

Tools for ALUMINUM



Aluminum Machining Without Chatter!

Scan this code to:

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- Get Tips and Tricks to Cut Thin Wall and Deep Pocket Parts
- And More...

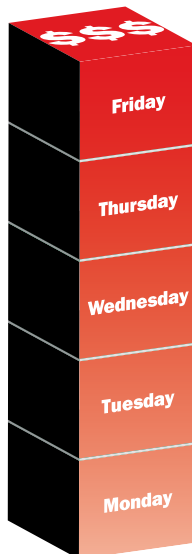
Featured Tools:

FM/FMHV Series — 41 Hours vs 1 Hour*

**MAX RPM!
MAX Feed Rate!
No Chatter!**

Cycle Time Before FM

*Actual results from a major defense manufacturer in deep pocket/thin wall aluminum



VS.

Cycle Time After FM

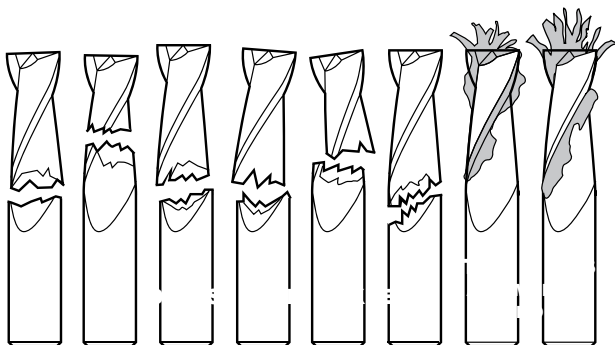


"I just wish we tried this tool sooner! It is truly amazing!"



A1-303/AL3

The **Only** Tool That Could Make the Part*



8 Other High-Performance Tools (Tried and Failed)

* Automotive aluminum part: No chatter, superfast feed rates, very high production 450 ipm in an aluminum extrusion.

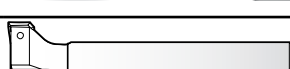
VS.



1 RJ A1-303 Tool

**MAX RPM!
MAX Feed Rate!
No Chatter!**



AL3 303/304/305	NEW! 3 Flute Chatter Reduction Hi-Performance with radii Standard, Long, and Extra-Long length		22
A1 / MA1 201	2 flute Stub Length tool to reduce required Horse-Power		28
A1 / MA1 303	3 Flute Chatter Reduction Hi-Performance with chamfer Standard length		30
FMHV 201-205/301-305	NEW! 2 & 3 Flute High Velocity Chatter Reduction with Reach and Radii for High Horse-Power Short, Medium, Long, and Extra-Long length		32
MFMHV METRIC 201-205/301-305	NEW! 2 & 3 Flute High Velocity Chatter Reduction with Reach and Radii for High Horse-Power Short, Medium, Long, and Extra-Long length		40
FM 201-205/301-305	2 & 3 Flute Chatter Reduction with Reach and Radii Short, Medium, Long, and Extra-Long length		52
MFM METRIC 201-205/301-305	2 & 3 Flute Chatter Reduction with Reach and Radii Short, Medium, Long, and Extra-Long length		60
S1 / MS1 201/301/401	2,3,4 Flute Stub Length		66
C1 / MC1 201/301/401	2,3,4 Flute Standard Length		68
PM / MPM / PMD Routers	1 Flute Router for Gummy Material		70
WU1 / WD1 310	3 Flute Up and Down-Shear Standard Length		71
AIC / INS FaceMills	NEW! Insertable Face Mill and Polished Inserts		72
FBD 201/202	NEW! Flat Bottom Drills for Aluminum 3x and 5x Lengths		74
SB / MSB 201 B / MB 203	2 Flute Ball End (See Multiple Applications)		156
C8 201/203/301/303	2 and 3 Flute on 1/4" Shank (See Multiple Applications)		151
NR / MNR 204/303/404	2, 3 and 4 Flute (See Multiple Applications)		160
PCD 203 Routers	2 Flute PCD-Tipped Routers (See Composites & Plastics)		109
PCD-BN 201 Routers	2 Flute PCD-Tipped Routers, Ball Nose (See Composites & Plastics)		109
MINIATURES	(See Miniatures Applications)		132
SAWS	(See Saws Applications)		170

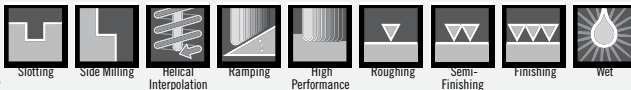
AL3 3 Flute High Performance Aluminum Carbide End Mill



Characteristics



Applications



Materials



Coatings



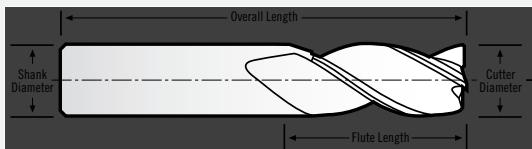
*Eliminate
Tool Pull Out!*

*ALL Tools h4 Shank Tolerance
up to 150% more gripping force*

*Tightest in the
Industry!*

*NEXT
GENERATION
Mirror
Edge!*

*Eliminates Chatter
& Vibration*



AL3 Series Tolerances:

Cutting Dia. = $-.0007/-0.0015$

Shank Dia. = $-.0001/-0.0002$

Flute Length = $+0.060/-0.000$

OAL = $+/- .060$



NEW!

AL3 3 Flute



	Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
STANDARD	1/8"	1/8"	3/8"	Sharp Corner	1-1/2"	AL3-303-04	AL3-303-04-DLC	AL3-303-04-TC*	AL3-303-04-TC-DLC*	1/8" DIAMETER
	1/8"	1/8"	3/8"	0.01"	1-1/2"	AL3-303-04-010	AL3-303-04-010-DLC	AL3-303-04-010-TC*	AL3-303-04-010-TC-DLC*	
	1/8"	1/8"	3/8"	0.03"	1-1/2"	AL3-303-04-030	AL3-303-04-030-DLC	AL3-303-04-030-TC*	AL3-303-04-030-TC-DLC*	
	1/8"	1/8"	3/8"	Ball End	1-1/2"	AL3-303-04-BN	AL3-303-04-BN-DLC			
LONG	1/8"	1/8"	5/8"	Sharp Corner	2"	AL3-304-04	AL3-304-04-DLC	AL3-304-04-TC*	AL3-304-04-TC-DLC*	
	1/8"	1/8"	5/8"	0.01"	2"	AL3-304-04-010	AL3-304-04-010-DLC	AL3-304-04-010-TC*	AL3-304-04-010-TC-DLC*	
	1/8"	1/8"	5/8"	0.03"	2"	AL3-304-04-030	AL3-304-04-030-DLC	AL3-304-04-030-TC*	AL3-304-04-030-TC-DLC*	
	1/8"	1/8"	5/8"	Ball End	2"	AL3-304-04-BN	AL3-304-04-BN-DLC			
EXTRA LONG	1/8"	1/8"	1"	Sharp Corner	2"	AL3-305-04	AL3-305-04-DLC	AL3-305-04-TC*	AL3-305-04-TC-DLC*	
	1/8"	1/8"	1"	0.01"	2"	AL3-305-04-010	AL3-305-04-010-DLC	AL3-305-04-010-TC*	AL3-305-04-010-TC-DLC*	
	1/8"	1/8"	1"	0.03"	2"	AL3-305-04-030	AL3-305-04-030-DLC	AL3-305-04-030-TC*	AL3-305-04-030-TC-DLC*	
	1/8"	1/8"	1"	Ball End	2"	AL3-305-04-BN	AL3-305-04-BN-DLC			
STANDARD	3/16"	3/16"	9/16"	Sharp Corner	2"	AL3-303-06	AL3-303-06-DLC	AL3-303-06-TC*	AL3-303-06-TC-DLC*	3/16" DIAMETER
	3/16"	3/16"	9/16"	0.01"	2"	AL3-303-06-010	AL3-303-06-010-DLC	AL3-303-06-010-TC*	AL3-303-06-010-TC-DLC*	
	3/16"	3/16"	9/16"	0.03"	2"	AL3-303-06-030	AL3-303-06-030-DLC	AL3-303-06-030-TC*	AL3-303-06-030-TC-DLC*	
	3/16"	3/16"	9/16"	0.06"	2"	AL3-303-06-060	AL3-303-06-060-DLC	AL3-303-06-060-TC*	AL3-303-06-060-TC-DLC*	
LONG	3/16"	3/16"	3/4"	Sharp Corner	2"	AL3-304-06	AL3-304-06-DLC	AL3-304-06-TC*	AL3-304-06-TC-DLC*	
	3/16"	3/16"	3/4"	0.01"	2"	AL3-304-06-010	AL3-304-06-010-DLC	AL3-304-06-010-TC*	AL3-304-06-010-TC-DLC*	
	3/16"	3/16"	3/4"	0.03"	2"	AL3-304-06-030	AL3-304-06-030-DLC	AL3-304-06-030-TC*	AL3-304-06-030-TC-DLC*	
	3/16"	3/16"	3/4"	0.06"	2"	AL3-304-06-060	AL3-304-06-060-DLC	AL3-304-06-060-TC*	AL3-304-06-060-TC-DLC*	
	3/16"	3/16"	3/4"	Ball End	2"	AL3-304-06-BN	AL3-304-06-BN-DLC			

* non center cutting single thru hole for 1/8" and 3/16" diameters

Due to the large offering of AL3 series many of these are made to order and non-returnable.

NEW!

Aluminum

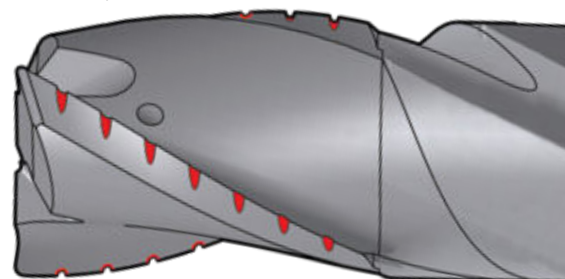
AL3 3 Flute – continued

	Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
EXTRA LONG	3/16"	3/16"	1"	Sharp Corner	2-1/2"	AL3-305-06	AL3-305-06-DLC	AL3-305-06-TC*	AL3-305-06-TC-DLC*	3/16" DIAMETER
	3/16"	3/16"	1"	0.01"	2-1/2"	AL3-305-06-010	AL3-305-06-010-DLC	AL3-305-06-010-TC*	AL3-305-06-010-TC-DLC*	
	3/16"	3/16"	1"	0.03"	2-1/2"	AL3-305-06-030	AL3-305-06-030-DLC	AL3-305-06-030-TC*	AL3-305-06-030-TC-DLC*	
	3/16"	3/16"	1"	0.06"	2-1/2"	AL3-305-06-060	AL3-305-06-060-DLC	AL3-305-06-060-TC*	AL3-305-06-060-TC-DLC*	
	3/16"	3/16"	1"	Ball End	2-1/2"	AL3-305-06-BN	AL3-305-06-BN-DLC			
STANDARD	1/4"	1/4"	3/4"	Sharp Corner	2-1/2"	AL3-303-08	AL3-303-08-DLC	AL3-303-08-TC	AL3-303-08-TC-DLC	1/4" DIAMETER
	1/4"	1/4"	3/4"	0.01"	2-1/2"	AL3-303-08-010	AL3-303-08-010-DLC	AL3-303-08-010-TC	AL3-303-08-010-TC-DLC	
	1/4"	1/4"	3/4"	0.03"	2-1/2"	AL3-303-08-030	AL3-303-08-030-DLC	AL3-303-08-030-TC	AL3-303-08-030-TC-DLC	
	1/4"	1/4"	3/4"	0.06"	2-1/2"	AL3-303-08-060	AL3-303-08-060-DLC	AL3-303-08-060-TC	AL3-303-08-060-TC-DLC	
	1/4"	1/4"	3/4"	0.09"	2-1/2"	AL3-303-08-090	AL3-303-08-090-DLC	AL3-303-08-090-TC	AL3-303-08-090-TC-DLC	
	1/4"	1/4"	3/4"	Ball End	2-1/2"	AL3-303-08-BN	AL3-303-08-BN-DLC	AL3-303-08-BN-TC	AL3-303-08-BN-TC-DLC	
LONG	1/4"	1/4"	1"	Sharp Corner	3"	AL3-304-08	AL3-304-08-DLC	AL3-304-08-TC	AL3-304-08-TC-DLC	1/4" DIAMETER
	1/4"	1/4"	1"	0.01"	3"	AL3-304-08-010	AL3-304-08-010-DLC	AL3-304-08-010-TC	AL3-304-08-010-TC-DLC	
	1/4"	1/4"	1"	0.03"	3"	AL3-304-08-030	AL3-304-08-030-DLC	AL3-304-08-030-TC	AL3-304-08-030-TC-DLC	
	1/4"	1/4"	1"	0.06"	3"	AL3-304-08-060	AL3-304-08-060-DLC	AL3-304-08-060-TC	AL3-304-08-060-TC-DLC	
	1/4"	1/4"	1"	0.09"	3"	AL3-304-08-090	AL3-304-08-090-DLC	AL3-304-08-090-TC	AL3-304-08-090-TC-DLC	
	1/4"	1/4"	1"	Ball End	3"	AL3-304-08-BN	AL3-304-08-BN-DLC	AL3-304-08-BN-TC	AL3-304-08-BN-TC-DLC	
EXTRA LONG	1/4"	1/4"	1-1/4"	Sharp Corner	3"	AL3-305-08	AL3-305-08-DLC	AL3-305-08-TC	AL3-305-08-TC-DLC	1/4" DIAMETER
	1/4"	1/4"	1-1/4"	0.01"	3"	AL3-305-08-010	AL3-305-08-010-DLC	AL3-305-08-010-TC	AL3-305-08-010-TC-DLC	
	1/4"	1/4"	1-1/4"	0.03"	3"	AL3-305-08-030	AL3-305-08-030-DLC	AL3-305-08-030-TC	AL3-305-08-030-TC-DLC	
	1/4"	1/4"	1-1/4"	0.06"	3"	AL3-305-08-060	AL3-305-08-060-DLC	AL3-305-08-060-TC	AL3-305-08-060-TC-DLC	
	1/4"	1/4"	1-1/4"	0.09"	3"	AL3-305-08-090	AL3-305-08-090-DLC	AL3-305-08-090-TC	AL3-305-08-090-TC-DLC	
	1/4"	1/4"	1-1/4"	Ball End	3"	AL3-305-08-BN	AL3-305-08-BN-DLC	AL3-305-08-BN-TC	AL3-305-08-BN-TC-DLC	
STANDARD	5/16"	5/16"	15/16"	Sharp Corner	2-1/2"	AL3-303-10	AL3-303-10-DLC	AL3-303-10-TC	AL3-303-10-TC-DLC	5/16" DIAMETER
	5/16"	5/16"	15/16"	0.01"	2-1/2"	AL3-303-10-010	AL3-303-10-010-DLC	AL3-303-10-010-TC	AL3-303-10-010-TC-DLC	
	5/16"	5/16"	15/16"	0.03"	2-1/2"	AL3-303-10-030	AL3-303-10-030-DLC	AL3-303-10-030-TC	AL3-303-10-030-TC-DLC	
	5/16"	5/16"	15/16"	0.06"	2-1/2"	AL3-303-10-060	AL3-303-10-060-DLC	AL3-303-10-060-TC	AL3-303-10-060-TC-DLC	
	5/16"	5/16"	15/16"	0.09"	2-1/2"	AL3-303-10-090	AL3-303-10-090-DLC	AL3-303-10-090-TC	AL3-303-10-090-TC-DLC	
	5/16"	5/16"	15/16"	0.12"	2-1/2"	AL3-303-10-120	AL3-303-10-120-DLC	AL3-303-10-120-TC	AL3-303-10-120-TC-DLC	
	5/16"	5/16"	15/16"	Ball End	2-1/2"	AL3-303-10-BN	AL3-303-10-BN-DLC	AL3-303-10-BN-TC	AL3-303-10-BN-TC-DLC	
	5/16"	5/16"	1-1/4"	Sharp Corner	3"	AL3-304-10	AL3-304-10-DLC	AL3-304-10-TC	AL3-304-10-TC-DLC	
LONG	5/16"	5/16"	1-1/4"	0.01"	3"	AL3-304-10-010	AL3-304-10-010-DLC	AL3-304-10-010-TC	AL3-304-10-010-TC-DLC	5/16" DIAMETER
	5/16"	5/16"	1-1/4"	0.03"	3"	AL3-304-10-030	AL3-304-10-030-DLC	AL3-304-10-030-TC	AL3-304-10-030-TC-DLC	
	5/16"	5/16"	1-1/4"	0.06"	3"	AL3-304-10-060	AL3-304-10-060-DLC	AL3-304-10-060-TC	AL3-304-10-060-TC-DLC	
	5/16"	5/16"	1-1/4"	0.09"	3"	AL3-304-10-090	AL3-304-10-090-DLC	AL3-304-10-090-TC	AL3-304-10-090-TC-DLC	
	5/16"	5/16"	1-1/4"	0.12"	3"	AL3-304-10-120	AL3-304-10-120-DLC	AL3-304-10-120-TC	AL3-304-10-120-TC-DLC	
	5/16"	5/16"	1-1/4"	Ball End	3"	AL3-304-10-BN	AL3-304-10-BN-DLC	AL3-304-10-BN-TC	AL3-304-10-BN-TC-DLC	

* non center cutting single thru hole for 1/8" and 3/16" diameters

Due to the large offering of AL3 series many of these are made to order and non-returnable.

All AL3-304 (Long Length) and AL3-305 (Extra Long Length) come standard with Chip Breakers to control chips!



AL3 3 Flute High Performance Aluminum Carbide End Mill



AL3 3 Flute – continued



EXTRA LONG

Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
5/16"	5/16"	1-9/16"	Sharp Corner	3"	AL3-305-10	AL3-305-10-DLC	AL3-305-10-TC	AL3-305-10-TC-DLC
5/16"	5/16"	1-9/16"	0.01"	3"	AL3-305-10-010	AL3-305-10-010-DLC	AL3-305-10-010-TC	AL3-305-10-010-TC-DLC
5/16"	5/16"	1-9/16"	0.03"	3"	AL3-305-10-030	AL3-305-10-030-DLC	AL3-305-10-030-TC	AL3-305-10-030-TC-DLC
5/16"	5/16"	1-9/16"	0.06"	3"	AL3-305-10-060	AL3-305-10-060-DLC	AL3-305-10-060-TC	AL3-305-10-060-TC-DLC
5/16"	5/16"	1-9/16"	0.09"	3"	AL3-305-10-090	AL3-305-10-090-DLC	AL3-305-10-090-TC	AL3-305-10-090-TC-DLC
5/16"	5/16"	1-9/16"	0.12"	3"	AL3-305-10-120	AL3-305-10-120-DLC	AL3-305-10-120-TC	AL3-305-10-120-TC-DLC
5/16"	5/16"	1-9/16"	Ball End	3"	AL3-305-10-BN	AL3-305-10-BN-DLC	AL3-305-10-BN-TC	AL3-305-10-BN-TC-DLC

5/16"
DIAMETER

STANDARD

3/8"	3/8"	1-1/8"	Sharp Corner	3"	AL3-303-12	AL3-303-12-DLC	AL3-303-12-TC	AL3-303-12-TC-DLC
3/8"	3/8"	1-1/8"	0.01"	3"	AL3-303-12-010	AL3-303-12-010-DLC	AL3-303-12-010-TC	AL3-303-12-010-TC-DLC
3/8"	3/8"	1-1/8"	0.03"	3"	AL3-303-12-030	AL3-303-12-030-DLC	AL3-303-12-030-TC	AL3-303-12-030-TC-DLC
3/8"	3/8"	1-1/8"	0.06"	3"	AL3-303-12-060	AL3-303-12-060-DLC	AL3-303-12-060-TC	AL3-303-12-060-TC-DLC
3/8"	3/8"	1-1/8"	0.09"	3"	AL3-303-12-090	AL3-303-12-090-DLC	AL3-303-12-090-TC	AL3-303-12-090-TC-DLC
3/8"	3/8"	1-1/8"	0.12"	3"	AL3-303-12-120	AL3-303-12-120-DLC	AL3-303-12-120-TC	AL3-303-12-120-TC-DLC
3/8"	3/8"	1-1/8"	Ball End	3"	AL3-303-12-BN	AL3-303-12-BN-DLC	AL3-303-12-BN-TC	AL3-303-12-BN-TC-DLC

3/8"
DIAMETER

LONG

3/8"	3/8"	1-1/2"	Sharp Corner	3-1/2"	AL3-304-12	AL3-304-12-DLC	AL3-304-12-TC	AL3-304-12-TC-DLC
3/8"	3/8"	1-1/2"	0.01"	3-1/2"	AL3-304-12-010	AL3-304-12-010-DLC	AL3-304-12-010-TC	AL3-304-12-010-TC-DLC
3/8"	3/8"	1-1/2"	0.03"	3-1/2"	AL3-304-12-030	AL3-304-12-030-DLC	AL3-304-12-030-TC	AL3-304-12-030-TC-DLC
3/8"	3/8"	1-1/2"	0.06"	3-1/2"	AL3-304-12-060	AL3-304-12-060-DLC	AL3-304-12-060-TC	AL3-304-12-060-TC-DLC
3/8"	3/8"	1-1/2"	0.09"	3-1/2"	AL3-304-12-090	AL3-304-12-090-DLC	AL3-304-12-090-TC	AL3-304-12-090-TC-DLC
3/8"	3/8"	1-1/2"	0.12"	3-1/2"	AL3-304-12-120	AL3-304-12-120-DLC	AL3-304-12-120-TC	AL3-304-12-120-TC-DLC
3/8"	3/8"	1-1/2"	Ball End	3-1/2"	AL3-304-12-BN	AL3-304-12-BN-DLC	AL3-304-12-BN-TC	AL3-304-12-BN-TC-DLC

EXTRA LONG

3/8"	3/8"	1-7/8"	Sharp Corner	3-1/2"	AL3-305-12	AL3-305-12-DLC	AL3-305-12-TC	AL3-305-12-TC-DLC
3/8"	3/8"	1-7/8"	0.01"	3-1/2"	AL3-305-12-010	AL3-305-12-010-DLC	AL3-305-12-010-TC	AL3-305-12-010-TC-DLC
3/8"	3/8"	1-7/8"	0.03"	3-1/2"	AL3-305-12-030	AL3-305-12-030-DLC	AL3-305-12-030-TC	AL3-305-12-030-TC-DLC
3/8"	3/8"	1-7/8"	0.06"	3-1/2"	AL3-305-12-060	AL3-305-12-060-DLC	AL3-305-12-060-TC	AL3-305-12-060-TC-DLC
3/8"	3/8"	1-7/8"	0.09"	3-1/2"	AL3-305-12-090	AL3-305-12-090-DLC	AL3-305-12-090-TC	AL3-305-12-090-TC-DLC
3/8"	3/8"	1-7/8"	0.12"	3-1/2"	AL3-305-12-120	AL3-305-12-120-DLC	AL3-305-12-120-TC	AL3-305-12-120-TC-DLC
3/8"	3/8"	1-7/8"	Ball End	3-1/2"	AL3-305-12-BN	AL3-305-12-BN-DLC	AL3-305-12-BN-TC	AL3-305-12-BN-TC-DLC

STANDARD

1/2"	1/2"	1-1/2"	Sharp Corner	3-1/2"	AL3-303-16	AL3-303-16-DLC	AL3-303-16-TC	AL3-303-16-TC-DLC
1/2"	1/2"	1-1/2"	0.01"	3-1/2"	AL3-303-16-010	AL3-303-16-010-DLC	AL3-303-16-010-TC	AL3-303-16-010-TC-DLC
1/2"	1/2"	1-1/2"	0.03"	3-1/2"	AL3-303-16-030	AL3-303-16-030-DLC	AL3-303-16-030-TC	AL3-303-16-030-TC-DLC
1/2"	1/2"	1-1/2"	0.06"	3-1/2"	AL3-303-16-060	AL3-303-16-060-DLC	AL3-303-16-060-TC	AL3-303-16-060-TC-DLC
1/2"	1/2"	1-1/2"	0.09"	3-1/2"	AL3-303-16-090	AL3-303-16-090-DLC	AL3-303-16-090-TC	AL3-303-16-090-TC-DLC
1/2"	1/2"	1-1/2"	0.12"	3-1/2"	AL3-303-16-120	AL3-303-16-120-DLC	AL3-303-16-120-TC	AL3-303-16-120-TC-DLC
1/2"	1/2"	1-1/2"	0.19"	3-1/2"	AL3-303-16-190	AL3-303-16-190-DLC	AL3-303-16-190-TC	AL3-303-16-190-TC-DLC
1/2"	1/2"	1-1/2"	Ball End	3-1/2"	AL3-303-16-BN	AL3-303-16-BN-DLC	AL3-303-16-BN-TC	AL3-303-16-BN-TC-DLC

1/2"
DIAMETER

LONG

1/2"	1/2"	2"	Sharp Corner	4"	AL3-304-16	AL3-304-16-DLC	AL3-304-16-TC	AL3-304-16-TC-DLC
1/2"	1/2"	2"	0.01"	4"	AL3-304-16-010	AL3-304-16-010-DLC	AL3-304-16-010-TC	AL3-304-16-010-TC-DLC
1/2"	1/2"	2"	0.03"	4"	AL3-304-16-030	AL3-304-16-030-DLC	AL3-304-16-030-TC	AL3-304-16-030-TC-DLC
1/2"	1/2"	2"	0.06"	4"	AL3-304-16-060	AL3-304-16-060-DLC	AL3-304-16-060-TC	AL3-304-16-060-TC-DLC
1/2"	1/2"	2"	0.09"	4"	AL3-304-16-090	AL3-304-16-090-DLC	AL3-304-16-090-TC	AL3-304-16-090-TC-DLC
1/2"	1/2"	2"	0.12"	4"	AL3-304-16-120	AL3-304-16-120-DLC	AL3-304-16-120-TC	AL3-304-16-120-TC-DLC
1/2"	1/2"	2"	0.19"	4"	AL3-304-16-190	AL3-304-16-190-DLC	AL3-304-16-190-TC	AL3-304-16-190-TC-DLC
1/2"	1/2"	2"	Ball End	4"	AL3-304-16-BN	AL3-304-16-BN-DLC	AL3-304-16-BN-TC	AL3-304-16-BN-TC-DLC

Due to the large offering of AL3 series many of these are made to order and non-returnable.

NEW!

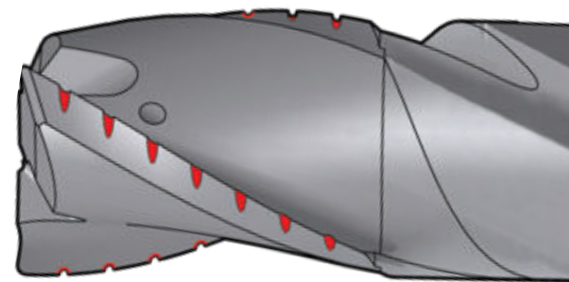
Aluminum

AL3 3 Flute – continued

	Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
EXTRA LONG	1/2"	1/2"	2-1/2"	Sharp Corner	4-1/2"	AL3-305-16	AL3-305-16-DLC	AL3-305-16-TC	AL3-305-16-TC-DLC	1/2" DIAMETER
	1/2"	1/2"	2-1/2"	0.01"	4-1/2"	AL3-305-16-010	AL3-305-16-010-DLC	AL3-305-16-010-TC	AL3-305-16-010-TC-DLC	
	1/2"	1/2"	2-1/2"	0.03"	4-1/2"	AL3-305-16-030	AL3-305-16-030-DLC	AL3-305-16-030-TC	AL3-305-16-030-TC-DLC	
	1/2"	1/2"	2-1/2"	0.06"	4-1/2"	AL3-305-16-060	AL3-305-16-060-DLC	AL3-305-16-060-TC	AL3-305-16-060-TC-DLC	
	1/2"	1/2"	2-1/2"	0.09"	4-1/2"	AL3-305-16-090	AL3-305-16-090-DLC	AL3-305-16-090-TC	AL3-305-16-090-TC-DLC	
	1/2"	1/2"	2-1/2"	0.12"	4-1/2"	AL3-305-16-120	AL3-305-16-120-DLC	AL3-305-16-120-TC	AL3-305-16-120-TC-DLC	
	1/2"	1/2"	2-1/2"	0.19"	4-1/2"	AL3-305-16-190	AL3-305-16-190-DLC	AL3-305-16-190-TC	AL3-305-16-190-TC-DLC	
	1/2"	1/2"	2-1/2"	Ball End	4-1/2"	AL3-305-16-BN	AL3-305-16-BN-DLC	AL3-305-16-BN-TC	AL3-305-16-BN-TC-DLC	
STANDARD	5/8"	5/8"	1-7/8"	Sharp Corner	4"	AL3-303-20	AL3-303-20-DLC	AL3-303-20-TC	AL3-303-20-TC-DLC	5/8" DIAMETER
	5/8"	5/8"	1-7/8"	0.01"	4"	AL3-303-20-010	AL3-303-20-010-DLC	AL3-303-20-010-TC	AL3-303-20-010-TC-DLC	
	5/8"	5/8"	1-7/8"	0.03"	4"	AL3-303-20-030	AL3-303-20-030-DLC	AL3-303-20-030-TC	AL3-303-20-030-TC-DLC	
	5/8"	5/8"	1-7/8"	0.06"	4"	AL3-303-20-060	AL3-303-20-060-DLC	AL3-303-20-060-TC	AL3-303-20-060-TC-DLC	
	5/8"	5/8"	1-7/8"	0.09"	4"	AL3-303-20-090	AL3-303-20-090-DLC	AL3-303-20-090-TC	AL3-303-20-090-TC-DLC	
	5/8"	5/8"	1-7/8"	0.12"	4"	AL3-303-20-120	AL3-303-20-120-DLC	AL3-303-20-120-TC	AL3-303-20-120-TC-DLC	
	5/8"	5/8"	1-7/8"	0.19"	4"	AL3-303-20-190	AL3-303-20-190-DLC	AL3-303-20-190-TC	AL3-303-20-190-TC-DLC	
	5/8"	5/8"	1-7/8"	0.25"	4"	AL3-303-20-250	AL3-303-20-250-DLC	AL3-303-20-250-TC	AL3-303-20-250-TC-DLC	
	5/8"	5/8"	1-7/8"	Ball End	4"	AL3-303-20-BN	AL3-303-20-BN-DLC	AL3-303-20-BN-TC	AL3-303-20-BN-TC-DLC	
	5/8"	5/8"	2-1/2"	Sharp Corner	4-1/2"	AL3-304-20	AL3-304-20-DLC	AL3-304-20-TC	AL3-304-20-TC-DLC	
LONG	5/8"	5/8"	2-1/2"	0.01"	4-1/2"	AL3-304-20-010	AL3-304-20-010-DLC	AL3-304-20-010-TC	AL3-304-20-010-TC-DLC	
	5/8"	5/8"	2-1/2"	0.03"	4-1/2"	AL3-304-20-030	AL3-304-20-030-DLC	AL3-304-20-030-TC	AL3-304-20-030-TC-DLC	
	5/8"	5/8"	2-1/2"	0.06"	4-1/2"	AL3-304-20-060	AL3-304-20-060-DLC	AL3-304-20-060-TC	AL3-304-20-060-TC-DLC	
	5/8"	5/8"	2-1/2"	0.09"	4-1/2"	AL3-304-20-090	AL3-304-20-090-DLC	AL3-304-20-090-TC	AL3-304-20-090-TC-DLC	
	5/8"	5/8"	2-1/2"	0.12"	4-1/2"	AL3-304-20-120	AL3-304-20-120-DLC	AL3-304-20-120-TC	AL3-304-20-120-TC-DLC	
	5/8"	5/8"	2-1/2"	0.19"	4-1/2"	AL3-304-20-190	AL3-304-20-190-DLC	AL3-304-20-190-TC	AL3-304-20-190-TC-DLC	
	5/8"	5/8"	2-1/2"	0.25"	4-1/2"	AL3-304-20-250	AL3-304-20-250-DLC	AL3-304-20-250-TC	AL3-304-20-250-TC-DLC	
	5/8"	5/8"	2-1/2"	Ball End	4-1/2"	AL3-304-20-BN	AL3-304-20-BN-DLC	AL3-304-20-BN-TC	AL3-304-20-BN-TC-DLC	
	5/8"	5/8"	3-1/8"	Sharp Corner	5"	AL3-305-20	AL3-305-20-DLC	AL3-305-20-TC	AL3-305-20-TC-DLC	
	5/8"	5/8"	3-1/8"	0.01"	5"	AL3-305-20-010	AL3-305-20-010-DLC	AL3-305-20-010-TC	AL3-305-20-010-TC-DLC	
EXTRA LONG	5/8"	5/8"	3-1/8"	0.03"	5"	AL3-305-20-030	AL3-305-20-030-DLC	AL3-305-20-030-TC	AL3-305-20-030-TC-DLC	
	5/8"	5/8"	3-1/8"	0.06"	5"	AL3-305-20-060	AL3-305-20-060-DLC	AL3-305-20-060-TC	AL3-305-20-060-TC-DLC	
	5/8"	5/8"	3-1/8"	0.09"	5"	AL3-305-20-090	AL3-305-20-090-DLC	AL3-305-20-090-TC	AL3-305-20-090-TC-DLC	
	5/8"	5/8"	3-1/8"	0.12"	5"	AL3-305-20-120	AL3-305-20-120-DLC	AL3-305-20-120-TC	AL3-305-20-120-TC-DLC	
	5/8"	5/8"	3-1/8"	0.19"	5"	AL3-305-20-190	AL3-305-20-190-DLC	AL3-305-20-190-TC	AL3-305-20-190-TC-DLC	
	5/8"	5/8"	3-1/8"	0.25"	5"	AL3-305-20-250	AL3-305-20-250-DLC	AL3-305-20-250-TC	AL3-305-20-250-TC-DLC	
	5/8"	5/8"	3-1/8"	Ball End	5"	AL3-305-20-BN	AL3-305-20-BN-DLC	AL3-305-20-BN-TC	AL3-305-20-BN-TC-DLC	
	5/8"	5/8"	3-1/8"	Ball End	5"	AL3-305-20-BN	AL3-305-20-BN-DLC	AL3-305-20-BN-TC	AL3-305-20-BN-TC-DLC	

Due to the large offering of AL3 series many of these are made to order and non-returnable.

All AL3-304 (Long Length) and AL3-305 (Extra Long Length) come standard with Chip Breakers to control chips!



AL3 3 Flute High Performance Aluminum Carbide End Mill



AL3 3 Flute – continued



STANDARD

LONG

EXTRA LONG

STANDARD

LONG

Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
3/4"	3/4"	2-1/4"	Sharp Corner	4-1/2"	AL3-303-24	AL3-303-24-DLC	AL3-303-24-TC	AL3-303-24-TC-DLC
3/4"	3/4"	2-1/4"	0.01	4-1/2"	AL3-303-24-010	AL3-303-24-010-DLC	AL3-303-24-010-TC	AL3-303-24-010-TC-DLC
3/4"	3/4"	2-1/4"	0.03	4-1/2"	AL3-303-24-030	AL3-303-24-030-DLC	AL3-303-24-030-TC	AL3-303-24-030-TC-DLC
3/4"	3/4"	2-1/4"	0.06	4-1/2"	AL3-303-24-060	AL3-303-24-060-DLC	AL3-303-24-060-TC	AL3-303-24-060-TC-DLC
3/4"	3/4"	2-1/4"	0.09	4-1/2"	AL3-303-24-090	AL3-303-24-090-DLC	AL3-303-24-090-TC	AL3-303-24-090-TC-DLC
3/4"	3/4"	2-1/4"	0.12	4-1/2"	AL3-303-24-120	AL3-303-24-120-DLC	AL3-303-24-120-TC	AL3-303-24-120-TC-DLC
3/4"	3/4"	2-1/4"	0.19	4-1/2"	AL3-303-24-190	AL3-303-24-190-DLC	AL3-303-24-190-TC	AL3-303-24-190-TC-DLC
3/4"	3/4"	2-1/4"	0.25"	4-1/2"	AL3-303-24-250	AL3-303-24-250-DLC	AL3-303-24-250-TC	AL3-303-24-250-TC-DLC
3/4"	3/4"	2-1/4"	Ball End	4-1/2"	AL3-303-24-BN	AL3-303-24-BN-DLC	AL3-303-24-BN-TC	AL3-303-24-BN-TC-DLC
3/4"	3/4"	3"	Sharp Corner	5"	AL3-304-24	AL3-304-24-DLC	AL3-304-24-TC	AL3-304-24-TC-DLC
3/4"	3/4"	3"	0.01"	5"	AL3-304-24-010	AL3-304-24-010-DLC	AL3-304-24-010-TC	AL3-304-24-010-TC-DLC
3/4"	3/4"	3"	0.03"	5"	AL3-304-24-030	AL3-304-24-030-DLC	AL3-304-24-030-TC	AL3-304-24-030-TC-DLC
3/4"	3/4"	3"	0.06"	5"	AL3-304-24-060	AL3-304-24-060-DLC	AL3-304-24-060-TC	AL3-304-24-060-TC-DLC
3/4"	3/4"	3"	0.09"	5"	AL3-304-24-090	AL3-304-24-090-DLC	AL3-304-24-090-TC	AL3-304-24-090-TC-DLC
3/4"	3/4"	3"	0.12"	5"	AL3-304-24-120	AL3-304-24-120-DLC	AL3-304-24-120-TC	AL3-304-24-120-TC-DLC
3/4"	3/4"	3"	0.19"	5"	AL3-304-24-190	AL3-304-24-190-DLC	AL3-304-24-190-TC	AL3-304-24-190-TC-DLC
3/4"	3/4"	3"	0.25"	5"	AL3-304-24-250	AL3-304-24-250-DLC	AL3-304-24-250-TC	AL3-304-24-250-TC-DLC
3/4"	3/4"	3"	Ball End	5"	AL3-304-24-BN	AL3-304-24-BN-DLC	AL3-304-24-BN-TC	AL3-304-24-BN-TC-DLC
3/4"	3/4"	3-3/4"	Sharp Corner	6"	AL3-305-24	AL3-305-24-DLC	AL3-305-24-TC	AL3-305-24-TC-DLC
3/4"	3/4"	3-3/4"	0.01"	6"	AL3-305-24-010	AL3-305-24-010-DLC	AL3-305-24-010-TC	AL3-305-24-010-TC-DLC
3/4"	3/4"	3-3/4"	0.03"	6"	AL3-305-24-030	AL3-305-24-030-DLC	AL3-305-24-030-TC	AL3-305-24-030-TC-DLC
3/4"	3/4"	3-3/4"	0.06"	6"	AL3-305-24-060	AL3-305-24-060-DLC	AL3-305-24-060-TC	AL3-305-24-060-TC-DLC
3/4"	3/4"	3-3/4"	0.09"	6"	AL3-305-24-090	AL3-305-24-090-DLC	AL3-305-24-090-TC	AL3-305-24-090-TC-DLC
3/4"	3/4"	3-3/4"	0.12"	6"	AL3-305-24-120	AL3-305-24-120-DLC	AL3-305-24-120-TC	AL3-305-24-120-TC-DLC
3/4"	3/4"	3-3/4"	0.19"	6"	AL3-305-24-190	AL3-305-24-190-DLC	AL3-305-24-190-TC	AL3-305-24-190-TC-DLC
3/4"	3/4"	3-3/4"	0.25"	6"	AL3-305-24-250	AL3-305-24-250-DLC	AL3-305-24-250-TC	AL3-305-24-250-TC-DLC
3/4"	3/4"	3-3/4"	Ball End	6"	AL3-305-24-BN	AL3-305-24-BN-DLC	AL3-305-24-BN-TC	AL3-305-24-BN-TC-DLC
1"	1"	3"	Sharp Corner	5"	AL3-303-32	AL3-303-32-DLC	AL3-303-32-TC	AL3-303-32-TC-DLC
1"	1"	3"	0.01"	5"	AL3-303-32-010	AL3-303-32-010-DLC	AL3-303-32-010-TC	AL3-303-32-010-TC-DLC
1"	1"	3"	0.03"	5"	AL3-303-32-030	AL3-303-32-030-DLC	AL3-303-32-030-TC	AL3-303-32-030-TC-DLC
1"	1"	3"	0.06"	5"	AL3-303-32-060	AL3-303-32-060-DLC	AL3-303-32-060-TC	AL3-303-32-060-TC-DLC
1"	1"	3"	0.09"	5"	AL3-303-32-090	AL3-303-32-090-DLC	AL3-303-32-090-TC	AL3-303-32-090-TC-DLC
1"	1"	3"	0.12"	5"	AL3-303-32-120	AL3-303-32-120-DLC	AL3-303-32-120-TC	AL3-303-32-120-TC-DLC
1"	1"	3"	0.19"	5"	AL3-303-32-190	AL3-303-32-190-DLC	AL3-303-32-190-TC	AL3-303-32-190-TC-DLC
1"	1"	3"	0.25"	5"	AL3-303-32-250	AL3-303-32-250-DLC	AL3-303-32-250-TC	AL3-303-32-250-TC-DLC
1"	1"	3"	Ball End	5"	AL3-303-32-BN	AL3-303-32-BN-DLC	AL3-303-32-BN-TC	AL3-303-32-BN-TC-DLC
1"	1"	4"	Sharp Corner	7"	AL3-304-32	AL3-304-32-DLC	AL3-304-32-TC	AL3-304-32-TC-DLC
1"	1"	4"	0.01"	7"	AL3-304-32-010	AL3-304-32-010-DLC	AL3-304-32-010-TC	AL3-304-32-010-TC-DLC
1"	1"	4"	0.03"	7"	AL3-304-32-030	AL3-304-32-030-DLC	AL3-304-32-030-TC	AL3-304-32-030-TC-DLC
1"	1"	4"	0.06"	7"	AL3-304-32-060	AL3-304-32-060-DLC	AL3-304-32-060-TC	AL3-304-32-060-TC-DLC
1"	1"	4"	0.09"	7"	AL3-304-32-090	AL3-304-32-090-DLC	AL3-304-32-090-TC	AL3-304-32-090-TC-DLC
1"	1"	4"	0.12"	7"	AL3-304-32-120	AL3-304-32-120-DLC	AL3-304-32-120-TC	AL3-304-32-120-TC-DLC
1"	1"	4"	0.19"	7"	AL3-304-32-190	AL3-304-32-190-DLC	AL3-304-32-190-TC	AL3-304-32-190-TC-DLC
1"	1"	4"	0.25"	7"	AL3-304-32-250	AL3-304-32-250-DLC	AL3-304-32-250-TC	AL3-304-32-250-TC-DLC
1"	1"	4"	Ball End	7"	AL3-304-32-BN	AL3-304-32-BN-DLC	AL3-304-32-BN-TC	AL3-304-32-BN-TC-DLC

3/4"
DIAMETER1"
DIAMETER

Due to the large offering of AL3 series many of these are made to order and non-returnable.

NEW!

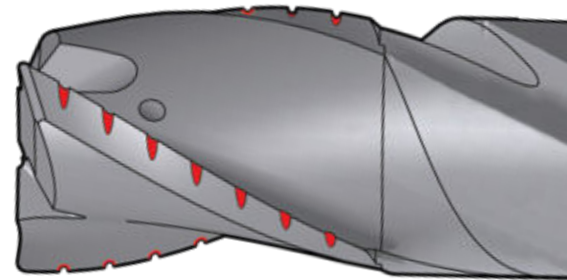
Aluminum

AL3 3 Flute – continued

EXTRA LONG	Cutting Diam.	Shank Diam.	Flute Length	Corner radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	1" DIAMETER
	1"	1"	5"	Sharp Corner	8"	AL3-305-32	AL3-305-32-DLC	AL3-305-32-TC	AL3-305-32-TC-DLC	
	1"	1"	5"	0.01"	8"	AL3-305-32-010	AL3-305-32-010-DLC	AL3-305-32-010-TC	AL3-305-32-010-TC-DLC	
	1"	1"	5"	0.03"	8"	AL3-305-32-030	AL3-305-32-030-DLC	AL3-305-32-030-TC	AL3-305-32-030-TC-DLC	
	1"	1"	5"	0.06"	8"	AL3-305-32-060	AL3-305-32-060-DLC	AL3-305-32-060-TC	AL3-305-32-060-TC-DLC	
	1"	1"	5"	0.09"	8"	AL3-305-32-090	AL3-305-32-090-DLC	AL3-305-32-090-TC	AL3-305-32-090-TC-DLC	
	1"	1"	5"	0.12"	8"	AL3-305-32-120	AL3-305-32-120-DLC	AL3-305-32-120-TC	AL3-305-32-120-TC-DLC	
	1"	1"	5"	0.19"	8"	AL3-305-32-190	AL3-305-32-190-DLC	AL3-305-32-190-TC	AL3-305-32-190-TC-DLC	
	1"	1"	5"	0.25"	8"	AL3-305-32-250	AL3-305-32-250-DLC	AL3-305-32-250-TC	AL3-305-32-250-TC-DLC	
	1"	1"	5"	Ball End	8"	AL3-305-32-BN	AL3-305-32-BN-DLC	AL3-305-32-BN-TC	AL3-305-32-BN-TC-DLC	

Due to the large offering of AL3 series many of these are made to order and non-returnable.

All AL3-304 (Long Length) and AL3-305 (Extra Long Length) come standard with Chip Breakers to control chips!



AL3-303 SPEEDS & FEEDS

Tool Diameter	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
1/8"	Max	0.0020	Max	0.0018	Max	0.0020	Max	0.0020
3/16"	Max	0.0030	Max	0.0026	Max	0.0030	Max	0.0030
1/4"	Max	0.0040	Max	0.0035	Max	0.0040	Max	0.0040
5/16"	Max	0.0050	Max	0.0044	Max	0.0050	Max	0.0050
3/8"	Max	0.0060	Max	0.0053	Max	0.0060	Max	0.0060
1/2"	Max	0.0080	Max	0.0070	Max	0.0080	Max	0.0080
5/8"	Max	0.0100	Max	0.0088	Max	0.0100	Max	0.0100
3/4"	Max	0.0120	Max	0.0105	Max	0.0120	Max	0.0120
1"	Max	0.0160	Max	0.0140	Max	0.0160	Max	0.0160

Profiling →

 AL3-303 50% Radial Width 2-3 x Diameter Axial Depth

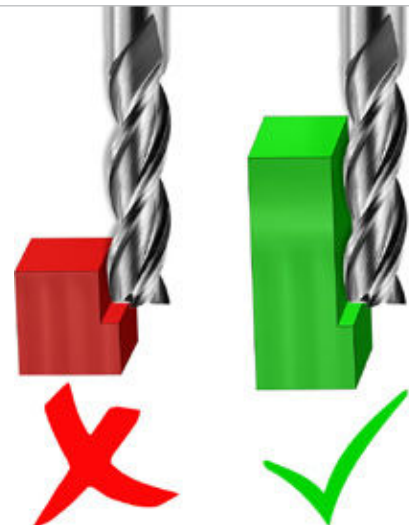
 AL3-304 30% Radial Width 4 x Diameter Axial Depth at 70% CLPT

 AL3-305 10% Radial Width 5 x Diameter Axial Depth at 70% CLPT



Don't just use the tip of the tool on longer length tools. Make sure to engage most of the cutting edges.

Spring passes with Long length and extra long length tools might be needed to improve finish and deflection. We tested up to 4 spring passes without problems with AL3-305 series using the entire cutting length.



A1/MA1 2 Flute High Performance Tools for Aluminum

Characteristics



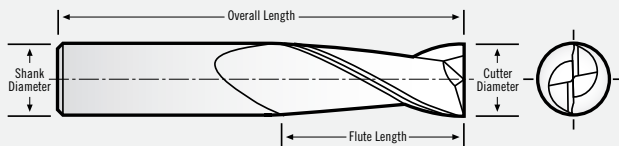
Applications



Materials



Coatings



A1 Series Tolerances:

Cutting Dia. = $-.0007/-0.0015$
 Shank Dia. = $-.0001/-0.0002$
 Flute Length = $+.060/-0.000$
 OAL = $+/- .060$

MA1 Series Tolerances:

Cutting Dia. = $-0.018/-0.038$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 Flute Length ($<10D$) = $+0.75/-0.000$ mm
 ($>10D$) = $+1.5/-0.000$ mm
 OAL = $+/-10$ mm



A1-201 2 Flute Stub Length



Cutting Diameter	Shank Diameter	Flute Length	Corner Chamfer	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/8"	1/8"	3/16"	.005	1-1/2"	A1-201-04	A1-201-04-DLC
3/16"	3/16"	9/32"	.005	2	A1-201-06	A1-201-06-DLC
1/4"	1/4"	3/8"	.005	2	A1-201-08	A1-201-08-DLC
5/16"	5/16"	15/32"	.005	2-1/2"	A1-201-10	A1-201-10-DLC
3/8"	3/8"	9/16"	.010	2-1/2"	A1-201-12	A1-201-12-DLC
1/2"	1/2"	3/4"	.010	3	A1-201-16	A1-201-16-DLC
5/8"	5/8"	10-5/16"	.010	3-1/2"	A1-201-20	A1-201-20-DLC
3/4"	3/4"	1-1/8"	.010	4	A1-201-24	A1-201-24-DLC
1	1	1-1/2"	.015	4	A1-201-32	A1-201-32-DLC



MA1-201 Metric 2 Flute Stub Length **METRIC**



Cutting Diameter	Shank Diameter	Flute Length	Corner Chamfer	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
3mm	3mm	4.5mm	0.12mm	38mm	MA1-201-03	MA1-201-03-DLC
4mm	4mm	6mm	0.12mm	50mm	MA1-201-04	MA1-201-04-DLC
5mm	5mm	7.5mm	0.12mm	50mm	MA1-201-05	MA1-201-05-DLC
6mm	6mm	9mm	0.12mm	50mm	MA1-201-06	MA1-201-06-DLC
8mm	8mm	12mm	0.25mm	63mm	MA1-201-08	MA1-201-08-DLC
10mm	10mm	15mm	0.25mm	72mm	MA1-201-10	MA1-201-10-DLC
12mm	12mm	18mm	0.25mm	83mm	MA1-201-12	MA1-201-12-DLC
16mm	16mm	24mm	0.25mm	92mm	MA1-201-16	MA1-201-16-DLC
20mm	20mm	30mm	0.3mm	104mm	MA1-201-20	MA1-201-20-DLC

A1-201 SPEEDS & FEEDS

Tool Diameter	Aluminum 6061-T6, 7075, 2024		Brass		Copper		Plastic		Magnesium	
	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
1/8"	Max	0.0032	22900	0.0016	18300	0.0016	39700	0.0032	Max	0.0032
3/16"	Max	0.0048	15300	0.0024	12200	0.0024	26500	0.0048	Max	0.0048
1/4"	Max	0.0064	11500	0.0032	9200	0.0032	19900	0.0064	Max	0.0064
5/16"	Max	0.0080	9200	0.0040	7300	0.0040	15900	0.0080	Max	0.0080
3/8"	Max	0.0096	7600	0.0048	6100	0.0048	13200	0.0096	Max	0.0096
1/2"	Max	0.0128	5700	0.0064	4600	0.0064	9900	0.0128	Max	0.0128
5/8"	Max	0.0160	4600	0.0080	3700	0.0080	7900	0.0160	Max	0.0160
3/4"	Max	0.0192	3800	0.0096	3100	0.0096	6600	0.0192	Max	0.0192
1"	Max	0.0256	2900	0.0128	2300	0.0128	5000	0.0256	Max	0.0256

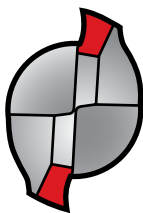
Axial depth of cut up to 1 × diameter of the tool up to a full slot

MA1-201 SPEEDS & FEEDS

Tool Diameter	Aluminum 6061-T6, 7075, 2024		Brass		Copper		Plastic		Magnesium	
	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
3mm	Max	0.077mm	24300	0.038mm	19400	0.038mm	42000	0.077mm	Max	0.077mm
4mm	Max	0.102mm	18200	0.051mm	14600	0.051mm	31500	0.102mm	Max	0.102mm
5mm	Max	0.128mm	14600	0.064mm	11600	0.064mm	25200	0.128mm	Max	0.128mm
6mm	Max	0.154mm	12100	0.077mm	9700	0.077mm	21000	0.154mm	Max	0.154mm
8mm	Max	0.205mm	9100	0.102mm	7300	0.102mm	15800	0.205mm	Max	0.205mm
10mm	Max	0.256mm	7300	0.128mm	5800	0.128mm	12600	0.256mm	Max	0.256mm
12mm	Max	0.307mm	6100	0.154mm	4900	0.154mm	10500	0.307mm	Max	0.307mm
16mm	Max	0.410mm	4500	0.205mm	3600	0.205mm	7900	0.410mm	Max	0.410mm
20mm	Max	0.512mm	3600	0.256mm	2900	0.256mm	6300	0.512mm	Max	0.512mm

Axial depth of cut up to 1 × diameter of the tool up to a full slot

See RobbJack Videos at
robbjack.com/robbjack-tv/

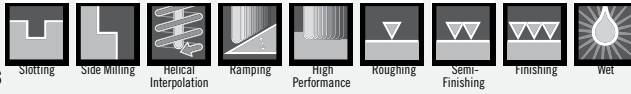



A1/MA1 3 Flute High Performance Tools for Aluminum

Characteristics



Applications



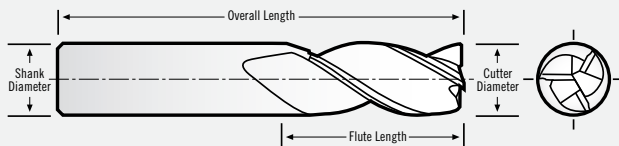
Materials



Coatings



A1-303 Series:
*Polished
& Mirror
Edge!*



A1 Series Tolerances:

Cutting Dia. = $-.0007/-0.0015$
Shank Dia. = $-.0001/-0.0002$
Flute Length = $+.060/-0.000$
OAL = $\pm .060$

MA1 Series Tolerances:

Cutting Dia. = $-0.018/-0.038\text{mm}$
Shank Dia. = $-0.002/-0.005\text{mm}$
Flute Length ($<10\text{D}$) = $+0.750/-0.000\text{mm}$
($>10\text{D}$) = $+1.500/-0.000\text{mm}$
OAL = $\pm 10\text{mm}$



A1-303 3 Flute Standard Length



Cutting Diameter	Shank Diameter	Flute Length	Corner Chamfer	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/8"	1/8"	3/8"	.005	1-1/2"	A1-303-04	A1-303-04-DLC
3/16"	3/16"	9/16"	.005	2"	A1-303-06	A1-303-06-DLC
1/4"	1/4"	3/4"	.005	2-1/2"	A1-303-08	A1-303-08-DLC
5/16"	5/16"	7/8"	.005	2-1/2"	A1-303-10	A1-303-10-DLC
3/8"	3/8"	1"	.010	2-1/2"	A1-303-12	A1-303-12-DLC
1/2"	1/2"	1-1/8"	.010	3"	A1-303-16	A1-303-16-DLC
5/8"	5/8"	1-1/4"	.010	3-1/2"	A1-303-20	A1-303-20-DLC
3/4"	3/4"	1-5/8"	.010	4"	A1-303-24	A1-303-24-DLC
1"	1"	2"	.015	4"	A1-303-32	A1-303-32-DLC



MA1-303 Metric 3 Flute Standard Length METRIC



Cutting Diameter	Shank Diameter	Flute Length	Corner Chamfer	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
3mm	3mm	8mm	0.1mm	38mm	MA1-303-03	MA1-303-03-DLC
4mm	4mm	12mm	0.1mm	50mm	MA1-303-04	MA1-303-04-DLC
5mm	5mm	14mm	0.1mm	50mm	MA1-303-05	MA1-303-05-DLC
6mm	6mm	15mm	0.1mm	63mm	MA1-303-06	MA1-303-06-DLC
8mm	8mm	20mm	0.1mm	63mm	MA1-303-08	MA1-303-08-DLC
10mm	10mm	22mm	0.1mm	72mm	MA1-303-10	MA1-303-10-DLC
12mm	12mm	26mm	0.2mm	83mm	MA1-303-12	MA1-303-12-DLC
16mm	16mm	33mm	0.2mm	92mm	MA1-303-16	MA1-303-16-DLC
20mm	20mm	42mm	0.2mm	104mm	MA1-303-20	MA1-303-20-DLC

A1-303 SPEEDS & FEEDS

Tool Diameter	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
1/8"	Max	0.0020	Max	0.0018	Max	0.0020	Max	0.0020
3/16"	Max	0.0030	Max	0.0026	Max	0.0030	Max	0.0030
1/4"	Max	0.0040	Max	0.0035	Max	0.0040	Max	0.0040
5/16"	Max	0.0050	Max	0.0044	Max	0.0050	Max	0.0050
3/8"	Max	0.0060	Max	0.0053	Max	0.0060	Max	0.0060
1/2"	Max	0.0080	Max	0.0070	Max	0.0080	Max	0.0080
5/8"	Max	0.0100	Max	0.0088	Max	0.0100	Max	0.0100
3/4"	Max	0.0120	Max	0.0105	Max	0.0120	Max	0.0120
1"	Max	0.0160	Max	0.0140	Max	0.0160	Max	0.0160

Axial depth of cut up to $1.5 \times$ diameter of the tool with 50% radial step over.

MA1-303 SPEEDS & FEEDS

Tool Diameter	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
	RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
3mm	Max	0.048mm	Max	0.042mm	Max	0.048mm	Max	0.048mm
4mm	Max	0.064mm	Max	0.056mm	Max	0.064mm	Max	0.064mm
5mm	Max	0.080mm	Max	0.070mm	Max	0.080mm	Max	0.080mm
6mm	Max	0.096mm	Max	0.084mm	Max	0.096mm	Max	0.096mm
8mm	Max	0.128mm	Max	0.112mm	Max	0.128mm	Max	0.128mm
10mm	Max	0.160mm	Max	0.140mm	Max	0.160mm	Max	0.160mm
12mm	Max	0.192mm	Max	0.168mm	Max	0.192mm	Max	0.192mm
16mm	Max	0.256mm	Max	0.224mm	Max	0.256mm	Max	0.256mm
20mm	Max	0.320mm	Max	0.280mm	Max	0.320mm	Max	0.320mm

Axial depth of cut up to $1.5 \times$ diameter of the tool with 50% radial step over.

See RobbJack Videos at
robbjack.com/robbjack-tv/

The screenshot shows the RobbJack Corporation website. At the top is a navigation bar with links for TOOLS, INDUSTRY SOLUTIONS, TECH INFO, SALES, ABOUT, and CONTACT. A search bar is located on the right. The main banner features the text 'RESHAPING PERFORMANCE' and 'HELPING CUSTOMERS ACHIEVE TARGET PERFORMANCE, EFFICIENCY, AND QUALITY FOR OVER FIVE DECADES'. Below the banner is a 'TOOL SEARCH' section with a filter by type, speed, geometry, material, and applications. A 'BUY NOW' button is also present. A red circle highlights the 'Recent Videos' section, which includes a video titled 'High Speed Aluminum'.



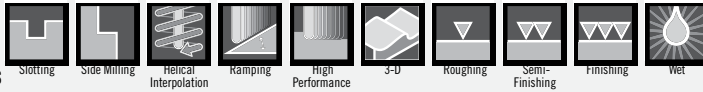
FMHV 2 Flute Ultra-High Velocity Tools for Aluminum



Characteristics



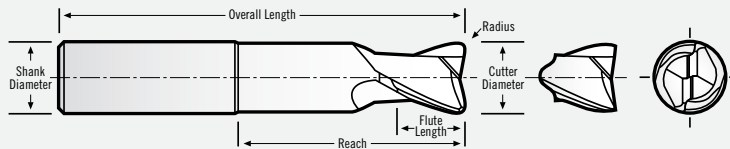
Applications



Materials



Coatings



FMHV Series Tolerances:

Cutting Dia. = $-.001/-0.0015$
 Shank Dia. = $-.0001/-0.0002$
 Flute Length = $+.060/-0.000$
 OAL = $\pm .060$

*Eliminate
Tool Pull Out!
H4 Shank Tolerance up to
150% more gripping force
Tightest in the
Industry!*

*NEXT
GENERATION
Mirror
Edge!
Eliminates Chatter
& Vibration*



NEW!

FMHV 2 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
SHORT	1/4"	1/4"	3/8"	Sq. End	3/4"	2"	FMHV-201-08	FMHV-201-08-DLC	FMHV-201-08-TC	FMHV-201-08-DLC-TC	1/4" DIAMETER
	1/4"	1/4"	3/8"	0.03"	3/4"	2"	FMHV-201-08-030	FMHV-201-08-030-DLC	FMHV-201-08-030-TC	FMHV-201-08-030-DLC-TC	
	1/4"	1/4"	3/8"	0.06"	3/4"	2"	FMHV-201-08-060	FMHV-201-08-060-DLC	FMHV-201-08-060-TC	FMHV-201-08-060-DLC-TC	
	1/4"	1/4"	3/8"	0.09"	3/4"	2"	FMHV-201-08-090	FMHV-201-08-090-DLC	FMHV-201-08-090-TC	FMHV-201-08-090-DLC-TC	
	1/4"	1/4"	3/8"	Ball End	3/4"	2"	FMHV-201-08-BN	FMHV-201-08-BN-DLC	FMHV-201-08-BN-TC	FMHV-201-08-BN-DLC-TC	
MEDIUM	1/4"	1/4"	3/8"	Sq. End	1-1/16"	2-1/2"	FMHV-202-08	FMHV-202-08-DLC	FMHV-202-08-TC	FMHV-202-08-DLC-TC	5/16" DIAMETER
	1/4"	1/4"	3/8"	0.03"	1-1/16"	2-1/2"	FMHV-202-08-030	FMHV-202-08-030-DLC	FMHV-202-08-030-TC	FMHV-202-08-030-DLC-TC	
	1/4"	1/4"	3/8"	0.06"	1-1/16"	2-1/2"	FMHV-202-08-060	FMHV-202-08-060-DLC	FMHV-202-08-060-TC	FMHV-202-08-060-DLC-TC	
	1/4"	1/4"	3/8"	0.09"	1-1/16"	2-1/2"	FMHV-202-08-090	FMHV-202-08-090-DLC	FMHV-202-08-090-TC	FMHV-202-08-090-DLC-TC	
	1/4"	1/4"	3/8"	Ball End	1-1/16"	2-1/2"	FMHV-202-08-BN	FMHV-202-08-BN-DLC	FMHV-202-08-BN-TC	FMHV-202-08-BN-DLC-TC	
LONG	1/4"	1/4"	3/8"	Sq. End	1-1/2"	3"	FMHV-203-08	FMHV-203-08-DLC	FMHV-203-08-TC	FMHV-203-08-DLC-TC	5/16" DIAMETER
	1/4"	1/4"	3/8"	0.03"	1-1/2"	3"	FMHV-203-08-030	FMHV-203-08-030-DLC	FMHV-203-08-030-TC	FMHV-203-08-030-DLC-TC	
	1/4"	1/4"	3/8"	0.06"	1-1/2"	3"	FMHV-203-08-060	FMHV-203-08-060-DLC	FMHV-203-08-060-TC	FMHV-203-08-060-DLC-TC	
	1/4"	1/4"	3/8"	0.09"	1-1/2"	3"	FMHV-203-08-090	FMHV-203-08-090-DLC	FMHV-203-08-090-TC	FMHV-203-08-090-DLC-TC	
	1/4"	1/4"	3/8"	Ball End	1-1/2"	3"	FMHV-203-08-BN	FMHV-203-08-BN-DLC	FMHV-203-08-BN-TC	FMHV-203-08-BN-DLC-TC	
SHORT	5/16"	5/16"	1/2"	Sq. End	3/4"	2"	FMHV-201-10	FMHV-201-10-DLC	FMHV-201-10-TC	FMHV-201-10-DLC-TC	5/16" DIAMETER
	5/16"	5/16"	1/2"	0.03"	3/4"	2"	FMHV-201-10-030	FMHV-201-10-030-DLC	FMHV-201-10-030-TC	FMHV-201-10-030-DLC-TC	
	5/16"	5/16"	1/2"	0.06"	3/4"	2"	FMHV-201-10-060	FMHV-201-10-060-DLC	FMHV-201-10-060-TC	FMHV-201-10-060-DLC-TC	
	5/16"	5/16"	1/2"	0.09"	3/4"	2"	FMHV-201-10-090	FMHV-201-10-090-DLC	FMHV-201-10-090-TC	FMHV-201-10-090-DLC-TC	
	5/16"	5/16"	1/2"	Ball End	3/4"	2"	FMHV-201-10-BN	FMHV-201-10-BN-DLC	FMHV-201-10-BN-TC	FMHV-201-10-BN-DLC-TC	
MEDIUM	5/16"	5/16"	1/2"	Sq. End	1-1/16"	2-1/2"	FMHV-202-10	FMHV-202-10-DLC	FMHV-202-10-TC	FMHV-202-10-DLC-TC	5/16" DIAMETER
	5/16"	5/16"	1/2"	0.03"	1-1/16"	2-1/2"	FMHV-202-10-030	FMHV-202-10-030-DLC	FMHV-202-10-030-TC	FMHV-202-10-030-DLC-TC	
	5/16"	5/16"	1/2"	0.06"	1-1/16"	2-1/2"	FMHV-202-10-060	FMHV-202-10-060-DLC	FMHV-202-10-060-TC	FMHV-202-10-060-DLC-TC	
	5/16"	5/16"	1/2"	0.09"	1-1/16"	2-1/2"	FMHV-202-10-090	FMHV-202-10-090-DLC	FMHV-202-10-090-TC	FMHV-202-10-090-DLC-TC	
	5/16"	5/16"	1/2"	Ball End	1-1/16"	2-1/2"	FMHV-202-10-BN	FMHV-202-10-BN-DLC	FMHV-202-10-BN-TC	FMHV-202-10-BN-DLC-TC	
LONG	5/16"	5/16"	1/2"	Sq. End	1-1/2"	3"	FMHV-203-10	FMHV-203-10-DLC	FMHV-203-10-TC	FMHV-203-10-DLC-TC	5/16" DIAMETER
	5/16"	5/16"	1/2"	0.03"	1-1/2"	3"	FMHV-203-10-030	FMHV-203-10-030-DLC	FMHV-203-10-030-TC	FMHV-203-10-030-DLC-TC	
	5/16"	5/16"	1/2"	0.06"	1-1/2"	3"	FMHV-203-10-060	FMHV-203-10-060-DLC	FMHV-203-10-060-TC	FMHV-203-10-060-DLC-TC	
	5/16"	5/16"	1/2"	0.09"	1-1/2"	3"	FMHV-203-10-090	FMHV-203-10-090-DLC	FMHV-203-10-090-TC	FMHV-203-10-090-DLC-TC	
	5/16"	5/16"	1/2"	Ball End	1-1/2"	3"	FMHV-203-10-BN	FMHV-203-10-BN-DLC	FMHV-203-10-BN-TC	FMHV-203-10-BN-DLC-TC	

FMHV 2 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
SHORT	3/8"	3/8"	1/2"	Sq. End	1-1/4"	3"	FMHV-201-12	FMHV-201-12-DLC	FMHV-201-12-TC	FMHV-201-12-DLC-TC	3/8" DIAMETER
	3/8"	3/8"	1/2"	0.03"	1-1/4"	3"	FMHV-201-12-030	FMHV-201-12-030-DLC	FMHV-201-12-030-TC	FMHV-201-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	1-1/4"	3"	FMHV-201-12-060	FMHV-201-12-060-DLC	FMHV-201-12-060-TC	FMHV-201-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	1-1/4"	3"	FMHV-201-12-090	FMHV-201-12-090-DLC	FMHV-201-12-090-TC	FMHV-201-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	1-1/4"	3"	FMHV-201-12-BN	FMHV-201-12-BN-DLC	FMHV-201-12-BN-TC	FMHV-201-12-BN-DLC-TC	
MEDIUM	3/8"	3/8"	1/2"	Sq. End	1-3/4"	3-1/2"	FMHV-202-12	FMHV-202-12-DLC	FMHV-202-12-TC	FMHV-202-12-DLC-TC	
	3/8"	3/8"	1/2"	0.03"	1-3/4"	3-1/2"	FMHV-202-12-030	FMHV-202-12-030-DLC	FMHV-202-12-030-TC	FMHV-202-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	1-3/4"	3-1/2"	FMHV-202-12-060	FMHV-202-12-060-DLC	FMHV-202-12-060-TC	FMHV-202-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	1-3/4"	3-1/2"	FMHV-202-12-090	FMHV-202-12-090-DLC	FMHV-202-12-090-TC	FMHV-202-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	1-3/4"	3-1/2"	FMHV-202-12-BN	FMHV-202-12-BN-DLC	FMHV-202-12-BN-TC	FMHV-202-12-BN-DLC-TC	
LONG	3/8"	3/8"	1/2"	Sq. End	2-1/4"	4"	FMHV-203-12	FMHV-203-12-DLC	FMHV-203-12-TC	FMHV-203-12-DLC-TC	
	3/8"	3/8"	1/2"	0.03"	2-1/4"	4"	FMHV-203-12-030	FMHV-203-12-030-DLC	FMHV-203-12-030-TC	FMHV-203-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	2-1/4"	4"	FMHV-203-12-060	FMHV-203-12-060-DLC	FMHV-203-12-060-TC	FMHV-203-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	2-1/4"	4"	FMHV-203-12-090	FMHV-203-12-090-DLC	FMHV-203-12-090-TC	FMHV-203-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	2-1/4"	4"	FMHV-203-12-BN	FMHV-203-12-BN-DLC	FMHV-203-12-BN-TC	FMHV-203-12-BN-DLC-TC	
SHORT	1/2"	1/2"	3/4"	Sq. End	1-1/4"	3"	FMHV-201-16	FMHV-201-16-DLC	FMHV-201-16-TC	FMHV-201-16-DLC-TC	1/2" DIAMETER
	1/2"	1/2"	3/4"	0.03"	1-1/4"	3"	FMHV-201-16-030	FMHV-201-16-030-DLC	FMHV-201-16-030-TC	FMHV-201-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	1-1/4"	3"	FMHV-201-16-060	FMHV-201-16-060-DLC	FMHV-201-16-060-TC	FMHV-201-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	1-1/4"	3"	FMHV-201-16-090	FMHV-201-16-090-DLC	FMHV-201-16-090-TC	FMHV-201-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	1-1/4"	3"	FMHV-201-16-120	FMHV-201-16-120-DLC	FMHV-201-16-120-TC	FMHV-201-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	1-1/4"	3"	FMHV-201-16-BN	FMHV-201-16-BN-DLC	FMHV-201-16-BN-TC	FMHV-201-16-BN-DLC-TC	
MEDIUM	1/2"	1/2"	3/4"	Sq. End	1-5/8"	3-1/2"	FMHV-202-16	FMHV-202-16-DLC	FMHV-202-16-TC	FMHV-202-16-DLC-TC	
	1/2"	1/2"	3/4"	0.03"	1-5/8"	3-1/2"	FMHV-202-16-030	FMHV-202-16-030-DLC	FMHV-202-16-030-TC	FMHV-202-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	1-5/8"	3-1/2"	FMHV-202-16-060	FMHV-202-16-060-DLC	FMHV-202-16-060-TC	FMHV-202-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	1-5/8"	3-1/2"	FMHV-202-16-090	FMHV-202-16-090-DLC	FMHV-202-16-090-TC	FMHV-202-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	1-5/8"	3-1/2"	FMHV-202-16-120	FMHV-202-16-120-DLC	FMHV-202-16-120-TC	FMHV-202-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	1-5/8"	3-1/2"	FMHV-202-16-BN	FMHV-202-16-BN-DLC	FMHV-202-16-BN-TC	FMHV-202-16-BN-DLC-TC	
LONG	1/2"	1/2"	3/4"	Sq. End	2-1/8"	4"	FMHV-203-16	FMHV-203-16-DLC	FMHV-203-16-TC	FMHV-203-16-DLC-TC	
	1/2"	1/2"	3/4"	0.03"	2-1/8"	4"	FMHV-203-16-030	FMHV-203-16-030-DLC	FMHV-203-16-030-TC	FMHV-203-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	2-1/8"	4"	FMHV-203-16-060	FMHV-203-16-060-DLC	FMHV-203-16-060-TC	FMHV-203-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	2-1/8"	4"	FMHV-203-16-090	FMHV-203-16-090-DLC	FMHV-203-16-090-TC	FMHV-203-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	2-1/8"	4"	FMHV-203-16-120	FMHV-203-16-120-DLC	FMHV-203-16-120-TC	FMHV-203-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	2-1/8"	4"	FMHV-203-16-BN	FMHV-203-16-BN-DLC	FMHV-203-16-BN-TC	FMHV-203-16-BN-DLC-TC	
EXTRA LONG	1/2"	1/2"	3/4"	Sq. End	2-5/8"	4-1/2"	FMHV-204-16	FMHV-204-16-DLC	FMHV-204-16-TC	FMHV-204-16-DLC-TC	
	1/2"	1/2"	3/4"	0.03"	2-5/8"	4-1/2"	FMHV-204-16-030	FMHV-204-16-030-DLC	FMHV-204-16-030-TC	FMHV-204-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	2-5/8"	4-1/2"	FMHV-204-16-060	FMHV-204-16-060-DLC	FMHV-204-16-060-TC	FMHV-204-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	2-5/8"	4-1/2"	FMHV-204-16-090	FMHV-204-16-090-DLC	FMHV-204-16-090-TC	FMHV-204-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	2-5/8"	4-1/2"	FMHV-204-16-120	FMHV-204-16-120-DLC	FMHV-204-16-120-TC	FMHV-204-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	2-5/8"	4-1/2"	FMHV-204-16-BN	FMHV-204-16-BN-DLC	FMHV-204-16-BN-TC	FMHV-204-16-BN-DLC-TC	
SHORT	5/8"	5/8"	7/8"	Sq. End	1-9/16"	3-1/2"	FMHV-201-20	FMHV-201-20-DLC	FMHV-201-20-TC	FMHV-201-20-DLC-TC	5/8" DIAMETER
	5/8"	5/8"	7/8"	0.03"	1-9/16"	3-1/2"	FMHV-201-20-030	FMHV-201-20-030-DLC	FMHV-201-20-030-TC	FMHV-201-20-030-DLC-TC	
	5/8"	5/8"	7/8"	0.06"	1-9/16"	3-1/2"	FMHV-201-20-060	FMHV-201-20-060-DLC	FMHV-201-20-060-TC	FMHV-201-20-060-DLC-TC	
	5/8"	5/8"	7/8"	0.09"	1-9/16"	3-1/2"	FMHV-201-20-090	FMHV-201-20-090-DLC	FMHV-201-20-090-TC	FMHV-201-20-090-DLC-TC	
	5/8"	5/8"	7/8"	0.12"	1-9/16"	3-1/2"	FMHV-201-20-120	FMHV-201-20-120-DLC	FMHV-201-20-120-TC	FMHV-201-20-120-DLC-TC	
	5/8"	5/8"	7/8"	Ball End	1-9/16"	3-1/2"	FMHV-201-20-BN	FMHV-201-20-BN-DLC	FMHV-201-20-BN-TC	FMHV-201-20-BN-DLC-TC	

*Other Reach Lengths available upon request.

Due to the large offering of FMHV series many of these are made to order and non-returnable.

CONTINUED ON NEXT PAGE—

FMHV 2 Flute Ultra-High Velocity Tools for Aluminum



FMHV 2 Flute (Short to Long Reach)



MEDIUM

LONG

EXTRA LONG

SHORT

MEDIUM

LONG

EXTRA LONG

Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
5/8"	5/8"	7/8"	Sq. End	2-1/16"	4"	FMHV-202-20	FMHV-202-20-DLC	FMHV-202-20-TC	FMHV-202-20-DLC-TC
5/8"	5/8"	7/8"	0.03"	2-1/16"	4"	FMHV-202-20-030	FMHV-202-20-030-DLC	FMHV-202-20-030-TC	FMHV-202-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06"	2-1/16"	4"	FMHV-202-20-060	FMHV-202-20-060-DLC	FMHV-202-20-060-TC	FMHV-202-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09"	2-1/16"	4"	FMHV-202-20-090	FMHV-202-20-090-DLC	FMHV-202-20-090-TC	FMHV-202-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12"	2-1/16"	4"	FMHV-202-20-120	FMHV-202-20-120-DLC	FMHV-202-20-120-TC	FMHV-202-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	2-1/16"	4"	FMHV-202-20-BN	FMHV-202-20-BN-DLC	FMHV-202-20-BN-TC	FMHV-202-20-BN-DLC-TC
5/8"	5/8"	7/8"	Sq. End	2-9/16"	4-1/2"	FMHV-203-20	FMHV-203-20-DLC	FMHV-203-20-TC	FMHV-203-20-DLC-TC
5/8"	5/8"	7/8"	0.03"	2-9/16"	4-1/2"	FMHV-203-20-030	FMHV-203-20-030-DLC	FMHV-203-20-030-TC	FMHV-203-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06"	2-9/16"	4-1/2"	FMHV-203-20-060	FMHV-203-20-060-DLC	FMHV-203-20-060-TC	FMHV-203-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09"	2-9/16"	4-1/2"	FMHV-203-20-090	FMHV-203-20-090-DLC	FMHV-203-20-090-TC	FMHV-203-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12"	2-9/16"	4-1/2"	FMHV-203-20-120	FMHV-203-20-120-DLC	FMHV-203-20-120-TC	FMHV-203-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	2-9/16"	4-1/2"	FMHV-203-20-BN	FMHV-203-20-BN-DLC	FMHV-203-20-BN-TC	FMHV-203-20-BN-DLC-TC
5/8"	5/8"	7/8"	Sq. End	3-1/16"	5"	FMHV-204-20	FMHV-204-20-DLC	FMHV-204-20-TC	FMHV-204-20-DLC-TC
5/8"	5/8"	7/8"	0.03"	3-1/16"	5"	FMHV-204-20-030	FMHV-204-20-030-DLC	FMHV-204-20-030-TC	FMHV-204-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06"	3-1/16"	5"	FMHV-204-20-060	FMHV-204-20-060-DLC	FMHV-204-20-060-TC	FMHV-204-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09"	3-1/16"	5"	FMHV-204-20-090	FMHV-204-20-090-DLC	FMHV-204-20-090-TC	FMHV-204-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12"	3-1/16"	5"	FMHV-204-20-120	FMHV-204-20-120-DLC	FMHV-204-20-120-TC	FMHV-204-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	3-1/16"	5"	FMHV-204-20-BN	FMHV-204-20-BN-DLC	FMHV-204-20-BN-TC	FMHV-204-20-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	2-1/8"	4"	FMHV-201-24	FMHV-201-24-DLC	FMHV-201-24-TC	FMHV-201-24-DLC-TC
3/4"	3/4"	1"	0.03"	2-1/8"	4"	FMHV-201-24-030	FMHV-201-24-030-DLC	FMHV-201-24-030-TC	FMHV-201-24-030-DLC-TC
3/4"	3/4"	1"	0.06"	2-1/8"	4"	FMHV-201-24-060	FMHV-201-24-060-DLC	FMHV-201-24-060-TC	FMHV-201-24-060-DLC-TC
3/4"	3/4"	1"	0.09"	2-1/8"	4"	FMHV-201-24-090	FMHV-201-24-090-DLC	FMHV-201-24-090-TC	FMHV-201-24-090-DLC-TC
3/4"	3/4"	1"	0.12"	2-1/8"	4"	FMHV-201-24-120	FMHV-201-24-120-DLC	FMHV-201-24-120-TC	FMHV-201-24-120-DLC-TC
3/4"	3/4"	1"	0.19"	2-1/8"	4"	FMHV-201-24-190	FMHV-201-24-190-DLC	FMHV-201-24-190-TC	FMHV-201-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	2-1/8"	4"	FMHV-201-24-BN	FMHV-201-24-BN-DLC	FMHV-201-24-BN-TC	FMHV-201-24-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	2-5/8"	4-1/2"	FMHV-202-24	FMHV-202-24-DLC	FMHV-202-24-TC	FMHV-202-24-DLC-TC
3/4"	3/4"	1"	0.03"	2-5/8"	4-1/2"	FMHV-202-24-030	FMHV-202-24-030-DLC	FMHV-202-24-030-TC	FMHV-202-24-030-DLC-TC
3/4"	3/4"	1"	0.06"	2-5/8"	4-1/2"	FMHV-202-24-060	FMHV-202-24-060-DLC	FMHV-202-24-060-TC	FMHV-202-24-060-DLC-TC
3/4"	3/4"	1"	0.09"	2-5/8"	4-1/2"	FMHV-202-24-090	FMHV-202-24-090-DLC	FMHV-202-24-090-TC	FMHV-202-24-090-DLC-TC
3/4"	3/4"	1"	0.12"	2-5/8"	4-1/2"	FMHV-202-24-120	FMHV-202-24-120-DLC	FMHV-202-24-120-TC	FMHV-202-24-120-DLC-TC
3/4"	3/4"	1"	0.19"	2-5/8"	4-1/2"	FMHV-202-24-190	FMHV-202-24-190-DLC	FMHV-202-24-190-TC	FMHV-202-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	2-5/8"	4-1/2"	FMHV-202-24-BN	FMHV-202-24-BN-DLC	FMHV-202-24-BN-TC	FMHV-202-24-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	3-1/8"	5"	FMHV-203-24	FMHV-203-24-DLC	FMHV-203-24-TC	FMHV-203-24-DLC-TC
3/4"	3/4"	1"	0.03"	3-1/8"	5"	FMHV-203-24-030	FMHV-203-24-030-DLC	FMHV-203-24-030-TC	FMHV-203-24-030-DLC-TC
3/4"	3/4"	1"	0.06"	3-1/8"	5"	FMHV-203-24-060	FMHV-203-24-060-DLC	FMHV-203-24-060-TC	FMHV-203-24-060-DLC-TC
3/4"	3/4"	1"	0.09"	3-1/8"	5"	FMHV-203-24-090	FMHV-203-24-090-DLC	FMHV-203-24-090-TC	FMHV-203-24-090-DLC-TC
3/4"	3/4"	1"	0.12"	3-1/8"	5"	FMHV-203-24-120	FMHV-203-24-120-DLC	FMHV-203-24-120-TC	FMHV-203-24-120-DLC-TC
3/4"	3/4"	1"	0.19"	3-1/8"	5"	FMHV-203-24-190	FMHV-203-24-190-DLC	FMHV-203-24-190-TC	FMHV-203-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	3-1/8"	5"	FMHV-203-24-BN	FMHV-203-24-BN-DLC	FMHV-203-24-BN-TC	FMHV-203-24-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	3-5/8"	5-1/2"	FMHV-204-24	FMHV-204-24-DLC	FMHV-204-24-TC	FMHV-204-24-DLC-TC
3/4"	3/4"	1"	0.03"	3-5/8"	5-1/2"	FMHV-204-24-030	FMHV-204-24-030-DLC	FMHV-204-24-030-TC	FMHV-204-24-030-DLC-TC
3/4"	3/4"	1"	0.06"	3-5/8"	5-1/2"	FMHV-204-24-060	FMHV-204-24-060-DLC	FMHV-204-24-060-TC	FMHV-204-24-060-DLC-TC
3/4"	3/4"	1"	0.09"	3-5/8"	5-1/2"	FMHV-204-24-090	FMHV-204-24-090-DLC	FMHV-204-24-090-TC	FMHV-204-24-090-DLC-TC
3/4"	3/4"	1"	0.12"	3-5/8"	5-1/2"	FMHV-204-24-120	FMHV-204-24-120-DLC	FMHV-204-24-120-TC	FMHV-204-24-120-DLC-TC
3/4"	3/4"	1"	0.19"	3-5/8"	5-1/2"	FMHV-204-24-190	FMHV-204-24-190-DLC	FMHV-204-24-190-TC	FMHV-204-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	3-5/8"	5-1/2"	FMHV-204-24-BN	FMHV-204-24-BN-DLC	FMHV-204-24-BN-TC	FMHV-204-24-BN-DLC-TC

5/8"
DIAMETER3/4"
DIAMETER

NEW!

Aluminum

FMHV 2 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
SHORT	1"	1"	1-1/4"	Sq. End	2-1/8"	4"	FMHV-201-32	FMHV-201-32-DLC	FMHV-201-32-TC	FMHV-201-32-DLC-TC
	1"	1"	1-1/4"	0.03"	2-1/8"	4"	FMHV-201-32-030	FMHV-201-32-030-DLC	FMHV-201-32-030-TC	FMHV-201-32-030-DLC-TC
	1"	1"	1-1/4"	0.06"	2-1/8"	4"	FMHV-201-32-060	FMHV-201-32-060-DLC	FMHV-201-32-060-TC	FMHV-201-32-060-DLC-TC
	1"	1"	1-1/4"	0.09"	2-1/8"	4"	FMHV-201-32-090	FMHV-201-32-090-DLC	FMHV-201-32-090-TC	FMHV-201-32-090-DLC-TC
	1"	1"	1-1/4"	0.12"	2-1/8"	4"	FMHV-201-32-120	FMHV-201-32-120-DLC	FMHV-201-32-120-TC	FMHV-201-32-120-DLC-TC
	1"	1"	1-1/4"	0.19"	2-1/8"	4"	FMHV-201-32-190	FMHV-201-32-190-DLC	FMHV-201-32-190-TC	FMHV-201-32-190-DLC-TC
	1"	1"	1-1/4"	Ball End	2-1/8"	4"	FMHV-201-32-BN	FMHV-201-32-BN-DLC	FMHV-201-32-BN-TC	FMHV-201-32-BN-DLC-TC
MEDIUM	1"	1"	1-1/4"	Sq. End	2-5/8"	4-1/2"	FMHV-202-32	FMHV-202-32-DLC	FMHV-202-32-TC	FMHV-202-32-DLC-TC
	1"	1"	1-1/4"	0.03"	2-5/8"	4-1/2"	FMHV-202-32-030	FMHV-202-32-030-DLC	FMHV-202-32-030-TC	FMHV-202-32-030-DLC-TC
	1"	1"	1-1/4"	0.06"	2-5/8"	4-1/2"	FMHV-202-32-060	FMHV-202-32-060-DLC	FMHV-202-32-060-TC	FMHV-202-32-060-DLC-TC
	1"	1"	1-1/4"	0.09"	2-5/8"	4-1/2"	FMHV-202-32-090	FMHV-202-32-090-DLC	FMHV-202-32-090-TC	FMHV-202-32-090-DLC-TC
	1"	1"	1-1/4"	0.12"	2-5/8"	4-1/2"	FMHV-202-32-120	FMHV-202-32-120-DLC	FMHV-202-32-120-TC	FMHV-202-32-120-DLC-TC
	1"	1"	1-1/4"	0.19"	2-5/8"	4-1/2"	FMHV-202-32-190	FMHV-202-32-190-DLC	FMHV-202-32-190-TC	FMHV-202-32-190-DLC-TC
	1"	1"	1-1/4"	Ball End	2-5/8"	4-1/2"	FMHV-202-32-BN	FMHV-202-32-BN-DLC	FMHV-202-32-BN-TC	FMHV-202-32-BN-DLC-TC
LONG	1"	1"	1-1/4"	Sq. End	3-1/8"	5"	FMHV-203-32	FMHV-203-32-DLC	FMHV-203-32-TC	FMHV-203-32-DLC-TC
	1"	1"	1-1/4"	0.03"	3-1/8"	5"	FMHV-203-32-030	FMHV-203-32-030-DLC	FMHV-203-32-030-TC	FMHV-203-32-030-DLC-TC
	1"	1"	1-1/4"	0.06"	3-1/8"	5"	FMHV-203-32-060	FMHV-203-32-060-DLC	FMHV-203-32-060-TC	FMHV-203-32-060-DLC-TC
	1"	1"	1-1/4"	0.09"	3-1/8"	5"	FMHV-203-32-090	FMHV-203-32-090-DLC	FMHV-203-32-090-TC	FMHV-203-32-090-DLC-TC
	1"	1"	1-1/4"	0.12"	3-1/8"	5"	FMHV-203-32-120	FMHV-203-32-120-DLC	FMHV-203-32-120-TC	FMHV-203-32-120-DLC-TC
	1"	1"	1-1/4"	0.19"	3-1/8"	5"	FMHV-203-32-190	FMHV-203-32-190-DLC	FMHV-203-32-190-TC	FMHV-203-32-190-DLC-TC
	1"	1"	1-1/4"	Ball End	3-1/8"	5"	FMHV-203-32-BN	FMHV-203-32-BN-DLC	FMHV-203-32-BN-TC	FMHV-203-32-BN-DLC-TC
EXTRA LONG	1"	1"	1-1/4"	Sq. End	3-5/8"	5-1/2"	FMHV-204-32	FMHV-204-32-DLC	FMHV-204-32-TC	FMHV-204-32-DLC-TC
	1"	1"	1-1/4"	0.03"	3-5/8"	5-1/2"	FMHV-204-32-030	FMHV-204-32-030-DLC	FMHV-204-32-030-TC	FMHV-204-32-030-DLC-TC
	1"	1"	1-1/4"	0.06"	3-5/8"	5-1/2"	FMHV-204-32-060	FMHV-204-32-060-DLC	FMHV-204-32-060-TC	FMHV-204-32-060-DLC-TC
	1"	1"	1-1/4"	0.09"	3-5/8"	5-1/2"	FMHV-204-32-090	FMHV-204-32-090-DLC	FMHV-204-32-090-TC	FMHV-204-32-090-DLC-TC
	1"	1"	1-1/4"	0.12"	3-5/8"	5-1/2"	FMHV-204-32-120	FMHV-204-32-120-DLC	FMHV-204-32-120-TC	FMHV-204-32-120-DLC-TC
	1"	1"	1-1/4"	0.19"	3-5/8"	5-1/2"	FMHV-204-32-190	FMHV-204-32-190-DLC	FMHV-204-32-190-TC	FMHV-204-32-190-DLC-TC
	1"	1"	1-1/4"	Ball End	3-5/8"	5-1/2"	FMHV-204-32-BN	FMHV-204-32-BN-DLC	FMHV-204-32-BN-TC	FMHV-204-32-BN-DLC-TC
DOUBLE EXTRA LONG	1"	1"	1-1/4"	Sq. End	4-1/8"	6"	FMHV-205-32	FMHV-205-32-DLC	FMHV-205-32-TC	FMHV-205-32-DLC-TC
	1"	1"	1-1/4"	0.03"	4-1/8"	6"	FMHV-205-32-030	FMHV-205-32-030-DLC	FMHV-205-32-030-TC	FMHV-205-32-030-DLC-TC
	1"	1"	1-1/4"	0.06"	4-1/8"	6"	FMHV-205-32-060	FMHV-205-32-060-DLC	FMHV-205-32-060-TC	FMHV-205-32-060-DLC-TC
	1"	1"	1-1/4"	0.09"	4-1/8"	6"	FMHV-205-32-090	FMHV-205-32-090-DLC	FMHV-205-32-090-TC	FMHV-205-32-090-DLC-TC
	1"	1"	1-1/4"	0.12"	4-1/8"	6"	FMHV-205-32-120	FMHV-205-32-120-DLC	FMHV-205-32-120-TC	FMHV-205-32-120-DLC-TC
	1"	1"	1-1/4"	0.19"	4-1/8"	6"	FMHV-205-32-190	FMHV-205-32-190-DLC	FMHV-205-32-190-TC	FMHV-205-32-190-DLC-TC
	1"	1"	1-1/4"	Ball End	4-1/8"	6"	FMHV-205-32-BN	FMHV-205-32-BN-DLC	FMHV-205-32-BN-TC	FMHV-205-32-BN-DLC-TC

1" DIAMETER

FMHV Technical data:

Diameter	Chip load per tooth	Typical Depth	Recommended RPM	Type of cut
1" Diameter	.008-.015	.300 up to .750	Max Tap Tested RPM Or Max RPM	Slot or profile (stay away from 50% radial step-over)
3/4" Diameter	.006-.012	.200 up to .900		
5/8" Diameter	.005-.011	.100 up to .750		
1/2" Diameter	.004-.010	.100 up to .750		
3/8" Diameter	.003-.006	.100 up to .500		
5/16" Diameter	.002-.005	.100 up to .500		
1/4" Diameter	.002-.004	.100 up to .375		

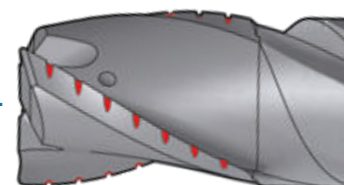
175 horsepower / 130 kilowatt machines: Speeds and feeds are based on short stickout tools.

These speed and feed data are based on super extreme high-velocity high-horsepower / kilowatt machines. Most machines cannot use these speeds and feeds without causing damage. Be sure not to max out your machine. These tools can max out all machines made today. Adjust speeds and feed to the machine and application. It is recommended to use the highest quality tool holders available. Be careful!

Due to the large offering of FMHV series many of these are made to order and non-returnable.

If you "Need Chip Breakers" add "-CB" to the end of any part number to get chip breakers added.

Example: MFMHV-202-25-CB



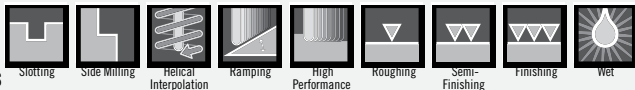
FMHV 3 Flute Ultra-High Velocity Tools for Aluminum



Characteristics



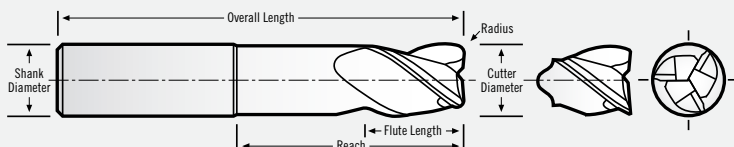
Applications



Materials



Coatings



FM Series Tolerances:

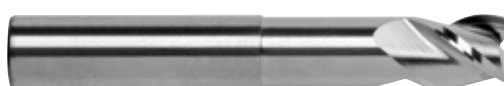
Cutting Dia. = $-.001/-0.0015$
 Shank Dia. = $-.0001/-0.0002$
 Flute Length = $+.060/-0.000$
 OAL = $+/- .060$

ALL-NEW BALANCED END DESIGN

CANNOT PLUNGE

*Eliminate
Tool Pull Out!*
*h4 Shank Tolerance up to
150% more gripping force*
*Tightest in the
Industry!*

*NEXT
GENERATION*
**Mirror
Edge!**
*Eliminates Chatter
& Vibration*



NEW!

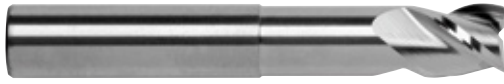
FMHV 3 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
SHORT	1/4"	1/4"	3/8"	Sq. End	3/4"	2"	FMHV-301-08	FMHV-301-08-DLC	FMHV-301-08-TC	FMHV-301-08-DLC-TC
	1/4"	1/4"	3/8"	0.03"	3/4"	2"	FMHV-301-08-030	FMHV-301-08-030-DLC	FMHV-301-08-030-TC	FMHV-301-08-030-DLC-TC
	1/4"	1/4"	3/8"	0.06"	3/4"	2"	FMHV-301-08-060	FMHV-301-08-060-DLC	FMHV-301-08-060-TC	FMHV-301-08-060-DLC-TC
	1/4"	1/4"	3/8"	0.09"	3/4"	2"	FMHV-301-08-090	FMHV-301-08-090-DLC	FMHV-301-08-090-TC	FMHV-301-08-090-DLC-TC
	1/4"	1/4"	3/8"	Ball End	3/4"	2"	FMHV-301-08-BN	FMHV-301-08-BN-DLC	FMHV-301-08-BN-TC	FMHV-301-08-BN-DLC-TC
MEDIUM	1/4"	1/4"	3/8"	Sq. End	1-1/16"	2-1/2"	FMHV-302-08	FMHV-302-08-DLC	FMHV-302-08-TC	FMHV-302-08-DLC-TC
	1/4"	1/4"	3/8"	0.03"	1-1/16"	2-1/2"	FMHV-302-08-030	FMHV-302-08-030-DLC	FMHV-302-08-030-TC	FMHV-302-08-030-DLC-TC
	1/4"	1/4"	3/8"	0.06"	1-1/16"	2-1/2"	FMHV-302-08-060	FMHV-302-08-060-DLC	FMHV-302-08-060-TC	FMHV-302-08-060-DLC-TC
	1/4"	1/4"	3/8"	0.09"	1-1/16"	2-1/2"	FMHV-302-08-090	FMHV-302-08-090-DLC	FMHV-302-08-090-TC	FMHV-302-08-090-DLC-TC
	1/4"	1/4"	3/8"	Ball End	1-1/16"	2-1/2"	FMHV-302-08-BN	FMHV-302-08-BN-DLC	FMHV-302-08-BN-TC	FMHV-302-08-BN-DLC-TC
LONG	1/4"	1/4"	3/8"	Sq. End	1-1/2"	3"	FMHV-303-08	FMHV-303-08-DLC	FMHV-303-08-TC	FMHV-303-08-DLC-TC
	1/4"	1/4"	3/8"	0.03"	1-1/2"	3"	FMHV-303-08-030	FMHV-303-08-030-DLC	FMHV-303-08-030-TC	FMHV-303-08-030-DLC-TC
	1/4"	1/4"	3/8"	0.06"	1-1/2"	3"	FMHV-303-08-060	FMHV-303-08-060-DLC	FMHV-303-08-060-TC	FMHV-303-08-060-DLC-TC
	1/4"	1/4"	3/8"	0.09"	1-1/2"	3"	FMHV-303-08-090	FMHV-303-08-090-DLC	FMHV-303-08-090-TC	FMHV-303-08-090-DLC-TC
	1/4"	1/4"	3/8"	Ball End	1-1/2"	3"	FMHV-303-08-BN	FMHV-303-08-BN-DLC	FMHV-303-08-BN-TC	FMHV-303-08-BN-DLC-TC

1/4"
DIAMETER

SHORT	5/16"	5/16"	1/2"	Sq. End	3/4"	2"	FMHV-301-10	FMHV-301-10-DLC	FMHV-301-10-TC	FMHV-301-10-DLC-TC
	5/16"	5/16"	1/2"	0.03"	3/4"	2"	FMHV-301-10-030	FMHV-301-10-030-DLC	FMHV-301-10-030-TC	FMHV-301-10-030-DLC-TC
	5/16"	5/16"	1/2"	0.06"	3/4"	2"	FMHV-301-10-060	FMHV-301-10-060-DLC	FMHV-301-10-060-TC	FMHV-301-10-060-DLC-TC
	5/16"	5/16"	1/2"	0.09"	3/4"	2"	FMHV-301-10-090	FMHV-301-10-090-DLC	FMHV-301-10-090-TC	FMHV-301-10-090-DLC-TC
	5/16"	5/16"	1/2"	Ball End	3/4"	2"	FMHV-301-10-BN	FMHV-301-10-BN-DLC	FMHV-301-10-BN-TC	FMHV-301-10-BN-DLC-TC
MEDIUM	5/16"	5/16"	1/2"	Sq. End	1-1/16"	2-1/2"	FMHV-302-10	FMHV-302-10-DLC	FMHV-302-10-TC	FMHV-302-10-DLC-TC
	5/16"	5/16"	1/2"	0.03"	1-1/16"	2-1/2"	FMHV-302-10-030	FMHV-302-10-030-DLC	FMHV-302-10-030-TC	FMHV-302-10-030-DLC-TC
	5/16"	5/16"	1/2"	0.06"	1-1/16"	2-1/2"	FMHV-302-10-060	FMHV-302-10-060-DLC	FMHV-302-10-060-TC	FMHV-302-10-060-DLC-TC
	5/16"	5/16"	1/2"	0.09"	1-1/16"	2-1/2"	FMHV-302-10-090	FMHV-302-10-090-DLC	FMHV-302-10-090-TC	FMHV-302-10-090-DLC-TC
	5/16"	5/16"	1/2"	Ball End	1-1/16"	2-1/2"	FMHV-302-10-BN	FMHV-302-10-BN-DLC	FMHV-302-10-BN-TC	FMHV-302-10-BN-DLC-TC

5/16"
DIAMETER



NEW!

3 Flute **FMHV**

Aluminum

FMHV 3 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
LONG	5/16"	5/16"	1/2"	Sq. End	1-1/2"	3"	FMHV-303-10	FMHV-303-10-DLC	FMHV-303-10-TC	FMHV-303-10-DLC-TC	5/16" DIAMETER
	5/16"	5/16"	1/2"	0.03"	1-1/2"	3"	FMHV-303-10-030	FMHV-303-10-030-DLC	FMHV-303-10-030-TC	FMHV-303-10-030-DLC-TC	
	5/16"	5/16"	1/2"	0.06"	1-1/2"	3"	FMHV-303-10-060	FMHV-303-10-060-DLC	FMHV-303-10-060-TC	FMHV-303-10-060-DLC-TC	
	5/16"	5/16"	1/2"	0.09"	1-1/2"	3"	FMHV-303-10-090	FMHV-303-10-090-DLC	FMHV-303-10-090-TC	FMHV-303-10-090-DLC-TC	
	5/16"	5/16"	1/2"	Ball End	1-1/2"	3"	FMHV-303-10-BN	FMHV-303-10-BN-DLC	FMHV-303-10-BN-TC	FMHV-303-10-BN-DLC-TC	
SHORT	3/8"	3/8"	1/2"	Sq. End	1-1/4"	3"	FMHV-301-12	FMHV-301-12-DLC	FMHV-301-12-TC	FMHV-301-12-DLC-TC	3/8" DIAMETER
	3/8"	3/8"	1/2"	0.03"	1-1/4"	3"	FMHV-301-12-030	FMHV-301-12-030-DLC	FMHV-301-12-030-TC	FMHV-301-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	1-1/4"	3"	FMHV-301-12-060	FMHV-301-12-060-DLC	FMHV-301-12-060-TC	FMHV-301-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	1-1/4"	3"	FMHV-301-12-090	FMHV-301-12-090-DLC	FMHV-301-12-090-TC	FMHV-301-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	1-1/4"	3"	FMHV-301-12-BN	FMHV-301-12-BN-DLC	FMHV-301-12-BN-TC	FMHV-301-12-BN-DLC-TC	
MEDIUM	3/8"	3/8"	1/2"	Sq. End	1-3/4"	3-1/2"	FMHV-302-12	FMHV-302-12-DLC	FMHV-302-12-TC	FMHV-302-12-DLC-TC	
	3/8"	3/8"	1/2"	0.03"	1-3/4"	3-1/2"	FMHV-302-12-030	FMHV-302-12-030-DLC	FMHV-302-12-030-TC	FMHV-302-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	1-3/4"	3-1/2"	FMHV-302-12-060	FMHV-302-12-060-DLC	FMHV-302-12-060-TC	FMHV-302-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	1-3/4"	3-1/2"	FMHV-302-12-090	FMHV-302-12-090-DLC	FMHV-302-12-090-TC	FMHV-302-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	1-3/4"	3-1/2"	FMHV-302-12-BN	FMHV-302-12-BN-DLC	FMHV-302-12-BN-TC	FMHV-302-12-BN-DLC-TC	
LONG	3/8"	3/8"	1/2"	Sq. End	2-1/4"	4"	FMHV-303-12	FMHV-303-12-DLC	FMHV-303-12-TC	FMHV-303-12-DLC-TC	
	3/8"	3/8"	1/2"	0.03"	2-1/4"	4"	FMHV-303-12-030	FMHV-303-12-030-DLC	FMHV-303-12-030-TC	FMHV-303-12-030-DLC-TC	
	3/8"	3/8"	1/2"	0.06"	2-1/4"	4"	FMHV-303-12-060	FMHV-303-12-060-DLC	FMHV-303-12-060-TC	FMHV-303-12-060-DLC-TC	
	3/8"	3/8"	1/2"	0.09"	2-1/4"	4"	FMHV-303-12-090	FMHV-303-12-090-DLC	FMHV-303-12-090-TC	FMHV-303-12-090-DLC-TC	
	3/8"	3/8"	1/2"	Ball End	2-1/4"	4"	FMHV-303-12-BN	FMHV-303-12-BN-DLC	FMHV-303-12-BN-TC	FMHV-303-12-BN-DLC-TC	
SHORT	1/2"	1/2"	3/4"	Sq. End	1-1/4"	3"	FMHV-301-16	FMHV-301-16-DLC	FMHV-301-16-TC	FMHV-301-16-DLC-TC	1/2" DIAMETER
	1/2"	1/2"	3/4"	0.03"	1-1/4"	3"	FMHV-301-16-030	FMHV-301-16-030-DLC	FMHV-301-16-030-TC	FMHV-301-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	1-1/4"	3"	FMHV-301-16-060	FMHV-301-16-060-DLC	FMHV-301-16-060-TC	FMHV-301-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	1-1/4"	3"	FMHV-301-16-090	FMHV-301-16-090-DLC	FMHV-301-16-090-TC	FMHV-301-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	1-1/4"	3"	FMHV-301-16-120	FMHV-301-16-120-DLC	FMHV-301-16-120-TC	FMHV-301-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	1-1/4"	3"	FMHV-301-16-BN	FMHV-301-16-BN-DLC	FMHV-301-16-BN-TC	FMHV-301-16-BN-DLC-TC	
	1/2"	1/2"	3/4"	Sq. End	1-5/8"	3-1/2"	FMHV-302-16	FMHV-302-16-DLC	FMHV-302-16-TC	FMHV-302-16-DLC-TC	
MEDIUM	1/2"	1/2"	3/4"	0.03"	1-5/8"	3-1/2"	FMHV-302-16-030	FMHV-302-16-030-DLC	FMHV-302-16-030-TC	FMHV-302-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	1-5/8"	3-1/2"	FMHV-302-16-060	FMHV-302-16-060-DLC	FMHV-302-16-060-TC	FMHV-302-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	1-5/8"	3-1/2"	FMHV-302-16-090	FMHV-302-16-090-DLC	FMHV-302-16-090-TC	FMHV-302-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	1-5/8"	3-1/2"	FMHV-302-16-120	FMHV-302-16-120-DLC	FMHV-302-16-120-TC	FMHV-302-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	1-5/8"	3-1/2"	FMHV-302-16-BN	FMHV-302-16-BN-DLC	FMHV-302-16-BN-TC	FMHV-302-16-BN-DLC-TC	
	1/2"	1/2"	3/4"	Sq. End	2-1/8"	4"	FMHV-303-16	FMHV-303-16-DLC	FMHV-303-16-TC	FMHV-303-16-DLC-TC	
	1/2"	1/2"	3/4"	0.03"	2-1/8"	4"	FMHV-303-16-030	FMHV-303-16-030-DLC	FMHV-303-16-030-TC	FMHV-303-16-030-DLC-TC	
LONG	1/2"	1/2"	3/4"	0.06"	2-1/8"	4"	FMHV-303-16-060	FMHV-303-16-060-DLC	FMHV-303-16-060-TC	FMHV-303-16-060-DLC-TC	
	1/2"	1/2"	3/4"	0.09"	2-1/8"	4"	FMHV-303-16-090	FMHV-303-16-090-DLC	FMHV-303-16-090-TC	FMHV-303-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	2-1/8"	4"	FMHV-303-16-120	FMHV-303-16-120-DLC	FMHV-303-16-120-TC	FMHV-303-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	2-1/8"	4"	FMHV-303-16-BN	FMHV-303-16-BN-DLC	FMHV-303-16-BN-TC	FMHV-303-16-BN-DLC-TC	
	1/2"	1/2"	3/4"	Sq. End	2-5/8"	4-1/2"	FMHV-304-16	FMHV-304-16-DLC	FMHV-304-16-TC	FMHV-304-16-DLC-TC	
	1/2"	1/2"	3/4"	0.03"	2-5/8"	4-1/2"	FMHV-304-16-030	FMHV-304-16-030-DLC	FMHV-304-16-030-TC	FMHV-304-16-030-DLC-TC	
	1/2"	1/2"	3/4"	0.06"	2-5/8"	4-1/2"	FMHV-304-16-060	FMHV-304-16-060-DLC	FMHV-304-16-060-TC	FMHV-304-16-060-DLC-TC	
EXTRA LONG	1/2"	1/2"	3/4"	0.09"	2-5/8"	4-1/2"	FMHV-304-16-090	FMHV-304-16-090-DLC	FMHV-304-16-090-TC	FMHV-304-16-090-DLC-TC	
	1/2"	1/2"	3/4"	0.12"	2-5/8"	4-1/2"	FMHV-304-16-120	FMHV-304-16-120-DLC	FMHV-304-16-120-TC	FMHV-304-16-120-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	2-5/8"	4-1/2"	FMHV-304-16-BN	FMHV-304-16-BN-DLC	FMHV-304-16-BN-TC	FMHV-304-16-BN-DLC-TC	
	1/2"	1/2"	3/4"	Ball End	2-5/8"	4-1/2"	FMHV-304-16-BN	FMHV-304-16-BN-DLC	FMHV-304-16-BN-TC	FMHV-304-16-BN-DLC-TC	

*Other Reach Lengths available upon request.

Due to the large offering of FMHV series many of these are made to order and non-returnable.

CONTINUED ON NEXT PAGE—

FMHV 3 Flute Ultra-High Velocity Tools for Aluminum



FMHV 3 Flute (Short to Long Reach)



SHORT

MEDIUM

LONG

EXTRA LONG

SHORT

MEDIUM

LONG

Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
5/8"	5/8"	7/8"	Sq. End	1-9/16"	3-1/2"	FMHV-301-20	FMHV-301-20-DLC	FMHV-301-20-TC	FMHV-301-20-DLC-TC
5/8"	5/8"	7/8"	0.03	1-9/16"	3-1/2"	FMHV-301-20-030	FMHV-301-20-030-DLC	FMHV-301-20-030-TC	FMHV-301-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06	1-9/16"	3-1/2"	FMHV-301-20-060	FMHV-301-20-060-DLC	FMHV-301-20-060-TC	FMHV-301-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09	1-9/16"	3-1/2"	FMHV-301-20-090	FMHV-301-20-090-DLC	FMHV-301-20-090-TC	FMHV-301-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12	1-9/16"	3-1/2"	FMHV-301-20-120	FMHV-301-20-120-DLC	FMHV-301-20-120-TC	FMHV-301-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	1-9/16"	3-1/2"	FMHV-301-20-BN	FMHV-301-20-BN-DLC	FMHV-301-20-BN-TC	FMHV-301-20-BN-DLC-TC
5/8"	5/8"	7/8"	Sq. End	2-1/16"	4"	FMHV-302-20	FMHV-302-20-DLC	FMHV-302-20-TC	FMHV-302-20-DLC-TC
5/8"	5/8"	7/8"	0.03	2-1/16"	4"	FMHV-302-20-030	FMHV-302-20-030-DLC	FMHV-302-20-030-TC	FMHV-302-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06	2-1/16"	4"	FMHV-302-20-060	FMHV-302-20-060-DLC	FMHV-302-20-060-TC	FMHV-302-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09	2-1/16"	4"	FMHV-302-20-090	FMHV-302-20-090-DLC	FMHV-302-20-090-TC	FMHV-302-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12	2-1/16"	4"	FMHV-302-20-120	FMHV-302-20-120-DLC	FMHV-302-20-120-TC	FMHV-302-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	2-1/16"	4"	FMHV-302-20-BN	FMHV-302-20-BN-DLC	FMHV-302-20-BN-TC	FMHV-302-20-BN-DLC-TC
5/8"	5/8"	7/8"	Sq. End	2-9/16"	4-1/2"	FMHV-303-20	FMHV-303-20-DLC	FMHV-303-20-TC	FMHV-303-20-DLC-TC
5/8"	5/8"	7/8"	0.03	2-9/16"	4-1/2"	FMHV-303-20-030	FMHV-303-20-030-DLC	FMHV-303-20-030-TC	FMHV-303-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06	2-9/16"	4-1/2"	FMHV-303-20-060	FMHV-303-20-060-DLC	FMHV-303-20-060-TC	FMHV-303-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09	2-9/16"	4-1/2"	FMHV-303-20-090	FMHV-303-20-090-DLC	FMHV-303-20-090-TC	FMHV-303-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12	2-9/16"	4-1/2"	FMHV-303-20-120	FMHV-303-20-120-DLC	FMHV-303-20-120-TC	FMHV-303-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	2-9/16"	4-1/2"	FMHV-303-20-BN	FMHV-303-20-BN-DLC	FMHV-303-20-BN-TC	FMHV-303-20-BN-DLC-TC
5/8"	5/8"	7/8"	Sq. End	3-1/16"	5"	FMHV-304-20	FMHV-304-20-DLC	FMHV-304-20-TC	FMHV-304-20-DLC-TC
5/8"	5/8"	7/8"	0.03	3-1/16"	5"	FMHV-304-20-030	FMHV-304-20-030-DLC	FMHV-304-20-030-TC	FMHV-304-20-030-DLC-TC
5/8"	5/8"	7/8"	0.06	3-1/16"	5"	FMHV-304-20-060	FMHV-304-20-060-DLC	FMHV-304-20-060-TC	FMHV-304-20-060-DLC-TC
5/8"	5/8"	7/8"	0.09	3-1/16"	5"	FMHV-304-20-090	FMHV-304-20-090-DLC	FMHV-304-20-090-TC	FMHV-304-20-090-DLC-TC
5/8"	5/8"	7/8"	0.12	3-1/16"	5"	FMHV-304-20-120	FMHV-304-20-120-DLC	FMHV-304-20-120-TC	FMHV-304-20-120-DLC-TC
5/8"	5/8"	7/8"	Ball End	3-1/16"	5"	FMHV-304-20-BN	FMHV-304-20-BN-DLC	FMHV-304-20-BN-TC	FMHV-304-20-BN-DLC-TC

5/8"
DIAMETER

3/4"	3/4"	1"	Sq. End	2-1/8"	4"	FMHV-301-24	FMHV-301-24-DLC	FMHV-301-24-TC	FMHV-301-24-DLC-TC
3/4"	3/4"	1"	0.03	2-1/8"	4"	FMHV-301-24-030	FMHV-301-24-030-DLC	FMHV-301-24-030-TC	FMHV-301-24-030-DLC-TC
3/4"	3/4"	1"	0.06	2-1/8"	4"	FMHV-301-24-060	FMHV-301-24-060-DLC	FMHV-301-24-060-TC	FMHV-301-24-060-DLC-TC
3/4"	3/4"	1"	0.09	2-1/8"	4"	FMHV-301-24-090	FMHV-301-24-090-DLC	FMHV-301-24-090-TC	FMHV-301-24-090-DLC-TC
3/4"	3/4"	1"	0.12	2-1/8"	4"	FMHV-301-24-120	FMHV-301-24-120-DLC	FMHV-301-24-120-TC	FMHV-301-24-120-DLC-TC
3/4"	3/4"	1"	0.19	2-1/8"	4"	FMHV-301-24-190	FMHV-301-24-190-DLC	FMHV-301-24-190-TC	FMHV-301-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	2-1/8"	4"	FMHV-301-24-BN	FMHV-301-24-BN-DLC	FMHV-301-24-BN-TC	FMHV-301-24-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	2-5/8"	4-1/2"	FMHV-302-24	FMHV-302-24-DLC	FMHV-302-24-TC	FMHV-302-24-DLC-TC
3/4"	3/4"	1"	0.03	2-5/8"	4-1/2"	FMHV-302-24-030	FMHV-302-24-030-DLC	FMHV-302-24-030-TC	FMHV-302-24-030-DLC-TC
3/4"	3/4"	1"	0.06	2-5/8"	4-1/2"	FMHV-302-24-060	FMHV-302-24-060-DLC	FMHV-302-24-060-TC	FMHV-302-24-060-DLC-TC
3/4"	3/4"	1"	0.09	2-5/8"	4-1/2"	FMHV-302-24-090	FMHV-302-24-090-DLC	FMHV-302-24-090-TC	FMHV-302-24-090-DLC-TC
3/4"	3/4"	1"	0.12	2-5/8"	4-1/2"	FMHV-302-24-120	FMHV-302-24-120-DLC	FMHV-302-24-120-TC	FMHV-302-24-120-DLC-TC
3/4"	3/4"	1"	0.19	2-5/8"	4-1/2"	FMHV-302-24-190	FMHV-302-24-190-DLC	FMHV-302-24-190-TC	FMHV-302-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	2-5/8"	4-1/2"	FMHV-302-24-BN	FMHV-302-24-BN-DLC	FMHV-302-24-BN-TC	FMHV-302-24-BN-DLC-TC
3/4"	3/4"	1"	Sq. End	3-1/8"	5"	FMHV-303-24	FMHV-303-24-DLC	FMHV-303-24-TC	FMHV-303-24-DLC-TC
3/4"	3/4"	1"	0.03	3-1/8"	5"	FMHV-303-24-030	FMHV-303-24-030-DLC	FMHV-303-24-030-TC	FMHV-303-24-030-DLC-TC
3/4"	3/4"	1"	0.06	3-1/8"	5"	FMHV-303-24-060	FMHV-303-24-060-DLC	FMHV-303-24-060-TC	FMHV-303-24-060-DLC-TC
3/4"	3/4"	1"	0.09	3-1/8"	5"	FMHV-303-24-090	FMHV-303-24-090-DLC	FMHV-303-24-090-TC	FMHV-303-24-090-DLC-TC
3/4"	3/4"	1"	0.12	3-1/8"	5"	FMHV-303-24-120	FMHV-303-24-120-DLC	FMHV-303-24-120-TC	FMHV-303-24-120-DLC-TC
3/4"	3/4"	1"	0.19	3-1/8"	5"	FMHV-303-24-190	FMHV-303-24-190-DLC	FMHV-303-24-190-TC	FMHV-303-24-190-DLC-TC
3/4"	3/4"	1"	Ball End	3-1/8"	5"	FMHV-303-24-BN	FMHV-303-24-BN-DLC	FMHV-303-24-BN-TC	FMHV-303-24-BN-DLC-TC

3/4"
DIAMETER

NEW!

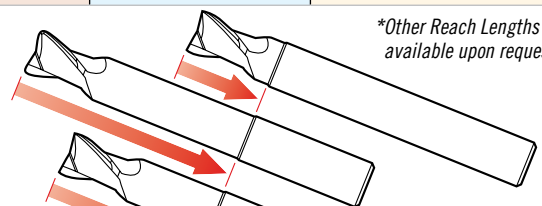
Aluminum

FMHV 3 Flute (Short to Long Reach)

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
EXTRA LONG	3/4"	3/4"	1"	Sq. End	3-5/8"	5-1/2"	FMHV-304-24	FMHV-304-24-DLC	FMHV-304-24-TC	FMHV-304-24-DLC-TC	3/4" DIAMETER
	3/4"	3/4"	1"	0.03"	3-5/8"	5-1/2"	FMHV-304-24-030	FMHV-304-24-030-DLC	FMHV-304-24-030-TC	FMHV-304-24-030-DLC-TC	
	3/4"	3/4"	1"	0.06"	3-5/8"	5-1/2"	FMHV-304-24-060	FMHV-304-24-060-DLC	FMHV-304-24-060-TC	FMHV-304-24-060-DLC-TC	
	3/4"	3/4"	1"	0.09"	3-5/8"	5-1/2"	FMHV-304-24-090	FMHV-304-24-090-DLC	FMHV-304-24-090-TC	FMHV-304-24-090-DLC-TC	
	3/4"	3/4"	1"	0.12"	3-5/8"	5-1/2"	FMHV-304-24-120	FMHV-304-24-120-DLC	FMHV-304-24-120-TC	FMHV-304-24-120-DLC-TC	
	3/4"	3/4"	1"	0.19"	3-5/8"	5-1/2"	FMHV-304-24-190	FMHV-304-24-190-DLC	FMHV-304-24-190-TC	FMHV-304-24-190-DLC-TC	
	3/4"	3/4"	1"	Ball End	3-5/8"	5-1/2"	FMHV-304-24-BN	FMHV-304-24-BN-DLC	FMHV-304-24-BN-TC	FMHV-304-24-BN-DLC-TC	
SHORT	1"	1"	1-1/4"	Sq. End	2-1/8"	4"	FMHV-301-32	FMHV-301-32-DLC	FMHV-301-32-TC	FMHV-301-32-DLC-TC	1" DIAMETER
	1"	1"	1-1/4"	0.03"	2-1/8"	4"	FMHV-301-32-030	FMHV-301-32-030-DLC	FMHV-301-32-030-TC	FMHV-301-32-030-DLC-TC	
	1"	1"	1-1/4"	0.06"	2-1/8"	4"	FMHV-301-32-060	FMHV-301-32-060-DLC	FMHV-301-32-060-TC	FMHV-301-32-060-DLC-TC	
	1"	1"	1-1/4"	0.09"	2-1/8"	4"	FMHV-301-32-090	FMHV-301-32-090-DLC	FMHV-301-32-090-TC	FMHV-301-32-090-DLC-TC	
	1"	1"	1-1/4"	0.12"	2-1/8"	4"	FMHV-301-32-120	FMHV-301-32-120-DLC	FMHV-301-32-120-TC	FMHV-301-32-120-DLC-TC	
	1"	1"	1-1/4"	0.19"	2-1/8"	4"	FMHV-301-32-190	FMHV-301-32-190-DLC	FMHV-301-32-190-TC	FMHV-301-32-190-DLC-TC	
	1"	1"	1-1/4"	Ball End	2-1/8"	4"	FMHV-301-32-BN	FMHV-301-32-BN-DLC	FMHV-301-32-BN-TC	FMHV-301-32-BN-DLC-TC	
MEDIUM	1"	1"	1-1/4"	Sq. End	2-5/8"	4-1/2"	FMHV-302-32	FMHV-302-32-DLC	FMHV-302-32-TC	FMHV-302-32-DLC-TC	
	1"	1"	1-1/4"	0.03"	2-5/8"	4-1/2"	FMHV-302-32-030	FMHV-302-32-030-DLC	FMHV-302-32-030-TC	FMHV-302-32-030-DLC-TC	
	1"	1"	1-1/4"	0.06"	2-5/8"	4-1/2"	FMHV-302-32-060	FMHV-302-32-060-DLC	FMHV-302-32-060-TC	FMHV-302-32-060-DLC-TC	
	1"	1"	1-1/4"	0.09"	2-5/8"	4-1/2"	FMHV-302-32-090	FMHV-302-32-090-DLC	FMHV-302-32-090-TC	FMHV-302-32-090-DLC-TC	
	1"	1"	1-1/4"	0.12"	2-5/8"	4-1/2"	FMHV-302-32-120	FMHV-302-32-120-DLC	FMHV-302-32-120-TC	FMHV-302-32-120-DLC-TC	
	1"	1"	1-1/4"	0.19"	2-5/8"	4-1/2"	FMHV-302-32-190	FMHV-302-32-190-DLC	FMHV-302-32-190-TC	FMHV-302-32-190-DLC-TC	
	1"	1"	1-1/4"	Ball End	2-5/8"	4-1/2"	FMHV-302-32-BN	FMHV-302-32-BN-DLC	FMHV-302-32-BN-TC	FMHV-302-32-BN-DLC-TC	
LONG	1"	1"	1-1/4"	Sq. End	3-1/8"	5"	FMHV-303-32	FMHV-303-32-DLC	FMHV-303-32-TC	FMHV-303-32-DLC-TC	
	1"	1"	1-1/4"	0.03"	3-1/8"	5"	FMHV-303-32-030	FMHV-303-32-030-DLC	FMHV-303-32-030-TC	FMHV-303-32-030-DLC-TC	
	1"	1"	1-1/4"	0.06"	3-1/8"	5"	FMHV-303-32-060	FMHV-303-32-060-DLC	FMHV-303-32-060-TC	FMHV-303-32-060-DLC-TC	
	1"	1"	1-1/4"	0.09"	3-1/8"	5"	FMHV-303-32-090	FMHV-303-32-090-DLC	FMHV-303-32-090-TC	FMHV-303-32-090-DLC-TC	
	1"	1"	1-1/4"	0.12"	3-1/8"	5"	FMHV-303-32-120	FMHV-303-32-120-DLC	FMHV-303-32-120-TC	FMHV-303-32-120-DLC-TC	
	1"	1"	1-1/4"	0.19"	3-1/8"	5"	FMHV-303-32-190	FMHV-303-32-190-DLC	FMHV-303-32-190-TC	FMHV-303-32-190-DLC-TC	
	1"	1"	1-1/4"	Ball End	3-1/8"	5"	FMHV-303-32-BN	FMHV-303-32-BN-DLC	FMHV-303-32-BN-TC	FMHV-303-32-BN-DLC-TC	
EXTRA LONG	1"	1"	1-1/4"	Sq. End	3-5/8"	5-1/2"	FMHV-304-32	FMHV-304-32-DLC	FMHV-304-32-TC	FMHV-304-32-DLC-TC	
	1"	1"	1-1/4"	0.03"	3-5/8"	5-1/2"	FMHV-304-32-030	FMHV-304-32-030-DLC	FMHV-304-32-030-TC	FMHV-304-32-030-DLC-TC	
	1"	1"	1-1/4"	0.06"	3-5/8"	5-1/2"	FMHV-304-32-060	FMHV-304-32-060-DLC	FMHV-304-32-060-TC	FMHV-304-32-060-DLC-TC	
	1"	1"	1-1/4"	0.09"	3-5/8"	5-1/2"	FMHV-304-32-090	FMHV-304-32-090-DLC	FMHV-304-32-090-TC	FMHV-304-32-090-DLC-TC	
	1"	1"	1-1/4"	0.12"	3-5/8"	5-1/2"	FMHV-304-32-120	FMHV-304-32-120-DLC	FMHV-304-32-120-TC	FMHV-304-32-120-DLC-TC	
	1"	1"	1-1/4"	0.19"	3-5/8"	5-1/2"	FMHV-304-32-190	FMHV-304-32-190-DLC	FMHV-304-32-190-TC	FMHV-304-32-190-DLC-TC	
	1"	1"	1-1/4"	Ball End	3-5/8"	5-1/2"	FMHV-304-32-BN	FMHV-304-32-BN-DLC	FMHV-304-32-BN-TC	FMHV-304-32-BN-DLC-TC	
DOUBLE EXTRA LONG	1"	1"	1-1/4"	Sq. End	4-1/8"	6"	FMHV-305-32	FMHV-305-32-DLC	FMHV-305-32-TC	FMHV-305-32-DLC-TC	
	1"	1"	1-1/4"	0.03"	4-1/8"	6"	FMHV-305-32-030	FMHV-305-32-030-DLC	FMHV-305-32-030-TC	FMHV-305-32-030-DLC-TC	
	1"	1"	1-1/4"	0.06"	4-1/8"	6"	FMHV-305-32-060	FMHV-305-32-060-DLC	FMHV-305-32-060-TC	FMHV-305-32-060-DLC-TC	
	1"	1"	1-1/4"	0.09"	4-1/8"	6"	FMHV-305-32-090	FMHV-305-32-090-DLC	FMHV-305-32-090-TC	FMHV-305-32-090-DLC-TC	
	1"	1"	1-1/4"	0.12"	4-1/8"	6"	FMHV-305-32-120	FMHV-305-32-120-DLC	FMHV-305-32-120-TC	FMHV-305-32-120-DLC-TC	
	1"	1"	1-1/4"	0.19"	4-1/8"	6"	FMHV-305-32-190	FMHV-305-32-190-DLC	FMHV-305-32-190-TC	FMHV-305-32-190-DLC-TC	
	1"	1"	1-1/4"	Ball End	4-1/8"	6"	FMHV-305-32-BN	FMHV-305-32-BN-DLC	FMHV-305-32-BN-TC	FMHV-305-32-BN-DLC-TC	

*Other Reach Lengths available upon request.

Any neck length (LBS) available upon request!



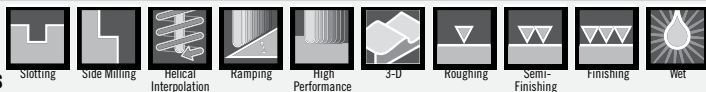
MFMHV 2 Flute Ultra-High Velocity Tools for Aluminum



Characteristics



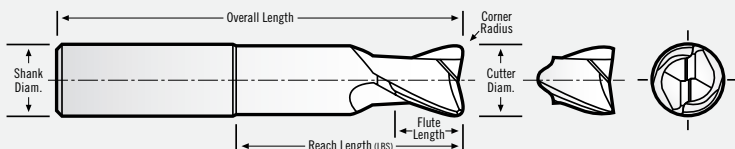
Applications



Materials



Coatings



MFMHV Series Tolerances:

Cutting Diam. = $-0.018/-0.038$ mm
 Shank Diam. = $-0.002/-0.005$ mm
 Flute Length = $+1.500/-0.000$ mm
 Overall Length = $+/- 1.500$ mm

*Eliminate
Tool Pull Out!*

*ALL Tools h4 Shank Tolerance
up to 150% more gripping force*

*Tightest in the
Industry!*

*NEXT
GENERATION
Mirror
Edge!
Eliminates Chatter
& Vibration*



NEW!

MFMHV 2 Flute (Short to Long Reach)



	Cutting Diameter	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
SHORT	6mm	6mm	2	10mm	Sq. End	18mm	51mm	MFMHV-201-06	MFMHV-201-06-DLC	MFMHV-201-06-TC	MFMHV-201-06-DLC-TC	6 mm DIAMETER
	6mm	6mm	2	10mm	0.5mm	18mm	51mm	MFMHV-201-06-050	MFMHV-201-06-050-DLC	MFMHV-201-06-050-TC	MFMHV-201-06-050-DLC-TC	
	6mm	6mm	2	10mm	1mm	18mm	51mm	MFMHV-201-06-100	MFMHV-201-06-100-DLC	MFMHV-201-06-100-TC	MFMHV-201-06-100-DLC-TC	
	6mm	6mm	2	10mm	2mm	18mm	51mm	MFMHV-201-06-200	MFMHV-201-06-200-DLC	MFMHV-201-06-200-TC	MFMHV-201-06-200-DLC-TC	
	6mm	6mm	2	10mm	Ball End	18mm	51mm	MFMHV-201-06-BN	MFMHV-201-06-BN-DLC	MFMHV-201-06-BN-TC	MFMHV-201-06-BN-DLC-TC	
MEDIUM	6mm	6mm	2	10mm	Sq. End	28mm	64mm	MFMHV-202-06	MFMHV-202-06-DLC	MFMHV-202-06-TC	MFMHV-202-06-DLC-TC	
	6mm	6mm	2	10mm	0.5mm	28mm	64mm	MFMHV-202-06-050	MFMHV-202-06-050-DLC	MFMHV-202-06-050-TC	MFMHV-202-06-050-DLC-TC	
	6mm	6mm	2	10mm	1mm	28mm	64mm	MFMHV-202-06-100	MFMHV-202-06-100-DLC	MFMHV-202-06-100-TC	MFMHV-202-06-100-DLC-TC	
	6mm	6mm	2	10mm	2mm	28mm	64mm	MFMHV-202-06-200	MFMHV-202-06-200-DLC	MFMHV-202-06-200-TC	MFMHV-202-06-200-DLC-TC	
	6mm	6mm	2	10mm	Ball End	28mm	64mm	MFMHV-202-06-BN	MFMHV-202-06-BN-DLC	MFMHV-202-06-BN-TC	MFMHV-202-06-BN-DLC-TC	
LONG	6mm	6mm	2	10mm	Sq. End	40mm	76mm	MFMHV-203-06	MFMHV-203-06-DLC	MFMHV-203-06-TC	MFMHV-203-06-DLC-TC	
	6mm	6mm	2	10mm	0.5mm	40mm	76mm	MFMHV-203-06-050	MFMHV-203-06-050-DLC	MFMHV-203-06-050-TC	MFMHV-203-06-050-DLC-TC	
	6mm	6mm	2	10mm	1mm	40mm	76mm	MFMHV-203-06-100	MFMHV-203-06-100-DLC	MFMHV-203-06-100-TC	MFMHV-203-06-100-DLC-TC	
	6mm	6mm	2	10mm	2mm	40mm	76mm	MFMHV-203-06-200	MFMHV-203-06-200-DLC	MFMHV-203-06-200-TC	MFMHV-203-06-200-DLC-TC	
	6mm	6mm	2	10mm	Ball End	40mm	76mm	MFMHV-203-06-BN	MFMHV-203-06-BN-DLC	MFMHV-203-06-BN-TC	MFMHV-203-06-BN-DLC-TC	
SHORT	8mm	8mm	2	13mm	Sq. End	19mm	51mm	MFMHV-201-08	MFMHV-201-08-DLC	MFMHV-201-08-TC	MFMHV-201-08-DLC-TC	8 mm DIAMETER
	8mm	8mm	2	13mm	0.5mm	19mm	51mm	MFMHV-201-08-050	MFMHV-201-08-050-DLC	MFMHV-201-08-050-TC	MFMHV-201-08-050-DLC-TC	
	8mm	8mm	2	13mm	1mm	19mm	51mm	MFMHV-201-08-100	MFMHV-201-08-100-DLC	MFMHV-201-08-100-TC	MFMHV-201-08-100-DLC-TC	
	8mm	8mm	2	13mm	2mm	19mm	51mm	MFMHV-201-08-200	MFMHV-201-08-200-DLC	MFMHV-201-08-200-TC	MFMHV-201-08-200-DLC-TC	
	8mm	8mm	2	13mm	3mm	19mm	51mm	MFMHV-201-08-300	MFMHV-201-08-300-DLC	MFMHV-201-08-300-TC	MFMHV-201-08-300-DLC-TC	
	8mm	8mm	2	13mm	Ball End	19mm	51mm	MFMHV-201-08-BN	MFMHV-201-08-BN-DLC	MFMHV-201-08-BN-TC	MFMHV-201-08-BN-DLC-TC	
	8mm	8mm	2	13mm	Ball End	19mm	51mm	MFMHV-201-08-BN	MFMHV-201-08-BN-DLC	MFMHV-201-08-BN-TC	MFMHV-201-08-BN-DLC-TC	

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

NEW!

Aluminum

MFMHV 2 Flute (Short to Long Reach) — continued

	Cutting Diameter	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
MEDIUM	8mm	8mm	2	13mm	Sq. End	27mm	64mm	MFMHV-202-08	MFMHV-202-08-DLC	MFMHV-202-08-TC	MFMHV-202-08-DLC-TC	8 mm DIAMETER
	8mm	8mm	2	13mm	0.5mm	27mm	64mm	MFMHV-202-08-050	MFMHV-202-08-050-DLC	MFMHV-202-08-050-TC	MFMHV-202-08-050-DLC-TC	
	8mm	8mm	2	13mm	1mm	27mm	64mm	MFMHV-202-08-100	MFMHV-202-08-100-DLC	MFMHV-202-08-100-TC	MFMHV-202-08-100-DLC-TC	
	8mm	8mm	2	13mm	2mm	27mm	64mm	MFMHV-202-08-200	MFMHV-202-08-200-DLC	MFMHV-202-08-200-TC	MFMHV-202-08-200-DLC-TC	
	8mm	8mm	2	13mm	3mm	27mm	64mm	MFMHV-202-08-300	MFMHV-202-08-300-DLC	MFMHV-202-08-300-TC	MFMHV-202-08-300-DLC-TC	
	8mm	8mm	2	13mm	Ball End	27mm	64mm	MFMHV-202-08-BN	MFMHV-202-08-BN-DLC	MFMHV-202-08-BN-TC	MFMHV-202-08-BN-DLC-TC	
LONG	8mm	8mm	2	13mm	Sq. End	38mm	76mm	MFMHV-203-08	MFMHV-203-08-DLC	MFMHV-203-08-TC	MFMHV-203-08-DLC-TC	10 mm DIAMETER
	8mm	8mm	2	13mm	0.5mm	38mm	76mm	MFMHV-203-08-050	MFMHV-203-08-050-DLC	MFMHV-203-08-050-TC	MFMHV-203-08-050-DLC-TC	
	8mm	8mm	2	13mm	1mm	38mm	76mm	MFMHV-203-08-100	MFMHV-203-08-100-DLC	MFMHV-203-08-100-TC	MFMHV-203-08-100-DLC-TC	
	8mm	8mm	2	13mm	2mm	38mm	76mm	MFMHV-203-08-200	MFMHV-203-08-200-DLC	MFMHV-203-08-200-TC	MFMHV-203-08-200-DLC-TC	
	8mm	8mm	2	13mm	3mm	38mm	76mm	MFMHV-203-08-300	MFMHV-203-08-300-DLC	MFMHV-203-08-300-TC	MFMHV-203-08-300-DLC-TC	
	8mm	8mm	2	13mm	Ball End	38mm	76mm	MFMHV-203-08-BN	MFMHV-203-08-BN-DLC	MFMHV-203-08-BN-TC	MFMHV-203-08-BN-DLC-TC	
SHORT	10mm	10mm	2	13mm	Sq. End	32mm	75mm	MFMHV-201-10	MFMHV-201-10-DLC	MFMHV-201-10-TC	MFMHV-201-10-DLC-TC	10 mm DIAMETER
	10mm	10mm	2	13mm	0.5mm	32mm	75mm	MFMHV-201-10-050	MFMHV-201-10-050-DLC	MFMHV-201-10-050-TC	MFMHV-201-10-050-DLC-TC	
	10mm	10mm	2	13mm	1mm	32mm	75mm	MFMHV-201-10-100	MFMHV-201-10-100-DLC	MFMHV-201-10-100-TC	MFMHV-201-10-100-DLC-TC	
	10mm	10mm	2	13mm	2mm	32mm	75mm	MFMHV-201-10-200	MFMHV-201-10-200-DLC	MFMHV-201-10-200-TC	MFMHV-201-10-200-DLC-TC	
	10mm	10mm	2	13mm	3mm	32mm	75mm	MFMHV-201-10-300	MFMHV-201-10-300-DLC	MFMHV-201-10-300-TC	MFMHV-201-10-300-DLC-TC	
	10mm	10mm	2	13mm	4mm	32mm	75mm	MFMHV-201-10-400	MFMHV-201-10-400-DLC	MFMHV-201-10-400-TC	MFMHV-201-10-400-DLC-TC	
MEDIUM	10mm	10mm	2	13mm	Ball End	32mm	75mm	MFMHV-201-10-BN	MFMHV-201-10-BN-DLC	MFMHV-201-10-BN-TC	MFMHV-201-10-BN-DLC-TC	10 mm DIAMETER
	10mm	10mm	2	13mm	Sq. End	45mm	88mm	MFMHV-202-10	MFMHV-202-10-DLC	MFMHV-202-10-TC	MFMHV-202-10-DLC-TC	
	10mm	10mm	2	13mm	0.5mm	45mm	88mm	MFMHV-202-10-050	MFMHV-202-10-050-DLC	MFMHV-202-10-050-TC	MFMHV-202-10-050-DLC-TC	
	10mm	10mm	2	13mm	1mm	45mm	88mm	MFMHV-202-10-100	MFMHV-202-10-100-DLC	MFMHV-202-10-100-TC	MFMHV-202-10-100-DLC-TC	
	10mm	10mm	2	13mm	2mm	45mm	88mm	MFMHV-202-10-200	MFMHV-202-10-200-DLC	MFMHV-202-10-200-TC	MFMHV-202-10-200-DLC-TC	
	10mm	10mm	2	13mm	3mm	45mm	88mm	MFMHV-202-10-300	MFMHV-202-10-300-DLC	MFMHV-202-10-300-TC	MFMHV-202-10-300-DLC-TC	
LONG	10mm	10mm	2	13mm	4mm	45mm	88mm	MFMHV-202-10-400	MFMHV-202-10-400-DLC	MFMHV-202-10-400-TC	MFMHV-202-10-400-DLC-TC	10 mm DIAMETER
	10mm	10mm	2	13mm	Ball End	45mm	88mm	MFMHV-202-10-BN	MFMHV-202-10-BN-DLC	MFMHV-202-10-BN-TC	MFMHV-202-10-BN-DLC-TC	
	10mm	10mm	2	13mm	Sq. End	57mm	100mm	MFMHV-203-10	MFMHV-203-10-DLC	MFMHV-203-10-TC	MFMHV-203-10-DLC-TC	
	10mm	10mm	2	13mm	0.5mm	57mm	100mm	MFMHV-203-10-050	MFMHV-203-10-050-DLC	MFMHV-203-10-050-TC	MFMHV-203-10-050-DLC-TC	
	10mm	10mm	2	13mm	1mm	57mm	100mm	MFMHV-203-10-100	MFMHV-203-10-100-DLC	MFMHV-203-10-100-TC	MFMHV-203-10-100-DLC-TC	
	10mm	10mm	2	13mm	2mm	57mm	100mm	MFMHV-203-10-200	MFMHV-203-10-200-DLC	MFMHV-203-10-200-TC	MFMHV-203-10-200-DLC-TC	
SHORT	12mm	12mm	2	19mm	Sq. End	32mm	76mm	MFMHV-201-12	MFMHV-201-12-DLC	MFMHV-201-12-TC	MFMHV-201-12-DLC-TC	10 mm DIAMETER
	12mm	12mm	2	19mm	0.5mm	32mm	76mm	MFMHV-201-12-050	MFMHV-201-12-050-DLC	MFMHV-201-12-050-TC	MFMHV-201-12-050-DLC-TC	
	12mm	12mm	2	19mm	1mm	32mm	76mm	MFMHV-201-12-100	MFMHV-201-12-100-DLC	MFMHV-201-12-100-TC	MFMHV-201-12-100-DLC-TC	
	12mm	12mm	2	19mm	2mm	32mm	76mm	MFMHV-201-12-200	MFMHV-201-12-200-DLC	MFMHV-201-12-200-TC	MFMHV-201-12-200-DLC-TC	
	12mm	12mm	2	19mm	3mm	32mm	76mm	MFMHV-201-12-300	MFMHV-201-12-300-DLC	MFMHV-201-12-300-TC	MFMHV-201-12-300-DLC-TC	
	12mm	12mm	2	19mm	4mm	32mm	76mm	MFMHV-201-12-400	MFMHV-201-12-400-DLC	MFMHV-201-12-400-TC	MFMHV-201-12-400-DLC-TC	
	12mm	12mm	2	19mm	Ball End	32mm	76mm	MFMHV-201-12-BN	MFMHV-201-12-BN-DLC	MFMHV-201-12-BN-TC	MFMHV-201-12-BN-DLC-TC	

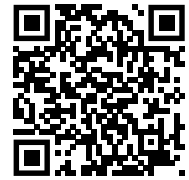
Due to the large offering of MFMHV series many of these are made to order and non-returnable.

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

MFMHV

2 Flute Ultra-High Velocity Tools for Aluminum



MFMHV 2 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
MEDIUM	12mm	12mm	2	19mm	Sq. End	41mm	89mm	MFMHV-202-12	MFMHV-202-12-DLC	MFMHV-202-12-TC	MFMHV-202-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	2	19mm	0.5mm	41mm	89mm	MFMHV-202-12-050	MFMHV-202-12-050-DLC	MFMHV-202-12-050-TC	MFMHV-202-12-050-DLC-TC	
	12mm	12mm	2	19mm	1mm	41mm	89mm	MFMHV-202-12-100	MFMHV-202-12-100-DLC	MFMHV-202-12-100-TC	MFMHV-202-12-100-DLC-TC	
	12mm	12mm	2	19mm	2mm	41mm	89mm	MFMHV-202-12-200	MFMHV-202-12-200-DLC	MFMHV-202-12-200-TC	MFMHV-202-12-200-DLC-TC	
	12mm	12mm	2	19mm	3mm	41mm	89mm	MFMHV-202-12-300	MFMHV-202-12-300-DLC	MFMHV-202-12-300-TC	MFMHV-202-12-300-DLC-TC	
	12mm	12mm	2	19mm	4mm	41mm	89mm	MFMHV-202-12-400	MFMHV-202-12-400-DLC	MFMHV-202-12-400-TC	MFMHV-202-12-400-DLC-TC	
	12mm	12mm	2	19mm	Ball End	41mm	89mm	MFMHV-202-12-BN	MFMHV-202-12-BN-DLC	MFMHV-202-12-BN-TC	MFMHV-202-12-BN-DLC-TC	
LONG	12mm	12mm	2	19mm	Sq. End	54mm	102mm	MFMHV-203-12	MFMHV-203-12-DLC	MFMHV-203-12-TC	MFMHV-203-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	2	19mm	0.5mm	54mm	102mm	MFMHV-203-12-050	MFMHV-203-12-050-DLC	MFMHV-203-12-050-TC	MFMHV-203-12-050-DLC-TC	
	12mm	12mm	2	19mm	1mm	54mm	102mm	MFMHV-203-12-100	MFMHV-203-12-100-DLC	MFMHV-203-12-100-TC	MFMHV-203-12-100-DLC-TC	
	12mm	12mm	2	19mm	2mm	54mm	102mm	MFMHV-203-12-200	MFMHV-203-12-200-DLC	MFMHV-203-12-200-TC	MFMHV-203-12-200-DLC-TC	
	12mm	12mm	2	19mm	3mm	54mm	102mm	MFMHV-203-12-300	MFMHV-203-12-300-DLC	MFMHV-203-12-300-TC	MFMHV-203-12-300-DLC-TC	
	12mm	12mm	2	19mm	4mm	54mm	102mm	MFMHV-203-12-400	MFMHV-203-12-400-DLC	MFMHV-203-12-400-TC	MFMHV-203-12-400-DLC-TC	
	12mm	12mm	2	19mm	Ball End	54mm	102mm	MFMHV-203-12-BN	MFMHV-203-12-BN-DLC	MFMHV-203-12-BN-TC	MFMHV-203-12-BN-DLC-TC	
EXTRA LONG	12mm	12mm	2	19mm	Sq. End	67mm	115mm	MFMHV-204-12	MFMHV-204-12-DLC	MFMHV-204-12-TC	MFMHV-204-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	2	19mm	0.5mm	67mm	115mm	MFMHV-204-12-050	MFMHV-204-12-050-DLC	MFMHV-204-12-050-TC	MFMHV-204-12-050-DLC-TC	
	12mm	12mm	2	19mm	1mm	67mm	115mm	MFMHV-204-12-100	MFMHV-204-12-100-DLC	MFMHV-204-12-100-TC	MFMHV-204-12-100-DLC-TC	
	12mm	12mm	2	19mm	2mm	67mm	115mm	MFMHV-204-12-200	MFMHV-204-12-200-DLC	MFMHV-204-12-200-TC	MFMHV-204-12-200-DLC-TC	
	12mm	12mm	2	19mm	3mm	67mm	115mm	MFMHV-204-12-300	MFMHV-204-12-300-DLC	MFMHV-204-12-300-TC	MFMHV-204-12-300-DLC-TC	
	12mm	12mm	2	19mm	4mm	67mm	115mm	MFMHV-204-12-400	MFMHV-204-12-400-DLC	MFMHV-204-12-400-TC	MFMHV-204-12-400-DLC-TC	
	12mm	12mm	2	19mm	Ball End	67mm	115mm	MFMHV-204-12-BN	MFMHV-204-12-BN-DLC	MFMHV-204-12-BN-TC	MFMHV-204-12-BN-DLC-TC	
SHORT	16mm	16mm	2	22mm	Sq. End	40mm	89mm	MFMHV-201-16	MFMHV-201-16-DLC	MFMHV-201-16-TC	MFMHV-201-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	2	22mm	0.5mm	40mm	89mm	MFMHV-201-16-050	MFMHV-201-16-050-DLC	MFMHV-201-16-050-TC	MFMHV-201-16-050-DLC-TC	
	16mm	16mm	2	22mm	1mm	40mm	89mm	MFMHV-201-16-100	MFMHV-201-16-100-DLC	MFMHV-201-16-100-TC	MFMHV-201-16-100-DLC-TC	
	16mm	16mm	2	22mm	2mm	40mm	89mm	MFMHV-201-16-200	MFMHV-201-16-200-DLC	MFMHV-201-16-200-TC	MFMHV-201-16-200-DLC-TC	
	16mm	16mm	2	22mm	3mm	40mm	89mm	MFMHV-201-16-300	MFMHV-201-16-300-DLC	MFMHV-201-16-300-TC	MFMHV-201-16-300-DLC-TC	
	16mm	16mm	2	22mm	4mm	40mm	89mm	MFMHV-201-16-400	MFMHV-201-16-400-DLC	MFMHV-201-16-400-TC	MFMHV-201-16-400-DLC-TC	
	16mm	16mm	2	22mm	Ball End	40mm	89mm	MFMHV-201-16-BN	MFMHV-201-16-BN-DLC	MFMHV-201-16-BN-TC	MFMHV-201-16-BN-DLC-TC	
MEDIUM	16mm	16mm	2	22mm	Sq. End	52mm	102mm	MFMHV-202-16	MFMHV-202-16-DLC	MFMHV-202-16-TC	MFMHV-202-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	2	22mm	0.5mm	52mm	102mm	MFMHV-202-16-050	MFMHV-202-16-050-DLC	MFMHV-202-16-050-TC	MFMHV-202-16-050-DLC-TC	
	16mm	16mm	2	22mm	1mm	52mm	102mm	MFMHV-202-16-100	MFMHV-202-16-100-DLC	MFMHV-202-16-100-TC	MFMHV-202-16-100-DLC-TC	
	16mm	16mm	2	22mm	2mm	52mm	102mm	MFMHV-202-16-200	MFMHV-202-16-200-DLC	MFMHV-202-16-200-TC	MFMHV-202-16-200-DLC-TC	
	16mm	16mm	2	22mm	3mm	52mm	102mm	MFMHV-202-16-300	MFMHV-202-16-300-DLC	MFMHV-202-16-300-TC	MFMHV-202-16-300-DLC-TC	
	16mm	16mm	2	22mm	4mm	52mm	102mm	MFMHV-202-16-400	MFMHV-202-16-400-DLC	MFMHV-202-16-400-TC	MFMHV-202-16-400-DLC-TC	
	16mm	16mm	2	22mm	Ball End	52mm	102mm	MFMHV-202-16-BN	MFMHV-202-16-BN-DLC	MFMHV-202-16-BN-TC	MFMHV-202-16-BN-DLC-TC	
LONG	16mm	16mm	2	22mm	Sq. End	65mm	115mm	MFMHV-203-16	MFMHV-203-16-DLC	MFMHV-203-16-TC	MFMHV-203-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	2	22mm	0.5mm	65mm	115mm	MFMHV-203-16-050	MFMHV-203-16-050-DLC	MFMHV-203-16-050-TC	MFMHV-203-16-050-DLC-TC	
	16mm	16mm	2	22mm	1mm	65mm	115mm	MFMHV-203-16-100	MFMHV-203-16-100-DLC	MFMHV-203-16-100-TC	MFMHV-203-16-100-DLC-TC	
	16mm	16mm	2	22mm	2mm	65mm	115mm	MFMHV-203-16-200	MFMHV-203-16-200-DLC	MFMHV-203-16-200-TC	MFMHV-203-16-200-DLC-TC	
	16mm	16mm	2	22mm	3mm	65mm	115mm	MFMHV-203-16-300	MFMHV-203-16-300-DLC	MFMHV-203-16-300-TC	MFMHV-203-16-300-DLC-TC	
	16mm	16mm	2	22mm	4mm	65mm	115mm	MFMHV-203-16-400	MFMHV-203-16-400-DLC	MFMHV-203-16-400-TC	MFMHV-203-16-400-DLC-TC	
	16mm	16mm	2	22mm	Ball End	65mm	115mm	MFMHV-203-16-BN	MFMHV-203-16-BN-DLC	MFMHV-203-16-BN-TC	MFMHV-203-16-BN-DLC-TC	

*Other Reach Lengths available upon request.

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

CONTINUED ON NEXT PAGE—

NEW!

Aluminum

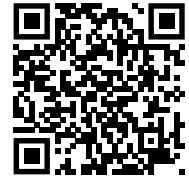
MFMHV 2 Flute (Short to Long Reach) — continued

	Cutting Diameter	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
EXTRA LONG	16mm	16mm	2	22mm	Sq. End	78mm	127mm	MFMHV-204-16	MFMHV-204-16-DLC	MFMHV-204-16-TC	MFMHV-204-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	2	22mm	0.5mm	78mm	127mm	MFMHV-204-16-050	MFMHV-204-16-050-DLC	MFMHV-204-16-050-TC	MFMHV-204-16-050-DLC-TC	
	16mm	16mm	2	22mm	1mm	78mm	127mm	MFMHV-204-16-100	MFMHV-204-16-100-DLC	MFMHV-204-16-100-TC	MFMHV-204-16-100-DLC-TC	
	16mm	16mm	2	22mm	2mm	78mm	127mm	MFMHV-204-16-200	MFMHV-204-16-200-DLC	MFMHV-204-16-200-TC	MFMHV-204-16-200-DLC-TC	
	16mm	16mm	2	22mm	3mm	78mm	127mm	MFMHV-204-16-300	MFMHV-204-16-300-DLC	MFMHV-204-16-300-TC	MFMHV-204-16-300-DLC-TC	
	16mm	16mm	2	22mm	4mm	78mm	127mm	MFMHV-204-16-400	MFMHV-204-16-400-DLC	MFMHV-204-16-400-TC	MFMHV-204-16-400-DLC-TC	
	16mm	16mm	2	22mm	Ball End	78mm	127mm	MFMHV-204-16-BN	MFMHV-204-16-BN-DLC	MFMHV-204-16-BN-TC	MFMHV-204-16-BN-DLC-TC	
SHORT	20mm	20mm	2	25mm	Sq. End	54mm	104mm	MFMHV-201-20	MFMHV-201-20-DLC	MFMHV-201-20-TC	MFMHV-201-20-DLC-TC	20 mm DIAMETER
	20mm	20mm	2	25mm	0.5mm	54mm	104mm	MFMHV-201-20-005	MFMHV-201-20-005-DLC	MFMHV-201-20-005-TC	MFMHV-201-20-005-DLC-TC	
	20mm	20mm	2	25mm	1mm	54mm	104mm	MFMHV-201-20-100	MFMHV-201-20-100-DLC	MFMHV-201-20-100-TC	MFMHV-201-20-100-DLC-TC	
	20mm	20mm	2	25mm	2mm	54mm	104mm	MFMHV-201-20-200	MFMHV-201-20-200-DLC	MFMHV-201-20-200-TC	MFMHV-201-20-200-DLC-TC	
	20mm	20mm	2	25mm	3mm	54mm	104mm	MFMHV-201-20-300	MFMHV-201-20-300-DLC	MFMHV-201-20-300-TC	MFMHV-201-20-300-DLC-TC	
	20mm	20mm	2	25mm	4mm	54mm	104mm	MFMHV-201-20-400	MFMHV-201-20-400-DLC	MFMHV-201-20-400-TC	MFMHV-201-20-400-DLC-TC	
	20mm	20mm	2	25mm	Ball End	54mm	104mm	MFMHV-201-20-BN	MFMHV-201-20-BN-DLC	MFMHV-201-20-BN-TC	MFMHV-201-20-BN-DLC-TC	
MEDIUM	20mm	20mm	2	25mm	Sq. End	65mm	115mm	MFMHV-202-20	MFMHV-202-20-DLC	MFMHV-202-20-TC	MFMHV-202-20-DLC-TC	
	20mm	20mm	2	25mm	0.5mm	65mm	115mm	MFMHV-202-20-005	MFMHV-202-20-005-DLC	MFMHV-202-20-005-TC	MFMHV-202-20-005-DLC-TC	
	20mm	20mm	2	25mm	1mm	65mm	115mm	MFMHV-202-20-100	MFMHV-202-20-100-DLC	MFMHV-202-20-100-TC	MFMHV-202-20-100-DLC-TC	
	20mm	20mm	2	25mm	2mm	65mm	115mm	MFMHV-202-20-200	MFMHV-202-20-200-DLC	MFMHV-202-20-200-TC	MFMHV-202-20-200-DLC-TC	
	20mm	20mm	2	25mm	3mm	65mm	115mm	MFMHV-202-20-300	MFMHV-202-20-300-DLC	MFMHV-202-20-300-TC	MFMHV-202-20-300-DLC-TC	
	20mm	20mm	2	25mm	4mm	65mm	115mm	MFMHV-202-20-400	MFMHV-202-20-400-DLC	MFMHV-202-20-400-TC	MFMHV-202-20-400-DLC-TC	
	20mm	20mm	2	25mm	Ball End	65mm	115mm	MFMHV-202-20-BN	MFMHV-202-20-BN-DLC	MFMHV-202-20-BN-TC	MFMHV-202-20-BN-DLC-TC	
LONG	20mm	20mm	2	25mm	Sq. End	78mm	127mm	MFMHV-203-20	MFMHV-203-20-DLC	MFMHV-203-20-TC	MFMHV-203-20-DLC-TC	
	20mm	20mm	2	25mm	0.5mm	78mm	127mm	MFMHV-203-20-005	MFMHV-203-20-005-DLC	MFMHV-203-20-005-TC	MFMHV-203-20-005-DLC-TC	
	20mm	20mm	2	25mm	1mm	78mm	127mm	MFMHV-203-20-100	MFMHV-203-20-100-DLC	MFMHV-203-20-100-TC	MFMHV-203-20-100-DLC-TC	
	20mm	20mm	2	25mm	2mm	78mm	127mm	MFMHV-203-20-200	MFMHV-203-20-200-DLC	MFMHV-203-20-200-TC	MFMHV-203-20-200-DLC-TC	
	20mm	20mm	2	25mm	3mm	78mm	127mm	MFMHV-203-20-300	MFMHV-203-20-300-DLC	MFMHV-203-20-300-TC	MFMHV-203-20-300-DLC-TC	
	20mm	20mm	2	25mm	4mm	78mm	127mm	MFMHV-203-20-400	MFMHV-203-20-400-DLC	MFMHV-203-20-400-TC	MFMHV-203-20-400-DLC-TC	
	20mm	20mm	2	25mm	Ball End	78mm	127mm	MFMHV-203-20-BN	MFMHV-203-20-BN-DLC	MFMHV-203-20-BN-TC	MFMHV-203-20-BN-DLC-TC	
EXTRA LONG	20mm	20mm	2	25mm	Sq. End	92mm	140mm	MFMHV-204-20	MFMHV-204-20-DLC	MFMHV-204-20-TC	MFMHV-204-20-DLC-TC	
	20mm	20mm	2	25mm	0.5mm	92mm	140mm	MFMHV-204-20-005	MFMHV-204-20-005-DLC	MFMHV-204-20-005-TC	MFMHV-204-20-005-DLC-TC	
	20mm	20mm	2	25mm	1mm	92mm	140mm	MFMHV-204-20-100	MFMHV-204-20-100-DLC	MFMHV-204-20-100-TC	MFMHV-204-20-100-DLC-TC	
	20mm	20mm	2	25mm	2mm	92mm	140mm	MFMHV-204-20-200	MFMHV-204-20-200-DLC	MFMHV-204-20-200-TC	MFMHV-204-20-200-DLC-TC	
	20mm	20mm	2	25mm	3mm	92mm	140mm	MFMHV-204-20-300	MFMHV-204-20-300-DLC	MFMHV-204-20-300-TC	MFMHV-204-20-300-DLC-TC	
	20mm	20mm	2	25mm	4mm	92mm	140mm	MFMHV-204-20-400	MFMHV-204-20-400-DLC	MFMHV-204-20-400-TC	MFMHV-204-20-400-DLC-TC	
	20mm	20mm	2	25mm	Ball End	92mm	140mm	MFMHV-204-20-BN	MFMHV-204-20-BN-DLC	MFMHV-204-20-BN-TC	MFMHV-204-20-BN-DLC-TC	
SHORT	25mm	25mm	2	32mm	Sq. End	54mm	102mm	MFMHV-201-25	MFMHV-201-25-DLC	MFMHV-201-25-TC	MFMHV-201-25-DLC-TC	25 mm DIAMETER
	25mm	25mm	2	32mm	0.5mm	54mm	102mm	MFMHV-201-25-050	MFMHV-201-25-050-DLC	MFMHV-201-25-050-TC	MFMHV-201-25-050-DLC-TC	
	25mm	25mm	2	32mm	1mm	54mm	102mm	MFMHV-201-25-100	MFMHV-201-25-100-DLC	MFMHV-201-25-100-TC	MFMHV-201-25-100-DLC-TC	
	25mm	25mm	2	32mm	2mm	54mm	102mm	MFMHV-201-25-200	MFMHV-201-25-200-DLC	MFMHV-201-25-200-TC	MFMHV-201-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	54mm	102mm	MFMHV-201-25-300	MFMHV-201-25-300-DLC	MFMHV-201-25-300-TC	MFMHV-201-25-300-DLC-TC	
	25mm	25mm	2	32mm	4mm	54mm	102mm	MFMHV-201-25-400	MFMHV-201-25-400-DLC	MFMHV-201-25-400-TC	MFMHV-201-25-400-DLC-TC	
	25mm	25mm	2	32mm	Ball End	54mm	102mm	MFMHV-201-25-BN	MFMHV-201-25-BN-DLC	MFMHV-201-25-BN-TC	MFMHV-201-25-BN-DLC-TC	

*Other Reach Lengths available upon request.

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

CONTINUED ON NEXT PAGE—

NEW!

MFMHV

2 Flute Ultra-High Velocity Tools for Aluminum

MFMHV 2 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated	
MEDIUM	25mm	25mm	2	32mm	Sq. End	65mm	115mm	MFMHV-202-25	MFMHV-202-25-DLC	MFMHV-202-25-TC	MFMHV-202-25-DLC-TC	25 mm DIAMETER
	25mm	25mm	2	32mm	0.5mm	65mm	115mm	MFMHV-202-25-050	MFMHV-202-25-050-DLC	MFMHV-202-25-050-TC	MFMHV-202-25-050-DLC-TC	
	25mm	25mm	2	32mm	1mm	65mm	115mm	MFMHV-202-25-100	MFMHV-202-25-100-DLC	MFMHV-202-25-100-TC	MFMHV-202-25-100-DLC-TC	
	25mm	25mm	2	32mm	2mm	65mm	115mm	MFMHV-202-25-200	MFMHV-202-25-200-DLC	MFMHV-202-25-200-TC	MFMHV-202-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	65mm	115mm	MFMHV-202-25-300	MFMHV-202-25-300-DLC	MFMHV-202-25-300-TC	MFMHV-202-25-300-DLC-TC	
	25mm	25mm	2	32mm	4mm	65mm	115mm	MFMHV-202-25-400	MFMHV-202-25-400-DLC	MFMHV-202-25-400-TC	MFMHV-202-25-400-DLC-TC	
	25mm	25mm	2	32mm	Ball End	65mm	115mm	MFMHV-202-25-BN	MFMHV-202-25-BN-DLC	MFMHV-202-25-BN-TC	MFMHV-202-25-BN-DLC-TC	
	25mm	25mm	2	32mm	Sq. End	78mm	127mm	MFMHV-203-25	MFMHV-203-25-DLC	MFMHV-203-25-TC	MFMHV-203-25-DLC-TC	
LONG	25mm	25mm	2	32mm	0.5mm	78mm	127mm	MFMHV-203-25-050	MFMHV-203-25-050-DLC	MFMHV-203-25-050-TC	MFMHV-203-25-050-DLC-TC	
	25mm	25mm	2	32mm	1mm	78mm	127mm	MFMHV-203-25-100	MFMHV-203-25-100-DLC	MFMHV-203-25-100-TC	MFMHV-203-25-100-DLC-TC	
	25mm	25mm	2	32mm	2mm	78mm	127mm	MFMHV-203-25-200	MFMHV-203-25-200-DLC	MFMHV-203-25-200-TC	MFMHV-203-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	78mm	127mm	MFMHV-203-25-300	MFMHV-203-25-300-DLC	MFMHV-203-25-300-TC	MFMHV-203-25-300-DLC-TC	
	25mm	25mm	2	32mm	4mm	78mm	127mm	MFMHV-203-25-400	MFMHV-203-25-400-DLC	MFMHV-203-25-400-TC	MFMHV-203-25-400-DLC-TC	
	25mm	25mm	2	32mm	Ball End	78mm	127mm	MFMHV-203-25-BN	MFMHV-203-25-BN-DLC	MFMHV-203-25-BN-TC	MFMHV-203-25-BN-DLC-TC	
	25mm	25mm	2	32mm	Sq. End	92mm	140mm	MFMHV-204-25	MFMHV-204-25-DLC	MFMHV-204-25-TC	MFMHV-204-25-DLC-TC	
	25mm	25mm	2	32mm	0.5mm	92mm	140mm	MFMHV-204-25-050	MFMHV-204-25-050-DLC	MFMHV-204-25-050-TC	MFMHV-204-25-050-DLC-TC	
EXTRA LONG	25mm	25mm	2	32mm	1mm	92mm	140mm	MFMHV-204-25-100	MFMHV-204-25-100-DLC	MFMHV-204-25-100-TC	MFMHV-204-25-100-DLC-TC	
	25mm	25mm	2	32mm	2mm	92mm	140mm	MFMHV-204-25-200	MFMHV-204-25-200-DLC	MFMHV-204-25-200-TC	MFMHV-204-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	92mm	140mm	MFMHV-204-25-300	MFMHV-204-25-300-DLC	MFMHV-204-25-300-TC	MFMHV-204-25-300-DLC-TC	
	25mm	25mm	2	32mm	4mm	92mm	140mm	MFMHV-204-25-400	MFMHV-204-25-400-DLC	MFMHV-204-25-400-TC	MFMHV-204-25-400-DLC-TC	
	25mm	25mm	2	32mm	Ball End	92mm	140mm	MFMHV-204-25-BN	MFMHV-204-25-BN-DLC	MFMHV-204-25-BN-TC	MFMHV-204-25-BN-DLC-TC	
	25mm	25mm	2	32mm	Sq. End	104mm	152mm	MFMHV-205-25	MFMHV-205-25-DLC	MFMHV-205-25-TC	MFMHV-205-25-DLC-TC	
	25mm	25mm	2	32mm	0.5mm	104mm	152mm	MFMHV-205-25-050	MFMHV-205-25-050-DLC	MFMHV-205-25-050-TC	MFMHV-205-25-050-DLC-TC	
	25mm	25mm	2	32mm	1mm	104mm	152mm	MFMHV-205-25-100	MFMHV-205-25-100-DLC	MFMHV-205-25-100-TC	MFMHV-205-25-100-DLC-TC	
SUPER LONG	25mm	25mm	2	32mm	2mm	104mm	152mm	MFMHV-205-25-200	MFMHV-205-25-200-DLC	MFMHV-205-25-200-TC	MFMHV-205-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	104mm	152mm	MFMHV-205-25-300	MFMHV-205-25-300-DLC	MFMHV-205-25-300-TC	MFMHV-205-25-300-DLC-TC	
	25mm	25mm	2	32mm	4mm	104mm	152mm	MFMHV-205-25-400	MFMHV-205-25-400-DLC	MFMHV-205-25-400-TC	MFMHV-205-25-400-DLC-TC	
	25mm	25mm	2	32mm	Ball End	104mm	152mm	MFMHV-205-25-BN	MFMHV-205-25-BN-DLC	MFMHV-205-25-BN-TC	MFMHV-205-25-BN-DLC-TC	
	25mm	25mm	2	32mm	Sq. End	104mm	152mm	MFMHV-205-25-050	MFMHV-205-25-050-DLC	MFMHV-205-25-050-TC	MFMHV-205-25-050-DLC-TC	
	25mm	25mm	2	32mm	1mm	104mm	152mm	MFMHV-205-25-100	MFMHV-205-25-100-DLC	MFMHV-205-25-100-TC	MFMHV-205-25-100-DLC-TC	
	25mm	25mm	2	32mm	2mm	104mm	152mm	MFMHV-205-25-200	MFMHV-205-25-200-DLC	MFMHV-205-25-200-TC	MFMHV-205-25-200-DLC-TC	
	25mm	25mm	2	32mm	3mm	104mm	152mm	MFMHV-205-25-300	MFMHV-205-25-300-DLC	MFMHV-205-25-300-TC	MFMHV-205-25-300-DLC-TC	

Technical Information: Run tools at the maximum tap tested Recommended RPM

FMHV Technical data:

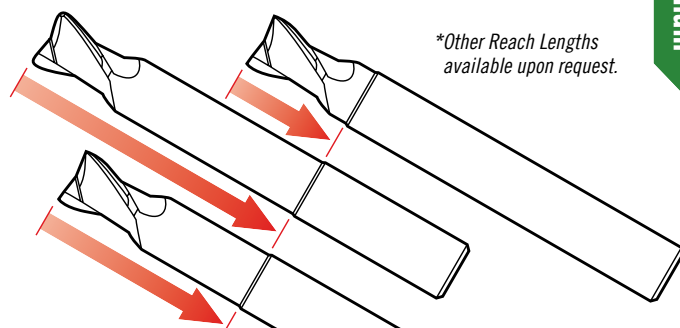
Diameter	Chip load per tooth	Typical Depth	Recommended RPM	Type of cut
1" Diameter	.008-.015	.300 up to .750	Max Tap Tested RPM Or Max RPM	Slot or profile (stay away from 50% radial step-over)
3/4" Diameter	.006-.012	.200 up to .900		
5/8" Diameter	.005-.011	.100 up to .750		
1/2" Diameter	.004-.010	.100 up to .750		
3/8" Diameter	.003-.006	.100 up to .500		
5/16" Diameter	.002-.005	.100 up to .500		
1/4" Diameter	.002-.004	.100 up to .375		

Recommended feed per tooth

CUTTING DIAMETER	Recommended chip load per tooth fz
6	0.051 - 0.095
8	0.076 - 0.143
10	0.076 - 0.143
12	0.102 - 0.254
16	0.127 - 0.254
20	0.152 - 0.305
25	0.203 - 0.381

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

Any neck length (LBS) available upon request!

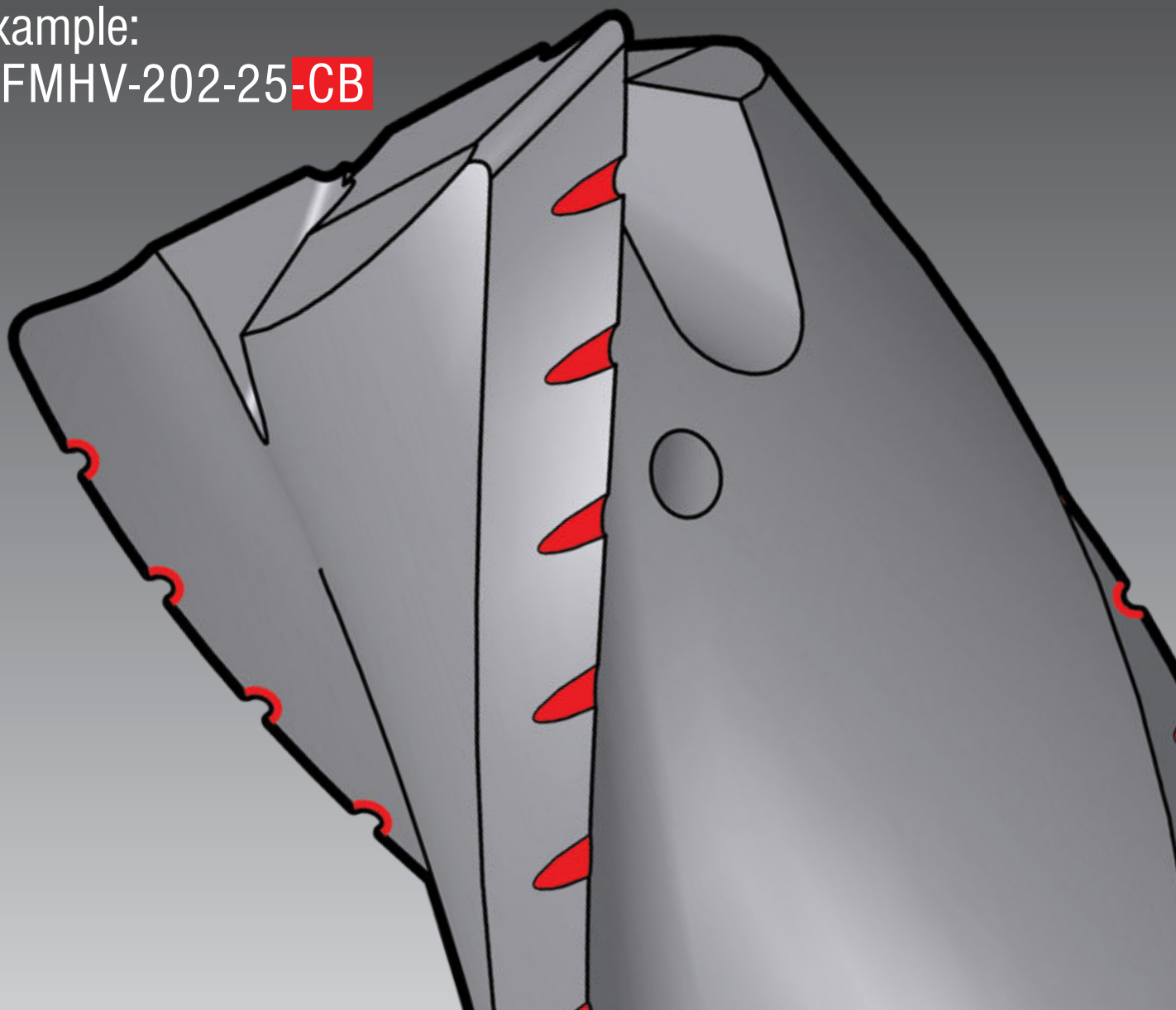


CHIP BREAKERS

If you “Need Chip Breakers” add “-CB” to the end of any part number to get chip breakers added.

Example:

MFMHV-202-25-**CB**



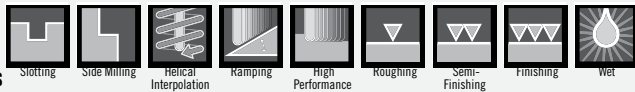
MFMHV 3 Flute Ultra-High Velocity Tools for Aluminum



Characteristics



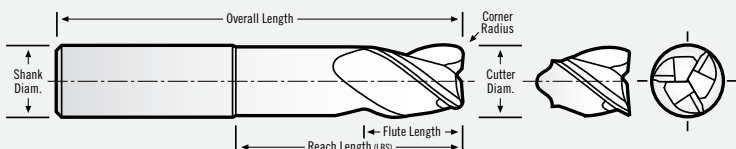
Applications



Materials



Coatings



MFMHV Series Tolerances:

Cutting Diam. = $-0.018/-0.038$ mm
 Shank Diam. = $-0.002/-0.005$ mm
 Flute Length = $+1.500/-0.000$ mm
 Overall Length = $+/- 1.500$ mm

*Eliminate
Tool Pull Out!*

*ALL Tools h4 Shank Tolerance
up to 150% more gripping force*

*Tightest in the
Industry!*

*NEXT
GENERATION
Mirror
Edge!*
*Eliminates Chatter
& Vibration*



ALL-NEW BALANCED END DESIGN

CANNOT PLUNGE

MFMHV 3 Flute (Short to Long Reach)



	Cutting Diam.	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Uncoated w/ Thru Coolant Holes	Thru Coolant DLC Coated	
SHORT	6mm	6mm	3	10mm	Sq. End	18mm	51mm	MFMHV-301-06	MFMHV-301-06-DLC	MFMHV-301-06-TC	MFMHV-301-06-DLC-TC	6 mm DIAMETER
	6mm	6mm	3	10mm	0.5mm	18mm	51mm	MFMHV-301-06-050	MFMHV-301-06-050-DLC	MFMHV-301-06-050-TC	MFMHV-301-06-050-DLC-TC	
	6mm	6mm	3	10mm	1mm	18mm	51mm	MFMHV-301-06-100	MFMHV-301-06-100-DLC	MFMHV-301-06-100-TC	MFMHV-301-06-100-DLC-TC	
	6mm	6mm	3	10mm	2mm	18mm	51mm	MFMHV-301-06-200	MFMHV-301-06-200-DLC	MFMHV-301-06-200-TC	MFMHV-301-06-200-DLC-TC	
	6mm	6mm	3	10mm	Ball End	18mm	51mm	MFMHV-301-06-BN	MFMHV-301-06-BN-DLC	MFMHV-301-06-BN-TC	MFMHV-301-06-BN-DLC-TC	
MEDIUM	6mm	6mm	3	10mm	Sq. End	28mm	64mm	MFMHV-302-06	MFMHV-302-06-DLC	MFMHV-302-06-TC	MFMHV-302-06-DLC-TC	6 mm DIAMETER
	6mm	6mm	3	10mm	0.5mm	28mm	64mm	MFMHV-302-06-050	MFMHV-302-06-050-DLC	MFMHV-302-06-050-TC	MFMHV-302-06-050-DLC-TC	
	6mm	6mm	3	10mm	1mm	28mm	64mm	MFMHV-302-06-100	MFMHV-302-06-100-DLC	MFMHV-302-06-100-TC	MFMHV-302-06-100-DLC-TC	
	6mm	6mm	3	10mm	2mm	28mm	64mm	MFMHV-302-06-200	MFMHV-302-06-200-DLC	MFMHV-302-06-200-TC	MFMHV-302-06-200-DLC-TC	
	6mm	6mm	3	10mm	Ball End	28mm	64mm	MFMHV-302-06-BN	MFMHV-302-06-BN-DLC	MFMHV-302-06-BN-TC	MFMHV-302-06-BN-DLC-TC	
LONG	6mm	6mm	3	10mm	Sq. End	40mm	76mm	MFMHV-303-06	MFMHV-303-06-DLC	MFMHV-303-06-TC	MFMHV-303-06-DLC-TC	6 mm DIAMETER
	6mm	6mm	3	10mm	0.5mm	40mm	76mm	MFMHV-303-06-050	MFMHV-303-06-050-DLC	MFMHV-303-06-050-TC	MFMHV-303-06-050-DLC-TC	
	6mm	6mm	3	10mm	1mm	40mm	76mm	MFMHV-303-06-100	MFMHV-303-06-100-DLC	MFMHV-303-06-100-TC	MFMHV-303-06-100-DLC-TC	
	6mm	6mm	3	10mm	2mm	40mm	76mm	MFMHV-303-06-200	MFMHV-303-06-200-DLC	MFMHV-303-06-200-TC	MFMHV-303-06-200-DLC-TC	
	6mm	6mm	3	10mm	Ball End	40mm	76mm	MFMHV-303-06-BN	MFMHV-303-06-BN-DLC	MFMHV-303-06-BN-TC	MFMHV-303-06-BN-DLC-TC	
SHORT	8mm	8mm	3	13mm	Sq. End	19mm	51mm	MFMHV-301-08	MFMHV-301-08-DLC	MFMHV-301-08-TC	MFMHV-301-08-DLC-TC	8 mm DIAMETER
	8mm	8mm	3	13mm	0.5mm	19mm	51mm	MFMHV-301-08-050	MFMHV-301-08-050-DLC	MFMHV-301-08-050-TC	MFMHV-301-08-050-DLC-TC	
	8mm	8mm	3	13mm	1mm	19mm	51mm	MFMHV-301-08-100	MFMHV-301-08-100-DLC	MFMHV-301-08-100-TC	MFMHV-301-08-100-DLC-TC	
	8mm	8mm	3	13mm	2mm	19mm	51mm	MFMHV-301-08-200	MFMHV-301-08-200-DLC	MFMHV-301-08-200-TC	MFMHV-301-08-200-DLC-TC	
	8mm	8mm	3	13mm	3mm	19mm	51mm	MFMHV-301-08-300	MFMHV-301-08-300-DLC	MFMHV-301-08-300-TC	MFMHV-301-08-300-DLC-TC	
	8mm	8mm	3	13mm	Ball End	19mm	51mm	MFMHV-301-08-BN	MFMHV-301-08-BN-DLC	MFMHV-301-08-BN-TC	MFMHV-301-08-BN-DLC-TC	

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

NEW!

Aluminum

MFMHV 3 Flute (Short to Long Reach) — continued

	Cutting Diam.	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Uncoated w/ Thru Coolant Holes	Thru Coolant DLC Coated	
MEDIUM	8mm	8mm	3	13mm	Sq. End	27mm	64mm	MFMHV-302-08	MFMHV-302-08-DLC	MFMHV-302-08-TC	MFMHV-302-08-DLC-TC	8 mm DIAMETER
	8mm	8mm	3	13mm	0.5mm	27mm	64mm	MFMHV-302-08-050	MFMHV-302-08-050-DLC	MFMHV-302-08-050-TC	MFMHV-302-08-050-DLC-TC	
	8mm	8mm	3	13mm	1mm	27mm	64mm	MFMHV-302-08-100	MFMHV-302-08-100-DLC	MFMHV-302-08-100-TC	MFMHV-302-08-100-DLC-TC	
	8mm	8mm	3	13mm	2mm	27mm	64mm	MFMHV-302-08-200	MFMHV-302-08-200-DLC	MFMHV-302-08-200-TC	MFMHV-302-08-200-DLC-TC	
	8mm	8mm	3	13mm	3mm	27mm	64mm	MFMHV-302-08-300	MFMHV-302-08-300-DLC	MFMHV-302-08-300-TC	MFMHV-302-08-300-DLC-TC	
	8mm	8mm	3	13mm	Ball End	27mm	64mm	MFMHV-302-08-BN	MFMHV-302-08-BN-DLC	MFMHV-302-08-BN-TC	MFMHV-302-08-BN-DLC-TC	
LONG	8mm	8mm	3	13mm	Sq. End	38mm	76mm	MFMHV-303-08	MFMHV-303-08-DLC	MFMHV-303-08-TC	MFMHV-303-08-DLC-TC	10 mm DIAMETER
	8mm	8mm	3	13mm	0.5mm	38mm	76mm	MFMHV-303-08-050	MFMHV-303-08-050-DLC	MFMHV-303-08-050-TC	MFMHV-303-08-050-DLC-TC	
	8mm	8mm	3	13mm	1mm	38mm	76mm	MFMHV-303-08-100	MFMHV-303-08-100-DLC	MFMHV-303-08-100-TC	MFMHV-303-08-100-DLC-TC	
	8mm	8mm	3	13mm	2mm	38mm	76mm	MFMHV-303-08-200	MFMHV-303-08-200-DLC	MFMHV-303-08-200-TC	MFMHV-303-08-200-DLC-TC	
	8mm	8mm	3	13mm	3mm	38mm	76mm	MFMHV-303-08-300	MFMHV-303-08-300-DLC	MFMHV-303-08-300-TC	MFMHV-303-08-300-DLC-TC	
	8mm	8mm	3	13mm	Ball End	38mm	76mm	MFMHV-303-08-BN	MFMHV-303-08-BN-DLC	MFMHV-303-08-BN-TC	MFMHV-303-08-BN-DLC-TC	
SHORT	10mm	10mm	3	13mm	Sq. End	32mm	75mm	MFMHV-301-10	MFMHV-301-10-DLC	MFMHV-301-10-TC	MFMHV-301-10-DLC-TC	12 mm DIAMETER
	10mm	10mm	3	13mm	0.5mm	32mm	75mm	MFMHV-301-10-050	MFMHV-301-10-050-DLC	MFMHV-301-10-050-TC	MFMHV-301-10-050-DLC-TC	
	10mm	10mm	3	13mm	1mm	32mm	75mm	MFMHV-301-10-100	MFMHV-301-10-100-DLC	MFMHV-301-10-100-TC	MFMHV-301-10-100-DLC-TC	
	10mm	10mm	3	13mm	2mm	32mm	75mm	MFMHV-301-10-200	MFMHV-301-10-200-DLC	MFMHV-301-10-200-TC	MFMHV-301-10-200-DLC-TC	
	10mm	10mm	3	13mm	3mm	32mm	75mm	MFMHV-301-10-300	MFMHV-301-10-300-DLC	MFMHV-301-10-300-TC	MFMHV-301-10-300-DLC-TC	
	10mm	10mm	3	13mm	4mm	32mm	75mm	MFMHV-301-10-400	MFMHV-301-10-400-DLC	MFMHV-301-10-400-TC	MFMHV-301-10-400-DLC-TC	
MEDIUM	10mm	10mm	3	13mm	Ball End	32mm	75mm	MFMHV-301-10-BN	MFMHV-301-10-BN-DLC	MFMHV-301-10-BN-TC	MFMHV-301-10-BN-DLC-TC	
	10mm	10mm	3	13mm	Sq. End	45mm	88mm	MFMHV-302-10	MFMHV-302-10-DLC	MFMHV-302-10-TC	MFMHV-302-10-DLC-TC	
	10mm	10mm	3	13mm	0.5mm	45mm	88mm	MFMHV-302-10-050	MFMHV-302-10-050-DLC	MFMHV-302-10-050-TC	MFMHV-302-10-050-DLC-TC	
	10mm	10mm	3	13mm	1mm	45mm	88mm	MFMHV-302-10-100	MFMHV-302-10-100-DLC	MFMHV-302-10-100-TC	MFMHV-302-10-100-DLC-TC	
	10mm	10mm	3	13mm	2mm	45mm	88mm	MFMHV-302-10-200	MFMHV-302-10-200-DLC	MFMHV-302-10-200-TC	MFMHV-302-10-200-DLC-TC	
	10mm	10mm	3	13mm	3mm	45mm	88mm	MFMHV-302-10-300	MFMHV-302-10-300-DLC	MFMHV-302-10-300-TC	MFMHV-302-10-300-DLC-TC	
LONG	10mm	10mm	3	13mm	4mm	45mm	88mm	MFMHV-302-10-400	MFMHV-302-10-400-DLC	MFMHV-302-10-400-TC	MFMHV-302-10-400-DLC-TC	
	10mm	10mm	3	13mm	Ball End	45mm	88mm	MFMHV-302-10-BN	MFMHV-302-10-BN-DLC	MFMHV-302-10-BN-TC	MFMHV-302-10-BN-DLC-TC	
	10mm	10mm	3	13mm	Sq. End	57mm	100mm	MFMHV-303-10	MFMHV-303-10-DLC	MFMHV-303-10-TC	MFMHV-303-10-DLC-TC	
	10mm	10mm	3	13mm	0.5mm	57mm	100mm	MFMHV-303-10-050	MFMHV-303-10-050-DLC	MFMHV-303-10-050-TC	MFMHV-303-10-050-DLC-TC	
	10mm	10mm	3	13mm	1mm	57mm	100mm	MFMHV-303-10-100	MFMHV-303-10-100-DLC	MFMHV-303-10-100-TC	MFMHV-303-10-100-DLC-TC	
	10mm	10mm	3	13mm	2mm	57mm	100mm	MFMHV-303-10-200	MFMHV-303-10-200-DLC	MFMHV-303-10-200-TC	MFMHV-303-10-200-DLC-TC	
SHORT	12mm	12mm	3	19mm	Sq. End	32mm	76mm	MFMHV-301-12	MFMHV-301-12-DLC	MFMHV-301-12-TC	MFMHV-301-12-DLC-TC	
	12mm	12mm	3	19mm	0.5mm	32mm	76mm	MFMHV-301-12-050	MFMHV-301-12-050-DLC	MFMHV-301-12-050-TC	MFMHV-301-12-050-DLC-TC	
	12mm	12mm	3	19mm	1mm	32mm	76mm	MFMHV-301-12-100	MFMHV-301-12-100-DLC	MFMHV-301-12-100-TC	MFMHV-301-12-100-DLC-TC	
	12mm	12mm	3	19mm	2mm	32mm	76mm	MFMHV-301-12-200	MFMHV-301-12-200-DLC	MFMHV-301-12-200-TC	MFMHV-301-12-200-DLC-TC	
	12mm	12mm	3	19mm	3mm	32mm	76mm	MFMHV-301-12-300	MFMHV-301-12-300-DLC	MFMHV-301-12-300-TC	MFMHV-301-12-300-DLC-TC	
	12mm	12mm	3	19mm	4mm	32mm	76mm	MFMHV-301-12-400	MFMHV-301-12-400-DLC	MFMHV-301-12-400-TC	MFMHV-301-12-400-DLC-TC	
	12mm	12mm	3	19mm	Ball End	32mm	76mm	MFMHV-301-12-BN	MFMHV-301-12-BN-DLC	MFMHV-301-12-BN-TC	MFMHV-301-12-BN-DLC-TC	

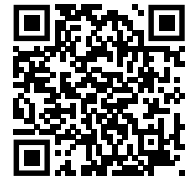
Due to the large offering of MFMHV series many of these are made to order and non-returnable.

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

MFMHV

3 Flute Ultra-High Velocity Tools for Aluminum



MFMHV 3 Flute (Short to Long Reach) — continued



	Cutting Diam.	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (L _S)	Overall Length	Uncoated	DLC Coated	Uncoated w/ Thru Coolant Holes	Thru Coolant DLC Coated	
MEDIUM	12mm	12mm	3	19mm	Sq. End	41mm	89mm	MFMHV-302-12	MFMHV-302-12-DLC	MFMHV-302-12-TC	MFMHV-302-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	3	19mm	0.5mm	41mm	89mm	MFMHV-302-12-050	MFMHV-302-12-050-DLC	MFMHV-302-12-050-TC	MFMHV-302-12-050-DLC-TC	
	12mm	12mm	3	19mm	1mm	41mm	89mm	MFMHV-302-12-100	MFMHV-302-12-100-DLC	MFMHV-302-12-100-TC	MFMHV-302-12-100-DLC-TC	
	12mm	12mm	3	19mm	2mm	41mm	89mm	MFMHV-302-12-200	MFMHV-302-12-200-DLC	MFMHV-302-12-200-TC	MFMHV-302-12-200-DLC-TC	
	12mm	12mm	3	19mm	3mm	41mm	89mm	MFMHV-302-12-300	MFMHV-302-12-300-DLC	MFMHV-302-12-300-TC	MFMHV-302-12-300-DLC-TC	
	12mm	12mm	3	19mm	4mm	41mm	89mm	MFMHV-302-12-400	MFMHV-302-12-400-DLC	MFMHV-302-12-400-TC	MFMHV-302-12-400-DLC-TC	
	12mm	12mm	3	19mm	Ball End	41mm	89mm	MFMHV-302-12-BN	MFMHV-302-12-BN-DLC	MFMHV-302-12-BN-TC	MFMHV-302-12-BN-DLC-TC	
LONG	12mm	12mm	3	19mm	Sq. End	54mm	102mm	MFMHV-303-12	MFMHV-303-12-DLC	MFMHV-303-12-TC	MFMHV-303-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	3	19mm	0.5mm	54mm	102mm	MFMHV-303-12-050	MFMHV-303-12-050-DLC	MFMHV-303-12-050-TC	MFMHV-303-12-050-DLC-TC	
	12mm	12mm	3	19mm	1mm	54mm	102mm	MFMHV-303-12-100	MFMHV-303-12-100-DLC	MFMHV-303-12-100-TC	MFMHV-303-12-100-DLC-TC	
	12mm	12mm	3	19mm	2mm	54mm	102mm	MFMHV-303-12-200	MFMHV-303-12-200-DLC	MFMHV-303-12-200-TC	MFMHV-303-12-200-DLC-TC	
	12mm	12mm	3	19mm	3mm	54mm	102mm	MFMHV-303-12-300	MFMHV-303-12-300-DLC	MFMHV-303-12-300-TC	MFMHV-303-12-300-DLC-TC	
	12mm	12mm	3	19mm	4mm	54mm	102mm	MFMHV-303-12-400	MFMHV-303-12-400-DLC	MFMHV-303-12-400-TC	MFMHV-303-12-400-DLC-TC	
	12mm	12mm	3	19mm	Ball End	54mm	102mm	MFMHV-303-12-BN	MFMHV-303-12-BN-DLC	MFMHV-303-12-BN-TC	MFMHV-303-12-BN-DLC-TC	
EXTRA LONG	12mm	12mm	3	19mm	Sq. End	67mm	115mm	MFMHV-304-12	MFMHV-304-12-DLC	MFMHV-304-12-TC	MFMHV-304-12-DLC-TC	12 mm DIAMETER
	12mm	12mm	3	19mm	0.5mm	67mm	115mm	MFMHV-304-12-050	MFMHV-304-12-050-DLC	MFMHV-304-12-050-TC	MFMHV-304-12-050-DLC-TC	
	12mm	12mm	3	19mm	1mm	67mm	115mm	MFMHV-304-12-100	MFMHV-304-12-100-DLC	MFMHV-304-12-100-TC	MFMHV-304-12-100-DLC-TC	
	12mm	12mm	3	19mm	2mm	67mm	115mm	MFMHV-304-12-200	MFMHV-304-12-200-DLC	MFMHV-304-12-200-TC	MFMHV-304-12-200-DLC-TC	
	12mm	12mm	3	19mm	3mm	67mm	115mm	MFMHV-304-12-300	MFMHV-304-12-300-DLC	MFMHV-304-12-300-TC	MFMHV-304-12-300-DLC-TC	
	12mm	12mm	3	19mm	4mm	67mm	115mm	MFMHV-304-12-400	MFMHV-304-12-400-DLC	MFMHV-304-12-400-TC	MFMHV-304-12-400-DLC-TC	
	12mm	12mm	3	19mm	Ball End	67mm	115mm	MFMHV-304-12-BN	MFMHV-304-12-BN-DLC	MFMHV-304-12-BN-TC	MFMHV-304-12-BN-DLC-TC	
SHORT	16mm	16mm	3	22mm	Sq. End	40mm	89mm	MFMHV-301-16	MFMHV-301-16-DLC	MFMHV-301-16-TC	MFMHV-301-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	3	22mm	0.5mm	40mm	89mm	MFMHV-301-16-050	MFMHV-301-16-050-DLC	MFMHV-301-16-050-TC	MFMHV-301-16-050-DLC-TC	
	16mm	16mm	3	22mm	1mm	40mm	89mm	MFMHV-301-16-100	MFMHV-301-16-100-DLC	MFMHV-301-16-100-TC	MFMHV-301-16-100-DLC-TC	
	16mm	16mm	3	22mm	2mm	40mm	89mm	MFMHV-301-16-200	MFMHV-301-16-200-DLC	MFMHV-301-16-200-TC	MFMHV-301-16-200-DLC-TC	
	16mm	16mm	3	22mm	3mm	40mm	89mm	MFMHV-301-16-300	MFMHV-301-16-300-DLC	MFMHV-301-16-300-TC	MFMHV-301-16-300-DLC-TC	
	16mm	16mm	3	22mm	4mm	40mm	89mm	MFMHV-301-16-400	MFMHV-301-16-400-DLC	MFMHV-301-16-400-TC	MFMHV-301-16-400-DLC-TC	
	16mm	16mm	3	22mm	Ball End	40mm	89mm	MFMHV-301-16-BN	MFMHV-301-16-BN-DLC	MFMHV-301-16-BN-TC	MFMHV-301-16-BN-DLC-TC	
MEDIUM	16mm	16mm	3	22mm	Sq. End	52mm	102mm	MFMHV-302-16	MFMHV-302-16-DLC	MFMHV-302-16-TC	MFMHV-302-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	3	22mm	0.5mm	52mm	102mm	MFMHV-302-16-050	MFMHV-302-16-050-DLC	MFMHV-302-16-050-TC	MFMHV-302-16-050-DLC-TC	
	16mm	16mm	3	22mm	1mm	52mm	102mm	MFMHV-302-16-100	MFMHV-302-16-100-DLC	MFMHV-302-16-100-TC	MFMHV-302-16-100-DLC-TC	
	16mm	16mm	3	22mm	2mm	52mm	102mm	MFMHV-302-16-200	MFMHV-302-16-200-DLC	MFMHV-302-16-200-TC	MFMHV-302-16-200-DLC-TC	
	16mm	16mm	3	22mm	3mm	52mm	102mm	MFMHV-302-16-300	MFMHV-302-16-300-DLC	MFMHV-302-16-300-TC	MFMHV-302-16-300-DLC-TC	
	16mm	16mm	3	22mm	4mm	52mm	102mm	MFMHV-302-16-400	MFMHV-302-16-400-DLC	MFMHV-302-16-400-TC	MFMHV-302-16-400-DLC-TC	
	16mm	16mm	3	22mm	Ball End	52mm	102mm	MFMHV-302-16-BN	MFMHV-302-16-BN-DLC	MFMHV-302-16-BN-TC	MFMHV-302-16-BN-DLC-TC	
LONG	16mm	16mm	3	22mm	Sq. End	65mm	115mm	MFMHV-303-16	MFMHV-303-16-DLC	MFMHV-303-16-TC	MFMHV-303-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	3	22mm	0.5mm	65mm	115mm	MFMHV-303-16-050	MFMHV-303-16-050-DLC	MFMHV-303-16-050-TC	MFMHV-303-16-050-DLC-TC	
	16mm	16mm	3	22mm	1mm	65mm	115mm	MFMHV-303-16-100	MFMHV-303-16-100-DLC	MFMHV-303-16-100-TC	MFMHV-303-16-100-DLC-TC	
	16mm	16mm	3	22mm	2mm	65mm	115mm	MFMHV-303-16-200	MFMHV-303-16-200-DLC	MFMHV-303-16-200-TC	MFMHV-303-16-200-DLC-TC	
	16mm	16mm	3	22mm	3mm	65mm	115mm	MFMHV-303-16-300	MFMHV-303-16-300-DLC	MFMHV-303-16-300-TC	MFMHV-303-16-300-DLC-TC	
	16mm	16mm	3	22mm	4mm	65mm	115mm	MFMHV-303-16-400	MFMHV-303-16-400-DLC	MFMHV-303-16-400-TC	MFMHV-303-16-400-DLC-TC	
	16mm	16mm	3	22mm	Ball End	65mm	115mm	MFMHV-303-16-BN	MFMHV-303-16-BN-DLC	MFMHV-303-16-BN-TC	MFMHV-303-16-BN-DLC-TC	

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE —

NEW!

Aluminum

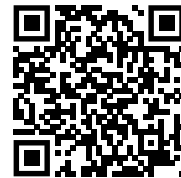
MFMHV 3 Flute (Short to Long Reach) — continued

	Cutting Diam.	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Uncoated w/ Thru Coolant Holes	Thru Coolant DLC Coated	
EXTRA LONG	16mm	16mm	3	22mm	Sq. End	78mm	127mm	MFMHV-304-16	MFMHV-304-16-DLC	MFMHV-304-16-TC	MFMHV-304-16-DLC-TC	16 mm DIAMETER
	16mm	16mm	3	22mm	0.5mm	78mm	127mm	MFMHV-304-16-050	MFMHV-304-16-050-DLC	MFMHV-304-16-050-TC	MFMHV-304-16-050-DLC-TC	
	16mm	16mm	3	22mm	1mm	78mm	127mm	MFMHV-304-16-100	MFMHV-304-16-100-DLC	MFMHV-304-16-100-TC	MFMHV-304-16-100-DLC-TC	
	16mm	16mm	3	22mm	2mm	78mm	127mm	MFMHV-304-16-200	MFMHV-304-16-200-DLC	MFMHV-304-16-200-TC	MFMHV-304-16-200-DLC-TC	
	16mm	16mm	3	22mm	3mm	78mm	127mm	MFMHV-304-16-300	MFMHV-304-16-300-DLC	MFMHV-304-16-300-TC	MFMHV-304-16-300-DLC-TC	
	16mm	16mm	3	22mm	4mm	78mm	127mm	MFMHV-304-16-400	MFMHV-304-16-400-DLC	MFMHV-304-16-400-TC	MFMHV-304-16-400-DLC-TC	
	16mm	16mm	3	22mm	Ball End	78mm	127mm	MFMHV-304-16-BN	MFMHV-304-16-BN-DLC	MFMHV-304-16-BN-TC	MFMHV-304-16-BN-DLC-TC	
SHORT	20mm	20mm	3	25mm	Sq. End	54mm	104mm	MFMHV-301-20	MFMHV-301-20-DLC	MFMHV-301-20-TC	MFMHV-301-20-DLC-TC	20 mm DIAMETER
	20mm	20mm	3	25mm	0.5mm	54mm	104mm	MFMHV-301-20-005	MFMHV-301-20-005-DLC	MFMHV-301-20-005-TC	MFMHV-301-20-005-DLC-TC	
	20mm	20mm	3	25mm	1mm	54mm	104mm	MFMHV-301-20-100	MFMHV-301-20-100-DLC	MFMHV-301-20-100-TC	MFMHV-301-20-100-DLC-TC	
	20mm	20mm	3	25mm	2mm	54mm	104mm	MFMHV-301-20-200	MFMHV-301-20-200-DLC	MFMHV-301-20-200-TC	MFMHV-301-20-200-DLC-TC	
	20mm	20mm	3	25mm	3mm	54mm	104mm	MFMHV-301-20-300	MFMHV-301-20-300-DLC	MFMHV-301-20-300-TC	MFMHV-301-20-300-DLC-TC	
	20mm	20mm	3	25mm	4mm	54mm	104mm	MFMHV-301-20-400	MFMHV-301-20-400-DLC	MFMHV-301-20-400-TC	MFMHV-301-20-400-DLC-TC	
	20mm	20mm	3	25mm	Ball End	54mm	104mm	MFMHV-301-20-BN	MFMHV-301-20-BN-DLC	MFMHV-301-20-BN-TC	MFMHV-301-20-BN-DLC-TC	
MEDIUM	20mm	20mm	3	25mm	Sq. End	65mm	115mm	MFMHV-302-20	MFMHV-302-20-DLC	MFMHV-302-20-TC	MFMHV-302-20-DLC-TC	
	20mm	20mm	3	25mm	0.5mm	65mm	115mm	MFMHV-302-20-005	MFMHV-302-20-005-DLC	MFMHV-302-20-005-TC	MFMHV-302-20-005-DLC-TC	
	20mm	20mm	3	25mm	1mm	65mm	115mm	MFMHV-302-20-100	MFMHV-302-20-100-DLC	MFMHV-302-20-100-TC	MFMHV-302-20-100-DLC-TC	
	20mm	20mm	3	25mm	2mm	65mm	115mm	MFMHV-302-20-200	MFMHV-302-20-200-DLC	MFMHV-302-20-200-TC	MFMHV-302-20-200-DLC-TC	
	20mm	20mm	3	25mm	3mm	65mm	115mm	MFMHV-302-20-300	MFMHV-302-20-300-DLC	MFMHV-302-20-300-TC	MFMHV-302-20-300-DLC-TC	
	20mm	20mm	3	25mm	4mm	65mm	115mm	MFMHV-302-20-400	MFMHV-302-20-400-DLC	MFMHV-302-20-400-TC	MFMHV-302-20-400-DLC-TC	
	20mm	20mm	3	25mm	Ball End	65mm	115mm	MFMHV-302-20-BN	MFMHV-302-20-BN-DLC	MFMHV-302-20-BN-TC	MFMHV-302-20-BN-DLC-TC	
LONG	20mm	20mm	3	25mm	Sq. End	78mm	127mm	MFMHV-303-20	MFMHV-303-20-DLC	MFMHV-303-20-TC	MFMHV-303-20-DLC-TC	
	20mm	20mm	3	25mm	0.5mm	78mm	127mm	MFMHV-303-20-005	MFMHV-303-20-005-DLC	MFMHV-303-20-005-TC	MFMHV-303-20-005-DLC-TC	
	20mm	20mm	3	25mm	1mm	78mm	127mm	MFMHV-303-20-100	MFMHV-303-20-100-DLC	MFMHV-303-20-100-TC	MFMHV-303-20-100-DLC-TC	
	20mm	20mm	3	25mm	2mm	78mm	127mm	MFMHV-303-20-200	MFMHV-303-20-200-DLC	MFMHV-303-20-200-TC	MFMHV-303-20-200-DLC-TC	
	20mm	20mm	3	25mm	3mm	78mm	127mm	MFMHV-303-20-300	MFMHV-303-20-300-DLC	MFMHV-303-20-300-TC	MFMHV-303-20-300-DLC-TC	
	20mm	20mm	3	25mm	4mm	78mm	127mm	MFMHV-303-20-400	MFMHV-303-20-400-DLC	MFMHV-303-20-400-TC	MFMHV-303-20-400-DLC-TC	
	20mm	20mm	3	25mm	Ball End	78mm	127mm	MFMHV-303-20-BN	MFMHV-303-20-BN-DLC	MFMHV-303-20-BN-TC	MFMHV-303-20-BN-DLC-TC	
EXTRA LONG	20mm	20mm	3	25mm	Sq. End	92mm	140mm	MFMHV-304-20	MFMHV-304-20-DLC	MFMHV-304-20-TC	MFMHV-304-20-DLC-TC	
	20mm	20mm	3	25mm	0.5mm	92mm	140mm	MFMHV-304-20-005	MFMHV-304-20-005-DLC	MFMHV-304-20-005-TC	MFMHV-304-20-005-DLC-TC	
	20mm	20mm	3	25mm	1mm	92mm	140mm	MFMHV-304-20-100	MFMHV-304-20-100-DLC	MFMHV-304-20-100-TC	MFMHV-304-20-100-DLC-TC	
	20mm	20mm	3	25mm	2mm	92mm	140mm	MFMHV-304-20-200	MFMHV-304-20-200-DLC	MFMHV-304-20-200-TC	MFMHV-304-20-200-DLC-TC	
	20mm	20mm	3	25mm	3mm	92mm	140mm	MFMHV-304-20-300	MFMHV-304-20-300-DLC	MFMHV-304-20-300-TC	MFMHV-304-20-300-DLC-TC	
	20mm	20mm	3	25mm	4mm	92mm	140mm	MFMHV-304-20-400	MFMHV-304-20-400-DLC	MFMHV-304-20-400-TC	MFMHV-304-20-400-DLC-TC	
	20mm	20mm	3	25mm	Ball End	92mm	140mm	MFMHV-304-20-BN	MFMHV-304-20-BN-DLC	MFMHV-304-20-BN-TC	MFMHV-304-20-BN-DLC-TC	
SHORT	25mm	25mm	3	32mm	Sq. End	54mm	102mm	MFMHV-301-25	MFMHV-301-25-DLC	MFMHV-301-25-TC	MFMHV-301-25-DLC-TC	25 mm DIAMETER
	25mm	25mm	3	32mm	0.5mm	54mm	102mm	MFMHV-301-25-050	MFMHV-301-25-050-DLC	MFMHV-301-25-050-TC	MFMHV-301-25-050-DLC-TC	
	25mm	25mm	3	32mm	1mm	54mm	102mm	MFMHV-301-25-100	MFMHV-301-25-100-DLC	MFMHV-301-25-100-TC	MFMHV-301-25-100-DLC-TC	
	25mm	25mm	3	32mm	2mm	54mm	102mm	MFMHV-301-25-200	MFMHV-301-25-200-DLC	MFMHV-301-25-200-TC	MFMHV-301-25-200-DLC-TC	
	25mm	25mm	3	32mm	3mm	54mm	102mm	MFMHV-301-25-300	MFMHV-301-25-300-DLC	MFMHV-301-25-300-TC	MFMHV-301-25-300-DLC-TC	
	25mm	25mm	3	32mm	4mm	54mm	102mm	MFMHV-301-25-400	MFMHV-301-25-400-DLC	MFMHV-301-25-400-TC	MFMHV-301-25-400-DLC-TC	
	25mm	25mm	3	32mm	Ball End	54mm	102mm	MFMHV-301-25-BN	MFMHV-301-25-BN-DLC	MFMHV-301-25-BN-TC	MFMHV-301-25-BN-DLC-TC	

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

NEW!

MFMHV

3 Flute Ultra-High Velocity Tools for Aluminum

MFMHV 3 Flute (Short to Long Reach) — continued



	Cutting Diam.	Shank Diam.	Cutting Edges	Flute Length	Corner Radius	Reach Length (LBS)	Overall Length	Uncoated	DLC Coated	Uncoated w/ Thru Coolant Holes	Thru Coolant DLC Coated	
MEDIUM	25mm	25mm	3	32mm	Sq. End	65mm	115mm	MFMHV-302-25	MFMHV-302-25-DLC	MFMHV-302-25-TC	MFMHV-302-25-DLC-TC	25 mm DIAMETER
	25mm	25mm	3	32mm	0.5mm	65mm	115mm	MFMHV-302-25-050	MFMHV-302-25-050-DLC	MFMHV-302-25-050-TC	MFMHV-302-25-050-DLC-TC	
	25mm	25mm	3	32mm	1mm	65mm	115mm	MFMHV-302-25-100	MFMHV-302-25-100-DLC	MFMHV-302-25-100-TC	MFMHV-302-25-100-DLC-TC	
	25mm	25mm	3	32mm	2mm	65mm	115mm	MFMHV-302-25-200	MFMHV-302-25-200-DLC	MFMHV-302-25-200-TC	MFMHV-302-25-200-DLC-TC	
	25mm	25mm	3	32mm	3mm	65mm	115mm	MFMHV-302-25-300	MFMHV-302-25-300-DLC	MFMHV-302-25-300-TC	MFMHV-302-25-300-DLC-TC	
	25mm	25mm	3	32mm	4mm	65mm	115mm	MFMHV-302-25-400	MFMHV-302-25-400-DLC	MFMHV-302-25-400-TC	MFMHV-302-25-400-DLC-TC	
	25mm	25mm	3	32mm	Ball End	65mm	115mm	MFMHV-302-25-BN	MFMHV-302-25-BN-DLC	MFMHV-302-25-BN-TC	MFMHV-302-25-BN-DLC-TC	
LONG	25mm	25mm	3	32mm	Sq. End	78mm	127mm	MFMHV-303-25	MFMHV-303-25-DLC	MFMHV-303-25-TC	MFMHV-303-25-DLC-TC	
	25mm	25mm	3	32mm	0.5mm	78mm	127mm	MFMHV-303-25-050	MFMHV-303-25-050-DLC	MFMHV-303-25-050-TC	MFMHV-303-25-050-DLC-TC	
	25mm	25mm	3	32mm	1mm	78mm	127mm	MFMHV-303-25-100	MFMHV-303-25-100-DLC	MFMHV-303-25-100-TC	MFMHV-303-25-100-DLC-TC	
	25mm	25mm	3	32mm	2mm	78mm	127mm	MFMHV-303-25-200	MFMHV-303-25-200-DLC	MFMHV-303-25-200-TC	MFMHV-303-25-200-DLC-TC	
	25mm	25mm	3	32mm	3mm	78mm	127mm	MFMHV-303-25-300	MFMHV-303-25-300-DLC	MFMHV-303-25-300-TC	MFMHV-303-25-300-DLC-TC	
	25mm	25mm	3	32mm	4mm	78mm	127mm	MFMHV-303-25-400	MFMHV-303-25-400-DLC	MFMHV-303-25-400-TC	MFMHV-303-25-400-DLC-TC	
	25mm	25mm	3	32mm	Ball End	78mm	127mm	MFMHV-303-25-BN	MFMHV-303-25-BN-DLC	MFMHV-303-25-BN-TC	MFMHV-303-25-BN-DLC-TC	
EXTRA LONG	25mm	25mm	3	32mm	Sq. End	92mm	140mm	MFMHV-304-25	MFMHV-304-25-DLC	MFMHV-304-25-TC	MFMHV-304-25-DLC-TC	
	25mm	25mm	3	32mm	0.5mm	92mm	140mm	MFMHV-304-25-050	MFMHV-304-25-050-DLC	MFMHV-304-25-050-TC	MFMHV-304-25-050-DLC-TC	
	25mm	25mm	3	32mm	1mm	92mm	140mm	MFMHV-304-25-100	MFMHV-304-25-100-DLC	MFMHV-304-25-100-TC	MFMHV-304-25-100-DLC-TC	
	25mm	25mm	3	32mm	2mm	92mm	140mm	MFMHV-304-25-200	MFMHV-304-25-200-DLC	MFMHV-304-25-200-TC	MFMHV-304-25-200-DLC-TC	
	25mm	25mm	3	32mm	3mm	92mm	140mm	MFMHV-304-25-300	MFMHV-304-25-300-DLC	MFMHV-304-25-300-TC	MFMHV-304-25-300-DLC-TC	
	25mm	25mm	3	32mm	4mm	92mm	140mm	MFMHV-304-25-400	MFMHV-304-25-400-DLC	MFMHV-304-25-400-TC	MFMHV-304-25-400-DLC-TC	
	25mm	25mm	3	32mm	Ball End	92mm	140mm	MFMHV-304-25-BN	MFMHV-304-25-BN-DLC	MFMHV-304-25-BN-TC	MFMHV-304-25-BN-DLC-TC	
SUPER LONG	25mm	25mm	3	32mm	Sq. End	104mm	152mm	MFMHV-305-25	MFMHV-305-25-DLC	MFMHV-305-25-TC	MFMHV-305-25-DLC-TC	
	25mm	25mm	3	32mm	0.5mm	104mm	152mm	MFMHV-305-25-050	MFMHV-305-25-050-DLC	MFMHV-305-25-050-TC	MFMHV-305-25-050-DLC-TC	
	25mm	25mm	3	32mm	1mm	104mm	152mm	MFMHV-305-25-100	MFMHV-305-25-100-DLC	MFMHV-305-25-100-TC	MFMHV-305-25-100-DLC-TC	
	25mm	25mm	3	32mm	2mm	104mm	152mm	MFMHV-305-25-200	MFMHV-305-25-200-DLC	MFMHV-305-25-200-TC	MFMHV-305-25-200-DLC-TC	
	25mm	25mm	3	32mm	3mm	104mm	152mm	MFMHV-305-25-300	MFMHV-305-25-300-DLC	MFMHV-305-25-300-TC	MFMHV-305-25-300-DLC-TC	
	25mm	25mm	3	32mm	4mm	104mm	152mm	MFMHV-305-25-400	MFMHV-305-25-400-DLC	MFMHV-305-25-400-TC	MFMHV-305-25-400-DLC-TC	
	25mm	25mm	3	32mm	Ball End	104mm	152mm	MFMHV-305-25-BN	MFMHV-305-25-BN-DLC	MFMHV-305-25-BN-TC	MFMHV-305-25-BN-DLC-TC	

Technical Information: Run tools at the maximum tap tested Recommended RPM

FMHV Technical data:

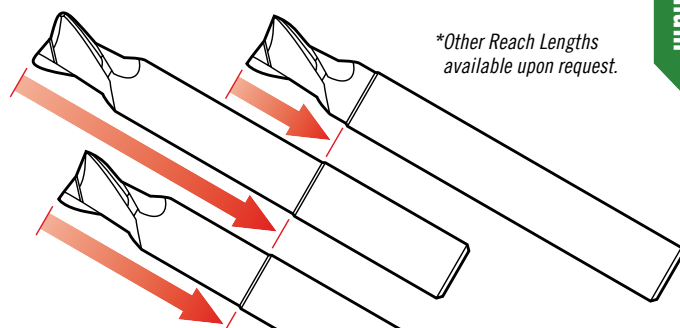
Diameter	Chip load per tooth	Typical Depth	Recommended RPM	Type of cut
1" Diameter	.008-.015	.300 up to .750	Max Tap Tested RPM Or Max RPM	Slot or profile (stay away from 50% radial step-over)
3/4" Diameter	.006-.012	.200 up to .900		
5/8" Diameter	.005-.011	.100 up to .750		
1/2" Diameter	.004-.010	.100 up to .750		
3/8" Diameter	.003-.006	.100 up to .500		
5/16" Diameter	.002-.005	.100 up to .500		
1/4" Diameter	.002-.004	.100 up to .375		

Recommended feed per tooth

CUTTING DIAMETER	Recommended chip load per tooth fz
6	0.051 - 0.095
8	0.076 - 0.143
10	0.076 - 0.143
12	0.102 - 0.254
16	0.127 - 0.254
20	0.152 - 0.305
25	0.203 - 0.381

Due to the large offering of MFMHV series many of these are made to order and non-returnable.

Any neck length (LBS) available upon request!

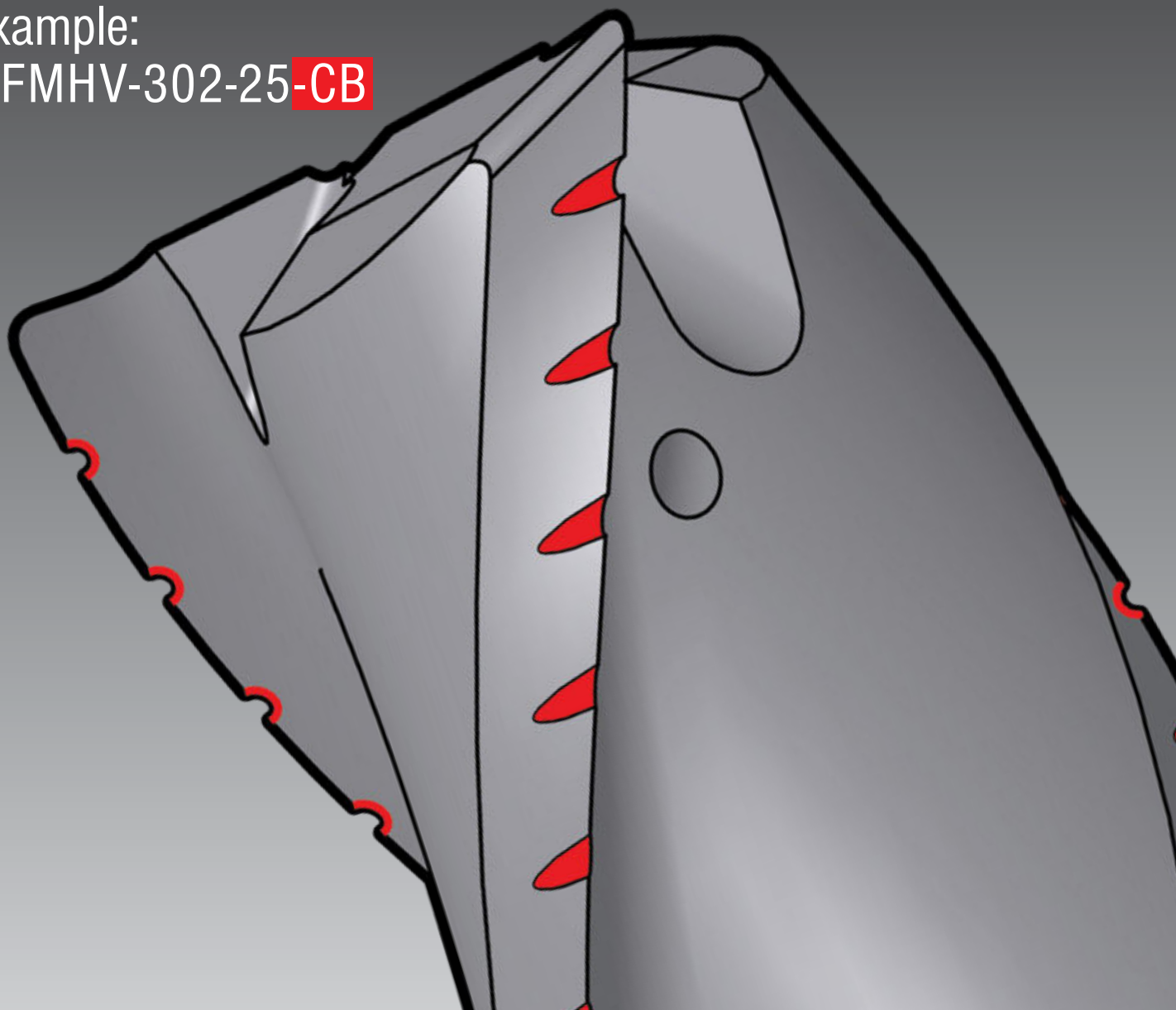


CHIP BREAKERS

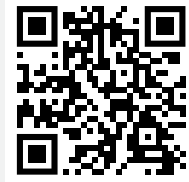
If you need Chip Breakers add “-CB” to the end of any part number to get chip breakers added.

Example:

MFMHV-302-25-CB



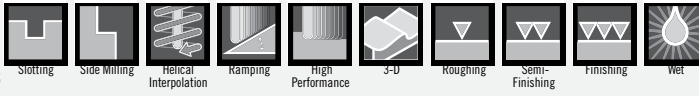
FM 2 Flute High Performance Tools for Aluminum



Characteristics



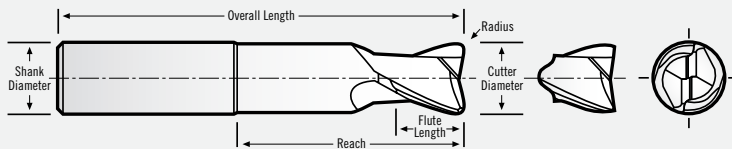
Applications



Materials



Coatings



FM Series Tolerances:

Cutting Dia. = $-.0007/-0.0015$
 Shank Dia. = $-.0001/-0.0002$
 Flute Length = $+.060/-0.000$
 OAL = $+/- .060$

FM Series comes with
Mirror Edge!
 for Chatter Reduction



Eliminate Tool Pull Out!
 ALL Tools h4 Shank Tolerance
 up to 150% more gripping force



FM 2 Flute (Short to Long Reach)



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	1/4"	1/4"	1/4"	Sq. End	5/8"	3"	FM-201-08	FM-201-08-DLC	1/4" DIAMETER
	1/4"	1/4"	1/4"	0.03"	5/8"	3"	FM-201-08-030	FM-201-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	5/8"	3"	FM-201-08-060	FM-201-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	5/8"	3"	FM-201-08-090	FM-201-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	5/8"	3"	FM-201-08-BN	FM-201-08-BN-DLC	
MEDIUM	1/4"	1/4"	1/4"	Sq. End	7/8"	3"	FM-202-08	FM-202-08-DLC	
	1/4"	1/4"	1/4"	0.03"	7/8"	3"	FM-202-08-030	FM-202-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	7/8"	3"	FM-202-08-060	FM-202-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	7/8"	3"	FM-202-08-090	FM-202-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	7/8"	3"	FM-202-08-BN	FM-202-08-BN-DLC	
LONG	1/4"	1/4"	1/4"	Sq. End	1-1/16"	3"	FM-204-08	FM-204-08-DLC	
	1/4"	1/4"	1/4"	0.03"	1-1/16"	3"	FM-204-08-030	FM-204-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	1-1/16"	3"	FM-204-08-060	FM-204-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	1-1/16"	3"	FM-204-08-090	FM-204-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	1-1/16"	3"	FM-204-08-BN	FM-204-08-BN-DLC	
EXTRA LONG	1/4"	1/4"	1/4"	Sq. End	1-1/2"	3"	FM-205-08	FM-205-08-DLC	
	1/4"	1/4"	1/4"	0.03"	1-1/2"	3"	FM-205-08-030	FM-205-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	1-1/2"	3"	FM-205-08-060	FM-205-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	1-1/2"	3"	FM-205-08-090	FM-205-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	1-1/2"	3"	FM-205-08-BN	FM-205-08-BN-DLC	
SHORT	5/16"	5/16"	5/16"	Sq. End	7/8"	3-1/8"	FM-201-10	FM-201-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	7/8"	3-1/8"	FM-201-10-030	FM-201-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	7/8"	3-1/8"	FM-201-10-060	FM-201-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	7/8"	3-1/8"	FM-201-10-090	FM-201-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	7/8"	3-1/8"	FM-201-10-120	FM-201-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	7/8"	3-1/8"	FM-201-10-BN	FM-201-10-BN-DLC	
	5/16"	5/16"	5/16"	Sq. End	1-3/32"	3-1/8"	FM-202-10	FM-202-10-DLC	
	5/16"	5/16"	5/16"	0.03"	1-3/32"	3-1/8"	FM-202-10-030	FM-202-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-3/32"	3-1/8"	FM-202-10-060	FM-202-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-3/32"	3-1/8"	FM-202-10-090	FM-202-10-090-DLC	
MEDIUM	5/16"	5/16"	5/16"	0.12"	1-3/32"	3-1/8"	FM-202-10-120	FM-202-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-3/32"	3-1/8"	FM-202-10-BN	FM-202-10-BN-DLC	

*Other Reach Lengths available upon request.

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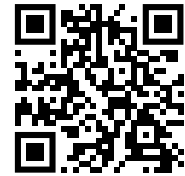
FM 2 Flute (Short to Long Reach) — continued

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
LONG	5/16"	5/16"	5/16"	Sq. End	1-5/16"	3-1/8"	FM-204-10	FM-204-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1-5/16"	3-1/8"	FM-204-10-030	FM-204-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-5/16"	3-1/8"	FM-204-10-060	FM-204-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-5/16"	3-1/8"	FM-204-10-090	FM-204-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	1-5/16"	3-1/8"	FM-204-10-120	FM-204-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-5/16"	3-1/8"	FM-204-10-BN	FM-204-10-BN-DLC	
EXTRA LONG	5/16"	5/16"	5/16"	Sq. End	1-5/8"	3-1/8"	FM-205-10	FM-205-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1-5/8"	3-1/8"	FM-205-10-030	FM-205-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-5/8"	3-1/8"	FM-205-10-060	FM-205-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-5/8"	3-1/8"	FM-205-10-090	FM-205-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	1-5/8"	3-1/8"	FM-205-10-120	FM-205-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-5/8"	3-1/8"	FM-205-10-BN	FM-205-10-BN-DLC	
SHORT	3/8"	3/8"	3/8"	Sq. End	1"	4"	FM-201-12	FM-201-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1"	4"	FM-201-12-030	FM-201-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1"	4"	FM-201-12-060	FM-201-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1"	4"	FM-201-12-090	FM-201-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1"	4"	FM-201-12-120	FM-201-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1"	4"	FM-201-12-BN	FM-201-12-BN-DLC	
MEDIUM	3/8"	3/8"	3/8"	Sq. End	1-1/4"	4"	FM-202-12	FM-202-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1-1/4"	4"	FM-202-12-030	FM-202-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1-1/4"	4"	FM-202-12-060	FM-202-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1-1/4"	4"	FM-202-12-090	FM-202-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1-1/4"	4"	FM-202-12-120	FM-202-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1-1/4"	4"	FM-202-12-BN	FM-202-12-BN-DLC	
LONG	3/8"	3/8"	3/8"	Sq. End	1-9/16"	4"	FM-204-12	FM-204-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1-9/16"	4"	FM-204-12-030	FM-204-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1-9/16"	4"	FM-204-12-060	FM-204-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1-9/16"	4"	FM-204-12-090	FM-204-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1-9/16"	4"	FM-204-12-120	FM-204-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1-9/16"	4"	FM-204-12-BN	FM-204-12-BN-DLC	
EXTRA LONG	3/8"	3/8"	3/8"	Sq. End	2-1/8"	4"	FM-205-12	FM-205-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	2-1/8"	4"	FM-205-12-030	FM-205-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	2-1/8"	4"	FM-205-12-060	FM-205-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	2-1/8"	4"	FM-205-12-090	FM-205-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	2-1/8"	4"	FM-205-12-120	FM-205-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	2-1/8"	4"	FM-205-12-BN	FM-205-12-BN-DLC	
SHORT	1/2"	1/2"	1/2"	Sq. End	1-1/4"	5"	FM-201-16	FM-201-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1-1/4"	5"	FM-201-16-030	FM-201-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	1-1/4"	5"	FM-201-16-060	FM-201-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	1-1/4"	5"	FM-201-16-090	FM-201-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	1-1/4"	5"	FM-201-16-120	FM-201-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	1-1/4"	5"	FM-201-16-BN	FM-201-16-BN-DLC	
MEDIUM	1/2"	1/2"	1/2"	Sq. End	1-5/8"	5"	FM-202-16	FM-202-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1-5/8"	5"	FM-202-16-030	FM-202-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	1-5/8"	5"	FM-202-16-060	FM-202-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	1-5/8"	5"	FM-202-16-090	FM-202-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	1-5/8"	5"	FM-202-16-120	FM-202-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	1-5/8"	5"	FM-202-16-BN	FM-202-16-BN-DLC	
LONG	1/2"	1/2"	1/2"	Sq. End	2-1/8"	5"	FM-204-16	FM-204-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2-1/8"	5"	FM-204-16-030	FM-204-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	2-1/8"	5"	FM-204-16-060	FM-204-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	2-1/8"	5"	FM-204-16-090	FM-204-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	2-1/8"	5"	FM-204-16-120	FM-204-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	2-1/8"	5"	FM-204-16-BN	FM-204-16-BN-DLC	

*Other Reach Lengths available upon request.

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FM 2 Flute High Performance Tools for Aluminum



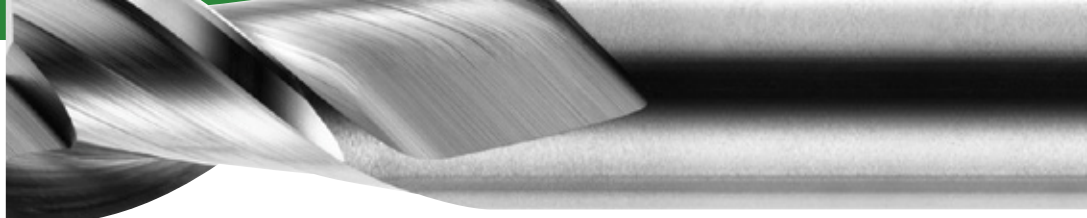
FM 2 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
EXTRA LONG	1/2"	1/2"	1/2"	Sq. End	2-5/8"	5"	FM-205-16	FM-205-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2-5/8"	5"	FM-205-16-030	FM-205-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	2-5/8"	5"	FM-205-16-060	FM-205-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	2-5/8"	5"	FM-205-16-090	FM-205-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	2-5/8"	5"	FM-205-16-120	FM-205-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	2-5/8"	5"	FM-205-16-BN	FM-205-16-BN-DLC	
SHORT	5/8"	5/8"	5/8"	Sq. End	1-1/2"	6"	FM-201-20	FM-201-20-DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	1-1/2"	6"	FM-201-20-030	FM-201-20-030-DLC	
	5/8"	5/8"	5/8"	0.06"	1-1/2"	6"	FM-201-20-060	FM-201-20-060-DLC	
	5/8"	5/8"	5/8"	0.09"	1-1/2"	6"	FM-201-20-090	FM-201-20-090-DLC	
	5/8"	5/8"	5/8"	0.12"	1-1/2"	6"	FM-201-20-120	FM-201-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	1-1/2"	6"	FM-201-20-BN	FM-201-20-BN-DLC	
MEDIUM	5/8"	5/8"	5/8"	Sq. End	2-1/16"	6"	FM-202-20	FM-202-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2-1/16"	6"	FM-202-20-030	FM-202-20-030-DLC	
	5/8"	5/8"	5/8"	0.06"	2-1/16"	6"	FM-202-20-060	FM-202-20-060-DLC	
	5/8"	5/8"	5/8"	0.09"	2-1/16"	6"	FM-202-20-090	FM-202-20-090-DLC	
	5/8"	5/8"	5/8"	0.12"	2-1/16"	6"	FM-202-20-120	FM-202-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	2-1/16"	6"	FM-202-20-BN	FM-202-20-BN-DLC	
LONG	5/8"	5/8"	5/8"	Sq. End	2-5/8"	6"	FM-204-20	FM-204-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2-5/8"	6"	FM-204-20-030	FM-204-20-030-DLC	
	5/8"	5/8"	5/8"	0.06"	2-5/8"	6"	FM-204-20-060	FM-204-20-060-DLC	
	5/8"	5/8"	5/8"	0.09"	2-5/8"	6"	FM-204-20-090	FM-204-20-090-DLC	
	5/8"	5/8"	5/8"	0.12"	2-5/8"	6"	FM-204-20-120	FM-204-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	2-5/8"	6"	FM-204-20-BN	FM-204-20-BN-DLC	
EXTRA LONG	5/8"	5/8"	5/8"	Sq. End	3-1/8"	6"	FM-205-20	FM-205-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03"	3-1/8"	6"	FM-205-20-030	FM-205-20-030-DLC	
	5/8"	5/8"	5/8"	0.06"	3-1/8"	6"	FM-205-20-060	FM-205-20-060-DLC	
	5/8"	5/8"	5/8"	0.09"	3-1/8"	6"	FM-205-20-090	FM-205-20-090-DLC	
	5/8"	5/8"	5/8"	0.12"	3-1/8"	6"	FM-205-20-120	FM-205-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	3-1/8"	6"	FM-205-20-BN	FM-205-20-BN-DLC	
SHORT	3/4"	3/4"	3/4"	Sq. End	2"	6"	FM-201-24	FM-201-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2"	6"	FM-201-24-030	FM-201-24-030-DLC	
	3/4"	3/4"	3/4"	0.06"	2"	6"	FM-201-24-060	FM-201-24-060-DLC	
	3/4"	3/4"	3/4"	0.09"	2"	6"	FM-201-24-090	FM-201-24-090-DLC	
	3/4"	3/4"	3/4"	0.12"	2"	6"	FM-201-24-120	FM-201-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	2"	6"	FM-201-24-BN	FM-201-24-BN-DLC	
MEDIUM	3/4"	3/4"	3/4"	Sq. End	2-9/16"	6"	FM-202-24	FM-202-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2-9/16"	6"	FM-202-24-030	FM-202-24-030-DLC	
	3/4"	3/4"	3/4"	0.06"	2-9/16"	6"	FM-202-24-060	FM-202-24-060-DLC	
	3/4"	3/4"	3/4"	0.09"	2-9/16"	6"	FM-202-24-090	FM-202-24-090-DLC	
	3/4"	3/4"	3/4"	0.12"	2-9/16"	6"	FM-202-24-120	FM-202-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	2-9/16"	6"	FM-202-24-BN	FM-202-24-BN-DLC	
LONG	3/4"	3/4"	3/4"	Sq. End	3-1/8"	6"	FM-204-24	FM-204-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3-1/8"	6"	FM-204-24-030	FM-204-24-030-DLC	
	3/4"	3/4"	3/4"	0.06"	3-1/8"	6"	FM-204-24-060	FM-204-24-060-DLC	
	3/4"	3/4"	3/4"	0.09"	3-1/8"	6"	FM-204-24-090	FM-204-24-090-DLC	
	3/4"	3/4"	3/4"	0.12"	3-1/8"	6"	FM-204-24-120	FM-204-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	3-1/8"	6"	FM-204-24-BN	FM-204-24-BN-DLC	
EXTENDING	3/4"	3/4"	3/4"	Sq. End	3-3/4"	6"	FM-205-24	FM-205-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3-3/4"	6"	FM-205-24-030	FM-205-24-030-DLC	
	3/4"	3/4"	3/4"	0.06"	3-3/4"	6"	FM-205-24-060	FM-205-24-060-DLC	
	3/4"	3/4"	3/4"	0.09"	3-3/4"	6"	FM-205-24-090	FM-205-24-090-DLC	
	3/4"	3/4"	3/4"	0.12"	3-3/4"	6"	FM-205-24-120	FM-205-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	3-3/4"	6"	FM-205-24-BN	FM-205-24-BN-DLC	

*Other Reach Lengths available upon request.

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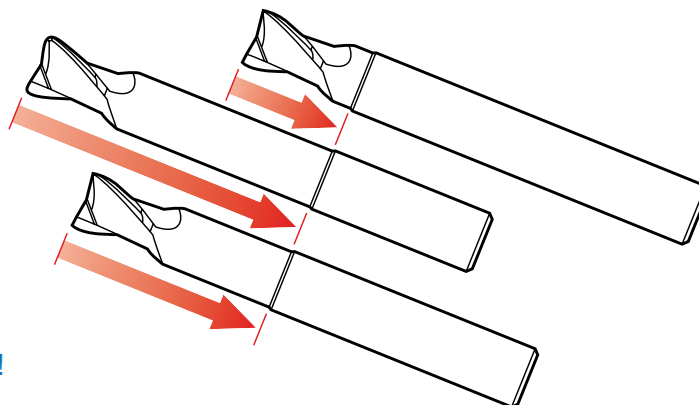


FM 2 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	1"	1"	1"	Sq. End	2"	6"	FM-201-32	FM-201-32-DLC	1" DIAMETER
	1"	1"	1"	0.03"	2"	6"	FM-201-32-030	FM-201-32-030-DLC	
	1"	1"	1"	0.06"	2"	6"	FM-201-32-060	FM-201-32-060-DLC	
	1"	1"	1"	0.09"	2"	6"	FM-201-32-090	FM-201-32-090-DLC	
	1"	1"	1"	0.12"	2"	6"	FM-201-32-120	FM-201-32-120-DLC	
	1"	1"	1"	Ball End	2"	6"	FM-201-32-BN	FM-201-32-BN-DLC	
MEDIUM	1"	1"	1"	Sq. End	3"	6"	FM-202-32	FM-202-32-DLC	
	1"	1"	1"	0.03"	3"	6"	FM-202-32-030	FM-202-32-030-DLC	
	1"	1"	1"	0.06"	3"	6"	FM-202-32-060	FM-202-32-060-DLC	
	1"	1"	1"	0.09"	3"	6"	FM-202-32-090	FM-202-32-090-DLC	
	1"	1"	1"	0.12"	3"	6"	FM-202-32-120	FM-202-32-120-DLC	
	1"	1"	1"	Ball End	3"	6"	FM-202-32-BN	FM-202-32-BN-DLC	
LONG	1"	1"	1"	Sq. End	3-1/2"	6"	FM-203-32	FM-203-32-DLC	
	1"	1"	1"	0.03"	3-1/2"	6"	FM-203-32-030	FM-203-32-030-DLC	
	1"	1"	1"	0.06"	3-1/2"	6"	FM-203-32-060	FM-203-32-060-DLC	
	1"	1"	1"	0.09"	3-1/2"	6"	FM-203-32-090	FM-203-32-090-DLC	
	1"	1"	1"	0.12"	3-1/2"	6"	FM-203-32-120	FM-203-32-120-DLC	
	1"	1"	1"	Ball End	3-1/2"	6"	FM-203-32-BN	FM-203-32-BN-DLC	
EXTRA LONG	1"	1"	1"	Sq. End	4"	6"	FM-204-32	FM-204-32-DLC	
	1"	1"	1"	0.03"	4"	6"	FM-204-32-030	FM-204-32-030-DLC	
	1"	1"	1"	0.06"	4"	6"	FM-204-32-060	FM-204-32-060-DLC	
	1"	1"	1"	0.09"	4"	6"	FM-204-32-090	FM-204-32-090-DLC	
	1"	1"	1"	0.12"	4"	6"	FM-204-32-120	FM-204-32-120-DLC	
	1"	1"	1"	Ball End	4"	6"	FM-204-32-BN	FM-204-32-BN-DLC	

*Other Reach Lengths available upon request.



Any neck length
available at same price!

FM SERIES SPEEDS & FEEDS

Tool Diameter	Typical Z-Depth	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
		RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
1/4"	0.1500	Max	0.0040	Max	0.0035	Max	0.0040	Max	0.0040
5/16"	0.1500	Max	0.0050	Max	0.0044	Max	0.0050	Max	0.0050
3/8"	3/16"	Max	0.0060	Max	0.0053	Max	0.0060	Max	0.0060
1/2"	0.2000	Max	0.0080	Max	0.0070	Max	0.0080	Max	0.0080
5/8"	0.2000	Max	0.0100	Max	0.0088	Max	0.0100	Max	0.0100
3/4"	1/4"	Max	0.0120	Max	0.0105	Max	0.0120	Max	0.0120
1"	1/4"	Max	0.0160	Max	0.0140	Max	0.0160	Max	0.0160

Z-Depth of cut per pass should be deeper than the corner radius to help reduce chatter

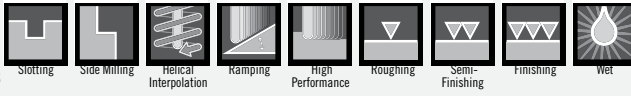
FM 3 Flute High Performance Tools for Aluminum



Characteristics



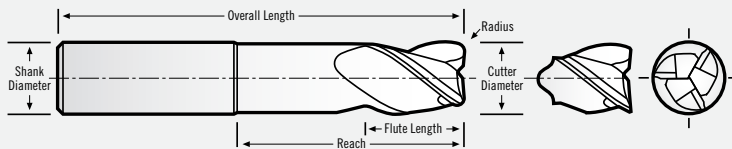
Applications



Materials



Coatings



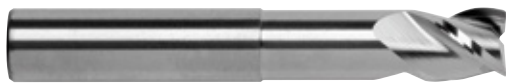
FM Series Tolerances:

Cutting Dia. = $-.0007/-0.0015$
 Shank Dia. = $-.0001/-0.0002$
 Flute Length = $+.060/-0.000$
 OAL = ± 0.060

FM Series comes with
Mirror Edge!
 for Chatter Reduction



Eliminate
 Tool Pull Out!
 ALL Tools h4 Shank Tolerance
 mean 4x more gripping force



NEW!

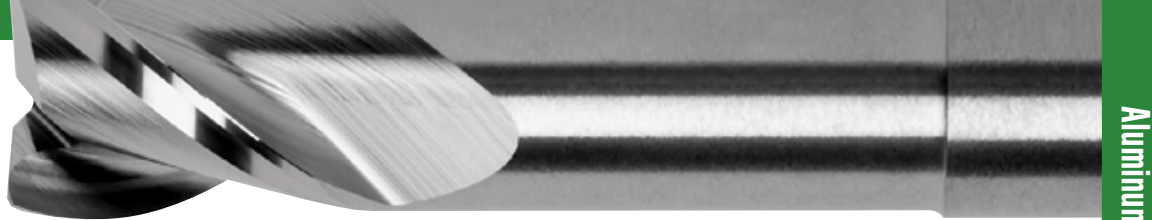
FM 3 Flute (Short to Long Reach)



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	1/4"	1/4"	1/4"	Sq. End	5/8"	3"	FM-301-08	FM-301-08-DLC	1/4" DIAMETER
	1/4"	1/4"	1/4"	0.03"	5/8"	3"	FM-301-08-030	FM-301-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	5/8"	3"	FM-301-08-060	FM-301-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	5/8"	3"	FM-301-08-090	FM-301-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	5/8"	3"	FM-301-08-BN	FM-301-08-BN-DLC	
MEDIUM	1/4"	1/4"	1/4"	Sq. End	7/8"	3"	FM-302-08	FM-302-08-DLC	
	1/4"	1/4"	1/4"	0.03"	7/8"	3"	FM-302-08-030	FM-302-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	7/8"	3"	FM-302-08-060	FM-302-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	7/8"	3"	FM-302-08-090	FM-302-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	7/8"	3"	FM-302-08-BN	FM-302-08-BN-DLC	
LONG	1/4"	1/4"	1/4"	Sq. End	1-1/16"	3"	FM-304-08	FM-304-08-DLC	
	1/4"	1/4"	1/4"	0.03"	1-1/16"	3"	FM-304-08-030	FM-304-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	1-1/16"	3"	FM-304-08-060	FM-304-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	1-1/16"	3"	FM-304-08-090	FM-304-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	1-1/16"	3"	FM-304-08-BN	FM-304-08-BN-DLC	
EXTRA LONG	1/4"	1/4"	1/4"	Sq. End	1-1/2"	3"	FM-305-08	FM-305-08-DLC	
	1/4"	1/4"	1/4"	0.03"	1-1/2"	3"	FM-305-08-030	FM-305-08-030-DLC	
	1/4"	1/4"	1/4"	0.06"	1-1/2"	3"	FM-305-08-060	FM-305-08-060-DLC	
	1/4"	1/4"	1/4"	0.09"	1-1/2"	3"	FM-305-08-090	FM-305-08-090-DLC	
	1/4"	1/4"	1/4"	Ball End	1-1/2"	3"	FM-305-08-BN	FM-305-08-BN-DLC	
SHORT	5/16"	5/16"	5/16"	Sq. End	7/8"	3-1/8"	FM-301-10	FM-301-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	7/8"	3-1/8"	FM-301-10-030	FM-301-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	7/8"	3-1/8"	FM-301-10-060	FM-301-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	7/8"	3-1/8"	FM-301-10-090	FM-301-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	7/8"	3-1/8"	FM-301-10-120	FM-301-10-120-DLC	
MEDIUM	5/16"	5/16"	5/16"	Ball End	7/8"	3-1/8"	FM-301-10-BN	FM-301-10-BN-DLC	
	5/16"	5/16"	5/16"	Sq. End	1-3/32"	3-1/8"	FM-302-10	FM-302-10-DLC	
	5/16"	5/16"	5/16"	0.03"	1-3/32"	3-1/8"	FM-302-10-030	FM-302-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-3/32"	3-1/8"	FM-302-10-060	FM-302-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-3/32"	3-1/8"	FM-302-10-090	FM-302-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	1-3/32"	3-1/8"	FM-302-10-120	FM-302-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-3/32"	3-1/8"	FM-302-10-BN	FM-302-10-BN-DLC	

*Other Reach Lengths available upon request.

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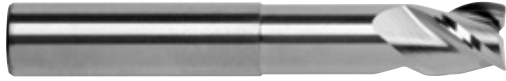
NEW!**Aluminum****FM 3 Flute (Short to Long Reach)** — continued

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
LONG	5/16"	5/16"	5/16"	Sq. End	1-5/16"	3-1/8"	FM-304-10	FM-304-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1-5/16"	3-1/8"	FM-304-10-030	FM-304-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-5/16"	3-1/8"	FM-304-10-060	FM-304-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-5/16"	3-1/8"	FM-304-10-090	FM-304-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	1-5/16"	3-1/8"	FM-304-10-120	FM-304-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-5/16"	3-1/8"	FM-304-10-BN	FM-304-10-BN-DLC	
EXTRA LONG	5/16"	5/16"	5/16"	Sq. End	1-5/8"	3-1/8"	FM-305-10	FM-305-10-DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1-5/8"	3-1/8"	FM-305-10-030	FM-305-10-030-DLC	
	5/16"	5/16"	5/16"	0.06"	1-5/8"	3-1/8"	FM-305-10-060	FM-305-10-060-DLC	
	5/16"	5/16"	5/16"	0.09"	1-5/8"	3-1/8"	FM-305-10-090	FM-305-10-090-DLC	
	5/16"	5/16"	5/16"	0.12"	1-5/8"	3-1/8"	FM-305-10-120	FM-305-10-120-DLC	
	5/16"	5/16"	5/16"	Ball End	1-5/8"	3-1/8"	FM-305-10-BN	FM-305-10-BN-DLC	
SHORT	3/8"	3/8"	3/8"	Sq. End	1"	4"	FM-301-12	FM-301-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1"	4"	FM-301-12-030	FM-301-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1"	4"	FM-301-12-060	FM-301-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1"	4"	FM-301-12-090	FM-301-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1"	4"	FM-301-12-120	FM-301-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1"	4"	FM-301-12-BN	FM-301-12-BN-DLC	
MEDIUM	3/8"	3/8"	3/8"	Sq. End	1-1/4"	4"	FM-302-12	FM-302-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1-1/4"	4"	FM-302-12-030	FM-302-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1-1/4"	4"	FM-302-12-060	FM-302-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1-1/4"	4"	FM-302-12-090	FM-302-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1-1/4"	4"	FM-302-12-120	FM-302-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1-1/4"	4"	FM-302-12-BN	FM-302-12-BN-DLC	
LONG	3/8"	3/8"	3/8"	Sq. End	1-9/16"	4"	FM-304-12	FM-304-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1-9/16"	4"	FM-304-12-030	FM-304-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	1-9/16"	4"	FM-304-12-060	FM-304-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	1-9/16"	4"	FM-304-12-090	FM-304-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	1-9/16"	4"	FM-304-12-120	FM-304-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	1-9/16"	4"	FM-304-12-BN	FM-304-12-BN-DLC	
EXTRA LONG	3/8"	3/8"	3/8"	Sq. End	2-1/8"	4"	FM-305-12	FM-305-12-DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	2-1/8"	4"	FM-305-12-030	FM-305-12-030-DLC	
	3/8"	3/8"	3/8"	0.06"	2-1/8"	4"	FM-305-12-060	FM-305-12-060-DLC	
	3/8"	3/8"	3/8"	0.09"	2-1/8"	4"	FM-305-12-090	FM-305-12-090-DLC	
	3/8"	3/8"	3/8"	0.12"	2-1/8"	4"	FM-305-12-120	FM-305-12-120-DLC	
	3/8"	3/8"	3/8"	Ball End	2-1/8"	4"	FM-305-12-BN	FM-305-12-BN-DLC	
SHORT	1/2"	1/2"	1/2"	Sq. End	1-1/4"	5"	FM-301-16	FM-301-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1-1/4"	5"	FM-301-16-030	FM-301-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	1-1/4"	5"	FM-301-16-060	FM-301-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	1-1/4"	5"	FM-301-16-090	FM-301-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	1-1/4"	5"	FM-301-16-120	FM-301-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	1-1/4"	5"	FM-301-16-BN	FM-301-16-BN-DLC	
MEDIUM	1/2"	1/2"	1/2"	Sq. End	1-5/8"	5"	FM-302-16	FM-302-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1-5/8"	5"	FM-302-16-030	FM-302-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	1-5/8"	5"	FM-302-16-060	FM-302-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	1-5/8"	5"	FM-302-16-090	FM-302-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	1-5/8"	5"	FM-302-16-120	FM-302-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	1-5/8"	5"	FM-302-16-BN	FM-302-16-BN-DLC	
LONG	1/2"	1/2"	1/2"	Sq. End	2-1/8"	5"	FM-304-16	FM-304-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2-1/8"	5"	FM-304-16-030	FM-304-16-030-DLC	
	1/2"	1/2"	1/2"	0.06"	2-1/8"	5"	FM-304-16-060	FM-304-16-060-DLC	
	1/2"	1/2"	1/2"	0.09"	2-1/8"	5"	FM-304-16-090	FM-304-16-090-DLC	
	1/2"	1/2"	1/2"	0.12"	2-1/8"	5"	FM-304-16-120	FM-304-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	2-1/8"	5"	FM-304-16-BN	FM-304-16-BN-DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

FM 3 Flute High Performance Tools for Aluminum

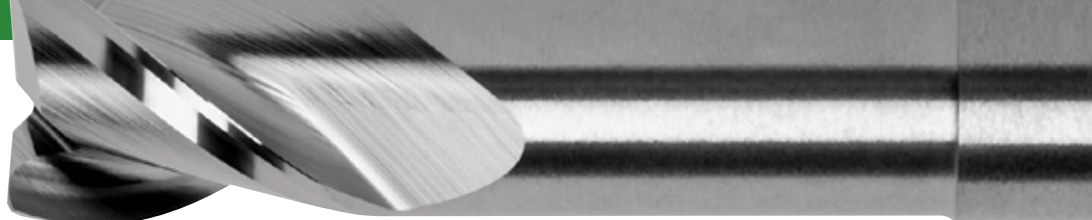


FM 3 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number Coated	
EXTRA LONG	1/2"	1/2"	1/2"	Sq. End	2-5/8"	5"	FM-305-16	FM-305-16-DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03	2-5/8"	5"	FM-305-16-030	FM-305-16-030-DLC	
	1/2"	1/2"	1/2"	0.06	2-5/8"	5"	FM-305-16-060	FM-305-16-060-DLC	
	1/2"	1/2"	1/2"	0.09	2-5/8"	5"	FM-305-16-090	FM-305-16-090-DLC	
	1/2"	1/2"	1/2"	0.12	2-5/8"	5"	FM-305-16-120	FM-305-16-120-DLC	
	1/2"	1/2"	1/2"	Ball End	2-5/8"	5"	FM-305-16-BN	FM-305-16-BN-DLC	
SHORT	5/8"	5/8"	5/8"	Sq. End	1-1/2"	6"	FM-301-20	FM-301-20-DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03	1-1/2"	6"	FM-301-20-030	FM-301-20-030-DLC	
	5/8"	5/8"	5/8"	0.06	1-1/2"	6"	FM-301-20-060	FM-301-20-060-DLC	
	5/8"	5/8"	5/8"	0.09	1-1/2"	6"	FM-301-20-090	FM-301-20-090-DLC	
	5/8"	5/8"	5/8"	0.12	1-1/2"	6"	FM-301-20-120	FM-301-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	1-1/2"	6"	FM-301-20-BN	FM-301-20-BN-DLC	
MEDIUM	5/8"	5/8"	5/8"	Sq. End	2-1/16"	6"	FM-302-20	FM-302-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03	2-1/16"	6"	FM-302-20-030	FM-302-20-030-DLC	
	5/8"	5/8"	5/8"	0.06	2-1/16"	6"	FM-302-20-060	FM-302-20-060-DLC	
	5/8"	5/8"	5/8"	0.09	2-1/16"	6"	FM-302-20-090	FM-302-20-090-DLC	
	5/8"	5/8"	5/8"	0.12	2-1/16"	6"	FM-302-20-120	FM-302-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	2-1/16"	6"	FM-302-20-BN	FM-302-20-BN-DLC	
LONG	5/8"	5/8"	5/8"	Sq. End	2-5/8"	6"	FM-304-20	FM-304-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03	2-5/8"	6"	FM-304-20-030	FM-304-20-030-DLC	
	5/8"	5/8"	5/8"	0.06	2-5/8"	6"	FM-304-20-060	FM-304-20-060-DLC	
	5/8"	5/8"	5/8"	0.09	2-5/8"	6"	FM-304-20-090	FM-304-20-090-DLC	
	5/8"	5/8"	5/8"	0.12	2-5/8"	6"	FM-304-20-120	FM-304-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	2-5/8"	6"	FM-304-20-BN	FM-304-20-BN-DLC	
EXTRA LONG	5/8"	5/8"	5/8"	Sq. End	3-1/8"	6"	FM-305-20	FM-305-20-DLC	3/4" DIAMETER
	5/8"	5/8"	5/8"	0.03	3-1/8"	6"	FM-305-20-030	FM-305-20-030-DLC	
	5/8"	5/8"	5/8"	0.06	3-1/8"	6"	FM-305-20-060	FM-305-20-060-DLC	
	5/8"	5/8"	5/8"	0.09	3-1/8"	6"	FM-305-20-090	FM-305-20-090-DLC	
	5/8"	5/8"	5/8"	0.12	3-1/8"	6"	FM-305-20-120	FM-305-20-120-DLC	
	5/8"	5/8"	5/8"	Ball End	3-1/8"	6"	FM-305-20-BN	FM-305-20-BN-DLC	
SHORT	3/4"	3/4"	3/4"	Sq. End	2"	6"	FM-301-24	FM-301-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03	2"	6"	FM-301-24-030	FM-301-24-030-DLC	
	3/4"	3/4"	3/4"	0.06	2"	6"	FM-301-24-060	FM-301-24-060-DLC	
	3/4"	3/4"	3/4"	0.09	2"	6"	FM-301-24-090	FM-301-24-090-DLC	
	3/4"	3/4"	3/4"	0.12	2"	6"	FM-301-24-120	FM-301-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	2"	6"	FM-301-24-BN	FM-301-24-BN-DLC	
MEDIUM	3/4"	3/4"	3/4"	Sq. End	2-9/16"	6"	FM-302-24	FM-302-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03	2-9/16"	6"	FM-302-24-030	FM-302-24-030-DLC	
	3/4"	3/4"	3/4"	0.06	2-9/16"	6"	FM-302-24-060	FM-302-24-060-DLC	
	3/4"	3/4"	3/4"	0.09	2-9/16"	6"	FM-302-24-090	FM-302-24-090-DLC	
	3/4"	3/4"	3/4"	0.12	2-9/16"	6"	FM-302-24-120	FM-302-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	2-9/16"	6"	FM-302-24-BN	FM-302-24-BN-DLC	
LONG	3/4"	3/4"	3/4"	Sq. End	3-1/8"	6"	FM-304-24	FM-304-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03	3-1/8"	6"	FM-304-24-030	FM-304-24-030-DLC	
	3/4"	3/4"	3/4"	0.06	3-1/8"	6"	FM-304-24-060	FM-304-24-060-DLC	
	3/4"	3/4"	3/4"	0.09	3-1/8"	6"	FM-304-24-090	FM-304-24-090-DLC	
	3/4"	3/4"	3/4"	0.12	3-1/8"	6"	FM-304-24-120	FM-304-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	3-1/8"	6"	FM-304-24-BN	FM-304-24-BN-DLC	
EXTRA LONG	3/4"	3/4"	3/4"	Sq. End	3-3/4"	6"	FM-305-24	FM-305-24-DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03	3-3/4"	6"	FM-305-24-030	FM-305-24-030-DLC	
	3/4"	3/4"	3/4"	0.06	3-3/4"	6"	FM-305-24-060	FM-305-24-060-DLC	
	3/4"	3/4"	3/4"	0.09	3-3/4"	6"	FM-305-24-090	FM-305-24-090-DLC	
	3/4"	3/4"	3/4"	0.12	3-3/4"	6"	FM-305-24-120	FM-305-24-120-DLC	
	3/4"	3/4"	3/4"	Ball End	3-3/4"	6"	FM-305-24-BN	FM-304-24-BN-DLC	

*Other Reach Lengths available upon request.

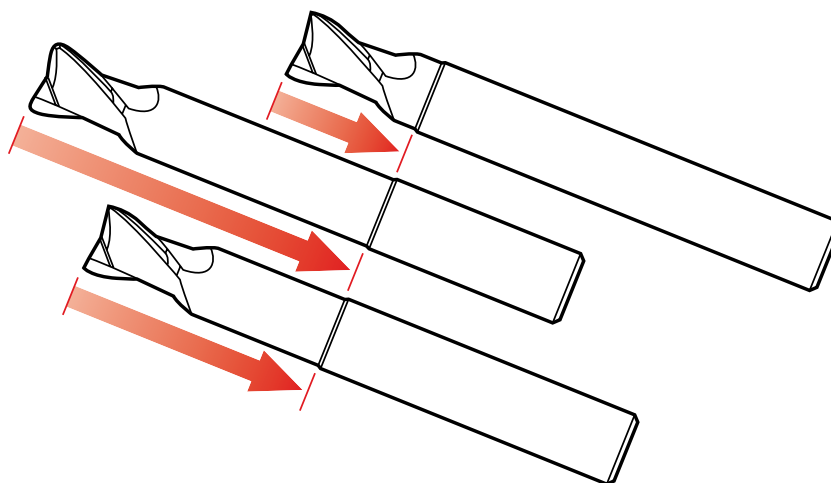


FM 3 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	1"	1"	1"	Sq. End	2"	6"	FM-301-32	FM-301-32-DLC	1" DIAMETER
	1"	1"	1"	0.03"	2"	6"	FM-301-32-030	FM-301-32-030-DLC	
	1"	1"	1"	0.06"	2"	6"	FM-301-32-060	FM-301-32-060-DLC	
	1"	1"	1"	0.09"	2"	6"	FM-301-32-090	FM-301-32-090-DLC	
	1"	1"	1"	0.12"	2"	6"	FM-301-32-120	FM-301-32-120-DLC	
	1"	1"	1"	Ball End	2"	6"	FM-301-32-BN	FM-301-32-BN-DLC	
MEDIUM	1"	1"	1"	Sq. End	3"	6"	FM-302-32	FM-302-32-DLC	
	1"	1"	1"	0.03"	3"	6"	FM-302-32-030	FM-302-32-030-DLC	
	1"	1"	1"	0.06"	3"	6"	FM-302-32-060	FM-302-32-060-DLC	
	1"	1"	1"	0.09"	3"	6"	FM-302-32-090	FM-302-32-090-DLC	
	1"	1"	1"	0.12"	3"	6"	FM-302-32-120	FM-302-32-120-DLC	
	1"	1"	1"	Ball End	3"	6"	FM-302-32-BN	FM-302-32-BN-DLC	
LONG	1"	1"	1"	Sq. End	3-1/2"	6"	FM-303-32	FM-303-32-DLC	
	1"	1"	1"	0.03"	3-1/2"	6"	FM-303-32-030	FM-303-32-030-DLC	
	1"	1"	1"	0.06"	3-1/2"	6"	FM-303-32-060	FM-303-32-060-DLC	
	1"	1"	1"	0.09"	3-1/2"	6"	FM-303-32-090	FM-303-32-090-DLC	
	1"	1"	1"	0.12"	3-1/2"	6"	FM-303-32-120	FM-303-32-120-DLC	
	1"	1"	1"	Ball End	3-1/2"	6"	FM-303-32-BN	FM-303-32-BN-DLC	
EXTRA LONG	1"	1"	1"	Sq. End	4"	6"	FM-304-32	FM-304-32-DLC	
	1"	1"	1"	0.03"	4"	6"	FM-304-32-030	FM-304-32-030-DLC	
	1"	1"	1"	0.06"	4"	6"	FM-304-32-060	FM-304-32-060-DLC	
	1"	1"	1"	0.09"	4"	6"	FM-304-32-090	FM-304-32-090-DLC	
	1"	1"	1"	0.12"	4"	6"	FM-304-32-120	FM-304-32-120-DLC	
	1"	1"	1"	Ball End	4"	6"	FM-304-32-BN	FM-304-32-BN-DLC	

*Other Reach Lengths available upon request.



Any neck length
available at same price!

FM SERIES SPEEDS & FEEDS

Tool Diameter	Typical Z-Depth	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
		RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
1/4"	0.1500	Max	0.0040	Max	0.0035	Max	0.0040	Max	0.0040
5/16"	0.1500	Max	0.0050	Max	0.0044	Max	0.0050	Max	0.0050
3/8"	3/16"	Max	0.0060	Max	0.0053	Max	0.0060	Max	0.0060
1/2"	0.2000	Max	0.0080	Max	0.0070	Max	0.0080	Max	0.0080
5/8"	0.2000	Max	0.0100	Max	0.0088	Max	0.0100	Max	0.0100
3/4"	1/4"	Max	0.0120	Max	0.0105	Max	0.0120	Max	0.0120
1	1/4"	Max	0.0160	Max	0.0140	Max	0.0160	Max	0.0160

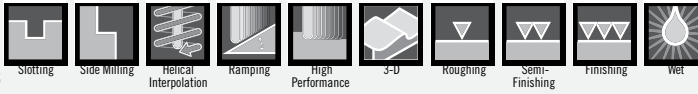
Z-Depth of cut per pass should be deeper than the corner radius to help reduce chatter

MFM Metric 2 Flute High Performance Tools for Aluminum

Characteristics



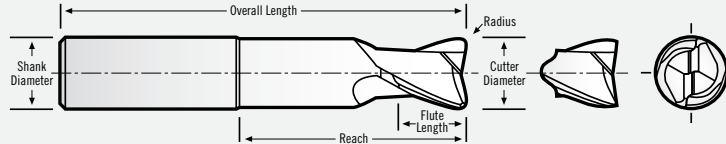
Applications



Materials



Coatings



MFM Series Tolerances:

Cutting Dia. = $-0.018/-0.038$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 Flute Length (<10D) = $+0.750/-0.000$ mm
 (>10D) = $+1.500/-0.000$ mm
 OAL = ± 10 mm

MFM Series comes with
Mirror Edge!
 for Chatter Reduction

Eliminate
 Tool Pull Out!
 ALL Tools H4 Shank Tolerance
 up to 150% more gripping force
 Tightest in the Industry!



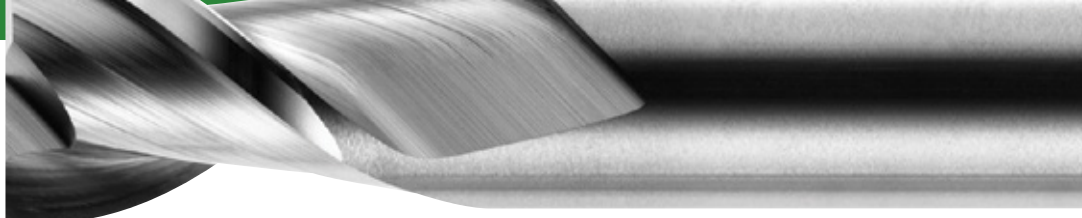
MFM 2 Flute Metric (Short to Long Reach) **METRIC**



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
S	6mm	6mm	7mm	Sq. End	12mm	75mm	MFM-201-06	MFM-201-06-DLC	6 mm DIAMETER
	6mm	6mm	7mm	0.5mm	12mm	75mm	MFM-201-06-050	MFM-201-06-050-DLC	
	6mm	6mm	7mm	1.0mm	12mm	75mm	MFM-201-06-100	MFM-201-06-100-DLC	
	6mm	6mm	7mm	Ball End	12mm	75mm	MFM-201-06-BN	MFM-201-06-BN-DLC	
M	6mm	6mm	7mm	Sq. End	18mm	75mm	MFM-202-06	MFM-202-06-DLC	
	6mm	6mm	7mm	0.5mm	18mm	75mm	MFM-202-06-050	MFM-202-06-050-DLC	
	6mm	6mm	7mm	1.0mm	18mm	75mm	MFM-202-06-100	MFM-202-06-100-DLC	
	6mm	6mm	7mm	Ball End	18mm	75mm	MFM-202-06-BN	MFM-202-06-BN-DLC	
L	6mm	6mm	7mm	Sq. End	24mm	75mm	MFM-203-06	MFM-203-06-DLC	
	6mm	6mm	7mm	0.5mm	24mm	75mm	MFM-203-06-050	MFM-203-06-050-DLC	
	6mm	6mm	7mm	1.0mm	24mm	75mm	MFM-203-06-100	MFM-203-06-100-DLC	
	6mm	6mm	7mm	Ball End	24mm	75mm	MFM-203-06-BN	MFM-203-06-BN-DLC	
XL	6mm	6mm	7mm	Sq. End	30mm	75mm	MFM-204-06	MFM-204-06-DLC	
	6mm	6mm	7mm	0.5mm	30mm	75mm	MFM-204-06-050	MFM-204-06-050-DLC	
	6mm	6mm	7mm	1.0mm	30mm	75mm	MFM-204-06-100	MFM-204-06-100-DLC	
	6mm	6mm	7mm	Ball End	30mm	75mm	MFM-204-06-BN	MFM-204-06-BN-DLC	
SHORT	8mm	8mm	9mm	Sq. End	16mm	80mm	MFM-201-08	MFM-201-08-DLC	8 mm DIAMETER
	8mm	8mm	9mm	1.0mm	16mm	80mm	MFM-201-08-100	MFM-201-08-100-DLC	
	8mm	8mm	9mm	2.0mm	16mm	80mm	MFM-201-08-200	MFM-201-08-200-DLC	
	8mm	8mm	9mm	2.5mm	16mm	80mm	MFM-201-08-250	MFM-201-08-250-DLC	
	8mm	8mm	9mm	Ball End	16mm	80mm	MFM-201-08-BN	MFM-201-08-BN-DLC	
MED	8mm	8mm	9mm	Sq. End	24mm	80mm	MFM-202-08	MFM-202-08-DLC	
	8mm	8mm	9mm	1.0mm	24mm	80mm	MFM-202-08-100	MFM-202-08-100-DLC	
	8mm	8mm	9mm	2.0mm	24mm	80mm	MFM-202-08-200	MFM-202-08-200-DLC	
	8mm	8mm	9mm	2.5mm	24mm	80mm	MFM-202-08-250	MFM-202-08-250-DLC	
	8mm	8mm	9mm	Ball End	24mm	80mm	MFM-202-08-BN	MFM-202-08-BN-DLC	
LONG	8mm	8mm	9mm	Sq. End	32mm	80mm	MFM-203-08	MFM-203-08-DLC	
	8mm	8mm	9mm	1.0mm	32mm	80mm	MFM-203-08-100	MFM-203-08-100-DLC	
	8mm	8mm	9mm	2.0mm	32mm	80mm	MFM-203-08-200	MFM-203-08-200-DLC	
	8mm	8mm	9mm	2.5mm	32mm	80mm	MFM-203-08-250	MFM-203-08-250-DLC	
	8mm	8mm	9mm	Ball End	32mm	80mm	MFM-203-08-BN	MFM-203-08-BN-DLC	
X LONG	8mm	8mm	9mm	Sq. End	40mm	80mm	MFM-204-08	MFM-204-08-DLC	
	8mm	8mm	9mm	1.0mm	40mm	80mm	MFM-204-08-100	MFM-204-08-100-DLC	
	8mm	8mm	9mm	2.0mm	40mm	80mm	MFM-204-08-200	MFM-204-08-200-DLC	
	8mm	8mm	9mm	2.5mm	40mm	80mm	MFM-204-08-250	MFM-204-08-250-DLC	
	8mm	8mm	9mm	Ball End	40mm	80mm	MFM-204-08-BN	MFM-204-08-BN-DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

**MFM 2 Flute Metric (Short to Long Reach)****METRIC**

— continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
S	10mm	10mm	11mm	Sq. End	20mm	100mm	MFM-201-10	MFM-201-10-DLC	10 mm DIAMETER
	10mm	10mm	11mm	1.5mm	20mm	100mm	MFM-201-10-150	MFM-201-10-150-DLC	
	10mm	10mm	11mm	2.5mm	20mm	100mm	MFM-201-10-250	MFM-201-10-250-DLC	
	10mm	10mm	11mm	Ball End	20mm	100mm	MFM-201-10-BN	MFM-201-10-BN-DLC	
M	10mm	10mm	11mm	Sq. End	30mm	100mm	MFM-202-10	MFM-202-10-DLC	
	10mm	10mm	11mm	1.5mm	30mm	100mm	MFM-202-10-150	MFM-202-10-150-DLC	
	10mm	10mm	11mm	2.5mm	30mm	100mm	MFM-202-10-250	MFM-202-10-250-DLC	
	10mm	10mm	11mm	Ball End	30mm	100mm	MFM-202-10-BN	MFM-202-10-BN-DLC	
L	10mm	10mm	11mm	Sq. End	40mm	100mm	MFM-203-10	MFM-203-10-DLC	
	10mm	10mm	11mm	1.5mm	40mm	100mm	MFM-203-10-150	MFM-203-10-150-DLC	
	10mm	10mm	11mm	2.5mm	40mm	100mm	MFM-203-10-250	MFM-203-10-250-DLC	
	10mm	10mm	11mm	Ball End	40mm	100mm	MFM-203-10-BN	MFM-203-10-BN-DLC	
XL	10mm	10mm	11mm	Sq. End	50mm	100mm	MFM-204-10	MFM-204-10-DLC	
	10mm	10mm	11mm	1.5mm	50mm	100mm	MFM-204-10-150	MFM-204-10-150-DLC	
	10mm	10mm	11mm	2.5mm	50mm	100mm	MFM-204-10-250	MFM-204-10-250-DLC	
	10mm	10mm	11mm	Ball End	50mm	100mm	MFM-204-10-BN	MFM-204-10-BN-DLC	
S	12mm	12mm	13mm	Sq. End	24mm	110mm	MFM-201-12	MFM-201-12-DLC	12 mm DIAMETER
	12mm	12mm	13mm	1.5mm	24mm	110mm	MFM-201-12-150	MFM-201-12-150-DLC	
	12mm	12mm	13mm	2.5mm	24mm	110mm	MFM-201-12-250	MFM-201-12-250-DLC	
	12mm	12mm	13mm	4.0mm	24mm	110mm	MFM-201-12-400	MFM-201-12-400-DLC	
	12mm	12mm	13mm	Ball End	24mm	110mm	MFM-201-12-BN	MFM-201-12-BN-DLC	
M	12mm	12mm	13mm	Sq. End	36mm	110mm	MFM-202-12	MFM-202-12-DLC	
	12mm	12mm	13mm	1.5mm	36mm	110mm	MFM-202-12-150	MFM-202-12-150-DLC	
	12mm	12mm	13mm	2.5mm	36mm	110mm	MFM-202-12-250	MFM-202-12-250-DLC	
	12mm	12mm	13mm	4.0mm	36mm	110mm	MFM-202-12-400	MFM-202-12-400-DLC	
	12mm	12mm	13mm	Ball End	36mm	110mm	MFM-202-12-BN	MFM-202-12-BN-DLC	
L	12mm	12mm	13mm	Sq. End	48mm	110mm	MFM-203-12	MFM-203-12-DLC	
	12mm	12mm	13mm	1.5mm	48mm	110mm	MFM-203-12-150	MFM-203-12-150-DLC	
	12mm	12mm	13mm	2.5mm	48mm	110mm	MFM-203-12-250	MFM-203-12-250-DLC	
	12mm	12mm	13mm	4.0mm	48mm	110mm	MFM-203-12-400	MFM-203-12-400-DLC	
	12mm	12mm	13mm	Ball End	48mm	110mm	MFM-203-12-BN	MFM-203-12-BN-DLC	
XL	12mm	12mm	13mm	Sq. End	60mm	110mm	MFM-204-12	MFM-204-12-DLC	
	12mm	12mm	13mm	1.5mm	60mm	110mm	MFM-204-12-150	MFM-204-12-150-DLC	
	12mm	12mm	13mm	2.5mm	60mm	110mm	MFM-204-12-250	MFM-204-12-250-DLC	
	12mm	12mm	13mm	4.0mm	60mm	110mm	MFM-204-12-400	MFM-204-12-400-DLC	
	12mm	12mm	13mm	Ball End	60mm	110mm	MFM-204-12-BN	MFM-204-12-BN-DLC	
SHORT	16mm	16mm	17mm	Sq. End	32mm	130mm	MFM-201-16	MFM-201-16-DLC	16 mm DIAMETER
	16mm	16mm	17mm	2.0mm	32mm	130mm	MFM-201-16-200	MFM-201-16-200-DLC	
	16mm	16mm	17mm	2.5mm	32mm	130mm	MFM-201-16-250	MFM-201-16-250-DLC	
	16mm	16mm	17mm	3.0mm	32mm	130mm	MFM-201-16-300	MFM-201-16-300-DLC	
	16mm	16mm	17mm	4.0mm	32mm	130mm	MFM-201-16-400	MFM-201-16-400-DLC	
MEDIUM	16mm	16mm	17mm	Ball End	32mm	130mm	MFM-201-16-BN	MFM-201-16-BN-DLC	
	16mm	16mm	17mm	Sq. End	48mm	130mm	MFM-202-16	MFM-202-16-DLC	
	16mm	16mm	17mm	2.0mm	48mm	130mm	MFM-202-16-200	MFM-202-16-200-DLC	
	16mm	16mm	17mm	2.5mm	48mm	130mm	MFM-202-16-250	MFM-202-16-250-DLC	
	16mm	16mm	17mm	3.0mm	48mm	130mm	MFM-202-16-300	MFM-202-16-300-DLC	
LONG	16mm	16mm	17mm	4.0mm	48mm	130mm	MFM-202-16-400	MFM-202-16-400-DLC	
	16mm	16mm	17mm	Ball End	48mm	130mm	MFM-202-16-BN	MFM-202-16-BN-DLC	
	16mm	16mm	17mm	Sq. End	64mm	130mm	MFM-203-16	MFM-203-16-DLC	
	16mm	16mm	17mm	2.0mm	64mm	130mm	MFM-203-16-200	MFM-203-16-200-DLC	
	16mm	16mm	17mm	2.5mm	64mm	130mm	MFM-203-16-250	MFM-203-16-250-DLC	
	16mm	16mm	17mm	3.0mm	64mm	130mm	MFM-203-16-300	MFM-203-16-300-DLC	
	16mm	16mm	17mm	4.0mm	64mm	130mm	MFM-203-16-400	MFM-203-16-400-DLC	
	16mm	16mm	17mm	Ball End	64mm	130mm	MFM-203-16-BN	MFM-203-16-BN-DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

MFM Metric 2 Flute High Performance Tools for Aluminum



MFM 2 Flute Metric (Short to Long Reach) **METRIC** — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
X LONG	16mm	16mm	17mm	Sq. End	80mm	130mm	MFM-204-16	MFM-204-16-DLC	16 mm DIAMETER
	16mm	16mm	17mm	2.0mm	80mm	130mm	MFM-204-16-200	MFM-204-16-200-DLC	
	16mm	16mm	17mm	2.5mm	80mm	130mm	MFM-204-16-250	MFM-204-16-250-DLC	
	16mm	16mm	17mm	3.0mm	80mm	130mm	MFM-204-16-300	MFM-204-16-300-DLC	
	16mm	16mm	17mm	4.0mm	80mm	130mm	MFM-204-16-400	MFM-204-16-400-DLC	
	16mm	16mm	17mm	Ball End	80mm	130mm	MFM-204-16-BN	MFM-204-16-BN-DLC	
SHORT	20mm	20mm	21mm	Sq. End	40mm	150mm	MFM-201-20	MFM-201-20-DLC	20 mm DIAMETER
	20mm	20mm	21mm	2.0mm	40mm	150mm	MFM-201-20-200	MFM-201-20-200-DLC	
	20mm	20mm	21mm	2.5mm	40mm	150mm	MFM-201-20-250	MFM-201-20-250-DLC	
	20mm	20mm	21mm	3.0mm	40mm	150mm	MFM-201-20-300	MFM-201-20-300-DLC	
	20mm	20mm	21mm	4.0mm	40mm	150mm	MFM-201-20-400	MFM-201-20-400-DLC	
	20mm	20mm	21mm	Ball End	40mm	150mm	MFM-201-20-BN	MFM-201-20-BN-DLC	
MEDIUM	20mm	20mm	21mm	Sq. End	60mm	150mm	MFM-202-20	MFM-202-20-DLC	20 mm DIAMETER
	20mm	20mm	21mm	2.0mm	60mm	150mm	MFM-202-20-200	MFM-202-20-200-DLC	
	20mm	20mm	21mm	2.5mm	60mm	150mm	MFM-202-20-250	MFM-202-20-250-DLC	
	20mm	20mm	21mm	3.0mm	60mm	150mm	MFM-202-20-300	MFM-202-20-300-DLC	
	20mm	20mm	21mm	4.0mm	60mm	150mm	MFM-202-20-400	MFM-202-20-400-DLC	
	20mm	20mm	21mm	Ball End	60mm	150mm	MFM-202-20-BN	MFM-202-20-BN-DLC	
LONG	20mm	20mm	21mm	Sq. End	80mm	150mm	MFM-203-20	MFM-203-20-DLC	20 mm DIAMETER
	20mm	20mm	21mm	2.0mm	80mm	150mm	MFM-203-20-200	MFM-203-20-200-DLC	
	20mm	20mm	21mm	2.5mm	80mm	150mm	MFM-203-20-250	MFM-203-20-250-DLC	
	20mm	20mm	21mm	3.0mm	80mm	150mm	MFM-203-20-300	MFM-203-20-300-DLC	
	20mm	20mm	21mm	4.0mm	80mm	150mm	MFM-203-20-400	MFM-203-20-400-DLC	
	20mm	20mm	21mm	Ball End	80mm	150mm	MFM-203-20-BN	MFM-203-20-BN-DLC	
X LONG	20mm	20mm	21mm	Sq. End	100mm	150mm	MFM-204-20	MFM-204-20-DLC	20 mm DIAMETER
	20mm	20mm	21mm	2.0mm	100mm	150mm	MFM-204-20-200	MFM-204-20-200-DLC	
	20mm	20mm	21mm	2.5mm	100mm	150mm	MFM-204-20-250	MFM-204-20-250-DLC	
	20mm	20mm	21mm	3.0mm	100mm	150mm	MFM-204-20-300	MFM-204-20-300-DLC	
	20mm	20mm	21mm	4.0mm	100mm	150mm	MFM-204-20-400	MFM-204-20-400-DLC	
	20mm	20mm	21mm	Ball End	100mm	150mm	MFM-204-20-BN	MFM-204-20-BN-DLC	
S	25mm	25mm	26mm	Sq. End	50mm	165mm	MFM-201-25	MFM-201-25-DLC	25 mm DIAMETER
	25mm	25mm	26mm	2.5mm	50mm	165mm	MFM-201-25-250	MFM-201-25-250-DLC	
	25mm	25mm	26mm	4.0mm	50mm	165mm	MFM-201-25-400	MFM-201-25-400-DLC	
	25mm	25mm	26mm	Ball End	50mm	165mm	MFM-201-25-BN	MFM-201-25-BN-DLC	
M	25mm	25mm	26mm	Sq. End	75mm	165mm	MFM-202-25	MFM-202-25-DLC	25 mm DIAMETER
	25mm	25mm	26mm	2.5mm	75mm	165mm	MFM-202-25-250	MFM-202-25-250-DLC	
	25mm	25mm	26mm	4.0mm	75mm	165mm	MFM-202-25-400	MFM-202-25-400-DLC	
	25mm	25mm	26mm	Ball End	75mm	165mm	MFM-202-25-BN	MFM-202-25-BN-DLC	
XL	25mm	25mm	26mm	Sq. End	100mm	165mm	MFM-204-25	MFM-204-25-DLC	25 mm DIAMETER
	25mm	25mm	26mm	2.5mm	100mm	165mm	MFM-204-25-250	MFM-204-25-250-DLC	
	25mm	25mm	26mm	4.0mm	100mm	165mm	MFM-204-25-400	MFM-204-25-400-DLC	
	25mm	25mm	26mm	Ball End	100mm	165mm	MFM-204-25-BN	MFM-204-25-BN-DLC	

MFM SERIES SPEEDS & FEEDS

Tool Diameter	Typical Z-Depth	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
		RPM	CLPT	RPM	CLPT	RPM	CLPT	RPM	CLPT
6mm	4mm	Max	0.096mm	Max	0.084mm	Max	0.096mm	Max	0.096mm
8mm	4mm	Max	0.128mm	Max	0.112mm	Max	0.128mm	Max	0.128mm
10mm	5mm	Max	0.16mm	Max	0.14mm	Max	0.16mm	Max	0.16mm
12mm	5mm	Max	0.192mm	Max	0.168mm	Max	0.192mm	Max	0.192mm
16mm	5mm	Max	0.256mm	Max	0.224mm	Max	0.256mm	Max	0.256mm
20mm	6.5mm	Max	0.32mm	Max	0.28mm	Max	0.32mm	Max	0.32mm
25mm	6.5mm	Max	0.4mm	Max	0.35mm	Max	0.4mm	Max	0.4mm

Z-Depth of cut per pass should be deeper than the corner radius to help reduce chatter

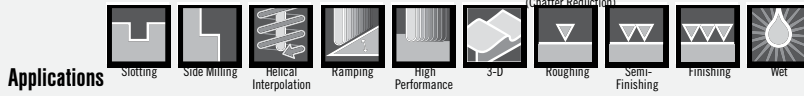
Metric 3 Flute High Performance Tools for Aluminum

MFM

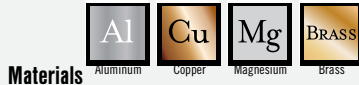
Aluminum



Characteristics



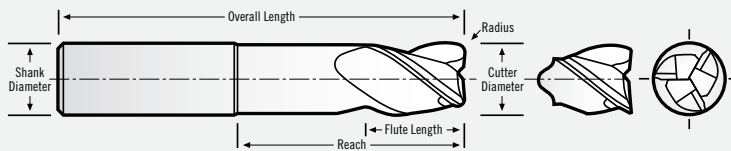
Applications



Materials



Coatings



MFM Series Tolerances:

Cutting Dia. = $-0,018/-0,038$ mm
 Shank Dia. = $-0,002/-0,005$ mm
 Flute Length (<10D) = $+0,750/-0,000$ mm
 (>10D) = $+1,500/-0,000$ mm
 OAL = $+/- 1,000$ mm

MFM Series
 Comes with
Mirror Edge
 for
**Chatter
 Reduction**



**Eliminate
 Tool Pull Out!**
 ALL Tools h4 Shank Tolerance
 up to 150% more gripping force
**Tightest in the
 Industry!**



MFM 3 Flute Metric (Short to Long Reach)



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
S	6mm	6mm	7mm	Sq. End	12mm	75mm	MFM-301-06	MFM-301-06-DLC	6 mm DIAMETER
	6mm	6mm	7mm	0.5mm	12mm	75mm	MFM-301-06-050	MFM-301-06-050-DLC	
	6mm	6mm	7mm	1.0mm	12mm	75mm	MFM-301-06-100	MFM-301-06-100-DLC	
	6mm	6mm	7mm	Ball End	12mm	75mm	MFM-301-06-BN	MFM-301-06-BN-DLC	
M	6mm	6mm	7mm	Sq. End	18mm	75mm	MFM-302-06	MFM-302-06-DLC	
	6mm	6mm	7mm	0.5mm	18mm	75mm	MFM-302-06-050	MFM-302-06-050-DLC	
	6mm	6mm	7mm	1.0mm	18mm	75mm	MFM-302-06-100	MFM-302-06-100-DLC	
	6mm	6mm	7mm	Ball End	18mm	75mm	MFM-302-06-BN	MFM-302-06-BN-DLC	
L	6mm	6mm	7mm	Sq. End	24mm	75mm	MFM-303-06	MFM-303-06-DLC	
	6mm	6mm	7mm	0.5mm	24mm	75mm	MFM-303-06-050	MFM-303-06-050-DLC	
	6mm	6mm	7mm	1.0mm	24mm	75mm	MFM-303-06-100	MFM-303-06-100-DLC	
	6mm	6mm	7mm	Ball End	24mm	75mm	MFM-303-06-BN	MFM-303-06-BN-DLC	
XL	6mm	6mm	7mm	Sq. End	30mm	75mm	MFM-304-06	MFM-304-06-DLC	
	6mm	6mm	7mm	0.5mm	30mm	75mm	MFM-304-06-050	MFM-304-06-050-DLC	
	6mm	6mm	7mm	1.0mm	30mm	75mm	MFM-304-06-100	MFM-304-06-100-DLC	
	6mm	6mm	7mm	Ball End	30mm	75mm	MFM-304-06-BN	MFM-304-06-BN-DLC	
SHORT	8mm	8mm	9mm	Sq. End	16mm	80mm	MFM-301-08	MFM-301-08-DLC	8 mm DIAMETER
	8mm	8mm	9mm	1.0mm	16mm	80mm	MFM-301-08-100	MFM-301-08-100-DLC	
	8mm	8mm	9mm	2.0mm	16mm	80mm	MFM-301-08-200	MFM-301-08-200-DLC	
	8mm	8mm	9mm	2.5mm	16mm	80mm	MFM-301-08-250	MFM-301-08-250-DLC	
	8mm	8mm	9mm	Ball End	16mm	80mm	MFM-301-08-BN	MFM-301-08-BN-DLC	
MED	8mm	8mm	9mm	Sq. End	24mm	80mm	MFM-302-08	MFM-302-08-DLC	
	8mm	8mm	9mm	1.0mm	24mm	80mm	MFM-302-08-100	MFM-302-08-100-DLC	
	8mm	8mm	9mm	2.0mm	24mm	80mm	MFM-302-08-200	MFM-302-08-200-DLC	
	8mm	8mm	9mm	2.5mm	24mm	80mm	MFM-302-08-250	MFM-302-08-250-DLC	
	8mm	8mm	9mm	Ball End	24mm	80mm	MFM-302-08-BN	MFM-302-08-BN-DLC	
LONG	8mm	8mm	9mm	Sq. End	32mm	80mm	MFM-303-08	MFM-303-08-DLC	
	8mm	8mm	9mm	1.0mm	32mm	80mm	MFM-303-08-100	MFM-303-08-100-DLC	
	8mm	8mm	9mm	2.0mm	32mm	80mm	MFM-303-08-200	MFM-303-08-200-DLC	
	8mm	8mm	9mm	2.5mm	32mm	80mm	MFM-303-08-250	MFM-303-08-250-DLC	
	8mm	8mm	9mm	Ball End	32mm	80mm	MFM-303-08-BN	MFM-303-08-BN-DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

MFM Metric 3 Flute High Performance Tools for Aluminum

MFM 3 Flute (Short to Long Reach) — continued



	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
X LONG	8mm	8mm	9mm	Sq. End	40mm	80mm	MFM-304-08	MFM-304-08-DLC	8 mm DIAMETER
	8mm	8mm	9mm	1.0mm	40mm	80mm	MFM-304-08-100	MFM-304-08-100-DLC	
	8mm	8mm	9mm	2.0mm	40mm	80mm	MFM-304-08-200	MFM-304-08-200-DLC	
	8mm	8mm	9mm	2.5mm	40mm	80mm	MFM-304-08-250	MFM-304-08-250-DLC	
	8mm	8mm	9mm	Ball End	40mm	80mm	MFM-304-08-BN	MFM-304-08-BN-DLC	
S M L XL	10mm	10mm	11mm	Sq. End	20mm		MFM-301-10	MFM-301-10-DLC	10 mm DIAMETER
	10mm	10mm	11mm	1.5mm	20mm	100mm	MFM-301-10-150	MFM-301-10-150-DLC	
	10mm	10mm	11mm	2.5mm	20mm	100mm	MFM-301-10-250	MFM-301-10-250-DLC	
	10mm	10mm	11mm	Ball End	20mm	100mm	MFM-301-10-BN	MFM-301-10-BN-DLC	
	10mm	10mm	11mm	Sq. End	30mm	100mm	MFM-302-10	MFM-302-10-DLC	
	10mm	10mm	11mm	1.5mm	30mm	100mm	MFM-302-10-150	MFM-302-10-150-DLC	
	10mm	10mm	11mm	2.5mm	30mm	100mm	MFM-302-10-250	MFM-302-10-250-DLC	
	10mm	10mm	11mm	Ball End	30mm	100mm	MFM-302-10-BN	MFM-302-10-BN-DLC	
	10mm	10mm	11mm	Sq. End	40mm	100mm	MFM-303-10	MFM-303-10-DLC	
	10mm	10mm	11mm	1.5mm	40mm	100mm	MFM-303-10-150	MFM-303-10-150-DLC	
S M L XL	12mm	12mm	13mm	Sq. End	24mm	110mm	MFM-301-12	MFM-301-12-DLC	12 mm DIAMETER
	12mm	12mm	13mm	1.5mm	24mm	110mm	MFM-301-12-150	MFM-301-12-150-DLC	
	12mm	12mm	13mm	2.5mm	24mm	110mm	MFM-301-12-250	MFM-301-12-250-DLC	
	12mm	12mm	13mm	4.0mm	24mm	110mm	MFM-301-12-400	MFM-301-12-400-DLC	
	12mm	12mm	13mm	Ball End	24mm	110mm	MFM-301-12-BN	MFM-301-12-BN-DLC	
	12mm	12mm	13mm	Sq. End	36mm	110mm	MFM-302-12	MFM-302-12-DLC	
	12mm	12mm	13mm	1.5mm	36mm	110mm	MFM-302-12-150	MFM-302-12-150-DLC	
	12mm	12mm	13mm	2.5mm	36mm	110mm	MFM-302-12-250	MFM-302-12-250-DLC	
	12mm	12mm	13mm	4.0mm	36mm	110mm	MFM-302-12-400	MFM-302-12-400-DLC	
	12mm	12mm	13mm	Ball End	36mm	110mm	MFM-302-12-BN	MFM-302-12-BN-DLC	
S M L XL	12mm	12mm	13mm	Sq. End	48mm	110mm	MFM-303-12	MFM-303-12-DLC	12 mm DIAMETER
	12mm	12mm	13mm	1.5mm	48mm	110mm	MFM-303-12-150	MFM-303-12-150-DLC	
	12mm	12mm	13mm	2.5mm	48mm	110mm	MFM-303-12-250	MFM-303-12-250-DLC	
	12mm	12mm	13mm	4.0mm	48mm	110mm	MFM-303-12-400	MFM-303-12-400-DLC	
	12mm	12mm	13mm	Ball End	48mm	110mm	MFM-303-12-BN	MFM-303-12-BN-DLC	
	12mm	12mm	13mm	Sq. End	60mm	110mm	MFM-304-12	MFM-304-12-DLC	
	12mm	12mm	13mm	1.5mm	60mm	110mm	MFM-304-12-150	MFM-304-12-150-DLC	
	12mm	12mm	13mm	2.5mm	60mm	110mm	MFM-304-12-250	MFM-304-12-250-DLC	
	12mm	12mm	13mm	4.0mm	60mm	110mm	MFM-304-12-400	MFM-304-12-400-DLC	
	12mm	12mm	13mm	Ball End	60mm	110mm	MFM-304-12-BN	MFM-304-12-BN-DLC	
SHORT MEDIUM LONG	16mm	16mm	17mm	Sq. End	32mm	130mm	MFM-301-16	MFM-301-16-DLC	16 mm DIAMETER
	16mm	16mm	17mm	2.0mm	32mm	130mm	MFM-301-16-200	MFM-301-16-200-DLC	
	16mm	16mm	17mm	2.5mm	32mm	130mm	MFM-301-16-250	MFM-301-16-250-DLC	
	16mm	16mm	17mm	3.0mm	32mm	130mm	MFM-301-16-300	MFM-301-16-300-DLC	
	16mm	16mm	17mm	4.0mm	32mm	130mm	MFM-301-16-400	MFM-301-16-400-DLC	
	16mm	16mm	17mm	Ball End	32mm	130mm	MFM-301-16-BN	MFM-301-16-BN-DLC	
	16mm	16mm	17mm	Sq. End	48mm	130mm	MFM-302-16	MFM-302-16-DLC	
	16mm	16mm	17mm	2.0mm	48mm	130mm	MFM-302-16-200	MFM-302-16-200-DLC	
	16mm	16mm	17mm	2.5mm	48mm	130mm	MFM-302-16-250	MFM-302-16-250-DLC	
	16mm	16mm	17mm	3.0mm	48mm	130mm	MFM-302-16-300	MFM-302-16-300-DLC	
	16mm	16mm	17mm	4.0mm	48mm	130mm	MFM-302-16-400	MFM-302-16-400-DLC	
	16mm	16mm	17mm	Ball End	48mm	130mm	MFM-302-16-BN	MFM-302-16-BN-DLC	
	16mm	16mm	17mm	Sq. End	64mm	130mm	MFM-303-16	MFM-303-16-DLC	
	16mm	16mm	17mm	2.0mm	64mm	130mm	MFM-303-16-200	MFM-303-16-200-DLC	
	16mm	16mm	17mm	2.5mm	64mm	130mm	MFM-303-16-250	MFM-303-16-250-DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

MFM 3 Flute (Short to Long Reach) — continued

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
LONG	16mm	16mm	17mm	3.0mm	64mm	130mm	MFM-303-16-300	MFM-303-16-300-DLC	16 mm DIAMETER
	16mm	16mm	17mm	4.0mm	64mm	130mm	MFM-303-16-400	MFM-303-16-400-DLC	
	16mm	16mm	17mm	Ball End	64mm	130mm	MFM-303-16-BN	MFM-303-16-BN-DLC	
	16mm	16mm	17mm	Sq. End	80mm	130mm	MFM-304-16	MFM-304-16-DLC	
	16mm	16mm	17mm	2.0mm	80mm	130mm	MFM-304-16-200	MFM-304-16-200-DLC	
	16mm	16mm	17mm	2.5mm	80mm	130mm	MFM-304-16-250	MFM-304-16-250-DLC	
	16mm	16mm	17mm	3.0mm	80mm	130mm	MFM-304-16-300	MFM-304-16-300-DLC	
	16mm	16mm	17mm	4.0mm	80mm	130mm	MFM-304-16-400	MFM-304-16-400-DLC	
X LONG	16mm	16mm	17mm	Ball End	80mm	130mm	MFM-304-16-BN	MFM-304-16-BN-DLC	20 mm DIAMETER
	20mm	20mm	21mm	Sq. End	40mm	150mm	MFM-301-20	MFM-301-20-DLC	
	20mm	20mm	21mm	2.0mm	40mm	150mm	MFM-301-20-200	MFM-301-20-200-DLC	
	20mm	20mm	21mm	2.5mm	40mm	150mm	MFM-301-20-250	MFM-301-20-250-DLC	
	20mm	20mm	21mm	3.0mm	40mm	150mm	MFM-301-20-300	MFM-301-20-300-DLC	
	20mm	20mm	21mm	4.0mm	40mm	150mm	MFM-301-20-400	MFM-301-20-400-DLC	
	20mm	20mm	21mm	Ball End	40mm	150mm	MFM-301-20-BN	MFM-301-20-BN-DLC	
	20mm	20mm	21mm	Sq. End	60mm	150mm	MFM-302-20	MFM-302-20-DLC	
MEDIUM	20mm	20mm	21mm	2.0mm	60mm	150mm	MFM-302-20-200	MFM-302-20-200-DLC	25 mm DIAMETER
	20mm	20mm	21mm	2.5mm	60mm	150mm	MFM-302-20-250	MFM-302-20-250-DLC	
	20mm	20mm	21mm	3.0mm	60mm	150mm	MFM-302-20-300	MFM-302-20-300-DLC	
	20mm	20mm	21mm	4.0mm	60mm	150mm	MFM-302-20-400	MFM-302-20-400-DLC	
	20mm	20mm	21mm	Ball End	60mm	150mm	MFM-302-20-BN	MFM-302-20-BN-DLC	
	20mm	20mm	21mm	Sq. End	80mm	150mm	MFM-303-20	MFM-303-20-DLC	
	20mm	20mm	21mm	2.0mm	80mm	150mm	MFM-303-20-200	MFM-303-20-200-DLC	
	20mm	20mm	21mm	2.5mm	80mm	150mm	MFM-303-20-250	MFM-303-20-250-DLC	
LONG	20mm	20mm	21mm	3.0mm	80mm	150mm	MFM-303-20-300	MFM-303-20-300-DLC	25 mm DIAMETER
	20mm	20mm	21mm	4.0mm	80mm	150mm	MFM-303-20-400	MFM-303-20-400-DLC	
	20mm	20mm	21mm	Ball End	80mm	150mm	MFM-303-20-BN	MFM-303-20-BN-DLC	
	20mm	20mm	21mm	Sq. End	100mm	150mm	MFM-304-20	MFM-304-20-DLC	
	20mm	20mm	21mm	2.0mm	100mm	150mm	MFM-304-20-200	MFM-304-20-200-DLC	
	20mm	20mm	21mm	2.5mm	100mm	150mm	MFM-304-20-250	MFM-304-20-250-DLC	
	20mm	20mm	21mm	3.0mm	100mm	150mm	MFM-304-20-300	MFM-304-20-300-DLC	
	20mm	20mm	21mm	4.0mm	100mm	150mm	MFM-304-20-400	MFM-304-20-400-DLC	
X LONG	20mm	20mm	21mm	Ball End	100mm	150mm	MFM-304-20-BN	MFM-304-20-BN-DLC	25 mm DIAMETER
	25mm	25mm	26mm	Sq. End	50mm	165mm	MFM-301-25	MFM-301-25-DLC	
	25mm	25mm	26mm	2.5mm	50mm	165mm	MFM-301-25-250	MFM-301-25-250-DLC	
	25mm	25mm	26mm	4.0mm	50mm	165mm	MFM-301-25-400	MFM-301-25-400-DLC	
	25mm	25mm	26mm	Ball End	50mm	165mm	MFM-301-25-BN	MFM-301-25-BN-DLC	
	25mm	25mm	26mm	Sq. End	75mm	165mm	MFM-302-25	MFM-302-25-DLC	
	25mm	25mm	26mm	2.5mm	75mm	165mm	MFM-302-25-250	MFM-302-25-250-DLC	
	25mm	25mm	26mm	4.0mm	75mm	165mm	MFM-302-25-400	MFM-302-25-400-DLC	
M	25mm	25mm	26mm	Ball End	75mm	165mm	MFM-302-25-BN	MFM-302-25-BN-DLC	25 mm DIAMETER
	25mm	25mm	26mm	Sq. End	100mm	165mm	MFM-304-25	MFM-304-25-DLC	
	25mm	25mm	26mm	2.5mm	100mm	165mm	MFM-304-25-250	MFM-304-25-250-DLC	
	25mm	25mm	26mm	4.0mm	100mm	165mm	MFM-304-25-400	MFM-304-25-400-DLC	
	25mm	25mm	26mm	Ball End	100mm	165mm	MFM-304-25-BN	MFM-304-25-BN-DLC	
	25mm	25mm	26mm	Sq. End	100mm	165mm	MFM-304-25	MFM-304-25-DLC	
	25mm	25mm	26mm	2.5mm	100mm	165mm	MFM-304-25-250	MFM-304-25-250-DLC	
	25mm	25mm	26mm	4.0mm	100mm	165mm	MFM-304-25-400	MFM-304-25-400-DLC	
XL	25mm	25mm	26mm	Ball End	100mm	165mm	MFM-304-25-BN	MFM-304-25-BN-DLC	25 mm DIAMETER

*Other Reach Lengths available upon request.

MFM SERIES SPEEDS & FEEDS

Tool Diameter	Typical Z-Depth	Aluminum 6061-T6		Aluminum 6061-T3		Aluminum 7075		Aluminum 2024	
		RPM	Chip Load per Tooth	RPM	Chip Load per Tooth	RPM	Chip Load per Tooth	RPM	Chip Load per Tooth
6mm	4mm	Max	0,096mm	Max	0,084mm	Max	0,096mm	Max	0,096mm
8mm	4mm	Max	0,128mm	Max	0,112mm	Max	0,128mm	Max	0,128mm
10mm	5mm	Max	0,16mm	Max	0,14mm	Max	0,16mm	Max	0,16mm
12mm	5mm	Max	0,192mm	Max	0,168mm	Max	0,192mm	Max	0,192mm
16mm	5mm	Max	0,256mm	Max	0,224mm	Max	0,256mm	Max	0,256mm
20mm	6.5mm	Max	0,32mm	Max	0,28mm	Max	0,32mm	Max	0,32mm
25mm	6.5mm	Max	0,4mm	Max	0,35mm	Max	0,4mm	Max	0,4mm

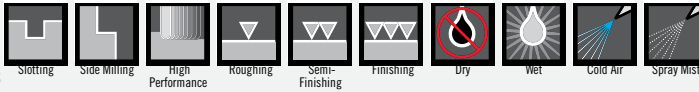
Z-Depth of cut per pass should be deeper than the corner radius to help reduce chatter

S1/MS1 C-2 Grade Carbide End Mills

Characteristics



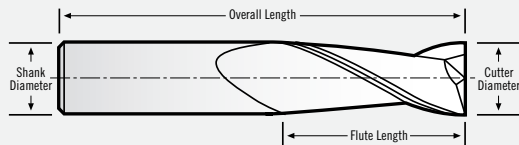
Applications



Materials



Coatings



S1 Tolerances

Cutting Dia. (1/16" to 1/4") = $+0.000/-0.002$
 (9/32" to 3/4") = $+0.000/-0.003$
 Shank Dia. = $-0.0001/-0.0002$
 Flute Length (1/16" to 5/16") = $+0.030/-0.000$
 (3/8" to 3/4") = $+0.060/-0.000$
 OAL = ± 0.060

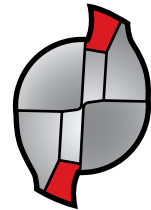
MS1 Tolerances

Cutting Dia. = $+0.000/-0.075$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 Flute Length = $+0.500/+1.500$ mm
 OAL = ± 10 mm



S1-201 2 Flute C-2 Grade Stub Length

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	1/8"	1-1/2"	S1-201-02	S1-201-02-DLC
3/32"	1/8"	3/16"	1-1/2"	S1-201-03	S1-201-03-DLC
1/8"	1/8"	1/4"	1-1/2"	S1-201-04	S1-201-04-DLC
3/16"	3/16"	3/8"	2"	S1-201-06	S1-201-06-DLC
1/4"	1/4"	1/2"	2"	S1-201-08	S1-201-08-DLC
5/16"	5/16"	1/2"	2-1/2"	S1-201-10	S1-201-10-DLC
3/8"	3/8"	5/8"	2-1/2"	S1-201-12	S1-201-12-DLC
7/16"	7/16"	5/8"	2-3/4"	S1-201-14	S1-201-14-DLC
1/2"	1/2"	5/8"	3"	S1-201-16	S1-201-16-DLC
5/8"	5/8"	7/8"	3-1/2"	S1-201-20	S1-201-20-DLC
3/4"	3/4"	1"	4"	S1-201-24	S1-201-24-DLC



MS1-201 Metric 2 Flute C-2 Grade Stub Length METRIC

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
2mm	3mm	5mm	38mm	MS1-201-02	MS1-201-02-DLC
3mm	3mm	6mm	38mm	MS1-201-03	MS1-201-03-DLC
4mm	4mm	8mm	50mm	MS1-201-04	MS1-201-04-DLC
5mm	5mm	8mm	50mm	MS1-201-05	MS1-201-05-DLC
6mm	6mm	8mm	50mm	MS1-201-06	MS1-201-06-DLC
8mm	8mm	12mm	58mm	MS1-201-08	MS1-201-08-DLC
10mm	10mm	14mm	66mm	MS1-201-10	MS1-201-10-DLC
12mm	12mm	16mm	73mm	MS1-201-12	MS1-201-12-DLC
16mm	16mm	20mm	82mm	MS1-201-16	MS1-201-16-DLC
20mm	20mm	25mm	92mm	MS1-201-20	MS1-201-20-DLC





S1-301 3 Flute C-2 Grade Stub Length



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	1/8"	1-1/2"	S1-301-02	S1-301-02-DLC
3/32"	1/8"	3/16"	1-1/2"	S1-301-03	S1-301-03-DLC
1/8"	1/8"	1/4"	1-1/2"	S1-301-04	S1-301-04-DLC
3/16"	3/16"	3/8"	2"	S1-301-06	S1-301-06-DLC
1/4"	1/4"	1/2"	2"	S1-301-08	S1-301-08-DLC
5/16"	5/16"	1/2"	2-1/2"	S1-301-10	S1-301-10-DLC
3/8"	3/8"	5/8"	2-1/2"	S1-301-12	S1-301-12-DLC
7/16"	7/16"	5/8"	2-3/4"	S1-301-14	S1-301-14-DLC
1/2"	1/2"	5/8"	3"	S1-301-16	S1-301-16-DLC



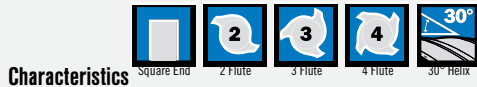
S1-401 4 Flute C-2 Grade Stub Length



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	1/8"	1-1/2"	S1-401-02	S1-401-02-DLC
3/32"	1/8"	3/16"	1-1/2"	S1-401-03	S1-401-03-DLC
1/8"	1/8"	1/4"	1-1/2"	S1-401-04	S1-401-04-DLC
3/16"	3/16"	3/8"	2"	S1-401-06	S1-401-06-DLC
1/4"	1/4"	1/2"	2"	S1-401-08	S1-401-08-DLC
5/16"	5/16"	1/2"	2-1/2"	S1-401-10	S1-401-10-DLC
3/8"	3/8"	5/8"	2-1/2"	S1-401-12	S1-401-12-DLC
7/16"	7/16"	5/8"	2-3/4"	S1-401-14	S1-401-14-DLC
1/2"	1/2"	5/8"	3"	S1-401-16	S1-401-16-DLC
5/8"	5/8"	7/8"	3-1/2"	S1-401-20	S1-401-20-DLC
3/4"	3/4"	1"	4"	S1-401-24	S1-401-24-DLC



C1/MC1 C-2 Grade Carbide End Mills



Characteristics



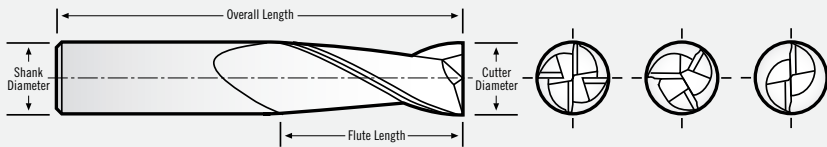
Applications



Materials



Coatings

**C1 Tolerances**

Cutting Dia. (1/16" to 1/4") = $+0.000/-0.002$
 (9/32" to 3/4") = $+0.000/-0.002$
 Shank Dia. = $-0.0001/-0.0002$
 Flute length (1/16" to 5/16") = $+0.030/-0.000$
 (3/8" to 3/4") = $+0.060/-0.000$
 OAL = ± 0.060

MC1 Tolerances

Cutting Dia. = $+0.000/-0.075$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 Flute Length = $+0.500/+1.500$ mm
 OAL = ± 10 mm



C1-201 2 Flute C-2 Grade Standard Length



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	3/16"	1-1/2"	C1-201-02	C1-201-02-DLC
3/32"	1/8"	3/8"	1-1/2"	C1-201-03	C1-201-03-DLC
1/8"	1/8"	1/2"	1-1/2"	C1-201-04	C1-201-04-DLC
5/32"	3/16"	9/16"	2"	C1-201-05	C1-201-05-DLC
3/16"	3/16"	5/8"	2"	C1-201-06	C1-201-06-DLC
7/32"	1/4"	5/8"	2-1/2"	C1-201-07	C1-201-07-DLC
1/4"	1/4"	3/4"	2-1/2"	C1-201-08	C1-201-08-DLC
9/32"	5/16"	3/4"	2-1/2"	C1-201-09	C1-201-09-DLC
5/16"	5/16"	13/16"	2-1/2"	C1-201-10	C1-201-10-DLC
3/8"	3/8"	7/8"	2-1/2"	C1-201-12	C1-201-12-DLC
7/16"	7/16"	1"	2-3/4"	C1-201-14	C1-201-14-DLC
1/2"	1/2"	1"	3"	C1-201-16	C1-201-16-DLC
9/16"	9/16"	1-1/4"	3-1/2"	C1-201-18	C1-201-18-DLC
5/8"	5/8"	1-1/4"	3-1/2"	C1-201-20	C1-201-20-DLC
3/4"	3/4"	1-1/2"	4"	C1-201-24	C1-201-24-DLC



MC1-201 Metric 2 Flute C-2 Grade Standard Length **METRIC**



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number	Tool Number DLC Coated
2mm	3mm	8mm	38mm	MC1-201-02	MC1-201-02-DLC
3mm	3mm	12mm	38mm	MC1-201-03	MC1-201-03-DLC
4mm	4mm	12mm	50mm	MC1-201-04	MC1-201-04-DLC
5mm	5mm	14mm	50mm	MC1-201-05	MC1-201-05-DLC
6mm	6mm	14mm	57mm	MC1-201-06	MC1-201-06-DLC
8mm	8mm	16mm	63mm	MC1-201-08	MC1-201-08-DLC
10mm	10mm	20mm	72mm	MC1-201-10	MC1-201-10-DLC
12mm	12mm	25mm	83mm	MC1-201-12	MC1-201-12-DLC
16mm	16mm	32mm	92mm	MC1-201-16	MC1-201-16-DLC
20mm	20mm	38mm	104mm	MC1-201-20	MC1-201-20-DLC
25mm	25mm	38mm	104mm	MC1-201-25	MC1-201-25-DLC



Side Milling



C1-301 3 Flute C-2 Grade Standard Length



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	3/16"	1-1/2"	C1-301-02	C1-301-02-DLC
3/32"	1/8"	3/8"	1-1/2"	C1-301-03	C1-301-03-DLC
1/8"	1/8"	1/2"	1-1/2"	C1-301-04	C1-301-04-DLC
5/32"	3/16"	9/16"	2"	C1-301-05	C1-301-05-DLC
3/16"	3/16"	5/8"	2"	C1-301-06	C1-301-06-DLC
7/32"	1/4"	5/8"	2-1/2"	C1-301-07	C1-301-07-DLC
1/4"	1/4"	3/4"	2-1/2"	C1-301-08	C1-301-08-DLC
9/32"	5/16"	3/4"	2-1/2"	C1-301-09	C1-301-09-DLC
5/16"	5/16"	13/16"	2-1/2"	C1-301-10	C1-301-10-DLC
3/8"	3/8"	7/8"	2-1/2"	C1-301-12	C1-301-12-DLC
7/16"	7/16"	1"	2-3/4"	C1-301-14	C1-301-14-DLC
1/2"	1/2"	1"	3"	C1-301-16	C1-301-16-DLC
9/16"	9/16"	1-1/4"	3-1/2"	C1-301-18	C1-301-18-DLC
5/8"	5/8"	1-1/4"	3-1/2"	C1-301-20	C1-301-20-DLC
3/4"	3/4"	1-1/2"	4"	C1-301-24	C1-301-24-DLC



MC1-301 Metric 3 Flute C-2 Grade Standard Length **METRIC**



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number	Tool Number DLC Coated
2mm	3mm	8mm	38mm	MC1-301-02	MC1-301-02-DLC
3mm	3mm	12mm	38mm	MC1-301-03	MC1-301-03-DLC
4mm	4mm	12mm	50mm	MC1-301-04	MC1-301-04-DLC
5mm	5mm	14mm	50mm	MC1-301-05	MC1-301-05-DLC
6mm	6mm	14mm	57mm	MC1-301-06	MC1-301-06-DLC
8mm	8mm	16mm	63mm	MC1-301-08	MC1-301-08-DLC
10mm	10mm	20mm	72mm	MC1-301-10	MC1-301-10-DLC
12mm	12mm	25mm	83mm	MC1-301-12	MC1-301-12-DLC
16mm	16mm	32mm	92mm	MC1-301-16	MC1-301-16-DLC
20mm	20mm	38mm	104mm	MC1-301-20	MC1-301-20-DLC
25mm	25mm	38mm	104mm	MC1-301-25	MC1-301-25-DLC



Side Milling



C1-401 4 Flute C-2 Grade Standard Length



Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number Uncoated	Tool Number DLC Coated
1/16"	1/8"	3/16"	1-1/2"	C1-401-02	C1-401-02-DLC
3/32"	1/8"	3/8"	1-1/2"	C1-401-03	C1-401-03-DLC
1/8"	1/8"	1/2"	1-1/2"	C1-401-04	C1-401-04-DLC
5/32"	3/16"	9/16"	2"	C1-401-05	C1-401-05-DLC
3/16"	3/16"	5/8"	2"	C1-401-06	C1-401-06-DLC
7/32"	1/4"	5/8"	2-1/2"	C1-401-07	C1-401-07-DLC
1/4"	1/4"	3/4"	2-1/2"	C1-401-08	C1-401-08-DLC
9/32"	5/16"	3/4"	2-1/2"	C1-401-09	C1-401-09-DLC
5/16"	5/16"	13/16"	2-1/2"	C1-401-10	C1-401-10-DLC
3/8"	3/8"	7/8"	2-1/2"	C1-401-12	C1-401-12-DLC
7/16"	7/16"	1"	2-3/4"	C1-401-14	C1-401-14-DLC
1/2"	1/2"	1"	3"	C1-401-16	C1-401-16-DLC
9/16"	9/16"	1-1/4"	3-1/2"	C1-401-18	C1-401-18-DLC
5/8"	5/8"	1-1/4"	3-1/2"	C1-401-20	C1-401-20-DLC
3/4"	3/4"	1-1/2"	4"	C1-401-24	C1-401-24-DLC

PM/MPM/PMD Tuffy Grade Carbide Router Bits



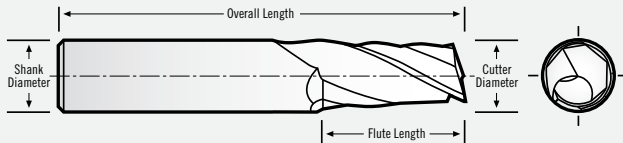
Characteristics



Applications



Materials

**PM/PMD Series Tolerances**

Cutting Dia. = $+0.000/-0.002$
 Shank Dia. = $-0.0001/-0.0002$
 Flute Length = $+0.060/-0.000$
 OAL = ± 0.060

MPM Tolerances

Cutting Dia. = $+0.000/-0.075$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 Flute Length = $+0.500/+1.500$ mm
 OAL = ± 10 mm

**PM Upshear 1 Flute Tuffy Grade**

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number
1/8"	1/8"	1/2"	2"	PM-104-04
1/8"	1/4"	1/2"	2"	PM-108-04
3/16"	3/16"	5/8"	2"	PM-106-06
3/16"	1/4"	5/8"	2"	PM-108-06
3/16"	1/4"	1-1/4"	3"	PM-108-06L
1/4"	1/4"	3/4"	2"	PM-108-08
1/4"	1/4"	1-1/2"	3"	PM-108-08L
3/8"	3/8"	1-1/4"	3"	PM-112-12
1/2"	1/2"	1-1/2"	4"	PM-116-16

**PMD Downshear 1 Flute Tuffy Grade**

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number
1/8"	1/4"	1/2"	2"	PMD-108-04
3/16"	1/4"	5/8"	2"	PMD-108-06
1/4"	1/4"	3/4"	2"	PMD-108-08

**MPM Upshear 1 Flute Tuffy Grade METRIC**

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number
4mm	3mm	12mm	50mm	MPM-104-04
6mm	4mm	12mm	50mm	MPM-106-04
6mm	6mm	14mm	50mm	MPM-106-05
6mm	6mm	14mm	57mm	MPM-106-06
8mm	8mm	22mm	63mm	MPM-108-08
10mm	10mm	25mm	72mm	MPM-110-10
12mm	12mm	25mm	83mm	MPM-112-12

Polished

Best Tool for Gummy/Soft Aluminum

Reduces Material Sticking to Tool



Router for Aluminum Aircraft Skins

WU1/WD1

Aluminum



Characteristics

Available with

Chatter Reduction with
Mirror Edge!



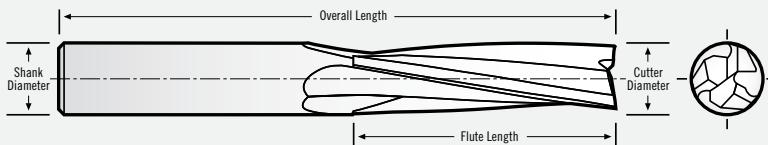
See Page 16



Applications



Materials



WU1/WD1 Tolerances

Cutting Dia. = .001/- .002
Shank Dia. = -.0001/- .0002
Flute Length (<5/16") = +.020/+ .030
(>5/16") = +.030/+ .060
OAL = ±.060



WU1-310 Upshear 3 Flute Standard Length (10° Helix)

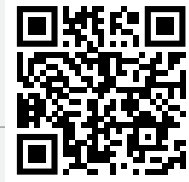
Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number
1/2"	1/2"	1-3/4"	4"	WU1-310-16
5/8"	5/8"	2"	4-5/8"	WU1-310-20
3/4"	3/4"	2-1/2"	5"	WU1-310-24



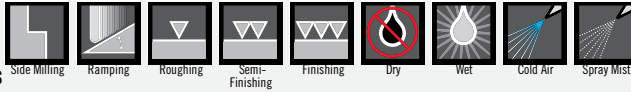
WD1-310 Downshear 3 Flute Standard Length (10° Helix)

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Tool Number
1/2"	1/2"	1-3/4"	4"	WD1-310-16
5/8"	5/8"	2"	4-5/8"	WD1-310-20
3/4"	3/4"	2-1/2"	5"	WD1-310-24

AIC/INS High Shear & Polished Insert Face Mill



Characteristics

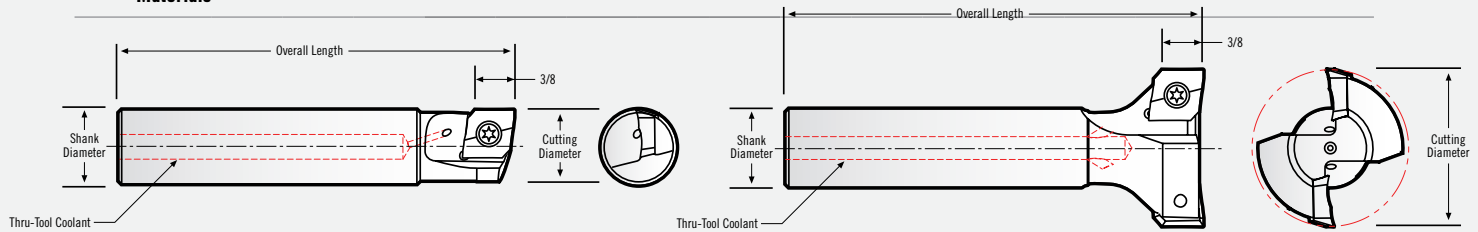


Applications



Materials

NEW!



FACEMILL BODY High Shear & Polished Face Mill

Cutting Diameter	Shank Diameter	Overall Length	# of Flutes	Max Ramp Angle	Part Number
1"	3/4"	4"	1	8°	AIC-101-32
1"	3/4"	6"	1	8°	AIC-102-32
1-1/4"	3/4"	4"	2	8°	AIC-201-1250
1-1/4"	1"	4"	2	8°	AIC-201-1250-1
1-1/4"	1"	6"	2	8°	AIC-202-1250
1-1/2"	3/4"	4"	2	5°	AIC-201-1500
1-1/2"	1"	4-1/2"	2	5°	AIC-202-1500
1-1/2"	1-1/4"	7"	2	5°	AIC-203-1500
2"	3/4"	4-1/2"	3	4°	AIC-301-2000
2"	1"	5"	3	4°	AIC-302-2000
2"	1-1/4"	7"	3	4°	AIC-303-2000
3"	3/4"	5"	4	None	AIC-402-3000
3"	1"	5"	4	None	AIC-402-3000-1
3"	1-1/4"	5"	4	None	AIC-402-3000-2
4"	1-1/4"	5"	4	None	AIC-401-4000
4-1/2"	1-1/4"	5-1/2"	5	None	AIC-501-4500

INSERT OPTIONS

CORNER RADIUS/CHAMFER

Corner Radius	Uncoated	DLC Coated
0.01	INS-AL-010	INS-AL-010-DLC
0.03	INS-AL-030	INS-AL-030-DLC
0.06	INS-AL-060	INS-AL-060-DLC
0.09	INS-AL-090	INS-AL-090-DLC
0.12	INS-AL-120	INS-AL-120-DLC
0.015 x 45° chamfer	INS-AL-015-45	INS-AL-015-45-DLC

INSERT SCREWS AND WRENCH

Feature	Part Number
3.5mm T15 screw	AIC-350-SCR
T15 Wrench	AIC-T15-WRCH

Face Mill bodies do not come with inserts.
Inserts must be purchased separately.

SPEED AND FEED INFO:

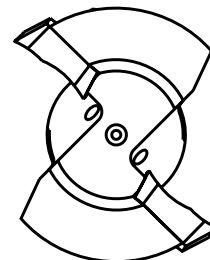
10,000 Max RPM

Roughing: .010-.017 Chipload per tooth

Finishing .001-.0025 Chipload per tooth

Typical roughing axial depth .150" (be careful not to max out machine) max axial depth .375"

Typical radial stepover 75% of diameter (be careful not to max out machine)





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FBD 2 Flute Flat Bottom Drills for Aluminum



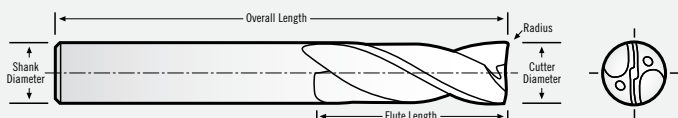
Characteristics



Applications



Materials



FBD Series Tolerances

Cutting Dia. = $+0.000/-0.001$ "
 Shank Dia. = $-0.0001/-0.0002$ "
 Flute Length = $+0.060/-0.000$ "
 OAL = ± 0.060 "



NEW!

180° Tip

FBD-201 2 Flute 2x Diameter Flat Bottom Drills

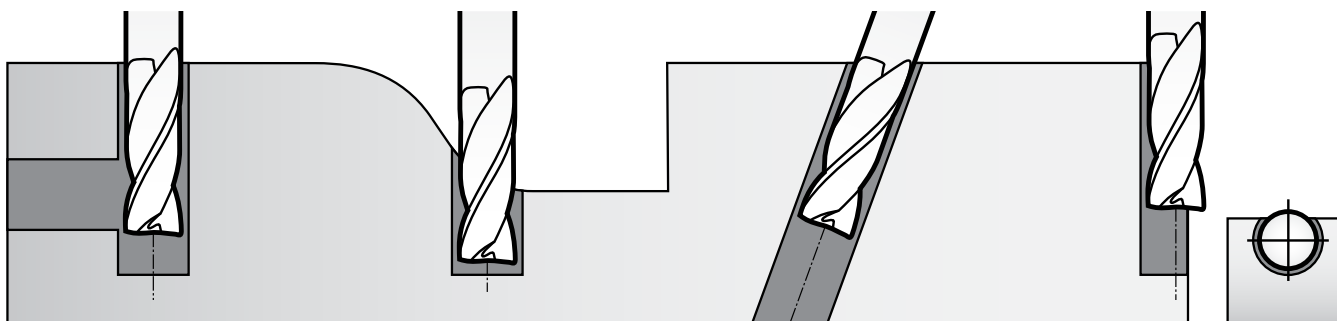
Cutting Diameter	Shank Diameter	Flute Length	Max Hole depth	Corner Radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
1/8"	1/8"	3/8"	1/4"	0.005	1-1/2"	FBD-201-04	FBD-201-04-DLC	FBD-201-04-TC	FBD-201-04-TC-DLC
3/16"	3/16"	9/16"	3/8"	0.01	2-1/2"	FBD-201-06	FBD-201-06-DLC	FBD-201-06-TC	FBD-201-06-TC-DLC
1/4"	1/4"	3/4"	1/2"	0.01	2-1/2"	FBD-201-08	FBD-201-08-DLC	FBD-201-08-TC	FBD-201-08-TC-DLC
5/16"	5/16"	15/16"	5/8"	0.02	2-1/2"	FBD-201-10	FBD-201-10-DLC	FBD-201-10-TC	FBD-201-10-TC-DLC
3/8"	3/8"	1-1/8"	3/4"	0.02	3"	FBD-201-12	FBD-201-12-DLC	FBD-201-12-TC	FBD-201-12-TC-DLC
1/2"	1/2"	1-1/2"	1"	0.02	3-1/2"	FBD-201-16	FBD-201-16-DLC	FBD-201-16-TC	FBD-201-16-TC-DLC



NEW!

FBD-202 2 Flute 5x Diameter Flat Bottom Drills

Cutting Diameter	Shank Diameter	Flute Length	Max Hole depth	Corner Radius	Overall Length	Uncoated	DLC Coated	Thru Coolant Uncoated	Thru Coolant DLC Coated
1/8"	1/8"	3/4"	5/8"	0.005	2"	FBD-202-04	FBD-202-04-DLC	FBD-202-04-TC	FBD-202-04-TC-DLC
3/16"	3/16"	1-1/8"	15/16"	0.01	2-1/2"	FBD-202-06	FBD-202-06-DLC	FBD-202-06-TC	FBD-202-06-TC-DLC
1/4"	1/4"	1-1/2"	1-1/4"	0.01	3"	FBD-202-08	FBD-202-08-DLC	FBD-202-08-TC	FBD-202-08-TC-DLC
5/16"	5/16"	1-7/8"	1-9/16"	0.02	3-1/2"	FBD-202-10	FBD-202-10-DLC	FBD-202-10-TC	FBD-202-10-TC-DLC
3/8"	3/8"	2-1/4"	1-7/8"	0.02	4"	FBD-202-12	FBD-202-12-DLC	FBD-202-12-TC	FBD-202-12-TC-DLC
1/2"	1/2"	3"	2-1/2"	0.02	5"	FBD-202-16	FBD-202-16-DLC	FBD-202-16-TC	FBD-202-16-TC-DLC



Burr-Free Intersecting Holes

Shoulder Drilling

Drilling Angled Holes

Creating a Guide Hole

2 Flute Flat Bottom Drills for Aluminum **FBD**

Use maximum RPM if it exceeds your machines RPM

Guide hole recommended if you get chatter. Pecking in small depths might help. Always start holes with short 2X drill first.

*Adjust inch per revolution to 50% when on angled surfaces is 30 degrees or less.

*Adjust inch per revolution to 30% of recommended when on an angled or curved surface is greater than 30 degrees or when the cutter is not fully encapsulated and only drilling a partial hole

** Adjust RPM to 70% of recommended RPM when on an angled or curved surface is greater than 30 degrees or when the cutter is not fully encapsulated and only drilling a partial hole

When using FBD-202 (5x) use FBD-201(2x) to start the hole to reduce walking.

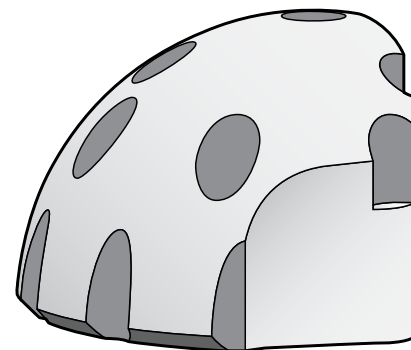
Thru coolant holes recommended on FBD-202 (5x) deep holes

If chip packing is a problem thru coolant holes are recommended.

Pecking may help if you do not have thru coolant.

Aluminum and similar materials			
Tool Diameter	FBD-201(2x) (SFM 500-1000) RPM**	FBD-202(5x) (SFM 250-500) RPM**	Inch per Revolution*
1/8	15280 - 30560	7640 - 15280	.0016-.0032
3/16	10187 - 20373	5093 - 10187	.0024-.0048
1/4	7640 - 15280	3820 - 7640	.0032-.006
5/16	6112 - 12224	3056 - 6112	.004-.008
3/8	5093 - 10187	2547 - 5093	.0048-.0098
1/2	3820 - 7640	1910 - 3820	.0065-.013

If drilling on flat surfaces and the drill walks spot drill first to reduce the amount of surface contact when starting the hole. The longer a drill is, the higher the chance that it will walk.



Aluminum Tools in Other Sections

SB / B 201/203
MSB / MB 201/203

2 Flute Ball End
(See Multiple Applications)



156

C8
201/203/301/303

2 & 3 Flute on 1/4" Shank
(See Multiple Applications)



151

NR / MNR
204/303/404

2, 3 and 4 Flute
(See Multiple Applications)



160

PCD
203 Routers

2 Flute PCD Diamond
(See Composites & Plastics)



109

PCD-BN
201 Routers

2 Flute PCD Diamond, Ball End
(See Composites & Plastics)



109

MINIATURES

(See Miniatures Applications)



132

SAWS

(See Saws Applications)



170