



TuffCut[®] XT

Series 278 3xD

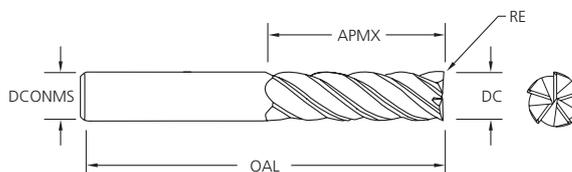
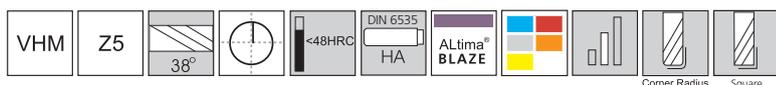
5 Flute Square & Radius End Mills

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is the *standard*[®]



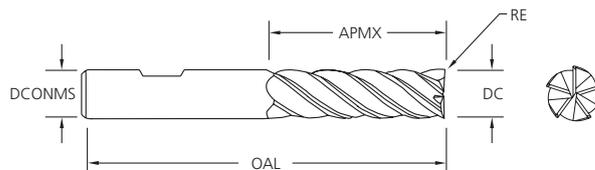
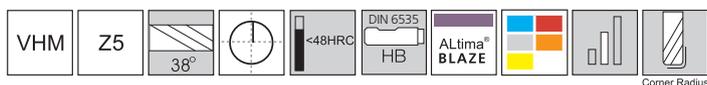
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TuffCut® XT Series 278 3xD



Tool No.	DC	DCONMS	OAL	APMX	RE
278 0803-0.5RB	8.0	8.0	75.0	26.0	0.5
278 1003B	10.0	10.0	80.0	32.0	-
278 1003-1.0RB	10.0	10.0	80.0	32.0	1.0
278 1203B	12.0	12.0	89.0	38.0	-
278 1203-1.0RB	12.0	12.0	89.0	38.0	1.0
278 1603-1.0RB	16.0	16.0	105.0	50.0	1.0

TuffCut® XT Series 278 3xD-W



Tool No.	DC	DCONMS	OAL	APMX	RE
278 1203-1.0RBW	12.0	12.0	89.0	38.0	1.0
278 1203-3.0RBW	12.0	12.0	89.0	38.0	3.0
278 1603-1.0RBW	16.0	16.0	105.0	50.0	1.0
278 1603-3.0RBW	16.0	16.0	105.0	50.0	3.0

TuffCut® XT Series 278 - Profile Milling with 3xD APMX

Recommended Cutting Data · Conditions de coupe recommandées · Empfohlene Schnittdaten · Dati di taglio Raccomandati · Zalecane Parametry

Workpiece Material Group	ISO	Coolant			RWOC (Ae)			End Mill Diameter (mm)				
		Emulsion	Air	MQL	5%	10%	15%	8	10	12	16	20
					2.3	1.67	1.4	← 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							
Low Carbon Steels	P	○	●	○	380	350	300	0.048	0.060	0.072	0.096	0.120
Medium Carbon Steels		○	●	○	270	260	240	0.048	0.060	0.072	0.096	0.120
Alloy Steels		○	●	○	260	240	220	0.048	0.060	0.072	0.096	0.120
Die / Tool Steels		○	●	○	220	200	180	0.048	0.060	0.072	0.096	0.120
Free Machining Stainless Steels	M	●	●	○	205	180	150	0.048	0.060	0.072	0.096	0.120
Austenitic Stainless Steels		●	x	○	160	140	100	0.040	0.050	0.060	0.080	0.100
Difficult Stainless Steels		●	x	○	110	90	70	0.032	0.040	0.048	0.064	0.080
PH Stainless Steels		●	●	○	160	140	100	0.032	0.040	0.048	0.064	0.080
Cobalt Chrome Alloys		●	x	○	120	100	80	0.032	0.040	0.048	0.064	0.080
Duplex (22%)		●	x	○	75	65	60	0.032	0.040	0.048	0.064	0.080
Super Duplex (25%)		●	x	○	70	60	55	0.032	0.040	0.048	0.064	0.080
High Temp Alloys	S	●	x	x	45	38	-	0.032	0.040	0.048	0.064	0.080
Titanium Alloys		●	x	x	120	90	80	0.032	0.040	0.048	0.064	0.080
Gray Cast Irons	K	●	○	○	360	350	300	0.048	0.060	0.072	0.096	0.120
Ductile Cast Irons		●	○	○	270	260	240	0.048	0.060	0.072	0.096	0.120
Malleable Cast Irons		●	○	○	160	150	140	0.048	0.060	0.072	0.096	0.120
Hardened Steels 45-50 HRC	H	○	●	○	160	140	-	0.040	0.050	0.060	0.080	0.100
Hardened Steels 50-55 HRC		○	●	○	150	130	-	0.032	0.040	0.048	0.064	0.080

● Preferred ○ Possible x Not Possible

RWOC (ae)	Chip Thickness Compensation Factor
5%	2.30
7%	1.96
8%	1.84
10%	1.67
13%	1.49
15%	1.40
20%	1.2

During profile milling with a radial width of less than 50% of the cutter diameter, the actual chip thickness at the cutting edge is reduced relative to the programmed feed per tooth (fz). The accompanying table provides a factor that indicates how much the fz can be increased, depending on the radial width of the cut. To determine the correct feed rate, multiply the recommended fz from the table by the appropriate compensation factor.

Notes

- Cutting data provided should be considered advisory only. Adjustments may be necessary depending on the application, workpiece rigidity, machine tool, etc.
- The 278 3xD should only be used in accurate tool holders with high gripping power. ER collet type holders are not recommended.

Helical interpolation recommendations:

- Under optimal conditions, with proper coolant flow/air blast techniques, up to 2° helical ramp angles are achievable with the 278 3xD in most materials
- A reduction of 30-50% in feed per tooth (fz) is recommended
- Recommended hole diameter = 1.9 x D
- To achieve a flat bottom, use a ramping diameter at least equal to tool diameter - 2 x corner radius.



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