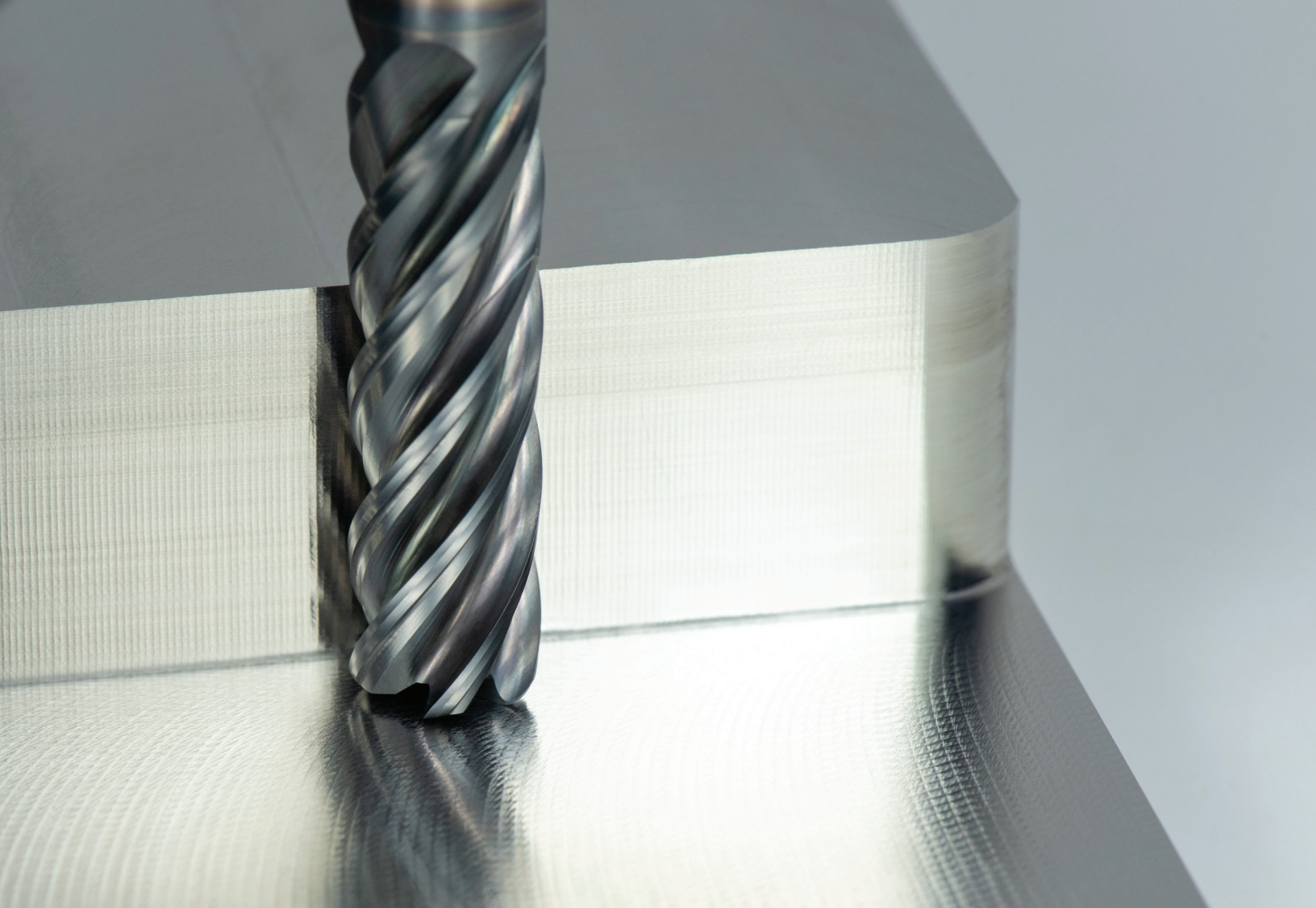




Special Offer on the Max Velocity Series 5 Flute End Mills

BUY 3 GET 1 FREE of equal or lesser value

Order via your local distributor and reference **promo code: MXV2025**
Promotion valid from 02-01-2025 thru 07-31-2025

Max Velocity Series

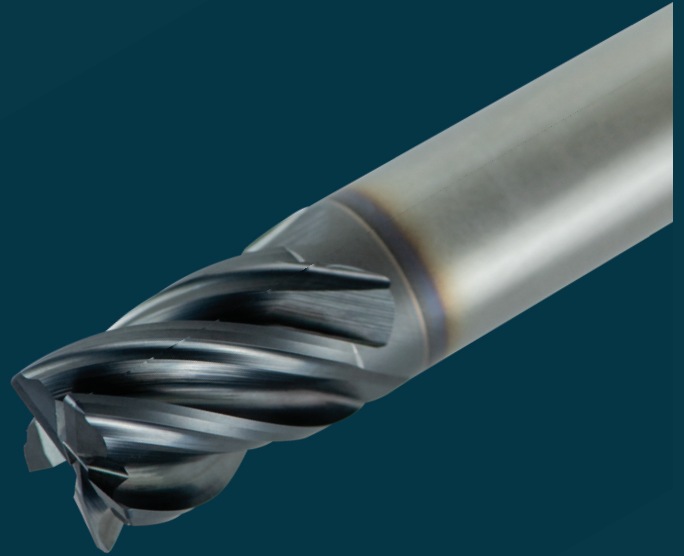
The Max Velocity (MXV) Series takes milling to the next level as LMT Onsrud's next generation universal endmill. It covers the largest range of milling applications from slotting to heavy profiling to finishing in a broad range of workpiece materials.

Features and Benefits:

- Unique NanoMax coating for maximum heat resistance and longer tool life
- Optimized geometry for maximum material removal rates in a broad range of applications
- Chipbreakers as standard in long lengths of cut
- Large selection of corner radii

Applications - 5 Flute:

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



MXV Promotion

Part #	Cutting Diameter	LOC	ERL Length	Overall Length	Shank Diameter	Flutes	Corner Radius	Chipbreakers
MXV2650574	3/8	7/8	-	2 1/2	3/8	5	0.015	No
MXV2650734	3/8	7/8	-	2 1/2	3/8	5	0.015	Yes
MXV2650575	3/8	7/8	-	2 1/2	3/8	5	0.030	No
MXV2650580	3/8	1 1/4	-	3	3/8	5	0.015	No
MXV2650736	3/8	1 1/4	-	3	3/8	5	0.015	Yes
MXV2650582	3/8	1 1/4	-	3	3/8	5	0.060	No
MXV2650032	1/2	5/8	-	2 1/2	1/2	5	0.015	No
MXV2650033	1/2	5/8	-	2 1/2	1/2	5	0.030	No
MXV2650037	1/2	1 1/4	-	3	1/2	5	Square	No
MXV2650737	1/2	1 1/4	-	3	1/2	5	Square	Yes
MXV2650038	1/2	1 1/4	-	3	1/2	5	0.015	No
MXV2650738	1/2	1 1/4	-	3	1/2	5	0.015	Yes
MXV2650039	1/2	1 1/4	-	3	1/2	5	0.030	No
MXV2650739	1/2	1 1/4	-	3	1/2	5	0.030	Yes
MXV2650126	1/2	1 1/4	-	3	1/2	5	0.060	No
MXV2650128	1/2	1 1/4	-	3	1/2	5	0.120	No
MXV2650044	1/2	5/8	1 3/4	4	1/2	5	0.030	No
MXV2650134	1/2	5/8	1 3/4	4	1/2	5	0.120	No
MXV2650055	3/4	1 1/8	-	3	3/4	5	0.030	No
MXV2650151	3/4	1 1/2	-	4	3/4	5	0.030	No
MXV2650751	3/4	1 1/2	-	4	3/4	5	0.030	Yes
MXV2650152	3/4	1 1/2	-	4	3/4	5	0.060	No
MXV2650063	3/4	1 5/8	-	4	3/4	5	Square	No
MXV2650752	3/4	1 5/8	-	4	3/4	5	Square	Yes
MXV2650064	3/4	1 5/8	-	4	3/4	5	0.030	No
MXV2650753	3/4	1 5/8	-	4	3/4	5	0.030	Yes
MXV2650065	3/4	1 5/8	-	4	3/4	5	0.060	No
MXV2650102	3/4	2 1/4	-	5	3/4	5	Square	No
MXV2650754	3/4	2 1/4	-	5	3/4	5	Square	Yes
MXV2650103	3/4	2 1/4	-	5	3/4	5	0.030	No
MXV2650755	3/4	2 1/4	-	5	3/4	5	0.030	Yes

MXV 5 Flute
Cutting Data Recommendations

ISO Grade	Material / Grade	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	400 - 600	150 - 250	Full Slotting	100%	.5x	350
		350 - 650	150 - 250	Heavy Profile	33%	1.25x	400
		500 - 850	225 - 325	HEM Profile*	15%	2x	550
		350 - 450	200 - 300	Finishing	3-5%	2x	450
	Alloy Steel 13XX, 40XX, 41XX, 43XX, 44XX, 46XX, 47XX, 48XX	275 - 400	100 - 200	Full Slotting	100%	.5x	325
		300 - 450	150 - 225	Heavy Profile	33%	1.25x	350
		450 - 750	175 - 300	HEM Profile*	15%	2x	500
		375 - 450	200 - 250	Finishing	3-5%	2x	450
	Mold & Die Steel 300M, 4340, 52100, M50, A2, D2, H13, L2, M2, P20, S7, T15, W2	225 - 325	70 - 150	Full Slotting	100%	.5x	275
		225 - 375	70 - 150	Heavy Profile	33%	1.25x	275
		350 - 500	150 - 275	HEM Profile*	10%	2x	400
		300 - 400	125 - 225	Finishing	3-5%	2x	350
	Tool Steel PM STEELS	125 - 275	-	Full Slotting	100%	.5x	200
		175 - 325	-	Heavy Profile	25%	1.25x	250
		275 - 475	-	HEM Profile*	10%	2x	350
		250 - 350	-	Finishing	3-5%	2x	350
M	Austenitic Stainless 301, 302, 303, 304/304L/304H, 316/316L, 317L, 321/321H, 347/347H, Nitronic, 309/309S, 310/310S/310H, 330	200 - 325	80 - 200	Full Slotting	100%	.5x	275
		250 - 350	80 - 200	Heavy Profile	33%	1.25x	325
		300 - 500	150 - 275	HEM Profile*	15%	2x	400
		250 - 350	175 - 275	Finishing	3-5%	2x	350
	Martensitic Stainless 403, 405, 409, 410/410S/410HT, 416/416HT, 420, 422, 430, 440C	200 - 325	100 - 250	Full Slotting	100%	.5x	275
		225 - 350	100 - 250	Heavy Profile	25%	1.25x	300
		275 - 450	125 - 250	HEM Profile*	10%	2x	400
		250 - 350	150 - 275	Finishing	3-5%	2x	350
	Precipitation Stainless 13-8 PH, 15-5 PH, 15-7 PH, 17-4 PH, 17-7 PH, S143	160 - 225	90 - 180	Full Slotting	100%	.5x	200
		180 - 250	90 - 125	Heavy Profile	25%	1.25x	225
		225 - 450	125 - 250	HEM Profile*	10%	2x	400
		225 - 325	150 - 275	Finishing	3-5%	2x	325
K	Cast Iron Grey 20A, 25A, 30A, 35A, 40A, 45A, 50A	250 - 400	130 - 300	Full Slotting	100%	.5x	375
		250 - 450	170 - 300	Heavy Profile	33%	1.25x	425
		300 - 550	350 - 500	HEM Profile*	10%	2x	500
		300 - 400	300 - 400	Finishing	3-5%	2x	400
	Cast Ductile/Nodular 40010, 60-40-18, 65-45-12, 32510, 32518	120 - 300	80 - 140	Full Slotting	100%	.5x	275
		220 - 350	100 - 150	Heavy Profile	33%	1.25x	325
		300 - 500	170 - 270	HEM Profile*	10%	2x	450
		275 - 400	140 - 200	Finishing	3-5%	2x	400
S	Cobalt Base Haynes 21, 25, L-605, Mar-M302, NASA Co-W-Re, Stellite, Ultimet	70 - 120	40 - 90	Full Slotting	100%	.33x	100
		70 - 120	40 - 90	Heavy Profile	20%	.75x	100
		150 - 210	80 - 100	HEM Profile*	8%	1.25x	170
		80-120	80 - 100	Finishing	3-5%	1.50x	100
	Iron Base A-286, Discaloy, Incoloy 800-802, Multimet, 16-25-6	60 - 90	40 - 70	Full Slotting	100%	.25x	70
		80 - 140	40 - 70	Heavy Profile	20%	.75x	120
		150 - 200	60 - 80	HEM Profile*	8%	1.25x	170
		80-120	60 - 80	Finishing	3-5%	1.5x	120
	Nickel Base Hastelloy, Haynes 242, Inconel 600, 625, 718, Invar, Kovar, Monel, Nimonic, Rene 41, 77, 95, Udimet, Waspaloy	70 - 100	40 - 80	Full Slotting	100%	.25x	70
		70 - 120	40 - 90	Heavy Profile	20%	.75x	90
		100 - 150	70 - 120	HEM Profile*	8%	1.50x	125
		90 - 125	70 - 100	Finishing	3-5%	1.50x	125
	Titanium 6Al-4V, Commercially Pure, Titanium Aluminide	120 - 180	80 - 120	Full Slotting	100%	.50x	140
		120 - 200	90 - 130	Heavy Profile	30%	1x	160
		200 - 450	100 - 140	HEM Profile*	10%	1.5x	350
		200 - 400	100 - 140	Finishing	3-5%	1.5x	300
	Titanium Ti 10-2-3, Beta 21S, Ti 5553	80 - 120	60 - 100	Full Slotting	100%	.25x	100
		90 - 140	80 - 120	Heavy Profile	20%	1x	120
		100 - 150	80 - 120	HEM Profile*	8%	1.5x	140
		100 - 160	100 - 120	Finishing	3-5%	1.5x	160

*High Efficiency Machining

Recommended Starting Parameters (<32Rc)

Chip Load Per Tooth (Inches)

1/8	1/4	3/8	1/2	5/8	3/4	1
.0005	.0012	.0020	.0024	.0031	.0037	.0043
.0005	.0013	.0021	.0026	.0033	.0039	.0046
.0007	.0017	.0028	.0034	.0043	.0052	.0060
.0013	.0031	.0051	.0061	.0079	.0094	.0110
.0005	.0012	.0020	.0024	.0030	.0037	.0043
.0005	.0014	.0021	.0026	.0032	.0039	.0046
.0007	.0016	.0028	.0034	.0042	.0052	.0060
.0013	.0027	.0051	.0061	.0077	.0094	.0110
.0003	.0010	.0150	.0020	.0024	.0029	.0033
.0003	.0011	.0160	.0021	.0026	.0031	.0035
.0005	.0017	.0250	.0033	.0040	.0048	.0055
.0008	.0026	.0383	.0051	.0061	.0074	.0084
.0003	.0008	.0015	.0020	.0025	.0030	.0035
.0003	.0009	.0017	.0023	.0029	.0035	.0040
.0005	.0013	.0025	.0033	.0042	.0050	.0058
.0008	.0020	.0038	.0051	.0064	.0077	.0089
.0004	.0010	.0018	.0022	.0027	.0033	.0040
.0004	.0011	.0019	.0023	.0029	.0035	.0043
.0006	.0014	.0025	.0031	.0038	.0046	.0056
.0010	.0026	.0046	.0056	.0069	.0084	.0102
.0003	.0008	.0015	.0017	.0023	.0026	.0030
.0003	.0009	.0018	.0020	.0026	.0030	.0035
.0005	.0013	.0026	.0029	.0038	.0044	.0050
.0008	.0020	.0039	.0044	.0057	.0067	.0077
.0003	.0008	.0160	.0021	.0025	.0030	.0035
.0003	.0009	.0185	.0024	.0029	.0035	.0040
.0005	.0013	.0267	.0035	.0042	.0050	.0058
.0008	.0019	.0408	.0054	.0064	.0077	.0089
.0003	.0011	.0020	.0025	.0030	.0035	.0040
.0003	.0012	.0021	.0027	.0032	.0037	.0043
.0005	.0018	.0033	.0042	.0050	.0058	.0067
.0008	.0028	.0051	.0064	.0077	.0089	.0102
.0003	.0008	.0015	.0020	.0025	.0030	.0035
.0003	.0009	.0016	.0021	.0027	.0032	.0037
.0005	.0013	.0025	.0033	.0042	.0050	.0058
.0008	.0020	.0038	.0051	.0064	.0077	.0089
.0002	.0005	.0011	.0014	.0018	.0023	.0027
.0003	.0006	.0014	.0018	.0023	.0029	.0034
.0004	.0009	.0020	.0026	.0033	.0042	.0050
.0005	.0013	.0028	.0036	.0046	.0059	.0069
.0003	.0008	.0015	.0019	.0025	.0030	.0035
.0004	.0010	.0019	.0023	.0031	.0038	.0044
.0006	.0015	.0028	.0034	.0046	.0055	.0065
.0008	.0020	.0038	.0047	.0064	.0077	.0089
.0002	.0005	.0011	.0015	.0019	.0022	.0026
.0003	.0006	.0014	.0019	.0024	.0028	.0033
.0004	.0009	.0020	.0028	.0035	.0041	.0048
.0005	.0013	.0028	.0038	.0048	.0056	.0066
.0003	.0008	.0015	.0020	.0025	.0030	.0034
.0003	.0008	.0016	.0021	.0027	.0033	.0037
.0005	.0013	.0025	.0033	.0042	.0050	.0057
.0008	.0019	.0038	.0050	.0064	.0077	.0087
.0002	.0005	.0011	.0015	.0018	.0022	.0026
.0003	.0006	.0014	.0019	.0023	.0028	.0033
.0004	.0009	.0020	.0028	.0033	.0041	.0048
.0005	.0013	.0028	.0038	.0046	.0056	.0066

Machining Formulas

RPM
$(3.82 \times \text{SFM}) / \text{tool diameter}$
SFM
$\text{RPM} \times .262 \times \text{tool diameter}$
FEED RATE (in / min)
$\text{chipload} \times \# \text{ flutes} \times \text{RPM}$
Material Removal Rate (in³ / min)
$\text{Feed Rate} \times \text{ADoC} \times \text{RDoC}$
Feed / Tooth (in)
$\text{Feed Rate} / (\text{RPM} \times \# \text{ Flutes})$
Required Motor Horsepower
$\text{Feed rate} \times \text{axial doc} \times \text{radial doc} \times \text{unit power} \times \text{machine efficiency} \%$

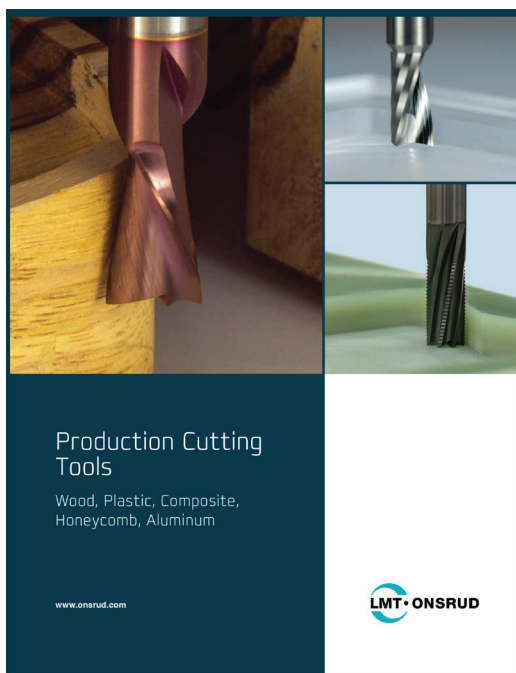
Radial Chip Thinning	
$\frac{\text{Chipload} \times (\text{dia}/2)}{\sqrt{(\text{dia} \times \text{RDoC}) - \text{RDoC}^2}}$	
Reduce SFM When End Mill is Projecting From the Tool Holder	
PROJECTION LENGTH < 2.5 X Ø	REDUCE SPEEDS & FEEDS 0%
2.5 X Ø	15%
3 X Ø	20%
4 X Ø	55%
5 X Ø	65%
6 X Ø	75%

Since our beginning over 75 years ago, LMT Onsrud has endeavored to innovate and to develop the best cutting tool solutions in the 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



LMT Onsrud
High Performance Milling

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