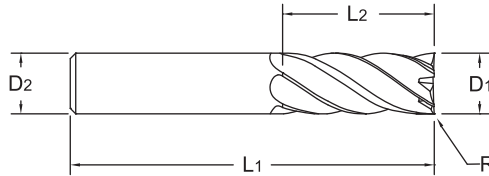


# TuffCut® XR7 Series 180



40% increase in productivity over a 5 flute tool.



- Designed specifically for Titanium, Inconel and similar materials.
- ALtima® Blaze coating for increased performance.

ALtima® Blaze		Diameter			Shank		OAL		Flute Length		Corner Radius	
		D1			D2 h6		L1		L2		R	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
18023600B	18936		6	.2362		6		57		13		
18023601B	18938		6	.2362		6		57		13		0.5
18025000B	18900	1/4		.2500	1/4		2		3/8			
18025002B	18901	1/4		.2500	1/4		2		3/8		.015	
18025010B	18902	1/4		.2500	1/4		2-1/2		3/4			
18025012B	18903	1/4		.2500	1/4		2-1/2		3/4		.015	
180L2500B	18904	1/4		.2500	1/4		3		1-1/4			
180X2500B	18906	1/4		.2500	1/4		4		1-3/4			
18031500B	18944		8	.3150		8		63		19		
18031501B	18946		8	.3150		8		63		19		0.5
18037500B	18908	3/8		.3750	3/8		2-1/2		1/2			
18037502B	18909	3/8		.3750	3/8		2-1/2		1/2		.015	
18037504B	18932	3/8		.3750	3/8		2-1/2		1/2		.030	
18037510B	18910	3/8		.3750	3/8		2-1/2		1			
18037512B	18911	3/8		.3750	3/8		2-1/2		1		.015	
18037514B	18934	3/8		.3750	3/8		2-1/2		1		.030	
180L3750B	18912	3/8		.3750	3/8		4		1-1/2			
180X3750B	18914	3/8		.3750	3/8		4		2-1/2			
18039300B	18940		10	.3937		10		72		22		
18039301B	18942		10	.3937		10		72		22		0.5
18047201B	18501		12	.4724		12		84		32		0.5
18047203B	18503		12	.4724		12		84		32		1.0

Inch	
D1	Tolerance
1/4-1.0	+0.00/-0.011

Metric (mm)	
D1	Tolerance
12.00-20.00	+0.00/-0.028

Inch	
D2	Tolerance (h6)
.2363 - .3937	+0/-0.00035
.3938 - .7087	+0/-0.00043
.7088 - 1.000	+0/-0.00051

Metric (mm)	
D2	Tolerance (h6)
12.00 - 18.0	+0/-0.011
18.01 - 20.0	+0/-0.013

ALtima® Blaze	
Featuring high temperature hardness and oxidation resistance that provides extreme wear resistance under all machining conditions	
Coating Properties	
Micro Hardness (HV)	3200
Max. Working Temperature	1100°C 2012°F
Friction Coefficient	0.35

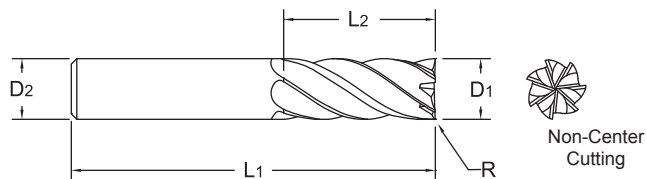


End Mills

# Series 180 Continued



**7**  
Flute



ALtima® Blaze		Diameter			Shank		OAL		Flute Length		Corner Radius	
		D1			D2 h6		L1		L2		R	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
18047205B	18505		12	.4724		12		84		32		2.0
18047207B	18507		12	.4724		12		84		32		3.0
18047209B	18508		12	.4724		12		84		32		4.0
18050000B	18512	1/2		.5000	1/2		3		5/8			
18050002B	18515	1/2		.5000	1/2		3		5/8		.015	
18050004B	18517	1/2		.5000	1/2		3		5/8		.030	
18050006B	18519	1/2		.5000	1/2		3		5/8		.060	
18050007B	18521	1/2		.5000	1/2		3		5/8		.090	
18050008B	18523	1/2		.5000	1/2		3		5/8		.125	
18050010B	18514	1/2		.5000	1/2		3		1-1/4			
18050012B	18516	1/2		.5000	1/2		3		1-1/4		.015	
18050014B	18518	1/2		.5000	1/2		3		1-1/4		.030	
18050016B	18520	1/2		.5000	1/2		3		1-1/4		.060	
18050017B	18522	1/2		.5000	1/2		3		1-1/4		.090	
18050018B	18524	1/2		.5000	1/2		3		1-1/4		.125	
180L5000B	18916	1/2		.5000	1/2		4		2			
180X5000B	18918	1/2		.5000	1/2		5		3			
18062500B	18532	5/8		.6250	5/8		3-1/2		3/4			
18062502B	18535	5/8		.6250	5/8		3-1/2		3/4		.015	
18062504B	18537	5/8		.6250	5/8		3-1/2		3/4		.030	
18062506B	18539	5/8		.6250	5/8		3-1/2		3/4		.060	
18062507B	18541	5/8		.6250	5/8		3-1/2		3/4		.090	
18062508B	18543	5/8		.6250	5/8		3-1/2		3/4		.125	
18062510B	18534	5/8		.6250	5/8		3-1/2		1-1/4			
18062512B	18536	5/8		.6250	5/8		3-1/2		1-1/4		.015	
18062514B	18538	5/8		.6250	5/8		3-1/2		1-1/4		.030	
18062516B	18540	5/8		.6250	5/8		3-1/2		1-1/4		.060	
18062517B	18542	5/8		.6250	5/8		3-1/2		1-1/4		.090	
18062518B	18544	5/8		.6250	5/8		3-1/2		1-1/4		.125	
180L6250B	18920	5/8		.6250	5/8		5		2-1/4			
180X6250B	18922	5/8		.6250	5/8		6		3			
18062901B	18509		16	.6299		16		92		42		0.5
18062903B	18510		16	.6299		16		92		42		1.0
18062905B	18511		16	.6299		16		92		42		2.0
18062907B	18513		16	.6299		16		92		42		3.0
18062909B	18527		16	.6299		16		92		42		4.0



# Series 180 Continued

ALtima® Blaze		Diameter			Shank		OAL		Flute Length		Corner Radius	
		D1			D2 h6		L1		L2		R	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
18075000B	18570	3/4		.7500	3/4		4		1			
18075002B	18573	3/4		.7500	3/4		4		1		.015	
18075004B	18575	3/4		.7500	3/4		4		1		.030	
18075006B	18577	3/4		.7500	3/4		4		1		.060	
18075007B	18579	3/4		.7500	3/4		4		1		.090	
18075008B	18581	3/4		.7500	3/4		4		1		.125	
18075009B	18583	3/4		.7500	3/4		4		1		.190	
180750012B	18585	3/4		.7500	3/4		4		1		.250	
18075010B	18572	3/4		.7500	3/4		4		1-1/2			
18075012B	18574	3/4		.7500	3/4		4		1-1/2		.015	
18075014B	18576	3/4		.7500	3/4		4		1-1/2		.030	
18075016B	18578	3/4		.7500	3/4		4		1-1/2		.060	
18075017B	18580	3/4		.7500	3/4		4		1-1/2		.090	
18075018B	18582	3/4		.7500	3/4		4		1-1/2		.125	
18075019B	18584	3/4		.7500	3/4		4		1-1/2		.190	
180750112B	18586	3/4		.7500	3/4		4		1-1/2		.250	
180L7500B	18924	3/4		.7500	3/4		5		2-1/4			
180X7500B	18926	3/4		.7500	3/4		6		3			
18078701B	18528		20	.7874		20		102		52		0.5
18078703B	18529		20	.7874		20		102		52		1.0
18078705B	18530		20	.7874		20		102		52		2.0
18078707B	18531		20	.7874		20		102		52		3.0
18078709B	18533		20	.7874		20		102		52		4.0
18010000B	18597	1		1.0000	1		4		1			
18010002B	18599	1		1.0000	1		4		1		.015	
18010004B	18601	1		1.0000	1		4		1		.030	
18010006B	18603	1		1.0000	1		4		1		.060	
18010007B	18615	1		1.0000	1		4		1		.090	
18010008B	18607	1		1.0000	1		4		1		.125	
18010009B	18609	1		1.0000	1		4		1		.190	
180100012B	18611	1		1.0000	1		4		1		.250	
18010010B	18598	1		1.0000	1		4		1-1/2			
18010012B	18613	1		1.0000	1		4		1-1/2		.015	
18010014B	18602	1		1.0000	1		4		1-1/2		.030	
18010016B	18604	1		1.0000	1		4		1-1/2		.060	
18010017B	18606	1		1.0000	1		4		1-1/2		.090	
18010018B	18608	1		1.0000	1		4		1-1/2		.125	
18010019B	18616	1		1.0000	1		4		1-1/2		.190	
180100112B	18612	1		1.0000	1		4		1-1/2		.250	
180L1000B	18928	1		1.0000	1		5		2-1/4			
180X1000B	18930	1		1.0000	1		6		3			



End Mills



# TuffCut®

## High Performance End Mills

M.A. Ford® TuffCut® End Mills perform better and last significantly longer than competitive products, minimizing process downtime and maximizing productivity and cost efficiency.

Included in our product line are high performance end mills developed for specific applications such as stainless steels and high temperature alloys, hardened steel, titanium, composite material, aluminum and softer alloys.

In addition to High Performance products, M.A. Ford® carries a complete family of standard carbide end mills designed for efficient general purpose milling of all steels, cast irons and most other materials.

M.A. Ford® End Mills are ideal for tough or abrasive work. On many jobs, they can run faster than HSS or Cobalt because of their high heat resistance.

Benefits of M.A. Ford® End Mill products and support include:

- Thousands of end mills in stock.
- Over 50 different styles of end mills available.
- Aggressive speeds and feeds to maximize metal removal rates.
- Standard, Stub, Long and Extended Reach Lengths are available.
- Solid Carbide Tools are easy to re-sharpen for maximum life.
- ALtima®, ALtima® Plus, ALtima® 52, ALtima® Blaze, ALtima® Micro, Fordlude, GemX, TiN, TiCN, and CERAedge® coatings are available as well as Special Coatings upon request. See page 188 for more information on available coatings.
- U.S. Designed and Manufactured.



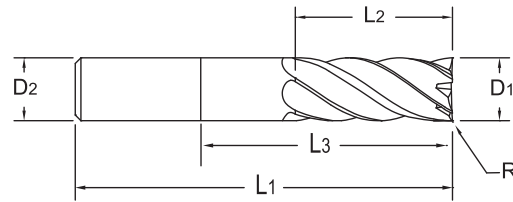
ADVANCED TECHNOLOGY

# TuffCut® XR7 Series 180N



40% increase in productivity over a 5 flute tool.

**7**  
Flute



Non-Center  
Cutting

- Designed specifically for Titanium, Inconel and similar materials.
- ALtima® Blaze coating for increased performance.

ALtima® Blaze		Diameter			Shank		OAL		Flute Length		Neck Length		Corner Radius	
		D1			D2 h6		L1		L2		L3		R	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
18047203NB	18500		12.0	.4724		12.0		120		30		60		1.0
18047205NB	18502		12.0	.4724		12.0		120		30		60		2.0
18047207NB	18504		12.0	.4724		12.0		120		30		60		3.0
18047209NB	18506		12.0	.4724		12.0		120		30		60		4.0
18050024NB	18526	1/2		.5000	1/2		4		1-1/4		2-1/8		.030	
18062524NB	18546	5/8		.6250	5/8		4		1-1/4		2-1/8		.030	
18062903NB	18548		16.0	.6299		16.0		150		40		80		1.0
18062905NB	18550		16.0	.6299		16.0		150		40		80		2.0
18062907NB	18552		16.0	.6299		16.0		150		40		80		3.0
18062909NB	18554		16.0	.6299		16.0		150		40		80		4.0
18075024NB	18588	3/4		.7500	3/4		5		1-7/8		3		.030	
18078713NB	18590		20.0	.7874		20.0		150		50		100		1.0
18078715NB	18592		20.0	.7874		20.0		150		50		100		2.0
18078717NB	18594		20.0	.7874		20.0		150		50		100		3.0
18078719NB	18596		20.0	.7874		20.0		150		50		100		4.0
180100205NB	18614	1		1.0000	1		6		3		4		.045	

Inch	
D1	Tolerance
1/2-1.0	+0.000/-0.0011

Metric (mm)	
D1	Tolerance
12.00-20.00	+0.000/-0.028

Inch	
D2	Tolerance (h6)
.5000 - .7087	+0/-0.00043
.7088 - 1.000	+0/-0.00051

Metric (mm)	
D2	Tolerance (h6)
12.00 - 18.0	+0/-0.011
18.01 - 20.0	+0/-0.013

