


CUTTING CONDITIONS


Milling | Endmills | Cutting conditions

AE-VTS-N Applies to square/sharp corner edge/radius type

Slot Milling

	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100	
Vc (m/min)	300~400		300~400		150~200	
DC X LU	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)
1 x 3	32.000	1.430	32.000	1.430	16.000	660
1,5 x 4,5	32.000	1.630	32.000	1.630	16.000	720
2 x 6	32.000	1.920	32.000	1.920	16.000	800
2,5 x 7,5	32.000	2.880	32.000	2.880	16.000	1.080
3 x 9	32.000	3.820	32.000	3.820	16.000	1.430
4 x 12	24.000	3.960	24.000	3.960	12.000	1.530
5 x 15	19.200	4.090	19.200	4.090	9.600	1.640
6 x 18	18.500	4.230	18.500	4.230	9.300	1.740
8 x 24	16.000	4.510	16.000	4.510	8.000	1.940
10 x 30	13.000	4.780	13.000	4.780	6.400	2.150
12 x 36	11.000	5.050	11.000	5.050	5.300	2.360
Depth of cut	<div>ap</div> <div>1D</div>				<div>ap</div> <div>0,5D</div>	

Side Milling

	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100									
Vc (m/min)	300~400		300~400		150~200									
DC X LU	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)								
1 x 3	32.000	1.430	32.000	1.430	16.000	720								
1,5 x 4,5	32.000	1.630	32.000	1.630	16.000	800								
2 x 6	32.000	1.920	32.000	1.920	16.000	1.080								
2,5 x 7,5	32.000	2.880	32.000	2.880	16.000	1.200								
3 x 9	32.000	3.820	32.000	3.820	16.000	1.600								
4 x 12	24.000	3.960	24.000	3.960	12.000	1.700								
5 x 15	19.200	4.090	19.200	4.090	9.600	1.830								
6 x 18	18.500	4.230	18.500	4.230	9.300	1.950								
8 x 24	16.000	4.510	16.000	4.510	8.000	2.180								
10 x 30	13.000	4.780	13.000	4.780	6.400	2.400								
12 x 36	11.000	5.050	11.000	5.050	5.300	2.650								
Depth of cut	<table><tr><td>ap</td><td>ae</td></tr><tr><td>1,5D</td><td>0,2D</td></tr></table>				ap	ae	1,5D	0,2D	<table><tr><td>ap</td><td>ae</td></tr><tr><td>1,5D</td><td>0,1D</td></tr></table>		ap	ae	1,5D	0,1D
					ap	ae								
1,5D	0,2D													
ap	ae													
1,5D	0,1D													


1. The above milling condition is a guideline for the overhang length is 4xD.
2. Use a rigid and precise machine and holder.
3. The indicated speeds and feeds are for milling with water-soluble coolant.
4. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
5. Reduce speed and feed as well as depth of cut when high precision is required.
6. Adjust the speed and feed accordingly when the overhang length is longer than specified (refer to p.18).
7. Please always use the appropriate cutting fluid recommended by the cutting fluid manufacturer in the machining of magnesium alloys. Be cautious with the cutting chips as they are highly flammable and may pose a serious fire risk if not properly handled.

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
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Plunging

	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100	
Vc (m/min)	150		150		75	
DC X LU	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)
1 x 3	20.000	400	20.000	400	10.000	120
1,5 x 4,5	20.000	400	20.000	400	10.000	120
2 x 6	20.000	400	20.000	400	10.000	120
2,5 x 7,5	20.000	400	20.000	400	10.000	120
3 x 9	15.900	500	15.900	500	8.000	150
4 x 12	12.000	500	12.000	500	6.000	150
5 x 15	9.600	500	9.600	500	4.800	150
6 x 18	8.000	600	8.000	600	4.000	180
8 x 24	6.000	700	6.000	700	3.000	210
10 x 30	4.800	700	4.800	700	2.400	210
12 x 36	4.000	700	4.000	700	2.000	210
Depth of cut	<div>ap</div> <div>1D</div>				<div>ap</div> <div>0,5D</div>	
<div>1. The above milling condition is a guideline for the overhang length is 4xD.</div> <div>2. Use a rigid and precise machine and holder.</div> <div>3. The indicated speeds and feeds are for milling with water-soluble coolant.</div> <div>4. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.</div> <div>5. Reduce speed and feed as well as depth of cut when high precision is required.</div> <div>6. Adjust the speed and feed accordingly when the overhang length is longer than specified.</div> <div>7. When the chips wind around the end mill, reduce the speed and feed.</div> <div>8. Please always use the appropriate cutting fluid recommended by the cutting fluid manufacturer in the machining of magnesium alloys. Be cautious with the cutting chips as they are highly flammable and may pose a serious fire risk if not properly handled.</div>						

Cutting Condition Guide for Changes in Overhang Length

DC = Ø6, Ø8

	Work Material	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100	
	L/D	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)
Slot milling	5	70%		70%		70%	
	6	70%	20%	70%	20%	70%	20%
Side milling	5	70%		70%		70%	
	6	50%		50%		50%	
Plunging	5	80%		80%		80%	
	6	60%		60%		60%	