

380N Series Recommended Cutting Data - Profile Milling with 4xD Neck Length- Inch

Workpiece Material Group	ISO	Coolant			RWOC (Ae)		End Mill Diameter (Inch)			
		Emulsion	Air	MQL	5%	7%	3/8	1/2	5/8	3/4
					2.3	1.96	← 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					
Low Carbon Steels	P	○	●	○	1330	1035	.0023	.0030	.0038	.0045
Medium Carbon Steels		○	●	○	1015	810	.0023	.0030	.0038	.0045
Alloy Steels		○	●	○	930	755	.0023	.0030	.0038	.0045
Die / Tool Steels		○	●	○	810	655	.0023	.0030	.0038	.0045
Free Machining Stainless Steels	M	●	●	○	610	490	.0023	.0030	.0038	.0045
Austenitic Stainless Steels		●	x	○	475	385	.0019	.0025	.0031	.0038
Difficult Stainless Steels		●	x	○	370	295	.0015	.0020	.0025	.0030
PH Stainless Steels		●	●	○	475	385	.0015	.0020	.0025	.0030
Cobalt Chrome Alloys		●	x	○	370	295	.0015	.0020	.0025	.0030
Duplex (22%)		●	x	○	295	265	.0015	.0020	.0025	.0030
Super Duplex (25%)		●	x	○	220	175	.0015	.0020	.0025	.0030
High Temp Alloys		S	●	x	x	160	-	.0009	.0013	.0016
Titanium Alloys	●		○	○	340	295	.0015	.0020	.0025	.0030
Gray Cast Irons	K	●	○	○	1465	1165	.0023	.0030	.0038	.0045
Ductile Cast Irons		●	○	○	880	795	.0023	.0030	.0038	.0045
Malleable Cast Irons		●	○	○	520	440	.0023	.0030	.0038	.0045
Hardened Steels 45-50 HRC	H	○	●	○	550	-	.0019	.0025	.0031	.0038
Hardened Steels 50-55 HRC		○	●	○	460	-	.0013	.0018	.0022	.0026
Hardened Steels 55-60 HRC		○	●	○	295	-	.0008	.0010	.0013	.0015

● Preferred ○ Possible x Not Possible

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.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

380N Series Recommended Cutting Data - Profile Milling with 5xD Neck Length- Inch

Workpiece Material Group	ISO	Coolant			RWOC (Ae)		End Mill Diameter (Inch)			
		Emulsion	Air	MQL	3%	5%	3/8	1/2	5/8	3/4
					2.93	2.3	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					
Low Carbon Steels	P	○	●	○	1035	805	.0018	.0024	.0030	.0036
Medium Carbon Steels		○	●	○	790	630	.0018	.0024	.0030	.0036
Alloy Steels		○	●	○	725	590	.0018	.0024	.0030	.0036
Die / Tool Steels		○	●	○	630	505	.0018	.0024	.0030	.0036
Free Machining Stainless Steels	M	●	●	○	470	380	.0018	.0024	.0030	.0036
Austenitic Stainless Steels		●	x	○	370	300	.0015	.0020	.0025	.0030
Difficult Stainless Steels		●	x	○	285	230	.0012	.0016	.0020	.0024
PH Stainless Steels		●	●	○	370	300	.0012	.0016	.0020	.0024
Cobalt Chrome Alloys		●	x	○	285	225	.0012	.0016	.0020	.0024
Duplex (22%)		●	x	○	230	205	.0012	.0016	.0020	.0024
Super Duplex (25%)		●	x	○	170	135	.0012	.0016	.0020	.0024
High Temp Alloys	S	●	x	x	125	-	.0008	.0010	.0013	.0015
Titanium Alloys		●	○	○	265	230	.0012	.0016	.0020	.0024
Gray Cast Irons	K	●	○	○	1140	905	.0018	.0024	.0030	.0036
Ductile Cast Irons		●	○	○	685	620	.0018	.0024	.0030	.0036
Malleable Cast Irons		●	○	○	405	345	.0018	.0024	.0030	.0036
Hardened Steels 45-50 HRC	H	○	●	○	425	-	.0015	.0020	.0025	.0030
Hardened Steels 50-55 HRC		○	●	○	355	-	.0011	.0014	.0018	.0021
Hardened Steels 55-60 HRC		○	●	○	230	-	.0006	.0008	.0010	.0012

● Preferred ○ Possible x Not Possible

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.

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380 Series Recommended Cutting Data - Chip Thickness Compensation Factors - Inch

RWOC (ae)	Chip Thickness 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.

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.

 **WARNING:** This product can expose you to chemicals including cobalt, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.