-	HEM* Profile	10%	200%	350
			200 - 280	-	Finishing	2-5%	200%	250
M	**Austenitic Stainless** 301, 302, 303, 304/304L/304H, 316/316L, 317L, 321/321H, 347/347H, Nitronic, 309/309S, 310/310S/310H, 330	40 - 65%	160 - 250	60 - 130	Full Slotting	100%	100%	225
			160 - 300	60 -130	Heavy Profile	25%	125%	275
			300 - 500	150 - 275	HEM* Profile	10%	200%	375
			160 - 235	115 - 180	Finishing	2-5%	200%	250
	Martensitic Stainless 403, 405, 409, 410/410S/410HT, 416/416HT, 420, 422, 430, 440C	25 - 75%	160 - 260	80 - 200	Full Slotting	100%	100%	225
			180 - 280	80 - 200	Heavy Profile	25%	125%	275
			275 - 450	125 - 250	HEM* Profile	10%	200%	400
			200 - 280	120 - 220	Finishing	2-5%	200%	250
	Precipitation Stainless 13-8 PH, 15-5 PH, 15-7 PH, 17-4 PH, 17-7 PH, S143	30 - 45%	130 - 180	80 - 160	Full Slotting	100%	100%	160
			145 - 225	80 - 100	Heavy Profile	25%	125%	175
			160 - 475	125 - 250	HEM* Profile	10%	200%	400
			200 - 275	120 - 220	Finishing	2-5%	200%	225
K	**Cast Iron Grey** 20A, 25A, 30A, 35A, 40A, 45A, 50A	35 - 70%	200 - 350	110 - 240	Full Slotting	100%	100%	275
			200 - 450	140 - 240	Heavy Profile	25%	125%	350
			300 - 550	350 - 500	HEM* Profile	10%	200%	500
			240 - 320	240 - 320	Finishing	2-5%	200%	300
	Cast Ductile/Nodular 40010, 60-40-18, 65-45-12, 32510, 32518	35 - 60%	100 - 240	80 - 140	Full Slotting	100%	100%	225
			200 - 300	100 - 150	Heavy Profile	25%	125%	275
			300 - 500	170 - 270	HEM* Profile	10%	200%	450
			220 - 320	140 - 200	Finishing	2-5%	200%	300
S	**Cobalt Base** Haynes 21, 25, L-605, Mar-M302, NASA Co-W-Re, Stellite, Ultimet	5 - 30%	60 - 100	30 - 80	Full Slotting	100%	30%	80
			60 - 100	30 - 80	Heavy Profile	20%	75%	80
			100 - 170	80 - 100	HEM* Profile	8%	125%	130
			70 - 100	70 - 90	Finishing	2-5%	200%	90
	Iron Base A-286, Discaloy, Incoloy 800-802, Multimet, 16-25-6	9 - 45%	50 - 80	30 - 60	Full Slotting	100%	20%	70
			70 - 120	30 - 60	Heavy Profile	20%	75%	100
			100 - 160	60 - 80	HEM* Profile	8%	125%	140
			70 - 100	50 - 70	Finishing	2-5%	200%	80
	Nickel Base Hastelloy, Haynes 242, Inconel 600, 625, 718, Invar, Kovar, Monel, Nimonic, Rene 41, 77, 95, Udimet, Waspaloy	9 - 45%	60 - 80	30 - 70	Full Slotting	100%	20%	70
			60 - 100	30 - 80	Heavy Profile	20%	75%	90
			100 - 150	70 - 120	HEM* Profile	8%	150%	125
			80 - 120	60 - 80	Finishing	2-5%	200%	100
	Titanium 6Al-4V, Commercially Pure, Titanium Aluminide	5 - 30%	100 - 140	70 - 110	Full Slotting	100%	50%	140
			100 - 160	80 - 120	Heavy Profile	20%	100%	180
			180 - 300	100 - 140	HEM* Profile	10%	150%	275
			160 - 360	80 - 120	Finishing	2-5%	200%	250
	Titanium Ti 10-2-3, Beta 21S, Ti 5553	5 - 30%	70 - 110	50 - 80	Full Slotting	100%	20%	70
			80 - 110	70 - 100	Heavy Profile	20%	100%	80
			100 - 150	80 - 120	HEM* Profile	8%	150%	100
			80 - 130	80 - 100	Finishing	2-5%	200%	110

***High Efficiency Machining**

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Recommended Starting Parameters (<32Rc)					
Chip Load Per Tooth (Inches)					
1/4	3/8	1/2	5/8	3/4	1
.0008	.0014	.0018	.0023	.0027	.0031
.0011	.0019	.0024	.0031	.0036	.0043
.0015	.0025	.0033	.0042	.0049	.0056
.0012	.0021	.0027	.0035	.0041	.0047
.0008	.0012	.0018	.0022	.0027	.0031
.0011	.0016	.0024	.0029	.0036	.0043
.0014	.0021	.0032	.0039	.0047	.0054
.0011	.0017	.0025	.0031	.0038	.0043
.0060	.0010	.0014	.0017	.0021	.0024
.0083	.0014	.0019	.0024	.0029	.0033
.0150	.0025	.0035	.0043	.0053	.0060
.0090	.0015	.0021	.0026	.0032	.0036
.0006	.0013	.0017	.0020	.0025	.0028
.0008	.0017	.0023	.0027	.0033	.0039
.0013	.0028	.0037	.0043	.0054	.0061
.0009	.0020	.0026	.0030	.0038	.0042
.0007	.0014	.0018	.0022	.0026	.0031
.0010	.0019	.0024	.0029	.0034	.0043
.0015	.0030	.0039	.0048	.0056	.0067
.0011	.0021	.0027	.0033	.0039	.0047
.0005	.0011	.0014	.0018	.0022	.0026
.0007	.0015	.0019	.0024	.0029	.0036
.0013	.0028	.0035	.0045	.0055	.0065
.0008	.0017	.0021	.0027	.0033	.0039
.0005	.0011	.0015	.0018	.0022	.0026
.0007	.0015	.0020	.0024	.0029	.0036
.0011	.0024	.0033	.0039	.0048	.0056
.0005	.0011	.0015	.0018	.0022	.0026
.0008	.0015	.0020	.0025	.0028	.0032
.0011	.0020	.0027	.0033	.0037	.0044
.0020	.0038	.0050	.0063	.0070	.0080
.0012	.0023	.0030	.0038	.0042	.0048
.0006	.0012	.0016	.0020	.0024	.0028
.0008	.0016	.0021	.0027	.0032	.0039
.0015	.0030	.0040	.0050	.0060	.0070
.0009	.0018	.0024	.0030	.0036	.0042
.0005	.0010	.0012	.0015	.0018	.0021
.0008	.0014	.0017	.0022	.0026	.0032
.0014	.0028	.0033	.0041	.0050	.0058
.0008	.0015	.0018	.0023	.0027	.0032
.0005	.0012	.0015	.0018	.0021	.0025
.0008	.0017	.0022	.0026	.0030	.0038
.0012	.0029	.0036	.0043	.0050	.0060
.0008	.0018	.0023	.0027	.0032	.0038
.0005	.0010	.0012	.0015	.0018	.0021
.0008	.0014	.0017	.0022	.0026	.0032
.0014	.0028	.0033	.0041	.0050	.0058
.0008	.0015	.0018	.0023	.0027	.0032
.0005	.0012	.0015	.0018	.0022	.0026
.0008	.0017	.0022	.0026	.0031	.0039
.0011	.0026	.0033	.0039	.0048	.0056
.0008	.0018	.0023	.0027	.0033	.0039
.0005	.0010	.0012	.0015	.0018	.0021
.0008	.0014	.0017	.0022	.0026	.0032
.0012	.0024	.0029	.0036	.0043	.0050
.0008	.0015	.0018	.0023	.0027	.0032

Machining Formulas

RPM
(3.82 x SFM) / tool diameter

SFM
RPM x .262 x tool diameter

FEED RATE (in / min)
chipload x # flutes x RPM

Material Removal Rate (in^3 / min)
Feed Rate x ADoC x RDoC

Feed / Tooth (in)
Feed Rate / (RPM x # Flutes)

Required Motor Horsepower
Feed rate x axial doc x radial doc x unit power x machine efficiency %

Radial Chip Thinning

$$\frac{\text{Chipload} \times (\text{dia}/2)}{\sqrt{(\text{dia} \times \text{RDoC}) - \text{RDoC}^2}}$$

Reduce SFM When End Mill is Projecting From the Tool Holder

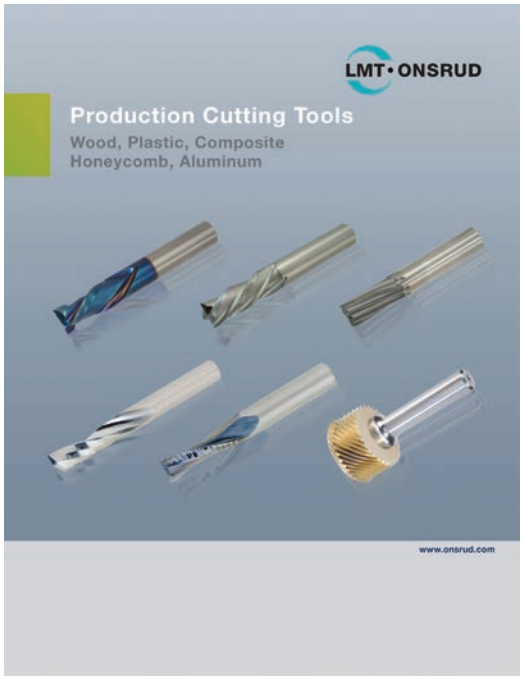
PROJECTION LENGTH < 2.5 X Ø	REDUCE SPEEDS & FEEDS 0%
2.5 X Ø	15%
3 X Ø	20%
4 X Ø	55%
5 X Ø	65%
6 X Ø	75%

Since our beginning over 70 years ago, LMT Onsrud has endeavored to innovate and to develop the best cutting tool solutions inthe market. LMT Onsrud is recognized as a leading manufacturer of solid round tooling for a wide range of materials from plastics to composites to exotic metals.

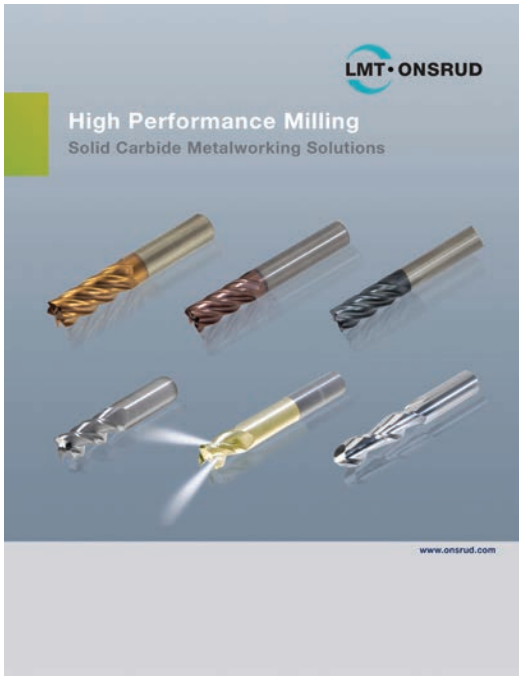
Today our promise remains the same-to consistently provide premium cutting tool solutions to meet your needs and to provide exceptional support throughout all phases of planning, development and production.

Materials Cut:

- Composites
- Exotic Metals
- Honeycomb
- Non-Ferrous Metals
- Plastics and Acrylics
- Solid Surface
- Stainless Steels
- Wood and Composite Woods



LMT Onsrud
Production Cutting Tools



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