

**SERVICING EVERY INDUSTRY SECTOR
...ONE CHIP AT A TIME!**

**CATALOG
815**

**NEW
CATALOG**



MICRO 100[®]

super carbide tools

FEATURING THE "ULTIMATE" QUICK CHANGE TOOLING SYSTEM



QUALITY...THROUGH MANUFACTURING EXCELLENCE!

www.micro100.com

Solid Carbide Tools

Metric Products

MICRO 100[®]
super carbide tools

World Class Quality
Through Manufacturing Excellence

MICRO 100[®]
super carbide tools

Combined with Superior Strength and
Wear Characteristics Provides Unmatched
High Performance Productivity at it's BEST!!!



Miniature Boring Tools
Boring Tools
Retaining Ring Grooving Tools
Internal Threading Tools
Toolholders



**WILL NOT CHIP OR BREAK
UNDER NORMAL MACHINING CONDITIONS**



MICRO 100[®]
super carbide tools

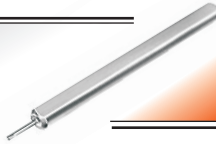
super carbide tools
FOR HIGHER PERFORMANCE

Solid Carbide Tools

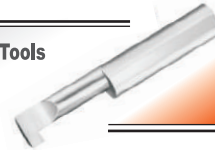
Metric Products

MICRO 100[®]
super carbide tools

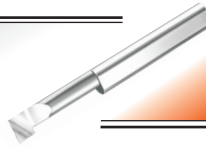
Miniature Boring Tools
Style MBBM
page 213



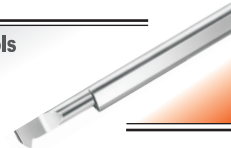
Retaining Ring Grooving Tools
Style RRM
page 216-217



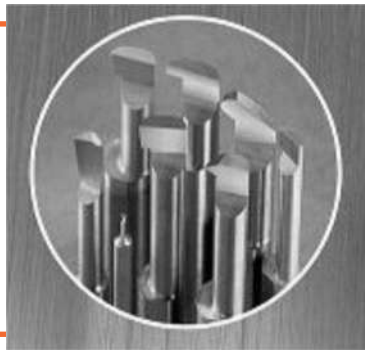
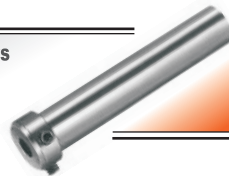
Boring Tools
Style BBM
pages 214-215



Internal Threading Tools
Style ITM
pages 218



Heat Treated Toolholders
Style THM
page 219



MICRO 100[®]
super carbide tools

Proprietary micro-grain carbide with highest transverse rupture strength. Unmatched in toughness and application versatility. Superior in material removal and tool life.

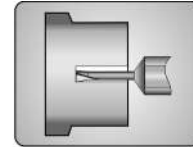
MBBM

Miniature Boring Tools
Metric



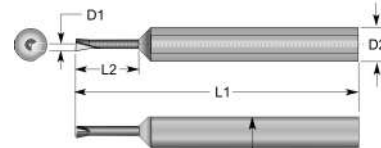
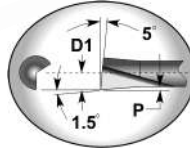
MBBM Miniature Metric Boring Tool Tolerances:

Shank Diameter:
-0.0025 to -0.0076mm
Minimum Bore Diameter:
+0.0mm -0.05mm
Maximum Bore Depth:
+0.635mm - 0.0mm
Overall Length:
±0.4mm



Coated Tools AVAILABLE!
AlTiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288
LEFT HAND TOOLS AVAILABLE



Lockdown flat automatically locates tool on center

For current pricing and availability please visit our website at: www.micro100.com

MBBM Catalog No.	Minimum Bore Diameter (D1)	Maximum Bore Depth (L2)	Overall Length (L1)
	metric	metric	metric
3mm Shanks - D2			
MBBM-005020	0.5	2.00	38
MBBM-006025	0.6	2.50	
MBBM-007030	0.7	3.00	
MBBM-007040		4.00	
MBBM-008030	0.8	3.00	
MBBM-008040		4.00	
MBBM-009030	0.9	3.00	
MBBM-009040		4.00	
MBBM-009050		5.00	
MBBM-010030	1.0	3.00	
MBBM-010040		4.00	
MBBM-010050		5.00	

See page 219 Toolholder Selections.



super carbide tools
FOR HIGHER PERFORMANCE

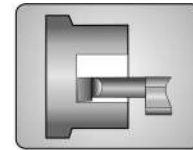
BBM
Boring Tools
Metric



BBM Metric Boring Tool Tolerances:

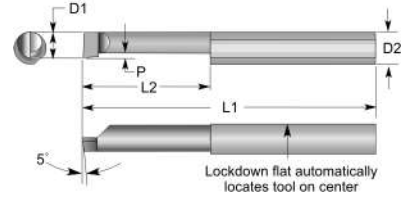
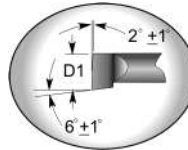
Shank Diameter:
-0.0025 to -0.0076mm
Minimum Bore Diameter:
+0.0mm -0.125mm
Maximum Bore Depth:
+1.250mm - 0.00mm
Overall Length:
±0.4mm

**OTHER
SIZES
AVAILABLE
UPON REQUEST**



Coated Tools AVAILABLE!
AlTiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288
LEFT HAND TOOLS AVAILABLE



For current pricing and availability please visit our website at: www.micro100.com

BBM Catalog No. Sharp Point	Minimum Bore Diameter (D1)	Maximum Bore Depth (L2)	Projection (P)	Overall Length (L1)
	metric	metric	metric	metric
4mm Shanks - D2				
BBM-040104	1	4	0.25	50
BBM-040106		6		
BBM-040108		8		
BBM-040204	2	4	0.50	
BBM-040206		6		
BBM-040208		8		
BBM-040210		10		
BBM-040213		13		
BBM-040308	3	8	0.75	
BBM-040310		10		
BBM-040313		13		
BBM-040315		15		
BBM-040320		20		
BBM-040408	4	8	1.00	
BBM-040410		10		
BBM-040415		15		
BBM-040420		20		
BBM-040425		25		
6mm Shanks - D2				
BBM-060510	5	10	1.25	57
BBM-060515		15		
BBM-060520		20		
BBM-060525		25		
BBM-060528		28		
BBM-060610	6	10	1.50	
BBM-060615		15		
BBM-060620		20		
BBM-060625		25		
BBM-060630		30		
BBM-060635		35		
BBM-060638		38		
8mm Shanks - D2				
BBM-080715	7	15	1.75	63
BBM-080720		20		
BBM-080725		25		

See page 219 for Toolholder Selections.

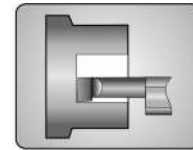
BBM
Boring Tools
Metric



BBM Metric Boring Tool Tolerances:

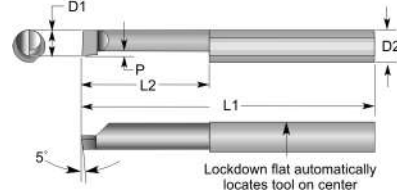
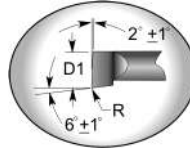
Shank Diameter:
-0.0025 to -0.0076mm
Minimum Bore Diameter:
+0.0mm -0.125mm
Maximum Bore Depth:
+1.250mm - 0.00mm
Overall Length:
±0.4mm

**OTHER
SIZES
AVAILABLE
UPON REQUEST**



Coated Tools AVAILABLE!
AlTiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288
LEFT HAND TOOLS AVAILABLE



For current pricing and availability please visit our website at: www.micro100.com

BBM Catalog No. Sharp Point	Minimum Bore Diameter (D1)	Maximum Bore Depth (L2)	Projection (P)	Overall Length (L1)	Shank Diameter (D2)
	metric	metric	metric	metric	metric
8mm Shanks - D2					
BBM-080732	7	32	1.75	63	8
BBM-080738		38			
BBM-080746		46			
BBM-080813	8	13	2.00	63	8
BBM-080820		20			
BBM-080825		25			
BBM-080832		32			
BBM-080838		38			
BBM-080846		46			
BBM-080850		50			
10mm Shanks - D2					
BBM-100913	9	13	2.25	72	10
BBM-100925		25			
BBM-100932		32			
BBM-100938		38			
BBM-100946		46			
BBM-100950		50			
BBM-101015	10	15	2.50	72	10
BBM-101020		20			
BBM-101025		25			
BBM-101032		32			
BBM-101038		38			
BBM-101046		46			
BBM-101050		50			
12mm Shanks - D2					
BBM-121115	11	15	2.75	83	12
BBM-121125		25			
BBM-121138		38			
BBM-121150		50			
BBM-121220	12	20	3.00	83	12
BBM-121232		32			
BBM-121246		46			
BBM-121260		60			

See page 219 for Toolholder Selections.



super carbide tools
FOR HIGHER PERFORMANCE

RRM

Retaining Ring Grooving Tools

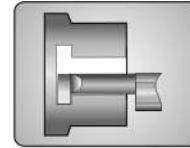
Metric



RRM Retaining Ring Metric Grooving Tool Tolerances:

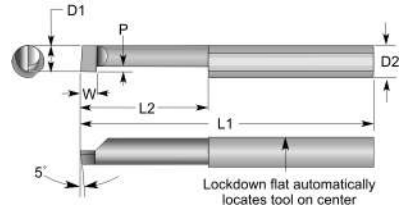
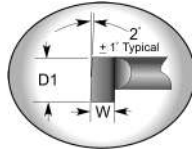
- Groove Width:
+.05mm to -.00mm
- Shank Diameter:
-0.0025mm to -0.0076mm
- Minimum Bore Diameter:
+0.0mm -0.125mm
- Maximum Bore Depth:
+1.250mm -0.0mm
- Overall Length:
±0.4mm

**OTHER
SIZES
AVAILABLE
UPON REQUEST**



Coated Tools AVAILABLE!
AITiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288
 LEFT HAND TOOLS AVAILABLE



For current pricing and availability please visit our website at: www.micro100.com

RRM Catalog No.	Groove Width (W)	Projection (P)	Minimum Bore Diameter (D1)	Maximum Bore Depth (L2)	Overall Length (L1)							
	metric	metric	metric	metric	metric							
4mm Shanks - D2												
RRM-030-10	0.30	0.60	3	10	50							
RRM-030-15				15								
RRM-040-10	0.40	0.80	4	10								
RRM-040-15				15								
RRM-040-20				20								
RRM-040-25				25								
6mm Shanks - D2												
RRM-050-10	0.50	1.25	6	10	57							
RRM-050-20				20								
RRM-050-25				25								
RRM-070-10	0.70			1.25		6	10					
RRM-070-15							15					
RRM-070-20							20					
RRM-070-25							25					
RRM-080-10	0.80						1.25	6	10			
RRM-080-15									15			
RRM-080-20									20			
RRM-080-25									25			
8mm Shanks - D2												
RRM-090-10	0.90	2.50	8		10				63			
RRM-090-20					20							
RRM-090-30					30							
RRM-090-40				40								
RRM-100-10	1.00			2.50	8	10						
RRM-100-20						20						
RRM-100-30						30						
RRM-100-40						40						
RRM-110-10	1.10					2.50	8	10				
RRM-110-20								20				
RRM-110-30								30				
RRM-110-40								40				
10mm Shanks - D2												
RRM-120-10	1.20							2.75		10	10	72
RRM-120-20											20	

See page 219 for Toolholder Selections.

RRM

Retaining Ring Grooving Tools

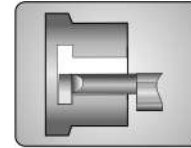
Metric



RRM Retaining Ring Metric Grooving Tool Tolerances:

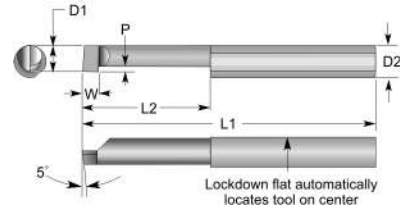
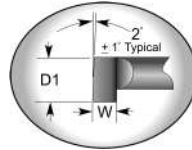
Groove Width:
+.05mm to -.00mm
Shank Diameter:
-0.0025mm to -0.0076mm
Minimum Bore Diameter:
+0.0mm -0.125mm
Maximum Bore Depth:
+1.250mm -0.0mm
Overall Length:
±0.4mm

**OTHER
SIZES
AVAILABLE
UPON REQUEST**



Coated Tools AVAILABLE!
AlTiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST. SEE PAGES 288
LEFT HAND TOOLS AVAILABLE



For current pricing and availability please visit our website at: www.micro100.com

RRM Catalog No.	Groove Width (W)	Projection (P)	Minimum Bore Diameter (D1)	Maximum Bore Depth (L2)	Overall Length (L1)
	metric	metric	metric	metric	metric
10mm Shanks - D2					
RRM-120-30	1.20	2.75	10	30	72
RRM-120-40				40	
RRM-130-10	1.30			10	
RRM-130-20				20	
RRM-130-30				30	
RRM-130-40	40				
RRM-160-30	1.60			30	
RRM-160-40				40	
RRM-180-10	1.80			10	
RRM-180-20				20	
RRM-180-30				30	
RRM-180-40				40	
RRM-200-10	2.00	10			
RRM-200-20		20			
RRM-200-30		30			
12mm Shanks - D2					
RRM-300-20	3.00	3.75	12	20	83
RRM-300-30				30	
RRM-300-40				40	
RRM-300-50				50	
RRM-400-20	4.00			20	
RRM-400-30				30	
RRM-400-50				50	
RRM-500-20	5.00			20	
RRM-500-30				30	
RRM-500-40				40	
RRM-500-50	50				
RRM-600-20	6.00			20	
RRM-600-40		40			
RRM-600-50		50			

See page 219 for Toolholder Selections.



super carbide tools
FOR HIGHER PERFORMANCE

ITM

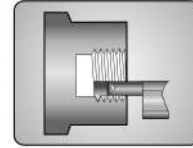
Internal Threading Tools Metric

MICRO 100®
super carbide tools

ITM Internal Single Point Threading Metric Tool Tolerances:

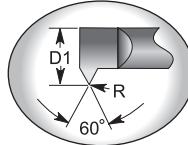
Shank Diameter:
-0.0025mm -0.0076mm
Minimum Bore Diameter:
+0.0mm -0.125mm
Maximum Bore Depth:
+1.250mm -0.0mm
Overall Length:
±0.4mm

OTHER
SIZES
AVAILABLE
UPON REQUEST

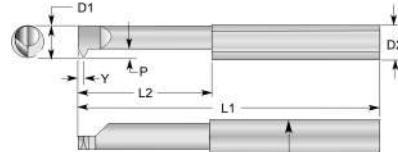


Coated Tools AVAILABLE!
AlTiN Add an "X" to end of Catalog No.
TiN Add a "G" to end of Catalog No.

OTHER COATINGS UPON REQUEST. SEE PAGES 288
LEFT HAND TOOLS AVAILABLE UPON REQUEST



Tool Radius:
.05mm (±.03mm)



Lockdown flat automatically locates tool on center.

For current pricing and availability please visit our website at: www.micro100.com

ITM Catalog No.	Minimum Bore Diameter (D1)	Projection (P)	Maximum Bore Depth (L2)	Offset Point (Y)	Threads Per Inch (T.P.I.)	Overall Length (L1)
	metric	metric	metric	metric		metric
6mm Shanks - D2						
ITM-064613	4.6	1.2	13	0.71	18 to 56	57
ITM-064625			25			
ITM-065115	5.1	1.3	15	0.76		
ITM-065128			28			
8mm Shanks - D2						
ITM-085815	5.8	1.5	15	0.86	18 to 56	63
ITM-085825			25			
ITM-085838			38			
ITM-087420	7.4	1.9	20	1.09		
ITM-087432			32			
ITM-087446			46			
10mm Shanks - D2						
ITM-109620	9.6	2.4	20	1.40	18 to 56	72
ITM-109632			32			
ITM-109646			46			
12mm Shanks - D2						
ITM-121120	11.4	3.2	20	1.85	18 to 56	83
ITM-121132			32			
ITM-121150			50			

See page 219 for Toolholder Selections.

THM
Heat-Treated Steel Shank Toolholders
Metric



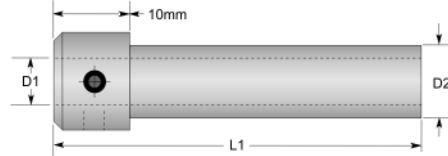
Featuring:

- Precision Ground Heat Treated Steel Shanks
- Two (2) lockdown screws at 90° for secure fastening.*

*Except on THM-84, THM-104, and THM-204
These products are manufactured with One (1)
Lockdown screw.



THM Heat Treated Steel Toolholder Tolerances:
T.I.R. Maximum: 0.05mm.



For current pricing and availability please visit our website at: www.micro100.com

THM Catalog No.	I.D. Diameter (D1) metric	Overall Length (L1) metric
12mm Shanks - D2		
THM-312	3	75
THM-412	4	
THM-612	6	
THM-812	8	
16mm Shanks - D2		
THM-316	3	75
THM-416	4	
THM-616	6	
THM-816	8	
THM-1016	10	
THM-1216	12	
20mm Shanks - D2		
THM-320	3	75
THM-420	4	
THM-620	6	
THM-820	8	
THM-1020	10	
THM-1220	12	



super carbide tools
FOR HIGHER PERFORMANCE

NEW PRODUCTS

Keyseat Cutters
Dovetail Cutters

MICRO 100®
super carbide tools

MICRO 100®
super carbide tools

THE **BEST** GETS **BETTER!**



Ideal for finishing, semi-finishing, and universal applications in most materials providing superior rupture strength and exceptional machining versatility.

KEYSEAT CUTTERS

A one-piece, solid carbide construction designed and engineered for improved cutting action while minimizing vibration and chip dragging therefore improving sidewall finishes.

Other Features of this product includes:

4, 6, and 8 flutes

Cutter diameter ranges: .093" up to .500"

*+.000"-.002" Cutter diameter tolerances.

Cutter width ranges: .010" up to .250"

Shank sizes: 1/8", 3/16", 1/4", 5/8" and 1/2"

Standard and long lengths

AlTiN Coated tools available



DOVETAIL CUTTERS

Solid carbide, one piece construction designed and engineered for improved cutting action while minimizing vibration and chip dragging therefore improving sidewall finishes.

Other Features of this product includes:

30°, 60°, and 90° angles

Cutter diameter ranges: .125" up to .500"

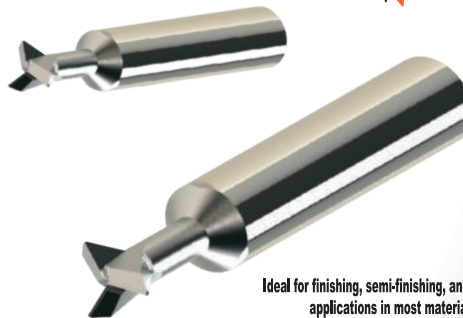
*+.000"-.002" Cutter diameter tolerances.

Cutter width ranges: .010" up to .250"

Shank sizes: 1/8", 3/16", 1/4", 5/8" and 1/2"

Standard and long lengths

AlTiN coated tools available



Ideal for finishing, semi-finishing, and universal applications in most materials providing superior rupture strength and exceptional machining versatility.



WILL NOT CHIP OR BREAK UNDER NORMAL MACHINING CONDITIONS

FOR MORE DETAILS ON THESE AND OTHER HIGH QUALITY, HIGH PERFORMANCE SOLID CARBIDE TOOLS

CONTACT YOUR LOCAL AUTHORIZED MICRO 100 DISTRIBUTOR...TODAY!

Specialty Tools
Solid Carbide Metric Products

MICRO 100[®]
super carbide tools

**World Class Quality
Through Manufacturing Excellence**

MICRO 100[®]
super carbide tools

**Combined with Superior Strength and
Wear Characteristics Provides Unmatched
High Performance Productivity at it's Best!!!**



**Thread Mills
Single Flute Routers
Engraving Tools
Full Radius Tools
Combined Drill and Countersink Tools**

J



MICRO 100[®]
super carbide tools

**super carbide tools
FOR HIGHER PERFORMANCE**

221

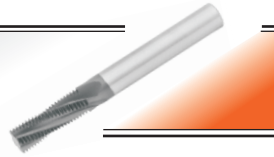
Specialty Tools

Solid Carbide Metric Products

MICRO 100[®]
super carbide tools

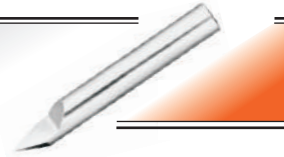
Thread Mills

Style TMM
pages 223



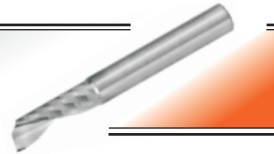
Engraving Tools

Styles RTCM / RSCM / RNCM
pages 227-228



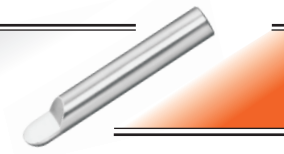
Single Flute Routers

for Aluminum
Style SFAM
page 224



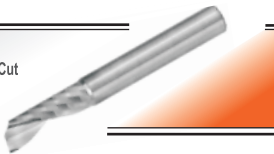
Full Radius Tools

Style RSFM
pages 229



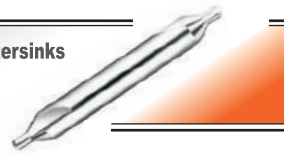
Single Flute Routers

Right / Left Hand Spiral, Right Hand Cut
Styles SFPM / SFLM
page 225-226



Combined Drills & Countersinks

Style DCM
page 230



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MICRO 100[®]
super carbide tools

Are more than just a micro-grain of excellent quality. It is in a class of it's own, resulting from the exclusive Micro 100 treating process

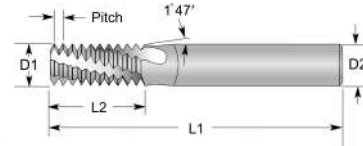
Thread Mills

Helical Flute Design,
Coated / Metric

MICRO 100®
super carbide tools

Featuring:

- Helical flute design for reducing cutting forces, smoother cuts, longest tool life, and maximum thread milling performances.
- 100% thread form, superior threads vs. tapping.
- Cuts right hand and left hand high quality threads.
- Suitable for all types of materials, especially heat treated and difficult to machine workpiece metals.
- Uncoated thread mills are also available from stock.



TMM Thread Mill Tool Tolerances

Cutter Diameter:
3mm - 6mm : +.00mm -.018mm
7.62mm - 9.40mm : +.00mm -.022mm
11.94mm - 15.75mm : +.00mm -.027mm

Shank Diameter:
-.0025mm to -.0076mm

Length of Cut:
+.13mm to 0.0mm

T.I.R. Maximum
.013mm

Overall Length:
±0.38mm

For programming and technical assistance, go to www.micro100.com to download our "Thread Mill Auto Assist" program or call us obtain your free disk.

Thread Mills Coated with:
AlTiN
OTHER COATINGS UPON REQUEST
SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

TMM Catalog No.	Minimum Thread	Pitch	Cutter Diameter (D1)	Number of Flutes	Length of Cut (L2)	Overall Length (L1)
	metric	metric	metric		metric	metric
6mm Shanks - D2						
TMM-045075X	M4.5	0.75	3.00	3	6	57
TMM-050080X	M5.0	0.80			8	
TMM-060100X	M6.0	1.00	12			
TMM-080075X	M8.0	0.75	6.00		16	
TMM-080125X		1.25				
8mm Shanks - D2						
TMM-100150X	M10.0	1.50	7.62	4	20	75
10mm Shanks - D2						
TMM-120175X	M12.0	1.75	9.15	4	22	100
TMM-140150X	M14.0	1.50	9.40			
12mm Shanks - D2						
TMM-160200X	M16.0	2.00	11.94	4	32	100
TMM-180150X	M18.0	1.50				
TMM-200250X	M20.0	2.50				

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FOR HIGHER PERFORMANCE

223

SFAM

Single Flute Routers for Aluminum
Right Hand Spiral, Right Hand Cut / Metric

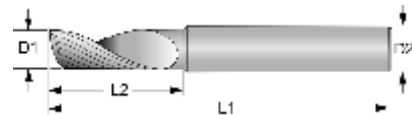


Featuring:

- High speed, solid carbide routers for aluminum and non-ferrous cutting applications.
- Optimize rake and clearance angles produce highest material removal rates and improved surface finishes.
- Innovative single flute end mill geometry avoids chip melting and chip re-welding problems.
- Unique open flute design with polished, mirror-like flute finish.
- Metric sizes available from stock.

SFAM Single Flute Router Metric Tolerances

Cutter Diameter:
+.00mm to -.05mm
Shank Diameter:
-.0025mm to -.0076mm
T.I.R. Maximum:
.013mm
Overall Length:
±0.8mm



**High Performance
Single Flute
Routers**

Coated Tools AVAILABLE!
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For current pricing and availability please visit our website at: www.micro100.com

SFAM Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
6mm Shanks - D2			
SFAM-020020	2	6	57
SFAM-030020	3	12	
SFAM-040020	4	16	
SFAM-050025	5	20	
SFAM-060030	6	25	
SFAM-060100		20	100
8mm Shanks - D2			
SFAM-080040	8	30	75
SFAM-080100		20	100
10mm Shanks - D2			
SFAM-100050	10	35	90
SFAM-100100		25	120
12mm Shanks - D2			
SFAM-120050	12	40	90
SFAM-120100		25	120
16mm Shanks - D2			
SFAM-160100	16	30	150
20mm Shanks - D2			
SFAM-200050	20	50	100
SFAM-200100		40	150

SFPM / SFLM

Single Flute Routers for Plastics / Composites
Right or Left Hand Spiral, Right Hand Cut / Metric



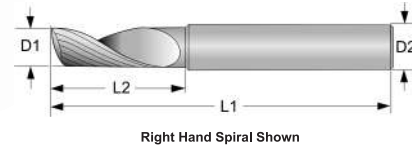
Featuring:

- High speed, solid carbide routers for plastic and composite materials.
- Optimize rake and clearance angles produce highest material removal rates and improved surface finishes.
- Innovative "O" flute design avoids chip melting and chip re-welding problems and evacuates chips efficiently.
- Open flute design with polished, mirror-like flute finish.
- Left-hand spiral routers are ideal for driving chips downward and when cutting forces on multi-layer workpieces require a down-cut operation.



SFPM / SFLM Single Flute Router Metric Tolerances

Cutter Diameter:
+0.000mm to -0.05mm
Shank Diameter:
-0.0025mm to -0.0076mm
T.I.R. Maximum:
.013mm
Overall Length:
±.0.4mm



**High Performance
Single Flute
Routers**

Coated Tools AVAILABLE!
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For current pricing and availability please visit our website at: www.micro100.com

SFPM Catalog No.	SFLM Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3mm Shanks - D2				
SFPM-010-10	SFLM-010-10	1	5	57
SFPM-020-10	SFLM-020-10	2	6	
SFPM-020-20	SFLM-020-20		10	38
SFPM-020-30	SFLM-020-30		12	57
SFPM-020-40	SFLM-020-40		14	75
SFPM-030-10	SFLM-030-10	3	8	57
SFPM-030-20	SFLM-030-20		12	38
4mm Shanks - D2				
SFPM-040-10	SFLM-040-10	4	12	57
SFPM-040-20	SFLM-040-20		15	40
5mm Shanks - D2				
SFPM-050-10	SFLM-050-10	5	16	50
6mm Shanks - D2				
SFPM-030-50	SFLM-030-50	3	8	57
SFPM-030-60	SFLM-030-60		18	
SFPM-030-70	SFLM-030-70		4	
SFPM-040-50	SFLM-040-50	20		75
SFPM-040-60	SFLM-040-60			
SFPM-040-70	SFLM-040-70	5		16
SFPM-050-40	SFLM-050-40		28	60
SFPM-050-60	SFLM-050-60			75
SFPM-060-10	SFLM-060-10	6	16	50
SFPM-060-20	SFLM-060-20		28	60
SFPM-060-30	SFLM-060-30			75

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SFPM / SFLM

Single Flute Routers for Plastics / Composites
Right or Left Hand Spiral, Right Hand Cut / Metric



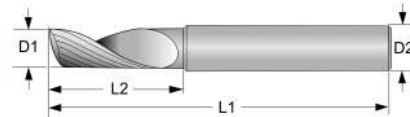
Featuring:

- High speed, solid carbide routers for plastic and composite materials.
- Optimize rake and clearance angles produce highest material removal rates and improved surface finishes.
- Innovative "O" flute design avoids chip melting and chip re-welding problems and evacuates chips efficiently.
- Open flute design with polished, mirror-like flute finish.
- Left-hand spiral routers are ideal for driving chips downward and when cutting forces on multi-layer workpieces require a down-cut operation.



SFPM / SFLM Single Flute Router Metric Tolerances

Cutter Diameter:
+0.000mm to -0.05mm
Shank Diameter:
-0.0025mm to -0.0076mm
T.I.R. Maximum:
.013mm
Overall Length:
±.04mm



Right Hand Spiral Shown

**High Performance
Single Flute
Routers**

Coated Tools AVAILABLE!
SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

SFPM Catalog No.	SFLM Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric		
8mm Shanks - D2						
SFPM-040-80	SFLM-040-80	4	20	95		
SFPM-050-70	SFLM-050-70	5				
SFPM-060-50	SFLM-060-50	6				
SFPM-060-60	SFLM-060-60	6	18	50		
SFPM-080-10	SFLM-080-10	8			22	63
SFPM-080-20	SFLM-080-20				30	75
SFPM-080-30	SFLM-080-30				40	100
SFPM-080-40	SFLM-080-40					
10mm Shanks - D2						
SFPM-100-10	SFLM-100-10	10	25	72		
SFPM-100-20	SFLM-100-20		55	100		
SFPM-100-30	SFLM-100-30		30	150		
12mm Shanks - D2						
SFPM-120-10	SFLM-120-10	12	30	83		
SFPM-120-20	SFLM-120-20		40	150		
16mm Shanks - D2						
SFPM-160-10	SFLM-160-10	16	35	92		
SFPM-160-20	SFLM-160-20		50	150		
20mm Shanks - D2						
SFPM-200-10	SFLM-200-10	20	40	104		
SFPM-200-20	SFLM-200-20		50	150		

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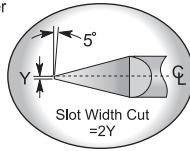
RTCM / RSCM

30° or 60° Included Cut Angle
Engraving Tools / Metric

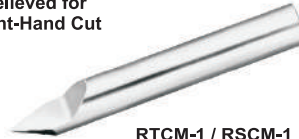


RTCM / RSCM Metric Engraving Tool Tolerances:

- Shank Diameter:
-.0025mm to -.0076mm finish ground
- Split Tolerance:
+.025mm -.000mm of tool center
- Offset Point:
±.025mm
- Overall Length:
±.38mm



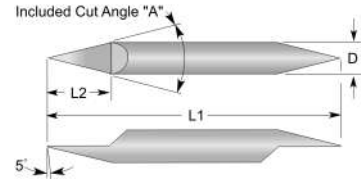
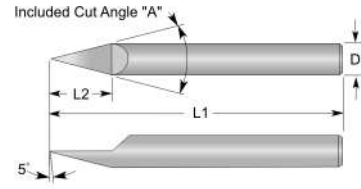
Relieved for
Right-Hand Cut



RTCM-1 / RSCM-1
STYLES



RTCM-2 / RSCM-2
STYLES



Coated Tools AVAILABLE!
AlTiN Add an "X" to end of
Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

RTCM-1 Catalog No.	RTCM-2 Catalog No.	Included Cut Angle (A) degree	Split Length (L2) metric	Offset Point (Y) metric	Overall Length (L1) metric
2mm Shanks - D2					
	RTCM-020-2	30°	4	0.10	38
3mm Shanks - D2					
RTCM-030-1	RTCM-030-2	30°	5	0.10	38
4mm Shanks - D2					
RTCM-040-1	RTCM-040-2	30°	6	0.10	50
5mm Shanks - D2					
RTCM-050-1	RTCM-050-2	30°	7	0.10	50
6mm Shanks - D2					
RTCM-060-1	RTCM-060-2	30°	8	0.10	57
8mm Shanks - D2					
RTCM-080-1	RTCM-080-2	30°	10	0.10	63
10mm Shanks - D2					
RTCM-100-1	RTCM-100-2	30°	12	0.10	72
12mm Shanks - D2					
RTCM-120-1		30°	14	0.10	83

RSCM-1 Catalog No.	RSCM-2 Catalog No.	Included Cut Angle (A) degree	Split Length (L2) metric	Offset Point (Y) metric	Overall Length (L1) metric
2mm Shanks - D2					
RSCM-020-1	RSCM-020-2	60°	4	0.10	38
3mm Shanks - D2					
RSCM-030-1	RSCM-030-2	60°	5	0.10	38
4mm Shanks - D2					
RSCM-040-1	RSCM-040-2	60°	6	0.10	50
5mm Shanks - D2					
RSCM-050-1	RSCM-050-2	60°	7	0.10	50
6mm Shanks - D2					
RSCM-060-1	RSCM-060-2	60°	8	0.10	57
8mm Shanks - D2					
RSCM-080-1		60°	10	0.10	63
10mm Shanks - D2					
RSCM-100-1	RSCM-100-2	60°	12	0.10	72
12mm Shanks - D2					
RSCM-120-1	RSCM-120-2	60°	14	0.10	83

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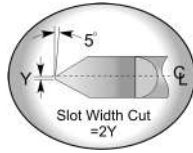
RNCM

90° Included Cut Angle Engraving Tools Metric

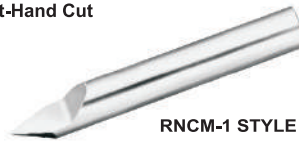


RNCM Metric Engraving Tool Tolerances:

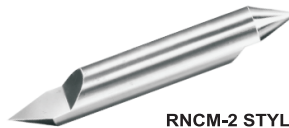
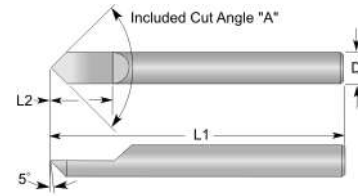
Shank Diameter:
-.0025mm to -.0076mm finish ground
Split Tolerance:
+.025mm -.000mm of tool center
Offset Point:
±.025mm
Overall Length:
±.38mm



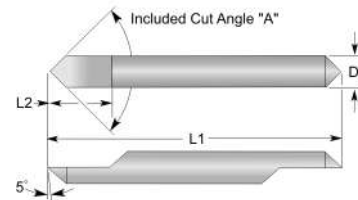
Relieved for
Right-Hand Cut



RNCM-1 STYLE



RNCM-2 STYLE



Coated Tools AVAILABLE!

AlTiN Add an "X" to end of
Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

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RNCM-1 Catalog No.	RNCM-2 Catalog No.	Included Cut Angle (A) degree	Split Length (L2) metric	Offset Point (Y) metric	Overall Length (L1) metric
2mm Shanks - D2					
RNCM-020-1		90°	4	0.10	38
3mm Shanks - D2					
RNCM-030-1	RNCM-030-2	90°	5	0.10	38
4mm Shanks - D2					
RNCM-040-1	RNCM-040-2	90°	6	0.10	50
5mm Shanks - D2					
RNCM-050-1	RNCM-050-2	90°	7	0.10	50
6mm Shanks - D2					
RNCM-060-1	RNCM-060-2	90°	8	0.10	57
8mm Shanks - D2					
RNCM-080-1	RNCM-080-2	90°	10	0.10	63
10mm Shanks - D2					
RNCM-100-1		90°	12	0.10	72
12mm Shanks - D2					
RNCM-120-1	RNCM-120-2	90°	14	0.10	83

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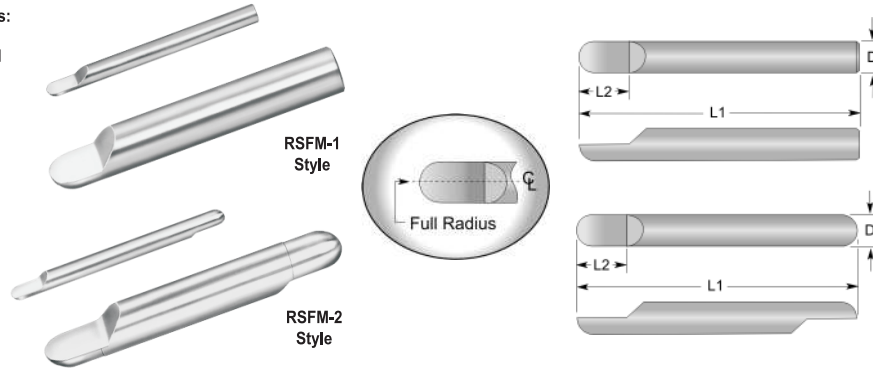
RSFM

Full Radius Tools with One or Two Split Ends
Metric



RSFM Metric Radius Tool Tolerances:

Shank Diameter:
-.0025mm to -.0076mm finish ground
Split Tolerance:
+.025mm -.000mm of tool center
Overall Length:
±.38mm
Split Length in proportion
to length of tool.



Relieved for
Right-Hand Cut

Coated Tools AVAILABLE!
SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

RSFM-1 Catalog No.	RSFM-2 Catalog No.	Split Length (L2) metric	Overall Length (L1) metric
2mm Shanks - D2			
RSFM-020-1	RSFM-020-2	4	38
3mm Shanks - D2			
RSFM-030-1	RSFM-030-2	5	38
4mm Shanks - D2			
RSFM-040-1	RSFM-040-2	6	50
5mm Shanks - D2			
RSFM-050-1	RSFM-050-2	7	50
6mm Shanks - D2			
RSFM-060-1	RSFM-060-2	8	57
8mm Shanks - D2			
RSFM-080-1	RSFM-080-2	10	63
10mm Shanks - D2			
RSFM-100-1	RSFM-100-2	12	72
12mm Shanks			
RSFM-120-1	RSFM-120-2	14	83

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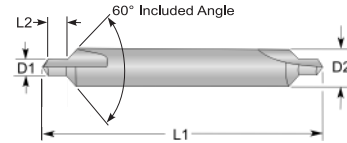
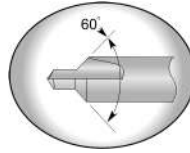
DCM

Straight Flute, Double Ended, Combined Drill and
60° Included Countersink / Metric



DCM Metric Combined Drill & Countersink Tool Tolerances:

Shank Diameter:
-.0025mm to -.0076mm finish ground
Pilot Drill Diameter:
+.08mm -.000mm
Drill Length:
±.38mm



Coated Tools AVAILABLE!
SEE PAGE 288

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DCM Catalog No.	Pilot Drill Diameter (D1)	Drill Length (L2)	Overall Length (L1)
	metric	metric	metric
3.15mm Shanks - D2			
DCM-005	0.50	0.8	35.0
DCM-008	0.80	1.1	
DCM-010	1.00	1.3	
DCM-013	1.25	1.6	
4mm Shanks - D2			
DCM-016	1.60	2.0	35.5
5mm Shanks - D2			
DCM-020	2.00	2.5	40.0
6.3mm Shanks - D2			
DCM-025	2.50	3.1	45.0
8mm Shanks - D2			
DCM-032	3.15	3.9	50.0
12.5mm Shanks - D2			
DCM-050	5.00	6.3	63.0

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Solid Carbide End Mills

Metric

MICRO 100[®]
super carbide tools

Proprietary Micro Grain Carbide
with the Highest Transverse Rupture Strength

MICRO 100[®]

are Unmatched in Toughness and
Application Versatility with
Superior Material Removal and Tool Life.



Hard Milling Miniature End Mills
Miniature End Mills
2, 3, 4, 5, & 6 Flute End Mills
End Mills for Hard Milling Applications
Stub Length End Mills
the "SHREDDER"
the "V-HEMOTH"
Long Length End Mills
Mold Making End Mills
Corner Rounding End Mills
Tapered End Mills
Drill Mills
Ball Nose End Mills
Spherical Ball Nose End Mills

K



**WILL NOT CHIP OR BREAK
UNDER NORMAL MACHINING CONDITIONS**



MICRO 100[®]
super carbide tools

End Mills

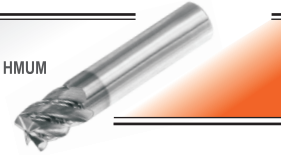
Square Nose / Metric

MICRO 100[®]
super carbide tools

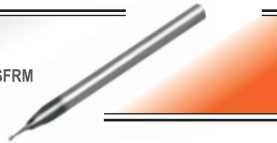
Miniature End Mills
Styles MEFM for Hard Milling
pages 234-238



Hard Milling End Mills
Styles HMCM, HMRM, HMSM, & HMUM
pages 251-254



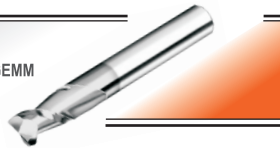
Miniature End Mills
Mold Making and Shrink Fit
Styles AMRM, RMEM, MMRM, & SFRM
pages 239-242



the "SHREDDER"
Styles SALM, SARM, SHLM, & SHRM
pages 255-255



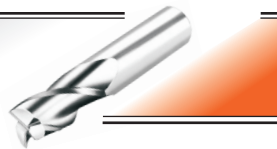
2/3/4 Flute End Mills
Styles AECM, AEMM, EMSM, & GEMM
pages 243-246



the "V-HEMOTH" 4 Flutes
Styles VHSM, VHMM & VLRM
pages 256-257



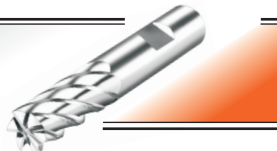
2/3/4 Flute End Mills
Styles ARMM & ASMM
pages 247-248



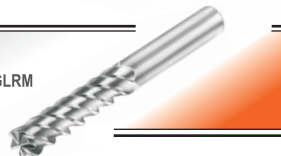
the "V-HEMOTH" 5 Flutes
Styles VHSM, VHMM & VLRM
pages 258-259



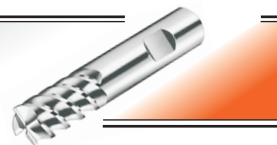
2/4/6 Flute End Mills
Style EMHM
page 249



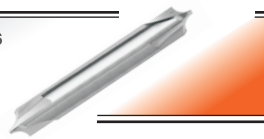
Long Length End Mills
Styles AELM, ALMM, GELM & GLRM
pages 260-263



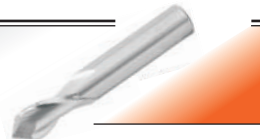
3/4 Flute End Mills
Style SDHM
pages 250



Corner Rounding End Mills
Style CREM
page 264



Drill Mills
Style DMM
pages 265



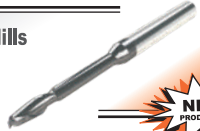
K

End Mills

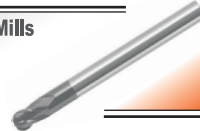
Ball Nose / Metric

MICRO 100[®]
super carbide tools

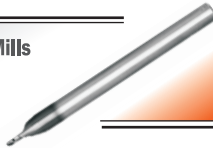
Miniature Ball Nose End Mills
Styles BEFM for Hard Milling
pages 266-267



Universal Ball Nose End Mills
For Hard Milling
Style HMBM
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Miniature Ball Nose End Mills
Styles BMRM & BMSM
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the V-HEMOTH Ball Nose End Mills
Style VHBM
pages 275



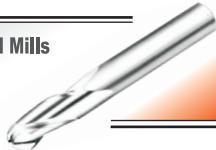
Miniature Ball Nose End Mills
Mold Making and Shrink Fit
Styles MMBM & SFBM
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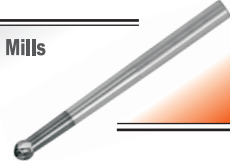
Long Length Ball Nose End Mills
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2/3/4 Flute Ball Nose End Mills
Style BEMM
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Spherical Ball Nose End Mills
Style SBMM
pages 278-279



Superior rupture strength
for exceptional machining
versatility.



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MICRO 100[®]
super carbide tools

super carbide tools
FOR HIGHER PERFORMANCE

MEFM-2

2 Flute, Extra Fine Carbide,
Hard Milling, Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

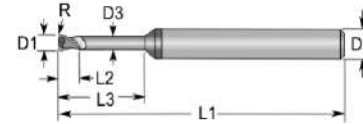
3 FLUTE
End Mills
AVAILABLE UPON REQUEST*



End Mills Coated with:
nACRO®
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288

MEFM Metric, Miniature, Hard Milling, End Mill

Tolerances:
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
+.0000mm -.0127mm
T.I.R. Maximum:
.0127mm



Side Milling Open End Slot Milling Plunging Open End Slot Milling Closed End Slot Milling

For current pricing and availability please visit our website at: www.micro100.com

MEFM-2 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Overall Reach (L3)	Neck Diameter (D3)	Tool Radius (R)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric	metric	metric
3mm Shanks - D2							
MEFM-002-030	MEFM-002-030K	0.2	0.3	0.3	0.2	0.00	38
MEFM-003-045	MEFM-003-045K	0.3	0.45	0.45	0.3		
MEFM-004-060	MEFM-004-060K	0.4	0.6	0.6	0.4		
MEFM-005-070-05	MEFM-005-070-05K	0.5	0.7	0.7	0.5	0.05	
MEFM-005-300-05	MEFM-005-300-05K			3.0	0.45		
MEFM-005-600-05	MEFM-005-600-05K			6.0			
MEFM-006-090	MEFM-006-090K	0.6	0.9	0.9	0.6	0.00	
MEFM-006-300	MEFM-006-300K			3.0	0.55		
MEFM-006-500	MEFM-006-500K			5.0			
MEFM-006-600	MEFM-006-600K			6.0	0.6		
MEFM-006-090-05	MEFM-006-090-05K			0.9		0.05	
MEFM-006-300-05	MEFM-006-300-05K			3.0			
MEFM-006-500-05	MEFM-006-500-05K			5.0			
MEFM-006-600-05	MEFM-006-600-05K			6.0			
MEFM-008-120	MEFM-008-120K			0.8	1.2	1.2	
MEFM-008-400	MEFM-008-400K	4.0	0.75				
MEFM-008-700	MEFM-008-700K	7.0					
MEFM-008-900	MEFM-008-900K	9.0	0.8				
MEFM-008-120-05	MEFM-008-120-05K	1.2				0.05	
MEFM-008-400-05	MEFM-008-400-05K	4.0					
MEFM-008-700-05	MEFM-008-700-05K	7.0					
MEFM-008-900-05	MEFM-008-900-05K	9.0					
MEFM-010-150	MEFM-010-150K	1.0	1.5			1.5	
MEFM-010-400	MEFM-010-400K			4.0	0.95		
MEFM-010-700	MEFM-010-700K			7.0			
MEFM-010-900	MEFM-010-900K			9.0	1.00		
MEFM-010-150-10	MEFM-010-150-10K			1.5		0.10	
MEFM-010-150-20	MEFM-010-150-20K			1.5			
MEFM-010-400-10	MEFM-010-400-10K			4.0	0.95	0.10	
MEFM-010-400-20	MEFM-010-400-20K					0.20	

*3 flute end mills available upon request.

K

MEFM-2

2 Flute, Extra Fine Carbide,
Hard Milling, Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

3 FLUTE
End Mills
AVAILABLE UPON REQUEST*



End Mills Coated with:
nACRo[®]
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288

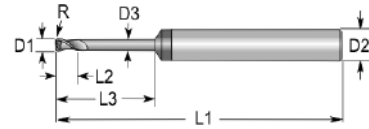
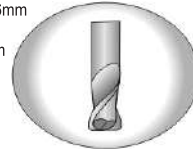
MEFM Metric, Miniature, Hard Milling, End Mill

Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
+.000mm -.0127mm

T.I.R. Maximum:
.013mm



Side Milling

Open End Slot Milling

Plunging

Open End Slot Milling

Closed End Slot Milling

For current pricing and availability please visit our website at: www.micro100.com

MEFM-2 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Overall Reach (L3)	Neck Diameter (D3)	Tool Radius (R)	Overall Length (L1)	
Uncoated	Coated	metric	metric	metric	metric	metric	metric	
3mm Shanks - D2								
MEFM-010-700-10	MEFM-010-700-10K	1.0	1.5	7.0	0.95	0.10	38	
MEFM-010-700-20	MEFM-010-700-20K					0.20		
MEFM-010-900-10	MEFM-010-900-10K			9.0		0.10		
MEFM-010-900-20	MEFM-010-900-20K					0.20		
MEFM-012-180	MEFM-012-180K	1.2	1.8	1.8	1.20	0.00	38	
MEFM-012-600	MEFM-012-600K			6.0				
MEFM-012-1000	MEFM-012-1000K			10.0		1.10		
MEFM-012-1200	MEFM-012-1200K			12.0				
MEFM-012-180-10	MEFM-012-180-10K				1.20	0.10		
MEFM-012-180-20	MEFM-012-180-20K					0.20		
MEFM-012-600-10	MEFM-012-600-10K					0.10		
MEFM-012-600-20	MEFM-012-600-20K					0.20		
MEFM-012-1000-10	MEFM-012-1000-10K					0.10		
MEFM-012-1000-20	MEFM-012-1000-20K					0.20		
MEFM-012-1200-10	MEFM-012-1200-10K					0.10		
MEFM-012-1200-20	MEFM-012-1200-20K					0.20		
MEFM-015-220	MEFM-015-220K	1.5	2.2	2.2	1.50	0.00	50	
MEFM-015-600	MEFM-015-600K			6.0				
MEFM-015-1000	MEFM-015-1000K			10.0	1.40			
MEFM-015-1200	MEFM-015-1200K			12.0				
MEFM-015-1500	MEFM-015-1500K			15.0				
MEFM-015-2000	MEFM-015-2000K			20.0				
MEFM-015-220-15	MEFM-015-220-15K				1.50	0.15		
MEFM-015-220-25	MEFM-015-220-25K					0.25		
MEFM-015-600-15	MEFM-015-600-15K					0.15		
MEFM-015-600-25	MEFM-015-600-25K					0.25		
MEFM-015-1000-15	MEFM-015-1000-15K		0.15					
MEFM-015-1000-25	MEFM-015-1000-25K		0.25					
MEFM-015-1200-15	MEFM-015-1200-15K		0.15					
MEFM-015-1200-25	MEFM-015-1200-25K		0.25					
MEFM-015-1500-15	MEFM-015-1500-15K		0.15					
MEFM-015-1500-25	MEFM-015-1500-25K		0.25					

*3 flute end mills available upon request.



super carbide tools
FOR HIGHER PERFORMANCE

MEFM-2

2 Flute, Extra Fine Carbide,
Hard Milling, Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

3 FLUTE
End Mills
AVAILABLE UPON REQUEST*



End Mills Coated with:

nACRo

(Nanotech "CR")

OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288

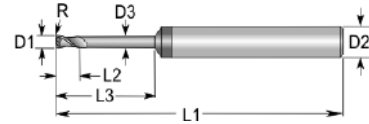
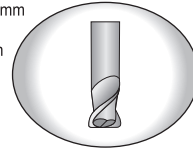
MEFM Metric, Miniature, Hard Milling, End Mill

Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
+.000mm -.0127mm

T.I.R. Maximum:
.0127mm



Side Milling

Open End Slot Milling

Plunging

Open End Slot Milling

Closed End Slot Milling

For current pricing and availability please visit our website at: www.micro100.com

MEFM-2 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Overall Reach (L3)	Neck Diameter (D3)	Tool Radius (R)	Overall Length (L1)		
Uncoated	Coated	metric	metric	metric	metric	metric	metric		
3mm Shanks - D2									
MEFM-020-250	MEFM-020-250K	2.0	2.5	2.5	2.00	0.00	38		
MEFM-020-700	MEFM-020-700K			7.0	1.90				
MEFM-020-1200	MEFM-020-1200K			12.0					
MEFM-020-1600	MEFM-020-1600K			16.0					
MEFM-020-2000	MEFM-020-2000K			20.0					
MEFM-020-2500	MEFM-020-2500K			25.0	2.00	0.15	50		
MEFM-020-250-15	MEFM-020-250-15K			2.5				0.25	
MEFM-020-250-25	MEFM-020-250-25K			2.5				0.15	38
MEFM-020-700-15	MEFM-020-700-15K			7.0				0.25	
MEFM-020-700-25	MEFM-020-700-25K			7.0				0.15	
MEFM-020-1200-15	MEFM-020-1200-15K			12.0	0.25				
MEFM-020-1200-25	MEFM-020-1200-25K			12.0	0.15	1.90	50		
MEFM-020-1600-15	MEFM-020-1600-15K			16.0	0.15				
MEFM-020-1600-25	MEFM-020-1600-25K			16.0	0.25				
MEFM-020-2000-15	MEFM-020-2000-15K			20.0	0.10				
MEFM-020-2000-25	MEFM-020-2000-25K	20.0	0.25	2.50	0.15	50			
MEFM-020-2500-15	MEFM-020-2500-15K	25.0	0.25						
MEFM-020-2500-25	MEFM-020-2500-25K	25.0	0.25						
MEFM-025-300	MEFM-025-300K	2.5	3.0	3.0	2.50	0.00	38		
MEFM-025-1000	MEFM-025-1000K			10.0	2.40				
MEFM-025-1500	MEFM-025-1500K			15.0					
MEFM-025-2000	MEFM-025-2000K			20.0					
MEFM-025-2500	MEFM-025-2500K			25.0				2.50	0.15
MEFM-025-3000	MEFM-025-3000K			30.0	0.25				
MEFM-025-300-15	MEFM-025-300-15K			3.0	0.15	38			
MEFM-025-300-25	MEFM-025-300-25K			3.0	0.25				
MEFM-025-1000-15	MEFM-025-1000-15K			10.0	0.15				
MEFM-025-1000-25	MEFM-025-1000-25K			10.0	0.25				
MEFM-025-1500-15	MEFM-025-1500-15K			15.0	0.15	2.40	50		
MEFM-025-1500-25	MEFM-025-1500-25K			15.0	0.25				
MEFM-025-2000-15	MEFM-025-2000-15K			20.0	0.15				
MEFM-025-2000-25	MEFM-025-2000-25K			20.0	0.25				

*3 flute end mills available upon request.

MEFM-2

2 Flute, Extra Fine Carbide,
Hard Milling, Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

3 FLUTE
End Mills
AVAILABLE UPON REQUEST*

MACHINE HARDENED MATERIALS
45-68 Rc!

EXTRA FINE CARBIDE
ENGINEERED FOR HARD MILLING APPLICATIONS!

End Mills Coated with:
nACRo[®]
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST. SEE PAGE 288

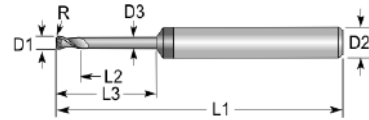
MEFM Metric, Miniature, Hard Milling, End Mill

Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
+.000mm -.0127mm

T.I.R. Maximum:
.0127mm



Side Milling

Open End Slot Milling

Plunging

Open End Slot Milling

Closed End Slot Milling

For current pricing and availability please visit our website at: www.micro100.com

MEFM-2 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Overall Reach (L3)	Neck Diameter (D3)	Tool Radius (R)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric	metric	metric
3mm Shanks - D2							
MEFM-025-2500-15	MEFM-025-2500-15K	2.5	3.0	25.0	2.40	0.15	50
MEFM-025-2500-25	MEFM-025-2500-25K			30.0		0.25	
MEFM-025-3000-15	MEFM-025-3000-15K			60	0.15		
MEFM-025-3000-25	MEFM-025-3000-25K				0.25		
6mm Shanks - D2							
MEFM-030-300	MEFM-030-300K	3.0	3.0	3.0	2.90	0.00	57
MEFM-030-1000	MEFM-030-1000K			10.0			
MEFM-030-1500	MEFM-030-1500K			15.0			
MEFM-030-2500	MEFM-030-2500K			25.0			
MEFM-030-3000	MEFM-030-3000K			20.0			
MEFM-030-300-15	MEFM-030-300-15K			3.0	3.00	0.15	
MEFM-030-300-25	MEFM-030-300-25K			10.0		0.25	
MEFM-030-1000-15	MEFM-030-1000-15K			2.90	0.15		
MEFM-030-1000-25	MEFM-030-1000-25K				0.25		
MEFM-030-1500-15	MEFM-030-1500-15K				15.0	0.15	
MEFM-030-1500-25	MEFM-030-1500-25K	0.25					
MEFM-030-2500-15	MEFM-030-2500-15K	25.0	0.15				
MEFM-030-2500-25	MEFM-030-2500-25K	0.25					
MEFM-030-3000-15	MEFM-030-3000-15K	30.0	0.15				
MEFM-030-3000-25	MEFM-030-3000-25K		0.25				
MEFM-040-500	MEFM-040-500K	4.0	5.0	5.0	4.00	0.00	57
MEFM-040-1500	MEFM-040-1500K			15.0			
MEFM-040-2500	MEFM-040-2500K			25.0			
MEFM-040-3000	MEFM-040-3000K			30.0			
MEFM-040-500-25	MEFM-040-500-25K			5.0	4.00	0.25	
MEFM-040-500-50	MEFM-040-500-50K					0.50	
MEFM-040-500-100	MEFM-040-500-100K			1.00			
MEFM-040-1500-25	MEFM-040-1500-25K			15.0	3.90	0.25	
MEFM-040-1500-50	MEFM-040-1500-50K					0.50	
MEFM-040-1500-100	MEFM-040-1500-100K					1.00	

*3 flute end mills available upon request.

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super carbide tools
FOR HIGHER PERFORMANCE

MEFM-2

2 Flute, Extra Fine Carbide,
Hard Milling, Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

3 FLUTE
End Mills
AVAILABLE UPON REQUEST*



End Mills Coated with:
nACRO®
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288

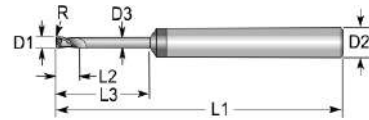
MEFM Metric, Miniature, Hard Milling, End Mill

Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
+.000mm -.0127mm

T.I.R. Maximum:
.0127mm



Side Milling

Open End Slot Milling

Plunging

Open End Slot Milling

Closed End Slot Milling

For current pricing and availability please visit our website at: www.micro100.com

MEFM-2 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Overall Reach (L3)	Neck Diameter (D3)	Tool Radius (R)	Overall Length (L1)	
Uncoated	Coated	metric	metric	metric	metric	metric	metric	
6mm Shanks - D2								
MEFM-040-2500-25	MEFM-040-2500-25K	4.0	5.0	25.0	3.90	0.25	57	
MEFM-040-2500-50	MEFM-040-2500-50K					0.50		
MEFM-040-2500-100	MEFM-040-2500-100K					1.00		
MEFM-040-3000-25	MEFM-040-3000-25K			30.0		0.25		
MEFM-040-3000-50	MEFM-040-3000-50K					0.50		
MEFM-040-3000-100	MEFM-040-3000-100K					1.00		
MEFM-050-600	MEFM-050-600K	5.0	6.0	6.0	5.00	0.00		
MEFM-050-1500	MEFM-050-1500K			15.0				
MEFM-050-2500	MEFM-050-2500K			25.0				
MEFM-050-3000	MEFM-050-3000K			30.0	4.90			0.25
MEFM-050-600-25	MEFM-050-600-25K			6.0				0.50
MEFM-050-600-50	MEFM-050-600-50K							1.00
MEFM-050-600-100	MEFM-050-600-100K				15.0	0.25		
MEFM-050-1500-25	MEFM-050-1500-25K			0.50				
MEFM-050-1500-50	MEFM-050-1500-50K			1.00				
MEFM-050-1500-100	MEFM-050-1500-100K			25.0		0.25		
MEFM-050-2500-25	MEFM-050-2500-25K					0.50		
MEFM-050-2500-50	MEFM-050-2500-50K					1.00		
MEFM-050-2500-100	MEFM-050-2500-100K	30.0	30.0	0.25				
MEFM-050-3000-25	MEFM-050-3000-25K			0.50				
MEFM-050-3000-50	MEFM-050-3000-50K			0.50				
MEFM-050-3000-100	MEFM-050-3000-100K			1.00				

*3 flute end mills available upon request.



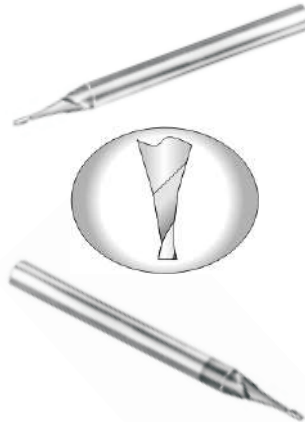
AMRM-2 / RMEM-2

2 Flute, Center Cutting, 30° Helix,
Miniature End Mills / Metric



Featuring:

- These precision miniature end mills are ideal for finishing and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

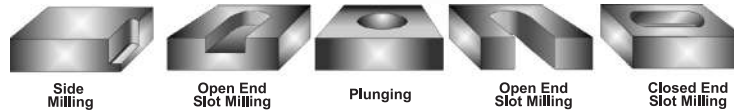
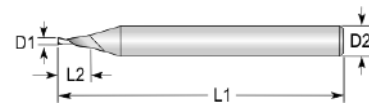


AMRM Metric Miniature End Mill Tolerances:

Shank Diameter:
-0.0025mm to -0.0076mm
Cutter Diameter:
0.2mm - 3mm: +.000mm -.014mm
3.5mm: +.000mm -.018mm
T.I.R. Maximum:
0.013mm

Coated End Mills AVAILABLE!
AlTiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

AMRM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric	RMEM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
4mm Shanks - D2				3mm Shanks - D2			
AMRM-002-2	0.2	0.4	50	RMEM-002-2	0.2	0.4	50
AMRM-003-2	0.3	0.9		RMEM-003-2	0.3	0.9	
AMRM-004-2	0.4	1.2		RMEM-004-2	0.4	1.2	
AMRM-005-2	0.5	1.5		RMEM-005-2	0.5	1.5	
AMRM-006-2	0.6	1.8		RMEM-006-2	0.6	1.8	
AMRM-007-2	0.7	2.1		RMEM-007-2	0.7	2.1	
AMRM-008-2	0.8	2.4		RMEM-008-2	0.8	2.4	
AMRM-009-2	0.9	2.7		RMEM-009-2	0.9	2.7	
AMRM-010-2	1.0	3.0		RMEM-010-2	1.0	3.0	
AMRM-011-2	1.1	3.3		RMEM-011-2	1.1	3.3	
AMRM-012-2	1.2	3.8		RMEM-012-2	1.2	3.8	
AMRM-013-2	1.3	3.9		RMEM-013-2	1.3	3.9	
AMRM-014-2	1.4	4.2		RMEM-014-2	1.4	4.2	
AMRM-015-2	1.5			RMEM-015-2	1.5		
AMRM-016-2	1.6	4.8		RMEM-016-2	1.6	4.8	
AMRM-017-2	1.7	5.1		RMEM-017-2	1.7	5.1	
AMRM-018-2	1.8	5.3		RMEM-018-2	1.8	5.3	
AMRM-019-2	1.9	5.7		RMEM-019-2	1.9	5.7	
AMRM-020-2	2.0	6.0		RMEM-020-2	2.0	6.0	
AMRM-025-2	2.5	8.0		RMEM-025-2	2.5	8.0	
AMRM-030-2	3.0	9.0					



super carbide tools
FOR HIGHER PERFORMANCE

MMRM-2

2 Flute, Center Cutting, 30° Helix,
Mold Making End Mills / Metric



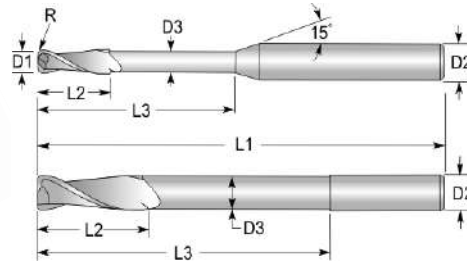
Featuring:

- These high precision end mills feature multiple corner radii and multiple neck length dimensions in a wide range of cutting diameters to provide the best available geometry for finishing cuts in mold making applications.
- A positive rake angle supports maximum cutting performance in medium and hard materials for conventional side milling and slotting.



MMRM Metric Mold Making End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.5mm - 1.5mm: +.000mm -.014mm
Tool Radius:
±.013mm
T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

MMRM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Tool Radius (R) metric	Overall Length (L1) metric
4mm Shanks - D2						
MMRM-005-5	0.5	0.5	.048	5	0.05	50
MMRM-005-10				10		
MMRM-006-5	0.6	0.6	.058	5		
MMRM-006-12				12		
MMRM-007-5	0.7	0.7	.068	5		
MMRM-007-12				12		
MMRM-008-5	0.8	0.8	.078	5		
MMRM-008-10				10		
MMRM-008-16				16		
MMRM-009-5	0.9	0.9	.088	5		
MMRM-009-10				10		
MMRM-009-16				16		
6mm Shanks - D2						
MMRM-010-5	1.0	1.0	.095	5	0.10	57
MMRM-010-8				8		
MMRM-010-10				10		
MMRM-010-12				12		
MMRM-010-15				15		
MMRM-010-20				20		
MMRM-012-7	1.2	1.2	1.15	7		
MMRM-012-15				15		
MMRM-012-20				20		
MMRM-015-7	1.5	1.5	1.45	7		
MMRM-015-15				15		
MMRM-015-25				25		
					0.15	72

K



MMRM-2

2 Flute, Center Cutting, 30° Helix,
Mold Making End Mills / Metric



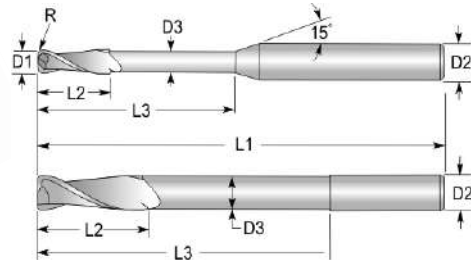
Featuring:

- These high precision end mills feature multiple corner radii and multiple neck length dimensions in a wide range of cutting diameters to provide the best available geometry for finishing cuts in mold making applications.
- A positive rake angle supports maximum cutting performance in medium and hard materials for conventional side milling and slotting.



MMRM Metric Mold Making End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
2mm - 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.022mm
12mm: +.000mm -.027mm
Tool Radius:
±.013mm
T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

MMRM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Tool Radius (R) metric	Overall Length (L1) metric
2-Flute						
6mm Shanks - D2						
MMRM-020-7	2	2	1.90	7	0.20	57
MMRM-020-15				15		
MMRM-020-30				30		
MMRM-030-8	3	3	2.90	8	0.25	57
MMRM-030-15				15		
MMRM-030-30				30		
MMRM-040-9	4	4	3.80	9	0.25	57
MMRM-040-15				15		
MMRM-040-30				30		
MMRM-050-10	5	5	4.80	10	0.50	57
MMRM-050-15				15		
MMRM-050-30				30		
MMRM-060-11	6	6	5.80	11	1.00	57
MMRM-060-16				16		
MMRM-060-30				30		
8mm Shanks - D2						
MMRM-080-16	8	8	7.80	16	1.00	63
MMRM-080-25				25		72
10mm Shanks - D2						
MMRM-100-20	10	10	9.80	20	1.00	72
MMRM-100-25				25		
12mm Shanks - D2						
MMRM-120-25	12	12	11.80	25	1.50	83

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super carbide tools
FOR HIGHER PERFORMANCE

SFRM-2

2 Flute, Center Cutting, 30° Helix,
HSC Shrink Fit End Mills / Metric



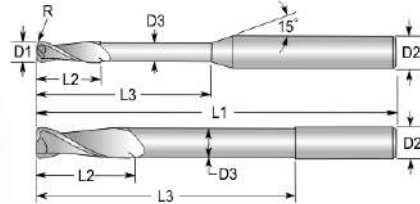
Featuring:

- These highest precision finishing end mills are suitable for HSC applications and are engineered for shrink-fit tool holding.
- A positive rake angle supports maximum cutting performance in soft, medium and hard materials for conventional side milling and slotting.



SFRM Metric HSC Shrink Fit End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.2mm - 1.4mm+.000mm -.014mm
Tool Radius:
±.013mm
T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

For current pricing and availability please visit our website at: www.micro100.com

SFRM-2 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Reduced Neck Diameter (D3)	Reduced Neck Length (L3)	Radius	Overall Length (L1)
2-Flute	metric	metric	metric	metric	metric	metric
6mm Shanks - D2						
SFRM-002-0	0.2	0.3	0.00	0.0	0.0	57
SFRM-003-0	0.3	0.4				
SFRM-004-0	0.4	0.5	0.35	1.2	0.0	
SFRM-004-1						
SFRM-005-1	0.5	0.6	0.45	1.6	0.1	
SFRM-005-3		0.5		3.3		
SFRM-005-5		0.5		5.1		
SFRM-006-2	0.6	0.7	0.55	1.7	0.1	
SFRM-006-4		0.6		4.5		
SFRM-006-6		0.6		6.2		
SFRM-008-2	0.8	1.0	0.75	2.5	0.1	
SFRM-008-5		0.8		5.2		
SFRM-008-8		0.8		8.0		
SFRM-010-8	1.0	1.3	0.95	8.0	0.1	
SFRM-012-3	1.2	1.5	1.15	3.5	0.1	
SFRM-012-8		1.2		8.0		
SFRM-014-3	1.4	1.8	1.35	3.8	0.1	
SFRM-014-15		2.3		15.0		
SFRM-015-4	1.5	1.9	1.45	4.9	0.1	
SFRM-015-9		1.5		9.5		
SFRM-016-5	1.6	2.0	1.55	5.0	0.1	
SFRM-016-22		2.0		22.0		
SFRM-018-5	1.8	2.3	1.75	5.3	0.1	
SFRM-020-5	2.0	2.5	1.95	5.5	0.1	
SFRM-025-6	2.5	3.0	2.40	6.0	0.2	
SFRM-025-9		2.5		9.5		
SFRM-030-8	3.0	4.0	2.90	8.0	0.2	
SFRM-030-15				15.0		
SFRM-035-9	3.5	4.5	3.40	9.5	0.2	
SFRM-040-10	4.0	5.0	3.90	10.0	0.2	
SFRM-040-20				20.0		
SFRM-050-11	5.0	6.0	4.90	11.0	0.2	
SFRM-050-25				25.0		
SFRM-060-12	6.0	7.5	5.90	12.5	0.2	
SFRM-060-25				25.0		

K

AECM-2/-3/-4

2, 3, & 4 Flute, Center Cutting, 30° Helix End Mills with Corner Radius / Metric



Featuring:

- These universal application type end mills feature a slightly increased flute and overall length for greatest versatility
- Engineered with various corner radii per cutting diameter, these end mills are **ideally suited for heavier cuts in medium and hard materials.**



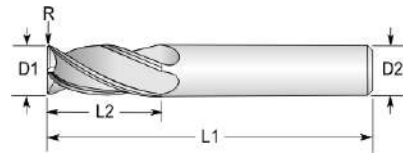
AECM Metric End Mill Tolerances:

Shank Diameter: -.0025mm to -.0076mm
 Cutter Diameter:
 1mm - 3mm: +.000mm -.014mm
 4mm - 6mm: +.000mm -.018mm
 8mm - 10mm: +.000mm -.036mm
 12mm: +.000mm -.043mm
 Corner Radius: ±.013mm
 T.I.R. Maximum: .013mm

Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

AECM-2 Catalog No.	AECM-3 Catalog No.	AECM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Overall Length (L1)
2-Flute	3-Flute	4-Flute	metric	metric	metric	metric
4mm Shanks - D2						
AECM-0101-2		AECM-0101-4	1	4	0.1	50
AECM-0102-2	AECM-0102-3	AECM-0102-4			0.2	
	AECM-0202-3	AECM-0202-4	2	5	0.5	
	AECM-0205-3	AECM-0205-4				
6mm Shanks - D2						
AECM-0305-2	AECM-0302-3	AECM-0305-4	3	8	0.2	57
	AECM-0402-3	AECM-0402-4	4	11	0.5	
	AECM-0405-3	AECM-0405-4			0.2	
	AECM-0502-3	AECM-0502-4	5	16	0.5	
	AECM-0510-3	AECM-0505-4			1.0	
AECM-0603-2		AECM-0603-4			0.3	
AECM-0605-2	AECM-0605-3	AECM-0605-4	6		0.5	
AECM-0610-2		AECM-0610-4			1.0	
8mm Shanks - D2						
AECM-0810-2	AECM-0810-3	AECM-0805-4	8	22	0.5	63
		AECM-0810-4			1.0	
		AECM-0815-4			1.5	
10mm Shanks - D2						
AECM-1005-2	AECM-1005-3	AECM-1005-4	10	25	0.5	72
		AECM-1010-4			1.0	
AECM-1015-2	AECM-1015-3	AECM-1015-4			1.5	
12mm Shanks - D2						
AECM-1205-2		AECM-1205-4	12	30	0.5	83
AECM-1210-2	AECM-1210-3	AECM-1210-4			1.0	
		AECM-1215-4			1.5	

K



super carbide tools
FOR HIGHER PERFORMANCE

AEMM-2/-3/-4

2, 3, & 4 Flute, Center Cutting,
30° Helix End Mills / Metric



Featuring:

- These universal application type end mills feature a slightly increased flute and overall length for greatest versatility.
- The conventional tool geometry supports applications in a wide scope of different materials, ranging from soft to hard.

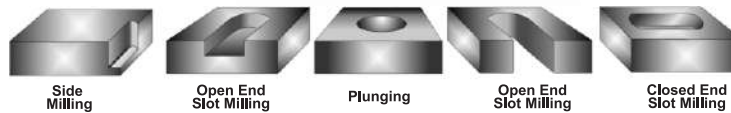
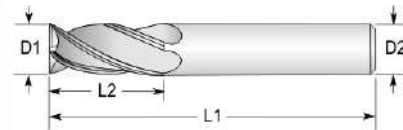


AEMM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
1mm - 3mm: +.000mm -.014mm
3.5mm - 6mm: +.000mm -.018mm
7mm - 10mm: +.000mm -.022mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

AEMM-2 Catalog No.	AEMM-3 Catalog No.	AEMM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2)	Overall Length (L1) metric
4mm Shanks - D2					
AEMM-010-2	AEMM-010-3	AEMM-010-4	1.0	4	50
AEMM-015-2	AEMM-015-3	AEMM-015-4	1.5		
AEMM-020-2	AEMM-020-3	AEMM-020-4	2.0	5	
AEMM-025-2	AEMM-025-3	AEMM-025-4	2.5	6	
6mm Shanks - D2					
AEMM-030-2	AEMM-030-3	AEMM-030-4	3.0	8	57
AEMM-035-2	AEMM-035-3	AEMM-035-4	3.5	10	
AEMM-040-2	AEMM-040-3	AEMM-040-4	4.0	11	
	AEMM-045-3	AEMM-045-4	4.5		
AEMM-050-2	AEMM-050-3	AEMM-050-4	5.0	16	
AEMM-055-2	AEMM-055-3	AEMM-055-4	5.5		
AEMM-060-2	AEMM-060-3	AEMM-060-4	6.0		
8mm Shanks - D2					
	AEMM-070-3	AEMM-070-4	7.0	22	63
AEMM-080-2	AEMM-080-3	AEMM-080-4	8.0		
10mm Shanks - D2					
AEMM-090-2			9.0	22	72
AEMM-100-2	AEMM-100-3	AEMM-100-4	10.0		
12mm Shanks - D2					
AEMM-110-2	AEMM-110-3	AEMM-110-4	11.0	30	83
AEMM-120-2	AEMM-120-3	AEMM-120-4	12.0		
14mm Shanks - D2					
AEMM-140-2	AEMM-140-3	AEMM-140-4	14.0	35	83
16mm Shanks - D2					
AEMM-160-2	AEMM-160-3	AEMM-160-4	16.0	35	92
18mm Shanks - D2					
AEMM-180-2	AEMM-180-3		18.0	45	92
20mm Shanks - D2					
	AEMM-200-3	AEMM-200-4	20.0	45	104
25mm Shanks - D2					
AEMM-250-2	AEMM-250-3	AEMM-250-4	25.0	50	127

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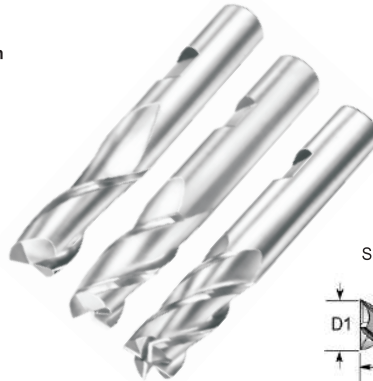
EMSM-2/-3/-4

2, 3, & 4 Flute, Center Cutting,
30° Helix End Mills / Metric



Featuring:

- These end mills feature a +.025mm plus tolerance on the cutting diameter.



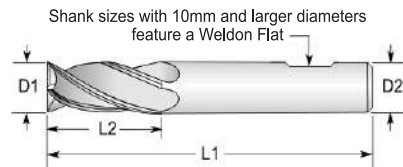
EMSM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
+.025mm - .000mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AlTiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

EMSM-2 Catalog No.	EMSM-3 Catalog No.	EMSM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
2-Flute	3-Flute	4-Flute	metric	metric	metric
2mm Shanks - D2					
EMSM-020-2	EMSM-020-3	EMSM-020-4	2	10	38
3mm Shanks - D2					
EMSM-030-2	EMSM-030-3	EMSM-030-4	3	15	38
4mm Shanks - D2					
EMSM-040-2	EMSM-040-3	EMSM-040-4	4	18	50
5mm Shanks - D2					
EMSM-050-2	EMSM-050-3		5	18	50
6mm Shanks - D2					
EMSM-060-2	EMSM-060-3	EMSM-060-4	6	18	57
8mm Shanks - D2					
EMSM-080-2	EMSM-080-3	EMSM-080-4	8	22	63
10mm Shanks - D2					
EMSM-100-2	EMSM-100-3		10	25	72
12mm Shanks - D2					
EMSM-120-2	EMSM-120-3	EMSM-120-4	12	30	83
14mm Shanks - D2					
EMSM-140-2	EMSM-140-3	EMSM-140-4	14	35	83
16mm Shanks - D2					
EMSM-160-2	EMSM-160-3	EMSM-160-4	16	35	92
18mm Shanks - D2					
EMSM-180-2	EMSM-180-3	EMSM-180-4	18	45	92
20mm Shanks - D2					
EMSM-200-2	EMSM-200-3	EMSM-200-4	20	45	104

K



super carbide tools
FOR HIGHER PERFORMANCE

GEMM-2/-3/-4

2, 3, & 4 Flute, Center Cutting,
30° Helix End Mills / Metric



Featuring:

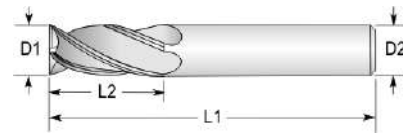
- These universal application type end mills feature a slightly increased flute and overall length for greatest versatility.
- The conventional tool geometry supports applications in a wide scope of different materials, ranging from soft to hard.



GEMM Metric End Mill Tolerances:
 Shank Diameter:
 -.0025mm to -.0076mm
 Cutter Diameter:
 1mm - 3mm: +.000mm -.04mm
 4mm - 6mm: +.000mm -.018mm
 8mm - 10mm: +.000mm -.036mm
 12mm - 18mm: +.000mm -.043mm
 20mm: +.000mm -.052mm
 T.I.R. Maximum:
 .013mm

Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

GEMM-2 Catalog No.	GEMM-3 Catalog No.	GEMM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2)		Overall Length (L1) metric
				2/3 flute	4 flute	
3mm Shanks - D2						
GEMM-010-2	GEMM-010-3	GEMM-010-4	1	3	3	38
GEMM-020-2	GEMM-020-3	GEMM-020-4	2	6	7	
GEMM-030-2	GEMM-030-3	GEMM-030-4	3	7	8	
4mm Shanks - D2						
GEMM-040-2	GEMM-040-3	GEMM-040-4	4	8	11	50
5mm Shanks - D2						
GEMM-050-2		GEMM-050-4	5	10	13	50
6mm Shanks - D2						
GEMM-060-2	GEMM-060-3	GEMM-060-4	6	10	13	57
8mm Shanks - D2						
GEMM-080-2	GEMM-080-3	GEMM-080-4	8	16	19	63
10mm Shanks - D2						
GEMM-100-2	GEMM-100-3	GEMM-100-4	10	19	22	72
12mm Shanks - D2						
GEMM-120-2	GEMM-120-3	GEMM-120-4	12	22	26	83
14mm Shanks - D2						
GEMM-140-2	GEMM-140-3	GEMM-140-4	14	22	26	83
16mm Shanks - D2						
GEMM-160-2	GEMM-160-3	GEMM-160-4	16	26	32	92
18mm Shanks - D2						
GEMM-180-2	GEMM-180-3	GEMM-180-4	18	26	32	92
20mm Shanks - D2						
	GEMM-200-3	GEMM-200-4	20	32	38	104

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ARMM-2/-3/-5

2, 3, & 5 Flute, Center Cutting,
45° Helix End Mills / Metric



Featuring:

- These end mills feature a 45° helix for **roughing, finishing, and slotting in medium to hard steels, stainless steels, and high temperature alloys.**
- The high helix angle **aids in reducing chatter and helps to increase metal removal rates, while providing the highest surface finish quality.**



ARMM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
1mm - 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.022mm
12mm - 18mm: +.000mm -.027mm
20mm: +.000mm -.033mm

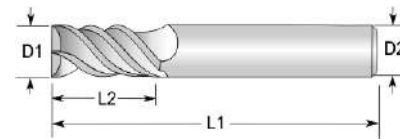
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

ZrN Add an **"S"** to end of Catalog No.
(ONLY FOR 2/3 FLUTED END MILLS)

AlTiN Add an **"X"** to end of Catalog No.
(ONLY FOR 5 FLUTED END MILLS)

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

ARMM-2 Catalog No.	ARMM-3 Catalog No.	ARMM-5 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
4mm Shanks - D2					
ARMM-010-2			1	3	50
ARMM-020-2			2	6	
6mm Shanks - D2					
ARMM-030-2		ARMM-030-5	3	10	57
ARMM-040-2		ARMM-040-5	4	15	
ARMM-050-2		ARMM-050-5	5	20	
ARMM-060-2	ARMM-060-3	ARMM-060-5	6		
8mm Shanks - D2					
ARMM-080-2	ARMM-080-3	ARMM-080-5	8	25	63
10mm Shanks - D2					
ARMM-100-2	ARMM-100-3	ARMM-100-5	10	25	72
12mm Shanks - D2					
ARMM-120-2	ARMM-120-3	ARMM-120-5	12	30	83
14mm Shanks - D2					
	ARMM-140-3	ARMM-140-5	14	30	83
16mm Shanks - D2					
ARMM-160-2	ARMM-160-3	ARMM-160-5	16	35	92
18mm Shanks - D2					
ARMM-180-2	ARMM-180-3	ARMM-180-5	18	45	92
20mm Shanks - D2					
ARMM-200-2	ARMM-200-3	ARMM-200-5	20	45	104

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super carbide tools
FOR HIGHER PERFORMANCE

ASMM-2/-5

2 & 5 Flute, Center Cutting,
45° Helix End Mills / Metric



Featuring:

- These high performance end mills feature a 45° helix and are engineered for high speed cutting in aluminum, nonferrous and soft materials.
- The special flute geometry provides an extremely smooth and silent cutting action for an exceptional surface finish.



ASMM Metric End Mill Tolerances:

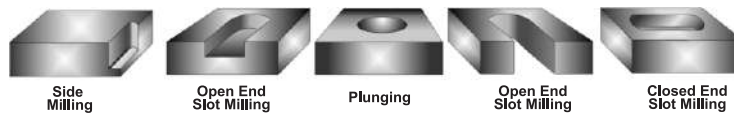
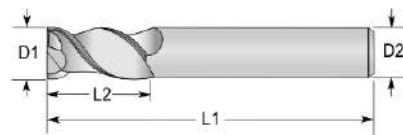
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
1mm - 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.022mm
12mm - 18mm: +.000mm -.027mm
20mm: +.000mm -.033mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

ZrN Add an "S" to end of Catalog No.
(ONLY FOR 2/3 FLUTED END MILLS)

AlTiN Add an "X" to end of Catalog No.
(ONLY FOR 5 FLUTED END MILLS)

OTHER COATINGS UPON REQUEST, SEE PAGES 288



For current pricing and availability please visit our website at: www.micro100.com

ASMM-2 Catalog No.	ASMM-5 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
2-Flute	5-Flute	metric	metric	metric
4mm Shanks - D2				
ASMM-020-2		2	4	50
6mm Shanks - D2				
ASMM-030-2	ASMM-030-5	3	6	57
ASMM-040-2	ASMM-040-5	4	8	
	ASMM-050-5	5	10	
ASMM-060-2	ASMM-060-5	6		
8mm Shanks - D2				
ASMM-080-5	ASMM-080-5	8	16	63
10mm Shanks - D2				
ASMM-100-5	ASMM-100-5	10	19	72
12mm Shanks - D2				
ASMM-120-2	ASMM-120-5	12	22	83

K

EMHM-2/-4/-6

2, 4, & 6 Flute, Center Cutting,
38° Helix End Mills / Metric



Featuring:

- These 38° helix end mills provide a superior work piece finish in all milling applications.
- These end mills are very suitable for milling steels, stainless steels, and heat treated materials.
- The 6 flute geometry provides excellent shearing action, resulting in the highest dimensional accuracy and reduced work piece distortion, especially in thin wall slotting applications.



EMHM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

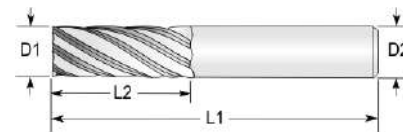
Cutter Diameter:
4mm - 6mm: +.000mm -.030mm
8mm - 10mm: +.000mm -.036mm
12mm - 18mm: +.000mm -.043mm
20mm: +.000mm -.052mm

T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AlTiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

EMHM-2 Catalog No.	EMHM-4 Catalog No.	EMHM-6 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
2 Flute	4 Flute	6 Flute	metric	metric	metric
4mm Shanks - D2					
	EMHM-030-4 EMHM-040-4		3 4	8 12	50
6mm Shanks - D2					
EMHM-050-2	EMHM-050-4		5	15	57
EMHM-060-2	EMHM-060-4	EMHM-060-6	6	18	
8mm Shanks - D2					
EMHM-080-2	EMHM-080-4	EMHM-080-6	8	20	63
10mm Shanks - D2					
	EMHM-100-4	EMHM-100-6	10	22	72
12mm Shanks - D2					
EMHM-120-2	EMHM-120-4	EMHM-120-6	12	25	83
14mm Shanks - D2					
		EMHM-140-6	14	30	83
16mm Shanks - D2					
		EMHM-160-6	16	35	92
18mm Shanks - D2					
		EMHM-180-6	18	45	92
20mm Shanks - D2					
	EMHM-200-4	EMHM-200-6	20	45	104

K



super carbide tools
FOR HIGHER PERFORMANCE

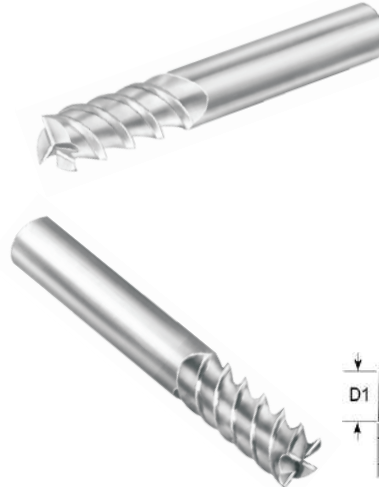
SDHM-3/-4

3 & 4 Flute,
60° Helix End Mills / Metric

MICRO 100®
super carbide tools

Featuring:

- These 60° high helix end mills generate the highest metal removal rate in most applications.
- The 3 flute geometry is ideal for roughing and slotting in all mild steels and stainless steels.
- The 4 flute geometry is ideally suited for milling inconel, waspalloy, titanium, and high temperature alloys.



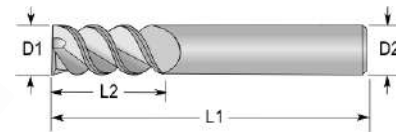
SDHM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
5mm - 6mm : +.000mm -.030mm
8mm - 10mm : +.000mm -.036mm
12mm - 18mm : +.000mm -.043mm
20mm : +.000mm -.052mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SDHM-3 Catalog No.	SDHM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
6mm Shanks - D2				
SDHM-050-03		5	15	57
SDHM-060-03		6	18	
8mm Shanks - D2				
SDHM-080-03	SDHM-080-04	8	22	63
10mm Shanks - D2				
SDHM-100-03	SDHM-100-04	10	25	72
12mm Shanks - D2				
SDHM-120-03	SDHM-120-04	12	30	83
14mm Shanks - D2				
SDHM-140-03		14	35	83
16mm Shanks - D2				
SDHM-160-03	SDHM-160-04	16	35	92
18mm Shanks - D2				
SDHM-180-03	SDHM-180-04	18	45	92
20mm Shanks - D2				
SDHM-200-03	SDHM-200-04	20	45	104

K

HMSM-4 / HMRM-4

4 Flute, Center Cutting, Hard Milling,
Stub / Regular Length End Mills / Metric



Featuring:

- Engineered with a special 4 flute stub length tool geometry, specifically suitable for milling operations with a shallow cutting depth in hard materials.
- The unique tool geometry provides maximum milling performance in semi-finishing and finishing as well as in roughing cuts.

End Mills Coated with:

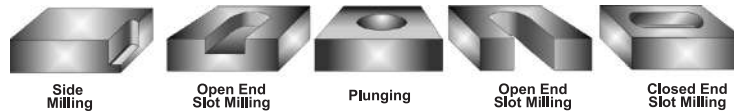
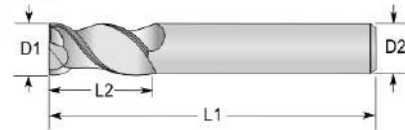
AlTiN

OTHER COATINGS UPON REQUEST,
SEE PAGE 288



HMRM / HMSM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.022mm
12mm - 16mm: +.000mm -.027mm
20mm: +.000mm -.033mm
T.I.R. Maximum:
.013mm



For current pricing and availability please visit our website at: www.micro100.com

HMSM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
4-Flute	metric	metric	metric
6mm Shanks - D2			
HMSM-030-4X	3	4.5	57
HMSM-040-4X	4	6	
HMSM-050-4X	5	7.5	
HMSM-060-4X	6	9	
8mm Shanks - D2			
HMSM-080-4X	8	12	75
10mm Shanks - D2			
HMSM-100-4X	10	15	80
12mm Shanks - D2			
HMSM-120-4X	12	18	100
16mm Shanks - D2			
HMSM-160-4X	16	24	110
20mm Shanks - D2			
HMSM-200-4X	20	30	125

HMRM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
4-Flute	metric	metric	metric
6mm Shanks - D2			
HMRM-030-4X	3	8	57
HMRM-040-4X	4	11	
HMRM-050-4X	5	13	
HMRM-060-4X	6		
8mm Shanks - D2			
HMRM-080-4X	8	19	75
10mm Shanks - D2			
HMRM-100-4X	10	22	80
12mm Shanks - D2			
HMRM-120-4X	12	26	100
16mm Shanks - D2			
HMRM-160-4X	16	32	110
20mm Shanks - D2			
HMRM-200-4X	20	38	125

K



super carbide tools
FOR HIGHER PERFORMANCE

HMUM-4

4 Flute, Center Cutting, Hard Milling
Long Length End Mills / Metric

MICRO 100®
super carbide tools

Featuring:

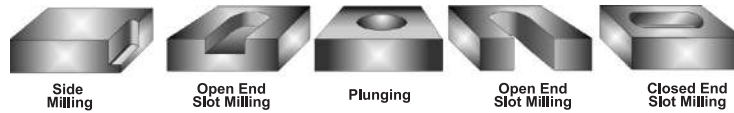
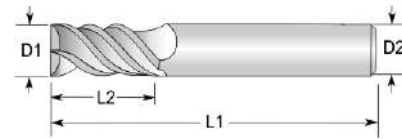
- Engineered with a negative rake angle, these high-tech end mills are specifically engineered for numerous milling applications in hard materials.
- The unique tool geometry provides maximum milling performance in semi-finishing and finishing as well as in roughing cuts.

End Mills Coated with:
AlTiN
OTHER COATINGS UPON REQUEST,
SEE PAGE 288



HMUM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
4mm - 6mm : +.000mm -.018mm
8mm - 10mm : +.000mm -.022mm
12mm - 16mm : +.000mm -.027mm
20mm : +.000mm -.033mm
T.I.R. Maximum:
.013mm



For current pricing and availability please visit our website at: www.micro100.com

HMUM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
4-Flute	metric	metric	metric
6mm Shanks - D2			
HMUM-040-4X	4	12	57
HMUM-060-4X	6	15	
8mm Shanks - D2			
HMUM-080-4X	8	20	75
10mm Shanks - D2			
HMUM-100-4X	10	25	80
12mm Shanks - D2			
HMUM-120-4X	12	30	100
16mm Shanks - D2			
HMUM-160-4X	16	40	110
20mm Shanks - D2			
HMUM-200-4X	20	45	125

K

HMCM-4

4 Flute, Center Cutting, Hard Milling, End Mills with Corner Radius / Metric



Featuring:

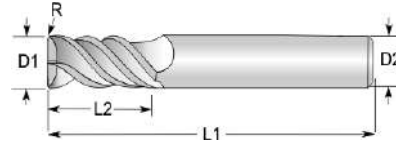
- Engineered with multiple corner radii per cutting diameter and a special 4-flute geometry, these high tech end mills are **designed for hard material milling applications.**
- The various corner radii reduce cutting forces on the tip of the cutting edge and therefore support **heavier cuts and longer tool life.**
- Unique tool geometry provides **maximum milling performance in semi-finishing and finishing as well as in rough cuts.**

End Mills Coated with:
AITiN
 OTHER COATINGS UPON REQUEST
 SEE PAGE 288



HMCM Metric End Mill Tolerances:

Shank Diameter:
 -.0025mm to -.0076mm
 Cutter Diameter:
 3mm: +.000mm -.014mm
 4mm - 6mm: +.000mm -.018mm
 8mm: +.000mm -.022mm
 T.I.R. Maximum:
 .013mm



For current pricing and availability please visit our website at: www.micro100.com

HMCM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Radius (R)	Overall Length (L1)
4-Flute	metric	metric	metric	metric
6mm Shanks - D2				
HMCM-0302-4X	3	8	0.2	57
HMCM-0305-4X			0.5	
HMCM-0402-4X	4	11	0.2	
HMCM-0405-4X			0.5	
HMCM-0410-4X			1.0	
HMCM-0502-4X	5	13	0.2	
HMCM-0505-4X			0.5	
HMCM-0510-4X			1.0	
HMCM-0603-4X	6		0.3	
HMCM-0605-4X			0.5	
HMCM-0610-4X			1.0	
8mm Shanks - D2				
HMCM-0803-4X	8	19	0.3	75
HMCM-0805-4X			0.5	
HMCM-0810-4X			1.0	
HMCM-0815-4X			1.5	
HMCM-0820-4X			2.0	
10mm Shanks - D2				
HMCM-1005-4X	10	22	0.5	80
HMCM-1010-4X			1.0	
HMCM-1015-4X			1.5	
HMCM-1020-4X			2.0	
12mm Shanks - D2				
HMCM-1205-4X	12	26	0.5	100
HMCM-1210-4X			1.0	
HMCM-1215-4X			1.5	
HMCM-1220-4X			2.0	
16mm Shanks - D2				
HMCM-1605-4X	16	32	1.0	110
HMCM-1610-4X			1.5	
HMCM-1615-4X			2.0	
HMCM-1620-4X			3.0	
20mm Shanks - D2				
HMCM-2005-4X	20	38	1.0	125
HMCM-2010-4X			1.5	
HMCM-2015-4X			2.0	
HMCM-2020-4X			3.0	

K



super carbide tools
FOR HIGHER PERFORMANCE

SALM-3 / SARM-3

3 Flute, 38° Helix, Regular / Long Length,
Roughing End Mills for Aluminum / Metric



Featuring:

- Designed and engineered to generate **maximum metal removal rates in aluminum applications.**

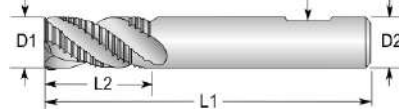


SALM / SARM Metric Roughing End Mill

Tolerances:

- Shank Diameter:
-.0025mm to -.0076mm
- Cutter Diameter:
6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.036mm
12mm - 18mm: +.000mm -.043mm
20mm: +.000mm -.052mm
25mm: +.000mm -.062mm
- T.I.R. Maximum:
.013mm

Shank sizes with 10mm and larger diameters feature a Weldon Flat



Coated End Mills AVAILABLE!
ZrN Add an "S" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SALM-3 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3-Flute			
6mm Shanks - D2			
SALM-060-3	6	25	75
8mm Shanks - D2			
SALM-080-3	8	30	75
10mm Shanks - D2			
SALM-100-3	10	38	100
12mm Shanks - D2			
SALM-120-3	12	50	100
16mm Shanks - D2			
SALM-160-3	16	75	150
25mm Shanks - D2			
SALM-250-3	25	75	150

SARM-3 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3-Flute			
14mm Shanks - D2			
SARM-140-3	14	35	83
18mm Shanks - D2			
SARM-180-3	18	45	92

K

SHLM-4 / SHRM-4

4 Flute, 38° Helix, Regular / Long Length,
Roughing End Mills / Metric



Featuring:

- Designed and engineered to generate **maximum metal removal rates in most applications.**



End Mills Coated with:
AlTiN
OTHER COATINGS UPON REQUEST
SEE PAGE 288



SHLM / SHRM Metric Roughing End Mill

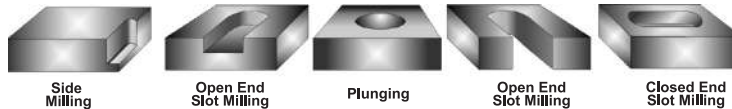
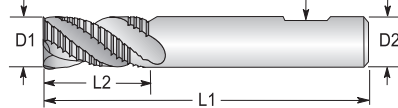
Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
6mm: +.000mm -.018mm
8mm-10mm: +.000mm -.036mm
12mm-18mm: +.000mm -.043mm
20mm: +.000mm -.052mm
25mm: +.000mm -.062mm

T.I.R. Maximum:
.013mm

Shank sizes with 10mm and larger diameters
feature a Weldon Flat



For current pricing and availability please visit our website at: www.micro100.com

SHLM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
4-Flute	metric	metric	metric
6mm Shanks - D2			
SHLM-060-4X	6	25	75
8mm Shanks - D2			
SHLM-080-4X	8	30	75
10mm Shanks - D2			
SHLM-100-4X	10	38	100
12mm Shanks - D2			
SHLM-120-4X	12	50	100
16mm Shanks - D2			
SHLM-160-4X	16	75	150
18mm Shanks - D2			
SHLM-180-4X	18	75	150
20mm Shanks - D2			
SHLM-200-4X	20	75	150

SHRM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
4-Flute	metric	metric	metric
6mm Shanks - D2			
SHRM-060-4X	6	16	57
8mm Shanks - D2			
SHRM-080-4X	8	22	63
10mm Shanks - D2			
SHRM-100-4X	10	25	72
12mm Shanks - D2			
SHRM-120-4X	12	30	83
14mm Shanks - D2			
SHRM-140-4X	14	35	83
16mm Shanks - D2			
SHRM-160-4X	■	■	■
20mm Shanks - D2			
SHRM-200-4X	■	■	■
25mm Shanks - D2			
SHRM-250-4X	25	50	127

K



super carbide tools
FOR HIGHER PERFORMANCE

VHSM-4 / VHMM-4

4 Flute, Variable Helix, High Velocity,
Stub / Regular Length End Mills / Metric

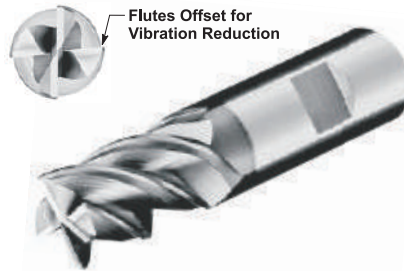


Featuring:

- Stub Length
- Variable Pitch
- High-Production / High Speed Milling
- Excellent Surface Finish
- Eliminates Chatter
- Reduces Machine Vibration



End Mills Coated with:
AlTiN
OTHER COATINGS UPON REQUEST
SEE PAGE 288



VHSM / VHMM Metric Variable Helix End Mill

Tolerances:

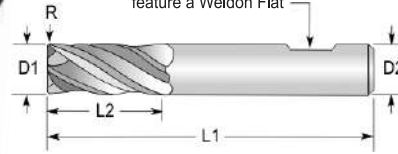
Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
4mm : +.000mm -.050mm
6mm to 25mm : +.000mm -.080mm

Corner Radius:
±.013mm

T.I.R. Maximum:
.013mm

Shank sizes with 10mm and larger diameters
feature a Weldon Flat



For current pricing and availability please visit our website at: www.micro100.com

VHSM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Overall Length (L1)
4-Flute				
4mm Shanks - D2				
VHSM-030-4X	3	6	0.3	50
VHSM-040-4X	4	8		
6mm Shanks - D2				
VHSM-060-4X	6	10	0.5	57
8mm Shanks - D2				
VHSM-080-4X	8	16	0.5	63
10mm Shanks - D2				
VHSM-100-4X	10	19	0.5	72
12mm Shanks - D2				
VHSM-120-4X	12	22	0.5	83

VHMM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Overall Length (L1)
4-Flute				
4mm Shanks - D2				
VHMM-030-4X	3	6	0.5	50
VHMM-040-4X	4	11		
6mm Shanks - D2				
VHMM-050-4X	5	16	0.5	57
VHMM-060-4X	6			
8mm Shanks - D2				
VHMM-080-4X	8	19	0.5	63
10mm Shanks - D2				
VHMM-100-4X	10	22	0.6	72
12mm Shanks - D2				
VHMM-120-4X	12	26	0.6	83
14mm Shanks - D2				
VHMM-140-4X	14	26	0.7	83
16mm Shanks - D2				
VHMM-160-4X	16	32	0.7	92
18mm Shanks - D2				
VHMM-180-4X	18	32	0.7	92
20mm Shanks - D2				
VHMM-200-4X	20	38	0.8	104
25mm Shanks - D2				
VHMM-250-4X	25	38	0.8	127

K

VLRM-4

4 Flute, Variable Helix, High Velocity,
Long Length, Reduced Neck, End Mills / Metric



Featuring:

- Variable Pitch
- High-Production / High Speed Milling
- Reduced Neck for Greater Clearance
- Excellent Surface Finish
- Eliminates Chatter
- Reduces Machine Vibration



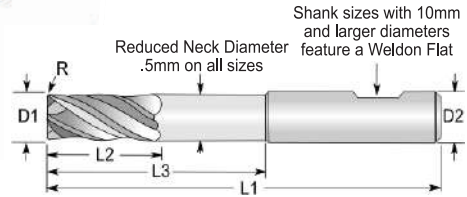
VLRM Metric Variable Helix End Mill

Tolerances:

- Shank Diameter:
-.0025mm to -.0076mm
- Cutter Diameter:
4mm : +.000mm -.050mm
6mm - 25mm : +.000mm -.080mm
- Corner Radius:
±.013mm
- T.I.R. Maximum:
.013mm



End Mills Coated with:
AITIN
OTHER COATINGS UPON REQUEST
SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

VLRM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Reduced Neck Length (L3)	Overall Length (L1)
4-Flute					
6mm Shanks - D2					
VLRM-040-4X	4	5	0.5	15	57
VLRM-060-4X	6	8		30	75
8mm Shanks - D2					
VLRM-080-4X	8	10	0.5	50	100
10mm Shanks - D2					
VLRM-100-4X	10	12	0.6	50	100
14mm Shanks - D2					
VLRM-140-4X	14	18	0.7	65	120
16mm Shanks - D2					
VLRM-160-4X	16	22	0.7	80	130



super carbide tools
FOR HIGHER PERFORMANCE

VHSM-5 / VHMM-5

5 Flute, Variable Helix, High Velocity,
Stub / Regular Length End Mills / Metric

MICRO 100®
super carbide tools

Featuring:

- Stub Length
- Variable Pitch
- High-Production / High Speed Milling
- Excellent Surface Finish
- Eliminates Chatter
- Reduces Machine Vibration



End Mills Coated with:
nACRo®
(Nanotech "CR")
OTHER COATINGS UPON REQUEST
SEE PAGE 288

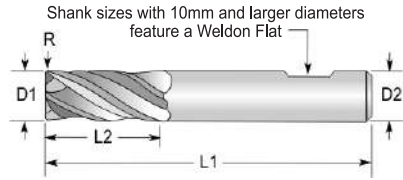


Flutes Offset for
Vibration Reduction



VHSM / VHMM Metric Variable Helix End Mill

Tolerances:
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
4mm : +.000mm -.050mm
6mm to 25mm : +.000mm -.080mm
Corner Radius:
±.013mm
T.I.R. Maximum:
.013mm



For current pricing and availability please visit our website at: www.micro100.com

VHSM-5 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric
4mm Shanks - D2					
VHSM-030-5	VHSM-030-5K	3	6	0.3	50
VHSM-040-5	VHSM-040-5K	4	8		
6mm Shanks - D2					
VHSM-050-5	VHSM-050-5K	5	10	0.5	57
VHSM-060-5	VHSM-060-5K	6			
8mm Shanks - D2					
VHSM-080-5	VHSM-080-5K	8	16	0.5	63
10mm Shanks - D2					
VHSM-100-5	VHSM-100-5K	10	19	0.5	72
12mm Shanks - D2					
VHSM-120-5	VHSM-120-5K	12	22	0.5	83

VHMM-5 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric
4mm Shanks - D2					
VHMM-030-5	VHMM-030-5K	3	8	0.3	50
VHMM-040-5	VHMM-040-5K	4	11		
6mm Shanks - D2					
VHMM-050-5	VHMM-050-5K	5	16	0.5	57
VHMM-060-5	VHMM-060-5K	6			
8mm Shanks - D2					
VHMM-080-5	VHMM-080-5K	8	19	0.5	63
10mm Shanks - D2					
VHMM-100-5	VHMM-100-5K	10	22	0.5	72
12mm Shanks - D2					
VHMM-120-5	VHMM-120-5K	12	26	0.5	83

K

VLRM-5

5 Flute, Variable Helix, High Velocity,
Long Length, Reduced Neck, End Mills



Featuring:

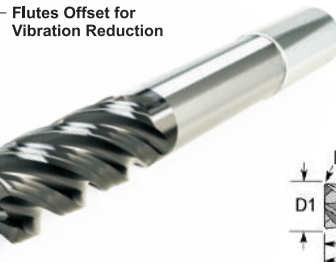
- Variable pitch
- High-Production / High Speed Milling
- Reduced Neck for Greater Clearance
- Excellent Surface Finish
- Eliminates Chatter
- Reduces Machine Vibration



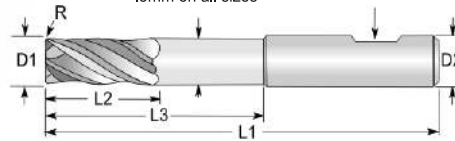
VLRM Metric Variable Helix End Mill

Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
4mm : +.000mm -.050mm
6mm - 25mm : +.000mm -.080mm
Corner Radius:
±.013mm
T.I.R. Maximum:
.013mm



Shank sizes with 10mm and larger diameters feature a Weldon Flat
Reduced Neck Diameter .5mm on all sizes



End Mills Coated with:

nACRo[®]
(Nanotech "CR")

OTHER COATINGS UPON REQUEST
SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

VLRM-5 Catalog No.		Cutter Diameter (D1)	Flute Length (L2)	Corner Radius (R)	Reduced Neck Length (L3)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric	metric
6mm Shanks - D2						
VLRM-040-5	VLRM-040-5K	4	5	0.3	15	57
VLRM-050-5	VLRM-050-5K	5	8	0.5	30	75
VLRM-060-5	VLRM-060-5K	6				



**WORLD CLASS QUALITY
CARBIDE TOOLING
THROUGH
AMANUFACTURING
EXCELLENCE!**

K



**super carbide tools
FOR HIGHER PERFORMANCE**

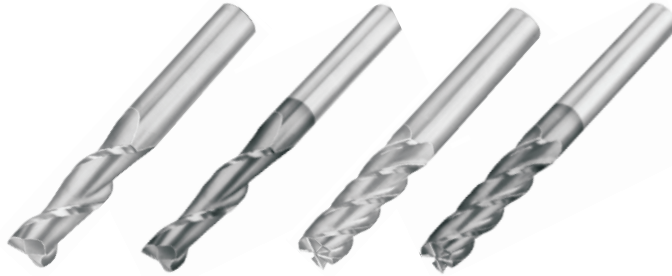
AELM-2/-4

2 & 4 Flute, Center Cutting, 30° Helix,
Long Length End Mills / Metric



AELM Metric End Mill Tolerances:

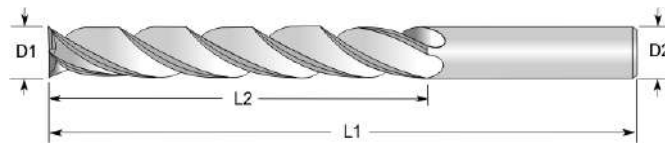
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
2mm - 3mm: +.000mm -.025mm
4mm - 6mm: +.000mm -.030mm
7mm - 10mm: +.000mm -.036mm
11mm - 18mm: +.000mm -.043mm
20mm: +.000mm -.052mm
T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

AELM-2 Catalog No.	AELM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
6mm Shanks - D2				
AELM-020-2	AELM-020-4	2	10	75
AELM-030-2	AELM-030-4	3	15	
AELM-040-2	AELM-040-4	4	20	
	AELM-050-4	5	25	100
AELM-060-2	AELM-060-4	6	30	
	AELM-070-4	7	35	
8mm Shanks - D2				
AELM-080-2	AELM-080-4	8	40	100
	AELM-090-4	9	45	
10mm Shanks - D2				
AELM-100-2	AELM-100-4	10	50	120
AELM-110-2	AELM-110-4	11		
12mm Shanks - D2				
	AELM-120-4	12	55	130
AELM-130-2		13		
AELM-140-2	AELM-140-4	14	60	140
	AELM-150-4	15		
16mm Shanks - D2				
	AELM-160-4	16	65	150
AELM-170-2	AELM-170-4	17		
AELM-180-2		18		
20mm Shanks - D2				
AELM-200-2	AELM-200-4	20	75	150

K

ALMM-5

5 Flute, Center Cutting, 45° Helix,
Long Length End Mills / Metric



Featuring:

- These 5 flute high tech end mills feature a 45° Helix for roughing, finishing, and slotting in medium to hard steels, stainless steels, and high temperature alloys.
- Ideal for continuous full depth milling.
- Higher metal removal rates as well as excellent finishes are achieved with these 5 flute end mills.
- 45° Helix diminishes chatter corner milling applications.

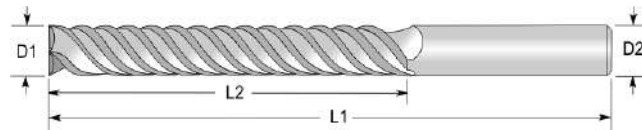


ALMM Metric End Mill Tolerances:

- Shank Diameter:
-.0025mm to -.0076mm
- Cutter Diameter:
3mm: +.000mm - .025mm
4mm - 6mm: +.000mm -.030mm
6mm - 10mm: +.000mm -.036mm
12mm - 16mm: +.000m -.042mm
20mm: +.000mm -.052mm
- T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 228



For current pricing and availability please visit our website at: www.micro100.com

ALMM-5 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
5-Flute			
6mm Shanks - D2			
ALMM-030-5	3	25	75
ALMM-040-5	4		
ALMM-050-5	5		
ALMM-060-5	6		
10mm Shanks - D2			
ALMM-100-5	10	38	100
12mm Shanks - D2			
ALMM-120-5	12	50	100
16mm Shanks - D2			
ALMM-160-5	16	75	150
20mm Shanks - D2			
ALMM-200-5	20	75	150



super carbide tools
FOR HIGHER PERFORMANCE

GELM-2/-3/-4

2, 3 & 4 Flute, Center Cutting, 30° Helix,
Extra Long Length End Mills / Metric

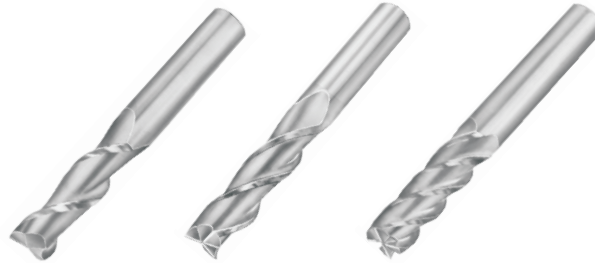


GELM Metric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

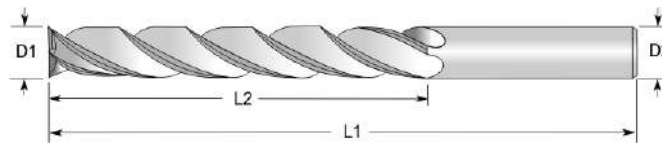
Cutter Diameter:
3mm: +.000mm -.025mm
4mm - 6mm: +.000mm -.030mm
8mm - 10mm: +.000mm -.036mm
12mm - 18mm: +.000mm -.042mm
20mm: +.000mm -.052mm
25mm: +.000mm -.062mm

T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

GELM-2 Catalog No.	GELM-3 Catalog No.	GELM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
2-Flute					
3mm Shanks - D2					
GELM-030-2	GELM-030-3	GELM-030-4	3	25	75
4mm Shanks - D2					
GELM-040-2	GELM-040-3	GELM-040-4	4	25	75
5mm Shanks - D2					
	GELM-050-3	GELM-050-4	5	25	75
6mm Shanks - D2					
GELM-060-2	GELM-060-3	GELM-060-4	6	25	75
8mm Shanks - D2					
	GELM-080-3	GELM-080-4	8	30	75
10mm Shanks - D2					
GELM-100-2	GELM-100-3	GELM-100-4	10	38	100
12mm Shanks - D2					
GELM-120-2	GELM-120-3		12	50	100
14mm Shanks - D2					
GELM-140-2	GELM-140-3	GELM-140-4	14	75	150
16mm Shanks - D2					
	GELM-160-3	GELM-160-4	16	75	150
18mm Shanks - D2					
GELM-180-2	GELM-180-3	GELM-180-4	18	75	150
20mm Shanks - D2					
GELM-200-2	GELM-200-3	GELM-200-4	20	75	150
25mm Shanks - D2					
GELM-250-2	GELM-250-3	GELM-250-4	25	75	150

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GLRM-2/-4

2 & 4 Flute, Center Cutting, 30° Helix,
Reduced Neck End Mills / Metric



GLRM Meric End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

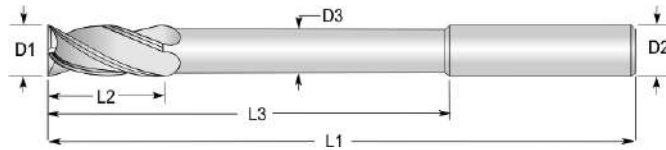
Cutter Diameter:
2mm - 3mm: +.000mm -.025mm
4mm - 6mm: +.000mm -.030mm
8mm - 10mm: +.000mm -.036mm
12mm -16mm: +.000mm -.043mm
20mm: +.000mm -.052mm

T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of
Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

GLRM-2 Catalog No.	GLRM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Overall Length (L1) metric
6mm Shanks - D2						
GLRM-020-2	GLRM-020-4	2	5	1.5	15	57
GLRM-030-2	GLRM-030-4	3	8	2.5	30	75
GLRM-040-2	GLRM-040-4	4		3.5		
GLRM-050-2	GLRM-050-4	5	10	4.5	50	100
GLRM-060-2	GLRM-060-4	6	12	5.5		
8mm Shanks - D2						
GLRM-080-2	GLRM-080-4	8	14	7.5	50	100
10mm Shanks - D2						
GLRM-100-2	GLRM-100-4	10	18	9.5	65	120
12mm Shanks - D2						
GLRM-120-2	GLRM-120-4	12	22	11.5	80	130
16mm Shanks - D2						
GLRM-160-2		16	30	15.5	100	150
20mm Shanks - D2						
GLRM-200-2	GLRM-200-4	20	38	19.5	100	150

K



super carbide tools
FOR HIGHER PERFORMANCE

CREM-3

3 Flute, Corner Rounding,
Single End, End Mills / Metric



CREM Metric Corner Rounding End Mill Tolerances:

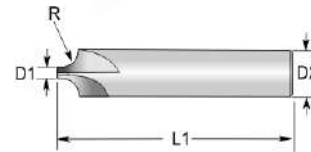
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
+.000mm - .076mm
Tool Radius:
+.000mm -.013mm



Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

CREM-3 Catalog No.	Minor Diameter (D1) metric	Radius (R) metric	Overall Length (L1) metric
3-Flute			
6mm Shanks - D2			
CREM-060-030	1.5	0.30	57
CREM-060-050		0.50	
CREM-060-080		0.80	
CREM-060-100		1.00	
CREM-060-125		1.25	
CREM-060-150		1.50	
CREM-060-200		2.00	
8mm Shanks - D2			
CREM-080-250	1.5	2.50	63
CREM-080-300		3.00	
10mm Shanks - D2			
CREM-100-350	1.5	3.50	73
CREM-100-400		4.00	
12mm Shanks - D2			
CREM-120-450	1.5	4.50	83
16mm Shanks - D2			
CREM-160-500	3	5.00	92
CREM-160-600		6.00	
18mm Shanks - D2			
CREM-180-700	3	7.00	92
20mm Shanks - D2			
CREM-200-800	3	8.00	104

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DMM-90 / DMM-120

2 & 4 Flute, 90° / 120° Included Point Angle,
Drill Mills / Metric



Featuring:

- Multi-purpose Drill-Mills for:

- Drilling
- Milling
- Chamfering
- Countersinking

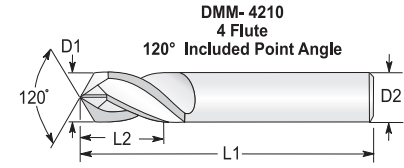
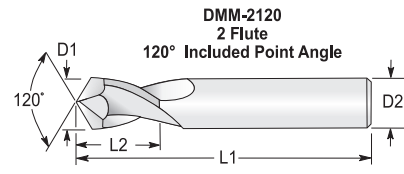
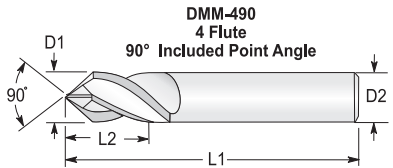
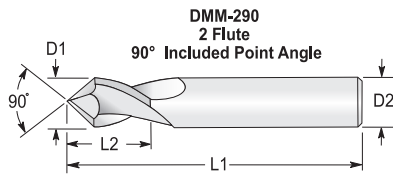
Coated Drill-Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288

DMM Metric Drill-Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
3mm : +.000mm -.025mm
4mm - 6mm : +.000mm -.036mm
8mm - 10mm : +.000mm -.043mm
12mm - 18mm : +.000mm -.052mm
20mm : +.000mm -.052mm
25mm : +.000mm -.062mm
T.I.R. Maximum:
.013mm



For current pricing and availability please visit our website at: www.micro100.com

DMM-290 Catalog No.	DMM-490 Catalog No.	DMM-2120 Catalog No.	DMM-4210 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Overall Length (L1)
2-Flute	4-Flute	2-Flute	4-Flute	metric	metric	metric
3mm Shanks - D2						
DMM-030-290	DMM-030-490	DMM-030-2120	DMM-030-4120	3	8	38
4mm Shanks - D2						
DMM-040-290	DMM-040-490	DMM-040-2120	DMM-040-4120	4	11	50
6mm Shanks - D2						
DMM-050-290	DMM-050-490	DMM-050-2120	DMM-050-4120	5	13	57
DMM-060-290	DMM-060-490	DMM-060-2120	DMM-060-4120	6	16	
8mm Shanks - D2						
DMM-080-290	DMM-080-490	DMM-080-2120	DMM-080-4120	8	22	63
10mm Shanks - D2						
DMM-100-290	DMM-100-490	DMM-100-2120	DMM-100-4120	10	25	72
12mm Shanks - D2						
DMM-120-290	DMM-120-490	DMM-120-2120	DMM-120-4120	12	30	83
16mm Shanks - D2						
DMM-160-290	DMM-160-490	DMM-160-2120	DMM-160-4120	16	35	92
18mm Shanks - D2						
			DMM-180-4120	18	45	92
20mm Shanks - D2						
DMM-200-290	DMM-200-490	DMM-200-2120		20	45	104
25mm Shanks - D2						
	DMM-250-490			25	50	127

K



super carbide tools
FOR HIGHER PERFORMANCE

BEFM-2

2 Flute, Extra Fine Carbide, Hard Milling,
Miniature, Ball Nose End Mills / Metric

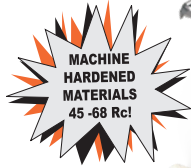


Featuring:

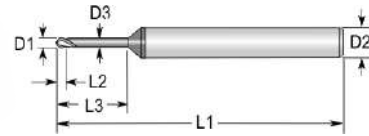
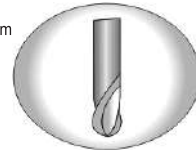
- These precision miniature ball nose end mills are ideal for finishing, and semi-finishing cuts and universal milling applications in soft, medium, and hard materials.

3 FLUTE
End Mills
AVAILABLE UPON REQUEST*

End Mills Coated with:
nACRo[®]
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288



**BEFM Metric, Ball Nose, Hard Milling,
Miniature End Mill Tolerances:**
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
3mm: +.000 -.0127mm
T.I.R. Maximum:
.013mm



For current pricing and availability please visit our website at: www.micro100.com

BEFM-2 Catalog No.		Cutter Diameter (D1)	Length of Cut (L2)	Overall Reach (L3)	Neck Diameter (D3)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric	metric
3mm Shanks - D2						
BEFM-002-030	BEFM-002-030K	0.2	0.3	0.3	0.2	38
BEFM-003-045	BEFM-003-045K	0.3	0.45	0.45	0.3	
BEFM-004-060	BEFM-004-060K	0.4	0.6	0.6	0.4	
BEFM-005-070	BEFM-005-070K	0.5	0.7	0.7	0.45	
BEFM-005-300	BEFM-005-300K			3.0		
BEFM-005-600	BEFM-005-600K			6.0		
BEFM-006-090	BEFM-006-090K	0.6	0.9	0.9	0.6	
BEFM-006-300	BEFM-006-300K			3.0	0.55	
BEFM-006-500	BEFM-006-500K			5.0		
BEFM-006-600	BEFM-006-600K			6.0		
BEFM-008-120	BEFM-008-120K	0.8	1.2	1.2	0.8	
BEFM-008-400	BEFM-008-400K			4.0	0.75	
BEFM-008-700	BEFM-008-700K			7.0		
BEFM-008-900	BEFM-008-900K			9.0		
BEFM-010-150	BEFM-010-150K	1.0	1.5	1.5	1.00	
BEFM-010-400	BEFM-010-400K			4.0	0.95	
BEFM-010-700	BEFM-010-700K			7.0		
BEFM-010-900	BEFM-010-900K			9.0		
BEFM-012-180	BEFM-012-180K	1.2	1.8	1.8	1.20	
BEFM-012-600	BEFM-012-600K			6.0	1.10	
BEFM-012-1000	BEFM-012-1000K			10.0		
BEFM-012-1200	BEFM-012-1200K			12.0		
BEFM-015-220	BEFM-015-220K	1.5	2.2	2.2	1.50	
BEFM-015-600	BEFM-015-600K			6.0	1.40	
BEFM-015-1000	BEFM-015-1000K			10.0		
BEFM-015-1200	BEFM-015-1200K			12.0		
BEFM-015-1500	BEFM-015-1500K			15.0		
BEFM-015-2000	BEFM-015-2000K			20.0		
						50

*3 flute end mills available upon request.

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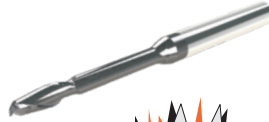
BEFM-2

2 Flute, Extra Fine Carbide, Hard Milling,
Miniature, Ball Nose End Mills / Metric



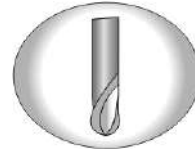
Featuring:

- These precision miniature ball nose end mills ideal for finishing, and semi-finishing cuts, and universal milling applications in soft, medium to hard materials.



BEFM Metric, Ball Nose, Hard Milling, Miniature End Mill Tolerances:

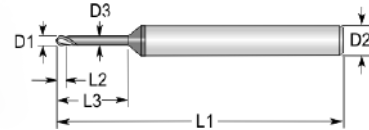
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
+.000mm -.0127mm
T.I.R. Maximum:
.013mm



3 FLUTE
End Mills
AVAILABLE UPON REQUEST*



End Mills Coated with:
nACRo[®]
(Nanotech "CR")
OTHER COATINGS AVAILABLE UPON REQUEST.
SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

BEFM-2 Catalog No.		Cutter Diameter (D1)	Length of Cut (L2)	Overall Reach (L3)	Neck Diameter (D3)	Overall Length (L1)
Uncoated	Coated	metric	metric	metric	metric	metric
3mm Shanks - D2						
BEFM-020-250	BEFM-020-250K	2.0	2.5	2.5	2.0	38
BEFM-020-700	BEFM-020-700K			7.0		
BEFM-020-1200	BEFM-020-1200K			12.0		
BEFM-020-1600	BEFM-020-1600K			16.0	1.9	
BEFM-020-2000	BEFM-020-2000K			20.0		
BEFM-020-2500	BEFM-020-2500K			25.0		
BEFM-025-300	BEFM-025-300K	2.5	3.0	3.0	2.5	38
BEFM-025-1000	BEFM-025-1000K			10.0		
BEFM-025-1600	BEFM-025-1500K			15.0		
BEFM-025-2000	BEFM-025-2000K			20.0	50	
BEFM-025-2500	BEFM-025-2500K			25.0		
BEFM-025-3000	BEFM-025-3000K			30.0		
6mm Shanks - D2						
BEFM-030-300	BEFM-030-300K	3.0	3.0	3.0	3.0	57
BEFM-030-1000	BEFM-030-1000K			10.0		
BEFM-030-1600	BEFM-030-1500K			15.0	2.9	
BEFM-030-2500	BEFM-030-2500K			25.0		
BEFM-030-3000	BEFM-030-3000K			30.0		
BEFM-040-500	BEFM-040-500K	4.0	5.0	5.0	4.0	
BEFM-040-1600	BEFM-040-1500K			15.0		
BEFM-040-2500	BEFM-040-2500K			25.0	3.9	
BEFM-040-3000	BEFM-040-3000K			30.0		
BEFM-050-600	BEFM-050-600K	5.0	6.0	6.0	5.0	
BEFM-050-1600	BEFM-050-1500K			15.0		
BEFM-050-2500	BEFM-050-2500K			25.0	4.9	
BEFM-050-3000	BEFM-050-3000K			30.0		

*3 flute end mills available upon request.



super carbide tools
FOR HIGHER PERFORMANCE

BMSM-2/-4 & BMRM-2/-4

2 & 4 Flute, Center Cutting, 30° Helix,
Stub / Regular Length, Miniature, Ball Nose End Mills / Metric



BMSM Metric, Ball Nose, Miniature End Mill Tolerances:

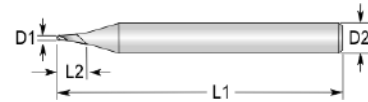
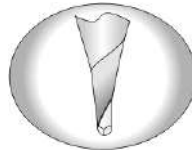
Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.3mm - 2.5mm: +.000mm -.014mm
T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

BMSM-2 Catalog No.	BMSM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3mm Shanks - D2				
BMSM-003-2		0.3	0.5	38
BMSM-004-2		0.4	0.6	
BMSM-005-2		0.5	0.8	
BMSM-006-2		0.6	0.9	
BMSM-007-2		0.7	1.1	
BMSM-008-2		0.8	1.2	
BMSM-009-2		0.9	1.4	
BMSM-010-2	BMSM-010-4	1.0	1.5	
BMSM-011-2	BMSM-011-4	1.1	1.7	
	BMSM-012-4	1.2	1.8	
BMSM-013-2	BMSM-013-4	1.3	2.0	
BMSM-014-2	BMSM-014-4	1.4	2.1	
BMSM-015-2	BMSM-015-4	1.5	2.3	
BMSM-016-2	BMSM-016-4	1.6	2.4	
	BMSM-017-4	1.7	2.5	
BMSM-018-2	BMSM-018-4	1.8	2.7	
BMSM-019-2	BMSM-019-4	1.9	2.8	
BMSM-020-2		2.0	3.0	
BMSM-025-2	BMSM-025-4	2.5	3.8	

BMRM-2 Catalog No.	BMRM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
4mm Shanks - D2				
BMRM-005-2		0.5	1.5	38
BMRM-006-2		0.6	1.8	
BMRM-007-2		0.7	2.1	
BMRM-008-2		0.8	2.4	
BMRM-009-2		0.9	2.7	
BMRM-010-2	BMRM-010-4	1.0	3.0	
BMRM-011-2	BMRM-011-4	1.1	3.3	
	BMRM-012-4	1.2	3.8	
BMRM-013-2	BMRM-013-4	1.3	3.9	
BMRM-014-2	BMRM-014-4	1.4	4.2	
BMRM-015-2	BMRM-015-4	1.5	4.2	
BMRM-016-2	BMRM-016-4	1.6	4.8	
BMRM-018-2	BMRM-018-4	1.8	5.3	
BMRM-020-2	BMRM-020-4	2.0	6.0	
BMRM-025-2	BMRM-025-4	2.5	8.0	
BMRM-030-2	BMRM-030-4	3.0	9.0	
BMRM-035-2	BMRM-035-4	3.5	10.5	

K

MMBM-2

2 Flute, Center Cutting, 30° Helix,
Mold Making, Ball Nose End Mills / Metric



Featuring:

- These high precision ball nose end mills feature multiple neck length dimensions in a wide range of cutting diameters to provide the best available geometry for finishing cuts in mold making applications.
- A positive rake angle supports maximum cutting performance in medium and hard materials for conventional side milling and slotting.



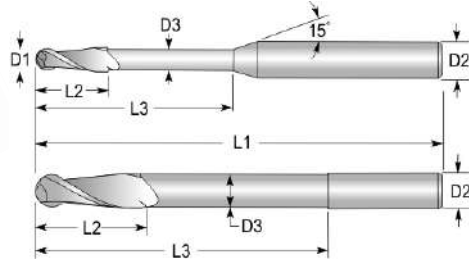
MMBM Metric, Mold Making, Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.3mm - 0.9mm: +.000mm -.04mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

MMBM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Overall Length (L1) metric
4mm Shanks - D2					
MMBM-003-3	0.3	0.3	0.28	3	50
MMBM-003-6				6	
MMBM-004-3	0.4	0.4	0.38	3	
MMBM-004-8				8	
MMBM-005-5	0.5	0.5	0.48	5	
MMBM-005-10				10	
MMBM-006-5	0.6	0.6	0.58	5	
MMBM-006-12				12	
MMBM-007-5	0.7	0.7	0.68	5	
MMBM-007-12				12	
MMBM-008-5	0.8	0.8	0.78	5	
MMBM-008-10				10	
MMBM-008-16				16	
MMBM-009-5	0.9	0.9	0.88	5	
MMBM-009-10				10	
MMBM-009-16				16	

K



super carbide tools
FOR HIGHER PERFORMANCE

MMBM-2

2 Flute, Center Cutting, 30° Helix,
Mold Making, Ball Nose End Mills / Metric



Featuring:

- These high precision ball nose end mills feature multiple neck length dimensions in a wide range of cutting diameters to provide the best available geometry for finishing cuts in mold making applications.
- A positive rake angle supports maximum cutting performance in medium and hard materials for conventional side milling and slotting.



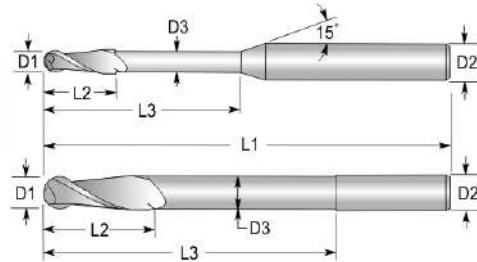
MMBM Metric, Mold Making, Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
1mm - 3mm: +.000mm -.014mm
4mm - 5mm: +.000mm -.018mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

MMBM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Overall Length (L1) metric
6mm Shanks - D2					
MMBM-010-6	1.0	1.0	0.95	6	57
MMBM-010-8				8	
MMBM-010-11				11	
MMBM-010-12				12	
MMBM-010-15				15	
MMBM-010-20				20	
MMBM-012-7	1.2	1.2	1.15	7	
MMBM-012-15				15	
MMBM-012-20				20	
MMBM-015-7	1.5	1.5	1.45	7	
MMBM-015-15				15	
MMBM-015-20				20	
MMBM-020-7	2.0	2.0	1.90	7	
MMBM-020-15				15	
MMBM-020-20				20	
MMBM-030-12	3.0	3.0	2.90	12	
MMBM-030-15				15	
MMBM-040-15	4.0	4.0	3.80		
MMBM-050-15	5.0	5.0	4.80		

K

SFBM-2

2 Flute, Center Cutting, 30° Helix,
HSC Shrink Fit, Ball Nose End Mills / Metric



Featuring:

- These highest precision finishing ball nose end mills are suitable for HSC applications and are engineered for shrink-fit tool holding.
- A positive rake angle supports maximum cutting performance in soft, medium and hard materials for conventional side milling and slotting.



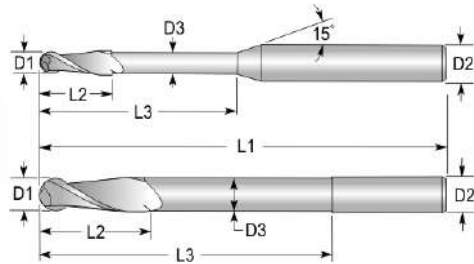
SFBM Metric, HSC Shrink, Fit Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.2mm - 1.4mm: +.000mm -.014mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITIN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SFBM-2 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Reduced Neck Diameter (D3)	Reduced Neck Length (L3)	Overall Length (L1)
2-Flute	metric	metric	metric	metric	metric
6mm Shanks - D2					
SFBM-002-0	0.2	0.3	0.00	0.0	57
SFBM-003-0	0.3	0.4	0.25	1.0	
SFBM-003-1			0.00	0.0	
SFBM-004-0	0.4	0.5	0.35	1.2	
SFBM-004-1				1.6	
SFBM-005-1	0.5	0.6	0.45	3.3	
SFBM-005-3		0.5		5.1	
SFBM-005-5		0.7		1.7	
SFBM-006-2	0.6	0.6	0.55	4.5	
SFBM-006-4				6.2	
SFBM-006-6				2.5	
SFBM-008-2	0.8	1.0	0.75	5.2	
SFBM-008-5		0.8		8.0	
SFBM-008-8				3.3	
SFBM-010-3	1.0	1.3	0.95	8.0	
SFBM-010-8					
SFBM-012-3	1.2	1.5	1.15	8.0	
SFBM-012-8		1.2		3.8	
SFBM-014-3	1.4	1.8	1.35	15.0	
SFBM-014-15		2.3			

K



super carbide tools
FOR HIGHER PERFORMANCE

SFBM-2

Metric, 2 Flute, Center Cutting, 30° Helix, HSC Shrink Fit, Ball Nose End Mills / Mills



Featuring:

- These highest precision finishing ball nose end mills are suitable for HSC applications and are engineered for shrink-fit tool holding.
- A positive rake angle supports maximum cutting performance in soft, medium and hard materials for conventional side milling and slotting.



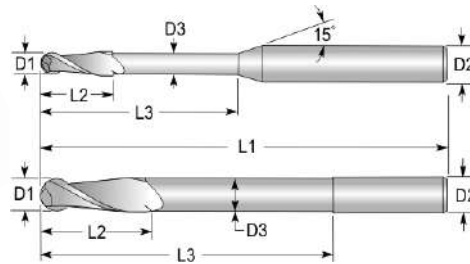
SFBM Metric, HSC Shrink, Fit Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
0.2mm - 1.4mm: +.000mm -.014mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SFBM-2 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Overall Length (L1) metric
6mm Shanks - D2					
SFBM-015-4	1.5	1.9	1.45	4.9	57
SFBM-015-9		1.5		9.5	
SFBM-016-5	1.6	2.0	1.55	5.0	
SFBM-016-22		2.3		22.0	
SFBM-018-5	1.8	2.3	1.75	5.3	
SFBM-020-5	2.0	2.5	1.95	5.5	
SFBM-020-9				9.5	
SFBM-025-6	2.5	3.0	2.40	6.0	
SFBM-025-9		2.5		9.5	
SFBM-030-8	3.0	4.0	2.90	8.0	
SFBM-030-15				15.0	
SFBM-035-9	3.5	4.5	3.40	9.5	
SFBM-040-10	4.0	5.0	3.90	10.0	
SFBM-040-20				20.0	
SFBM-050-11	5.0	6.0	4.90	11.0	
SFBM-050-25				25.0	
SFBM-060-12	6.0	7.5	5.90	12.5	
SFBM-060-25				25.0	

K

BEMM-2/-3/-4

2, 3, & 4 Flute, Center Cutting, 30° Helix
Ball Nose End Mills / Metric



Featuring:

- High performance ball nose end mills with a 2, 3, & 4-flute geometry and a helix of 30°.
- These end mills are ideal for semi-finishing, finishing, and slotting in steels, stainless steels, high temperature alloys, and other difficult to machine materials.

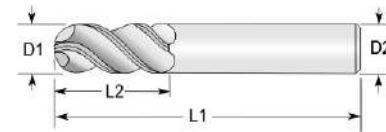


BEMM Metric Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
3mm : +.000mm -.014mm
4mm - 6mm : +.000mm -.018mm
8mm - 10mm : +.000mm -.022mm
12mm - 18mm : +.000mm -.027mm
20mm - 25mm : +.000mm -.033mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

BEMM-2 Catalog No.	BEMM-3 Catalog No.	BEMM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3mm Shanks - D2					
BEMM-030-2	BEMM-030-3	BEMM-030-4	3	15	38
4mm Shanks - D2					
BEMM-040-2	BEMM-040-3	BEMM-040-4	4	18	50
5mm Shanks - D2					
	BEMM-050-3	BEMM-050-4	5	18	50
6mm Shanks - D2					
BEMM-060-2		BEMM-060-4	6	18	57
8mm Shanks - D2					
BEMM-080-2	BEMM-080-3	BEMM-080-4	8	22	63
10mm Shanks - D2					
BEMM-100-2	BEMM-100-3	BEMM-100-4	10	25	72
12mm Shanks - D2					
BEMM-120-2	BEMM-120-3	BEMM-120-4	12	30	83
14mm Shanks - D2					
BEMM-140-2	BEMM-140-3	BEMM-140-4	14	35	83
16mm Shanks - D2					
	BEMM-160-3	BEMM-160-4	16	35	92
18mm Shanks - D2					
BEMM-180-2	BEMM-180-3	BEMM-180-4	18	45	92
20mm Shanks - D2					
BEMM-200-2	BEMM-200-3	BEMM-200-4	20	45	104

K



super carbide tools
FOR HIGHER PERFORMANCE

HMBM-2/-3/-4

2 & 4 Flute, Center Cutting,
Hard Milling, Ball Nose End Mills / Metric



Featuring:

- Engineered with a negative rake angle, these high-tech end mills are specifically engineered for numerous milling applications in hard materials.
- The unique tool geometry provides maximum milling performance in semi-finishing and finishing as well as in roughing cuts.



HMBM Metric, Hard Milling End Mill Tolerances:

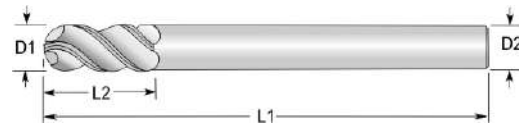
Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
1mm 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.022mm
12mm - 16mm: +.000mm -.027mm
20mm: +.000mm -.033mm

T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!
AlTiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

HMBM-2 Catalog No.	HMBM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
6mm Shanks - D2				
HMBM-025-2		2.5	4.0	57
HMBM-050-2		5.0	7.5	80
HMBM-060-2	HMBM-060-4	6.0	9.0	90
8mm Shanks - D2				
HMBM-080-2	HMBM-080-4	8.0	12.0	100
10mm Shanks - D2				
HMBM-100-2	HMBM-100-4	10.0	15.0	100
12mm Shanks - D2				
HMBM-120-2	HMBM-120-4	12.0	18.0	110
16mm Shanks - D2				
HMBM-160-2		16.0	24.0	140
20mm Shanks - D2				
HMBM-200-2		20.0	30.0	160

K

VHBM-4

4 Flute, Variable Helix,
High Velocity, Ball Nose End Mills / Metric

MICRO 100®
super carbide tools

Featuring:

- Variable Pitch
- High-Production / High Speed Milling
- Excellent Surface Finish
- Eliminates Chatter
- Reduces Machine Vibration



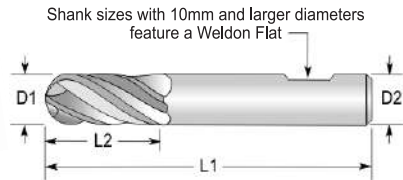
VHBM Metric, Variable Pitch Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:
3mm: +.000mm -.014mm
4mm - 6mm: +.000mm-.018mm
8mm - 10mm: +.000mm -.036mm
12mm - 18mm: +.000mm -.043mm
20mm: +.000mm -.052mm
25mm: +.000mm -.062mm

T.I.R. Maximum:
.013mm

End Mills Coated with:
AlTiN
OTHER COATINGS UPON REQUEST
SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

VHBM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
4-Flute			
4mm Shanks			
VHBM-030-4X	3	8	50
VHBM-040-4X	4	11	
6mm Shanks			
VHBM-050-4X	5	16	57
VHBM-060-4X	6		
8mm Shanks			
VHBM-080-4X	8	19	63
10mm Shanks			
VHBM-100-4X	10	22	72
12mm Shanks			
VHBM-120-4X	12	26	83
14mm Shanks			
VHBM-140-4X	14	26	83
18mm Shanks			
VHBM-180-4X	18	32	92

K

MICRO 100®
super carbide tools

super carbide tools
FOR HIGHER PERFORMANCE

BELM-2/-3/-4

2, 3, & 4 Flute, Center Cutting, 30° Helix,
Extra Long Length, Ball Nose End Mills / Metric



BELM Metric, Extra Long Length, Ball Nose, End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm

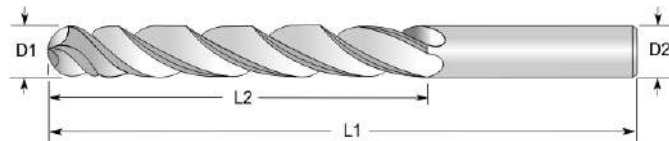
Cutter Diameter:
3mm: +.000mm -.025mm
4mm - 6mm: +.000mm -.030mm
8mm - 10mm: +.000mm -.036mm
12mm - 18mm: +.000mm -.043mm
20mm: +.000mm -.052mm
25mm: +.000mm -.062mm

T.I.R. Maximum:
.013mm



Coated End Mills AVAILABLE!
AITiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

BELM-2 Catalog No.	BELM-3 Catalog No.	BELM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Overall Length (L1) metric
3mm Shanks - D2					
BELM-030-2		BELM-030-4	3	25	75
4mm Shanks - D2					
BELM-040-2	BELM-040-3		4	25	75
5mm Shanks - D2					
BELM-050-2	BELM-050-3	BELM-050-4	5	25	75
6mm Shanks - D2					
BELM-060-2	BELM-060-3	BELM-060-4	6	25	75
8mm Shanks - D2					
BELM-080-2	BELM-080-3	BELM-080-4	8	25	75
10mm Shanks - D2					
BELM-100-2	BELM-100-3	BELM-100-4	10	38	100
12mm Shanks - D2					
	BELM-120-3	BELM-120-4	12	50	100
14mm Shanks - D2					
BELM-140-2	BELM-140-3	BELM-140-4	14	75	150
16mm Shanks - D2					
BELM-160-2	BELM-160-3	BELM-160-4	16	75	150
18mm Shanks - D2					
BELM-180-2	BELM-180-3	BELM-180-4	18	75	150
20mm Shanks - D2					
BELM-200-2	BELM-200-3	BELM-200-4	20	75	150
25mm Shanks - D2					
BELM-250-2	BELM-250-3	BELM-250-4	25	75	150

K

BLRM-2/-3/-4

2, 3, & 4 Flute, Center Cutting, 30° Helix,
Reduced Neck, Ball Nose End Mills / Metric



BLRM Metric, Reduced Neck

End Mill Tolerances:

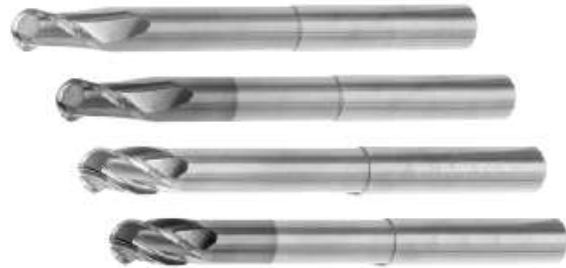
Shank Diameter:
-.0025mm to -.0076mm

Cutter Diameter:

2mm - 3mm: +.000mm -.025mm
4mm - 6mm: +.000mm -.030mm
8mm - 10mm: +.000mm -.036mm
12mm - 16mm: +.000mm -.043mm
20mm: +.000mm -.052mm

T.I.R. Maximum:

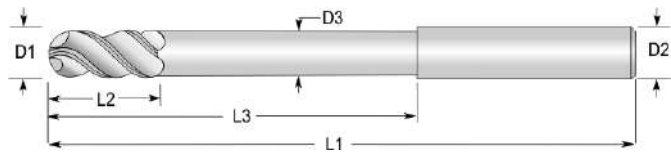
.013mm



Coated End Mills AVAILABLE!

AlTiN Add an "X" to end of
Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

BLRM-2 Catalog No.	BLRM-3 Catalog No.	BLRM-4 Catalog No.	Cutter Diameter (D1) metric	Flute Length (L2) metric	Reduced Neck Diameter (D3) metric	Reduced Neck Length (L3) metric	Overall Length (L1) metric
2-Flute	3-Flute	4-Flute					
6mm Shanks - D2							
BLRM-020-2	BLRM-020-3	BLRM-020-4	2	5	1.5	15	57
BLRM-030-2	BLRM-030-3	BLRM-030-4	3	8	2.5	30	75
BLRM-040-2	BLRM-040-3	BLRM-040-4	4		3.5		
BLRM-050-2	BLRM-050-3	BLRM-050-4	5	10	4.5	50	100
BLRM-060-2	BLRM-060-3	BLRM-060-4	6	12	5.5		
8mm Shanks - D2							
BLRM-080-2	BLRM-080-3	BLRM-080-4	8	14	7.5	50	100
10mm Shanks - D2							
BLRM-100-2	BLRM-100-3	BLRM-100-4	10	18	9.5	65	120
12mm Shanks - D2							
BLRM-120-2	BLRM-120-3	BLRM-120-4	12	22	11.5	80	130
16mm Shanks - D2							
	BLRM-160-3	BLRM-160-4	16	30	15.5	100	150
20mm Shanks - D2							
	BLRM-200-3	BLRM-200-4	20	38	19.5	100	150

K



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SBMM-2 / SBMM-3

2 & 3 Flute, Center Cutting, 30° Helix,
Spherical Ball Nose, End Mills



Featuring:

- These short flute 220° spherical ball nose end mills feature a reduced neck diameter and are ideal for copy milling and deep pocket milling applications.
- The special geometry allows inclination of up to 15° with optimal chip evacuation for increased feed rates.



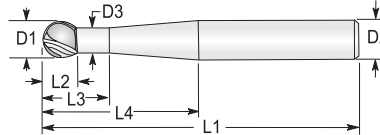
SBMM Metric, Spherical Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
2mm - 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.036mm
12mm - 16mm: +.000mm -.043mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!

AITIN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SBMM-2 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Neck Diameter (D3)	Neck Length (L3)	Reduced Neck Length (L4)	Radius	Overall Length (L1)
2-Flute	metric	metric	metric	metric	metric	metric	metric
6mm Shanks - D2							
SBMM-020-206	2	1.3	1.3	6	32	1.0	75
SBMM-020-210				10	36		
SBMM-020-216				16	42		
SBMM-030-209	3	2.0	2.0	9	31	1.5	75
SBMM-030-215				15	37		
SBMM-030-221				21	43		
SBMM-040-212	4	2.7	2.7	12	30	2.0	100
SBMM-040-220				20	36		
SBMM-040-232				32	44		
SBMM-060-218	6	4.0	4.0	18	29	3.0	75
SBMM-060-230				30	41		
SBMM-060-248				32	44		
8mm Shanks - D2D							
SBMM-080-224	8	5.4	5.4	24	39	4.0	100
SBMM-080-240				40	55		
SBMM-080-264				55	68		
10mm Shanks - D2							
SBMM-100-230	10	6.7	6.7	30	48	5.0	100
SBMM-100-250				50	59		
SBMM-100-272				55	68		
12mm Shanks - D2							
SBMM-120-236	12	8.0	8.0	36	58	6.0	100
SBMM-120-272				55	68		
16mm Shanks - D2							
SBMM-160-248	16	10.7	10.7	48	55	8.0	100
SBMM-160-272				55	68		
SBMM-3							
SBMM-3 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Neck Diameter (D3)	Neck Length (L3)	Reduced Neck Length (L4)	Radius	Overall Length (L1)
3-Flute	metric	metric	metric	metric	metric	metric	metric
6mm Shanks - D2							
SBMM-020-316	2	1.3	1.3	16	42	1.0	75
SBMM-030-321	3	2.0	2.0	21	43	1.5	
SBMM-060-318	6	4.0	4.0	18	29	3.0	
SBMM-060-348				48	44		
8mm Shanks - D2							
SBMM-080-224	8	5.4	5.4	24	39	4.0	100
SBMM-080-240				40	55		

K

SBMM-4

4 Flute, Center Cutting, 30° Helix,
Spherical Ball Nose, End Mills / Metric



Featuring:

- These short flute 220° spherical ball nose end mills feature a reduced neck diameter and are ideal for copy milling and deep pocket milling applications.
- The special geometry allows inclination of up to 15° with optimal chip evacuation for increased feed rates.

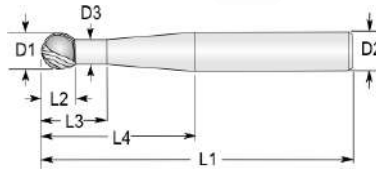


SBMM Metric, Spherical Ball Nose End Mill Tolerances:

Shank Diameter:
-.0025mm to -.0076mm
Cutter Diameter:
2mm - 3mm: +.000mm -.014mm
4mm - 6mm: +.000mm -.018mm
8mm - 10mm: +.000mm -.036mm
12mm - 16mm: +.000mm -.043mm
T.I.R. Maximum:
.013mm

Coated End Mills AVAILABLE!
AlTiN Add an "X" to end of Catalog No.

OTHER COATINGS UPON REQUEST, SEE PAGE 288



For current pricing and availability please visit our website at: www.micro100.com

SBMM-4 Catalog No.	Cutter Diameter (D1)	Flute Length (L2)	Neck Diameter (D3)	Neck Length (L3)	Reduced Neck Length (L4)	Radius	Overall Length (L1)
4-Flute	metric	metric	metric	metric	metric	metric	metric
6mm Shanks - D2							
SBMM-020-406	2	1.3	1.3	6	32	1.0	75
SBMM-020-410				10	36		
SBMM-020-416				16	42		
SBMM-030-409	3	2.0	2.0	9	31	1.5	75
SBMM-030-415				15	37		
SBMM-030-421				21	43		
SBMM-040-412	4	2.7	2.7	12	30	2.0	100
SBMM-040-420				20	36		
SBMM-040-432				32	44		
SBMM-060-418	6	4.0	4.0	18	29	3.0	75
SBMM-060-430				30	41		
SBMM-060-448				32	44		
8mm Shanks - D2							
SBMM-080-424	8	5.4	5.4	24	39	4.0	100
SBMM-080-440				40	55		
SBMM-080-464				55	68		
10mm Shanks - D2							
SBMM-100-430	10	6.7	6.7	30	48	5.0	100
SBMM-100-450				50	59		
SBMM-100-472				55	68		
12mm Shanks - D2							
SBMM-120-436	12	8.0	8.0	36	58	6.0	100
SBMM-120-472				55	68		
16mm Shanks - D2							
SBMM-160-448	16	10.7	10.7	48	55	8.0	100
SBMM-160-472				55	68		

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- CNC HORIZONTAL LATHES
- CNC VERTICAL LATHES
- MANUEL LATHES
- AUTOMATIC "CHUCKER" TYPE LATHES
- GANG TOOL LATHES
- SWISS TYPE MACHINES



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"SERVICING EVERY
INDUSTRY SECTOR
...ONE CHIP AT A TIME!"

QUALITY...THROUGH MANUFACTURING EXCELLENCE.

Blanks
Solid Carbide Metric Products

MICRO 100[®]
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World Class Quality
Through Manufacturing Excellence

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Combined with Superior Strength and
Wear Characteristics Provides Unmatched
High Performance Productivity at it's BEST!!!



Half Round Blanks
Round Blanks
Split End Blanks



**WILL NOT CHIP OR BREAK
UNDER NORMAL MACHINING CONDITIONS**



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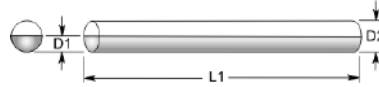
281

Blanks
Half-Round Blanks
Metric



Half-Round, Metric Blank Tolerances:
Shank Diameter:
-.0025mm to -.0076mm finish ground

Style "HRM"
by SPECIAL ORDER
once current inventories
are depleted!



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HRM Catalog No.	Half of Diameter (D1)	Overall Length (L1)
	metric	metric
2mm Shanks - D2		
HRM-020-38	1.0	38
3mm Shanks - D2		
HRM-030-38	1.5	38
4mm Shanks - D2		
HRM-040-50	2.0	50
5mm Shanks - D2		
HRM-050-50	2.5	50
6mm Shanks - D2		
HRM-060-57	3.0	57
8mm Shanks - D2		
HRM-080-63	4.0	63
10mm Shanks - D2		
HRM-100-72	5.0	72
12mm Shanks - D2		
HRM-120-83	6.0	83

L

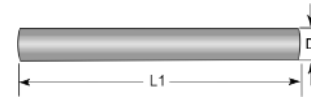
Blanks

Round Blanks

Metric



SRM Metric Round Blank Tolerances:
 Diameter:
 -.0025mm to -.0076mm finish ground



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SRM Catalog No.	Overall Length (L) metric
1mm Diameters - D2	
SRM-010-030	30
SRM-010-310	310
1.5mm Diameters - D2	
SRM-015-100	100
2mm Diameters - D2	
SRM-020-038	38
SRM-020-100	100
SRM-020-310	310
2.5mm Diameters - D2	
SRM-025-100	100
3mm Diameters - D2	
SRM-030-038	38
SRM-030-100	100
SRM-030-310	310
3.5mm Diameters - D2	
SRM-035-100	100
4mm Diameters - D2	
SRM-040-050	50
SRM-040-100	100
SRM-040-310	310
4.5mm Diameters - D2	
SRM-045-100	100
5mm Diameters - D2	
SRM-050-050	50
SRM-050-100	100
SRM-050-310	310
5.5mm Diameters - D2	
SRM-055-100	100
6mm Diameters - D2	
SRM-060-057	57
SRM-060-100	100
SRM-060-310	310
6.5mm Diameters - D2	
SRM-055-100	100
7mm Diameters - D2	
SRM-070-100	100
SRM-070-310	310
8mm Diameters - D2	
SRM-080-063	63
SRM-080-100	100
SRM-080-310	310

SRM Catalog No.	Overall Length (L) metric
9mm Diameters	
SRM-090-100	100
SRM-090-310	310
10mm Diameters - D2	
SRM-100-072	72
SRM-100-100	100
SRM-100-310	310
11mm Diameters - D2	
SRM-110-310	310
12mm Diameters - D2	
SRM-120-083	83
SRM-120-100	100
SRM-120-310	310
13mm Diameters - D2	
SRM-130-310	310
14mm Diameters - D2	
SRM-140-100	100
SRM-140-310	310
15mm Diameters - D2	
SRM-150-310	310
16mm Diameters - D2	
SRM-160-100	100
SRM-160-310	310
17mm Diameters - D2	
SRM-170-310	310
18mm Diameters - D2	
SRM-180-100	100
SRM-180-310	310
19mm Diameters - D2	
SRM-190-310	310
20mm Diameters - D2	
SRM-200-100	100
SRM-200-310	310
25mm Diameters - D2	
SRM-250-310	310

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Blanks

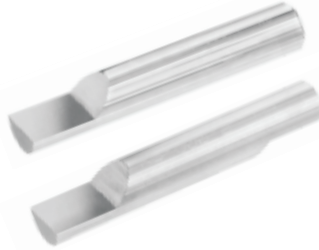
1 & 2 Split-Ends

Metric

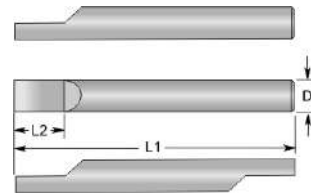


RSM Metric, Blank Tolerances:

Shank Diameter:
-.0025mm to -.0076mm finish ground
Split Tolerance:
+.025mm -.000mm of tool center
Overall Length:
± .38mm
Split Length in proportion
to length of too.



RSM-1
Style



RSM-2
Style

For current pricing and availability please visit our website at: www.micro100.com

RSM-1 Catalog No.	RSM-2 Catalog No.	Split Length (L2)	Overall Length (L1)
		metric	metric
2mm Shanks			
RSM-020-1	RSM-020-2	4	38
3mm Shanks			
RSM-030-1	RSM-030-2	5	38
4mm Shanks			
RSM-040-1	RSM-040-2	6	50
5mm Shanks			
RSM-050-1	RSM-050-2	7	50
6mm Shanks			
RSM-060-1	RSM-060-2	8	57
8mm Shanks			
RSM-080-1	RSM-080-2	10	63
10mm Shanks			
RSM-100-1	RSM-100-2	12	72
12mm Shanks			
RSM-120-1	RSM-120-2	14	83

L

Technical Data
Inch and Metric

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Through Manufacturing Excellence!**



**WILL NOT
CHIP OR BREAK
UNDER NORMAL
MACHINING CONDITIONS**



Safe Starting Conditions
Coatings and Substrate Chart
Machining Formulas
Boring Tools Application Data
Grooving Tools Application Data
Internal Threading Tools Application Data
End Mill Flute Selection
End Mill Application Data
Miniature End Mill Hard Milling Recommendations
End Mill Application Data
Miniature Ball Nose End Mill Hard Milling Recommendations
Ball Nose End Mill Application Data
End Mill Trouble Shooting Recommendations
Engraving Tools Application Recommendations
Thread Mill Assist Programs
Custom and Special Tooling
Material Safety Data Sheets
Conversion Tables

M

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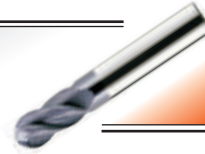
Coating & Substrate Chart Coating Services

pages 288, 289

Coating Name	Cutting Tool Designation Letter	General Notes
TiN Titanium Nitride	G	Give more life than TiAlN and TiCN
TiCN		This wear longer than TiN

Ball Nose End Mills

pages 312-315



Machining Formulas

page 290

Need to Know	Machining Form
SFM Surface Footage Per Minute	SFM = $\frac{\text{Cutting Speed} \times \text{Cutting Diameter}}{1000}$
RPM Revolutions Per Minute	RPM = $\frac{\text{Cutting Speed}}{\text{Cutting Diameter} \times \pi}$
IPM Inches Per Minute	IPM = $\frac{\text{Cutting Speed} \times \text{Cutting Diameter}}{1000}$
FPM (FPT) Feet Per Minute / Diameter	FPM = $\frac{\text{Cutting Speed}}{12}$
IPR (IPR) Inches Per Revolution / Diameter	IPR = $\frac{\text{Cutting Speed}}{12 \times \pi}$

End Mill Trouble Shooting

page 316

Problem	Cause	Solution
Chattering	Feed and Speed too low Lack of rigidity machine & tool Too much tool length Cut too deep Rake angle too steep Too much overhang	Feed and Speed to the max. Use maximum length Cut shallow Rake angle too steep Too much overhang
Excessive Floor	Speed is too fast Heat work material Improper speed and feed Wing tool edge Primary side angle too large Holding chips	Reduce speed Reduce feed Wing tool edge Primary side angle too large Holding chips
Leaving Burrs	Feed much lower on primary side Primary feeds and speeds Wrong rake angle	Feed much lower on primary side Primary feeds and speeds Wrong rake angle

Boring Tools

page 291



Thread Mill Assist Programs

page 317

NOTE: ONLY CHANGE THESE VARS

Major Diameter	Minor Diameter	Pitch	Flute
1.00	0.85	20	2
1.125	0.975	20	2

NOTES:
- The Major Diameter is the maximum diameter of the cutter diameter is the diameter of the thread (the pitch is the number of threads per inch)
- The full thread depth is the diameter of the thread (the full thread depth is the diameter of the thread minus the pitch diameter)
- RPM is the spindle speed per minute. Use the formula: RPM = $\frac{\text{Cutting Speed}}{\text{Cutting Diameter} \times \pi}$
- Feed per tooth is the distance the tool advances per tooth in the direction of cutting
- Feed per revolution is the distance the tool advances per revolution in the direction of cutting

Grooving Tools

pages 292, 293



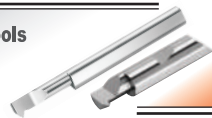
Engraving Tools

pages 318, 319



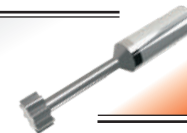
Internal Threading Tools

pages 294, 295



Keyseat Cutters

page 320



End Mill Flute Selection Chart

page 296

Flute Count	Flute Geometry
3F	Standard 3-flute design
4F	Standard 4-flute design
5F	Standard 5-flute design
6F	Standard 6-flute design

Conversion Charts / Tables

pages 321, 322

Fraction	Inch	mm
	0.00039	0.010
	0.00094	0.024
	0.00188	0.048
	0.00376	0.095
	0.00564	0.143
	0.00752	0.190
	0.00940	0.238
	0.01128	0.286
	0.01316	0.334
	0.01504	0.382
	0.01692	0.430
	0.01880	0.478
	0.02068	0.526
	0.02256	0.574
	0.02444	0.622
	0.02632	0.670
	0.02820	0.718
	0.03008	0.766
	0.03196	0.814
	0.03384	0.862
	0.03572	0.910
	0.03760	0.958
	0.03948	1.006
	0.04136	1.054
	0.04324	1.102
	0.04512	1.150
	0.04700	1.198
	0.04888	1.246
	0.05076	1.294
	0.05264	1.342
	0.05452	1.390
	0.05640	1.438
	0.05828	1.486
	0.06016	1.534
	0.06204	1.582
	0.06392	1.630
	0.06580	1.678
	0.06768	1.726
	0.06956	1.774
	0.07144	1.822
	0.07332	1.870
	0.07520	1.918
	0.07708	1.966
	0.07896	2.014
	0.08084	2.062
	0.08272	2.110
	0.08460	2.158
	0.08648	2.206
	0.08836	2.254
	0.09024	2.302
	0.09212	2.350
	0.09400	2.398
	0.09588	2.446
	0.09776	2.494
	0.09964	2.542
	0.10152	2.590
	0.10340	2.638
	0.10528	2.686
	0.10716	2.734
	0.10904	2.782
	0.11092	2.830
	0.11280	2.878
	0.11468	2.926
	0.11656	2.974
	0.11844	3.022
	0.12032	3.070
	0.12220	3.118
	0.12408	3.166
	0.12596	3.214
	0.12784	3.262
	0.12972	3.310
	0.13160	3.358
	0.13348	3.406
	0.13536	3.454

End Mills

pages 297-312



Material Safety Data Sheets Helpful Hints Terms / Conditions

pages 323-315

Helpful Hints

Material	Tool
Aluminum	Aluminum
Steel	Steel
Inconel	Inconel
Titanium	Titanium
Copper	Copper
Brass	Brass
Cast Iron	Cast Iron
Stainless Steel	Stainless Steel
High Speed Steel	High Speed Steel
Carbide	Carbide
Aluminum Nitride	Aluminum Nitride
Titanium Nitride	Titanium Nitride
Titanium Carbide	Titanium Carbide
Titanium Oxide	Titanium Oxide
Titanium Oxide Nitride	Titanium Oxide Nitride
Titanium Oxide Carbide	Titanium Oxide Carbide
Titanium Oxide Nitride Carbide	Titanium Oxide Nitride Carbide
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Technical Data



The recommendations listed in this "Technical Data Section", should only be considered "Safe Starting Points".

Selection of proper tools for the required machining applications and/or conditions include, but, not limited to, rigidity of setups, tool overhang, tool clearances, and finished surface requirements in order to achieve successful machining outcomes.

Surface speeds, feed rates, machine RPM and depth of cut will vary depending on materials being machined. Adjustments and variations may be necessary to achieve the optimum machining performances and superior tool life.

Coated versions of selected tools may allow you to increase Speed/Feed rates by 25% or more. Coating on a tool will not compensate for poor initial tool selection.

MICRO 100 Tool Corporation has no control over the conditions for which the products we manufacture may be subjected to. It is highly recommended that the user(s) of products manufactured by MICRO 100 Tool Corporation abide by the guidelines and/or standards in regard to the type of machinery our products will be used on. Common safety practices and precautions should always be enforced.

During machining applications, "hot flying" chips may be projected from the workpiece or a rotating part of the machine tool. If carbide tool material is subjected to over-stress and/or severe impact, it may fracture causing small fragments to be dispelled. For such instances, precautionary safety methods must be implemented to protect the operator(s) and/or observer(s). These safety measures may include, but not be limited to, appropriate safety glasses with wrap around eye protection and/or safety shields to protect everyone in the immediate area of where machining operations are being performed.

Grinding products manufactured by MICRO 100 Tool Corporation will produce a dust and/or mist that may be hazardous. Using commonly accepted safety practices is recommended.

Any modification(s) of the products manufactured by MICRO 100 Tool Corporation by the customer and/or any end user will void any and all specifications and/or guarantees listed.

Designs, specifications, product improvements and/or pricing of any products manufactured by MICRO 100 Tool Corporation are subject to change without notice.



THERE ARE MANY BRANDS OF MICRO-GRAIN CARBIDE TOOLS
BUT, THERE IS ONLY ONE



MICRO GRAIN CARBIDE +PLUS, YOUR SUPER CARBIDE TOOLS
IN A CLASS OF THEIR OWN!



SOLUTIONS FOR PERFORMANCE

Coatings and Substrates Chart



The information/data provided below, is intended as a guideline for comparing coatings and general application recommendations as to types of materials where performance and optimal tool life may be achieved.

Choose the coating for your machining application and simply add the "Catalog Tool Designation Letter" to the end of the Catalog Tool Number...please see example below:

BB-180350X

the **"X"** at the end of the Catalog Tool Number designates the tool will be supplied with an **AlTiN** coating.

Coating Name	Recommended Materials	Catalog Tool Designation Letter	Characteristics and Benefits	Coating Color and Structure
TiN Titanium Nitride	General Purpose and for Ferrous Materials	G	General purpose coating with proven performance and increasing tool productivity with higher feeds and speeds in the machining of ferrous materials and in applications that are not generating excessive/extreme heat.	Color: Gold Structure: Mono-Layer Hardness (Vickers): 2300 (81Rc) Oxidation Temperature: 600°C (1112°F) Friction Coefficient: 0.5 Thickness: 1-7 microns
TiAlN Titanium Aluminum Nitride	High Strength Steels High Temperature Alloys including Nickel Base and Titaniums	N	Features a hard aluminum oxide layer for hot, dry machining applications of which reflects the heat back into the chip and away from the tool and the workpiece. Due to greater ductility, this coating performs well for interrupted cuts and longer tool life in high heat applications.	Color: Violet Bronze Structure: Mono-Layer Hardness (Vickers): 2800 (85Rc) Oxidation Temperature: 700°C (1292°F) Friction Coefficient: 0.70 Thickness: 1-4 microns
AlTiN Aluminum Titanium Nitride	Alloy Steels Stainless Steels Tool Steels Nickel Alloys and Titaniums	X	High performance and versatile coating. Higher breakdown temperature. Maintains high surface hardness at elevated temperatures, promotes tool life and allows for faster feeds and speeds. Excellent for dry-machining.	Color: Gray / Black Structure: Multi-Layer Hardness (Vickers): 4500 (90Rc) Oxidation Temperature: 900°C (1652°F) Friction Coefficient: 0.45 Thickness: 1-4 microns
nACRo Aluminum Chromium Nitride	Aluminum Alloys Steels, Carbon Steels Stainless Steels Hardened Steels Nickel Alloys, Cast Irons Titanium, and most High Temperature Alloys	K	Extremely heat and scratch resistant coating that provides exceptional performance for those "tough and difficult" materials where temperatures increase dramatically during the machining application.	Color: Blue / Gray Structure: Nano Composite Multi-Layer Hardness (Vickers): 4000 (HV 0.05) Oxidation Temperature: 1100°C (2102°F) Friction Coefficient: 0.35 Thickness: 1-7 microns
ZrN Zirconium Nitride	Abrasive Non-Ferrous Alloys Brass Bronze Copper and most types of Aluminum	S	Better tool performance over uncoated carbide in numerous non-ferrous materials. Characteristics include a high hardness with lubricity and abrasion resistance. Generally, a less expensive alternative to diamond coatings.	Color: Light Silver Structure: Mono-Layer Hardness (Vickers): 2800 (88Rc) Oxidation Temperature: 550°C (1022°F) Friction Coefficient: 0.40 Thickness: 1-4 microns

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Contact our Customer Service Department
for the Weekly Coating Schedule, Pricing, and more Details.



Micro 100 Tool Corporation

is pleased to offer our Coating Services to you.



MICRO 100 utilizes coating technologies that ultimately enhance the performance of the coated product(s).

Cutting Tools with coatings, when properly applied, can improve tool life and performance. Coatings lower the friction coefficient, thermal conductivity, and chemically inert surface by increasing the surface hardness.

Our experienced tool coating specialists are well trained and are ready to discuss your specific machining application needs to better determine the type of coating(s) that will provide you with the best results.



MICRO 100 Coating Services and Capabilities:

- TiN (titanium nitride)
- TiCN (titanium carbon nitride)
- AlTiN (aluminum titanium nitride)
- ZrN (zirconium nitride)
- Nano-Tek / CR w/Polish (aluminum titanium nitride nano)
- Coat both Single and Double End Tools
- 1/8" up to 1" Shanks
- 3mm up to 25mm Shanks
- Overall tool lengths up to 6"
- Overall tool lengths up to 153mm

Advantages of the MICRO 100 Coating Services:

- Guaranteed Efficient Coating Procedures
- Guaranteed Quality
- Timely Turn-a-Rounds
- State of the Art Coating Technologies
- Added Performance and Value to Cutting Tools
- Customer Service for Advice and Recommendations

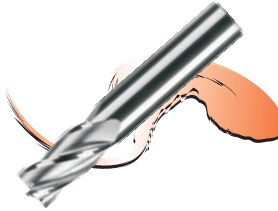


For more details on this "NEW" Service and any other questions you may have concerning the High Quality, Super Carbide Products manufactured by MICRO 100 Tool Corporation... contact us today at 1-800-421-8065!

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Technical Data

Machining Formulas



MICRO 100 Tool Corporation has been manufacturing high-quality solid carbide tooling for over 45 years and we are proud of our reputation for high-quality.

These machining formulas are considered to be "industry standards".

All tooling manufactured by MICRO 100 Tool Corporation if applied properly, will give exceptional performance.

MICRO 100 Tool Corporation is a "World Class" Machining and Grinding facility. Our Engineering Staff is outstanding and would be pleased to help offer solutions for your difficult machining applications.

MICRO 100 is recognized as an Industry Leader. Our proprietary micro grain carbide cutting tool products provide, you the customer, the highest transverse rupture strength in today's market. Other benefits of MICRO 100 products feature, unmatched toughness, application versatility, superior metal removal, and tool performance.

Our goal is to provide high-quality, performance driven, solid carbide tooling. We will treat each order with the care and attention to detail that you deserve. Earning your business on a consistent basis is very important to us.

Inch / Metric Conversions

Inches	x	25.4	=	Millimeters
Inches	x	2.54	=	Centimeters
Inches	x	0.0254	=	Meters
Millimeters	x	0.03937	=	Inches
Centimeters	x	0.3937	=	Inches
Meters	x	39.37	=	Inches

List of Symbols

ADOC	=	Axial Depth Of Cut
D(d)	=	Diameter of Cutter or Bore Size
DOC	=	Depth Of Cut
FPT	=	Feed Rate Per Tooth
FPR	=	Feed Rate Per Revolution
IPM	=	Inches Per Minute
IPT	=	Inch Per Tooth/Flute Chipload
MRR	=	Metal Removal Rate
NOT	=	Number of Teeth/Flutes
PC	=	Power Constants
RDOC	=	Radial Depth Of Cut
RPM	=	Revolutions Per Minute
SFM	=	Surface Footage Per Minute
Z	=	Number of Flutes

Machining Formulas - Inch

Need to Know	Formula
SFM Surface Footage Per Minute	$SFM = 0.262 \times D \times RPM$
RPM Revolutions Per Minute	$RPM = 3.82 \times SFM \div D$
IPM Inches Per Minute	$IPM = FPT \times NOT \times RPM$
IPT (FPT) Inches Per Tooth / Chipload	$IPT = IPM \div RPM \div NOT \text{ or } Z$
IPR (FPR) Inch Feed Per Revolution	$IPR (FRR) = IPM \div RPM$
CLPT Chipload per Tooth	$CLPT = CLPT \times D$
MRR Metal Removal Rate	$MRR = ADOC \times RDOC \times IPM$
HP Horsepower Requires	$HP = IPM \times RDOC \times ADOC \times PC$

Machining Formulas - Metric

Need to Know:	Formula:
m/min Meters Per Minute	$m/min = 0.00314 \times d \times rpm$
rpm Revolutions Per Minute	$rpm = 318.057 \times m/min \div d$
mm/min Millimeters Per Minute	$mm/min = rpm \times mmpt \times not \text{ or } z$
mmpt Millimeters Per Tooth / Chipload	$mmpt = mm/min \div rpm \times not \text{ or } z$
mmpr(fr) Millimeters (Feed) Per Revolution	$mmpr(fr) = mm/min \div rpm$
mrr Metal Removal Rate	$mr = adoc \times rdoc \times mm/min \div 1000$
hp Horsepower Requires	$hp = mm/min \times rdoc \times adoc \times .001 \times pc$
kW	$kW = .7457 \times hp$

Inch / Metric Conversions

S.F.M. (Surface Footage Per Minute) - $0.3048 = m/min$ (Meters per Minute)

I.P.M. (Inches Per Minute) = mm/min (Millimeters Per Minute) $\div 25.4$

m/min (Meters per Minute (m/min)) = sfm (Surface Footage Per Minute) $\times 0.304$

mm/min (Millimeters per Minute (m/min)) = ipm (Inches Per Minute) $\times 25.4$

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super carbide tools
FOR HIGHER PERFORMANCE

Safe Starting Conditions for Boring Applications

MATERIALS	BHN	SURFACE SPEED (SFM)	FEED RATE (I.P.R.)	DEPTH OF CUT* (per side/inch)	SURFACE SPEED (m/min)	FEED RATE (mm/r)	DEPTH OF CUT* (per side/mm)
NON-FERROUS MATERIALS							
Aluminum - Aluminum Alloys	140-425	175-2000	.0005-.030	.0002-.090	53-610	.013-.076	.005-.23
Brass - Bronze	80-120	175-2000	.0005-.030	.0002-.090	53-457	.013-.076	.005-.23
Copper	80-120	150-400	.0005-.030	.0002-.090	61-457	.013-.076	.005-.23
Zinc Alloys	80-120	150-350	.0005-.030	.0002-.090	46-107	.013-.076	.005-.23
Non-Metallics	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Acrylics	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Fiberglass	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Graphites	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Nylons	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Phenolics	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
Plastics	-	200-1000	.0005-.030	.0002-.090	61-305	.013-.076	.005-.23
CAST IRONS							
Cast Iron - Gray	160-260	100-900	.0005-.025	.0002-.030	30-84	.013-.064	.005-.076
Cast Iron - Ferritic	140-200	75-750	.0005-.025	.0002-.030	23-229	.013-.064	.005-.076
Cast Iron - Pearlitic	220-260	75-650	.0005-.025	.0002-.030	23-198	.013-.064	.005-.076
Iron - SG Nodular	160-260	164-262	.0005-.025	.0002-.030	50-80	.013-.064	.005-.076
STEELS							
Low Carbon - Unalloyed	160-260	75-800	.0005-.015	.0002-.025	23-244	.013-.038	.005-.064
Medium Carbon - Unalloyed	140-200	75-800	.0005-.015	.0002-.025	23-244	.013-.038	.005-.064
High Carbon - Unalloyed	220-260	75-800	.0005-.015	.0002-.025	23-244	.013-.038	.005-.064
Low Carbon Alloys	220-260	75-800	.0005-.015	.0002-.025	23-244	.013-.038	.005-.064
Medium Carbon Alloys	220-260	75-800	.0005-.015	.0002-.025	23-244	.013-.038	.005-.064
High Strength Alloys	220-260	75-600	.0005-.015	.0002-.025	23-183	.013-.038	.005-.064
Tool Steels	220-250	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
Heat Treated Alloys	32-40RC	75-250	.0005-.015	.0002-.025	23-76	.013-.038	.005-.064
Powder Metal Alloys	230-260	75-250	.0005-.015	.0002-.025	23-76	.013-.038	.005-.064
STAINLESS STEELS							
300 Series	135-185	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
400 Series	180-220	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
13-8 PH	32-35RC	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
15-5 PH	32-35RC	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
17-4 PH	32-35RC	75-500	.0005-.015	.0002-.025	23-152	.013-.038	.005-.064
HIGH TEMPERATURE ALLOYS							
Monel 400	140-300	70-300	.0003-.010	.0002-.020	21-91	.013-.025	.005-.051
Monel 500	140-300	70-300	.0003-.010	.0002-.020	21-91	.013-.025	.005-.051
K Monel	140-300	70-300	.0003-.010	.0002-.020	21-91	.013-.025	.005-.051
A286	225-363	75-300	.0003-.010	.0002-.020	23-91	.013-.025	.005-.051
Hastelloy	225-363	75-300	.0003-.010	.0002-.020	23-91	.013-.025	.005-.051
Inconel	225-363	75-300	.0003-.010	.0002-.020	23-91	.013-.025	.005-.051
Rene	225-363	75-300	.0003-.010	.0002-.020	23-91	.013-.025	.005-.051
Waspalloy	225-363	75-300	.0003-.010	.0002-.020	23-91	.013-.025	.005-.051
HARDENED MATERIALS							
Titanium Alloys	300-500	70-140	.0002-.008	.0001-.005	21-43	.005-.020	.003-.013
Extra Hard Steels	45-50RC	65-147	.0001-.005	.0001-.005	20-45	.003-.013	.003-.013
Hardened and Tempered	51-55RC	65-131	.0001-.005	.0001-.005	20-40	.003-.013	.003-.013

Machining Data for Speeds, Feeds, and Depth of Cuts are considered to be "safe starting conditions" and may need to be adjusted to obtain optimal performance.

For greater Depth of Cuts...reduce the Feed Rates. Depth of Cuts not recommended to exceed 20% of the D1 dimension.

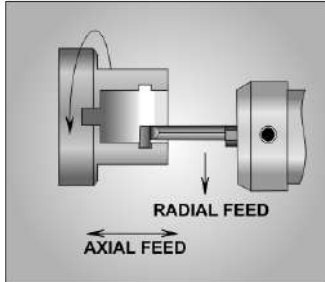
To obtain better surface finish, reduce Feed Rates.



Technical Data

Grooving Tools

MICRO 100[®]
super carbide tools



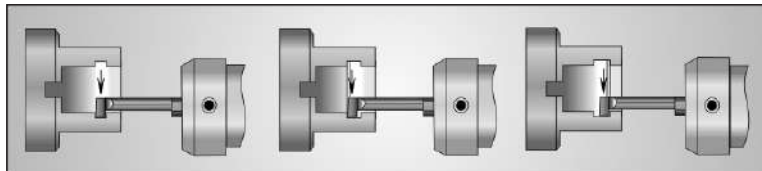
The Recommendations listed below should be considered to be only as starting points.

Selection of proper tools for the required machining applications and/or conditions such as, but not limited to, rigidity of setups, tool overhang, tool clearances, and surface finish requirements.

Surface Speeds, Feed Rates, Machine RPM, and Depth of Cuts will vary depending on materials being machined. Adjustments and variations may be necessary to achieve optimum machining performances and prolonged tool life.

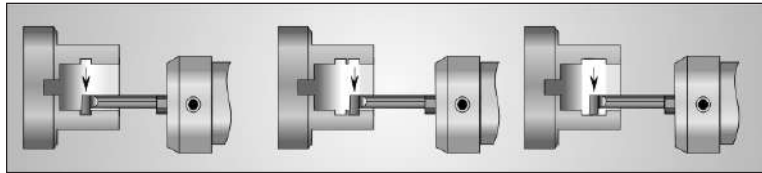
Coated versions of selected tools may allow you to increase Speed/Feed rates by 25% or more.

During Machining applications, it is recommended that the operator(s) and/or observer(s) use precautions such as, but not limited to...safety glasses with wrap around eye protection and/or safety shields on the machine(s). Grinding products manufactured by MICRO 100 Tool Corporation will produce a dust/mist that may be hazardous. Using common safety practices is recommended.



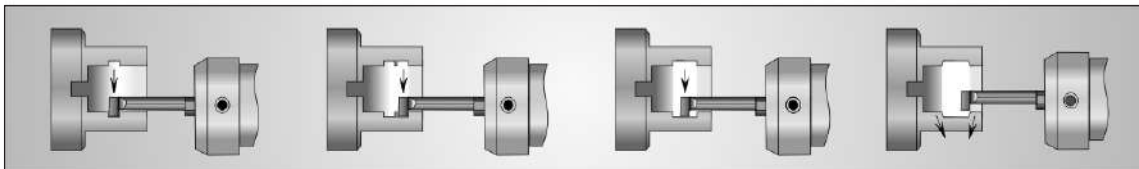
GROOVE WIDTHS "SLIGHTLY" WIDER THAN THE WIDTH OF THE GROOVING TOOL

Plunge the center of the desired groove location.
Plunge each side of the groove to obtain the specified width.
Slower "feed rates" should be used during this operation.



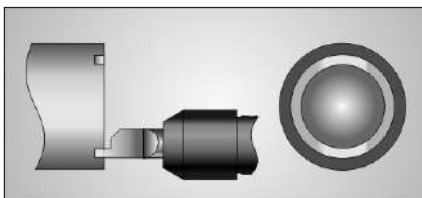
GROOVE WIDTHS WIDER THAN THE WIDTH OF THE GROOVING TOOL

Plunge out both sides of the desired groove width.
Plunge the center area to remove excess material.



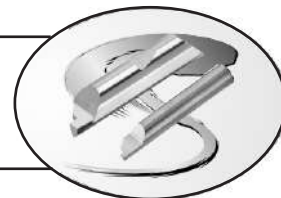
GROOVE WIDTHS WIDER THAN THE WIDTH OF THE GROOVING TOOL WITH A "SPECIFIED" ANGLE

Plunge out both sides of the desired groove width.
Plunge the center area to remove excess material.
Plunge both sides of the groove at the specified angle calculating approximately 1/2 of the "maximum" width of the tool.



FACE GROOVING

Groove Widths from .020"(.50mm) to .156"(3.96mm)
are typically used in applications to create
Face Grooves with
Major Diameters greater than .250"(6.35mm).



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Technical Data

Grooving Tools



Safe Starting Conditions for Grooving Applications

MATERIALS	BHN	FEED RATE (Radial/Inch)	FEED RATE (Axial/Inch)	FEED RATE (Radial/Metric)	FEED RATE (Axial/Metric)
NON-FERROUS MATERIALS					
Wrought Aluminum Alloys	140-300	.0005-.002	.0003-.005	.013-.051	.008-.127
Cast Aluminum Alloys	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
High Silicone Aluminum Alloys	270-425	.0005-.002	.0003-.005	.013-.051	.008-.127
Brass	80-120	.0005-.002	.0003-.005	.013-.051	.008-.127
Bronze	80-120	.0005-.002	.0003-.005	.013-.051	.008-.127
Non-Leaded Copper	80-120	.0005-.002	.0003-.005	.013-.051	.008-.127
Zinc Alloys	80-120	.0005-.002	.0003-.005	.013-.051	.008-.127
Non-Metallics	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Acrylics	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Fiberglass	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Graphites	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Nylons	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Phenolics	-	.0005-.002	.0003-.005	.013-.051	.008-.127
Plastics		.0005-.002	.0003-.005	.013-.051	.008-.127
CAST IRONS					
Cast Iron - Gray	160-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Cast Iron - Ferritic	140-200	.0005-.002	.0003-.005	.013-.051	.008-.127
Cast Iron - Pearlitic	220-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Iron - SG Nodular	160-260	.0005-.002	.0003-.005	.013-.051	.008-.127
STEELS					
Low Carbon - Unalloyed	160-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Medium Carbon - Unalloyed	140-200	.0005-.002	.0003-.005	.013-.051	.008-.127
High Carbon - Unalloyed	220-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Low Carbon Alloys	220-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Medium Carbon Alloys	220-260	.0005-.002	.0003-.005	.013-.051	.008-.127
High Strength Alloys	220-260	.0005-.002	.0003-.005	.013-.051	.008-.127
Tool Steels	220-250	.0005-.002	.0003-.005	.013-.051	.008-.127
Heat Treated Alloys	32-40RC	.0005-.002	.0003-.005	.013-.051	.008-.127
Powder Metal Alloys	230-260	.0005-.002	.0003-.005	.013-.051	.008-.127
STAINLESS STEELS					
300 Series	135-185	.0005-.002	.0003-.005	.013-.051	.008-.127
400 Series	180-220	.0005-.002	.0003-.005	.013-.051	.008-.127
13-8 PH	32-35RC	.0005-.002	.0003-.005	.013-.051	.008-.127
15-5 PH	32-35RC	.0005-.002	.0003-.005	.013-.051	.008-.127
17-4 PH	32-35RC	.0005-.002	.0003-.005	.013-.051	.008-.127
HIGH TEMPERATURE ALLOYS					
Monel 400	140-300	.0005-.002	.0003-.005	.013-.051	.008-.127
Monel 500	140-300	.0005-.002	.0003-.005	.013-.051	.008-.127
K Monel	140-300	.0005-.002	.0003-.005	.013-.051	.008-.127
A286	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
Hastelloy	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
Inconel	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
Rene	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
Waspalloy	225-363	.0005-.002	.0003-.005	.013-.051	.008-.127
HARDENED MATERIALS					
Titanium Alloys	300-500	.0005-.002	.0003-.005	.013-.051	.008-.127
Extra Hard Steels	45-50RC	.0005-.002	.0003-.005	.013-.051	.008-.127
Hardened and Tempered	51-55RC	.0005-.002	.0003-.005	.013-.051	.008-.127

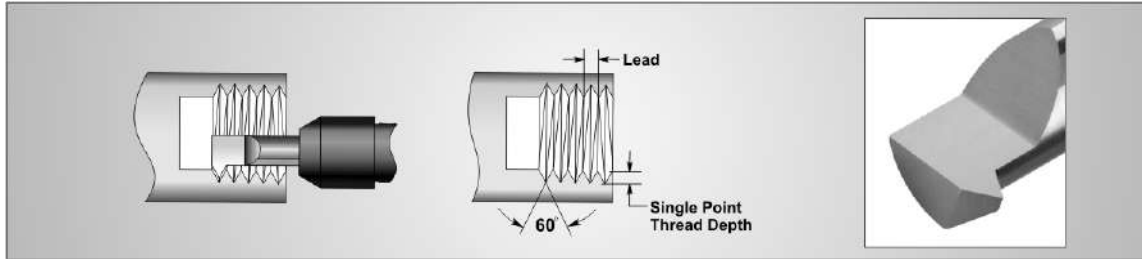
Machining Data for Speeds, Feeds, and Depth of Cuts are considered to be "safe starting conditions" and may need to be adjusted to obtain optimal performance. For greater Depth of Cuts...reduce the Feed Rates. To obtain better surface finish, reduce Feed Rates.

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super carbide tools
FOR HIGHER PERFORMANCE

Single Point Threading



Methods of Infeed

RADIAL		<p>Most widely used infeed method. This method creates the most cutting force on the tool due to the entire tool cutting edge being engaged in the cut.</p>
FLANK		<p>This infeed method allows for a more "evenly" formed chip. Reduction of heat generated by this method promotes longer tool edge life.</p>
MODIFIED FLANK	<p>1/2° to 5°</p>	<p>This infeed method reduces the cutting force and will wear one edge of the insert. Less heat and better chip flow can be expected with this method.</p>
ALTERNATE		<p>This infeed method reduces the cutting force and will wear one edge of the insert. Less heat and better chip flow can be expected with this method.</p>

T.P.I.	8	10	12	14	16	18	20	24	28	32	36	40	44	48	56
	3.18	2.54	2.12	1.81	1.59	1.41	1.27	1.06	0.91	0.80	0.71	0.64	0.58	0.53	0.45
NUMBER OF PASSES	12-14	10-12	8-10	8-10	8-10	6-8	6-8	6-8	6-8	4-6	4-6	4-6	4-6	4-6	4-6

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Conditions based on Mild Steel and Non-Ferrous materials. Harder materials and/or High Temperature Alloys may require more passes. The data given in the chart above should always be considered "safe starting conditions" and may need to be adjusted to obtain optimal machining performance.

Safe Starting Conditions for Single Point Internal Threading Applications

MATERIALS	BHN	SURFACE SPEED (SFM)	SURFACE SPEED (m/min)
NON-FERROUS MATERIALS			
Wrought Aluminum Alloys	140-300	200-2000	61-610
Cast Aluminum Alloys	225-363	200-2000	61-610
High Silicone Aluminum Alloys	270-425	150-400	45-122
Brass	80-120	175-1500	61-457
Bronze	80-120	175-1500	61-457
Non-Leaded Copper	80-120	175-1500	61-457
Zinc Alloys	80-120	175-1500	53-457
Non-Metallics	-	200-1000	61-305
Acrylics	-	200-1000	61-305
Fiberglass	-	200-1000	61-305
Graphites	-	200-1000	61-305
Nylons	-	200-1000	61-305
Phenolics	-	200-1000	61-305
Plastics	-	200-1000	61-305
CAST IRONS			
Cast Iron - Gray	160-260	130-260	40-79
Cast Iron - Ferritic	140-200	190-260	58-79
Cast Iron - Pearlitic	220-260	190-260	58-79
Iron - SG Nodular	160-260	190-300	58-91
STEELS			
Low Carbon - Unalloyed	160-260	450-700	137-213
Medium Carbon - Unalloyed	140-200	400-600	122-183
High Carbon - Unalloyed	220-260	350-600	107-183
Low Carbon Alloys	220-260	80-130	24-40
Medium Carbon Alloys	220-260	90-170	27-52
High Strength Alloys	220-260	210-380	64-116
Tool Steels	220-250	290-400	88-122
Heat Treated Alloys	32-40 RC	160-330	49-101
Powder Metal Alloys	230-260	320-500	98-152
STAINLESS STEELS			
300 Series	135-185	130-300	40-91
400 Series	180-220	130-300	40-91
13-8 PH	32-35 RC	130-300	40-91
15-5 PH	32-35 RC	130-300	40-91
17-4 PH	32-35 RC	130-300	40-91
HIGH TEMPERATURE ALLOYS			
Monel 400	140-300	82-330	25-100
Monel 500	140-300	82-330	25-100
K Monel	140-300	82-330	25-100
A286	225-363	82-330	25-100
Hastelloy	225-363	82-330	25-100
Inconel	225-363	82-330	25-100
Rene	225-363	82-330	25-100
Waspalloy	225-363	82-330	25-100
HARDENED MATERIALS			
Titanium Alloys	300-350	82-130	25-40
Extra Hard Steels	45-50 RC	82-130	25-40
Hardened and Tempered	51-55 RC	82-130	25-40

For number of recommended passes, see chart on page 332.
Machining Data for Speeds, Feeds, and Depth of Cuts are considered to be "safe starting conditions" and may need to be adjusted to obtain optimal performance.

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