

硬质合金抗振铣刀 超短刃型

Anti-Vibration Stub Carbide End Mill

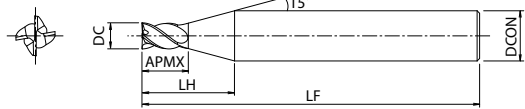
A
The A Brand

AE-VMSS

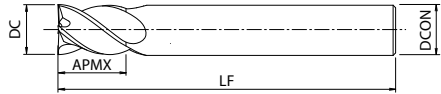
切削条件 Cutting Conditions **P193**



Type 1



Type 2



平头型 Square Type

(单位:mm) (Unit:mm)

商品号 EDP No.	外径 DC	全长 LF	刃长 APMX	LH	柄径 DCON	形状 Type	库存 Stock	重量 (g)
8556410	1	40	1.5	7.9	4	1	B	9
8556411	1.1		1.7	8				—
8556412	1.2		1.8	7.9				—
8556413	1.3		2	7.9				—
8556414	1.4		2.1	8				—
8556415	1.5		2.3	7.8				9
8556416	1.6		2.4	7.9				—
8556417	1.7		2.6	7.7				—
8556418	1.8		2.7	7.6				—
8556419	1.9		2.9	7.7				—
8556420	2		3	8.2				9
8556421	2.1		3.2	8.2				—
8556422	2.2		3.3	8.1				—
8556423	2.3		3.5	8.1				—
8556424	2.4		3.6	8				—
8556425	2.5		3.8	8				9
8556426	2.6	3.9	8.5	—				
8556427	2.7	4.1	8.5	—				
8556428	2.8	4.2	8.4	—				
8556429	2.9	4.4	8.4	—				
8556430	3	4.5	12.2	18				
8556431	3.1	4.7	12.2	—				
8556432	3.2	4.8	12.2	—				
8556433	3.3	5	12.2	—				
8556434	3.4	5.1	12.1	—				
8556435	3.5	5.3	12.1	18				
8556436	3.6	5.4	12	—				
8556437	3.7	5.6	12	—				
8556438	3.8	5.7	11.9	—				
8556439	3.9	5.9	11.9	—				
8556440	4	6	11.9	19				
8556441	4.1	6.2	12.1	—				

(单位:mm) (Unit:mm)

商品号 EDP No.	外径 DC	全长 LF	刃长 APMX	LH	柄径 DCON	形状 Type	库存 Stock	重量 (g)
8556442	4.2	45	6.3	12	6	1	B	—
8556443	4.3		6.5	12				—
8556444	4.4		6.6	11.9				—
8556445	4.5		6.8	11.9				19
8556446	4.6		6.9	11.8				—
8556447	4.7		7.1	11.9				—
8556448	4.8		7.2	11.8				—
8556449	4.9		7.4	11.8				—
8556450	5		7.5	11.7				19
8556451	5.1		7.7	11.7				—
8556452	5.2		7.8	11.6				—
8556453	5.3		8	11.6				—
8556454	5.4		8.1	11.5				—
8556455	5.5		8.3	11.6				19
8556456	5.6		8.4	11.5				—
8556457	5.7		8.6	11.5				—
8556458	5.8	8.7	11.4	—				
8556459	5.9	8.9	11.4	—				
8556460	6	9	—	19				
8556465	6.5	60	9.8	14.9	8	1	B	41
8556470	7		10.5	14.7				41
8556475	7.5		11.3	14.6				42
8556480	8		12	—				42
8556485	8.5	70	12.8	17.9	10	1	B	72
8556490	9		13.5	17.7				73
8556495	9.5		14.3	17.6				74
8556500	10		15	—				75
8556505	10.5	75	15.8	20.9	12	1	B	110
8556510	11		16.5	20.7				113
8556515	11.5		17.3	20.6				115
8556520	12		18	—				117

短刃型 (AE-VMS) 请参阅P.165

See page 165 for AE-VMS

长刃型 (AE-VML) 请参阅P.167

See page 167 for AE-VML

加工材料 Work Material	碳素钢 Carbon Steel	合金钢 Alloy Steel	预硬钢 Prehardened Steel	不锈钢 Stainless Steel	铸铁 Cast Iron	铜合金 Copper Alloy	铝合金 Aluminum Alloy	石墨 Graphite	钛合金 Titanium Alloy	耐热合金 Heat Resistant Alloy	塑料 Plastic
商品代号 Abbreviation	预硬钢 Prehardened Steel	工具钢 Tool Steel	淬火钢 Hardened Steel	~45HRC ~55HRC ~60HRC ~65HRC	~35HRC ~350HB						
AE-VMSS	◎	○			◎	◎	○	○	○	○	

库存记号 Inventory symbols

● = 标准库存品
Standard stock item

○ = 准标准库存品 (请确认库存。)
Limited standard stock item

▲ = 由新产品及后续产品替代 (请确认库存。)
Scheduled to be replaced by new product or successor item

□ = 特定代理店库存品
Stocked by specific distributors. Contact us for price & availability.

△ = 停产产品 (请确认库存。)
Discontinued item

硬质合金铣刀
CARBIDE END MILLS

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NEW

硬质合金抗振铣刀 超短刃型
Anti-Vibration Stub Carbide End Mill

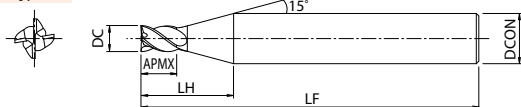
The A Brand

AE-VMSS

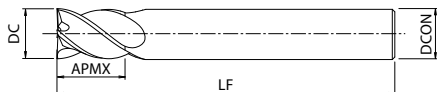
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Type 1



Type 2



SPECIFICATION CHART
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球头铣刀

CARBIDE CHAMFERING
硬质合金
倒角铣刀



直角型 Right Angle Type

(单位:mm) (Unit:mm)

商品号 EDP No.	外径 DC	全长 LF	刃长 APMX	LH	柄径 DCON	形状 Type	库存 Stock	重量 (g)
8556550	1 -RA	40	1.5	7.9	4	1	A	● 14
8556555	1.5 -RA		2.3	7.8				● 10
8556560	2 -RA		3	8.2				● 12
8556565	2.5 -RA	3.8	8	● 10				
8556570	3 -RA	4.5	12.2	6	● 22			
8556575	3.5 -RA	5.3	12.1		● 22			
8556580	4 -RA	6	11.9		● 20			
8556585	4.5 -RA	45	6.8	11.9	6	2	● 18	
8556590	5 -RA		7.5	11.7			● 20	
8556595	5.5 -RA		8.3	11.6			● 23	
8556600	6 -RA	9	-	-	● 20			

短刃型 (AE-VMS) 请参阅P.165

See page 165 for AE-VMS

长刃型 (AE-VML) 请参阅P.167

See page 167 for AE-VML

加工材料 Work Material	碳素钢 Carbon Steel	合金钢 Alloy Steel	预硬钢 Prehardened Steel	不锈钢 Stainless Steel	铸铁 Cast Iron	铜合金 Copper Alloy	铝合金 Aluminum Alloy	石墨 Graphite	钛合金 Titanium Alloy	耐热合金 Heat Resistant Alloy	塑料 Plastic
商品记号 Abbreviation	预硬钢 Prehardened Steel	工具钢 Tool Steel	淬硬钢 Hardened Steel		球墨铸铁 Ductile Cast Iron						
AE-VMSS	~ 40HRC		~ 45HRC ~ 55HRC ~ 60HRC ~ 65HRC	~ 35HRC	~ 350HB						

库存记号 Inventory symbols

● = 标准库存品

Standard stock item

□ = 特定代理店库存品

Stocked by specific distributors. Contact us for price & availability.

○ = 准标准库存品 (请确认库存。)

Limited standard stock item

▲ = 由新产品及后续产品替代 (请确认库存。)

Scheduled to be replaced by new product or successor item

△ = 停产产品 (请确认库存。)

Discontinued item

硬质合金铣刀切削条件基准表

CUTTING CONDITIONS FOR CARBIDE END MILLS

硬质合金抗振铣刀 超短刃型 AE-VMSS

ANTI-VIBRATION STUB CARBIDE END MILL

SQUARE TYPE / RIGHT ANGLE TYPE*

※直角型请使用下表所示转速和进给速度的70%作为参考值。

*For right angle type, please use 70% of the speed and feed shown in the table below as reference.

槽铣

SLOTTING

加工材料 Work Material	一般构造用钢·碳素钢·铸钢 Mild Steel·Carbon Steel·Cast Iron SS400·S55C·FC250 (~750N/mm ²)		合金钢·合金工具钢 Alloy Steel·Tool Steel SCM·SKS·SKD (~30HRC)		预硬钢·淬火钢 Prehardened Steel·Hardened Steel PX5·NAK80 (30~45HRC)		不锈钢 Stainless Steel SUS304·SUS420 (≤200HB)		析出硬化体不锈钢 Precipitation Stainless Steel SUS630		钛合金 Titanium Alloy Ti-6Al-4V		镍基合金 Ni-Based Alloy Inconel 718	
	切削速度 Cutting Speed (m/min)	100(80-120)	90(70-110)	80(60-100)	70(50-80)	70(60-80)	60(50-70)	25(20-30)						
外径 Mill Dia. (mm)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)
1	28,700	570	25,500	460	22,300	360	19,100	340	25,620	320	22,280	300	9,550	120
1.5	19,100	610	17,000	480	14,900	420	12,700	360	16,980	360	14,850	340	6,370	130
2	14,300	630	12,700	510	11,100	440	9,600	380	12,810	360	11,140	350	4,770	140
2.5	11,500	780	10,200	570	8,900	460	7,600	430	10,190	410	8,910	390	3,820	150
3	10,600	930	9,600	690	8,500	510	7,400	470	8,540	430	7,430	410	3,180	160
4	8,000	960	7,200	720	6,400	510	5,600	490	6,410	460	5,570	440	2,390	170
5	6,400	1,020	5,700	800	5,100	610	4,500	560	5,120	490	4,460	470	1,910	180
6	5,300	1,060	4,800	900	4,200	670	3,700	370	4,270	480	3,710	460	1,590	180
8	4,000	910	3,600	720	3,200	640	2,800	370	2,750	450	2,390	430	1,190	200
10	3,200	840	2,900	700	2,500	550	2,200	350	2,200	420	1,910	400	950	180
12	2,700	810	2,400	670	2,100	550	1,900	330	1,830	420	1,590	400	800	180
切削深度 Depth of Cut	$\frac{a_p}{1D}$		$\frac{a_p}{1D}$		$\frac{a_p}{1D}$		$\frac{DC}{DC \leq 6}$ $\frac{a_p}{0.5D}$ $\frac{DC}{DC > 6}$ $\frac{a_p}{1D}$		$\frac{a_p}{0.25D}$		$\frac{a_p}{0.25D}$		$\frac{a_p}{0.25D}$	

侧铣

SIDE MILLING

加工材料 Work Material	一般构造用钢·碳素钢·铸钢 Mild Steel·Carbon Steel·Cast Iron SS400·S55C·FC250 (~750N/mm ²)		合金钢·合金工具钢 Alloy Steel·Tool Steel SCM·SKS·SKD (~30HRC)		硬钢·淬火钢 Prehardened Steel·Hardened Steel PX5·NAK80 (30~45HRC)		不锈钢 Stainless Steel SUS304·SUS420 (≤200HB)		析出硬化体不锈钢 Precipitation Stainless Steel SUS630		钛合金 Titanium Alloy Ti-6Al-4V		镍基合金 Ni-Based Alloy Inconel 718	
	切削速度 Cutting Speed (m/min)	130(100-150)	120(100-150)	100(80-120)	80(60-100)	80(70-90)	70(60-80)	30(25-40)						
外径 Mill Dia. (mm)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)
1	38,200	840	28,700	690	25,500	510	22,300	450	29,280	370	25,460	350	12,730	160
1.5	25,500	920	21,200	760	17,000	540	14,900	460	19,520	410	16,980	400	8,490	180
2	19,900	1,430	17,500	840	14,300	630	11,100	470	14,640	440	12,730	420	6,370	190
2.5	15,900	1,590	14,000	900	11,500	690	8,900	480	11,710	480	10,190	460	5,090	210
3	13,800	1,660	12,700	1,070	10,600	760	8,000	480	9,760	510	8,490	480	4,240	220
4	10,400	1,830	9,600	1,150	8,000	800	6,000	530	7,320	550	6,370	530	3,180	240
5	8,300	1,990	7,600	1,220	6,400	900	4,800	560	5,860	560	5,090	540	2,550	250
6	6,900	2,070	6,400	1,540	5,300	1,060	4,200	640	4,880	580	4,240	550	2,120	250
8	5,200	1,770	4,800	1,540	4,000	1,040	3,200	610	3,200	450	2,790	430	1,590	230
10	4,100	1,640	3,800	1,370	3,200	900	2,500	580	2,560	430	2,230	410	1,270	220
12	3,500	1,400	3,200	1,280	2,700	760	2,100	530	2,140	420	1,860	400	1,060	210
切削深度 Depth of Cut	$\frac{a_p}{1.5D}$		$\frac{a_e}{0.2D}$		$\frac{a_p}{1.5D}$		$\frac{a_e}{0.2D}$		$\frac{a_p}{1.5D}$		$\frac{a_e}{0.2D}$		$\frac{a_p}{1.5D}$	

1. 上表是在悬伸量为刀具径3倍情况下的参考值。
2. 请使用高刚性，高精度的机械、刀柄。
3. 转速是通过基准切削速度的中央值计算出的。请根据工件的夹持力，机械的刚性等使用情况，进行转速、进给速度的调整。
4. 请使用适用加工材料，发烟量少的切削剂。
5. 干式加工情况下，为了不造成切屑阻塞，请使用气冷方式除去切屑。
6. 加工不锈钢、析出硬化体不锈钢、钛合金、镍基合金。推荐使用水溶性切削油剂。
7. 对加工精度有要求的情况下，请适当下调转速，进给速度及切削深度。
8. 悬伸较长的情况下，请参考“根据悬伸量变化的切削条件调整参考值”来调整转速及进给速度。(参照 p.194)。

1. The above milling condition is a guideline for the overhang length is 3 × D.
2. Use a rigid and precise machine and holder.
3. The rotational speed is calculated by the median of the recommended cutting speed. Adjustment may be necessary depending on the rigidity of the workpiece fixture and machine.
4. Please use a suitable fluid with high smoke retardant properties.
5. During dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and to eliminate chip packing.
6. Please use water-soluble coolant when machining stainless steel, precipitation stainless steel, titanium alloy, Ni-based alloy.
7. Reduce speed and feed as well as depth of cut when high precision is required.
8. Adjust the speed and feed accordingly when the overhang length is longer than specified (refer to p.194).

CUTTING CONDITIONS
切削条件

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A END MILLS

硬质合金抗振铣刀 超短刃型 AE-VMSS
长颈型
侧铣

ANTI-VIBRATION STUB CARBIDE END MILL
LONG NECK TYPE
SIDE MILLING

加工材料 Work Material	一般构造用钢·碳素钢·铸钢 Mild Steel·Carbon Steel·Cast Iron SS400·S55C·FC250 (~750N/mm ²)		合金钢·合金工具钢 Alloy Steel·Tool Steel SCM·SKS·SKD (~30HRC)		预硬钢·淬火钢 Prehardened Steel·Hardened Steel PX5·NAK80 (30~45HRC)		不锈钢 Stainless Steel SUS304·SUS420 (≤200HB)		析出硬化体不锈钢 Precipitation Stainless Steel SUS630		钛合金 Titanium Alloy Ti-6Al-4V		镍基合金 Ni-Based Alloy Inconel 718	
	切削速度 Cutting Speed (m/min)	105(80-120)		95(70-110)		70(50-90)		60(40-80)		60(50-70)		50(40-60)		30(20-35)
外径 Mill Dia. (mm)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)
	6	5,520	1,660	5,120	1,230	3,710	740	2,940	450	3,420	410	2,970	390	1,480
8	4,160	1,420	3,840	1,230	2,800	730	2,240	430	2,240	320	1,950	300	1,110	160
10	3,280	1,310	3,040	1,100	2,240	630	1,750	410	1,790	300	1,560	290	890	150
12	2,800	1,120	2,560	1,020	1,890	530	1,470	370	1,500	290	1,300	280	740	150
切削深度 Depth of Cut					ap		ae							
					1.5D		0.2D							

1. 请使用高刚性、高精度的机械、刀柄。
2. 转速是通过基准切削速度的中央值计算出的。请根据工件的夹持力，机械的刚性等使用情况，进行转速、进给速度的调整。
3. 请使用适应加工材料、发烟量少的切削油剂。
4. 干式加工情况下，为了不造成切屑阻塞，请使用气冷方式除去切屑。
5. 加工不锈钢、析出硬化体不锈钢、钛合金、镍基合金，推荐使用水溶性切削油剂。
6. 对加工精度有要求的情况下，请适当下调转速，进给速度及切削深度。

1. Use a rigid and precise machine and holder.
2. The rotational speed is calculated by the median of the recommended cutting speed. Adjustment may be necessary depending on the rigidity of the workpiece fixture and machine.
3. Please use a suitable fluid with high smoke retardant properties.
4. During dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and to eliminate chip packing.
5. Please use water-soluble coolant when machining stainless steel, precipitation stainless steel, titanium alloy, Ni-based alloy.
6. Reduce speed and feed as well as depth of cut when high precision is required.

根据悬伸量变化的切削条件调整参考值 (φ6≤DC)

	加工材料 Work Material	一般构造用钢·碳素钢·铸钢 Mild Steel·Carbon Steel·Cast Iron SS400·S55C·FC250 (~750N/mm ²)		合金钢·合金工具钢 Alloy Steel·Tool Steel SCM·SKS·SKD (~30HRC)		预硬钢·淬火钢 Prehardened Steel·Hardened Steel PX5·NAK80 (30~45HRC)		不锈钢 Stainless Steel SUS304·SUS420 (≤200HB)		析出硬化体不锈钢 Precipitation Stainless Steel SUS630		钛合金 Titanium Alloy Ti-6Al-4V		镍基合金 Ni-Based Alloy Inconel 718	
		悬伸量 L/D	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)	进给速度 Feed (mm/min)	转速 Speed (min ⁻¹)
槽铣 Slot Milling	4	80%		70%		70%		60%		60%		50%		50%	
	5	70%		60%		60%		50%		50%		50%		50%	
侧铣 Side Milling	4	90%		90%		80%		70%		70%		60%		60%	
	5	80%		80%		70%		70%		70%		60%		60%	