














TOOLS FOR

Aluminum Applications

TOOLS FOR

Aluminum Applications

Aluminum Applications Tools

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A1/MA1 2 Flute High Performance Tools for Aluminum

Characteristics

- Square End
- Corner Break
- 2 Flute
- 30° Helix

Applications

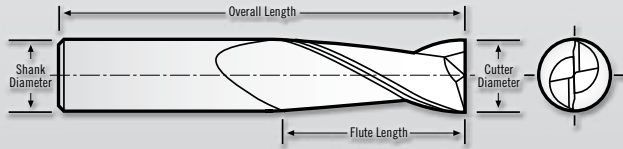
- Slotting
- Side Milling
- Helical Interpolation
- Ramping
- High Performance
- Roughing
- Semi-Finishing
- Finishing
- Dry
- Wet
- Cold Air
- Spray Mist

Materials

- Aluminum
- Copper
- Magnesium
- Plastics
- BRASS

Coatings

- Diamond-Like Carbon (DLC)



A1 Series Tolerances:

Cutting Dia. = $-.001/-0.0015$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC = $+0.060/-0.000$ "
 OAL = $+/- .060$ "

MA1 Series Tolerances:

Cutting Dia. = $-0.025/-0.038$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 LOC (<10D) = $+0.75/-0.000$ mm
 (>10D) = $+1.5/-0.000$ mm
 OAL = $+/-1.000$ 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"	15/16"	.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

See RobbJack Videos on



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

2 Flute High Performance Tools for Aluminum **A1/MA1**

A1-201 SPEED & FEED

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 x diameter of the tool

MA1-201 SPEED & FEED

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 x diameter of the tool



Videos Online!

See RobbJack's high performance aluminum tools in action.

www.youtube.com/user/RobbJackCorp

A1/MA1 3 Flute High Performance Tools for Aluminum

Characteristics

- Square End
- Corner Break
- 3 Flute
- 35° Helix
- Mirror Edge
- Polished

Applications

- Slotting
- Side Milling
- Helical Interpolation
- Ramping
- High Performance
- Roughing
- Semi-Finishing
- Finishing
- Wet

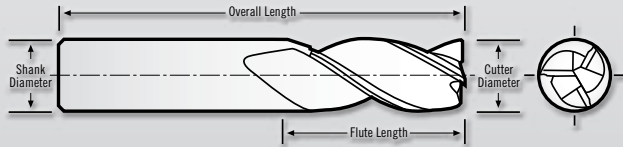
Materials

- Aluminum
- Copper
- Magnesium
- Brass

Coatings

- Diamond-Like Carbon (DLC)

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



A1 Series Tolerances:
 Cutting Dia. = $-.001/-0.0015$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC = $+0.060/-0.000$ "
 OAL = $+/-0.060$ "

MA1 Series Tolerances:
 Cutting Dia. = $-0.025/-0.038$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 LOC ($<10D$) = $+0.750/-0.000$ mm
 ($>10D$) = $+1.500/-0.000$ mm
 OAL = $+/-1.000$ 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

3 Flute High Performance Tools for Aluminum **A1/MA1**

A1-303 SPEED & FEED

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 SPEED & FEED

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.

FM 2 Flute High Performance Tools for Aluminum

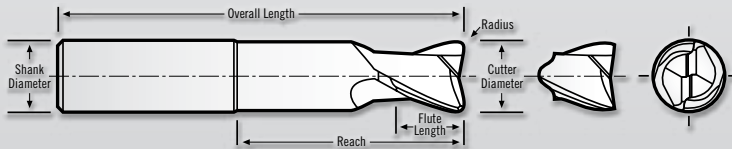
Characteristics

Applications

Materials

Coatings

FM Series comes with
Mirror Edge!
for Chatter Reduction



FM Series Tolerances:
 Cutting Dia. = $-.001/-0.0015$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC = $+0.060/-0.000$ "
 OAL = $+/-0.060$ "



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	0.625"	3"	FM-201-08	FM-201-08 DLC	1/4" DIAMETER
	1/4"	1/4"	1/4"	0.03"	0.625"	3"	FM-201-08-030	FM-201-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	0.625"	3"	FM-201-08-060	FM-201-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	0.625"	3"	FM-201-08-090	FM-201-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	0.625"	3"	FM-201-08-BN	FM-201-08-BN DLC	
MEDIUM	1/4"	1/4"	1/4"	Sq. End	0.875"	3"	FM-202-08	FM-202-08 DLC	
	1/4"	1/4"	1/4"	0.03"	0.875"	3"	FM-202-08-030	FM-202-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	0.875"	3"	FM-202-08-060	FM-202-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	0.875"	3"	FM-202-08-090	FM-202-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	0.875"	3"	FM-202-08-BN	FM-202-08-BN DLC	
LONG	1/4"	1/4"	1/4"	Sq. End	1.063"	3"	FM-204-08	FM-204-08 DLC	
	1/4"	1/4"	1/4"	0.03"	1.063"	3"	FM-204-08-030	FM-204-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	1.063"	3"	FM-204-08-060	FM-204-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	1.063"	3"	FM-204-08-090	FM-204-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	1.063"	3"	FM-204-08-BN	FM-204-08-BN DLC	
EXTRA LONG	1/4"	1/4"	1/4"	Sq. End	1.500"	3"	FM-205-08	FM-205-08 DLC	
	1/4"	1/4"	1/4"	0.03"	1.500"	3"	FM-205-08-030	FM-205-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	1.500"	3"	FM-205-08-060	FM-205-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	1.500"	3"	FM-205-08-090	FM-205-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	1.500"	3"	FM-205-08-BN	FM-205-08-BN DLC	
SHORT	5/16"	5/16"	5/16"	Sq. End	0.875"	3-1/8"	FM-201-10	FM-201-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	0.875"	3-1/8"	FM-201-10-030	FM-201-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	0.875"	3-1/8"	FM-201-10-060	FM-201-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	0.875"	3-1/8"	FM-201-10-090	FM-201-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	0.875"	3-1/8"	FM-201-10-120	FM-201-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	0.875"	3-1/8"	FM-201-10-BN	FM-201-10-BN DLC	
MEDIUM	5/16"	5/16"	5/16"	Sq. End	1.094"	3-1/8"	FM-202-10	FM-202-10 DLC	
	5/16"	5/16"	5/16"	0.03"	1.094"	3-1/8"	FM-202-10-030	FM-202-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.094"	3-1/8"	FM-202-10-060	FM-202-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.094"	3-1/8"	FM-202-10-090	FM-202-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	1.094"	3-1/8"	FM-202-10-120	FM-202-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.094"	3-1/8"	FM-202-10-BN	FM-202-10-BN DLC	

*Other Reach Lengths available upon request.

2 Flute High Performance Tools for Aluminum

FM

Aluminum



NEW!

FM 2 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

	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	1.313"	3-1/8"	FM-204-10	FM-204-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1.313"	3-1/8"	FM-204-10-030	FM-204-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.313"	3-1/8"	FM-204-10-060	FM-204-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.313"	3-1/8"	FM-204-10-090	FM-204-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	1.313"	3-1/8"	FM-204-10-120	FM-204-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.313"	3-1/8"	FM-204-10-BN	FM-204-10-BN DLC	
EXTRA LONG	5/16"	5/16"	5/16"	Sq. End	1.625"	3-1/8"	FM-205-10	FM-205-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1.625"	3-1/8"	FM-205-10-030	FM-205-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.625"	3-1/8"	FM-205-10-060	FM-205-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.625"	3-1/8"	FM-205-10-090	FM-205-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	1.625"	3-1/8"	FM-205-10-120	FM-205-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.625"	3-1/8"	FM-205-10-BN	FM-205-10-BN DLC	
SHORT	3/8"	3/8"	3/8"	Sq. End	1.000"	4"	FM-201-12	FM-201-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.000"	4"	FM-201-12-030	FM-201-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.000"	4"	FM-201-12-060	FM-201-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.000"	4"	FM-201-12-090	FM-201-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.000"	4"	FM-201-12-120	FM-201-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.000"	4"	FM-201-12-BN	FM-201-12-BN DLC	
MEDIUM	3/8"	3/8"	3/8"	Sq. End	1.250"	4"	FM-202-12	FM-202-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.250"	4"	FM-202-12-030	FM-202-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.250"	4"	FM-202-12-060	FM-202-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.250"	4"	FM-202-12-090	FM-202-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.250"	4"	FM-202-12-120	FM-202-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.250"	4"	FM-202-12-BN	FM-202-12-BN DLC	
LONG	3/8"	3/8"	3/8"	Sq. End	1.563"	4"	FM-204-12	FM-204-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.563"	4"	FM-204-12-030	FM-204-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.563"	4"	FM-204-12-060	FM-204-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.563"	4"	FM-204-12-090	FM-204-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.563"	4"	FM-204-12-120	FM-204-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.563"	4"	FM-204-12-BN	FM-204-12-BN DLC	
EXTRA LONG	3/8"	3/8"	3/8"	Sq. End	2.125"	4"	FM-205-12	FM-205-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	2.125"	4"	FM-205-12-030	FM-205-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	2.125"	4"	FM-205-12-060	FM-205-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	2.125"	4"	FM-205-12-090	FM-205-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	2.125"	4"	FM-205-12-120	FM-205-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	2.125"	4"	FM-205-12-BN	FM-205-12-BN DLC	
SHORT	1/2"	1/2"	1/2"	Sq. End	1.250"	5"	FM-201-16	FM-201-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1.250"	5"	FM-201-16-030	FM-201-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	1.250"	5"	FM-201-16-060	FM-201-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	1.250"	5"	FM-201-16-090	FM-201-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	1.250"	5"	FM-201-16-120	FM-201-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	1.250"	5"	FM-201-16-BN	FM-201-16-BN DLC	
MEDIUM	1/2"	1/2"	1/2"	Sq. End	1.625"	5"	FM-202-16	FM-202-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1.625"	5"	FM-202-16-030	FM-202-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	1.625"	5"	FM-202-16-060	FM-202-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	1.625"	5"	FM-202-16-090	FM-202-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	1.625"	5"	FM-202-16-120	FM-202-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	1.625"	5"	FM-202-16-BN	FM-202-16-BN DLC	
LONG	1/2"	1/2"	1/2"	Sq. End	2.125"	5"	FM-204-16	FM-204-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2.125"	5"	FM-204-16-030	FM-204-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	2.125"	5"	FM-204-16-060	FM-204-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	2.125"	5"	FM-204-16-090	FM-204-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	2.125"	5"	FM-204-16-120	FM-204-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	2.125"	5"	FM-204-16-BN	FM-204-16-BN DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

FM 2 Flute High Performance Tools for Aluminum


NEW!

FM 2 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

	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	2.625"	5"	FM-205-16	FM-205-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2.625"	5"	FM-205-16-030	FM-205-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	2.625"	5"	FM-205-16-060	FM-205-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	2.625"	5"	FM-205-16-090	FM-205-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	2.625"	5"	FM-205-16-120	FM-205-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	2.625"	5"	FM-205-16-BN	FM-205-16-BN DLC	
SHORT	5/8"	5/8"	5/8"	Sq. End	1.500"	6"	FM-201-20	FM-201-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	1.500"	6"	FM-201-20-030	FM-201-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	1.500"	6"	FM-201-20-060	FM-201-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	1.500"	6"	FM-201-20-090	FM-201-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	1.500"	6"	FM-201-20-120	FM-201-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	1.500"	6"	FM-201-20-BN	FM-201-20-BN DLC	
MEDIUM	5/8"	5/8"	5/8"	Sq. End	2.063"	6"	FM-202-20	FM-202-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2.063"	6"	FM-202-20-030	FM-202-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	2.063"	6"	FM-202-20-060	FM-202-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	2.063"	6"	FM-202-20-090	FM-202-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	2.063"	6"	FM-202-20-120	FM-202-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	2.063"	6"	FM-202-20-BN	FM-202-20-BN DLC	
LONG	5/8"	5/8"	5/8"	Sq. End	2.625"	6"	FM-204-20	FM-204-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2.625"	6"	FM-204-20-030	FM-204-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	2.625"	6"	FM-204-20-060	FM-204-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	2.625"	6"	FM-204-20-090	FM-204-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	2.625"	6"	FM-204-20-120	FM-204-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	2.625"	6"	FM-204-20-BN	FM-204-20-BN DLC	
EXTRA LONG	5/8"	5/8"	5/8"	Sq. End	3.125"	6"	FM-205-20	FM-205-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	3.125"	6"	FM-205-20-030	FM-205-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	3.125"	6"	FM-205-20-060	FM-205-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	3.125"	6"	FM-205-20-090	FM-205-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	3.125"	6"	FM-205-20-120	FM-205-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	3.125"	6"	FM-205-20-BN	FM-205-20-BN DLC	
SHORT	3/4"	3/4"	3/4"	Sq. End	2.000"	6"	FM-201-24	FM-201-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2.000"	6"	FM-201-24-030	FM-201-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	2.000"	6"	FM-201-24-060	FM-201-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	2.000"	6"	FM-201-24-090	FM-201-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	2.000"	6"	FM-201-24-120	FM-201-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	2.000"	6"	FM-201-24-BN	FM-201-24-BN DLC	
MEDIUM	3/4"	3/4"	3/4"	Sq. End	2.563"	6"	FM-202-24	FM-202-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2.563"	6"	FM-202-24-030	FM-202-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	2.563"	6"	FM-202-24-060	FM-202-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	2.563"	6"	FM-202-24-090	FM-202-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	2.563"	6"	FM-202-24-120	FM-202-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	2.563"	6"	FM-202-24-BN	FM-202-24-BN DLC	
LONG	3/4"	3/4"	3/4"	Sq. End	3.125"	6"	FM-204-24	FM-204-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3.125"	6"	FM-204-24-030	FM-204-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	3.125"	6"	FM-204-24-060	FM-204-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	3.125"	6"	FM-204-24-090	FM-204-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	3.125"	6"	FM-204-24-120	FM-204-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	3.125"	6"	FM-204-24-BN	FM-204-24-BN DLC	
EXTRA LONG	3/4"	3/4"	3/4"	Sq. End	3.750"	6"	FM-205-24	FM-205-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3.750"	6"	FM-205-24-030	FM-205-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	3.750"	6"	FM-205-24-060	FM-205-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	3.750"	6"	FM-205-24-090	FM-205-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	3.750"	6"	FM-205-24-120	FM-205-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	3.750"	6"	FM-205-24-BN	FM-205-24-BN DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

2 Flute High Performance Tools for Aluminum **FM**

Aluminum



NEW!

FM 2 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

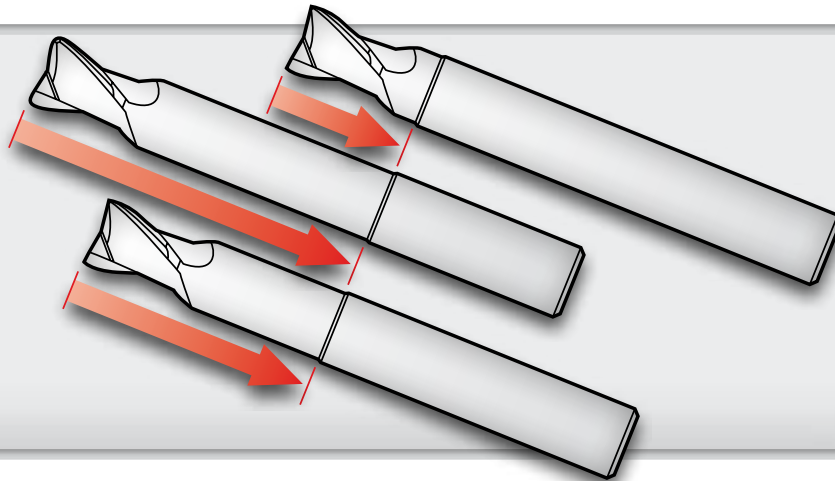
	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	1"	1"	1"	Sq. End	2.000"	6"	FM-201-32	FM-201-32 DLC	1" DIAMETER
	1"	1"	1"	0.03"	2.000"	6"	FM-201-32-030	FM-201-32-030 DLC	
	1"	1"	1"	0.06"	2.000"	6"	FM-201-32-060	FM-201-32-060 DLC	
	1"	1"	1"	0.09"	2.000"	6"	FM-201-32-090	FM-201-32-090 DLC	
	1"	1"	1"	0.12"	2.000"	6"	FM-201-32-120	FM-201-32-120 DLC	
	1"	1"	1"	Ball End	2.000"	6"	FM-201-32-BN	FM-201-32-BN DLC	
MEDIUM	1"	1"	1"	Sq. End	3.000"	6"	FM-202-32	FM-202-32 DLC	
	1"	1"	1"	0.03"	3.000"	6"	FM-202-32-030	FM-202-32-030 DLC	
	1"	1"	1"	0.06"	3.000"	6"	FM-202-32-060	FM-202-32-060 DLC	
	1"	1"	1"	0.09"	3.000"	6"	FM-202-32-090	FM-202-32-090 DLC	
	1"	1"	1"	0.12"	3.000"	6"	FM-202-32-120	FM-202-32-120 DLC	
	1"	1"	1"	Ball End	3.000"	6"	FM-202-32-BN	FM-202-32-BN DLC	
LONG	1"	1"	1"	Sq. End	3.500"	6"	FM-203-32	FM-203-32 DLC	
	1"	1"	1"	0.03"	3.500"	6"	FM-203-32-030	FM-203-32-030 DLC	
	1"	1"	1"	0.06"	3.500"	6"	FM-203-32-060	FM-203-32-060 DLC	
	1"	1"	1"	0.09"	3.500"	6"	FM-203-32-090	FM-203-32-090 DLC	
	1"	1"	1"	0.12"	3.500"	6"	FM-203-32-120	FM-203-32-120 DLC	
	1"	1"	1"	Ball End	3.500"	6"	FM-203-32-BN	FM-203-32-BN DLC	
EXTRA LONG	1"	1"	1"	Sq. End	4.000"	6"	FM-204-32	FM-204-32 DLC	
	1"	1"	1"	0.03"	4.000"	6"	FM-204-32-030	FM-204-32-030 DLC	
	1"	1"	1"	0.06"	4.000"	6"	FM-204-32-060	FM-204-32-060 DLC	
	1"	1"	1"	0.09"	4.000"	6"	FM-204-32-090	FM-204-32-090 DLC	
	1"	1"	1"	0.12"	4.000"	6"	FM-204-32-120	FM-204-32-120 DLC	
	1"	1"	1"	Ball End	4.000"	6"	FM-204-32-BN	FM-204-32-BN DLC	

*Other Reach Lengths available upon request.

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Need a Different Reach?

Any neck length available at same price!

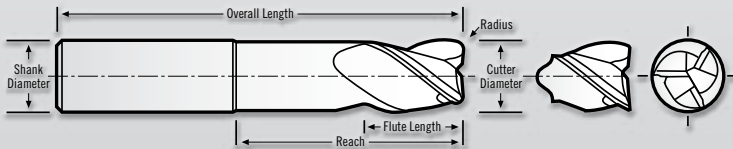
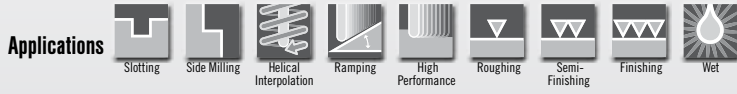


FM SERIES SPEED & FEED

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"	0.1875"	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"	0.2500"	Max	0.0120"	Max	0.0105"	Max	0.0120"	Max	0.0120"
1"	0.2500"	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



FM Series Tolerances:
 Cutting Dia. = $-.001/-0.0015$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC = $+0.060/-0.000$ "
 OAL = ± 0.060 "



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	0.625"	3"	FM-301-08	FM-301-08 DLC	1/4" DIAMETER
	1/4"	1/4"	1/4"	0.03"	0.625"	3"	FM-301-08-030	FM-301-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	0.625"	3"	FM-301-08-060	FM-301-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	0.625"	3"	FM-301-08-090	FM-301-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	0.625"	3"	FM-301-08-BN	FM-301-08-BN DLC	
MEDIUM	1/4"	1/4"	1/4"	Sq. End	0.875"	3"	FM-302-08	FM-302-08 DLC	
	1/4"	1/4"	1/4"	0.03"	0.875"	3"	FM-302-08-030	FM-302-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	0.875"	3"	FM-302-08-060	FM-302-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	0.875"	3"	FM-302-08-090	FM-302-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	0.875"	3"	FM-302-08-BN	FM-302-08-BN DLC	
LONG	1/4"	1/4"	1/4"	Sq. End	1.063"	3"	FM-304-08	FM-304-08 DLC	
	1/4"	1/4"	1/4"	0.03"	1.063"	3"	FM-304-08-030	FM-304-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	1.063"	3"	FM-304-08-060	FM-304-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	1.063"	3"	FM-304-08-090	FM-304-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	1.063"	3"	FM-304-08-BN	FM-304-08-BN DLC	
EXTRA LONG	1/4"	1/4"	1/4"	Sq. End	1.500"	3"	FM-305-08	FM-305-08 DLC	
	1/4"	1/4"	1/4"	0.03"	1.500"	3"	FM-305-08-030	FM-305-08-030 DLC	
	1/4"	1/4"	1/4"	0.06"	1.500"	3"	FM-305-08-060	FM-305-08-060 DLC	
	1/4"	1/4"	1/4"	0.09"	1.500"	3"	FM-305-08-090	FM-305-08-090 DLC	
	1/4"	1/4"	1/4"	Ball End	1.500"	3"	FM-305-08-BN	FM-305-08-BN DLC	
SHORT	5/16"	5/16"	5/16"	Sq. End	0.875"	3-1/8"	FM-301-10	FM-301-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	0.875"	3-1/8"	FM-301-10-030	FM-301-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	0.875"	3-1/8"	FM-301-10-060	FM-301-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	0.875"	3-1/8"	FM-301-10-090	FM-301-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	0.875"	3-1/8"	FM-301-10-120	FM-301-10-120 DLC	
MEDIUM	5/16"	5/16"	5/16"	Ball End	0.875"	3-1/8"	FM-301-10-BN	FM-301-10-BN DLC	
	5/16"	5/16"	5/16"	Sq. End	1.094"	3-1/8"	FM-302-10	FM-302-10 DLC	
	5/16"	5/16"	5/16"	0.03"	1.094"	3-1/8"	FM-302-10-030	FM-302-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.094"	3-1/8"	FM-302-10-060	FM-302-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.094"	3-1/8"	FM-302-10-090	FM-302-10-090 DLC	
MEDIUM	5/16"	5/16"	5/16"	0.12"	1.094"	3-1/8"	FM-302-10-120	FM-302-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.094"	3-1/8"	FM-302-10-BN	FM-302-10-BN DLC	

*Other Reach Lengths available on request.

3 Flute High Performance Tools for Aluminum **FM**

Aluminum



NEW!

FM 3 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

	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	1.313"	3-1/8"	FM-304-10	FM-304-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1.313"	3-1/8"	FM-304-10-030	FM-304-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.313"	3-1/8"	FM-304-10-060	FM-304-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.313"	3-1/8"	FM-304-10-090	FM-304-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	1.313"	3-1/8"	FM-304-10-120	FM-304-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.313"	3-1/8"	FM-304-10-BN	FM-304-10-BN DLC	
EXTRA LONG	5/16"	5/16"	5/16"	Sq. End	1.625"	3-1/8"	FM-305-10	FM-305-10 DLC	5/16" DIAMETER
	5/16"	5/16"	5/16"	0.03"	1.625"	3-1/8"	FM-305-10-030	FM-305-10-030 DLC	
	5/16"	5/16"	5/16"	0.06"	1.625"	3-1/8"	FM-305-10-060	FM-305-10-060 DLC	
	5/16"	5/16"	5/16"	0.09"	1.625"	3-1/8"	FM-305-10-090	FM-305-10-090 DLC	
	5/16"	5/16"	5/16"	0.12"	1.625"	3-1/8"	FM-305-10-120	FM-305-10-120 DLC	
	5/16"	5/16"	5/16"	Ball End	1.625"	3-1/8"	FM-305-10-BN	FM-305-10-BN DLC	
SHORT	3/8"	3/8"	3/8"	Sq. End	1.000"	4"	FM-301-12	FM-301-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.000"	4"	FM-301-12-030	FM-301-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.000"	4"	FM-301-12-060	FM-301-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.000"	4"	FM-301-12-090	FM-301-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.000"	4"	FM-301-12-120	FM-301-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.000"	4"	FM-301-12-BN	FM-301-12-BN DLC	
MEDIUM	3/8"	3/8"	3/8"	Sq. End	1.250"	4"	FM-302-12	FM-302-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.250"	4"	FM-302-12-030	FM-302-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.250"	4"	FM-302-12-060	FM-302-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.250"	4"	FM-302-12-090	FM-302-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.250"	4"	FM-302-12-120	FM-302-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.250"	4"	FM-302-12-BN	FM-302-12-BN DLC	
LONG	3/8"	3/8"	3/8"	Sq. End	1.563"	4"	FM-304-12	FM-304-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	1.563"	4"	FM-304-12-030	FM-304-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	1.563"	4"	FM-304-12-060	FM-304-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	1.563"	4"	FM-304-12-090	FM-304-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	1.563"	4"	FM-304-12-120	FM-304-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	1.563"	4"	FM-304-12-BN	FM-304-12-BN DLC	
EXTRA LONG	3/8"	3/8"	3/8"	Sq. End	2.125"	4"	FM-305-12	FM-305-12 DLC	3/8" DIAMETER
	3/8"	3/8"	3/8"	0.03"	2.125"	4"	FM-305-12-030	FM-305-12-030 DLC	
	3/8"	3/8"	3/8"	0.06"	2.125"	4"	FM-305-12-060	FM-305-12-060 DLC	
	3/8"	3/8"	3/8"	0.09"	2.125"	4"	FM-305-12-090	FM-305-12-090 DLC	
	3/8"	3/8"	3/8"	0.12"	2.125"	4"	FM-305-12-120	FM-305-12-120 DLC	
	3/8"	3/8"	3/8"	Ball End	2.125"	4"	FM-305-12-BN	FM-305-12-BN DLC	
SHORT	1/2"	1/2"	1/2"	Sq. End	1.250"	5"	FM-301-16	FM-301-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1.250"	5"	FM-301-16-030	FM-301-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	1.250"	5"	FM-301-16-060	FM-301-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	1.250"	5"	FM-301-16-090	FM-301-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	1.250"	5"	FM-301-16-120	FM-301-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	1.250"	5"	FM-301-16-BN	FM-301-16-BN DLC	
MEDIUM	1/2"	1/2"	1/2"	Sq. End	1.625"	5"	FM-302-16	FM-302-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	1.625"	5"	FM-302-16-030	FM-302-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	1.625"	5"	FM-302-16-060	FM-302-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	1.625"	5"	FM-302-16-090	FM-302-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	1.625"	5"	FM-302-16-120	FM-302-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	1.625"	5"	FM-302-16-BN	FM-302-16-BN DLC	
LONG	1/2"	1/2"	1/2"	Sq. End	2.125"	5"	FM-304-16	FM-304-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2.125"	5"	FM-304-16-030	FM-304-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	2.125"	5"	FM-304-16-060	FM-304-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	2.125"	5"	FM-304-16-090	FM-304-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	2.125"	5"	FM-304-16-120	FM-304-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	2.125"	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


NEW!

FM 3 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

	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	2.625"	5"	FM-305-16	FM-305-16 DLC	1/2" DIAMETER
	1/2"	1/2"	1/2"	0.03"	2.625"	5"	FM-305-16-030	FM-305-16-030 DLC	
	1/2"	1/2"	1/2"	0.06"	2.625"	5"	FM-305-16-060	FM-305-16-060 DLC	
	1/2"	1/2"	1/2"	0.09"	2.625"	5"	FM-305-16-090	FM-305-16-090 DLC	
	1/2"	1/2"	1/2"	0.12"	2.625"	5"	FM-305-16-120	FM-305-16-120 DLC	
	1/2"	1/2"	1/2"	Ball End	2.625"	5"	FM-305-16-BN	FM-305-16-BN DLC	
SHORT	5/8"	5/8"	5/8"	Sq. End	1.500"	6"	FM-301-20	FM-301-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	1.500"	6"	FM-301-20-030	FM-301-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	1.500"	6"	FM-301-20-060	FM-301-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	1.500"	6"	FM-301-20-090	FM-301-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	1.500"	6"	FM-301-20-120	FM-301-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	1.500"	6"	FM-301-20-BN	FM-301-20-BN DLC	
MEDIUM	5/8"	5/8"	5/8"	Sq. End	2.063"	6"	FM-302-20	FM-302-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2.063"	6"	FM-302-20-030	FM-302-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	2.063"	6"	FM-302-20-060	FM-302-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	2.063"	6"	FM-302-20-090	FM-302-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	2.063"	6"	FM-302-20-120	FM-302-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	2.063"	6"	FM-302-20-BN	FM-302-20-BN DLC	
LONG	5/8"	5/8"	5/8"	Sq. End	2.625"	6"	FM-304-20	FM-304-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	2.625"	6"	FM-304-20-030	FM-304-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	2.625"	6"	FM-304-20-060	FM-304-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	2.625"	6"	FM-304-20-090	FM-304-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	2.625"	6"	FM-304-20-120	FM-304-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	2.625"	6"	FM-304-20-BN	FM-304-20-BN DLC	
EXTRA LONG	5/8"	5/8"	5/8"	Sq. End	3.125"	6"	FM-305-20	FM-305-20 DLC	5/8" DIAMETER
	5/8"	5/8"	5/8"	0.03"	3.125"	6"	FM-305-20-030	FM-305-20-030 DLC	
	5/8"	5/8"	5/8"	0.06"	3.125"	6"	FM-305-20-060	FM-305-20-060 DLC	
	5/8"	5/8"	5/8"	0.09"	3.125"	6"	FM-305-20-090	FM-305-20-090 DLC	
	5/8"	5/8"	5/8"	0.12"	3.125"	6"	FM-305-20-120	FM-305-20-120 DLC	
	5/8"	5/8"	5/8"	Ball End	3.125"	6"	FM-305-20-BN	FM-305-20-BN DLC	
SHORT	3/4"	3/4"	3/4"	Sq. End	2.000"	6"	FM-301-24	FM-301-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2.000"	6"	FM-301-24-030	FM-301-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	2.000"	6"	FM-301-24-060	FM-301-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	2.000"	6"	FM-301-24-090	FM-301-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	2.000"	6"	FM-301-24-120	FM-301-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	2.000"	6"	FM-301-24-BN	FM-301-24-BN DLC	
MEDIUM	3/4"	3/4"	3/4"	Sq. End	2.563"	6"	FM-302-24	FM-302-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	2.563"	6"	FM-302-24-030	FM-302-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	2.563"	6"	FM-302-24-060	FM-302-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	2.563"	6"	FM-302-24-090	FM-302-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	2.563"	6"	FM-302-24-120	FM-302-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	2.563"	6"	FM-302-24-BN	FM-302-24-BN DLC	
LONG	3/4"	3/4"	3/4"	Sq. End	3.125"	6"	FM-304-24	FM-304-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3.125"	6"	FM-304-24-030	FM-304-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	3.125"	6"	FM-304-24-060	FM-304-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	3.125"	6"	FM-304-24-090	FM-304-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	3.125"	6"	FM-304-24-120	FM-304-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	3.125"	6"	FM-304-24-BN	FM-304-24-BN DLC	
EXTRA LONG	3/4"	3/4"	3/4"	Sq. End	3.750"	6"	FM-305-24	FM-305-24 DLC	3/4" DIAMETER
	3/4"	3/4"	3/4"	0.03"	3.750"	6"	FM-305-24-030	FM-305-24-030 DLC	
	3/4"	3/4"	3/4"	0.06"	3.750"	6"	FM-305-24-060	FM-305-24-060 DLC	
	3/4"	3/4"	3/4"	0.09"	3.750"	6"	FM-305-24-090	FM-305-24-090 DLC	
	3/4"	3/4"	3/4"	0.12"	3.750"	6"	FM-305-24-120	FM-305-24-120 DLC	
	3/4"	3/4"	3/4"	Ball End	3.750"	6"	FM-305-24-BN	FM-305-24-BN DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

3 Flute High Performance Tools for Aluminum **FM**

Aluminum



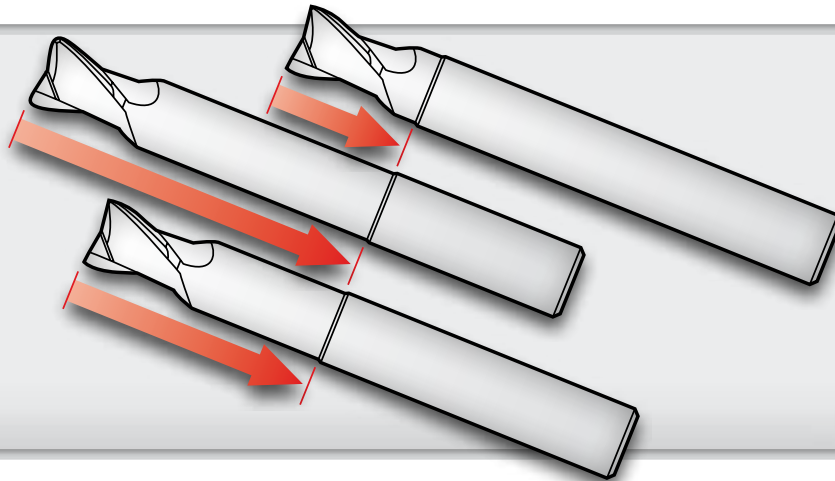
FM 3 Flute (Short to Long Reach) —CONTINUED FROM PREVIOUS

	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	2.000"	6"	FM-301-32	FM-301-32 DLC	1" DIAMETER
	1"	1"	1"	0.03"	2.000"	6"	FM-301-32-030	FM-301-32-030 DLC	
	1"	1"	1"	0.06"	2.000"	6"	FM-301-32-060	FM-301-32-060 DLC	
	1"	1"	1"	0.09"	2.000"	6"	FM-301-32-090	FM-301-32-090 DLC	
	1"	1"	1"	0.12"	2.000"	6"	FM-301-32-120	FM-301-32-120 DLC	
	1"	1"	1"	Ball End	2.000"	6"	FM-301-32-BN	FM-301-32-BN DLC	
MEDIUM	1"	1"	1"	Sq. End	3.000"	6"	FM-302-32	FM-302-32 DLC	
	1"	1"	1"	0.03"	3.000"	6"	FM-302-32-030	FM-302-32-030 DLC	
	1"	1"	1"	0.06"	3.000"	6"	FM-302-32-060	FM-302-32-060 DLC	
	1"	1"	1"	0.09"	3.000"	6"	FM-302-32-090	FM-302-32-090 DLC	
	1"	1"	1"	0.12"	3.000"	6"	FM-302-32-120	FM-302-32-120 DLC	
	1"	1"	1"	Ball End	3.000"	6"	FM-302-32-BN	FM-302-32-BN DLC	
LONG	1"	1"	1"	Sq. End	3.500"	6"	FM-303-32	FM-303-32 DLC	
	1"	1"	1"	0.03"	3.500"	6"	FM-303-32-030	FM-303-32-030 DLC	
	1"	1"	1"	0.06"	3.500"	6"	FM-303-32-060	FM-303-32-060 DLC	
	1"	1"	1"	0.09"	3.500"	6"	FM-303-32-090	FM-303-32-090 DLC	
	1"	1"	1"	0.12"	3.500"	6"	FM-303-32-120	FM-303-32-120 DLC	
	1"	1"	1"	Ball End	3.500"	6"	FM-303-32-BN	FM-303-32-BN DLC	
EXTRA LONG	1"	1"	1"	Sq. End	4.000"	6"	FM-304-32	FM-304-32 DLC	
	1"	1"	1"	0.03"	4.000"	6"	FM-304-32-030	FM-304-32-030 DLC	
	1"	1"	1"	0.06"	4.000"	6"	FM-304-32-060	FM-304-32-060 DLC	
	1"	1"	1"	0.09"	4.000"	6"	FM-304-32-090	FM-304-32-090 DLC	
	1"	1"	1"	0.12"	4.000"	6"	FM-304-32-120	FM-304-32-120 DLC	
	1"	1"	1"	Ball End	4.000"	6"	FM-304-32-BN	FM-304-32-BN DLC	

*Other Reach Lengths available upon request.

Need a Different Reach?

Any neck length available at same price!



FM SERIES SPEED & FEED

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"	0.1875"	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"	0.2500"	Max	0.0120"	Max	0.0105"	Max	0.0120"	Max	0.0120"
1"	0.2500"	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

- Corner Radius
- 2 Flute
- 40° Helix
- Feather Blend
- Necked
- Mirror Edge

Applications

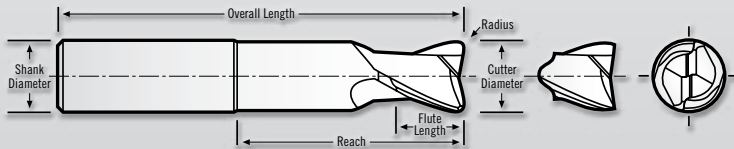
- Slotting
- Side Milling
- Helical Interpolation
- Ramping
- High Performance
- 3-D
- Roughing
- Semi-Finishing
- Finishing
- Wet

Materials

- Aluminum
- Copper
- Magnesium
- BRASS

Coatings

- Diamond-Like Carbon (DLC)



MFM Series Tolerances:
 Cutting Dia. = $-0.025/-0.038$ mm
 Shank Dia. = $-0.002/-0.005$ mm
 LOC (<10D) = $+0.750/-0.000$ mm
 (>10D) = $+1.500/-0.000$ mm
 OAL = $+/- 1.000$ mm



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	0.5mm	12mm	75mm	MFM-201-06-050	MFM-201-06-050 DLC	6 mm DIAMETER
	6mm	6mm	7mm	1.0mm	12mm	75mm	MFM-201-06-100	MFM-201-06-100 DLC	
M	6mm	6mm	7mm	0.5mm	18mm	75mm	MFM-202-06-050	MFM-202-06-050 DLC	6 mm DIAMETER
	6mm	6mm	7mm	1.0mm	18mm	75mm	MFM-202-06-100	MFM-202-06-100 DLC	
L	6mm	6mm	7mm	0.5mm	24mm	75mm	MFM-203-06-050	MFM-203-06-050 DLC	6 mm DIAMETER
	6mm	6mm	7mm	1.0mm	24mm	75mm	MFM-203-06-100	MFM-203-06-100 DLC	
XL	6mm	6mm	7mm	0.5mm	30mm	75mm	MFM-204-06-050	MFM-204-06-050 DLC	6 mm DIAMETER
	6mm	6mm	7mm	1.0mm	30mm	75mm	MFM-204-06-100	MFM-204-06-100 DLC	
SHORT	8mm	8mm	9mm	1.0mm	16mm	80mm	MFM-201-08-100	MFM-201-08-100 DLC	8 mm DIAMETER
	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	
MED	8mm	8mm	9mm	1.0mm	24mm	80mm	MFM-202-08-100	MFM-202-08-100 DLC	8 mm DIAMETER
	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	
LONG	8mm	8mm	9mm	1.0mm	32mm	80mm	MFM-203-08-100	MFM-203-08-100 DLC	8 mm DIAMETER
	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	
X LONG	8mm	8mm	9mm	1.0mm	40mm	80mm	MFM-204-08-100	MFM-204-08-100 DLC	8 mm DIAMETER
	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	
S	10mm	10mm	11mm	1.5mm	20mm	100mm	MFM-201-10-150	MFM-201-10-150 DLC	10 mm DIAMETER
	10mm	10mm	11mm	2.5mm	20mm	100mm	MFM-201-10-250	MFM-201-10-250 DLC	
M	10mm	10mm	11mm	1.5mm	30mm	100mm	MFM-202-10-150	MFM-202-10-150 DLC	10 mm DIAMETER
	10mm	10mm	11mm	2.5mm	30mm	100mm	MFM-202-10-250	MFM-202-10-250 DLC	
L	10mm	10mm	11mm	1.5mm	40mm	100mm	MFM-203-10-150	MFM-203-10-150 DLC	10 mm DIAMETER
	10mm	10mm	11mm	2.5mm	40mm	100mm	MFM-203-10-250	MFM-203-10-250 DLC	
XL	10mm	10mm	11mm	1.5mm	50mm	100mm	MFM-204-10-150	MFM-204-10-150 DLC	10 mm DIAMETER
	10mm	10mm	11mm	2.5mm	50mm	100mm	MFM-204-10-250	MFM-204-10-250 DLC	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

Metric 2 Flute High Performance Tools for Aluminum

MFM

Aluminum



MFM 2 Flute Metric (Short to Long Reach) **METRIC** —CONTINUED FROM PREVIOUS

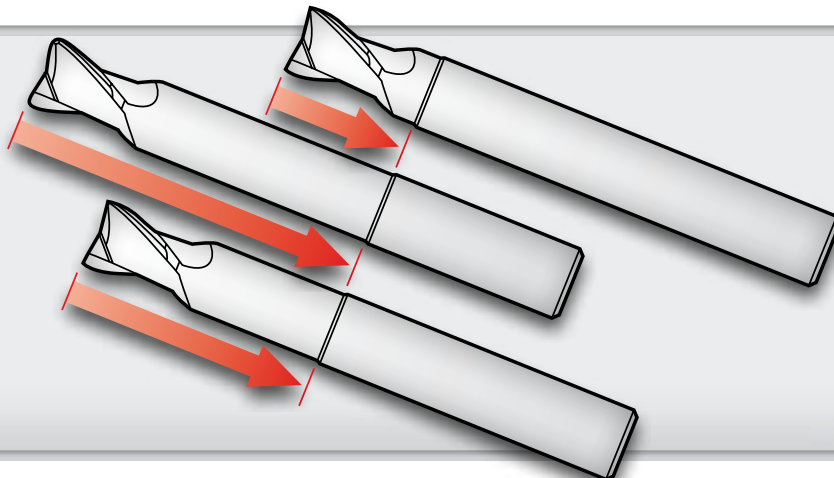
	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
S	12mm	12mm	13mm	1.5mm	24mm	110mm	MFM-201-12-150	MFM-201-12-150 DLC	12 mm DIAMETER
	12mm	12mm	13mm	2.5mm	24mm	110mm	MFM-201-12-250	MFM-201-12-250 DLC	
	12mm	12mm	13mm	4.0mm	24mm	110mm	MFM-201-12-400	MFM-201-12-400 DLC	
M	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	
L	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	
XL	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	
SHORT	16mm	16mm	17mm	2.0mm	32mm	130mm	MFM-201-16-200	MFM-201-16-200 DLC	16 mm DIAMETER
	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	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	
	16mm	16mm	17mm	4.0mm	48mm	130mm	MFM-202-16-400	MFM-202-16-400 DLC	
LONG	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	
X LONG	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	

*Other Reach Lengths available upon request.

CONTINUED ON NEXT PAGE—

Need a Different Reach?

Any neck length available at same price!



MFM Metric 2 Flute High Performance Tools for Aluminum



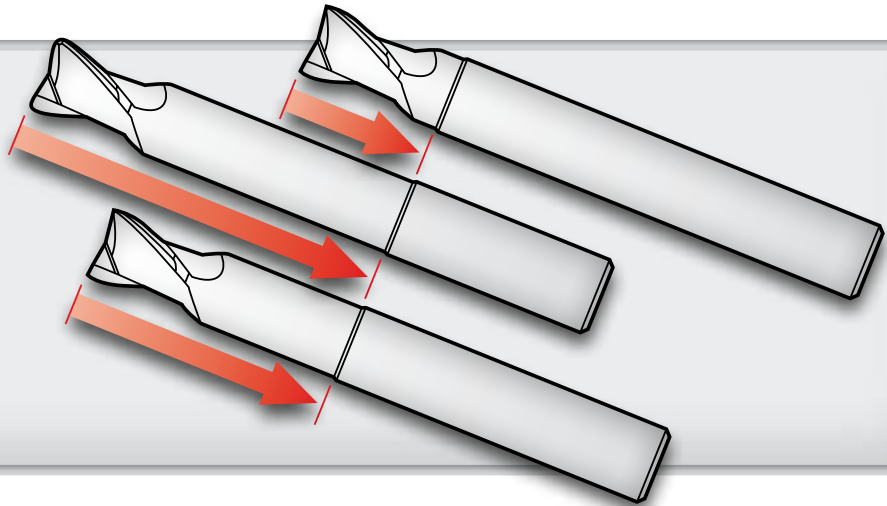
MFM 2 Flute Metric (Short to Long Reach) **METRIC** —CONTINUED FROM PREVIOUS

	Cutting Diameter	Shank Diameter	Flute Length	Corner Radius	Reach Length*	Overall Length	Tool Number Uncoated	Tool Number DLC Coated	
SHORT	20mm	20mm	21mm	2.0mm	40mm	150mm	MFM-201-20-200	MFM-201-20-200 DLC	20 mm DIAMETER
	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	
MEDIUM	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	
LONG	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	
X LONG	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	
S	25mm	25mm	26mm	2.5mm	50mm	165mm	MFM-201-25-250	MFM-201-25-250 DLC	25 mm DIAMETER
	25mm	25mm	26mm	4.0mm	50mm	165mm	MFM-201-25-400	MFM-201-25-400 DLC	
M	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	
XL	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	

*Other Reach Lengths available upon request.

Need a Different Reach?

Any neck length available at same price!



MFM SERIES SPEED & FEED

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

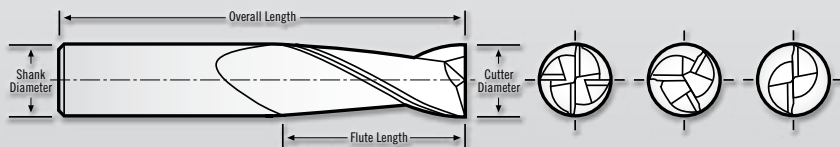
C-2 Grade Carbide End Mills S1/MS1

Characteristics

Applications

Materials

Coatings



S1 Tolerances

Cutting Dia. (1/16" to 1/4") = +.000/- .002"
 (9/32" to 3/4") = +.000/- .003"
 Shank Dia. = -.0001/- .0002"
 LOC (1/16" to 5/16") = +.030/- .000"
 (3/8" to 3/4") = +.060/- .000"
 OAL = ±.060"

MS1 Tolerances

Cutting Dia. = +.000/- .075mm
 Shank Dia. = -.002/- .005mm
 LOC = +0.500/+1.500mm
 OAL = ±1.000mm



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"	3-1/2"	S1-201-24	S1-201-24 DLC

Available with
Wiper Flats
 See Page 7

Available with
45° Chamfer
 See Page 7

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

Available with
Coolant Grooves
 See Page 6

S1 C-2 Grade Carbide End Mills



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"	3-1/2"	S1-401-24	S1-401-24 DLC



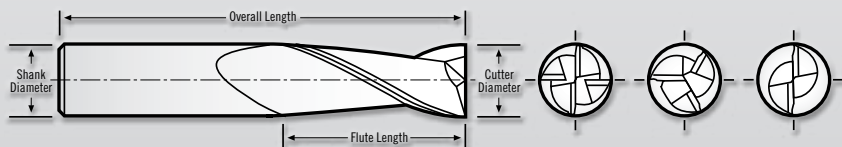
C-2 Grade Carbide End Mills C1/MC1

Characteristics

Applications

Materials

Coatings



C1 Tolerances

Cutting Dia. (1/16" to 1/4") = +.000/- .002"
 (9/32" to 3/4") = +.000/- .003"
 LOC (1/16" to 5/16") = +.030/- .000"
 (3/8" to 3/4") = +.060/- .000"
 Shank Dia. = -.0001/- .0002"
 OAL = ±.060"



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

C1/MC1 C-2 Grade Carbide End Mills



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



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

Router for Aluminum Aircraft Skins **WU1/WD1**

Characteristics





Applications







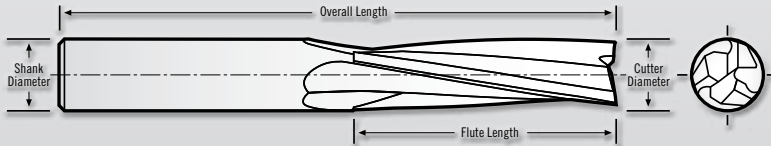




Materials







WU1/WD1 Tolerances

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



WU1-310 Up Shear 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"	5-1/4"	WU1-310-24

WD1-310 Down Shear 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"	5-1/4"	WD1-310-24

Available with

Chatter Reduction with

Mirror Edge!



See Page 6

Aluminum Tools in Other Sections

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

2 Flute Ball End
(See Multiple Applications)



100

C8
201/203/301/303

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



93

NR / MNR
204/303/404

2, 3 and 4 Flute
(See Multiple Applications)



102

PM / PMD
Routers

Single Flute
(See Composites & Plastics)



63

PCD
203 Routers

2 Flute PCD Diamond
(See Composites & Plastics)



59

PCD-BN
201 Routers

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



59

MINIATURES

(See Miniatures Applications)



77

SAWS

(See Saws Applications)



109