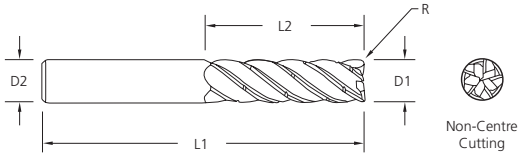
NEW

TuffCut® XV Series XV5CB 2xD

VHM | Z5 | 40° | HB DIN 6535 | 7° Max | ALtima® Q | Corner Radius | Chipbreaker



Tool Number	D1	D2	L1	L2	R
XV5CBM1002-R0.5AQW	10.0	10.0	74.0	27.0	0.5
XV5CBM1202-R0.5AQW	12.0	12.0	85.0	32.0	0.5
XV5CBM1602-R0.5AQW	16.0	16.0	98.0	42.0	0.5
XV5CBM2002-R0.5AQW	20.0	20.0	110.0	52.0	0.5

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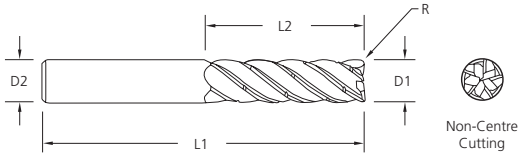
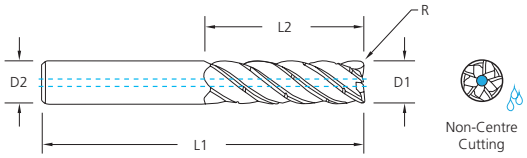


Tool Number	D1	D2	L1	L2	R
XV5CBM1003-R0.5AQW	10.0	10.0	80.0	33.0	0.5
XV5CBM1203-R0.5AQW	12.0	12.0	93.0	40.0	0.5
XV5CBM1603-R0.5AQW	16.0	16.0	110.0	54.0	0.5
XV5CBM2003-R0.5AQW	20.0	20.0	124.0	66.0	0.5

NEW

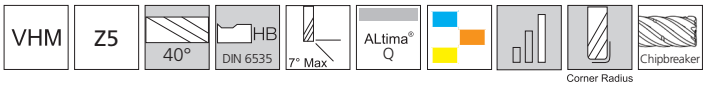
TuffCut® XV Series XV5CB 3xD-C

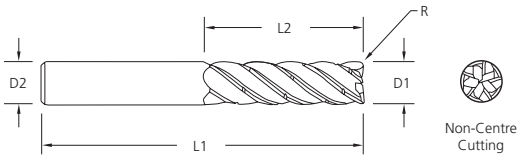


Tool Number	D1	D2	L1	L2	R
XV5CBM1003-R0.5AQW-C	10.0	10.0	80.0	33.0	0.5
XV5CBM1203-R0.5AQW-C	12.0	12.0	93.0	40.0	0.5
XV5CBM1603-R0.5AQW-C	16.0	16.0	110.0	54.0	0.5
XV5CBM2003-R0.5AQW-C	20.0	20.0	124.0	66.0	0.5

NEW

TuffCut® XV Series XV5CB 4xD





Tool Number	D1	D2	L1	L2	R
XV5CBM1004-R0.5AQW	10.0	10.0	90.0	43.0	0.5
XV5CBM1204-R0.5AQW	12.0	12.0	104.0	51.0	0.5
XV5CBM1604-R0.5AQW	16.0	16.0	123.0	67.0	0.5
XV5CBM2004-R0.5AQW	20.0	20.0	141.0	83.0	0.5

Recommended Cutting Data

Series XV5CB - 2xD											
Workpiece Material Group	ISO	Coolant			RWOC (ae)			Tool Diameter (mm)			
								10	12	16	20
		Emulsion	Air	MQL	10%	15%	20%	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only use this calculation when roughing or semi-finishing.			
					1.67	1.4	1.2				
					Vc - M/Min			fz - mm/tooth			
Low Carbon Steels	P	•	•	•	350	300	250	0.060	0.072	0.096	0.120
Medium Carbon Steels	P	•	•	•	260	240	220	0.060	0.072	0.096	0.120
Alloy Steels	P	•	•	•	240	220	200	0.060	0.072	0.096	0.120
Die / Tool Steels	P	•	•	•	220	200	180	0.060	0.072	0.096	0.120
Stainless Steels - Free Machining	M	•	•	o	205	180	150	0.060	0.072	0.096	0.120
Stainless Steels - Austenitic	M	•	x	o	160	140	100	0.048	0.058	0.077	0.096
Stainless Steels - Difficult to Machine	M	•	x	o	110	90	70	0.040	0.048	0.064	0.080
Stainless Steels - Precipitation Hardened	M	•	•	o	160	140	100	0.048	0.058	0.077	0.096
Titanium Alloys - Special Alloys	S	•	x	x	120	100	80	0.040	0.048	0.064	0.080

Series XV5CB - 3xD											
Workpiece Material Group	ISO	Coolant			RWOC (ae)			Tool Diameter (mm)			
								10	12	16	20
		Emulsion	Air	MQL	5%	10%	15%	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only use this calculation when roughing or semi-finishing.			
					2.3	1.67	1.4				
					Vc - M/Min			fz - mm/tooth			
Low Carbon Steels	P	•	•	•	350	300	250	0.060	0.072	0.096	0.120
Medium Carbon Steels	P	•	•	•	260	240	220	0.060	0.072	0.096	0.120
Alloy Steels	P	•	•	•	240	220	200	0.060	0.072	0.096	0.120
Die / Tool Steels	P	•	•	•	220	200	180	0.060	0.072	0.096	0.120
Stainless Steels - Free Machining	M	•	•	o	205	180	150	0.060	0.072	0.096	0.120
Stainless Steels - Austenitic	M	•	x	o	160	140	100	0.048	0.058	0.077	0.096
Stainless Steels - Difficult to Machine	M	•	x	o	110	90	70	0.040	0.048	0.064	0.080
Stainless Steels - Precipitation Hardened	M	•	•	o	160	140	100	0.048	0.058	0.077	0.096
Titanium AlloysSpecial Alloys	S	•	x	x	120	100	80	0.040	0.048	0.064	0.080

Series XV5CB - 4xD											
Workpiece Material Group	ISO	Coolant			RWOC (ae)			Tool Diameter (mm)			
								10	12	16	20
		Emulsion	Air	MQL	5%	7%	10%	← Multiply fz by this Factor based on ae. When finishing, use the standard fz per chart below. Only use this calculation when roughing or semi-finishing.			
					2.3	2.0	1.67				
					Vc - M/Min			fz - mm/tooth			
Low Carbon Steels	P	•	•	•	300	275	250	0.040	0.048	0.064	0.080
Medium Carbon Steels	P	•	•	•	240	230	220	0.040	0.048	0.064	0.080
Alloy Steels	P	•	•	•	220	210	200	0.040	0.048	0.064	0.080
Die / Tool Steels	P	•	•	•	200	190	180	0.040	0.048	0.064	0.080
Stainless Steels - Free Machining	M	•	•	o	180	165	150	0.040	0.048	0.064	0.080
Stainless Steels - Austenitic	M	•	x	o	160	150	140	0.028	0.034	0.045	0.056
Stainless Steels - Difficult to Machine	M	•	x	o	90	80	70	0.024	0.029	0.038	0.048
Stainless Steels - Precipitation Hardened	M	•	•	o	160	150	140	0.028	0.034	0.045	0.056
Titanium Alloys - Special Alloys	S	•	x	x	100	90	80	0.024	0.029	0.038	0.048

• Preferred o 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 XV5CB should only be used in accurate tool holders with high gripping power. ER collet type holders are not recommended.
For optimal performance in ISO S materials, ae = ≤ 0.1 x D

XV5CB Series Recommended Cutting Data - Profile Milling with 4xD ADOC (ap)

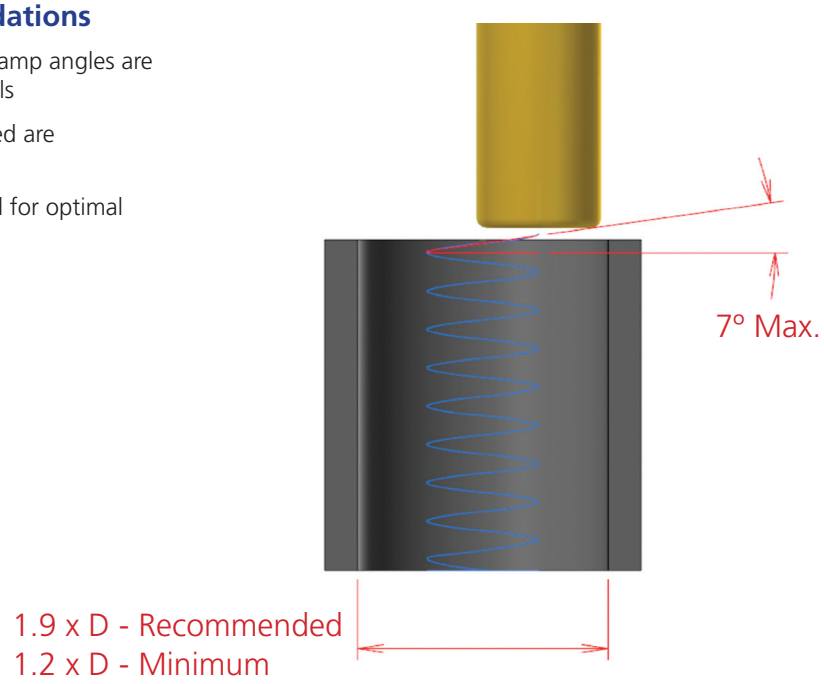
Helical interpolation recommendations

Under optimal conditions, up to 7° helical ramp angles are achievable with the XV5CB in most materials

A reduction of 30-50% in both speed & feed are recommended for helical interpolation

A hole diameter of 1.9 x D is recommended for optimal helical interpolation performance

Minumum hole diameter = 1.2 x D



RWOC (ae)	Chip Thicknesss Compensation Factor
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.