

Recommended Cutting Data 3MVS/3MVR Series - Inch

Note: Square corner tools recommended for finishing applications only.

Stub Length - 3MVS Series																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		● Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	●	X	○	Slotting	-	.5 x D	245	.00004	.00007	.00011	.00015	.00019	.00022	.00026	.00030
					Profiling	.2 x D	1 x D	490	.00010	.00020	.00031	.00041	.00051	.00061	.00072	.00083
High Temp Alloys	S	●	X	X	Slotting	-	.5 x D	100	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.1 x D	1 x D	150	.00008	.00017	.00026	.00035	.00044	.00052	.00061	.00070
Titanium Alloys	S	●	X	X	Slotting	-	.5 x D	245	.00004	.00007	.00011	.00015	.00019	.00022	.00026	.00030
					Profiling	.2 x D	1 x D	350	.00006	.00012	.00019	.00025	.00031	.00037	.00044	.00050

Regular Length - 3MVR Series																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		● Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	●	X	○	Slotting	-	.5 x D	245	.00004	.00007	.00011	.00015	.00019	.00022	.00026	.00030
					Profiling	.1 x D	2-2.5 x D	490	.00010	.00020	.00031	.00041	.00051	.00061	.00072	.00083
High Temp Alloys	S	●	X	X	Slotting	-	.5 x D	100	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.05 x D	2-2.5 x D	150	.00008	.00017	.00026	.00035	.00044	.00052	.00061	.00070
Titanium Alloys	S	●	X	X	Slotting	-	.5 x D	245	.00004	.00007	.00011	.00015	.00019	.00022	.00026	.00030
					Profiling	.1 x D	2-2.5 x D	350	.00006	.00012	.00019	.00025	.00031	.00037	.00044	.00050

Inch necked tools cutting data on pages 8-9.

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:

$$\frac{(\text{Calculated Feed} \times \text{Spindle Maximum})}{\text{Calculated Speed}}$$

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



Recommended Cutting Data 3MVS Series Necked Tools - Inch

Note: Square corner tools recommended for finishing applications only.

3 X D Necked Tools (3MVS Series - N3)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.5 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.1 x D	1 x D	490	.0010	.0020	.0031	.0041	.0051	.0061	.0072	.0083
High Temp Alloys	S	•	X	X	Slotting	-	.5 x D	100	.0003	.0006	.0009	.0012	.0016	.0019	.0022	.0025
					Profiling	.05 x D	1 x D	150	.0008	.0017	.0026	.0035	.0044	.0052	.0061	.0070
Titanium Alloys	S	•	X	X	Slotting	-	.5 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.1 x D	1 x D	350	.0006	.0012	.0019	.0025	.0031	.0037	.0044	.0050

5 X D Necked Tools (3MVS Series - N5)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.3 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.08 x D	1 x D	490	.0010	.0020	.0031	.0041	.0051	.0061	.0072	.0083
High Temp Alloys	S	•	X	X	Slotting	-	.3 x D	100	.0003	.0006	.0009	.0012	.0016	.0019	.0022	.0025
					Profiling	.05 x D	1 x D	150	.0008	.0017	.0026	.0035	.0044	.0052	.0061	.0070
Titanium Alloys	S	•	X	X	Slotting	-	.3 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.08 x D	1 x D	350	.0006	.0012	.0019	.0025	.0031	.0037	.0044	.0050

8 X D Necked Tools (3MVS Series - N8)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.2 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.05 x D	.75 x D	490	.0010	.0020	.0031	.0041	.0051	.0061	.0072	.0083
High Temp Alloys	S	•	X	X	Slotting	-	.2 x D	100	.0003	.0006	.0009	.0012	.0016	.0019	.0022	.0025
					Profiling	.05 x D	.75 x D	150	.0008	.0017	.0026	.0035	.0044	.0052	.0061	.0070
Titanium Alloys	S	•	X	X	Slotting	-	.2 x D	245	.0004	.0007	.0011	.0015	.0019	.0022	.0026	.0030
					Profiling	.05 x D	.75 x D	350	.0006	.0012	.0019	.0025	.0031	.0037	.0044	.0050

Inch non-necked tools cutting data on page 7.

Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula:
 $(\text{Calculated Feed} \times \text{Spindle Maximum}) / \text{Calculated Speed}$.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

Recommended Cutting Data 3MVS Series Necked Tools - Inch continued

Note: Square corner tools recommended for finishing applications only.

10 X D Necked Tools (3MVS Series - N10)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.15 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.15 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
High Temp Alloys	S	•	X	X	Slotting	-	.15 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
					Profiling	.5 x D	.15 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
Titanium Alloys	S	•	X	X	Slotting	-	.15 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.15 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025

12 X D Necked Tools (3MVS Series - N12)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.1 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.1 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
High Temp Alloys	S	•	X	X	Slotting	-	.1 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
					Profiling	.5 x D	.1 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
Titanium Alloys	S	•	X	X	Slotting	-	.1 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.1 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025

15 X D Necked Tools (3MVS Series - N15)																
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - SFM	End Mill Diameter (inch)							
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		.015	.031	.047	.062	.078	.093	.109	.125
		Max.	Air	MMS					fz - in/tooth by Cutter Diameter							
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.07 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.07 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
High Temp Alloys	S	•	X	X	Slotting	-	.07 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
					Profiling	.5 x D	.07 x D	100	.00002	.00005	.00008	.00010	.00012	.00015	.00017	.00020
Titanium Alloys	S	•	X	X	Slotting	-	.07 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025
					Profiling	.5 x D	.07 x D	245	.00003	.00006	.00009	.00012	.00016	.00019	.00022	.00025

Inch non-necked tools cutting data on page 7.

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.



Recommended Cutting Data 3MVS/3MVR Series - Metric

Note: Square corner tools recommended for finishing applications only.

Stub Length - 3MVS Series														
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - m/min	End Mill Diameter (mm)					
		● Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		0.5	1.0	1.5	2.0	2.5	3.0
		Max.	Air	MMS					fz - mm/tooth by Cutter Diameter					
Moderate Machining & PH Stainless Steels	M	●	X	○	Slotting	-	.5 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.2 x D	1 x D	150	.0033	.0066	.0099	.0132	.0165	.0198
High Temp Alloys	S	●	X	X	Slotting	-	.5 x D	30	.0010	.0020	.0030	.0040	.0050	.0060
					Profiling	.1 x D	1 x D	45	.0028	.0056	.0084	.0112	.0140	.0168
Titanium Alloys	S	●	X	X	Slotting	-	.5 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.2 x D	1 x D	107	.0020	.0040	.0060	.0080	.0100	.0120

Regular Length - 3MVR Series														
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		vc - m/min	End Mill Diameter (mm)					
		● Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		0.5	1.0	1.5	2.0	2.5	3.0
		Max.	Air	MMS					fz - mm/tooth by Cutter Diameter					
Moderate Machining & PH Stainless Steels	M	●	X	○	Slotting	-	.5 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.1 x D	2-2.5 x D	150	.0033	.0066	.0099	.0132	.0165	.0198
High Temp Alloys	S	●	X	X	Slotting	-	.5 x D	30	.0010	.0020	.0030	.0040	.0050	.0060
					Profiling	.05 x D	2-2.5 x D	45	.0028	.0056	.0084	.0112	.0140	.0168
Titanium Alloys	S	●	X	X	Slotting	-	.5 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.1 x D	2-2.5 x D	107	.0020	.0040	.0060	.0080	.0100	.0120

Metric necked tools cutting data on page 11.



Spindle Maximum - Should the calculated spindle speed be more than your actual spindle maximum, use this formula:
 $(\text{Calculated Feed} \times \text{Spindle Maximum}) / \text{Calculated Speed}$.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

Recommended Cutting Data 3MVS Series Necked Tools - Metric

Note: Square corner tools recommended for finishing applications only.

5 X D Necked Tools (3MVS Series - N5)														
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		Vc m/min	End Mill Diameter (mm)					
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		0.5	1.0	1.5	2.0	2.5	3.0
		Max.	Air	MMS					fz - mm/tooth by Cutter Diameter					
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.3 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.08 x D	1 x D	150	.0033	.0066	.0099	.0132	.0165	.0198
High Temp Alloys	S	•	X	X	Slotting	-	.3 x D	30	.0010	.0020	.0030	.0040	.0050	.0060
					Profiling	.05 x D	1 x D	45	.0028	.0056	.0084	.0112	.0140	.0168
Titanium Alloys	S	•	X	X	Slotting	-	.3 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.08 x D	1 x D	107	.0020	.0040	.0060	.0080	.0100	.0120

8 X D Necked Tools (3MVS Series - N8)														
Workpiece Material Group	ISO	Coolant			Application	Depth of Cut Per Application		Vc m/min	End Mill Diameter (mm)					
		• Preferred ○ Possible x Not Possible				Radial (Ae)	Axial (Ap)		0.5	1.0	1.5	2.0	2.5	3.0
		Max.	Air	MMS					fz - mm/tooth by Cutter Diameter					
Moderate Machining & PH Stainless Steels	M	•	X	○	Slotting	-	.2 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.05 x D	.75 x D	150	.0033	.0066	.0099	.0132	.0165	.0198
High Temp Alloys	S	•	X	X	Slotting	-	.2 x D	30	.0010	.0020	.0030	.0040	.0050	.0060
					Profiling	.05 x D	.75 x D	45	.0028	.0056	.0084	.0112	.0140	.0168
Titanium Alloys	S	•	X	X	Slotting	-	.2 x D	75	.0012	.0024	.0036	.0048	.0060	.0072
					Profiling	.05 x D	.75 x D	107	.0020	.0040	.0060	.0080	.0100	.0120

Metric non-necked tools cutting data on page 10.

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:

$$\frac{\text{Calculated Feed} \times \text{Spindle Maximum}}{\text{Calculated Speed}}$$

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.