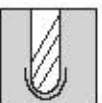
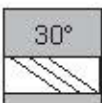
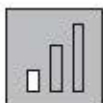
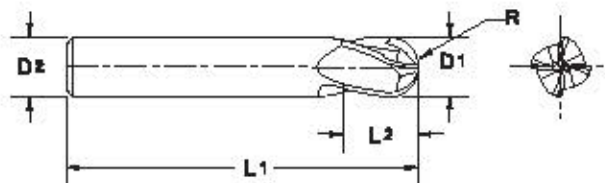


**TuffCut® GP
Series 165**

Z4



Manufactured with full ball radius end.



- Ideal for most ferrous metal applications

Tool No.	EDP	Diameter			Shank		OAL		Flute Length	
		D1			D2		L1		L2	
		Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm
16501560	16500	1/64		.0156	1.8		1-1/2		.023	
16503120	16501	1/32		.0312	1.8		1-1/2		1/16	
16503940	16503		1.0	.0394		3.0		38		2.0
16504680	16505	3/64		.0468	1.8		1-1/2		3/32	
16505910	16507		1.5	.0591		3.0		38		3.0
16506250	16509	1/16		.0625	1.8		1-1/2		1/8	
16507810	16510	5/64		.0781	1.8		1-1/2		5/32	
16507870	16511		2.0	.0787		3.0		38		4.0
16509370	16513	3/32		.0937	1.8		1-1/2		3/16	
16509840	16515		2.5	.0984		3.0		38		5.0
16510930	16516	7/64		.1093	1.8		1-1/2		7/32	
16511810	16517		3.0	.1181		3.0		38		6.0
16512500	16519	1/8		.1250	1.8		1-1/2		1/4	
16513780	16521		3.5	.1378		4.0		51		7.0
16514060	16522	9/64		.1406	3/16		2		5/16	
16515620	16523	5/32		.1562	3/16		2		5/16	
16515750	16525		4.0	.1575		4.0		51		8.0
16517180	16526	11/64		.1718	3/16		2		3/8	
16517720	16527		4.5	.1772		5.0		51		9.0
16518750	16529	3/16		.1875	3/16		2		3/8	
16519680	16531		5.0	.1968		5.0		51		11.0
16520310	16532	13/64		.2031	1/4		2		1/2	
16521650	16533		5.5	.2165		6.0		51		12.0
16521870	16535	7/32		.2187	1/4		2		1/2	
16523430	16536	15/64		.2343	1/4		2		1/2	
16523620	16537		6.0	.2362		6.0		51		13.0
16525000	16539	1/4		.2500	1/4		2		1/2	
16527560	16541		7.0	.2756		8.0		51		13.0
16528120	16542	9/32		.2812	5/16		2		1/2	
16531250	16543	5/16		.3125	5/16		2		1/2	
16531500	16545		8.0	.3150		8.0		51		13.0
16535430	16547		9.0	.3543		9.0		51		14.0
16537500	16549	3/8		.3750	3/8		2		5/8	
16539370	16551		10.0	.3937		10.0		51		14.0
16543310	16553		11.0	.4331		11.0		64		16.0
16543750	16555	7/16		.4375	7/16		2-1/2		5/8	

Inch	
D1	Tolerance
1/64	+ .000/- .001
1/32 - 1/4	+ .000/- .002
> 1/4 - 3/4	+ .000/- .003

Metric (mm)	
D1	Tolerance h10
1.00 - 3.00	+ .000/- .040
> 3.00 - 6.00	+ .000/- .048
> 6.00 - 10.00	+ .000/- .058
> 10.00 - 18.00	+ .000/- .070
> 18.00 - 20.00	+ .000/- .084

Inch	
R	Tolerance
≤ 1/16	+ .001/- .001
> 1/16 - 1/8	+ .002/- .002
> 1/8	+ .003/- .003

Metric (mm)	
R	Tolerance
≤ 1.5	+ .025/- .025
1.6 - 3.0	+ .050/- .050
> 3.0	+ .075/- .075

Series 165 coated tools on page 302.



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TuffCut® GP

GENERAL PURPOSE