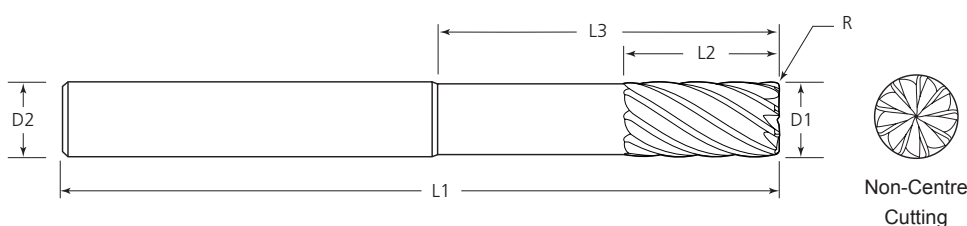
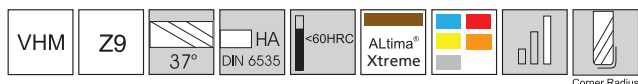


TuffCut® XT9 Series 380N



Features

- Stiff Core Technology
- Uneven 9 flute design
- ALtima® Xtreme Coating
- 4 and 5xØ reach necked versions

Benefits

- Less deflection for long reach applications
- High feed rates with reduced harmonics for stable machining
- Excellent high heat and wear resistance
- Long reach profiling applications

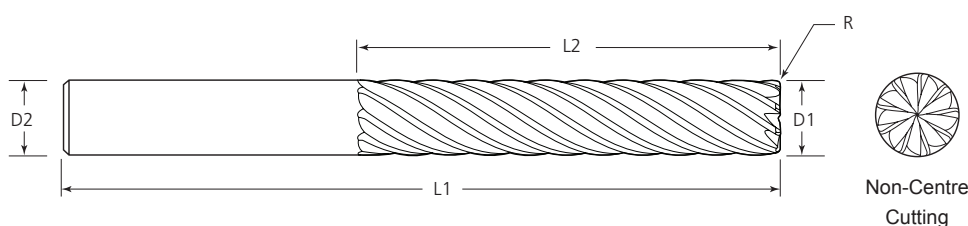
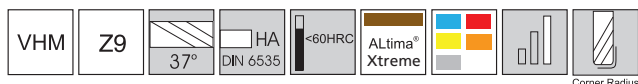
Tool Number	D1	D2 (h6)	L1	L2	L3	R
380M1200N4-1.0RAX	12.0	12.0	100.0	18.0	50.0	1.0
380M1200N5-1.0RAX	12.0	12.0	110.0	18.0	62.0	1.0
380M1600N4-1.0RAX	16.0	16.0	120.0	35.0	65.0	1.0
380M1600N5-1.0RAX	16.0	16.0	133.0	35.0	82.0	1.0

ALtima® Xtreme Coating Properties

Microhardness (HV)	3800
Max. Service Temp.	1100° C / 2012° F
Friction Coefficient	0.3 - 0.5
Designation	AX
Colour	Copper

M.A. FORD EUROPE LTD

TuffCut® XT9 Series 380L



Features

- Stiff Core Technology
- Uneven 9 flute design
- ALtima® Xtreme Coating
- 4 and 5xØ long flute versions

Benefits

- Less deflection for long reach applications
- High feed rates with reduced harmonics for stable machining
- Excellent high heat and wear resistance
- Long reach profiling applications

Tool Number	D1	D2 (h6)	L1	L2	R
380M1204-1.0RAX	12.0	12.0	100.0	50.0	1.0
380M1205-1.0RAX	12.0	12.0	120.0	62.0	1.0
380M1604-1.0RAX	16.0	16.0	120.0	66.0	1.0
380M1605-1.0RAX	16.0	16.0	150.0	82.0	1.0

ALtima® Xtreme Coating Properties

Microhardness (HV)	3800
Max. Service Temp.	1100° C / 2012° F
Friction Coefficient	0.3 - 0.5
Designation	AX
Colour	Copper

TuffCut® XT9 Series 380N and 380L

Recommended cutting data

Workpiece Material Group	ISO	Hardness	Coolant ● Preferred ○ Possible x Not Possible			Profiling (ae)			End Mill Diameter (mm)	
						5% 7% 10%			12	16
						2.3 2.0 1.8			← 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.	
			Max.	Air	MMS	vc - m/min				fz - mm/tooth
Low Carbon Steels 1018, 1020	P	up to 28 Rc	●	●	●	385	350	310	0.050	0.060
Medium Carbon Steels 1140, 1145	P	28 to 38 Rc	●	●	●	250	230	200	0.050	0.060
Alloy Steels 4140, 4145	P	28 to 44 Rc	●	●	●	250	230	200	0.050	0.060
Die / Tool Steels A2, D2, H13, P20	P	28 to 44 Rc	●	●	●	220	200	180	0.050	0.060
Stainless Steel - Easy to Machine 430F, 301, 303, 410, 416 Annealed, 420F, 430	M	up to 28 Rc	●	x	○	165	150	130	0.050	0.060
Stainless Steel - Austenitic 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	M	up to 28 Rc	●	x	○	130	120	100	0.050	0.060
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321	M	up to 28 Rc	●	x	○	100	90	80	0.050	0.060
Stainless Steel - Difficult to Machine 17-4 PH, PH13-8Mo, Nitronics	M	over 28 Rc	●	x	○	100	90	80	0.050	0.060
Cobalt Chrome Alloys	M		●	x	○	100	90	80	0.050	0.060
Duplex (22%)	M		●	x	○	60	50	45	0.050	0.060
Super Duplex (25%)	M		●	x	○	60	50	45	0.050	0.060
High Temp Alloys	S	up to 42 Rc	●	x	x	45	40	35	0.050	0.060
Inconel	S		●	x	x	45	40	35	0.025	0.030
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr	S	up to 42 Rc	●	x	x	90	85	80	0.030	0.040
Cast Iron - Gray CG, ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	K	up to 240 HB	●	○	○	395	355	315	0.050	0.060
Cast Iron - Ductile & Malleable CGI 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250, 300, 350, 400, 450	K	over 240 HB	●	○	○	165	150	130	0.050	0.060
Hardened Steels	H	40-50 Rc	●	○	○	150	130	120	0.040	0.050
Hardened Steels		50-55 Rc	●	○	○	125	110	100	0.025	0.030
Hardened Steels		>55 Rc	●	○	○	80	75	75	0.020	0.025

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.

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.