

硬质合金铣刀目录 INDEX OF CARBIDE END MILLS

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 形状別目录

 高速铣刀
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 硬质合金铣刀目录
 INDEX OF CARBIDE END MILLS

页码 Page	形状 Appearance	产品记号 Abbreviation	式样 Specification	表面处理 Surface Treatment	库存尺寸 Stocked Sizes	含钴 Cobalt
石墨加工用金刚石涂层硬质合金系列 石墨加工专用的DIA涂层铣刀。 Diamond Coated Carbide Series for Graphite						
317		DG-LN-EMS	4刃 石墨用 长颈短刃型 4 Flutes Long Neck Short for Graphite	DG	1 6	○
332		DG-EBD	2刃 石墨用 球头型 2 Flutes Ball-end for Graphite	DG	R2 R6	○
335		DG-EBM	4刃 石墨用 球头型 4 Flutes Ball-end for Graphite	DG	R2 R5	○
353		DG-LN-EBD	2刃 石墨用 长颈球头型 2 Flutes Long Neck Ball-end for Graphite	DG	R0.2 R2	○
354		DG-LN-EBM	4刃 石墨用 长颈球头型 4 Flutes Long Neck Ball-end for Graphite	DG	R1 R1.5	○
406		DG-CPR	2刃 4刃 石墨用 长颈·长颈圆弧角短刃型 2 Flutes/4 Flutes Long Neck/Pencil Neck Short with Corner Radius for Graphite		0.5 12	○
石墨用系列 石墨加工专用的铣刀系列，其中DIA涂层的产品可在石墨加工中抑制磨损，大幅提高工具寿命。 Regular Grain Carbide Series for Graphite						
387		DIA-LS-CRED	石墨用 2刃 圆弧角长柄型 2 Flutes Long Shank with Corner Radius for Graphite	DIA	5 11	○
硬质合金MG系列 Uncoated Micro Grain Carbide Series						
276 277		MG-EDS	2刃 短刃型 2 Flutes Short		1 25	○
277		MG-EDS OH1	2刃短刃型(OH1) 2 Flutes Short (OH1)		1 12	○
275		MG-EDS-3	2刃 小径短刃型 2 Flutes Short Miniature (φ3 shank)		0.1 3	○

G-LIST No. | EW1248

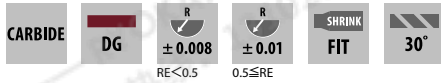
DG涂层 石墨用2刃长颈球头型
DG Coated-2 Flutes-for Graphite

DG-LN-EBD

切削条件 Cutting Conditions | P619



采用了石墨专用的金刚石涂层的铣刀。
Diamond Coated end mills for graphite.



(单位:mm) (Unit:mm)

商品号 EDP No.	球半径 × 颈长 RE × LU	球半径 RE	颈长 LU	刃长 APMX	颈径 DN	刃尖至柄部的 有效长度 (参考值) L2	柄径 DCON	全长 LF	库存 Stock	重量 (g)
8553701	R0.2 × 4		4			11.17			●	13
8553702	R0.2 × 8	0.2	8	0.6	0.36	15.17			●	13
8553703	R0.2 × 12		12			19.17	50		●	13
8553711	R0.3 × 6		6			12.8			●	13
8553712	R0.3 × 10		10			16.8			●	13
8553713	R0.3 × 16	0.3	16	0.9	0.56	22.8	60		●	13
8553714	R0.3 × 20		20			26.8			●	13
8553721	R0.5 × 4		4			10.05			●	14
8553722	R0.5 × 6		6			12.05	50		●	14
8553723	R0.5 × 10		10			16.05			●	14
8553724	R0.5 × 16	0.5	16	1.5	0.96	22.05	60		●	14
8553725	R0.5 × 20		20			26.05			●	14
8553726	R0.5 × 30		30			36.05	80		●	17
8553727	R0.5 × 40		40			46.05			●	17
8553731	R0.75 × 6		6			11.07	50		●	14
8553732	R0.75 × 10		10			15.07			●	14
8553733	R0.75 × 16	0.75	16	2.3	1.44	21.07	60	4	●	14
8553734	R0.75 × 20		20			25.07			●	14
8553735	R0.75 × 30		30			35.07	80		●	17
8553736	R0.75 × 40		40			45.07			●	17
8553741	R1 × 6		6			10.35	50		●	14
8553742	R1 × 10		10			14.35			●	14
8553743	R1 × 16		16			20.35	60		●	14
8553744	R1 × 20	1	20	3	1.9	24.35			●	14
8553745	R1 × 30		30			34.35	80		●	17
8553746	R1 × 40		40			44.35			●	17
8553747	R1 × 60		60			64.35	100		●	17
8553761	R1.5 × 20		20			22.48	60		●	14
8553762	R1.5 × 40	1.5	40	4.5	2.9	42.48	80		●	14
8553763	R1.5 × 60		60			62.48	100		●	19
8553781	R2 × 20		20			—	60		●	14
8553782	R2 × 40	2	40	6	3.9	—	80		●	17
8553783	R2 × 60		60			—	100		●	23

G-LIST No. | EW1166

超微结晶DIA涂层 2刃
Diamond Coated-2 Flutes

DIA-LN-EBD

切削条件 Cutting Conditions | P615



采用了超微结晶金刚石涂层的长颈球头形铣刀。石墨加工时发挥了极好的耐久性能。对铜、铝合金的加工也非常有效。

Long neck ball nose end mill with the Ultra fine Diamond coating. Works superb on Copper and Aluminum Alloys.



(单位:mm) (Unit:mm)

商品号 EDP No.	球半径 × 颈长 RE × LU	全长 LF	刃长 APMX	柄径 DCON	颈径 DN	库存 Stock	重量 (g)
8505211	R0.5 × 5		1.5		0.95	●	27
8505212	R0.5 × 10					●	25
	R0.6 × 6		1.8		1.15	□	—
	R0.6 × 12				1.17	□	—
	R0.7 × 7		2.1		1.35	□	—
	R0.7 × 14				—	□	—
	R0.75 × 7.5		2.3		1.45	□	—
	R0.75 × 15				—	□	—
	R0.8 × 8		2.4		1.55	□	—
	R0.8 × 16				—	□	—
	R0.9 × 9		2.7		1.75	□	—
	R0.9 × 18				—	□	—
8505222	R1 × 10		3	6	1.95	●	26
8505224	R1 × 20				—	●	23
	R1.25 × 12.5		3.7		2.4	□	—
	R1.25 × 25				—	□	—
8505233	R1.5 × 15		4.5	70	2.85	●	26
8505236	R1.5 × 30				—	●	21
	R1.75 × 17.5		5.3		3.35	□	—
	R1.75 × 35				—	□	—
8505244	R2 × 20		6	80	3.85	●	30
8505247	R2 × 40				—	●	25
	R2.25 × 22.5		6.8		4.35	□	—
	R2.25 × 45				—	□	—
8505255	R2.5 × 25		7.5		4.85	●	39
8505258	R2.5 × 50	100			—	●	39

硬质合金铣刀
CARBIDE END MILLS

SPECIFICATION CHART
形状尺寸表

高硬度立铣刀
HSS END MILLS

可转位刀具
INDEXABLE TOOL

硬质合金
CERAMIC

硬质合金
CERAMIC

CARBIDE SQUARE
硬质合金平头
铣刀

CARBIDE LONG
NECK SQUARE
硬质合金长颈型
平头铣刀

CARBIDE BALL NOSE
硬质合金球头
铣刀

CARBIDE BALL NOSE
WITH LONG NECK
硬质合金长颈型
球头铣刀

CARBIDE PENCIL
NECK BALL NOSE
硬质合金长颈型
球头铣刀

CARBIDE CORNER RADIUS
硬质合金圆弧
R角铣刀

CARBIDE ROUGHING
硬质合金波纹
铣刀

CARBIDE TAPER
硬质合金锥形
铣刀

CARBIDE
COUNTERBORING
硬质合金沉孔
铣刀

CARBIDE CHAMFERING
硬质合金倒角
铣刀

ROUTER FOR CFRP
CFRP用铣刀

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	淬火钢 Hardened Steel	~40HRC	~45HRC ~ 55HRC ~ 60HRC ~ 65HRC	~35HRC	~350HB				
DG-LN-EBD								○			○
DIA-LN-EBD								○			○

库存标识 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.

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

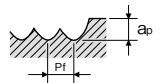
硬质合金铣刀切削条件基准表 CUTTING CONDITIONS FOR CARBIDE END MILLS

DG涂层石墨用2刃长颈球头型 DG-LN-EBD DG COATED 2 FLUTES LONG NECK BALL-END FOR GRAPHITE

加工材料 Work Material	石墨 Graphite													
	粗加工 Roughing						精加工 Finishing							
	转速 (min ⁻¹)		进给速度 (mm/min)			切深量 (mm)		转速 (min ⁻¹)		进给速度 (mm/min)			切深量 (mm)	
球半径×颈长 R×L REXLU	短 Short	长 Long	短 Short	长 Long	短 Short	长 Long	短 Short	长 Long	短 Short	长 Long	短 Short	长 Long	短 Short	长 Long
	R 0.2 × 4	40,000	~ 20,000	960	~ 480	0.04	0.12	40,000	~ 20,000	800	~ 400	0.012	0.012	
R 0.2 × 8	30,000	~ 18,000	430	~ 250	0.03	0.08	30,000	~ 18,000	360	~ 210	0.012	0.012		
R 0.2 × 12	13,000	~ 9,000	180	~ 130	0.03	0.06	13,000	~ 9,000	150	~ 110	0.008	0.008		
R 0.3 × 6	40,000	~ 20,000	960	~ 480	0.06	0.18	40,000	~ 20,000	800	~ 400	0.018	0.018		
R 0.3 × 10	33,000	~ 20,000	635	~ 385	0.05	0.15	33,000	~ 20,000	530	~ 320	0.018	0.018		
R 0.3 × 16	15,000	~ 10,000	215	~ 145	0.03	0.09	15,000	~ 10,000	180	~ 120	0.013	0.013		
R 0.3 × 20	9,000	~ 7,000	130	~ 95	0.02	0.07	9,000	~ 7,000	110	~ 80	0.013	0.013		
R 0.5 × 4	40,000	~ 20,000	1,200	~ 600	0.1	0.3	40,000	~ 20,000	1,000	~ 500	0.03	0.03		
R 0.5 × 6	40,000	~ 20,000	1,150	~ 575	0.1	0.3	40,000	~ 20,000	950	~ 480	0.03	0.03		
R 0.5 × 10	33,000	~ 20,000	935	~ 575	0.1	0.3	33,000	~ 20,000	780	~ 480	0.03	0.03		
R 0.5 × 16	23,000	~ 18,000	530	~ 410	0.08	0.24	23,000	~ 18,000	440	~ 340	0.03	0.03		
R 0.5 × 20	18,000	~ 12,000	310	~ 205	0.07	0.2	18,000	~ 12,000	260	~ 170	0.03	0.03		
R 0.5 × 30	8,000	~ 5,000	145	~ 85	0.04	0.13	8,000	~ 5,000	120	~ 70	0.02	0.02		
R 0.5 × 40	7,000	~ 5,000	120	~ 85	0.03	0.1	7,000	~ 5,000	100	~ 70	0.02	0.02		
R 0.75 × 6	40,000	~ 20,000	1,800	~ 900	0.15	0.45	40,000	~ 20,000	1,500	~ 750	0.045	0.045		
R 0.75 × 10	38,000	~ 20,000	1,600	~ 865	0.15	0.45	38,000	~ 20,000	1,350	~ 720	0.045	0.045		
R 0.75 × 16	30,000	~ 20,000	1,300	~ 865	0.15	0.45	30,000	~ 20,000	1,100	~ 720	0.045	0.045		
R 0.75 × 20	22,000	~ 18,000	745	~ 625	0.15	0.45	22,000	~ 18,000	620	~ 520	0.045	0.045		
R 0.75 × 30	12,000	~ 9,000	310	~ 240	0.1	0.3	12,000	~ 9,000	260	~ 200	0.032	0.032		
R 0.75 × 40	7,000	~ 5,000	190	~ 130	0.08	0.23	7,000	~ 5,000	160	~ 110	0.032	0.032		
R 1 × 6	40,000	~ 20,000	2,800	~ 1,350	0.2	0.6	40,000	~ 20,000	2,000	~ 950	0.06	0.06		
R 1 × 10	40,000	~ 20,000	2,500	~ 1,350	0.2	0.6	40,000	~ 20,000	1,800	~ 950	0.06	0.06		
R 1 × 16	28,000	~ 20,000	1,800	~ 1,350	0.2	0.6	28,000	~ 20,000	1,300	~ 950	0.06	0.06		
R 1 × 20	23,000	~ 18,000	1,550	~ 1,100	0.2	0.6	23,000	~ 18,000	1,100	~ 800	0.06	0.06		
R 1 × 30	16,000	~ 11,500	840	~ 615	0.18	0.52	16,000	~ 11,500	600	~ 440	0.06	0.06		
R 1 × 40	6,000	~ 4,000	335	~ 210	0.13	0.4	6,000	~ 4,000	240	~ 150	0.04	0.04		
R 1 × 60	6,000	~ 4,000	335	~ 210	0.09	0.26	6,000	~ 4,000	240	~ 150	0.04	0.04		
R 1.5 × 20	20,000	~ 15,500	2,050	~ 1,550	0.3	0.9	20,000	~ 15,500	1,450	~ 1,100	0.09	0.09		
R 1.5 × 40	12,500	~ 9,200	1,000	~ 740	0.22	0.65	12,500	~ 9,200	720	~ 530	0.09	0.09		
R 1.5 × 60	7,000	~ 4,000	490	~ 280	0.15	0.45	7,000	~ 4,000	350	~ 200	0.06	0.06		
R 2 × 20	20,000	~ 14,000	2,950	~ 2,050	0.4	1.2	20,000	~ 14,000	2,100	~ 1,450	0.12	0.12		
R 2 × 40	11,500	~ 9,500	1,700	~ 1,350	0.4	1.2	11,500	~ 9,500	1,200	~ 950	0.12	0.12		
R 2 × 60	8,200	~ 5,700	1,200	~ 770	0.34	1.05	8,200	~ 5,700	850	~ 550	0.12	0.12		

斜角切入角度请按照0.3°~0.5°的基准设定。 Set the diagonal plunge angle to be approximately 0.3° and 0.5°.

1. 请根据加工形状、机械刚性、夹具刚性、工件固定情况等使用状况，调节转速、进给速度和切深量。
2. 转速和进给速度无法依上表调高的情况下请同比例调低转速和进给速度。
3. 当发生工件崩损时或对加工精度较高时，请根据情况降低进给速度。
4. 根据不同的形状，当加工中产生振动时请同比例调低转速和进给速度。
5. 请使用专机进行石墨加工，为防止吸入粉尘，请一定使用防尘、吸尘的集尘机和防尘面罩。
6. 加工时请将铣刀刀尖的跳动控制在0.01 mm以下。
7. 高效率精加工时，进给速度调整的上限为上表的3倍。
8. 高效率加工时将槽加工等负荷较大的部分的进给速度减少30%后，刀具的偏转可减轻切削残留量。
9. 当平坦部加工中产生刨纹时，请提高转速。
10. 当加工形状为角状时，可通过程序对圆角角进行处理，调节转速使不产生振动，并在角部减速60%。



1. Adjust the speed, the feed rate, and the depth of cut to suit your operating conditions, such as the milling shape, machine rigidity, tool holder rigidity, and work holding force.
2. If you are unable to raise the speed and feed rate higher than those indicated in the table above, lower the speed and feed rate using the same ratio.
3. If the workpiece gets chipped or if the operation requires a higher level of milling precision, lower the feed rate as necessary.
4. Depending on the shape, if the workpiece chatters, lower the speed and feed rate using the same ratio.
5. To mill graphite, use a dedicated milling machine. To prevent inhalation of dust, use a dust collector and a dust mask when working around graphite.
6. During milling, keep the runout at the tip of the end mill to be less than 0.01 mm.
7. To achieve efficient finishing, the feed rate may be adjusted as high as triple the rate.
8. For high-efficiency machining, lower the feed rate as far down as 30% for high-load operations such as slotting. This can minimize the amount of cutting remnants resulting from the flexing of the tool.
9. If gouging occurs while milling a flat area, raise the speed.
10. If a cut involves the shaping of a corner, use the corner radius process of the program, or adjust the speed so that it would not cause chattering, and reduce the speed at the corner at the same time (by approximately 60%).