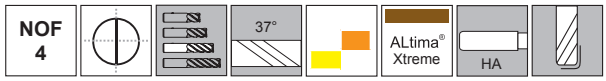
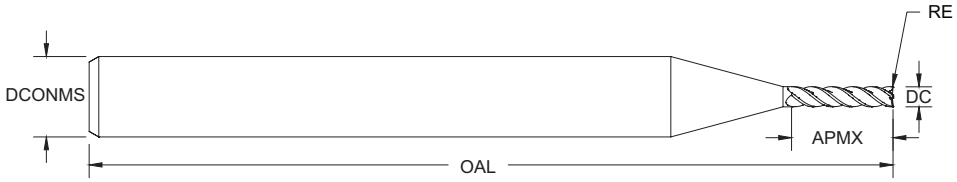
TuffCut® Micro Series 4MVR







For deep, dynamic micro milling applications in aerospace & medical materials.

Features

- Ultrafine carbide grade
- 37° helix, variable pitch geometry
- Thick core design
- Reinforced (1/4") shank

Benefits

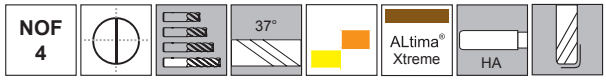
- Optimum balance between hardness & toughness
- Smooth cutting action & reduced harmonics
- Increased strength in long ap applications
- Increased stiffness & rigidity

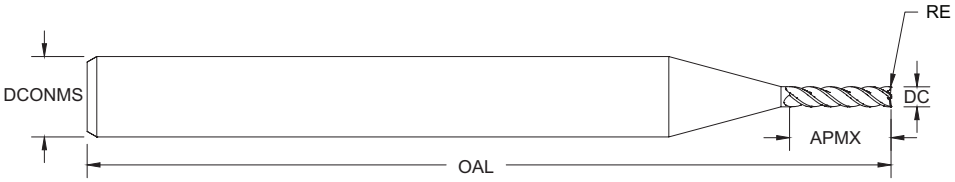
ALtima® Xtreme		DC		DCONMS	OAL	APMX	RE
Tool Number	EDP	Inch	Decimal	Inch	Inch	Inch	Inch
4MVR0312AX	20960	1/32	.0312	1/4	2-1/2	3/32	-
4MVR0312R.005AX	20961	1/32	.0312	1/4	2-1/2	3/32	.005
4MVR0468AX	20962	3/64	.0468	1/4	2-1/2	5/32	-
4MVR0468R.010AX	20963	3/64	.0468	1/4	2-1/2	5/32	.010
4MVR0625AX	20964	1/16	.0625	1/4	2-1/2	3/16	-
4MVR0625R.010AX	20965	1/16	.0625	1/4	2-1/2	3/16	.010
4MVR0781AX	20966	5/64	.0781	1/4	2-1/2	1/4	-
4MVR0781R.010AX	20967	5/64	.0781	1/4	2-1/2	1/4	.010
4MVR0938AX	20968	3/32	.0938	1/4	2-1/2	9/32	-
4MVR0938R.010AX	20969	3/32	.0938	1/4	2-1/2	9/32	.010
4MVR1250AX	20970	1/8	.1250	1/4	2-1/2	3/8	-
4MVR1250R.010AX	20971	1/8	.1250	1/4	2-1/2	3/8	.010

Inch	
DC	Tolerance
.0312 - .1250	±.0005

Inch	
DCONMS	Tolerance (h6)
.2500	+0/-.00035

TuffCut® Micro Series 4MVL







For deep, dynamic micro milling applications in aerospace & medical materials.

Features

- Ultrafine carbide grade
- 37° helix, variable pitch geometry
- Thick core design
- Reinforced (1/4") shank

Benefits

- Optimum balance between hardness & toughness
- Smooth cutting action & reduced harmonics
- Increased strength in long ap applications
- Increased stiffness & rigidity

ALtima® Xtreme		DC		DCONMS	OAL	APMX	RE
Tool Number	EDP	Inch	Decimal	Inch	Inch	Inch	Inch
4MVL0312AX	20972	1/32	.0312	1/4	2-1/2	5/32	-
4MVL0312R.005AX	20973	1/32	.0312	1/4	2-1/2	5/32	.005
4MVL0468AX	20974	3/64	.0468	1/4	2-1/2	1/4	-
4MVL0468R.010AX	20975	3/64	.0468	1/4	2-1/2	1/4	.010
4MVL0625AX	20976	1/16	.0625	1/4	2-1/2	5/16	-
4MVL0625R.010AX	20977	1/16	.0625	1/4	2-1/2	5/16	.010
4MVL0781AX	20978	5/64	.0781	1/4	2-1/2	3/8	-
4MVL0781R.010AX	20979	5/64	.0781	1/4	2-1/2	3/8	.010
4MVL0938AX	20980	3/32	.0938	1/4	2-1/2	1/2	-
4MVL0938R.010AX	20981	3/32	.0938	1/4	2-1/2	1/2	.010
4MVL1250AX	20982	1/8	.1250	1/4	2-1/2	5/8	-
4MVL1250R.010AX	20983	1/8	.1250	1/4	2-1/2	5/8	.010

Inch	
DC	Tolerance
.0312 - .1250	±.0005

Inch	
DCONMS	Tolerance (h6)
.2500	+0/-.00035

4MVR Series Recommended Cutting Data - **Inch**

Workpiece Material Group	ISO	Coolant			Application	Type of cut		Vc-SFM	Tool Diameter (inch)					
		Emulsion	Air	MQL		Radial (Ae)	Axial (Ap)		1/32	3/64	1/16	5/64	3/32	1/8
									fz - in/tooth					
Austentic & PH Stainless Steels	**M**	●	X	X	Slotting	1 x D	0.5 x D	245	.00015	.00023	.00030	.00038	.00045	.00060
					Profiling	0.1 x D	3 x D	490	.00030	.00045	.00060	.00075	.00090	.00120
High Temp Alloys	**S**	●	X	X	Slotting	1 x D	0.3 x D	100	.00006	.00009	.00012	.00015	.00018	.00024
					Profiling	0.05 x D	3 x D	150	.00018	.00026	.00035	.00044	.00053	.00070
Titanium Alloys		●	X	X	Slotting	1 x D	0.5 x D	245	.00013	.00019	.00025	.00031	.00038	.00050
					Profiling	0.1 x D	3 x D	350	.00025	.00038	.00050	.00063	.00075	.00100
Aluminum Alloys	**N**	●	X	X	Slotting	1 x D	1 x D	525	.00035	.00053	.00070	.00088	.00105	.00140
					Profiling	0.2 x D	3 x D	655	.00056	.00084	.00113	.00141	.00169	.00225

● Preferred O Possible X Not Possible

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.
Max. ramp angle = 3° @ 30-50% feed reduction

4MVL Series Recommended Cutting Data - **Inch**

Workpiece Material Group	ISO	Coolant			Application	Type of cut		Vc-SFM	Tool Diameter (inch)					
		Emulsion	Air	MQL		Radial (Ae)	Axial (Ap)		1/32	3/64	1/16	5/64	3/32	1/8
									fz - in/tooth					
Austentic & PH Stainless Steels	**M**	●	X	X	Slotting	1 x D	0.3 x D	245	.00015	.00023	.00030	.00038	.00045	.00060
					Profiling	0.05 x D	5 x D	490	.00030	.00045	.00060	.00075	.00090	.00120
High Temp Alloys	**S**	●	X	X	Slotting	1 x D	0.2 x D	100	.00006	.00009	.00012	.00015	.00018	.00024
					Profiling	0.03 x D	5 x D	150	.00018	.00026	.00035	.00044	.00053	.00070
Titanium Alloys		●	X	X	Slotting	1 x D	0.3 x D	245	.00013	.00019	.00025	.00031	.00038	.00050
					Profiling	0.05 x D	5 x D	350	.00025	.00038	.00050	.00063	.00075	.00100
Aluminum Alloys	**N**	●	X	X	Slotting	1 x D	0.5 x D	525	.00031	.00047	.00063	.00078	.00094	.00125
					Profiling	0.1 x D	5 x D	655	.00050	.00075	.00100	.00125	.00150	.00200

● Preferred O Possible X Not Possible

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.
Max. ramp angle = 3° @ 30-50% feed reduction

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.