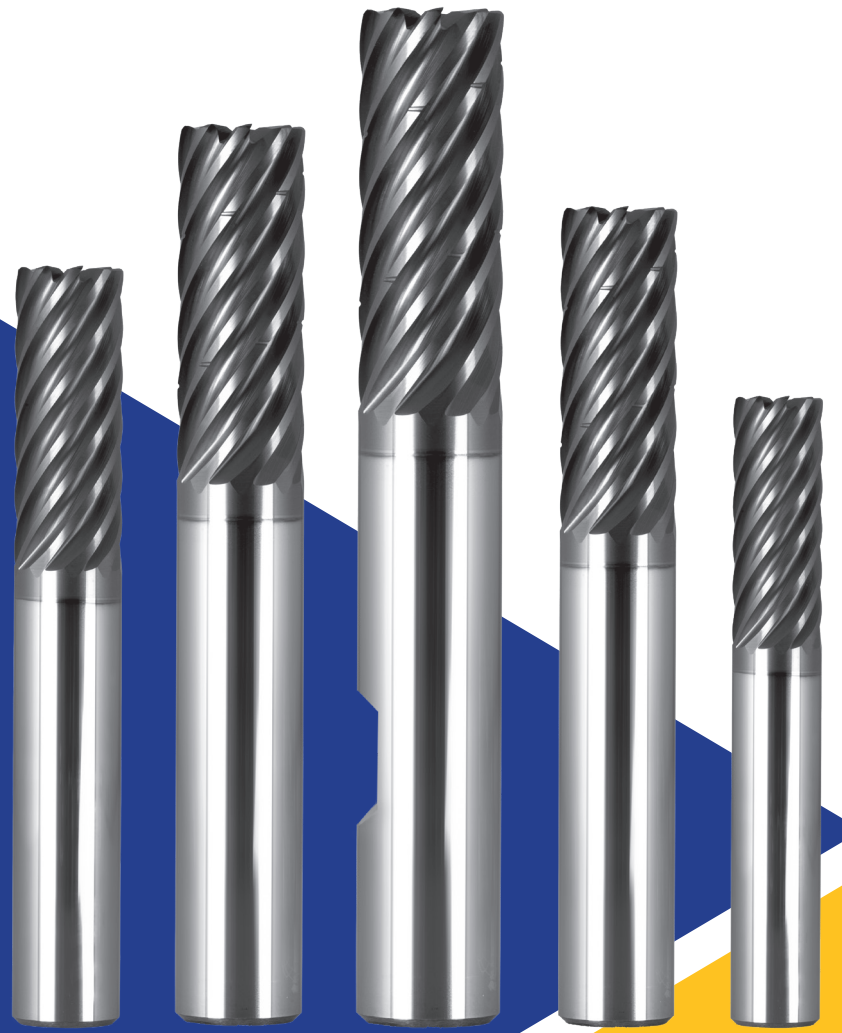
M.A. FORD
High Performance Cutting Tools

*Where **high performance** is the **standard***®

TuffCut® XV

Series XV9

9 Flute Radius End Mill
Stainless, Titanium & HRSA

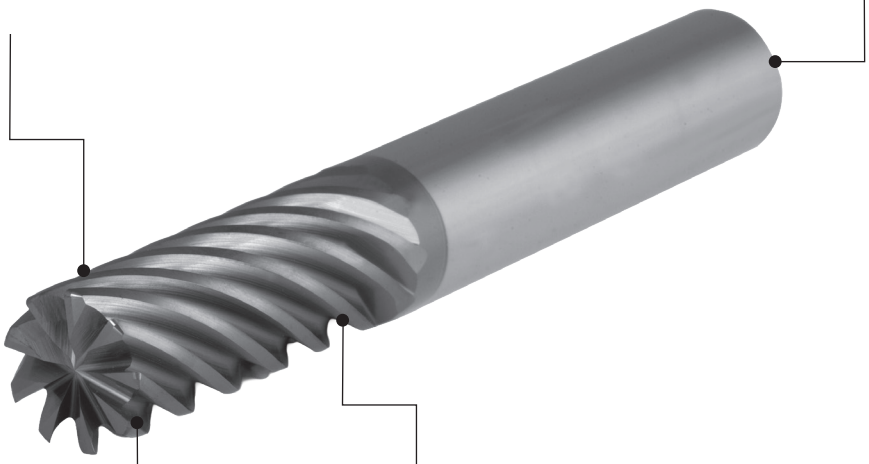


www.mafordeurope.com

TuffCut® XV Series XV9 / XV9CB / XV9CB-W

Available in two flute versions
either chip breaker geometry for chip control or continuous flute geometry for edge strength.

9 flutes
up to 28% higher feed potential vs 7-flute tools in profiling and dynamic milling operations.



ALtima® Q Coating
provides optimal heat and wear resistance enabling increased tool life.

High helix angle (37°)
for smoother cutting action, reduced vibration, and improved harmonics.

The XV9 end mill features an advanced 9-flute geometry engineered specifically for a wide range of materials and is based upon our high performing 380 Series, with improved substrate and advanced multi-purpose coating.

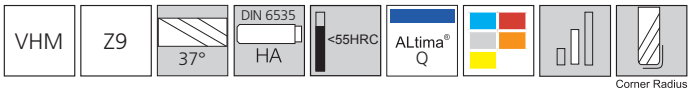
ALtima® Q coating – high heat resistance, lower wear, greater chipping resistance, and longer tool life in Steels, Stainless Steels, Titanium and High-Temperature Alloys.

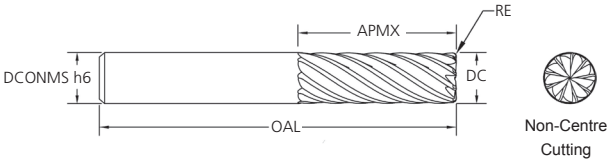
Applications

The XV9 was developed for high metal removal in profile milling and dynamic roughing tool paths, with reliable finishing performance in tough-to-machine applications.

Suitable Materials

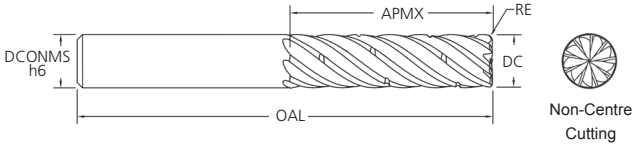
TuffCut® XV Series XV9





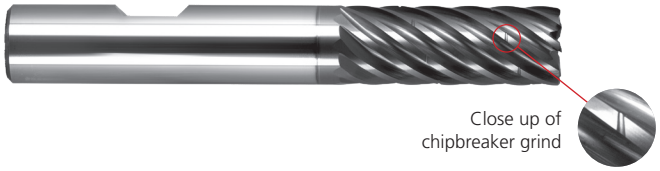
Tool No.	DC	DCONMS	OAL	APMX	RE
XV9M0800-R0.5AQ	8.0	8.0	63.0	22.0	0.5
XV9M1000-R0.5AQ	10.0	10.0	72.0	27.0	0.5
XV9M1000-R1.0AQ	10.0	10.0	72.0	27.0	1.0
XV9M1200-R0.5AQ	12.0	12.0	81.0	32.0	0.5
XV9M1200-R1.0AQ	12.0	12.0	81.0	32.0	1.0
XV9M1600-R1.0AQ	16.0	16.0	92.0	42.0	1.0

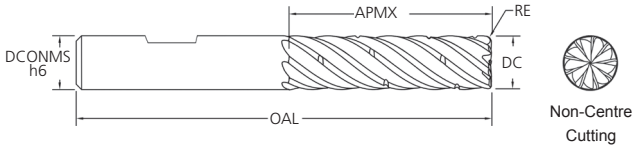
TuffCut® XV Series XV9CB



Tool No.	DC	DCONMS	OAL	APMX	RE
XV9CBM0800-R0.5AQ	8.0	8.0	63.0	22.0	0.5
XV9CBM1000-R0.5AQ	10.0	10.0	72.0	27.0	0.5
XV9CBM1200-R0.5AQ	12.0	12.0	81.0	32.0	0.5
XV9CBM1600-R1.0AQ	16.0	16.0	92.0	42.0	1.0

TuffCut® XV Series XV9CB-W





Tool No.	DC	DCONMS	OAL	APMX	RE
XV9CBM1200-R0.5AQW	12.0	12.0	85.0	32.0	0.5

TuffCut® XV Series XV9 / XV9CB / XV9CB-W - Profile Milling with 4xD Cutting Length - Metric

Workpiece Material Group	ISO	Coolant			RWOC (Ae)		End Mill Diameter (mm)			
							8	10	12	16
					5%	10%	← 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.			
					2.3	1.67				
		Emulsion	Air	MQL	Vc - M/Min		fz - mm/tooth			
Low Carbon Steels	P	○	●	○	380	350	0.048	0.060	0.072	0.096
Medium Carbon Steels		○	●	○	270	260	0.048	0.060	0.072	0.096
Alloy Steels		○	●	○	260	240	0.048	0.060	0.072	0.096
Die / Tool Steels		○	●	○	220	200	0.048	0.060	0.072	0.096
Free Machining Stainless Steels	M	●	●	○	205	180	0.048	0.060	0.072	0.096
Austenitic Stainless Steels		●	x	○	160	140	0.040	0.050	0.060	0.080
Difficult Stainless Steels		●	x	○	110	90	0.032	0.040	0.048	0.064
PH Stainless Steels		●	●	○	160	140	0.032	0.040	0.048	0.064
Cobalt Chrome Alloys		●	x	○	120	100	0.032	0.040	0.048	0.064
Duplex (22%)		●	x	○	75	65	0.032	0.040	0.048	0.064
Super Duplex (25%)		●	x	○	70	60	0.032	0.040	0.048	0.064
High Temp Alloys	S	●	x	x	50	40	0.020	0.025	0.030	0.040
Titanium Alloys		●	x	x	120	90	0.032	0.040	0.048	0.064
Gray Cast Irons	K	●	○	○	360	350	0.048	0.060	0.072	0.096
Ductile Cast Irons		●	○	○	270	260	0.048	0.060	0.072	0.096
Hardened Steels 45-50 HRC	H	x	●	○	160	140	0.040	0.050	0.060	0.080
Hardened Steels 50-55 HRC		x	●	○	150	130	0.016	0.020	0.024	0.032

● Preferred ○ Possible x Not Possible

Notes:
- Cutting data provided should be considered advisory only. Adjustments may be necessary depending on the application, workpiece rigidity, machine tool, etc.
- The XV9 / XV9CB should only be used in accurate tool holders with high gripping power. ER collet type holders are not recommended.
- For machining materials above 50 HRC, reduce stepover (Ae) to 2-3% of DC for optimal performance

RWOC (Ae)	Chip Thicknesss Compensation Factor
1%	5.00
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 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.

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M.A. FORD High Performance Cutting Tools
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M.A. FORDMAX RANGE

TuffCut® Endmills

cyclone Drills

TrueSize® Reamers

Twister® Drills

Chamfer & Profile Mills

Diamond Grind Routers

Edgehog® Burrs

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