TuffCut® XT9

380 / 380CB Series Recommended Cutting Data - Profile Milling - **Inch**

Workpiece Material Group	ISO	Coolant • Preferred o Possible x Not Possible			RWOC (Ae)		End Mill Diameter (inch)			
							3/8	1/2	5/8	3/4
					5%	10%				
		Emulsion	Compressed Air	MQL	2.3	1.67	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only add chip thinning when roughing or semi-finishing.			
					Vc - SFM		fz - in/tooth			
Low Carbon Steels	P	o	●	o	1475	1150	.0023	.0030	.0038	.0045
Medium Carbon Steels		o	●	o	1130	900	.0023	.0030	.0038	.0045
Alloy Steels		o	●	o	1035	840	.0023	.0030	.0038	.0045
Die / Tool Steels		o	●	o	900	725	.0023	.0030	.0038	.0045
Free Machining Stainless Steel	M	●	●	o	675	545	.0023	.0030	.0038	.0045
Austenitic Stainless Steel		●	x	o	525	430	.0019	.0025	.0031	.0038
Difficult Stainless Steel		●	x	o	410	330	.0015	.0020	.0025	.0030
PH Stainless Steels		●	●	o	525	430	.0015	.0020	.0025	.0030
Cobalt Chrome Alloys		●	x	o	410	325	.0015	.0020	.0025	.0030
Duplex (22%)		●	x	o	330	295	.0015	.0020	.0025	.0030
Super Duplex (25%)		●	x	o	245	195	.0015	.0020	.0025	.0030
High Temp Alloys	S	●	x	x	180	150	.0009	.0013	.0016	.0019
Titanium Alloys		●	x	x	375	330	.0015	.0020	.0025	.0030
Gray Cast Iron	K	●	o	o	1625	1295	.0023	.0030	.0038	.0045
Ductile Cast Iron		●	o	o	975	885	.0023	.0030	.0038	.0045
Malleable Cast Irons		●	o	o	575	490	.0023	.0030	.0038	.0045
Hardened Steels 45-50 HRC	H	o	●	o	610	495	.0019	.0025	.0031	.0038
Hardened Steels 50-55 HRC		o	●	o	510	-	.0013	.0018	.0022	.0026
Hardened Steels 55-60 HRC		o	●	o	330	-	.0008	.0010	.0013	.0015

Notes: For machining materials above 50 HRC, reduce stepover (ae) to 2-3% of DC for optimal performance.

Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula: (Calculated Feed x Spindle Maximum)/Calculated Speed.

380 Series Recommended Cutting Data - Chip Thickness Compensation Factors

RWOC (Ae)	Chip Thicknesss Compensation Factor
2%	3.57
3%	2.93
5%	2.30
7%	1.96
8%	1.84
10%	1.67

During profile milling with a radial width of less than 50% of the cutter diameter, the actual chip thickness at the cutting edge is less than the programmed chipload.

The accompanying table shows the increase in chipload by given radial width percentage to adjust for chip thinning. Multiply your recommended chip thickness by the appropriate feed factor to establish the correct feed rate.

TuffCut® XT9

380 / 380CB Series Recommended Cutting Data - Profile Milling - **Metric**

Workpiece Material Group	ISO	Coolant • Preferred o Possible x Not Possible			RWOC (Ae)		End Mill Diameter (mm)			
							10	12	16	20
					5%	10%				
		Emulsion	Compressed Air	MQL	2.3	1.67	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only add chip thinning when roughing or semi-finishing.			
					vc - m/min		fz - mm/tooth			
Low Carbon Steels	P	o	●	o	450	350	0.060	0.072	0.096	0.120
Medium Carbon Steels	P	o	●	o	345	275	0.060	0.072	0.096	0.120
Alloy Steels	P	o	●	o	315	255	0.060	0.072	0.096	0.120
Die / Tool Steels	P	o	●	o	275	220	0.060	0.072	0.096	0.120
Free Machining Stainless Steel	M	●	●	o	205	165	0.060	0.072	0.096	0.120
Austenitic Stainless Steel	M	●	x	o	160	130	0.050	0.060	0.080	0.100
Difficult Stainless Steel	M	●	x	o	125	100	0.040	0.048	0.064	0.080
PH Stainless Steels	M	●	●	o	160	130	0.040	0.048	0.064	0.080
Cobalt Chrome Alloys	M	●	x	o	125	100	0.040	0.048	0.064	0.080
Duplex (22%)	M	●	x	o	100	90	0.040	0.048	0.064	0.080
Super Duplex (25%)	M	●	x	o	75	60	0.040	0.048	0.064	0.080
High Temp Alloys	S	●	x	x	55	45	0.025	0.030	0.040	0.050
Titanium Alloys	S	●	x	x	115	100	0.040	0.048	0.064	0.080
Gray Cast Iron	K	●	o	o	495	395	0.060	0.072	0.096	0.120
Ductile Cast Iron	K	●	o	o	295	270	0.060	0.072	0.096	0.120
Malleable Cast Irons	K	●	o	o	175	150	0.060	0.072	0.096	0.120
Hardened Steels 45-50 HRC	H	o	●	o	185	150	0.050	0.060	0.080	0.100
Hardened Steels 50-55 HRC	H	o	●	o	155	-	0.035	0.042	0.056	0.070
Hardened Steels 55-60 HRC	H	o	●	o	100	-	0.020	0.024	0.032	0.040

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