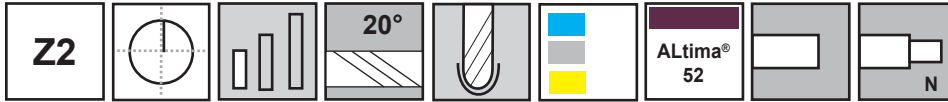
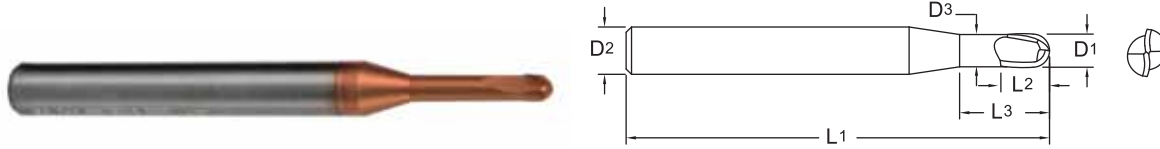


TuffCut® DM Series 156



Series 156 is designed for high-productivity milling of hard and difficult to cut materials Rc 45-60. Coated with ALtima® 52 for materials Rc 52 and above.



ALtima® 52		Diameter			Shank		Neck Diameter		OAL		Flute Length		Neck Length	
		D1			D2 h5		D3		L1		L2		L3	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
15601560A	15600	1/64		.0156	1/4				2-1/2		1/64			
156M0050N1A	15400		0.5	.0196		4.0		0.47		50		0.35		1
156M0050N2A	15401		0.5	.0196		4.0		0.47		50		0.35		2
156M0050N3A	15402		0.5	.0196		4.0		0.47		50		0.35		3
156M0050N4A	15403		0.5	.0196		4.0		0.47		50		0.35		4
156M0050N5A	15404		0.5	.0196		4.0		0.47		50		0.35		5
156M0050N6A	15406		0.5	.0196		4.0		0.47		50		0.35		6
15601960A	15602		0.5	.0196		6.0				63		0.50		
156M0060N2A	15409		0.6	.0236		4.0		0.57		50		0.40		2
156M0060N4A	15411		0.6	.0236		4.0		0.57		50		0.40		4
156M0060N6A	15413		0.6	.0236		4.0		0.57		50		0.40		6
156M0060N8A	15415		0.6	.0236		4.0		0.57		50		0.40		8
156M0060N10A	15417		0.6	.0236		4.0		0.57		50		0.40		10
15603120A	15604	1/32		.0312	1/4				2-1/2		1/32			
15603121A	15606	1/32		.0312	1/4		.0300		2-1/2		1/32		1/4	
15603122A	15608	1/32		.0312	1/4		.0300		2-1/2		1/32		5/16	
15603123A	15610	1/32		.0312	1/4		.0300		2-1/2		1/32		3/8	
15603124A	15612	1/32		.0312	1/4		.0300		2-1/2		1/32		1/2	
15603125A	15614	1/32		.0312	1/4		.0300		2-1/2		1/32		5/8	
156M0080N2A	15419		0.8	.0315		4.0		0.77		50		0.50		2
156M0080N4A	15420		0.8	.0315		4.0		0.77		50		0.50		4
156M0080N6A	15422		0.8	.0315		4.0		0.77		50		0.50		6
156M0080N8A	15423		0.8	.0315		4.0		0.77		50		0.50		8
156M0080N10A	15424		0.8	.0315		4.0		0.77		50		0.50		10
156M0100N2A	15425		1.0	.0394		4.0		0.96		50		0.80		2
156M0100N3A	15426		1.0	.0394		4.0		0.96		50		0.80		3
156M0100N4A	15427		1.0	.0394		4.0		0.96		50		0.80		4
156M0100N6A	15429		1.0	.0394		4.0		0.96		50		0.80		6

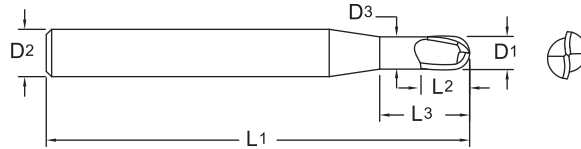
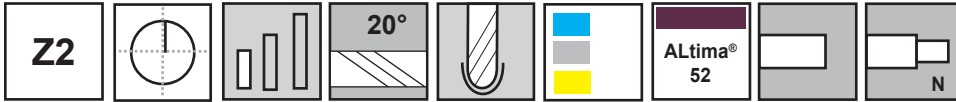
• Radius Tolerance +/- .0004 inch (±.010 mm)

Inch		Metric (mm)	
D1	Tolerance	D1	Tolerance
1/64-1/2	+0 /-.0005	0.50-12.00	+0 /-.015

Inch		Metric (mm)	
D2	Tolerance h5	D2	Tolerance h5
.1182-.2362	+0 /-.00020	3.01-6.00	+0 /-.005
.2363-.3937	+0 /-.00024	6.01-10.00	+0 /-.006
.3938-7087	+0 /-.00031	10.01-18.00	+0 /-.008



Series 156 Continued



ALtima® 52		Diameter			Shank		Neck Diameter		OAL		Flute Length		Neck Length	
Tool No.	EDP	D1			D2 h5		D3		L1		L2		L3	
		Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
156M0100N10A	15431		1.0	.0394		4.0		0.96		50		0.80		10
156M0100N12A	15432		1.0	.0394		4.0		0.96		63		0.80		12
156M0100N14A	15433		1.0	.0394		4.0		0.96		63		0.80		14
156M0100N16A	15434		1.0	.0394		4.0		0.96		63		0.80		16
156M0100N18A	15435		1.0	.0394		4.0		0.96		63		0.80		18
156M0100N20A	15436		1.0	.0394		4.0		0.96		63		0.80		20
15603940A	15616		1.0	.0394		6.0				63		1.00		
15603941A	15618		1.0	.0394		6.0		0.96		63		1.00		6
15603942A	15620		1.0	.0394		6.0		0.96		63		1.00		8
15603943A	15622		1.0	.0394		6.0		0.96		63		1.00		10
15603944A	15624		1.0	.0394		6.0		0.96		63		1.00		12
15603945A	15626		1.0	.0394		6.0		0.96		63		1.00		16
156M0120N8A	15437		1.2	.0472		4.0		1.15		50		1.10		8
156M0120N12A	15438		1.2	.0472		4.0		1.15		63		1.10		12
156M0140N8A	15439		1.4	.0551		4.0		1.34		50		1.30		8
156M0140N12A	15440		1.4	.0551		4.0		1.34		63		1.30		12
156M0140N16A	15441		1.4	.0551		4.0		1.34		63		1.30		16
156M0150N4A	15442		1.5	.0591		4.0		1.44		50		1.35		4
156M0150N8A	15444		1.5	.0591		4.0		1.44		50		1.35		8
156M0150N16A	15446		1.5	.0591		4.0		1.44		63		1.35		16
156M0150N20A	15447		1.5	.0591		4.0		1.44		63		1.35		20
15605910A	15628		1.5	.0591		6.0				63		1.50		
15606250A	15630	1/16		.0625	1/4				2-1/2		1/16			
156M0160N8A	15448		1.6	.0630		4.0		1.54		50		1.40		8
156M0160N12A	15449		1.6	.0630		4.0		1.54		63		1.40		12
156M0160N16A	15450		1.6	.0630		4.0		1.54		63		1.40		16
156M0160N20A	15451		1.6	.0630		4.0		1.54		63		1.40		20
156M0180N8A	15452		1.8	.0709		4.0		1.73		50		1.60		8
156M0180N12A	15453		1.8	.0709		4.0		1.73		63		1.60		12
156M0180N16A	15454		1.8	.0709		4.0		1.73		63		1.60		16
156M0180N20A	15455		1.8	.0709		4.0		1.73		63		1.60		20
156M0200N3A	15456		2.0	.0787		4.0		1.92		50		1.70		3
156M0200N4A	15457		2.0	.0787		4.0		1.92		50		1.70		4
156M0200N6A	15458		2.0	.0787		4.0		1.92		50		1.70		6
156M0200N8A	15459		2.0	.0787		4.0		1.92		50		1.70		8
156M0200N10A	15460		2.0	.0787		4.0		1.92		50		1.70		10
156M0200N12A	15461		2.0	.0787		4.0		1.92		63		1.70		12
156M0200N16A	15463		2.0	.0787		4.0		1.92		63		1.70		16

Series 156 Continued

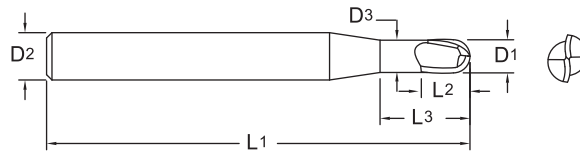
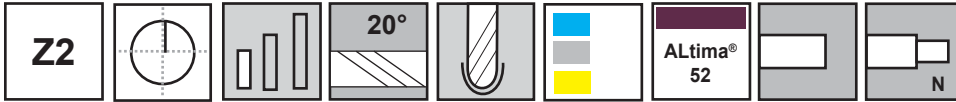


ALtima® 52		Diameter			Shank		Neck Diameter		OAL		Flute Length		Neck Length	
		D1			D2 h5		D3		L1		L2		L3	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
156M0200N20A	15465		2.0	.0787		4.0		1.92		63		1.70		20
156M0200N25A	15467		2.0	.0787		4.0		1.92		80		1.70		25
156M0200N30A	15468		2.0	.0787		4.0		1.92		80		1.70		30
156M0200N35A	15469		2.0	.0787		4.0		1.92		80		1.70		35
156M0200N40A	15470		2.0	.0787		4.0		1.92		80		1.70		40
15607870A	15632		2.0	.0787		6.0				63		2.00		
15607871A	15634		2.0	.0787		6.0		1.92		63		2.00		8
15607872A	15636		2.0	.0787		6.0		1.92		63		2.00		12
15607873A	15638		2.0	.0787		6.0		1.92		63		2.00		20
15609370A	15640	3/32		.0937	1/4				2-1/2		3/32			
15609371A	15642	3/32		.0937	1/4		.0898		2-1/2		3/32		5/16	
15609372A	15644	3/32		.0937	1/4		.0898		2-1/2		3/32		1/2	
15609373A	15646	3/32		.0937	1/4		.0898		2-1/2		3/32		3/4	
156M0300N8A	15471		3.0	.1181		6.0		2.90		75		2.50		8
156M0300N10A	15472		3.0	.1181		6.0		2.90		75		2.50		10
156M0300N16A	15474		3.0	.1181		6.0		2.90		75		2.50		16
156M0300N25A	15476		3.0	.1181		6.0		2.90		75		2.50		25
156M0300N30A	15477		3.0	.1181		6.0		2.90		75		2.50		30
156M0300N35A	15478		3.0	.1181		6.0		2.90		75		2.50		35
15611810A	15648		3.0	.1181		6.0				75		3.00		
15611812A	15676		3.0	.1181		6.0		2.90		75		3.00		12
15611811A	15650		3.0	.1181		6.0		2.90		75		3.00		20
15612500A	15652	1/8		.1250	1/4				3		1/8			
15612501A	15654	1/8		.1250	1/4		.1211		3		1/8		3/4	
15615620A	15656	5/32		.1562	1/4				3		5/32			
156M0400N10A	15480		4.0	.1575		6.0		3.90		75		3.00		10
156M0400N16A	15482		4.0	.1575		6.0		3.90		75		3.00		16
156M0400N25A	15484		4.0	.1575		6.0		3.90		75		3.00		25
156M0400N35A	15486		4.0	.1575		6.0		3.90		75		3.00		35
156M0400N40A	15487		4.0	.1575		6.0		3.90		75		3.00		40
156M0400N50A	15489		4.0	.1575		6.0		3.90		100		3.00		50
15615750A	15658		4.0	.1575		6.0				75		4.00		
15615751A	15678		4.0	.1575		6.0		3.90		75		4.00		12
15615752A	15679		4.0	.1575		6.0		3.90		75		4.00		20
15618750A	15659	3/16		.1875	1/4				3		3/16			
156M0500N25A	15490		5.0	.1968		6.0		4.90		75		3.50		25
156M0500N40A	15493		5.0	.1968		6.0		4.90		75		3.50		40
15619680A	15680		5.0	.1968		6.0				75		5.00		
15619681A	15681		5.0	.1968		6.0		4.90		75		5.00		12
15619682A	15682		5.0	.1968		6.0		4.90		75		5.00		25
156M0600N30A	15494		6.0	.2362		6.0		5.90		75		4.50		30
156M0600N50A	15495		6.0	.2362		6.0		5.90		100		4.50		50
15623620A	15660		6.0	.2362		6.0				75		6.00		
15623621A	15683		6.0	.2362		6.0		5.90		75		6.00		12
15623622A	15684		6.0	.2362		6.0		5.90		75		6.00		25
15625000A	15662	1/4		.2500	1/4				3		1/4			

End Mills



Series 156 Continued



ALtima® 52		Diameter			Shank		Neck Diameter		OAL		Flute Length		Neck Length	
		D1			D2 h5		D3		L1		L2		L3	
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
15631250A	15664	5/16		.3125	5/16				3-1/8		5/16			
156M0800N30A	15665		8.0	.3150		8.0		7.90		102		5.50		30
156M0800N50A	15667		8.0	.3150		8.0		7.90		102		5.50		50
15631500A	15666		8.0	.3150		8.0				80		8.00		
15637500A	15668	3/8		.3750	3/8				3-1/4		3/8			
156M1000N30A	15669		10.0	.3937		10.0		9.90		102		6.50		30
156M1000N50A	15671		10.0	.3937		10.0		9.90		102		6.50		50
15639370A	15670		10.0	.3937		10.0				82		10.00		
156M1200N30A	15673		12.0	.4724		12.0		11.90		102		7.50		30
156M1200N50A	15675		12.0	.4724		12.0		11.90		102		7.50		50
15647240A	15672		12.0	.4724		12.0				100		12.00		
15650000A	15674	1/2		.5000	1/2				4		1/2			

Go Green with RED BOX



Extend the Life of Your Cutting Tools with M.A. Ford®'s Reconditioning Service.

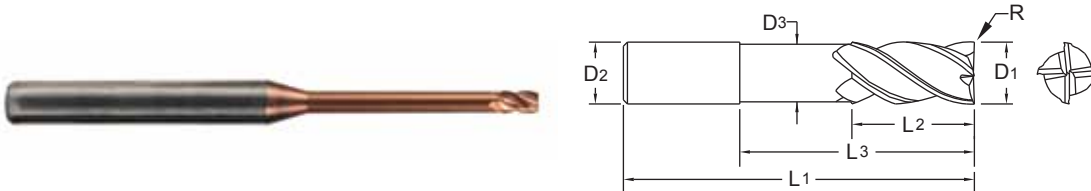
See page 186 for more information or Call 800-553-8024 or 563-391-6220



TuffCut® DM Series 158



Series 158 was designed with similar TuffCut® XR geometry, but incorporates features that make it an excellent tool for die and mold steels and hard to machine materials up to 65 Rc. Coated with ALtima® 52 for materials Rc 52 and above.



4
Flute

ALtima® 52		Diameter		Shank	Neck Diameter	OAL	Flute Length	Neck Length	Corner Radius
Tool No.	EDP	D1	D2						
		mm	Decimal	D2 h6	D3	L1	L2	L3	R
15811800N3A	15522	3	.1181	6	2.9	50	5	9	
15811800N5A	15524	3	.1181	6	2.9	50	5	15	
15811800R012N3A	15526	3	.1181	6	2.9	50	5	9	0.3
15811800R012N5A	15528	3	.1181	6	2.9	50	5	15	0.3
15811800R031N5A	15530	3	.1181	6	2.9	50	5	15	0.8
15823600N3A	15532	6	.2362	6	5.8	100	9	18	
15823600N5A	15534	6	.2362	6	5.8	100	9	30	
15823600R012N3A	15536	6	.2362	6	5.8	100	9	18	0.3
15823600R012N5A	15538	6	.2362	6	5.8	100	9	30	0.3
15823600R059N5A	15540	6	.2362	6	5.8	100	9	30	1.5
15831500N3A	15542	8	.3150	8	7.6	100	12	24	
15831500N5A	15544	8	.3150	8	7.6	100	12	40	
15831500R012N3A	15546	8	.3150	8	7.6	100	12	24	0.3
15831500R012N5A	15548	8	.3150	8	7.6	100	12	40	0.3
15831500R079N5A	15550	8	.3150	8	7.6	100	12	40	2.0
15839300N3A	15552	10	.3937	10	9.6	100	15	30	
15839300N5A	15554	10	.3937	10	9.6	100	15	50	
15839300R012N3A	15556	10	.3937	10	9.6	100	15	30	0.3
15839300R012N5A	15558	10	.3937	10	9.6	100	15	50	0.3
15839300R079N5A	15560	10	.3937	10	9.6	100	15	50	2.0
15847200N3A	15562	12	.4724	12	11.4	100	18	36	
15847200N5A	15564	12	.4724	12	11.4	130	18	60	
15847200R012N3A	15566	12	.4724	12	11.4	100	18	36	0.3
15847200R012N5A	15568	12	.4724	12	11.4	130	18	60	0.3
15847200R079N5A	15570	12	.4724	12	11.4	130	18	60	2.0
15862900N3A	15572	16	.6299	16	15.2	130	24	48	
15862900N5A	15574	16	.6299	16	15.2	150	24	80	
15862900R012N3A	15576	16	.6299	16	15.2	130	24	48	0.3
15862900R012N5A	15578	16	.6299	16	15.2	150	24	80	0.3
15862900R118N5A	15580	16	.6299	16	15.2	150	24	80	3.0
15878700N5A	15582	20	.7874	20	19.2	150	30	100	
15878700R012N5A	15584	20	.7874	20	19.2	150	30	100	0.3
15878700R118N5A	15586	20	.7874	20	19.2	150	30	100	3.0

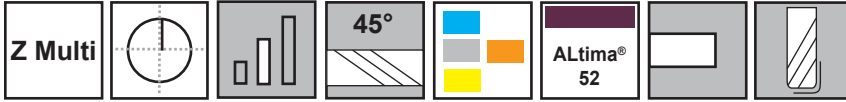
Metric (mm)	
D1	Tolerance
3.0 - 20.0	+0/-0.02

Metric (mm)	
D2	Tolerance (h6)
3	+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 - 20.0	+0/-0.013

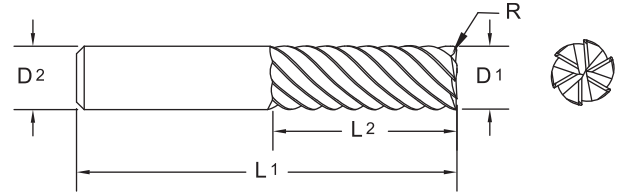
End Mills



TuffCut® DM Series 157



Multi-Flute designed for hardened materials Rc 50-65. Available as a Square End and in 7 standard corner radii. Coated with ALtima® 52 for materials Rc 52 and above.



ALtima® 52		Diameter			Shank		OAL		Flute Length		Corner Radius		No. of Flutes
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
15711810A	15700		3	.1181		6		75		10			4
15711811A	15701		3	.1181		6		75		10		0.50	4
15712500A	15702	1/8		.1250	1/4		3		3/8				4
15712501A	15703	1/8		.1250	1/4		3		3/8		0.015		4
15712502A	15704	1/8		.1250	1/4		3		3/8		0.020		4
15715620A	15705	5/32		.1562	1/4		3		15/32				4
15715621A	15706	5/32		.1562	1/4		3		15/32		0.015		4
15715622A	15707	5/32		.1562	1/4		3		15/32		0.020		4
15715750A	15708		4	.1575		6		75		12			4
15715751A	15709		4	.1575		6		75		12		0.50	4
15715752A	15710		4	.1575		6		75		12		0.75	4
15718750A	15711	3/16		.1875	1/4		3		9/16				4
15718751A	15712	3/16		.1875	1/4		3		9/16		0.015		4
15718752A	15713	3/16		.1875	1/4		3		9/16		0.020		4
15718753A	15714	3/16		.1875	1/4		3		9/16		0.030		4
15719680A	15715		5	.1968		6		90		15			4
15719681A	15716		5	.1968		6		90		15		0.50	4
15719682A	15717		5	.1968		6		90		15		0.75	4
15719683A	15718		5	.1968		6		90		15		1.00	4
15723620A	15719		6	.2362		6		90		15			6
15723621A	15720		6	.2362		6		90		15		0.50	6
15723622A	15721		6	.2362		6		90		15		0.75	6
15723623A	15722		6	.2362		6		90		15		1.00	6
15725000A	15723	1/4		.2500	1/4		3-1/2		5/8				6
15725001A	15724	1/4		.2500	1/4		3-1/2		5/8		0.015		6
15725002A	15725	1/4		.2500	1/4		3-1/2		5/8		0.020		6

Inch		Metric (mm)	
D1	Tolerance	D1	Tolerance
1/8-3/16	-.0006/- .0015	3.0	-.005/- .028
1/4-5/8	-.0008/- .0019	4.0-6.0	-.015/- .038
		8.0-16.0	-.020/- .048
		20.0-25.0	-.020/- .053



Series 157 Continued

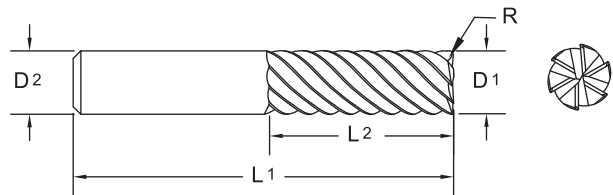
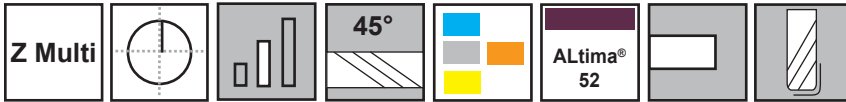
ALtima® 52		Diameter			Shank		OAL		Flute Length		Corner Radius		No. of Flutes
		D1			D2		L1		L2		R		
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
15725003A	15726	1/4		.2500	1/4		3-1/2		5/8		0.030		6
15725004A	15727	1/4		.2500	1/4		3-1/2		5/8		0.045		6
15731250A	15728	5/16		.3125	5/16		4		3/4				6
15731251A	15729	5/16		.3125	5/16		4		3/4		0.015		6
15731252A	15730	5/16		.3125	5/16		4		3/4		0.020		6
15731253A	15731	5/16		.3125	5/16		4		3/4		0.030		6
15731254A	15732	5/16		.3125	5/16		4		3/4		0.045		6
15731500A	15733		8	.3150		8		100		20			6
15731501A	15734		8	.3150		8		100		20		0.50	6
15731502A	15735		8	.3150		8		100		20		0.75	6
15731503A	15736		8	.3150		8		100		20		1.00	6
15731504A	15737		8	.3150		8		100		20		1.50	6
15731505A	15810		8	.3150		8		100		20		2.00	6
15737500A	15738	3/8		.3750	3/8		4		1				6
15737501A	15739	3/8		.3750	3/8		4		1		0.015		6
15737502A	15740	3/8		.3750	3/8		4		1		0.020		6
15737503A	15741	3/8		.3750	3/8		4		1		0.030		6
15737504A	15742	3/8		.3750	3/8		4		1		0.045		6
15739370A	15743		10	.3937		10		100		25			6
15739371A	15744		10	.3937		10		100		25		0.50	6
15739372A	15745		10	.3937		10		100		25		0.75	6
15739373A	15746		10	.3937		10		100		25		1.00	6
15739374A	15747		10	.3937		10		100		25		1.50	6
15739375A	15812		10	.3937		10		100		25		2.00	6
15747240A	15748		12	.4724		12		100		30			6
15747241A	15749		12	.4724		12		100		30		0.50	6
15747242A	15750		12	.4724		12		100		30		0.75	6
15747243A	15751		12	.4724		12		100		30		1.00	6
15747244A	15752		12	.4724		12		100		30		1.50	6
15747245A	15753		12	.4724		12		100		30		2.00	6
15747247A	15814		12	.4724		12		100		30		3.00	6
15750000A	15754	1/2		.5000	1/2		4		1-1/4				6
15750001A	15755	1/2		.5000	1/2		4		1-1/4		0.015		6
15750002A	15756	1/2		.5000	1/2		4		1-1/4		0.020		6
15750003A	15757	1/2		.5000	1/2		4		1-1/4		0.030		6
15750004A	15758	1/2		.5000	1/2		4		1-1/4		0.045		6
15750005A	15759	1/2		.5000	1/2		4		1-1/4		0.060		6
15762500A	15760	5/8		.6250	5/8		6		1-9/16				6
15762501A	15761	5/8		.6250	5/8		6		1-9/16		0.015		6
15762502A	15762	5/8		.6250	5/8		6		1-9/16		0.020		6
15762503A	15763	5/8		.6250	5/8		6		1-9/16		0.030		6
15762504A	15764	5/8		.6250	5/8		6		1-9/16		0.045		6
15762505A	15765	5/8		.6250	5/8		6		1-9/16		0.060		6
15762506A	15766	5/8		.6250	5/8		6		1-9/16		0.090		6



End Mills



Series 157 Continued



ALtima® 52		Diameter			Shank		OAL		Flute Length		Corner Radius		No. of Flutes
		D1			D2		L1		L2		R		
Tool No.	EDP	Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
15762990A	15767		16	.6299		16		150		40			6
15762991A	15768		16	.6299		16		150		40		0.50	6
15762992A	15769		16	.6299		16		150		40		0.75	6
15762993A	15770		16	.6299		16		150		40		1.00	6
15762994A	15771		16	.6299		16		150		40		1.50	6
15762995A	15772		16	.6299		16		150		40		2.00	6
15762996A	15773		16	.6299		16		150		40		2.50	6
15762997A	15774		16	.6299		16		150		40		3.00	6
15778740A	15783		20	.7874		20		150		45			8
15778741A	15784		20	.7874		20		150		45		0.50	8
15778742A	15785		20	.7874		20		150		45		0.75	8
15778743A	15786		20	.7874		20		150		45		1.00	8
15778744A	15787		20	.7874		20		150		45		1.50	8
15778745A	15788		20	.7874		20		150		45		2.00	8
15778746A	15789		20	.7874		20		150		45		2.50	8
15778747A	15790		20	.7874		20		150		45		3.00	8
15798430A	15791		25	.9843		25		150		50			10
15798431A	15792		25	.9843		25		150		50		0.50	10
15798432A	15793		25	.9843		25		150		50		0.75	10
15798433A	15794		25	.9843		25		150		50		1.00	10
15798434A	15795		25	.9843		25		150		50		1.50	10
15798435A	15796		25	.9843		25		150		50		2.00	10
15798436A	15797		25	.9843		25		150		50		2.50	10
15798437A	15798		25	.9843		25		150		50		3.00	10

Safety Note

Always wear the appropriate personal protective equipment such as safety glasses and protective clothing when using solid carbide or HSS cutting tools. Machines should be fully guarded.

