


## Milling | Endmills | Cutting conditions

## Slot Milling

## Side Milling

	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100					
Vc (m/min)	300		300		150					
DC X LU	S (min <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)				
1 x 3	32.000	1.300	32.000	1.300	16.000	600				
1,5 x 4,5	32.000	1.430	32.000	1.430	16.000	660				
2 x 6	32.000	1.730	32.000	1.730	16.000	720				
2,5 x 7,5	32.000	1.920	32.000	1.920	16.000	900				
3 x 9	32.000	2.150	32.000	2.150	16.000	1.200				
4 x 12	24.000	2.230	24.000	2.230	12.000	1.290				
5 x 15	19.200	2.300	19.200	2.300	9.600	1.360				
6 x 18	16.000	2.380	16.000	2.380	8.000	1.450				
8 x 24	12.000	2.540	12.000	2.540	6.000	1.620				
10 x 30	9.600	2.690	9.600	2.690	4.800	1.780				
12 x 36	8.000	2.840	8.000	2.840	4.000	1.950				
16 x 48	6.000	2.980	6.000	2.980	3.000	2.040				
20 x 60	4.800	3.100	4.800	3.100	2.400	2.130				
25 x 75	3.850	3.200	3.850	3.200	1.900	2.200				
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
ap	ae									
1,5D	0,2D									
<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 (refer to p.10).</div> <div>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.</div>										

# CUTTING CONDITIONS


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## AE-TS-N Applies to square/sharp corner edge/radius type Plunging

	Aluminum Alloy Expanding Material • Magnesium Alloy A5052 • A7075 • AZ91• AZ80A		Aluminum Alloy Casting AC4C • ADC		Copper Alloy C1100	
Vc (m/min)	80		80		60	
DC X LU	S (min <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)
1 x 3	16.000	350	16.000	350	10.000	100
1,5 x 4,5	16.000	350	16.000	350	9.000	100
2 x 6	12.750	350	12.750	350	8.500	100
2,5 x 7,5	10.000	350	10.000	350	6.400	100
3 x 9	8.500	400	8.500	400	6.400	120
4 x 12	6.400	400	6.400	400	4.800	120
5 x 15	5.100	400	5.100	400	3.800	120
6 x 18	4.200	450	4.200	450	3.100	130
8 x 24	3.200	500	3.200	500	2.400	150
10 x 30	2.550	500	2.550	500	1.900	150
12 x 36	2.100	500	2.100	500	1.600	150
16 x 48	1.600	550	1.600	550	1.200	170
20 x 60	1.300	550	1.300	550	960	170
25 x 75	1.020	550	1.020	550	770	170
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 (refer to p.10).</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 <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)	S (min <sup>-1</sup> )	F (mm/min)
Slot milling	5	70%		70%		70%	
	6	40%		40%		40%	
Side milling	5	70%		70%		70%	
	6	50%		50%		50%	
Plunging	5	80%		80%		80%	
	6	60%		60%		60%	