

无限白金涂层 高硬度钢用4刃长颈圆鼻铣刀

MUGEN COATING PREMIUM

4-Flute Long Neck Corner Radius End Mill for Hardened Steel

MHRH430R

增加规格

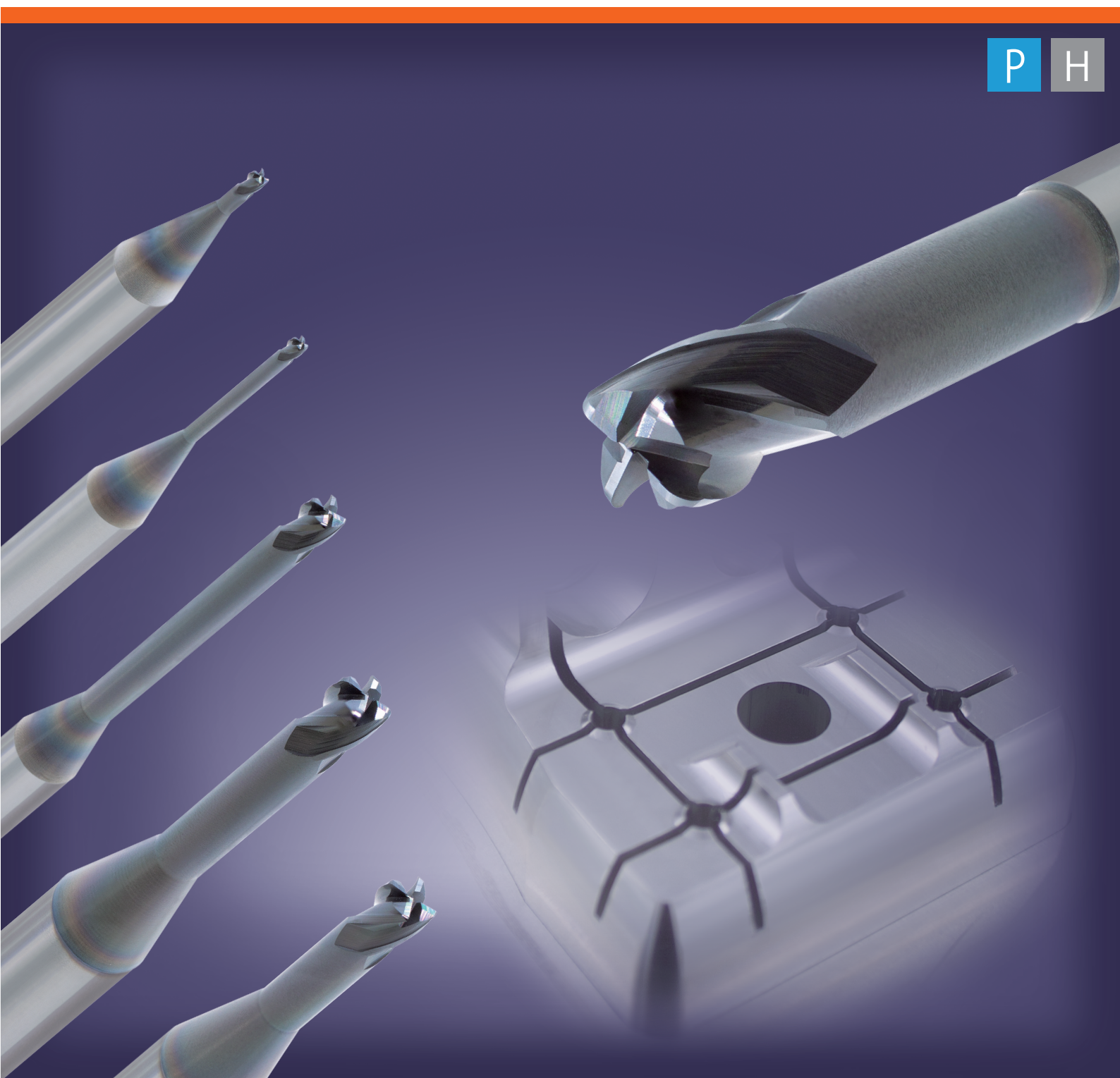
Lineup Expansion

增加 114 种规格
114 sizes added

共 450 种规格
Total 450 sizes

P

H



可对应调质钢、高硬度钢(~65HRC)的4刃长颈圆鼻铣刀

丰富的尺寸规格增加至 共 450 种规格

Long neck corner radius end mill supports machining from prehardened steels to hardened steels(~65HRC)
Abundant size variations with total 450 sizes

无限白金涂层

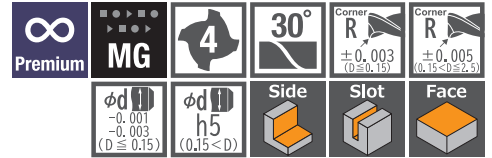
高硬度钢用4刃长颈圆鼻铣刀

MUGEN COATING PREMIUM

4-Flute Long Neck Corner Radius End Mill for Hardened Steel

MHRH430R

增加规格
Lineup Expansion



$\phi 0.1 \times R0.01 \sim \phi 6 \times R1$ 共 450 种规格

Total 450 sizes



特点

Features

Feature 1	涂层 Coating	无限白金涂层 Performance of MUGEN COATING PREMIUM
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无限白金涂层是在无限涂层的基础上, 针对高硬度钢的直接加工时, 可大幅提升刀具寿命的涂层
特别是针对加工硬度40~65HRC的材料时可实现显著的效果

MUGEN COATING PREMIUM is a further improvement of the conventional MUGEN COATING that dramatically extends tool life during direct milling on hardened steels

It is effective in machining work materials with hardness from 40 to 65 HRC



Feature
2

刀尖设计 Cutting edge shape

外周刃带倒锥造型 4刃造型从刃径 ϕ 0.1起
Peripheral edge with back taper shape • 4-Flute type from ϕ 0.1

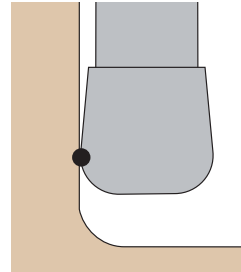
2-1

为了抑制增加切削负荷而产生的振刀现象，
外周刃采用倒锥形造型。

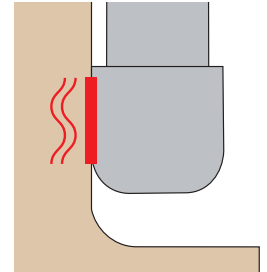
单点切削造型可减轻加工负荷，实现稳定的加工面

Adopt back taper shape for the peripheral edge to suppress
chattering that occurs due to increasing cutting load

The cutting load is reduced by point cutting that realizes stable
machining surface



单点切削，不易振刀！
Suppress chattering by
point milling

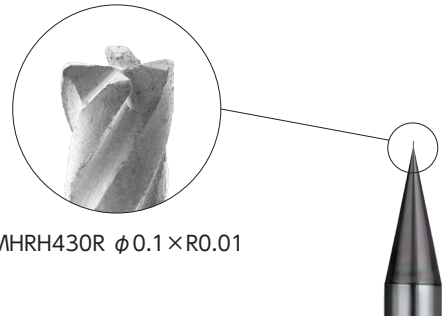


普通铣刀
General End Mill

2-2

刃径 ϕ 0.1×角半径R0.01的极小径都采用4刃设计，
可满足微细精密加工的需求

Even with a very small outer diameter of ϕ 0.1 with corner
radius R0.01, the 4-flute shape provides a lineup that can
support the needs of micro precision machining



MHRH430R ϕ 0.1 × R0.01

Feature
3

丰富的尺寸规格 Abundant line up

无限白金涂层系列

MUGEN COATING PREMIUM Series

		平底铣刀 Square End Mill	球头铣刀 Ball End Mill	圆鼻铣刀 Corner Radius End Mill
全刃长类型 Full Cutting Length Type		MXH225, MXH230, MXH235 MXH240, MXH245 刃长为外径的 1 ~ 5 倍 可对应广泛地材料 All round type with L/D 1-5 times	MSBH230 粗加工到精加工可对应广泛地材料 Multi-purpose from roughing to finishing	MHDH445R MHDH645R 适合于高硬度钢 (~ 65HRC) 加工的圆鼻铣刀 Corner radius end mill suitable for hardened steels (~ 65HRC)
		MXH225P, MXH230P, MXH235P 刃长为外径的 1 ~ 3 倍 尖角造型 Sharp edge type with L/D 1-3 times	MSBH345 3刃强螺旋角球头铣刀 3-flute strong helix angle ball end mill	
		MHDH445 MHDH645 适合于高硬度钢 (~ 65HRC) 的精加工 Suitable for finishing on hardened steels (~ 65HRC)		
长颈类型 Long Neck Type		MHRH230 MHRH430 适合于调质钢·高硬度钢 (~ 65HRC) 的深沟加工 Suitable for deep milling on prehardened steels and hardened steels (~ 65HRC)	MRBH230 适合于高硬度钢 (~ 65HRC) 的长颈球头铣刀 Ball end mill suitable for hardened steels (~ 65HRC)	MHRH230R MHRH430R 可对应调质钢·高硬度钢 (~ 65HRC) Support to machining on prehardened steels and hardened steels (~ 65HRC)
			MACH225 MACH225SF 锋利刀尖设计可减轻切削负荷 Sharp cutting edge reduces cutting load	
			MRBTNH230 MRBTNH345 采用锥形长颈大幅提升刀具刚性 Taper neck shape significantly increases tool rigidity	

无限白金涂层

高硬度钢用4刃长颈圆鼻铣刀

MUGEN COATING PREMIUM 4-Flute Long Neck Corner Radius End Mill for Hardened Steel

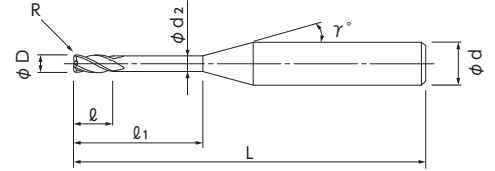
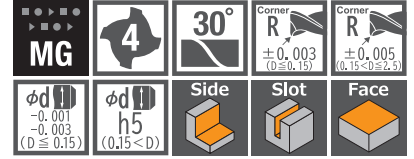
共 450 种规格

Total 450 sizes

可对应调质钢、高硬度钢(~65HRC)的4刃长颈圆鼻铣刀
丰富的尺寸规格增加至共 450 种规格

Long neck corner radius end mill supports machining from prehardened steels to hardened steels (~65HRC)

Abundant size variations with total 450 sizes



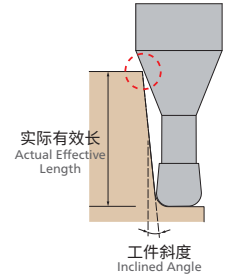
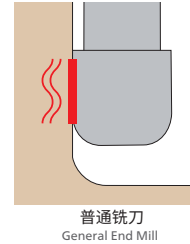
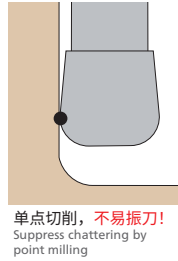
$\phi 0.1 \sim \phi 0.3$ 的底刃的轴中心为止都没有刀刃。请注意切削余部。
Please be aware of stock since there is no cutting edge from the center to the bottom.

- 采用高硬度钢用的无线白金涂层与新刀具设计提升耐磨损性、抑制振刀现象进而提升精加工面品质。
- 可进行高效加工的 4 刃造型铣刀。
- 4 刃造型最小径从 $\phi 0.1$ 至 $\phi 6$ 共 450 种规格。
- MUGEN COATING PREMIUM for hardened steels and unique new design excel in chipping prevention and resolve chattering to realize excellent finished surface.
- 4-flute end mill for high efficiency machining.
- 4-flute end mill has 450 sizes in total that lineup from the smallest diameter $\phi 0.1$ to $\phi 6$.

尺寸 Size	外径公差 Diameter Tolerance	R 角半径公差 Corner R Tolerance	柄径公差 Shank Dia. Tolerance
$D \leq 0.15$	0 -0.007	± 0.003	-0.001 -0.003
$0.15 < D < 0.5$	0 -0.01	± 0.005	h5
$0.5 \leq D \leq 2.5$	0 -0.02		
$D > 2.5$		± 0.01	

加工材料 Work Material

调质钢 Prehardened Steel P	高硬度钢 Hardened Steel H	
	40~60HRC	~65HRC



◆ 2023年7月增加规格 ※Released in Jul, 2023.

$D \geq 3$ 可对应返修服务(柄长须在15mm以上。详情请咨询本公司。)

单位 [尺寸: mm / 价格: 日元]
Unit [Size: mm / Retail Price: JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(l1) 颈长 Under Neck Length	(l) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece										
										30°	1°	1°30'	2°	3°						
08-00237-01013	0.1	R0.01	0.3	0.08	0.085	12°	4	45	15,400	0.34	0.36	0.38	0.39	0.44						
08-00237-01015			0.5												0.55	0.58	0.60	0.63	0.70	
08-00237-01512	0.15	R0.01	0.3	0.12	0.135	12°	4	45	14,300	0.34	0.36	0.38	0.39	0.44						
08-00237-01513			0.5												0.55	0.58	0.60	0.63	0.70	
08-00237-01515			0.75												0.81	0.85	0.89	0.93	1.03	
08-00237-01517			1												1.07	1.12	1.17	1.23	1.37	
08-00237-01522			0.3												0.34	0.36	0.37	0.39	0.43	
08-00237-01523		R0.02	0.5	0.55	0.58	0.60	0.63	0.70												
08-00237-01525			0.75	0.81	0.85	0.89	0.93	1.03												
08-00237-01527			1	1.07	1.12	1.17	1.23	1.36												
◆ 08-00237-02020			0.2	R0.02	0.3	0.15	0.18	12°	4	45	14,300	0.36	0.37	0.39	0.41	0.45				
08-00237-02021					0.5												0.56	0.59	0.62	0.65
08-00237-02023	1	1.09			1.13												1.19	1.24	1.38	
08-00237-02025	1.5	1.61			1.68												1.76	1.84	2.04	
08-00237-02027	2	2.13			2.22												2.33	2.44	2.71	
◆ 08-00237-02050	R0.05	0.3		0.35	0.37	0.38	0.40	0.44												
08-00237-02051		0.5		0.56	0.59	0.61	0.64	0.71												
08-00237-02053		1		1.08	1.13	1.18	1.24	1.37												
08-00237-02055		1.5		1.61	1.68	1.75	1.84	2.03												
08-00237-02057		2		2.13	2.22	2.32	2.43	2.70												
◆ 08-00237-03020		0.3	R0.02	0.5	0.25	0.28	12°	4	45	13,900	0.56	0.59	0.62	0.65	0.71					
08-00237-03021				1												1.09	1.13	1.19	1.24	1.38
08-00237-03022				1.5												1.61	1.68	1.76	1.84	2.04

订购方式
How to Order

请指定MHRH430R 外径(D)×角半径(R)×颈长(l1)。
When you order, indicate MHRH430R (D)×(R)×(l1).

※(γ)为参考值。
※(γ) is reference value.

单位 [尺寸 : mm / 价格 : 日元]
Unit [Size : mm / Retail Price : JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece										
										30°	1°	1°30'	2°	3°						
										08-00237-03023	0.3	R0.02	2	0.25	0.28	12°	4	45	13,900	2.13
08-00237-03024	2.5	45	17,300	2.65	2.77	2.90	3.04	3.37												
08-00237-03025	3	45	13,300	3.17	3.31	3.47	3.64	4.03												
08-00237-03050	R0.05	0.5	45	13,900	0.56	0.59	0.61	0.64	0.71											
08-00237-03051		1	45	13,900	1.08	1.13	1.18	1.24	1.37											
08-00237-03052		1.5	45	13,900	1.61	1.68	1.75	1.84	2.03											
08-00237-03053		2	45	13,900	2.13	2.22	2.32	2.43	2.70											
08-00237-03054		2.5	45	17,300	2.65	2.77	2.89	3.03	3.36											
08-00237-03055		3	45	17,300	3.17	3.31	3.46	3.63	4.02											
08-00237-04020		0.4	R0.02	0.5	0.3	0.37	12°	4	45	9,200		0.59	0.61					0.64	0.67	0.75
08-00237-04021				1					45	9,200		1.11	1.16					1.21	1.27	1.41
08-00237-04022	1.5			45					9,200	1.63		1.70	1.78					1.87	2.07	
08-00237-04023	2			45					9,200	2.15		2.25	2.35					2.47	2.74	
08-00237-04024	2.5			45					9,200	2.67		2.79	2.92					3.07	3.40	
08-00237-04025	3			45					9,200	3.20		3.34	3.49					3.67	4.06	
08-00237-04027	4			45					9,200	4.24	4.43	4.63	4.86	5.39						
08-00237-04050	R0.05		0.5	45					9,200	0.59	0.61	0.64	0.67	0.74						
08-00237-04051			1	45					9,200	1.11	1.16	1.21	1.27	1.40						
08-00237-04052			1.5	45					9,200	1.63	1.70	1.78	1.86	2.06						
08-00237-04053			2	45					9,200	2.15	2.25	2.35	2.46	2.73						
08-00237-04054			2.5	45					9,200	2.67	2.79	2.92	3.06	3.39						
08-00237-04055			3	45					9,200	3.19	3.34	3.49	3.66	4.05						
08-00237-04057			4	45					9,200	4.24	4.43	4.63	4.86	5.38						
08-00237-04101			R0.1	1					45	9,200	1.11	1.15	1.20	1.26	1.38					
08-00237-04103	2	45		9,200	2.15	2.24	2.34	2.45	2.71											
08-00237-04105	3	45		9,200	3.19	3.33	3.48	3.65	4.04											
08-00237-04107	4	45		9,200	4.24	4.42	4.62	4.85	5.37											
08-00237-05021	0.5	R0.02	1	0.4	0.46	12°	4	45	7,600	1.14	1.19	1.24	1.30	1.44						
08-00237-05022			2					45	7,600	2.18	2.27	2.38	2.50	2.77						
08-00237-05023			3					45	7,600	3.22	3.36	3.52	3.69	4.10						
08-00237-05024			4					45	7,600	4.26	4.45	4.66	4.89	5.42						
08-00237-05025			5					45	7,600	5.31	5.54	5.80	6.09	6.75						
08-00237-05026		6	45					7,600	6.35	6.63	6.94	7.28	8.08							
08-00237-05051		R0.05	1					45	7,600	1.13	1.18	1.24	1.29	1.43						
08-00237-05052			2					45	7,600	2.18	2.27	2.38	2.49	2.76						
08-00237-05053			3					45	7,600	3.22	3.36	3.52	3.69	4.09						
08-00237-05054			4					45	7,600	4.26	4.45	4.66	4.88	5.41						
08-00237-05055			5					45	7,600	5.31	5.54	5.80	6.08	6.74						
08-00237-05056			6					45	7,600	6.35	6.63	6.94	7.28	8.07						
08-00237-05101			R0.1					1	45	7,600	1.13	1.18	1.23	1.28	1.42					
08-00237-05102								2	45	7,600	2.17	2.27	2.37	2.48	2.74					
08-00237-05103		3						45	7,600	3.22	3.36	3.51	3.68	4.07						
08-00237-05104	4	45		7,600	4.26	4.45	4.65	4.87	5.40											
08-00237-05105	5	45		7,600	5.30	5.54	5.79	6.07	6.72											
08-00237-05106	6	45		7,600	6.35	6.63	6.93	7.27	8.05											
08-00237-06021	0.6	R0.02		2	0.5	0.56	12°	4	45	8,100	2.18	2.27	2.38	2.50	2.77					
08-00237-06023			4	45					8,100	4.26	4.45	4.66	4.89	5.42						
08-00237-06025			6	45					8,100	6.35	6.63	6.94	7.28	8.08						
08-00237-06027			8	50					8,400	8.43	8.81	9.22	9.68	10.73						
08-00237-06029			10	50					8,400	10.52	10.99	11.50	12.07	13.39						
08-00237-06051		R0.05	2	45					8,100	2.18	2.27	2.38	2.49	2.76						
08-00237-06053			4	45					8,100	4.26	4.45	4.66	4.88	5.41						
08-00237-06055			6	45					8,100	6.35	6.63	6.94	7.28	8.07						
08-00237-06057			8	50					8,400	8.43	8.81	9.22	9.67	10.72						
08-00237-06059			10	50					8,400	10.52	10.99	11.50	12.06	13.38						
08-00237-06101			R0.1	2					45	7,600	2.17	2.27	2.37	2.48	2.74					
08-00237-06103				4					45	7,600	4.26	4.45	4.65	4.87	5.40					
08-00237-06105				6					45	7,600	6.35	6.63	6.93	7.27	8.05					
08-00237-06107		8		50					7,800	8.43	8.80	9.21	9.66	10.71						
08-00237-06109		10		50					7,800	10.52	10.98	11.49	12.05	13.36						

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高硬度钢用4刃长颈圆鼻铣刀
MUGEN COATING PREMIUM 4-Flute Long Neck Corner Radius End Mill for Hardened Steel

◆ 2023年7月增加规格 ※Released in Jul, 2023.

单位 [尺寸: mm / 价格: 日元]

D≥3可对应返修服务(柄长须在15mm以上。详情请咨询本公司。)

Unit [Size: mm / Retail Price: JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece												
										30°	1°	1°30'	2°	3°								
08-00237-07020	0.7	R0.02	2	0.55	0.66	12°	4	45	8,500	2.18	2.27	2.38	2.50	2.77								
08-00237-07021			4					45	8,500	4.26	4.45	4.66	4.89	5.42								
08-00237-07023			6					45	8,500	6.35	6.63	6.94	7.28	8.08								
08-00237-07050		R0.05	2					0.65	0.76	12°	4	45	8,500	2.18	2.27	2.38	2.49	2.76				
08-00237-07051			4									45	8,500	4.26	4.45	4.66	4.88	5.41				
08-00237-07053			6									45	8,500	6.35	6.63	6.94	7.28	8.07				
08-00237-07100		R0.1	2									0.7	0.85	12°	4	45	8,500	2.17	2.27	2.37	2.48	2.74
08-00237-07101			4													45	8,500	4.26	4.45	4.65	4.87	5.40
08-00237-07103			6													45	8,500	6.35	6.63	6.93	7.27	8.05
08-00237-08020	0.8	R0.02	2	0.65	0.76	12°	4									45	8,500	2.18	2.27	2.38	2.50	2.77
08-00237-08021			4													45	8,500	4.26	4.45	4.66	4.89	5.42
08-00237-08023			6													45	8,500	6.35	6.63	6.94	7.28	8.08
08-00237-08025		R0.05	8					0.7	0.85	12°	4					50	8,800	8.43	8.81	9.22	9.68	10.73
08-00237-08050			2													45	8,500	2.18	2.27	2.38	2.49	2.76
08-00237-08051			4													45	8,500	4.26	4.45	4.66	4.88	5.41
08-00237-08053		R0.1	6									0.7	0.85	12°	4	45	8,500	6.35	6.63	6.94	7.28	8.07
08-00237-08055			8													50	8,800	8.43	8.81	9.22	9.67	10.72
08-00237-08059			12													50	8,800	12.60	13.17	13.78	14.46	16.03
08-00237-08100	R0.2	2	0.7	0.85	12°	4	45									8,500	2.17	2.27	2.37	2.48	2.74	
08-00237-08101		4					45									8,500	4.26	4.45	4.65	4.87	5.40	
08-00237-08103		6					45									8,500	6.35	6.63	6.93	7.27	8.05	
08-00237-08105	R0.1	8					0.7	0.85	12°	4	50					8,800	8.43	8.80	9.21	9.66	10.71	
08-00237-08109		12									50					8,800	12.60	13.16	13.77	14.45	16.01	
08-00237-08200		2									45					8,500	2.17	2.26	2.36	2.46	2.71	
08-00237-08201	R0.2	4									0.7	0.85	12°	4	45	8,500	4.26	4.44	4.64	4.86	5.37	
08-00237-08203		6													45	8,500	6.34	6.62	6.92	7.25	8.02	
08-00237-08205		8													50	8,800	8.43	8.80	9.20	9.64	10.67	
08-00237-08209	12	50	8,800	12.60	13.15	13.76									14.43	15.98						
08-00237-09101	0.9	R0.1	4	0.7	0.85	12°									4	45	9,700	4.28	4.47	4.68	4.90	5.43
08-00237-09105			8													50	9,700	8.46	8.83	9.24	9.69	10.74
◆ 08-00237-10024	1	R0.02	1.5	0.8	0.95	12°	4	50	6,500	1.68					1.76	1.84	1.93	2.14				
08-00237-10028			2					50	6,500	2.20					2.30	2.41	2.53	2.80				
◆ 08-00237-10026			2.5					50	6,500	2.72					2.85	2.98	3.12	3.46				
08-00237-10020			3					50	6,500	3.25	3.39	3.55	3.72	4.13								
08-00237-10021			4					50	6,500	4.29	4.48	4.69	4.92	5.45								
08-00237-10022			5					50	7,100	5.33	5.57	5.83	6.11	6.78								
08-00237-10023			6					50	7,100	6.37	6.66	6.97	7.31	8.11								
08-00237-10025			8					50	7,100	8.46	8.84	9.25	9.70	10.76								
08-00237-10027			10					50	7,100	10.54	11.02	11.53	12.10	13.42								
◆ 08-00237-10054		R0.05	1.5					0.8	0.95	12°	4	50	6,500	1.68	1.75	1.83	1.92	2.13				
08-00237-10058			2									50	6,500	2.20	2.30	2.40	2.52	2.79				
◆ 08-00237-10056			2.5									50	6,500	2.72	2.84	2.97	3.12	3.45				
08-00237-10050			3									50	6,500	3.24	3.39	3.54	3.72	4.12				
08-00237-10051			4									50	6,500	4.29	4.48	4.68	4.91	5.44				
08-00237-10052			5									50	7,100	5.33	5.57	5.82	6.11	6.77				
08-00237-10053			6									50	7,100	6.37	6.66	6.97	7.31	8.10				
08-00237-10055			8									50	7,100	8.46	8.83	9.25	9.70	10.75				
08-00237-10057			10									50	7,100	10.54	11.01	11.53	12.09	13.41				
◆ 08-00237-10104		R0.1	1.5									0.8	0.95	12°	4	50	6,500	1.68	1.75	1.83	1.91	2.11
08-00237-10108			2													50	6,500	2.20	2.29	2.40	2.51	2.77
◆ 08-00237-10106			2.5													50	6,500	2.72	2.84	2.97	3.11	3.44
08-00237-10100			3													50	6,500	3.24	3.38	3.54	3.71	4.10
08-00237-10101			4													50	6,500	4.28	4.47	4.68	4.90	5.43
08-00237-10102			5													50	7,100	5.33	5.56	5.82	6.10	6.76
08-00237-10103			6													50	7,100	6.37	6.65	6.96	7.30	8.08
08-00237-10105			8													50	7,100	8.46	8.83	9.24	9.69	10.74
08-00237-10107			10													50	7,100	10.54	11.01	11.52	12.08	13.39
◆ 08-00237-10204	R0.2	1.5	0.8	0.95	12°	4	50									6,500	1.67	1.74	1.81	1.89	2.08	
08-00237-10208		2					50									6,500	2.19	2.28	2.38	2.49	2.74	
◆ 08-00237-10206		2.5					50									6,500	2.72	2.83	2.95	3.09	3.41	
08-00237-10200		3					50									6,500	3.24	3.37	3.52	3.69	4.07	

订购方式
How to Order

请指定MHRH430R 外径(D)×角半径(R)×颈长(L1)。
When you order, indicate MHRH430R (D)×(R)×(L1).

※(γ)为参考值。
※(γ) is reference value.

单位 [尺寸: mm / 价格: 日元]
Unit [Size: mm / Retail Price: JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece										
										30°	1°	1°30'	2°	3°						
08-00237-10201	1	R0.2	4	0.8	0.95	12°	4	50	6,500	4.28	4.46	4.66	4.88	5.40						
08-00237-10202			5					50	7,100	5.32	5.55	5.80	6.08	6.72						
08-00237-10203			6					50	7,100	6.37	6.64	6.94	7.28	8.05						
08-00237-10205			8					50	7,100	8.45	8.82	9.23	9.67	10.71						
08-00237-10207			10					50	7,100	10.54	11.00	11.51	12.06	13.36						
◆ 08-00237-10304		R0.3	1.5					50	6,500	1.67	1.73	1.80	1.87	2.05						
08-00237-10308			2					50	6,500	2.19	2.28	2.37	2.47	2.71						
◆ 08-00237-10306			2.5					50	6,500	2.71	2.82	2.94	3.07	3.37						
08-00237-10300			3					50	6,500	3.23	3.36	3.51	3.67	4.04						
08-00237-10301			4					50	6,500	4.28	4.45	4.65	4.86	5.36						
08-00237-10302			5					50	7,100	5.32	5.54	5.79	6.06	6.69						
08-00237-10303			6					50	7,100	6.36	6.63	6.93	7.26	8.02						
08-00237-10305			8					50	7,100	8.45	8.81	9.21	9.65	10.67						
08-00237-10307			10					50	7,100	10.53	10.99	11.49	12.04	13.33						
08-00237-12101			1.2					R0.1	5	1	1.14	12°	4	50	7,400	5.35	5.59	5.84	6.13	6.79
08-00237-12103									10					50	7,400	10.57	11.03	11.55	12.11	13.42
08-00237-12201								R0.2	5					50	7,400	5.35	5.58	5.83	6.11	6.75
08-00237-12203	10	50		7,400	10.56	11.03	11.53		12.09					13.39						
08-00237-12301	R0.3	5		50	7,400	5.34	5.57	5.82	6.09					6.72						
08-00237-12303		10		50	7,400	10.56	11.02	11.52	12.07					13.36						
08-00237-15020	1.5	R0.02	3	1.2	1.43	12°	4	50	6,900	3.29	3.44	3.60	3.78	4.19						
08-00237-15021			4					50	6,900	4.34	4.53	4.74	4.97	5.52						
08-00237-15023			6					50	6,900	6.42	6.71	7.02	7.37	8.17						
08-00237-15025			8					50	7,400	8.51	8.89	9.30	9.76	10.83						
◆ 08-00237-15026			10					50	7,400	10.59	11.07	11.59	12.15	13.48						
08-00237-15027			12					50	7,400	12.68	13.25	13.87	14.55	16.13						
08-00237-15029			15					50	7,400	15.81	16.51	17.29	18.14	20.12						
08-00237-15050			R0.05					3	50	6,900	3.29	3.44	3.60	3.77	4.18					
08-00237-15051								4	50	6,900	4.34	4.53	4.74	4.97	5.51					
08-00237-15053		6						50	6,900	6.42	6.71	7.02	7.36	8.16						
08-00237-15055		8						50	7,400	8.51	8.89	9.30	9.76	10.82						
◆ 08-00237-15056		10						50	7,400	10.59	11.06	11.58	12.15	13.47						
08-00237-15057		12						50	7,400	12.68	13.24	13.86	14.54	16.12						
08-00237-15059		15						50	7,400	15.81	16.51	17.28	18.13	20.11						
08-00237-15100		R0.1						3	50	6,900	3.29	3.43	3.59	3.76	4.16					
08-00237-15101			4					50	6,900	4.33	4.52	4.73	4.96	5.49						
08-00237-15103			6					50	6,900	6.42	6.70	7.01	7.35	8.15						
08-00237-15105	8		50	7,400	8.50	8.88	9.29	9.75	10.80											
◆ 08-00237-15106	10		50	7,400	10.59	11.06	11.57	12.14	13.45											
08-00237-15107	12		50	7,400	12.68	13.24	13.85	14.53	16.11											
08-00237-15109	15		60	7,400	15.80	16.51	17.28	18.12	20.09											
08-00237-15200	R0.2	3	50	6,900	3.29	3.43	3.58	3.74	4.13											
08-00237-15201		4	50	6,900	4.33	4.51	4.72	4.94	5.46											
08-00237-15203		6	50	6,900	6.42	6.69	7.00	7.33	8.11											
08-00237-15205		8	50	7,400	8.50	8.87	9.28	9.73	10.77											
◆ 08-00237-15206		10	50	7,400	10.59	11.05	11.56	12.12	13.42											
08-00237-15207		12	50	7,400	12.67	13.23	13.84	14.51	16.08											
08-00237-15209		15	60	7,400	15.80	16.50	17.26	18.10	20.06											
08-00237-15300	R0.3	3	50	6,900	3.28	3.42	3.56	3.72	4.10											
08-00237-15301		4	50	6,900	4.33	4.51	4.70	4.92	5.43											
08-00237-15303		6	50	6,900	6.41	6.68	6.98	7.31	8.08											
08-00237-15305		8	50	7,400	8.50	8.86	9.27	9.71	10.74											
◆ 08-00237-15306		10	50	7,400	10.58	11.04	11.55	12.10	13.39											
08-00237-15307		12	50	7,400	12.67	13.22	13.83	14.49	16.04											
08-00237-15309		15	60	7,400	15.80	16.49	17.25	18.08	20.03											
08-00237-15500	R0.5	3	50	6,900	3.27	3.40	3.53	3.69	4.04											
08-00237-15501		4	50	6,900	4.32	4.49	4.68	4.88	5.36											
08-00237-15503		6	50	6,900	6.40	6.67	6.96	7.27	8.02											
08-00237-15505		8	50	7,400	8.49	8.85	9.24	9.67	10.67											
◆ 08-00237-15506		10	50	7,400	10.57	11.02	11.52	12.06	13.33											
08-00237-15507		12	50	7,400	12.66	13.20	13.80	14.45	15.98											
08-00237-15509		15	60	7,400	15.79	16.47	17.22	18.04	19.96											

无限白金涂层
高硬度钢用4刃长颈圆鼻铣刀
MUGEN COATING PREMIUM 4-Flute Long Neck Corner Radius End Mill for Hardened Steel

◆ 2023年7月增加规格 ※Released in Jul, 2023.

单位 [尺寸: mm / 价格: 日元]

D≥3可对应返修服务(柄长须在15mm以上。详情请咨询本公司。)

Unit [Size: mm / Retail Price: JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece						
										30°	1°	1°30'	2°	3°		
◆ 08-00237-20022	2	R0.02	3	1.6	1.91	12°	4	50	6,900	3.34	3.49	3.66	3.83	4.25		
08-00237-20020			4					50	6,900	4.39	4.58	4.80	5.03	5.58		
08-00237-20021			6					50	6,900	6.47	6.76	7.08	7.42	8.23		
08-00237-20023			8					50	7,400	8.56	8.94	9.36	9.82	10.89		
◆ 08-00237-20024			10					50	7,400	10.64	11.12	11.64	12.21	13.54		
08-00237-20025			12					50	7,400	12.73	13.30	13.92	14.60	16.20		
08-00237-20027			16					60	7,400	16.90	17.66	18.48	19.39	Free		
08-00237-20029			20					60	7,400	21.07	22.01	23.04	24.18	Free		
◆ 08-00237-20052			R0.05					3	50	6,900	3.34	3.49	3.65	3.83	4.24	
08-00237-20050								4	50	6,900	4.38	4.58	4.79	5.03	5.57	
08-00237-20051								6	50	6,900	6.47	6.76	7.07	7.42	8.22	
08-00237-20053								8	50	7,400	8.56	8.94	9.35	9.81	10.88	
◆ 08-00237-20054								10	50	7,400	10.64	11.12	11.63	12.20	13.53	
08-00237-20055								12	50	7,400	12.73	13.29	13.92	14.60	16.19	
08-00237-20057								16	60	7,400	16.90	17.65	18.48	19.38	Free	
08-00237-20059								20	60	7,400	21.07	22.01	23.04	24.17	Free	
◆ 08-00237-20102								R0.1	3	50	6,900	3.34	3.49	3.64	3.82	4.23
08-00237-20100									4	50	6,900	4.38	4.57	4.78	5.02	5.55
08-00237-20101									6	50	6,900	6.47	6.75	7.07	7.41	8.21
08-00237-20103									8	50	7,400	8.55	8.93	9.35	9.80	10.86
◆ 08-00237-20104									10	50	7,400	10.64	11.11	11.63	12.19	13.52
08-00237-20105									12	50	7,400	12.73	13.29	13.91	14.59	16.17
08-00237-20107									16	60	7,400	16.90	17.65	18.47	19.37	Free
08-00237-20109									20	60	7,400	21.07	22.01	23.03	24.16	Free
◆ 08-00237-20202		R0.2							3	50	6,900	3.34	3.48	3.63	3.80	4.19
08-00237-20200									4	50	6,900	4.38	4.57	4.77	5.00	5.52
08-00237-20201									6	50	6,900	6.46	6.74	7.05	7.39	8.18
08-00237-20203									8	50	7,400	8.55	8.92	9.33	9.78	10.83
◆ 08-00237-20204									10	50	7,400	10.64	11.10	11.61	12.18	13.48
08-00237-20205									12	50	7,400	12.72	13.28	13.89	14.57	16.14
08-00237-20207									16	60	7,400	16.89	17.64	18.46	19.36	Free
08-00237-20209									20	60	7,400	21.06	22.00	23.02	24.14	Free
◆ 08-00237-20302			R0.3						3	50	6,900	3.33	3.47	3.62	3.78	4.16
08-00237-20300									4	50	6,900	4.37	4.56	4.76	4.98	5.49
08-00237-20301									6	50	6,900	6.46	6.74	7.04	7.37	8.14
08-00237-20303									8	50	7,400	8.55	8.91	9.32	9.76	10.80
◆ 08-00237-20304									10	50	7,400	10.63	11.09	11.60	12.16	13.45
08-00237-20305									12	50	7,400	12.72	13.27	13.88	14.55	16.11
08-00237-20307									16	60	7,400	16.89	17.63	18.44	19.34	Free
08-00237-20309									20	60	7,400	21.06	21.99	23.00	24.12	Free
◆ 08-00237-20502								R0.5	3	50	6,900	3.32	3.45	3.59	3.74	4.10
08-00237-20500									4	50	6,900	4.37	4.54	4.73	4.94	5.43
08-00237-20501									6	50	6,900	6.45	6.72	7.01	7.33	8.08
08-00237-20503									8	50	7,400	8.54	8.90	9.29	9.72	10.73
◆ 08-00237-20504									10	50	7,400	10.62	11.08	11.57	12.12	13.39
08-00237-20505									12	50	7,400	12.71	13.25	13.85	14.51	16.04
08-00237-20507									16	60	7,400	16.88	17.61	18.42	19.30	Free
08-00237-20509									20	60	7,400	21.05	21.97	22.98	24.08	Free
◆ 08-00237-25100	2.5	R0.1		5	50	7,600	5.47		5.72	5.98	6.27	6.94				
08-00237-25101				10	50	7,600	10.69		11.16	11.68	12.25	13.58				
◆ 08-00237-25102				15	60	7,900	15.90		16.61	17.38	18.23	Free				
08-00237-25103				20	60	7,900	21.12		22.06	23.09	Free	Free				
08-00237-25105		30		70	8,100	31.55	32.95		Free	Free	Free					
◆ 08-00237-25200		R0.2		5	50	7,600	5.47		5.71	5.96	6.25	6.91				
08-00237-25201				10	50	7,600	10.68		11.15	11.67	12.23	13.55				
◆ 08-00237-25202				15	60	7,900	15.90		16.60	17.37	18.21	Free				
08-00237-25203			20	60	7,900	21.11	22.05		23.07	Free	Free					
08-00237-25205		30	70	8,100	31.54	32.94	Free		Free	Free						
◆ 08-00237-25300		R0.3	5	50	7,600	5.47	5.70		5.95	6.23	6.88					
08-00237-25301			10	50	7,600	10.68	11.14		11.65	12.21	13.52					
◆ 08-00237-25302			15	60	7,900	15.89	16.59		17.36	18.20	Free					

订购方式
How to Order

请指定MHRH430R 外径(D)×角半径(R)×颈长(L1)。
When you order, indicate MHRH430R (D)×(R)×(L1).

※(γ)为参考值。
※(γ) is reference value.

单位 [尺寸: mm / 价格: 日元]
Unit [Size: mm / Retail Price: JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(ℓ1) 颈长 Under Neck Length	(ℓ) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece					
										30°	1°	1°30'	2°	3°	
										08-00237-25303	2.5	R0.3	20	2	2.39
08-00237-25305	30	8,100	31.54	32.93	Free	Free	Free								
◆ 08-00237-25500	R0.5	5	50	7,600	5.46	5.68	5.92	6.19	6.82						
08-00237-25501		10	50	7,600	10.67	11.13	11.63	12.17	13.45						
◆ 08-00237-25502		15	60	7,900	15.89	16.57	17.33	18.16	Free						
08-00237-25503		20	60	7,900	21.10	22.02	23.03	Free	Free						
08-00237-25505		30	70	8,100	31.53	32.92	Free	Free	Free						
08-00237-30058	3	R0.05	4	2.5	2.85	12°	6	50	6,600	4.53	4.73	4.95	5.19	5.76	
08-00237-30050			6					50	6,600	6.62	6.91	7.23	7.59	8.41	
08-00237-30051			8					50	6,600	8.70	9.09	9.51	9.98	11.07	
◆ 08-00237-30052			10					50	6,600	10.79	11.27	11.80	12.37	13.72	
08-00237-30053			12					50	7,900	12.87	13.45	14.08	14.77	16.37	
◆ 08-00237-30054			14					50	7,900	14.96	15.63	16.36	17.16	19.03	
08-00237-30055			16					60	9,900	17.05	17.81	18.64	19.55	21.68	
08-00237-30057			20					60	9,900	21.22	22.16	23.20	24.34	26.99	
08-00237-30112			R0.1					4	50	6,600	4.53	4.73	4.95	5.18	5.74
08-00237-30100								6	50	6,600	6.62	6.91	7.23	7.58	8.39
08-00237-30101								8	50	6,600	8.70	9.09	9.51	9.97	11.05
◆ 08-00237-30102								10	50	6,600	10.79	11.27	11.79	12.36	13.70
08-00237-30103								12	50	7,900	12.87	13.44	14.07	14.76	16.36
◆ 08-00237-30104								14	50	7,900	14.96	15.62	16.35	17.15	19.01
08-00237-30105								16	60	9,900	17.04	17.80	18.63	19.54	21.67
08-00237-30107		20						60	9,900	21.21	22.16	23.19	24.33	26.98	
08-00237-30109		25						70	9,900	26.43	27.61	28.90	30.31	Free	
08-00237-30111		30						70	11,100	31.64	33.05	34.60	36.30	Free	
08-00237-30212		R0.2						4	50	6,600	4.53	4.72	4.93	5.16	5.71
08-00237-30200								6	50	6,600	6.61	6.90	7.21	7.56	8.36
08-00237-30201								8	50	6,600	8.70	9.08	9.49	9.95	11.02
◆ 08-00237-30202								10	50	6,600	10.78	11.26	11.77	12.34	13.67
08-00237-30203								12	50	7,900	12.87	13.44	14.06	14.74	16.33
◆ 08-00237-30204			14					50	7,900	14.95	15.61	16.34	17.13	18.98	
08-00237-30205			16					60	9,900	17.04	17.79	18.62	19.52	21.64	
08-00237-30207			20					60	9,900	21.21	22.15	23.18	24.31	26.94	
08-00237-30209			25					70	9,900	26.42	27.60	28.88	30.29	Free	
08-00237-30211			30					70	11,100	31.64	33.05	34.58	36.28	Free	
08-00237-30312			R0.3					4	50	6,600	4.52	4.71	4.92	5.15	5.68
08-00237-30300								6	50	6,600	6.61	6.89	7.20	7.54	8.33
08-00237-30301								8	50	6,600	8.69	9.07	9.48	9.93	10.99
◆ 08-00237-30302								10	50	6,600	10.78	11.25	11.76	12.33	13.64
08-00237-30303								12	50	7,900	12.86	13.43	14.04	14.72	16.29
◆ 08-00237-30304	14	50		7,900	14.95	15.61	16.32	17.11	18.95						
08-00237-30305	16	60		9,900	17.04	17.78	18.60	19.50	21.60						
08-00237-30307	20	60		9,900	21.21	22.14	23.17	24.29	26.91						
08-00237-30309	25	70		9,900	26.42	27.59	28.87	30.27	Free						
08-00237-30311	30	70		11,100	31.63	33.04	34.57	36.26	Free						
08-00237-30512	R0.5	4		50	6,600	4.51	4.69	4.89	5.11	5.61					
08-00237-30500		6		50	6,600	6.60	6.87	7.17	7.50	8.27					
08-00237-30501		8		50	6,600	8.68	9.05	9.45	9.89	10.92					
◆ 08-00237-30502		10		50	6,600	10.77	11.23	11.73	12.29	13.58					
08-00237-30503		12		50	7,900	12.86	13.41	14.01	14.68	16.23					
◆ 08-00237-30504		14	50	7,900	14.94	15.59	16.30	17.07	18.89						
08-00237-30505		16	60	9,900	17.03	17.77	18.58	19.47	21.54						
08-00237-30507		20	60	9,900	21.20	22.12	23.14	24.25	26.85						
08-00237-30509		25	70	9,900	26.41	27.57	28.84	30.24	Free						
08-00237-30511		30	70	11,100	31.63	33.02	34.54	36.22	Free						
◆ 08-00237-31000		R1	6	50	6,600	6.58	6.83	7.10	7.40	8.11					
08-00237-31001			8	50	6,600	8.66	9.01	9.38	9.80	10.76					
◆ 08-00237-31002			10	50	6,600	10.75	11.19	11.66	12.19	13.42					
08-00237-31003			12	50	7,900	12.83	13.36	13.94	14.58	16.07					
◆ 08-00237-31004			14	50	7,900	14.92	15.54	16.23	16.98	18.73					
08-00237-31005	16	60	9,900	17.01	17.72	18.51	19.37	21.38							

MHRH430R

增加规格
Lineup Expansion

无限白金涂层
高硬度钢用4刃长颈圆鼻铣刀
MUGEN COATING PREMIUM 4-Flute Long Neck Corner Radius End Mill for Hardened Steel

◆ 2023年7月增加规格 ※Released in Jul, 2023.

单位 [尺寸: mm / 价格: 日元]

Unit [Size: mm / Retail Price: JPY]

D≥3可对应返修服务(柄长须在15mm以上。详情请咨询本公司。)

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece					
										30°	1°	1°30'	2°	3°	
										08-00237-31007	3	R1	20	2.5	2.85
08-00237-31009	25	70	9,900	26.39	27.53	28.77	30.14	Free							
08-00237-31011	30	70	11,100	31.60	32.97	34.47	36.12	Free							
◆ 08-00237-40051	4	R0.05	8	3.2	3.8	12°	6	60	9,900	8.83	9.22	9.65	10.12	11.22	
◆ 08-00237-40053			12					60	9,900	13.00	13.58	14.21	14.91	16.53	
◆ 08-00237-40054			16					60	9,900	17.17	17.93	18.77	19.69	Free	
◆ 08-00237-40055			20					65	11,000	21.34	22.29	23.33	24.48	Free	
◆ 08-00237-40056			24					70	11,000	25.51	26.65	27.90	Free	Free	
◆ 08-00237-40057			28					70	11,000	29.68	31.01	32.46	Free	Free	
◆ 08-00237-40058			32					70	11,000	33.85	35.37	37.02	Free	Free	
08-00237-40106			R0.1					8	60	9,900	8.82	9.21	9.64	10.11	11.21
◆ 08-00237-40107								10	60	9,900	10.91	11.39	11.92	12.50	13.86
08-00237-40100								12	60	9,900	13.00	13.57	14.20	14.90	16.51
08-00237-40101								16	60	9,900	17.17	17.93	18.77	19.68	Free
◆ 08-00237-40102								20	65	11,000	21.34	22.29	23.33	24.47	Free
08-00237-40103		24						70	11,000	25.51	26.65	27.89	Free	Free	
◆ 08-00237-40104		28						70	11,000	29.68	31.00	32.45	Free	Free	
08-00237-40105		32						70	11,000	33.85	35.36	37.01	Free	Free	
◆ 08-00237-40108		40						80	12,100	42.19	44.08	Free	Free	Free	
08-00237-40206		R0.2						8	60	9,900	8.82	9.21	9.63	10.09	11.17
◆ 08-00237-40207								10	60	9,900	10.91	11.38	11.91	12.49	13.83
08-00237-40200								12	60	9,900	12.99	13.56	14.19	14.88	16.48
08-00237-40201			16					60	9,900	17.16	17.92	18.75	19.66	Free	
◆ 08-00237-40202			20					65	11,000	21.33	22.28	23.31	24.45	Free	
08-00237-40203			24					70	11,000	25.50	26.64	27.88	Free	Free	
◆ 08-00237-40204			28					70	11,000	29.68	30.99	32.44	Free	Free	
08-00237-40205			32					70	11,000	33.85	35.35	37.00	Free	Free	
◆ 08-00237-40208			40					80	12,100	42.19	44.07	Free	Free	Free	
08-00237-40306			R0.3					8	60	9,900	8.82	9.20	9.61	10.07	11.14
◆ 08-00237-40307								10	60	9,900	10.90	11.38	11.90	12.47	13.80
08-00237-40300								12	60	9,900	12.99	13.55	14.18	14.86	16.45
08-00237-40301		16						60	9,900	17.16	17.91	18.74	19.65	Free	
◆ 08-00237-40302		20						65	11,000	21.33	22.27	23.30	24.43	Free	
08-00237-40303		24						70	11,000	25.50	26.63	27.86	Free	Free	
◆ 08-00237-40304		28						70	11,000	29.67	30.99	32.42	Free	Free	
08-00237-40305		32						70	11,000	33.84	35.34	36.99	Free	Free	
◆ 08-00237-40308		40						80	12,100	42.19	44.06	Free	Free	Free	
08-00237-40506		R0.5						8	60	9,900	8.81	9.18	9.59	10.03	11.08
◆ 08-00237-40507								10	60	9,900	10.89	11.36	11.87	12.43	13.73
08-00237-40500								12	60	9,900	12.98	13.54	14.15	14.82	16.39
08-00237-40501			16					60	9,900	17.15	17.89	18.71	19.61	Free	
◆ 08-00237-40502			20					65	11,000	21.32	22.25	23.27	24.39	Free	
08-00237-40503			24					70	11,000	25.49	26.61	27.83	Free	Free	
◆ 08-00237-40504			28					70	11,000	29.66	30.97	32.40	Free	Free	
08-00237-40505			32					70	11,000	33.83	35.33	36.96	Free	Free	
◆ 08-00237-40508			40					80	12,100	42.18	44.04	Free	Free	Free	
08-00237-41006			R1					8	60	9,900	8.79	9.13	9.52	9.94	10.92
◆ 08-00237-41007								10	60	9,900	10.87	11.31	11.80	12.33	13.57
08-00237-41000								12	60	9,900	12.96	13.49	14.08	14.72	16.23
08-00237-41001		16						60	9,900	17.13	17.85	18.64	19.51	Free	
◆ 08-00237-41002		20						65	11,000	21.30	22.21	23.20	24.30	Free	
08-00237-41003	24	70		11,000	25.47	26.57	27.77	29.08	Free						
◆ 08-00237-41004	28	70		11,000	29.64	30.92	32.33	Free	Free						
08-00237-41005	32	70		11,000	33.81	35.28	36.89	Free	Free						
◆ 08-00237-41008	40	80		12,100	42.16	44.00	Free	Free	Free						
◆ 08-00237-50104	5	R0.1		10	4	4.75	12°	6	70	14,100	11.03	11.52	12.06	12.65	Free
08-00237-50100				15					70	14,100	16.25	16.97	17.76	Free	Free
08-00237-50101				20					70	14,100	21.46	22.42	Free	Free	Free
◆ 08-00237-50102			30	80					15,600	31.89	Free	Free	Free	Free	
08-00237-50103			40	90					17,600	42.32	Free	Free	Free	Free	

订购方式
How to Order

请指定MHRH430R 外径(D)×角半径(R)×颈长(L1)。
When you order, indicate MHRH430R (D)×(R)×(L1).

※(γ)为参考值。
※(γ) is reference value.

MHRH430R

无限白金涂层
高硬度钢用4刃长颈圆鼻铣刀

MUGEN COATING PREMIUM 4-Flute Long Neck Corner Radius End Mill for Hardened Steel

单位 [尺寸：mm / 价格：日元]
Unit [Size : mm / Retail Price : JPY]

产品代码No. Code No.	(D) 外径 Dia.	(R) 角半径 Corner Radius	(L1) 颈长 Under Neck Length	(L) 刃长 Length of Cut	(d2) 颈径 Neck Dia.	(γ) 颈角 Neck Taper Angle	(d) 柄径 Shank Dia.	(L) 全长 Overall Length	标准价格 Retail Price	相对于工件斜度的有效长 Actual effective length depending on inclined angle of workpiece										
										30°	1°	1°30'	2°	3°						
◆ 08-00237-50204	5	R0.2	10	4	4.75	12°	6	70	14,100	11.03	11.51	12.04	12.63	Free						
08-00237-50200								15	70	14,100	16.24	16.96	17.75	Free	Free					
08-00237-50201								20	70	14,100	21.46	22.41	Free	Free	Free					
◆ 08-00237-50202								30	80	15,600	31.88	Free	Free	Free	Free					
08-00237-50203								40	90	17,600	42.31	Free	Free	Free	Free					
◆ 08-00237-50304								10	70	14,100	11.02	11.50	12.03	12.61	Free					
08-00237-50300								15	70	14,100	16.24	16.95	17.73	Free	Free					
08-00237-50301								20	70	14,100	21.45	22.40	Free	Free	Free					
◆ 08-00237-50302								30	80	15,600	31.88	Free	Free	Free	Free					
08-00237-50303								40	90	17,600	42.31	Free	Free	Free	Free					
◆ 08-00237-50504			10					70	14,100	11.02	11.49	12.00	12.57	Free						
08-00237-50500			15					70	14,100	16.23	16.93	17.70	Free	Free						
08-00237-50501			20					70	14,100	21.44	22.38	Free	Free	Free						
◆ 08-00237-50502			30					80	15,600	31.87	Free	Free	Free	Free						
08-00237-50503			40					90	17,600	42.30	Free	Free	Free	Free						
◆ 08-00237-51004			10					70	14,100	10.99	11.44	11.93	12.47	Free						
08-00237-51000			15					70	14,100	16.21	16.89	17.63	Free	Free						
08-00237-51001			20					70	14,100	21.42	22.34	Free	Free	Free						
◆ 08-00237-51002			30					80	15,600	31.85	Free	Free	Free	Free						
08-00237-51003			40					90	17,600	42.28	Free	Free	Free	Free						
◆ 08-00237-60051		6	R0.05					12	5	5.7	-	6	70	14,300	Free	Free	Free	Free	Free	
08-00237-60052													15	70	14,300	Free	Free	Free	Free	Free
◆ 08-00237-60053													18	90	18,200	Free	Free	Free	Free	Free
08-00237-60054													24	90	18,200	Free	Free	Free	Free	Free
◆ 08-00237-60055													30	90	18,200	Free	Free	Free	Free	Free
08-00237-60056													40	100	19,900	Free	Free	Free	Free	Free
◆ 08-00237-60057													48	110	22,100	Free	Free	Free	Free	Free
08-00237-60104													12	70	14,300	Free	Free	Free	Free	Free
◆ 08-00237-60105													15	70	14,300	Free	Free	Free	Free	Free
08-00237-60100													18	90	18,200	Free	Free	Free	Free	Free
08-00237-60101			24	90	18,200	Free	Free	Free					Free	Free						
◆ 08-00237-60102			30	90	18,200	Free	Free	Free					Free	Free						
08-00237-60106			40	100	19,900	Free	Free	Free					Free	Free						
08-00237-60103			48	110	22,100	Free	Free	Free					Free	Free						
08-00237-60204			12	70	14,300	Free	Free	Free					Free	Free						
◆ 08-00237-60205			15	70	14,300	Free	Free	Free					Free	Free						
08-00237-60200			18	90	18,200	Free	Free	Free					Free	Free						
08-00237-60201			24	90	18,200	Free	Free	Free					Free	Free						
◆ 08-00237-60202			30	90	18,200	Free	Free	Free					Free	Free						
08-00237-60206			40	100	19,900	Free	Free	Free					Free	Free						
08-00237-60203			48	110	22,100	Free	Free	Free					Free	Free						
08-00237-60304			12	70	14,300	Free	Free	Free					Free	Free						
◆ 08-00237-60305			15	70	14,300	Free	Free	Free					Free	Free						
08-00237-60300			18	90	18,200	Free	Free	Free					Free	Free						
08-00237-60301			24	90	18,200	Free	Free	Free					Free	Free						
◆ 08-00237-60302			30	90	18,200	Free	Free	Free					Free	Free						
08-00237-60306			40	100	19,900	Free	Free	Free					Free	Free						
08-00237-60303			48	110	22,100	Free	Free	Free					Free	Free						
08-00237-60504			12	70	14,300	Free	Free	Free					Free	Free						
◆ 08-00237-60505			15	70	14,300	Free	Free	Free					Free	Free						
08-00237-60500			18	90	18,200	Free	Free	Free					Free	Free						
08-00237-60501			24	90	18,200	Free	Free	Free					Free	Free						
◆ 08-00237-60502			30	90	18,200	Free	Free	Free					Free	Free						
08-00237-60506			40	100	19,900	Free	Free	Free					Free	Free						
08-00237-60503			48	110	22,100	Free	Free	Free					Free	Free						
08-00237-61004			12	70	14,300	Free	Free	Free					Free	Free						
◆ 08-00237-61005			15	70	14,300	Free	Free	Free					Free	Free						
08-00237-61000			18	90	18,200	Free	Free	Free					Free	Free						
08-00237-61001			24	90	18,200	Free	Free	Free					Free	Free						
◆ 08-00237-61002			30	90	18,200	Free	Free	Free					Free	Free						
08-00237-61006			40	100	19,900	Free	Free	Free					Free	Free						
08-00237-61003			48	110	22,100	Free	Free	Free					Free	Free						

切削参数参考表 Recommended Milling Conditions

加工材料 Work Material				调质钢 Prehardened Steels HPM·NAK (~42HRC)				高硬度钢 Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				高硬度钢 Hardened Steels SKD11·PD613 (~62HRC)				高速钢 High Speed Steels SKH (~65HRC)					
外径 Dia.	角半径 Corner Radius	颈长 Under Neck Length	L(颈长)/ D(外径) L/D	主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut			
				min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm		
0.1	0.01	0.3	3.0	40,000	240	0.004	0.03	40,000	200	0.003	0.02	40,000	160	0.002	0.01	40,000	120	0.002	0.01		
		0.5	5.0	40,000	180	0.003	0.03	40,000	150	0.002	0.02	40,000	120	0.001	0.01	40,000	90	0.001	0.01		
0.15	0.01	0.3	2.0	40,000	360	0.004	0.04	40,000	300	0.003	0.03	40,000	240	0.002	0.015	40,000	180	0.002	0.01		
		0.5	3.3	40,000	240	0.004	0.04	40,000	200	0.003	0.03	40,000	160	0.002	0.015	40,000	120	0.002	0.01		
		0.75	5.0	40,000	180	0.003	0.04	40,000	150	0.002	0.03	40,000	120	0.001	0.015	40,000	90	0.001	0.01		
		1	6.7	40,000	100	0.003	0.04	40,000	80	0.002	0.03	40,000	65	0.001	0.015	40,000	50	0.001	0.01		
	0.02	0.3	2.0	40,000	360	0.004	0.04	40,000	300	0.003	0.03	40,000	240	0.002	0.015	40,000	180	0.002	0.01		
		0.5	3.3	40,000	240	0.004	0.04	40,000	200	0.003	0.03	40,000	160	0.002	0.015	40,000	120	0.002	0.01		
		0.75	5.0	40,000	180	0.003	0.04	40,000	150	0.002	0.03	40,000	120	0.001	0.015	40,000	90	0.001	0.01		
		1	6.7	40,000	100	0.003	0.04	40,000	80	0.002	0.03	40,000	65	0.001	0.015	40,000	50	0.001	0.01		
0.2	0.02	0.3	1.5	30,000	560	0.005	0.05	30,000	480	0.003	0.04	30,000	380	0.003	0.02	30,000	280	0.003	0.01		
		0.5	2.5	30,000	480	0.005	0.05	30,000	400	0.003	0.04	30,000	320	0.003	0.02	30,000	240	0.003	0.01		
		1	5.0	30,000	360	0.005	0.05	30,000	300	0.003	0.04	30,000	240	0.002	0.02	30,000	160	0.002	0.01		
		1.5	7.5	30,000	240	0.004	0.05	30,000	200	0.002	0.04	30,000	160	0.002	0.02	30,000	120	0.001	0.01		
	0.05	0.3	1.5	30,000	560	0.01	0.05	30,000	480	0.003	0.04	30,000	380	0.003	0.02	30,000	280	0.003	0.01		
		0.5	2.5	30,000	480	0.01	0.05	30,000	400	0.003	0.04	30,000	320	0.003	0.02	30,000	240	0.003	0.01		
		1	5.0	30,000	360	0.007	0.05	30,000	300	0.003	0.04	30,000	240	0.003	0.02	30,000	160	0.003	0.01		
		1.5	7.5	30,000	240	0.005	0.05	30,000	200	0.002	0.04	30,000	160	0.002	0.02	30,000	120	0.002	0.01		
		2	10.0	30,000	140	0.003	0.05	30,000	100	0.002	0.04	30,000	80	0.002	0.02	30,000	60	0.002	0.01		
		0.3	0.02	0.5	1.7	30,000	800	0.015	0.1	30,000	680	0.003	0.08	30,000	560	0.003	0.04	30,000	450	0.003	0.03
				1	3.3	30,000	700	0.015	0.1	30,000	600	0.003	0.08	30,000	500	0.003	0.04	30,000	400	0.003	0.03
				1.5	5.0	30,000	480	0.01	0.1	30,000	400	0.003	0.08	30,000	320	0.003	0.04	30,000	240	0.003	0.03
2	6.7			30,000	360	0.007	0.1	30,000	300	0.003	0.08	30,000	240	0.003	0.04	25,000	200	0.003	0.03		
0.05	0.5		1.7	30,000	800	0.02	0.1	30,000	680	0.003	0.08	30,000	560	0.003	0.04	30,000	450	0.003	0.03		
	1		3.3	30,000	700	0.02	0.1	30,000	600	0.003	0.08	30,000	500	0.003	0.04	30,000	400	0.003	0.03		
	1.5		5.0	30,000	480	0.015	0.1	30,000	400	0.003	0.08	30,000	320	0.003	0.04	30,000	240	0.003	0.03		
	2		6.7	30,000	360	0.01	0.1	30,000	300	0.003	0.08	30,000	240	0.003	0.04	25,000	200	0.003	0.03		
0.4	0.02	0.5	1.3	30,000	1,000	0.015	0.12	30,000	900	0.005	0.1	28,000	780	0.005	0.05	25,000	660	0.004	0.04		
		1	2.5	30,000	900	0.015	0.12	30,000	800	0.005	0.1	28,000	700	0.005	0.05	25,000	600	0.004	0.04		
		1.5	3.8	30,000	800	0.012	0.12	30,000	700	0.005	0.1	28,000	600	0.005	0.05	25,000	520	0.004	0.04		
		2	5.0	30,000	720	0.01	0.12	30,000	600	0.005	0.1	25,000	500	0.005	0.05	25,000	440	0.003	0.04		
		2.5	6.3	30,000	680	0.008	0.12	28,000	560	0.004	0.1	25,000	480	0.004	0.05	20,000	360	0.003	0.04		
		3	7.5	30,000	640	0.008	0.12	25,000	500	0.004	0.1	23,000	440	0.003	0.05	18,000	320	0.002	0.04		
	0.05	0.5	1.3	30,000	1,000	0.025	0.12	30,000	900	0.005	0.1	28,000	780	0.005	0.05	25,000	660	0.005	0.04		
		1	2.5	30,000	900	0.025	0.12	30,000	800	0.005	0.1	28,000	700	0.005	0.05	25,000	600	0.005	0.04		
		1.5	3.8	30,000	800	0.022	0.12	30,000	700	0.005	0.1	28,000	600	0.005	0.05	25,000	520	0.005	0.04		
		2	5.0	30,000	720	0.02	0.12	30,000	600	0.005	0.1	25,000	500	0.005	0.05	25,000	440	0.005	0.04		
		2.5	6.3	30,000	680	0.015	0.12	28,000	560	0.004	0.1	25,000	480	0.004	0.05	20,000	360	0.004	0.04		
		3	7.5	30,000	640	0.015	0.12	25,000	500	0.004	0.1	23,000	440	0.003	0.05	18,000	320	0.003	0.04		
0.1	0.5	1.3	30,000	1,000	0.025	0.12	30,000	900	0.005	0.1	28,000	780	0.005	0.05	25,000	660	0.005	0.04			
	1	2.5	30,000	900	0.025	0.12	30,000	800	0.005	0.1	28,000	700	0.005	0.05	25,000	600	0.005	0.04			
	1.5	3.8	30,000	800	0.022	0.12	30,000	700	0.005	0.1	28,000	600	0.005	0.05	25,000	520	0.005	0.04			
	2	5.0	30,000	720	0.02	0.12	30,000	600	0.005	0.1	25,000	500	0.005	0.05	25,000	440	0.005	0.04			
0.5	0.02	2.5	6.3	30,000	680	0.015	0.12	28,000	560	0.004	0.1	25,000	480	0.004	0.05	20,000	360	0.004	0.04		
		3	7.5	30,000	640	0.015	0.12	25,000	500	0.004	0.1	23,000	440	0.003	0.05	18,000	320	0.003	0.04		
		4	10.0	30,000	500	0.01	0.12	25,000	400	0.003	0.1	20,000	320	0.002	0.05	18,000	240	0.002	0.04		
		1	2.5	30,000	900	0.025	0.12	30,000	800	0.005	0.1	28,000	700	0.005	0.05	25,000	600	0.005	0.04		
		2	5.0	30,000	720	0.02	0.12	30,000	600	0.005	0.1	25,000	500	0.005	0.05	25,000	440	0.005	0.04		
		3	7.5	30,000	640	0.015	0.12	25,000	500	0.004	0.1	23,000	440	0.003	0.05	18,000	320	0.003	0.04		
	0.02	1	2.0	30,000	1,200	0.016	0.14	25,000	1,000	0.008	0.15	23,000	900	0.006	0.1	20,000	800	0.004	0.08		
		2	4.0	30,000	1,000	0.014	0.14	25,000	840	0.007	0.15	23,000	720	0.005	0.1	20,000	600	0.003	0.08		
		3	6.0	30,000	840	0.012	0.14	25,000	700	0.006	0.15	23,000	640	0.004	0.1	20,000	560	0.003	0.08		
		4	8.0	25,000	760	0.01	0.14	25,000	600	0.004	0.15	23,000	480	0.002	0.1	20,000	360	0.002	0.08		
		5	10.0	25,000	600	0.008	0.14	20,000	400	0.003	0.15	18,000	300	0.002	0.1	16,000	200	0.002	0.08		
		6	12.0	25,000	500	0.004	0.14	20,000	320	0.002	0.15	18,000	200	0.001	0.1	16,000	140	0.001	0.08		

加工材料 Work Material				调质钢 Prehardened Steels HPM·NAK (~42HRC)				高硬度钢 Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				高硬度钢 Hardened Steels SKD11·PD613 (~62HRC)				高速钢 High Speed Steels SKH (~65HRC)					
外径 Dia.	角半径 Corner Radius	颈长 Under Neck Length	L(颈长)/ D(外径) L/D	主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut		主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut		主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut	
				min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm		
0.5	0.05 0.1	1	2.0	30,000	1,200	0.03	0.14	25,000	1,000	0.01	0.15	23,000	900	0.007	0.1	20,000	800	0.005	0.08		
		2	4.0	30,000	1,000	0.025	0.14	25,000	840	0.01	0.15	23,000	720	0.007	0.1	20,000	600	0.005	0.08		
		3	6.0	30,000	840	0.02	0.14	25,000	700	0.008	0.15	23,000	640	0.005	0.1	20,000	560	0.003	0.08		
		4	8.0	25,000	760	0.015	0.14	25,000	600	0.005	0.15	23,000	480	0.003	0.1	20,000	360	0.002	0.08		
		5	10.0	25,000	600	0.01	0.14	20,000	400	0.004	0.15	18,000	300	0.003	0.1	16,000	200	0.002	0.08		
		6	12.0	25,000	500	0.008	0.14	20,000	320	0.003	0.15	18,000	200	0.002	0.1	16,000	140	0.001	0.08		
0.6	0.02	2	3.3	30,000	1,200	0.016	0.2	25,000	1,000	0.012	0.2	23,000	800	0.006	0.15	20,000	640	0.004	0.1		
		4	6.7	25,000	900	0.012	0.2	23,000	800	0.007	0.2	20,000	600	0.004	0.15	18,000	400	0.003	0.1		
		6	10.0	23,000	600	0.008	0.2	20,000	400	0.005	0.2	18,000	300	0.003	0.15	12,000	200	0.002	0.1		
		8	13.3	18,000	400	0.006	0.2	16,000	300	0.003	0.2	14,000	200	0.001	0.15	10,000	160	0.001	0.1		
		10	16.7	16,000	240	0.003	0.2	14,000	200	0.001	0.2	12,000	160	0.001	0.15	8,000	100	0.001	0.1		
	0.05 0.1	2	3.3	30,000	1,200	0.035	0.2	25,000	1,000	0.02	0.2	23,000	800	0.01	0.15	20,000	640	0.007	0.1		
		4	6.7	25,000	900	0.025	0.2	23,000	800	0.015	0.2	20,000	600	0.007	0.15	18,000	400	0.005	0.1		
		6	10.0	23,000	600	0.015	0.2	20,000	400	0.008	0.2	18,000	300	0.005	0.15	12,000	200	0.003	0.1		
		8	13.3	18,000	400	0.01	0.2	16,000	300	0.005	0.2	14,000	200	0.002	0.15	10,000	160	0.001	0.1		
		10	16.7	16,000	240	0.005	0.2	14,000	200	0.002	0.2	12,000	160	0.001	0.15	8,000	100	0.001	0.1		
0.7	0.02	2	2.9	30,000	1,800	0.016	0.25	25,000	1,400	0.012	0.25	23,000	1,200	0.006	0.15	20,000	900	0.003	0.12		
		4	5.7	28,000	1,400	0.012	0.25	25,000	1,200	0.008	0.25	23,000	1,000	0.005	0.15	20,000	700	0.002	0.12		
		6	8.6	25,000	1,000	0.008	0.25	20,000	700	0.005	0.25	18,000	500	0.003	0.15	16,000	400	0.002	0.12		
	0.05 0.1	2	2.9	30,000	1,800	0.04	0.25	25,000	1,400	0.03	0.25	23,000	1,200	0.015	0.15	20,000	900	0.01	0.12		
		4	5.7	28,000	1,400	0.03	0.25	25,000	1,200	0.02	0.25	23,000	1,000	0.01	0.15	20,000	700	0.007	0.12		
		6	8.6	25,000	1,000	0.02	0.25	20,000	700	0.01	0.25	18,000	500	0.007	0.15	16,000	400	0.005	0.12		
0.8	0.02	2	2.5	28,000	2,000	0.016	0.3	25,000	1,600	0.014	0.25	23,000	1,400	0.006	0.16	20,000	1,000	0.005	0.14		
		4	5.0	28,000	1,800	0.012	0.3	25,000	1,400	0.008	0.25	23,000	1,200	0.005	0.16	20,000	800	0.003	0.14		
		6	7.5	23,000	1,400	0.009	0.3	20,000	1,100	0.006	0.25	18,000	900	0.004	0.16	16,000	650	0.002	0.14		
		8	10.0	18,000	1,000	0.006	0.3	16,000	800	0.003	0.25	14,000	600	0.002	0.16	12,000	400	0.002	0.14		
	0.05 0.1 0.2	2	2.5	28,000	2,000	0.05	0.3	25,000	1,600	0.03	0.25	23,000	1,400	0.02	0.16	20,000	1,000	0.015	0.14		
		4	5.0	28,000	1,800	0.045	0.3	25,000	1,400	0.025	0.25	23,000	1,200	0.015	0.16	20,000	800	0.01	0.14		
		6	7.5	23,000	1,400	0.03	0.3	20,000	1,100	0.02	0.25	18,000	900	0.01	0.16	16,000	650	0.007	0.14		
		8	10.0	18,000	1,000	0.02	0.3	16,000	800	0.01	0.25	14,000	600	0.005	0.16	12,000	400	0.005	0.14		
		12	15.0	16,000	600	0.007	0.3	14,000	400	0.005	0.25	12,000	240	0.003	0.16	10,000	160	0.001	0.14		
		0.9	0.1	4	4.4	25,000	2,200	0.05	0.3	25,000	1,700	0.03	0.3	20,000	1,400	0.02	0.2	18,000	1,200	0.01	0.15
8	8.9			18,000	1,000	0.03	0.3	16,000	800	0.01	0.3	14,000	700	0.008	0.2	10,000	500	0.005	0.15		
1	0.02	1.5	1.5	30,000	3,000	0.016	0.35	25,000	2,400	0.012	0.3	21,000	2,100	0.01	0.25	17,000	1,500	0.008	0.2		
		2	2.0	30,000	2,800	0.016	0.35	25,000	2,300	0.012	0.3	21,000	2,000	0.01	0.25	17,000	1,400	0.008	0.2		
		2.5	2.5	29,000	2,700	0.016	0.35	24,000	2,200	0.012	0.3	20,000	1,900	0.01	0.25	16,500	1,350	0.008	0.2		
		3	3.0	28,000	2,500	0.016	0.35	23,000	2,100	0.012	0.3	20,000	1,800	0.01	0.25	16,000	1,300	0.008	0.2		
		4	4.0	25,000	2,200	0.014	0.35	21,000	1,800	0.01	0.3	18,000	1,500	0.008	0.25	14,000	1,100	0.005	0.2		
		5	5.0	23,000	1,900	0.012	0.35	19,000	1,600	0.008	0.3	16,000	1,400	0.005	0.25	13,000	1,000	0.003	0.2		
		6	6.0	20,000	1,700	0.01	0.35	16,000	1,400	0.008	0.3	14,000	1,200	0.005	0.25	11,000	850	0.003	0.2		
		8	8.0	18,000	1,400	0.008	0.35	15,000	1,100	0.006	0.3	13,000	900	0.005	0.25	10,000	650	0.002	0.2		
		10	10.0	16,000	1,000	0.006	0.35	13,000	800	0.004	0.3	11,000	700	0.003	0.25	9,000	500	0.002	0.2		
		0.05 0.1 0.2 0.3	1.5	1.5	30,000	3,000	0.065	0.35	25,000	2,400	0.05	0.3	21,000	2,100	0.04	0.25	17,000	1,500	0.03	0.2	
	2		2.0	30,000	2,800	0.065	0.35	25,000	2,300	0.05	0.3	21,000	2,000	0.04	0.25	17,000	1,400	0.03	0.2		
	2.5		2.5	29,000	2,700	0.06	0.35	24,000	2,200	0.05	0.3	20,000	1,900	0.04	0.25	16,500	1,350	0.03	0.2		
	3		3.0	28,000	2,500	0.06	0.35	23,000	2,100	0.05	0.3	20,000	1,800	0.04	0.25	16,000	1,300	0.03	0.2		
	4		4.0	25,000	2,200	0.055	0.35	21,000	1,800	0.04	0.3	18,000	1,500	0.03	0.25	14,000	1,100	0.02	0.2		
	5		5.0	23,000	1,900	0.05	0.35	19,000	1,600	0.03	0.3	16,000	1,400	0.02	0.25	13,000	1,000	0.01	0.2		
	6		6.0	20,000	1,700	0.045	0.35	16,000	1,400	0.02	0.3	14,000	1,200	0.01	0.25	11,000	850	0.007	0.2		
	8		8.0	18,000	1,400	0.035	0.35	15,000	1,100	0.015	0.3	13,000	900	0.008	0.25	10,000	650	0.005	0.2		
	1.2	0.1 0.2 0.3	5	4.2	24,000	2,200	0.06	0.45	20,000	1,800	0.045	0.4	17,000	1,500	0.03	0.3	14,000	1,100	0.02	0.2	
10			8.3	16,000	1,400	0.04	0.45	13,000	1,100	0.03	0.4	11,000	950	0.01	0.3	9,000	700	0.005	0.2		
3			2.0	28,000	2,800	0.016	0.55	23,000	2,300	0.012	0.5	20,000	2,000	0.01	0.4	16,000	1,400	0.008	0.3		
1.5	0.02	4	2.7	25,000	2,400	0.016	0.55	21,000	2,000	0.012	0.5	18,000	1,700	0.01	0.4	14,000	1,200	0.008	0.3		
		6	4.0	23,000	2,200	0.014	0.55	19,000	1,800	0.01	0.5	16,000	1,500	0.008	0.4	13,000	1,100	0.005	0.3		

切削参数参考表 Recommended Milling Conditions

加工材料 Work Material				调质钢 Prehardened Steels HPM·NAK (~42HRC)				高硬度钢 Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				高硬度钢 Hardened Steels SKD11·PD613 (~62HRC)				高速钢 High Speed Steels SKH (~65HRC)				
外径 Dia.	角半径 Corner Radius	颈长 Under Neck Length	L(颈长)/D(外径) L/D	主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		主轴转速 Spindle Speed	进给 速度 Feed	切深量 Depth of Cut		
				min ⁻¹	mm/min	a _p mm	a _e mm	min ⁻¹	mm/min	a _p mm	a _e mm	min ⁻¹	mm/min	a _p mm	a _e mm	min ⁻¹	mm/min	a _p mm	a _e mm	
1.5	0.02	8	5.3	20,000	1,800	0.014	0.55	16,000	1,500	0.01	0.5	14,000	1,300	0.008	0.4	11,000	900	0.003	0.3	
		10	6.7	18,000	1,600	0.013	0.55	15,000	1,300	0.008	0.5	13,000	1,100	0.006	0.4	10,000	750	0.003	0.3	
		12	8.0	16,000	1,400	0.012	0.55	13,000	1,100	0.008	0.5	11,000	950	0.005	0.4	9,000	650	0.002	0.3	
		15	10.0	14,000	1,000	0.008	0.55	11,000	800	0.005	0.5	9,000	700	0.003	0.4	7,000	500	0.002	0.3	
	0.05	3	2.0	28,000	2,800	0.1	0.55	23,000	2,300	0.05	0.5	20,000	2,000	0.04	0.4	16,000	1,400	0.03	0.3	
		4	2.7	25,000	2,400	0.08	0.55	21,000	2,000	0.05	0.5	18,000	1,700	0.04	0.4	14,000	1,200	0.03	0.3	
		6	4.0	23,000	2,200	0.08	0.55	19,000	1,800	0.045	0.5	16,000	1,500	0.03	0.4	13,000	1,100	0.02	0.3	
		8	5.3	20,000	1,800	0.06	0.55	16,000	1,500	0.04	0.5	14,000	1,300	0.025	0.4	11,000	900	0.01	0.3	
		10	6.7	18,000	1,600	0.06	0.55	15,000	1,300	0.03	0.5	13,000	1,100	0.02	0.4	10,000	750	0.01	0.3	
		12	8.0	16,000	1,400	0.06	0.55	13,000	1,100	0.03	0.5	11,000	950	0.02	0.4	9,000	650	0.007	0.3	
	2	0.02	3	1.5	25,000	3,000	0.02	0.7	22,000	2,500	0.015	0.6	19,000	2,100	0.012	0.5	15,000	1,500	0.008	0.35
			4	2.0	24,000	2,800	0.02	0.7	20,000	2,300	0.015	0.6	17,000	2,000	0.012	0.5	14,000	1,400	0.008	0.35
			6	3.0	22,000	2,500	0.018	0.7	18,000	2,100	0.015	0.6	15,000	1,800	0.012	0.5	12,000	1,300	0.008	0.35
			8	4.0	20,000	2,200	0.016	0.7	16,000	1,800	0.012	0.6	14,000	1,500	0.01	0.5	11,000	1,100	0.005	0.35
10			5.0	18,000	1,900	0.015	0.7	14,000	1,500	0.012	0.6	13,000	1,300	0.008	0.5	10,000	950	0.005	0.35	
12			6.0	16,000	1,700	0.014	0.7	13,000	1,400	0.01	0.6	11,000	1,200	0.008	0.5	9,000	850	0.003	0.35	
16			8.0	14,000	1,400	0.012	0.7	11,000	1,100	0.008	0.6	9,500	950	0.005	0.5	7,500	650	0.002	0.35	
20			10.0	10,000	800	0.01	0.7	8,000	650	0.005	0.6	7,000	550	0.003	0.5	5,500	400	0.002	0.35	
0.05		3	1.5	25,000	3,000	0.13	0.7	22,000	2,500	0.06	0.6	19,000	2,100	0.05	0.5	15,000	1,500	0.03	0.35	
		4	2.0	24,000	2,800	0.13	0.7	20,000	2,300	0.06	0.6	17,000	2,000	0.05	0.5	14,000	1,400	0.03	0.35	
		6	3.0	22,000	2,500	0.12	0.7	18,000	2,100	0.06	0.6	15,000	1,800	0.05	0.5	12,000	1,300	0.03	0.35	
		8	4.0	20,000	2,200	0.11	0.7	16,000	1,800	0.05	0.6	14,000	1,500	0.04	0.5	11,000	1,100	0.02	0.35	
		10	5.0	18,000	1,900	0.1	0.7	14,000	1,500	0.05	0.6	13,000	1,300	0.03	0.5	10,000	950	0.015	0.35	
		12	6.0	16,000	1,700	0.09	0.7	13,000	1,400	0.04	0.6	11,000	1,200	0.03	0.5	9,000	850	0.01	0.35	
2.5	0.1	5	2.0	20,000	2,800	0.16	0.85	20,000	2,400	0.08	0.7	16,000	1,800	0.05	0.5	13,000	1,300	0.03	0.5	
		10	4.0	16,000	2,200	0.14	0.85	13,000	1,800	0.07	0.7	11,000	1,500	0.05	0.5	9,000	1,100	0.03	0.5	
		15	6.0	14,000	1,800	0.11	0.85	12,000	1,600	0.05	0.7	9,000	1,100	0.03	0.5	7,000	750	0.02	0.5	
		20	8.0	11,000	1,400	0.08	0.85	9,000	1,100	0.04	0.7	7,500	950	0.02	0.5	6,000	650	0.01	0.5	
		30	12.0	7,000	800	0.03	0.85	5,500	650	0.01	0.7	4,500	550	0.01	0.5	3,500	400	0.005	0.5	
		3	0.05	4	1.3	18,000	2,800	0.18	1	15,000	2,300	0.1	0.8	13,000	2,000	0.07	0.7	10,000	1,400	0.05
6	2.0			16,000	2,500	0.17	1	13,000	2,100	0.1	0.8	11,000	1,800	0.07	0.7	9,000	1,300	0.05	0.6	
8	2.7			14,000	2,200	0.16	1	11,000	1,800	0.1	0.8	9,500	1,500	0.07	0.7	7,500	1,100	0.05	0.6	
10	3.3			13,800	2,100	0.16	1	11,000	1,700	0.09	0.8	9,500	1,400	0.06	0.7	7,500	1,000	0.04	0.6	
12	4.0			13,500	2,000	0.16	1	11,000	1,600	0.08	0.8	9,500	1,400	0.06	0.7	7,500	1,000	0.04	0.6	
14	4.7			12,800	1,900	0.15	1	10,000	1,500	0.07	0.8	9,000	1,300	0.05	0.7	7,200	940	0.03	0.6	
16	5.3			12,000	1,800	0.14	1	10,000	1,500	0.07	0.8	8,500	1,300	0.05	0.7	7,000	900	0.03	0.6	
20	6.7			10,000	1,400	0.12	1	8,000	1,100	0.05	0.8	7,000	950	0.04	0.7	5,500	700	0.02	0.6	
1	0.1		4	1.3	18,000	2,800	0.18	1	15,000	2,300	0.1	0.8	13,000	2,000	0.07	0.7	10,000	1,400	0.05	0.6
			6	2.0	16,000	2,500	0.17	1	13,000	2,100	0.1	0.8	11,000	1,800	0.07	0.7	9,000	1,300	0.05	0.6
			8	2.7	14,000	2,200	0.16	1	11,000	1,800	0.1	0.8	9,500	1,500	0.07	0.7	7,500	1,100	0.05	0.6
			10	3.3	13,800	2,100	0.16	1	11,000	1,700	0.09	0.8	9,500	1,400	0.06	0.7	7,500	1,000	0.04	0.6
			12	4.0	13,500	2,000	0.16	1	11,000	1,600	0.08	0.8	9,500	1,400	0.06	0.7	7,500	1,000	0.04	0.6
			14	4.7	12,800	1,900	0.15	1	10,000	1,500	0.07	0.8	9,000	1,300	0.05	0.7	7,200	940	0.03	0.6
			16	5.3	12,000	1,800	0.14	1	10,000	1,500	0.07	0.8	8,500	1,300	0.05	0.7	7,000	900	0.03	0.6
			20	6.7	10,000	1,400	0.12	1	8,000	1,100	0.05	0.8	7,000	950	0.04	0.7	5,500	700	0.02	0.6
	25		8.3	9,000	1,200	0.08	1	7,500	1,000	0.04	0.8	6,500	850	0.02	0.7	5,000	600	0.01	0.6	
	30		10.0	8,000	800	0.06	1	6,500	650	0.03	0.8	5,500	550	0.02	0.7	4,500	400	0.007	0.6	

加工材料 Work Material				调质钢 Prehardened Steels HPM·NAK (~42HRC)				高硬度钢 Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				高硬度钢 Hardened Steels SKD11·PD613 (~62HRC)				高速钢 High Speed Steels SKH (~65HRC)					
外径 Dia.	角半径 Corner Radius	颈长 Under Neck Length	L(颈长)/ D(外径) L/D	主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut		主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut		主轴转速 Spindle Speed		进给 速度 Feed		切深量 Depth of Cut	
				min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min	ap mm	ae mm	min ⁻¹	mm/min
3	1	20	6.7	10,000	1,400	0.12	1	8,000	1,100	0.05	0.8	7,000	950	0.04	0.7	5,500	700	0.02	0.6		
		25	8.3	9,000	1,200	0.08	1	7,500	1,000	0.04	0.8	6,500	850	0.02	0.7	5,000	600	0.01	0.6		
		30	10.0	8,000	800	0.06	1	6,500	650	0.03	0.8	5,500	550	0.02	0.7	4,500	400	0.007	0.6		
4	0.05	8	2.0	12,000	2,600	0.25	1.4	10,000	2,100	0.15	1.2	8,500	1,800	0.08	1	7,000	1,300	0.06	0.8		
		12	3.0	12,000	2,600	0.25	1.4	10,000	2,100	0.15	1.2	8,500	1,800	0.08	1	7,000	1,300	0.06	0.8		
		16	4.0	10,000	2,200	0.17	1.4	8,000	1,800	0.1	1.2	7,000	1,500	0.06	1	5,500	1,100	0.05	0.8		
		20	5.0	9,000	1,900	0.15	1.4	7,200	1,500	0.09	1.2	6,300	1,300	0.06	1	5,000	950	0.04	0.8		
		24	6.0	8,000	1,600	0.14	1.4	6,500	1,300	0.08	1.2	5,500	1,100	0.05	1	4,500	750	0.03	0.8		
		28	7.0	7,200	1,400	0.11	1.4	6,000	1,200	0.05	1.2	5,000	1,000	0.03	1	4,000	700	0.02	0.8		
		32	8.0	6,500	1,300	0.08	1.4	5,500	1,100	0.04	1.2	4,500	950	0.02	1	3,500	650	0.01	0.8		
	0.1 0.2 0.3 0.5 1	8	2.0	12,000	2,600	0.25	1.4	10,000	2,100	0.15	1.2	8,500	1,800	0.08	1	7,000	1,300	0.06	0.8		
		10	2.5	12,000	2,600	0.25	1.4	10,000	2,100	0.15	1.2	8,500	1,800	0.08	1	7,000	1,300	0.06	0.8		
		12	3.0	12,000	2,600	0.25	1.4	10,000	2,100	0.15	1.2	8,500	1,800	0.08	1	7,000	1,300	0.06	0.8		
		16	4.0	10,000	2,200	0.17	1.4	8,000	1,800	0.1	1.2	7,000	1,500	0.06	1	5,500	1,100	0.05	0.8		
		20	5.0	9,000	1,900	0.15	1.4	7,200	1,500	0.09	1.2	6,300	1,300	0.06	1	5,000	950	0.04	0.8		
		24	6.0	8,000	1,600	0.14	1.4	6,500	1,300	0.08	1.2	5,500	1,100	0.05	1	4,500	750	0.03	0.8		
		28	7.0	7,200	1,400	0.11	1.4	6,000	1,200	0.05	1.2	5,000	1,000	0.03	1	4,000	700	0.02	0.8		
5	0.1 0.2 0.3 0.5 1	32	8.0	6,500	1,300	0.08	1.4	5,500	1,100	0.04	1.2	4,500	950	0.02	1	3,500	650	0.01	0.8		
		40	10.0	5,500	1,000	0.05	1.4	4,600	830	0.025	1.2	3,600	640	0.01	1	2,400	420	0.005	0.8		
		10	2.0	9,800	2,500	0.3	2.2	8,500	2,100	0.18	2	7,400	1,800	0.08	1.6	6,000	1,400	0.06	1.2		
		15	3.0	9,500	2,400	0.25	2.2	8,000	2,000	0.15	2	7,000	1,700	0.08	1.6	5,500	1,200	0.06	1.2		
		20	4.0	8,000	2,000	0.18	2.2	6,500	1,600	0.1	2	5,500	1,400	0.07	1.6	4,500	1,000	0.05	1.2		
6	0.05 0.1 0.2 0.3 0.5 1	30	6.0	6,400	1,600	0.14	2.2	5,300	1,300	0.07	2	4,500	1,100	0.03	1.6	3,800	850	0.02	1.2		
		40	8.0	5,000	1,200	0.09	2.2	4,000	1,000	0.05	2	3,500	850	0.02	1.6	3,000	600	0.01	1.2		
		12	2.0	8,000	2,500	0.35	2.7	6,500	2,100	0.18	2.5	5,500	1,800	0.08	2	4,500	1,300	0.06	1.5		
		15	2.5	7,700	2,400	0.32	2.7	6,000	1,900	0.18	2.5	5,000	1,600	0.08	2	4,000	1,200	0.06	1.5		
		18	3.0	7,000	2,200	0.3	2.7	5,500	1,800	0.18	2.5	4,500	1,500	0.08	2	3,500	1,100	0.06	1.5		
		24	4.0	6,000	1,800	0.2	2.7	5,000	1,500	0.15	2.5	4,000	1,300	0.07	2	3,000	900	0.05	1.5		
		30	5.0	5,300	1,600	0.16	2.7	4,300	1,300	0.13	2.5	3,600	1,080	0.06	2	2,700	870	0.04	1.5		
		40	6.7	4,300	1,300	0.12	2.7	3,200	960	0.08	2.5	2,700	800	0.04	2	2,300	700	0.03	1.5		
		48	8.0	3,000	900	0.1	2.7	2,500	750	0.05	2.5	2,000	650	0.03	2	2,000	450	0.02	1.5		
备注 Notes				※1 请根据实际的加工形状和所使用的机床等调整切削参数。 ※2 切深量的ap表示轴向切深量，ae表示径向切深量。 ※3 切削高硬度钢时，建议使用油雾冷却方式。 ※4 轴向进刀建议采用螺旋进刀及倾斜进刀方式。 ※5 L(颈长)/D(外径)超过8倍时，立面附近的进给速度须调整至50%以下，切深量：ae调整至30%以下。 ※6 沟槽切削时建议参考切削参数表，切深量：ap及进给速度设定为50%以下，并采用来回切削加工方式。 ※7 发生振刀时，请以相同的比率降低主轴转速和进给速度。此外，主轴转速过低时，也以相同的比率降低。 ※1 Adjust milling conditions according to milling shape and machine type. ※2 ap : Axial Depth of Cut, ae : Radial Depth of Cut. ※3 Recommend to use oil mist coolant for machining hardened steels. ※4 Recommend to apply helical or ramping for approaching into axial direction. ※5 Adjust feed rate 50% lower and cutting depth (ae) 30% lower for milling deep wall area when L/D exceeds 8 for stable milling. ※6 For slotting, recommend reciprocating milling by adjusting feed & ap in below 50% of recommended milling condition. ※7 Reduce both spindle speed and feed at same rate for chattering and also for insufficient spindle speed of a machine.																	

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警告 CAUTION 使用上的安全注意事项 Attention on Safety

- 1) 拿取刀具使用时, 请特别小心避免损坏刀刃。
- 2) 请勿空手触摸刀刃。
- 3) 为了安全, 使用刀具时请带防护眼镜。
- 4) 选用适合刀具和实际加工内容的刀柄。刀柄装夹后将刀柄的偏摆量控制最低。
- 5) 加工工件必须固定好。
- 6) 请预先测量刀具及加工材料的尺寸。
- 7) 请根据工件形状和使用设备情况来调节切削参数。
- 8) 根据实际用途请选择适合的冷却方式。使用切削油时, 请采取防火措施以免发生火花引起火灾等发生。
- 9) 加工过程中如发生异常现象(异常声音或烟雾)时, 请立即停止机床。
- 10) 请勿改造刀具。
- 1) When removing tools from cases, be careful of getting-out of tools and don't touch directly the cutting edges.
- 2) Never touch the cutting edges directly with bare hand.
- 3) Use safety covers and eye protection, as tools may be broken.
- 4) Use holders, etc. that match the tools and nature of the processing operations. The tool should be firmly attached to the holder to prevent shaking.
- 5) The work materials clamp firmly.
- 6) Make sure of dimensions of tools and work pieces before starting operation.
- 7) It is necessary to adjust conditions according to the dimensions of work materials and the machine.
- 8) Select a cutting fluid appropriate to the particular usage. Using a non-water cutting fluid could lead to fires due to sparks generated during processing or heat caused by breakage. Ensure that you take proper fire-prevention measures.
- 9) If abnormal sound, etc. occurs during processing, stop the machine immediately.
- 10) Don't modify tools.

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■ 本册中列出的产品规格将来可能会发生改变, 恕不另行通知。
Specifications may change without notice for improvement.