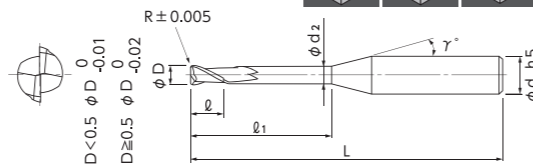
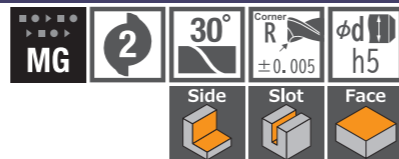


MUGEN COATING PREMIUM 2-Flute Long Neck Radius End Mill for Hardened Steel

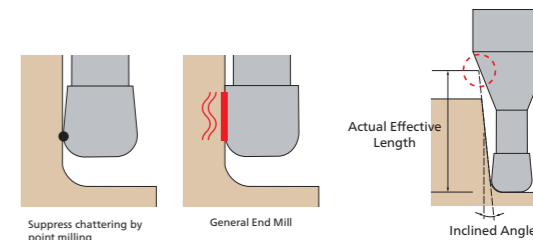
Total 97 sizes

Long neck corner radius end mill for prehardened steels and hardened steels (≤ 65 HRC). Maximum L/D=16



● MUGEN COATING PREMIUM for hardened steels and unique new design excel in chipping prevention and resolve chattering to realize excellent finished surface.

[Neck Shape]
(γ) is reference value. Tool measurement required in order to avoid interference to the work material.



Prehardened Steel **P**

Hardened Steel ~ 55 HRC **H**

Hardened Steel ~ 65 HRC **H**

Stainless Steel **M**

Titanium Alloy Heat Resistant Alloy **S**

Prehardened Steel **P**

Hardened Steel ~ 55 HRC **H**

Hardened Steel ~ 65 HRC **H**

Stainless Steel **M**

Titanium Alloy Heat Resistant Alloy **S**

Unit : mm

Code No.	Dia. (D)	Corner Radius (R)	Under Neck Length (l1)	Length of Cut (l)	Neck Dia. (d2)	Neck Taper Angle (γ)	Shank Dia. (d)	Overall Length (L)	Actual effective length depending on inclined angle of workpiece									
									30°	1°	1°30'	2°	3°					
08-00227-02021	0.2	R0.02	0.5	0.15	0.18	12°	4	45	0.56	0.59	0.62	0.65	0.71					
08-00227-02023			1					45	1.09	1.13	1.19	1.24	1.38					
08-00227-02025			1.5					45	1.61	1.68	1.76	1.84	2.04					
08-00227-02027			2					45	2.13	2.22	2.33	2.44	2.71					
08-00227-02051			0.5					45	0.56	0.59	0.61	0.64	0.70					
08-00227-02053		1	45					1.08	1.13	1.18	1.24	1.37						
08-00227-02055		1.5	45					1.61	1.68	1.75	1.84	2.03						
08-00227-02057		2	45					2.13	2.22	2.32	2.43	2.70						
08-00227-03021		0.3	R0.02					1	0.25	0.28	12°	4	45	1.09	1.13	1.19	1.24	1.38
08-00227-03022								1.5					45	1.61	1.68	1.76	1.84	2.04
08-00227-03023	2			45	2.13	2.22	2.33	2.44					2.71					
08-00227-03024	2.5			45	2.65	2.77	2.90	3.04					3.37					
08-00227-03025	3			45	3.17	3.31	3.47	3.64					4.03					
08-00227-03051	1		45	1.08	1.13	1.18	1.24	1.37										
08-00227-03052	1.5		45	1.61	1.68	1.75	1.84	2.03										
08-00227-03053	2		45	2.13	2.22	2.32	2.43	2.70										
08-00227-03054	2.5		45	2.65	2.77	2.89	3.03	3.36										
08-00227-03055	3		45	3.17	3.31	3.46	3.63	4.02										
08-00227-04021	0.4	R0.02	1	0.3	0.37	12°	4	45	1.11	1.16	1.21	1.27	1.41					
08-00227-04022			1.5					45	1.63	1.70	1.78	1.87	2.07					
08-00227-04023			2					45	2.15	2.25	2.35	2.47	2.74					
08-00227-04024			2.5					45	2.67	2.79	2.92	3.07	3.40					
08-00227-04025			3					45	3.20	3.34	3.49	3.67	4.06					
08-00227-04027		4	45					4.24	4.43	4.63	4.86	5.39						
08-00227-04051		1	45					1.11	1.16	1.21	1.27	1.40						
08-00227-04052		1.5	45					1.63	1.70	1.78	1.86	2.06						
08-00227-04053		2	45					2.15	2.25	2.35	2.46	2.73						
08-00227-04054		2.5	45					2.67	2.79	2.92	3.06	3.39						
08-00227-04055	3	45	3.19	3.34	3.49	3.66	4.05											
08-00227-04057	4	45	4.24	4.43	4.63	4.86	5.38											
08-00227-04101	0.5	R0.02	1	0.4	0.46	12°	4	45	1.11	1.15	1.20	1.26	1.38					
08-00227-04103			2					45	2.15	2.24	2.34	2.45	2.71					
08-00227-04105			3					45	3.19	3.33	3.48	3.65	4.04					
08-00227-04107			4					45	4.24	4.42	4.62	4.85	5.36					
08-00227-05021			1					45	1.14	1.19	1.24	1.30	1.44					
08-00227-05022		2	45					2.18	2.27	2.38	2.50	2.77						
08-00227-05023		3	45					3.22	3.36	3.52	3.69	4.10						
08-00227-05024		4	45					4.26	4.45	4.66	4.89	5.42						
08-00227-05025		5	45					5.31	5.54	5.80	6.09	6.75						
08-00227-05026		6	45					6.35	6.63	6.94	7.28	8.08						
08-00227-05051	0.5	R0.05	1	0.4	0.46	12°	4	45	1.13	1.18	1.24	1.29	1.43					
08-00227-05052			2					45	2.18	2.27	2.38	2.49	2.76					
08-00227-05053			3					45	3.22	3.36	3.52	3.69	4.09					
08-00227-05054			4					45	4.26	4.45	4.66	4.88	5.41					
08-00227-05055			5					45	5.31	5.54	5.80	6.08	6.74					
08-00227-05056		6	45					6.35	6.63	6.94	7.28	8.07						

How to Order When you order, indicate MHRH230R (D)x(R)x(l1). ※(γ) is reference value.

Unit : mm

Code No.	Dia. (D)	Corner Radius (R)	Under Neck Length (l1)	Length of Cut (l)	Neck Dia. (d2)	Neck Taper Angle (r)	Shank Dia. (d)	Overall Length (L)	Actual effective length depending on inclined angle of workpiece									
									30°	1°	1°30'	2°	3°					
08-00227-05101	0.5	R0.1	1	0.4	0.46	12°	4	45	1.13	1.18	1.23	1.28	1.41					
08-00227-05102			2					45	2.17	2.27	2.37	2.48	2.74					
08-00227-05103			3					45	3.22	3.36	3.51	3.68	4.07					
08-00227-05104			4					45	4.26	4.45	4.65	4.87	5.40					
08-00227-05105			5					45	5.30	5.54	5.79	6.07	6.72					
08-00227-05106			6					45	6.35	6.63	6.93	7.27	8.05					
08-00227-06021	0.6	R0.02	2	0.5	0.56	12°	4	45	2.18	2.27	2.38	2.50	2.77					
08-00227-06023			4					45	4.26	4.45	4.66	4.89	5.42					
08-00227-06025			6					45	6.35	6.63	6.94	7.28	8.08					
08-00227-06027			8					50	8.43	8.81	9.22	9.68	10.73					
08-00227-06029			10					50	10.52	10.99	11.50	12.07	13.39					
08-00227-06051		R0.05	2					45	2.18	2.27	2.38	2.49	2.76					
08-00227-06053			4					45	4.26	4.45	4.66	4.88	5.41					
08-00227-06055			6					45	6.35	6.63	6.94	7.28	8.07					
08-00227-06057			8					50	8.43	8.81	9.22	9.67	10.72					
08-00227-06059			10					50	10.52	10.99	11.50	12.06	13.38					
08-00227-06101	0.6	R0.1	2	0.5	0.56	12°	4	45	2.17	2.27	2.37	2.48	2.74					
08-00227-06103			4					45	4.26	4.45	4.65	4.87	5.40					
08-00227-06105			6					45	6.35	6.63	6.93	7.27	8.05					
08-00227-06107			8					50	8.43	8.80	9.21	9.66	10.71					
08-00227-06109			10					50	10.52	10.98	11.49	12.05	13.36					
08-00227-07020		0.7	R0.02					2	0.55	0.66	12°	4	45	2.18	2.27	2.38	2.50	2.77
08-00227-07021								4					45	4.26	4.45	4.66	4.89	5.42
08-00227-07023								6					45	6.35	6.63	6.94	7.28	8.08
08-00227-07050								2					45	2.18	2.27	2.38	2.49	2.76
08-00227-07051								4					45	4.26	4.45	4.66	4.88	5.41
08-00227-07053	6		45	6.35	6.63	6.94	7.28	8.07										
08-00227-07100	R0.1		2	45	2.17	2.27	2.37	2.48					2.74					
08-00227-07101			4	45	4.26	4.45	4.65	4.87					5.40					
08-00227-07103			6	45	6.35	6.63	6.93	7.27					8.05					
08-00227-08020			0.8	R0.02	2	0.65	0.76	12°					4	45	2.18	2.27	2.38	2.50
08-00227-08021		4			45				4.26	4.45	4.66	4.89		5.42				
08-00227-08023	6	45			6.35				6.63	6.94	7.28	8.08						
08-00227-08025	8	50			8.43				8.81	9.22	9.68	10.73						
08-00227-08050	R0.05	2			45				2.18	2.27	2.38	2.49		2.76				
08-00227-08051		4		45	4.26				4.45	4.66	4.88	5.41						
08-00227-08053		6		45	6.35				6.63	6.94	7.28	8.07						
08-00227-08055		8		50	8.43				8.81	9.22	9.67	10.72						
08-00227-08059		12		50	12.60				13.17	13.78	14.46	16.03						
08-00227-08100	0.8	R0.1		2	0.65				0.76	12°	4	45		2.17	2.27	2.37	2.48	2.74
08-00227-08101			4	45		4.26	4.45	4.65				4.87	5.40					
08-00227-08103			6	45		6.35	6.63	6.93				7.27	8.05					
08-00227-08105			8	50		8.43	8.80	9.21				9.66	10.71					
08-00227-08109			12	50		12.60	13.16	13.77				14.45	16.01					
08-00227-08200		R0.2	2	45		2.17	2.26	2.36				2.46	2.71					
08-00227-08201			4	45		4.26	4.44	4.64				4.85	5.36					
08-00227-08203			6	45		6.34	6.62	6.92				7.25	8.02					
08-00227-08205			8	50		8.43	8.80	9.20				9.64	10.67					
08-00227-08209			12	50		12.60	13.15	13.76				14.43	15.98					
08-00227-09101	0.9	R0.1	4	0.7	0.85	12°	4	45	4.28	4.47	4.68	4.90	5.43					
08-00227-09105			8					45	8.46	8.83	9.24	9.69	10.74					

Long Neck Corner Radius Coating

Long Neck Corner Radius Coating

Recommended Milling Conditions

Work Material			Prehardened Steels HPM·NAK (~42HRC)				Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				Hardened Steels SKD11·PD613 (~62HRC)				High Speed Steels SKH (~65HRC)								
Dia.	Corner Radius	Under Neck Length	Spindle Speed		Feed		Depth of Cut		Spindle Speed		Feed		Depth of Cut		Spindle Speed		Feed		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	ap mm	ae mm	
0.2	0.02	0.5	30,000	240	0.005	0.05	30,000	200	0.003	0.04	30,000	160	0.003	0.02	30,000	120	0.003	0.01					
		1	30,000	180	0.005	0.05	30,000	150	0.003	0.04	30,000	120	0.002	0.02	30,000	80	0.002	0.01					
		1.5	30,000	120	0.004	0.05	30,000	100	0.002	0.04	30,000	80	0.002	0.02	30,000	60	0.001	0.01					
		2	30,000	70	0.003	0.05	30,000	50	0.002	0.04	30,000	40	0.001	0.02	30,000	30	0.001	0.01					
	0.05	0.5	30,000	240	0.01	0.05	30,000	200	0.003	0.04	30,000	160	0.003	0.02	30,000	120	0.003	0.01					
		1	30,000	180	0.007	0.05	30,000	150	0.003	0.04	30,000	120	0.003	0.02	30,000	80	0.003	0.01					
		1.5	30,000	120	0.005	0.05	30,000	100	0.002	0.04	30,000	80	0.002	0.02	30,000	60	0.002	0.01					
		2	30,000	70	0.003	0.05	30,000	50	0.002	0.04	30,000	40	0.002	0.02	30,000	30	0.002	0.01					
	0.3	0.02	1	30,000	350	0.015	0.1	30,000	300	0.003	0.08	30,000	250	0.003	0.04	30,000	200	0.003	0.03				
			1.5	30,000	240	0.01	0.1	30,000	200	0.003	0.08	30,000	160	0.003	0.04	30,000	120	0.003	0.03				
			2	30,000	180	0.007	0.1	30,000	150	0.003	0.08	30,000	120	0.003	0.04	25,000	100	0.003	0.03				
			2.5	30,000	150	0.005	0.1	25,000	100	0.002	0.08	25,000	80	0.002	0.04	20,000	60	0.002	0.03				
0.05		1	30,000	350	0.02	0.1	30,000	300	0.003	0.08	30,000	250	0.003	0.04	30,000	200	0.003	0.03					
		1.5	30,000	240	0.015	0.1	30,000	200	0.003	0.08	30,000	160	0.003	0.04	30,000	120	0.003	0.03					
		2	30,000	180	0.01	0.1	30,000	150	0.003	0.08	30,000	120	0.003	0.04	25,000	100	0.003	0.03					
		2.5	30,000	150	0.007	0.1	25,000	100	0.002	0.08	25,000	80	0.002	0.04	20,000	60	0.002	0.03					
0.4		0.02	1	30,000	450	0.015	0.12	30,000	400	0.005	0.1	28,000	350	0.005	0.05	25,000	300	0.004	0.04				
			1.5	30,000	400	0.012	0.12	30,000	350	0.005	0.1	28,000	300	0.005	0.05	25,000	260	0.004	0.04				
			2	30,000	360	0.01	0.12	30,000	300	0.005	0.1	25,000	250	0.005	0.05	25,000	220	0.003	0.04				
			2.5	30,000	340	0.008	0.12	28,000	280	0.004	0.1	25,000	240	0.004	0.05	20,000	180	0.003	0.04				
	0.05	1	30,000	450	0.025	0.12	30,000	400	0.005	0.1	28,000	350	0.005	0.05	25,000	300	0.005	0.04					
		1.5	30,000	400	0.022	0.12	30,000	350	0.005	0.1	28,000	300	0.005	0.05	25,000	260	0.005	0.04					
		2	30,000	360	0.02	0.12	30,000	300	0.005	0.1	25,000	250	0.005	0.05	25,000	220	0.005	0.04					
		2.5	30,000	340	0.015	0.12	28,000	280	0.004	0.1	25,000	240	0.004	0.05	20,000	180	0.004	0.04					
	0.1	1	30,000	450	0.025	0.12	30,000	400	0.005	0.1	28,000	350	0.005	0.05	25,000	300	0.005	0.04					
		2	30,000	360	0.02	0.12	30,000	300	0.005	0.1	25,000	250	0.005	0.05	25,000	220	0.005	0.04					
		3	30,000	320	0.015	0.12	25,000	250	0.004	0.1	23,000	220	0.003	0.05	18,000	160	0.003	0.04					
		4	30,000	250	0.01	0.12	25,000	200	0.003	0.1	20,000	160	0.002	0.05	18,000	120	0.002	0.04					
0.5	0.02	1	30,000	600	0.016	0.14	25,000	500	0.008	0.15	23,000	450	0.006	0.1	20,000	400	0.004	0.08					
		2	30,000	500	0.014	0.14	25,000	420	0.007	0.15	23,000	360	0.005	0.1	20,000	300	0.003	0.08					
		3	30,000	420	0.012	0.14	25,000	350	0.006	0.15	23,000	320	0.004	0.1	20,000	280	0.003	0.08					
		4	25,000	380	0.01	0.14	25,000	300	0.004	0.15	23,000	240	0.002	0.1	20,000	180	0.002	0.08					
	0.05	1	30,000	600	0.03	0.14	25,000	500	0.01	0.15	23,000	450	0.007	0.1	20,000	400	0.005	0.08					
		2	30,000	500	0.025	0.14	25,000	420	0.01	0.15	23,000	360	0.007	0.1	20,000	300	0.005	0.08					
		3	30,000	420	0.02	0.14	25,000	350	0.008	0.15	23,000	320	0.005	0.1	20,000	280	0.003	0.08					
		4	25,000	380	0.015	0.14	25,000	300	0.005	0.15	23,000	240	0.003	0.1	20,000	180	0.002	0.08					
	0.1	1	30,000	600	0.03	0.14	25,000	500	0.01	0.15	23,000	450	0.007	0.1	20,000	400	0.005	0.08					
		2	30,000	500	0.025	0.14	25,000	420	0.01	0.15	23,000	360	0.007	0.1	20,000	300	0.005	0.08					
		3	30,000	420	0.02	0.14	25,000	350	0.008	0.15	23,000	320	0.005	0.1	20,000	280	0.003	0.08					
		4	25,000	380	0.015	0.14	25,000	300	0.005	0.15	23,000	240	0.003	0.1	20,000	180	0.002	0.08					
0.1	5	25,000	300	0.01	0.14	20,000	200	0.004	0.15	18,000	150	0.003	0.1	16,000	100	0.002	0.08						
	6	25,000	250	0.004	0.14	20,000	160	0.002	0.15	18,000	100	0.001	0.1	16,000	70	0.001	0.08						
	5	25,000	300	0.01	0.14	20,000	200	0.004	0.15	18,000	150	0.003	0.1	16,000	100	0.002	0.08						
	6	25,000	250	0.008	0.14	20,000	160	0.003	0.15	18,000	100	0.002	0.1	16,000	70	0.001	0.08						

Prehardened Steel P
Hardened Steel ~55 HRC H
Hardened Steel ~65 HRC H

Stainless Steel M
Titanium Alloy Heat Resistant Alloy S

Long Neck Corner Radius Coating

Recommended Milling Conditions

Work Material			Prehardened Steels HPM·NAK (~42HRC)				Hardened Steels HPM38·STAVAX·SKD61 (~55HRC)				Hardened Steels SKD11·PD613 (~62HRC)				High Speed Steels SKH (~65HRC)							
Dia.	Corner Radius	Under Neck Length	Spindle Speed		Feed		Depth of Cut		Spindle Speed		Feed		Depth of Cut		Spindle Speed		Feed		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	ap mm	ae mm
0.6	0.02	2	30,000	600	0.016	0.2	25,000	500	0.012	0.2	23,000	400	0.007	0.2	20,000	300	0.004	0.15	18,000	200	0.003	0.1
		4	25,000	450	0.012	0.2	23,000	400	0.007	0.2	20,000	300	0.004	0.15	18,000	200	0.003	0.1				
		6	23,000	300	0.008	0.2	20,000	200	0.005	0.2	18,000	150	0.003	0.15	12,000	100	0.002	0.1				
		8	18,000	200	0.006	0.2	16,000	150	0.003	0.2	14,000	100	0.001	0.15	10,000	80	0.001	0.1				
	0.05	2	30,000	600	0.035	0.2	25,000	500	0.02	0.2	23,000	400	0.01	0.15	20,000	320	0.007	0.1				
		4	25,000	450	0.025	0.2	23,000	400	0.015	0.2	20,000	300	0.007	0.15	18,000	200	0.005	0.1				
		6	23,000	300	0.015	0.2	20,000	200	0.008	0.2	18,000	150	0.005	0.15	12,000	100	0.003	0.1				
		8	18,000	200	0.01	0.2	16,000	150	0.005	0.2	14,000	100	0.002	0.15	10,000	80	0.001	0.1				
	0.1	2	30,000	600	0.005	0.2	23,000	400	0.01	0.15	20,000	300	0.007	0.15	18,000	200	0.005	0.1				
		4	25,000																			