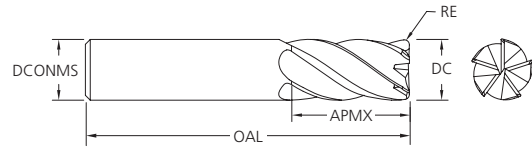


# TuffCut® XR - Series 178



- Designed for EXTREME Productivity. Gain 20% or more in productivity over four flute styles. Smooth cutting action to eliminate vibration.

ALtima®		ALtima® Weldon Flat		DC			DCONMS		OAL		APMX		RE	
Tool No.	EDP	Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
17811800A	17959				3	.1181		6		57		8		
17811810A	17998				3	.1181		3		75		25		
17812500A	17800			1/8		.1250	1/8		1-1/2		1/8			
17812510A	17801			1/8		.1250	1/8		1-1/2		3/8			
17815600A	17802			5/32		.1562	3/16		2		3/16			
17815610A	17803			5/32		.1562	3/16		2		7/16			
17815700A	17961				4	.1575		6		57		11		
17815710A	17999				4	.1575		4		75		25		
17818700A	17804			3/16		.1875	3/16		2		3/16			
17818710A	17805			3/16		.1875	3/16		2		7/16			
17819600A	17963				5	.1968		6		57		13		
17819610A	18026				5	.1968		5		75		25		
17821800A	17806			7/32		.2187	1/4		2		1/4			
17821810A	17807			7/32		.2187	1/4		2-1/2		7/16			
17823600A	17965				6	.2362		6		57		13		
17823601A	17966				6	.2362		6		57		13		0.500
17823610A	18027				6	.2362		6		75		25		
17825000A	17808			1/4		.2500	1/4		2		3/8			
17825002A	17829			1/4		.2500	1/4		2		3/8			0.015
17825004A	17830			1/4		.2500	1/4		2		3/8			0.030
17825010A	17809			1/4		.2500	1/4		2-1/2		5/8			
17825012A	17831			1/4		.2500	1/4		2-1/2		5/8			0.015
17825014A	17832			1/4		.2500	1/4		2-1/2		5/8			0.030
17825022A	18105			1/4		.2500	1/4		2-1/2		3/4			0.015
17828100A	17810			9/32		.2812	5/16		2-1/2		5/8			
17828102A	17835			9/32		.2812	5/16		2-1/2		5/8			0.015
17828104A	17836			9/32		.2812	5/16		2-1/2		5/8			0.030
17831200A	17811			5/16		.3125	5/16		2		7/16			

Inch	
DC	Tolerance
1/8 - 1/4	+0.000/-0.002
> 1/4 - 1.0	+0.000/-0.003

Inch	
DCONMS	Tolerance (h6)
.1182 - .2362	+0/-0.00031
.2363 - .3937	+0/-0.00035
.3938 - .7087	+0/-0.00043
.7088 - 1.000	+0/-0.00051

Metric (mm)	
DC	Tolerance (h10)
1.50 - 3.00	+0.000/-0.040
>3.00 - 6.00	+0.000/-0.048
>6.00 - 10.00	+0.000/-0.058
>10.00 - 18.00	+0.000/-0.070
>18.00 - 25.00	+0.000/-0.084

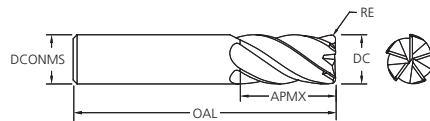
Metric (mm)	
DCONMS	Tolerance (h6)
3.0	+0/-0.006
3.01 - 6.0	+0/-0.008
6.01 - 10.0	+0/-0.009
10.01 - 18.0	+0/-0.011
18.01 - 25.0	+0/-0.013

Inch	
RE	Tolerance
1/4 - 1	+0.0000/-0.0016

Metric (mm)	
RE	Tolerance
6.0 - 25.0	+0.00/-0.04



# TuffCut® XR - Series 178 *Continued*



ALtima®		ALtima® Weldon Flat		DC			DCONMS		OAL		APMX		RE	
Tool No.	EDP	Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
17831202A	17837			5/16		.3125	5/16		2		7/16		0.015	
17831204A	17838			5/16		.3125	5/16		2		7/16		0.030	
17831210A	17812			5/16		.3125	5/16		2-1/2		13/16			
17831212A	17839			5/16		.3125	5/16		2-1/2		13/16		0.015	
17831214A	17840			5/16		.3125	5/16		2-1/2		13/16		0.030	
17831500A	17968				8	.3150		8		63		19		
17831501A	17969				8	.3150		8		63		19		0.500
17831510A	18028				8	.3150		8		75		30		
17834300A	17813			11/32		.3438	3/8		2-1/2		13/16			
17834302A	17843			11/32		.3438	3/8		2-1/2		13/16		0.015	
17834304A	17844			11/32		.3438	3/8		2-1/2		13/16		0.030	
17837500A	17814			3/8		.3750	3/8		2		1/2			
17837502A	17845			3/8		.3750	3/8		2		1/2		0.015	
17837504A	17846			3/8		.3750	3/8		2		1/2		0.030	
17837510A	17815			3/8		.3750	3/8		2-1/2		7/8			
17837512A	17847			3/8		.3750	3/8		2-1/2		7/8		0.015	
17837514A	17848			3/8		.3750	3/8		2-1/2		7/8		0.030	
17839300A	17971				10	.3937		10		72		22		
17839301A	17972				10	.3937		10		72		22		0.500
17839310A	18029				10	.3937		10		100		45		
17840600A	17816			13/32		.4062	7/16		2-3/4		7/8			
17840602A	17853			13/32		.4062	7/16		2-3/4		7/8		0.015	
17840604A	17854			13/32		.4062	7/16		2-3/4		7/8		0.030	
17843700A	17817			7/16		.4375	7/16		2-1/2		9/16			
17843702A	17855			7/16		.4375	7/16		2-1/2		9/16		0.015	
17843704A	17856			7/16		.4375	7/16		2-1/2		9/16		0.030	
17843710A	17818			7/16		.4375	7/16		2-3/4		1			
17843712A	17857			7/16		.4375	7/16		2-3/4		1		0.015	
17843714A	17858			7/16		.4375	7/16		2-3/4		1		0.030	
17846800A	17819			15/32		.4688	1/2		3		1			
17846802A	17863			15/32		.4688	1/2		3		1		0.015	
17846804A	17864			15/32		.4688	1/2		3		1		0.030	
17847200A	17974				12	.4724		12		83		26		
17847202A	17975				12	.4724		12		83		26		0.750
17847210A	18030				12	.4724		12		150		75		
17850000A	17820	17850000AW	10655	1/2		.5000	1/2		2-1/2		5/8			
17850002A	17865	17850002AW	13337	1/2		.5000	1/2		2-1/2		5/8		0.015	
17850004A	17866	17850004AW	13339	1/2		.5000	1/2		2-1/2		5/8		0.030	
17850010A	17821	17850010AW	13341	1/2		.5000	1/2		3		1			
17850012A	17867	17850012AW	13343	1/2		.5000	1/2		3		1		0.015	
17850014A	17868	17850014AW	13345	1/2		.5000	1/2		3		1		0.030	
17850015A	17869	17850015AW	13347	1/2		.5000	1/2		3		1		0.045	

 TuffCut® End Mills  
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ALtima®		ALtima® Weldon Flat		DC			DCONMS		OAL		APMX		RE	
Tool No.	EDP	Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm
17850016A	17913	17850016AW	13349	1/2		.5000	1/2		3		1		0.060	
17850017A	17914	17850017AW	13351	1/2		.5000	1/2		3		1		0.090	
17850018A	17915	17850018AW	13353	1/2		.5000	1/2		3		1		0.125	
17855100A	17977				14	.5512		14		83		26		
17855102A	17978				14	.5512		14		83		26		0.750
17856200A	17822	17856200AW	13355	9/16		.5625	9/16		3-1/2		1-1/8			
17856202A	17875	17856202AW	13357	9/16		.5625	9/16		3-1/2		1-1/8		0.015	
17856204A	17876	17856204AW	13359	9/16		.5625	9/16		3-1/2		1-1/8		0.030	
17862500A	17823	17862500AW	13361	5/8		.6250	5/8		3		3/4			
17862502A	18006	17862502AW	13363	5/8		.6250	5/8		3		3/4		0.015	
17862504A	17877	17862504AW	13365	5/8		.6250	5/8		3		3/4		0.030	
17862505A	17878	17862505AW	13367	5/8		.6250	5/8		3		3/4		0.045	
17862510A	17824	17862510AW	13369	5/8		.6250	5/8		3-1/2		1-1/4			
17862512A	18007	17862512AW	13371	5/8		.6250	5/8		3-1/2		1-1/4		0.015	
17862514A	17879	17862514AW	13373	5/8		.6250	5/8		3-1/2		1-1/4		0.030	
17862515A	17880	17862515AW	13375	5/8		.6250	5/8		3-1/2		1-1/4		0.045	
17862516A	17916	17862516AW	13377	5/8		.6250	5/8		3-1/2		1-1/4		0.060	
17862517A	17917	17862517AW	13379	5/8		.6250	5/8		3-1/2		1-1/4		0.090	
17862518A	17918	17862518AW	13381	5/8		.6250	5/8		3-1/2		1-1/4		0.125	
17862900A	17981				16	.6299		16		92		32		
17862903A	17982				16	.6299		16		92		32		1.000
17862910A	18031				16	.6299		16		150		75		
17870800A	17983				18	.7087		18		92		32		
17870803A	17984				18	.7087		18		92		32		1.000
17875000A	17825	17875000AW	10656	3/4		.7500	3/4		3		1			
17875002A	18011	17875002AW	13385	3/4		.7500	3/4		3		1		0.015	
17875004A	17887	17875004AW	13387	3/4		.7500	3/4		3		1		0.030	
17875005A	17888	17875005AW	13389	3/4		.7500	3/4		3		1		0.045	
17875010A	17826	17875010AW	13394	3/4		.7500	3/4		4		1-1/2			
17875012A	18012	17875012AW	13395	3/4		.7500	3/4		4		1-1/2		0.015	
17875014A	17889	17875014AW	13396	3/4		.7500	3/4		4		1-1/2		0.030	
17875015A	17890	17875015AW	13397	3/4		.7500	3/4		4		1-1/2		0.045	
17875016A	17919	17875016AW	13398	3/4		.7500	3/4		4		1-1/2		0.060	
17875017A	17920	17875017AW	13399	3/4		.7500	3/4		4		1-1/2		0.090	
17875018A	17921	17875018AW	13402	3/4		.7500	3/4		4		1-1/2		0.125	
17878700A	17986				20	.7874		20		104		38		
17878703A	17987				20	.7874		20		104		38		1.000
17878710A	18032				20	.7874		20		150		75		
17898400A	17988				25	.9843		25		104		38		
17898403A	17989				25	.9843		25		104		38		1.000
17810000A	17827	17810000AW	13403	1		1.0000	1		4		1			
17810010A	17828	17810010AW	13404	1		1.0000	1		4		1-1/2			
17810012A	18015	17810012AW	13405	1		1.0000	1		4		1-1/2		0.015	
17810014A	17895	17810014AW	13406	1		1.0000	1		4		1-1/2		0.030	
17810015A	17896	17810015AW	13407	1		1.0000	1		4		1-1/2		0.045	
17810016A	17922	17810016AW	13408	1		1.0000	1		4		1-1/2		0.060	
17810017A	17923	17810017AW	13420	1		1.0000	1		4		1-1/2		0.090	
17810018A	17924	17810018AW	13421	1		1.0000	1		4		1-1/2		0.125	

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