MHR430R

Size ϕ1 × R0.05 ～ ϕ6 × R1

∞ ≦55 HRC

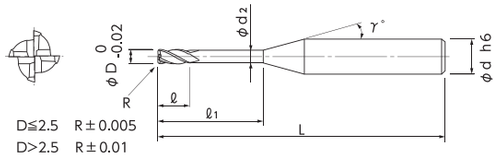
MUGEN COATING 4-Flute Long Neck Radius End Mill

Total 146 sizes

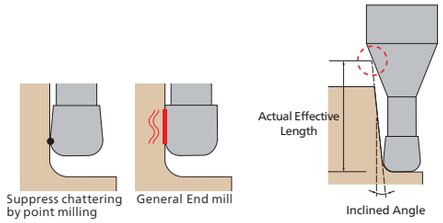
4-flute long neck corner radius end mill. Maximum L/D=12

MG | 4 | 30° | Corner R ±0.005 (D≦2.5)

Side | Slot | Face



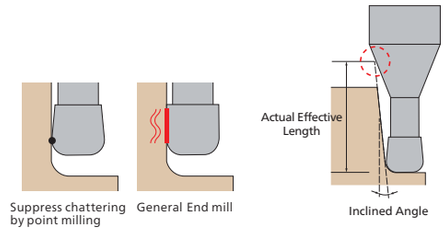
- Employing short flute length. Less contact to work material reduces chattering.
- Corner R accuracy : ±5μm (Dia. ～2.5)
- Upgraded MUGEN COATING brings outstanding performance for milling of Prehardened Steels and Copper Electrode as well.



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°
08-00230-10021	1	R0.05	3	0.8	0.95	12°	4	50	3.24	3.39	3.54	3.72	4.12
08-00230-10022			4					50	4.29	4.48	4.68	4.91	5.44
08-00230-10023			5					50	5.33	5.57	5.82	6.11	6.77
08-00230-10024			6					50	6.37	6.66	6.97	7.31	8.10
08-00230-10025			8					50	8.46	8.83	9.25	9.70	10.75
08-00230-10026			10					50	10.54	11.01	11.53	12.09	13.41
08-00230-10027			12					50	12.63	13.19	13.81	14.49	16.06
08-00230-10031		R0.1	3					50	3.24	3.38	3.54	3.71	4.10
08-00230-10032			4					50	4.28	4.47	4.68	4.90	5.43
08-00230-10033			5					50	5.33	5.56	5.82	6.10	6.76
08-00230-10034			6					50	6.37	6.65	6.96	7.30	8.08
08-00230-10035			8					50	8.46	8.83	9.24	9.69	10.74
08-00230-10036			10					50	10.54	11.01	11.52	12.08	13.39
08-00230-10037			12					50	12.63	13.19	13.80	14.48	16.05
08-00230-10041		R0.2	3					50	3.24	3.37	3.52	3.69	4.07
08-00230-10042			4					50	4.28	4.46	4.66	4.88	5.40
08-00230-10043			5					50	5.32	5.55	5.80	6.08	6.72
08-00230-10044			6					50	6.37	6.64	6.94	7.28	8.05
08-00230-10045			8					50	8.45	8.82	9.23	9.67	10.71
08-00230-10046			10					50	10.54	11.00	11.51	12.06	13.36
08-00230-10047			12					50	12.62	13.18	13.79	14.46	16.01
08-00230-10051		R0.3	3					50	3.23	3.36	3.51	3.67	4.04
08-00230-10052			4					50	4.28	4.45	4.65	4.86	5.36
08-00230-10053			5					50	5.32	5.54	5.79	6.06	6.69
08-00230-10054			6					50	6.36	6.63	6.93	7.26	8.02
08-00230-10055			8					50	8.45	8.81	9.21	9.65	10.67
08-00230-10056			10					50	10.53	10.99	11.49	12.04	13.33
08-00230-10057			12					50	12.62	13.17	13.77	14.44	15.98
08-00230-12031	1.2	R0.1	5	1	1.14	12°	4	50	5.35	5.59	5.84	6.13	6.79
08-00230-12032			10					50	10.57	11.03	11.55	12.11	13.42
08-00230-12033			15					60	15.78	16.48	17.25	18.09	20.06

How to Order When you order, indicate MHR430R (D)×(R)×(ℓ1). ※(γ) is reference value.

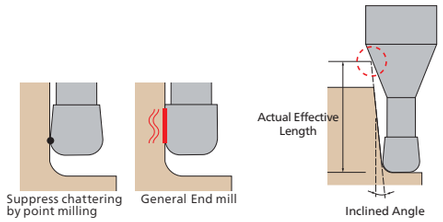


Unit : mm

Code No.	Dia. (D)	Corner Radius (R)	Under Neck Length (ℓ1)	Length of Cut (ℓ)	Neck Dia. (d2)	Neck Taper Angle (γ)	Shank Dia. (d)	Overall Length (L)	Actual effective length depending on inclined angle of workpiece				
									30´	1°	1°30´	2°	3°
08-00230-12041	1.2	R0.2	5	1	1.14	12°	4	50	5.35	5.58	5.83	6.11	6.75
08-00230-12042			10					50	10.56	11.03	11.53	12.09	13.39
08-00230-12043			15					60	15.78	16.47	17.24	18.07	20.03
08-00230-12051		R0.3	5					50	5.34	5.57	5.82	6.09	6.72
08-00230-12052			10					50	10.56	11.02	11.52	12.07	13.36
08-00230-12053			15					60	15.77	16.46	17.22	18.05	20.00
08-00230-15031	1.5	R0.1	6	1.2	1.45	12°	4	50	6.37	6.65	6.96	7.30	8.08
08-00230-15032			12					50	12.63	13.19	13.80	14.48	16.05
08-00230-15033			18					60	18.88	19.72	20.64	21.65	Free
08-00230-15041		R0.2	6					50	6.37	6.64	6.94	7.28	8.05
08-00230-15042			12					50	12.62	13.18	13.79	14.46	16.01
08-00230-15043			18					60	18.88	19.72	20.63	21.64	23.98
08-00230-15051		R0.3	6					50	6.36	6.63	6.93	7.26	8.02
08-00230-15052			12					50	12.62	13.17	13.77	14.44	15.98
08-00230-15053			18					60	18.88	19.71	20.62	21.62	23.95
08-00230-15061		R0.5	6					50	6.35	6.62	6.90	7.22	7.96
08-00230-15062			12					50	12.61	13.15	13.75	14.40	15.92
08-00230-15063			18					60	18.87	19.69	20.59	21.58	23.88
08-00230-20031	2	R0.1	8	1.6	1.91	12°	4	50	8.55	8.93	9.35	9.80	10.86
08-00230-20032			12					50	12.73	13.29	13.91	14.59	16.17
08-00230-20033			16					60	16.90	17.65	18.47	19.37	Free
08-00230-20034			20					60	21.07	22.01	23.03	24.16	Free
08-00230-20035			24					70	25.24	26.36	27.59	Free	Free
08-00230-20041		R0.2	8					50	8.55	8.92	9.33	9.78	10.83
08-00230-20042			12					50	12.72	13.28	13.89	14.57	16.14
08-00230-20043			16					60	16.89	17.64	18.46	19.36	Free
08-00230-20044			20					60	21.06	22.00	23.02	24.14	Free
08-00230-20045			24					70	25.23	26.36	27.58	Free	Free
08-00230-20051		R0.3	8					50	8.55	8.91	9.32	9.76	10.80
08-00230-20052			12					50	12.72	13.27	13.88	14.55	16.11
08-00230-20053			16					60	16.89	17.63	18.44	19.34	Free
08-00230-20054			20					60	21.06	21.99	23.00	24.12	Free
08-00230-20055			24					70	25.23	26.35	27.57	28.91	Free
08-00230-20061		R0.5	8					50	8.54	8.90	9.29	9.72	10.73
08-00230-20062			12					50	12.71	13.25	13.85	14.51	16.04
08-00230-20063			16					60	16.88	17.61	18.42	19.30	Free
08-00230-20064			20					60	21.05	21.97	22.98	24.08	Free
08-00230-20065			24					70	25.22	26.33	27.54	28.87	Free

MHR430R

MUGEN COATING 4-Flute Long Neck Radius End Mill



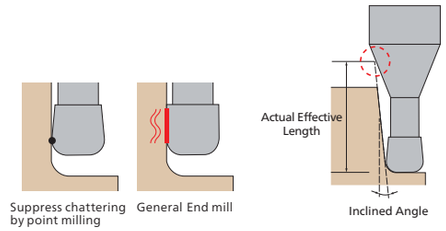
Unit : mm

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°
08-00230-25031	2.5	R0.1	10	2	2.39	12°	4	50	10.69	11.16	11.68	12.25	13.58
08-00230-25032			20					60	21.12	22.06	23.09	Free	Free
08-00230-25033			30					70	31.55	32.95	Free	Free	Free
08-00230-25041		R0.2	10					50	10.68	11.15	11.67	12.23	13.55
08-00230-25042			20					60	21.11	22.05	23.07	Free	Free
08-00230-25043			30					70	31.54	32.94	Free	Free	Free
08-00230-25051		R0.3	10					50	10.68	11.14	11.65	12.21	13.52
08-00230-25052			20					60	21.11	22.04	23.06	Free	Free
08-00230-25053			30					70	31.54	32.93	Free	Free	Free
08-00230-25061		R0.5	10					50	10.67	11.13	11.63	12.17	13.45
08-00230-25062			20					60	21.10	22.02	23.03	Free	Free
08-00230-25063			30					70	31.53	32.92	Free	Free	Free
08-00230-30031	3	R0.1	12	2.5	2.85	12°	6	50	12.87	13.44	14.07	14.76	16.36
08-00230-30032			18					60	19.13	19.98	20.91	21.94	24.32
08-00230-30033			24					70	25.39	26.52	27.76	29.12	Free
08-00230-30034			30					70	31.64	33.05	34.60	36.30	Free
08-00230-30035			36					80	37.90	39.59	41.44	Free	Free
08-00230-30041		R0.2	12					50	12.87	13.44	14.06	14.74	16.33
08-00230-30042			18					60	19.13	19.97	20.90	21.92	24.29
08-00230-30043			24					70	25.38	26.51	27.74	29.10	Free
08-00230-30044			30					70	31.64	33.05	34.58	36.28	Free
08-00230-30045			36					80	37.90	39.58	41.43	Free	Free
08-00230-30051		R0.3	12					50	12.86	13.43	14.04	14.72	16.29
08-00230-30052			20					60	21.21	22.14	23.17	24.29	26.91
08-00230-30053			24					70	25.38	26.50	27.73	29.08	Free
08-00230-30054			30					70	31.63	33.04	34.57	36.26	Free
08-00230-30055			36					80	37.89	39.57	41.41	Free	Free
08-00230-30061		R0.5	12					50	12.86	13.41	14.01	14.68	16.23
08-00230-30062			20					60	21.20	22.12	23.14	24.25	26.85
08-00230-30063			24					70	25.37	26.48	27.70	29.04	Free
08-00230-30064			30					70	31.63	33.02	34.54	36.22	Free
08-00230-30065			36					80	37.88	39.56	41.39	43.40	Free
08-00230-30071		R1	12					50	12.83	13.36	13.94	14.58	16.07
08-00230-30072			20					60	21.18	22.08	23.07	24.16	26.69
08-00230-30073			24					70	25.35	26.44	27.63	28.94	Free
08-00230-30074			30					70	31.60	32.97	34.47	36.12	Free
08-00230-30075			36					80	37.86	39.51	41.32	43.30	Free

How to Order When you order, indicate MHR430R (D)×(R)×(ℓ1). ※(γ) is reference value.

MHR430R

MUGEN COATING 4-Flute Long Neck Radius End Mill



Regular Line
MUGEN COATING
Long Neck Type

P Carbon Steel
P Alloy Steel
P Prehardened Steel
H ~55 HRC Hardened Steel
M Stainless Steel
N Aluminium Alloy
N Copper
O Resin
Long Neck Corner Radius Coating

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°
08-00230-40031	4	R0.1	16	3.2	3.8	12°	6	60	17.17	17.93	18.77	19.68	Free
08-00230-40032			24					70	25.51	26.65	27.89	Free	Free
08-00230-40033			32					70	33.85	35.36	37.01	Free	Free
08-00230-40034			48					100	50.54	52.79	Free	Free	Free
08-00230-40041		R0.2	16					60	17.16	17.92	18.75	19.66	Free
08-00230-40042			24					70	25.50	26.64	27.88	Free	Free
08-00230-40043			32					70	33.85	35.35	37.00	Free	Free
08-00230-40044			48					100	50.53	52.78	Free	Free	Free
08-00230-40051		R0.3	16					60	17.16	17.91	18.74	19.65	Free
08-00230-40052			24					70	25.50	26.63	27.86	Free	Free
08-00230-40053			32					70	33.84	35.34	36.99	Free	Free
08-00230-40054			48					100	50.53	52.78	Free	Free	Free
08-00230-40061		R0.5	16					60	17.15	17.89	18.71	19.61	Free
08-00230-40062			24					70	25.49	26.61	27.83	Free	Free
08-00230-40063			32					70	33.83	35.33	36.96	Free	Free
08-00230-40064			48					100	50.52	52.76	Free	Free	Free
08-00230-40071		R1	16					60	17.13	17.85	18.64	19.51	Free
08-00230-40072			24					70	25.47	26.57	27.77	29.08	Free
08-00230-40073			32					70	33.81	35.28	36.89	Free	Free
08-00230-40074			48					100	50.50	52.71	Free	Free	Free
08-00230-50031	5	R0.1	20	4	4.75	12°	6	70	21.46	22.42	Free	Free	Free
08-00230-50032			40					90	42.32	Free	Free	Free	Free
08-00230-50041		R0.2	20					70	21.46	22.41	Free	Free	Free
08-00230-50042			40					90	42.31	Free	Free	Free	Free
08-00230-50051		R0.3	20					70	21.45	22.40	Free	Free	Free
08-00230-50052			40					90	42.31	Free	Free	Free	Free
08-00230-50061		R0.5	20					70	21.44	22.38	Free	Free	Free
08-00230-50062			40					90	42.30	Free	Free	Free	Free
08-00230-50071		R1	20					70	21.42	22.34	Free	Free	Free
08-00230-50072			40					90	42.28	Free	Free	Free	Free
08-00230-60031	6	R0.1	24	5	5.7	–	6	90	Free	Free	Free	Free	Free
08-00230-60032			48					110	Free	Free	Free	Free	Free
08-00230-60041		R0.2	24					90	Free	Free	Free	Free	Free
08-00230-60042			48					110	Free	Free	Free	Free	Free
08-00230-60051		R0.3	24					90	Free	Free	Free	Free	Free
08-00230-60052			48					110	Free	Free	Free	Free	Free
08-00230-60061		R0.5	24					90	Free	Free	Free	Free	Free
08-00230-60062			48					110	Free	Free	Free	Free	Free
08-00230-60071		R1	24					90	Free	Free	Free	Free	Free
08-00230-60072			48					110	Free	Free	Free	Free	Free

Work Material			Carbon Steels・Prehardened Steels S50C・NAK55・NAK80・HPM1 (～43HRC)				Hardened Steels HPM38・STAVAX・SKD61 (～55HRC)				Aluminium Alloy・Copper			
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
1	0.05 0.1 0.2 0.3	3	16,000	1,800	0.06	0.35	12,800	1,260	0.045	0.3	16,000	1,800	0.2	0.23
		4	16,000	1,500	0.05	0.35	12,800	1,050	0.04	0.3	16,000	1,500	0.15	0.23
		5	16,000	1,410	0.045	0.35	12,800	990	0.035	0.25	16,000	1,410	0.13	0.23
		6	14,500	1,200	0.04	0.25	11,600	840	0.03	0.25	14,500	1,200	0.12	0.2
		8	14,500	870	0.03	0.25	11,600	620	0.02	0.2	14,500	870	0.09	0.2
		10	11,100	660	0.025	0.25	8,900	470	0.015	0.1	11,100	660	0.075	0.15
		12	11,100	300	0.02	0.2	8,900	210	0.01	0.08	11,100	300	0.06	0.15
1.2	0.1 0.2 0.3	5	15,500	1,740	0.06	0.4	12,400	1,220	0.045	0.35	15,500	1,740	0.18	0.28
		10	12,000	1,290	0.04	0.35	9,600	900	0.03	0.25	12,000	1,290	0.12	0.28
		15	10,600	480	0.02	0.25	8,500	330	0.01	0.1	10,600	480	0.07	0.23
1.5	0.1 0.2 0.3 0.5	6	14,000	1,910	0.08	0.53	11,200	1,340	0.05	0.4	14,000	1,910	0.24	0.35
		12	11,500	1,250	0.06	0.42	9,000	870	0.04	0.3	11,500	1,250	0.18	0.3
		18	8,500	560	0.02	0.3	6,800	390	0.01	0.15	8,500	560	0.08	0.25
2	0.1 0.2 0.3 0.5	8	11,100	2,150	0.08	0.6	8,800	1,500	0.05	0.5	11,100	2,150	0.24	0.45
		12	11,100	1,800	0.065	0.6	8,800	1,260	0.045	0.5	11,100	1,800	0.2	0.43
		16	9,600	1,500	0.05	0.5	7,700	1,050	0.04	0.35	9,600	1,500	0.15	0.39
		20	9,600	900	0.03	0.45	7,700	630	0.015	0.25	9,600	900	0.12	0.35
		24	6,400	740	0.02	0.4	5,100	510	0.01	0.2	6,400	740	0.1	0.3
2.5	0.1 0.2 0.3 0.5	10	9,200	2,280	0.1	0.85	7,400	1,590	0.07	0.7	9,200	2,280	0.3	0.5
		20	8,300	1,580	0.08	0.6	6,600	1,110	0.05	0.4	8,300	1,580	0.24	0.43
		30	5,400	710	0.025	0.45	4,300	500	0.01	0.2	5,400	710	0.1	0.33
3	0.1 0.2 0.3 0.5 1	12	8,000	2,400	0.12	0.9	6,400	1,680	0.08	0.8	8,000	2,400	0.36	0.55
		18	7,800	2,000	0.11	0.8	6,200	1,410	0.07	0.7	7,800	2,010	0.33	0.5
		20	7,700	1,850	0.1	0.8	6,200	1,250	0.06	0.6	7,700	1,850	0.3	0.5
		24	7,500	1,620	0.1	0.7	6,000	1,140	0.06	0.5	7,500	1,620	0.3	0.45
		30	6,000	1,050	0.05	0.6	4,800	740	0.03	0.4	6,000	1,050	0.15	0.4
		36	4,200	710	0.03	0.5	3,400	500	0.01	0.3	4,200	710	0.1	0.35
4	0.1 0.2 0.3 0.5 1	16	6,000	2,520	0.15	1.2	4,800	1,770	0.1	1	6,000	2,520	0.45	0.75
		24	5,400	2,030	0.12	1	4,300	1,430	0.085	0.8	5,400	2,030	0.39	0.7
		32	4,800	1,350	0.08	0.9	3,800	950	0.04	0.7	4,800	1,350	0.25	0.6
		48	3,200	570	0.04	0.8	2,600	410	0.01	0.35	3,200	570	0.12	0.5
5	0.1 0.2 0.3 0.5 1	20	5,100	2,300	0.17	1.6	4,100	1,610	0.12	1.2	5,100	2,300	0.52	1
		40	3,200	1,020	0.07	1.2	2,600	720	0.05	0.9	3,200	1,020	0.25	0.8
6	0.1 0.2 0.3 0.5 1	24	3,700	2,100	0.2	2.1	3,000	1,470	0.12	1.5	3,700	2,100	0.6	1.2
		48	2,600	950	0.09	1.5	2,100	660	0.05	1.2	2,600	950	0.32	0.9

Notes

※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.

Work Material			Carbon Steels・Prehardened Steels S50C・NAK55・NAK80・HPM1 (～43HRC)				Hardened Steels HPM38・STAVAX・SKD61 (～55HRC)				Hardened Steels SKD11・PD613 (～62HRC)			
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
2	0.5	8	22,000	6,200	0.06	0.4	16,000	4,500	0.04	0.3	12,800	3,000	0.03	0.2
2.5	0.5	10	18,000	6,400	0.08	0.65	13,000	4,600	0.05	0.5	10,200	3,600	0.03	0.3
3	1	12	15,000	7,100	0.1	0.7	11,000	5,100	0.06	0.6	8,500	3,700	0.04	0.4
4	1	16	11,000	7,100	0.13	1	8,000	5,100	0.08	0.8	6,300	3,800	0.05	0.5
5	1	20	9,000	8,200	0.15	1.4	6,500	5,200	0.1	1	5,100	3,700	0.05	0.7
6	1	24	7,500	7,700	0.18	1.8	5,300	5,300	0.1	1.3	4,200	3,100	0.06	0.8

Notes

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P Carbon Steel
P Alloy Steel
P Prehardened Steel
H ～55 HRC Hardened Steel
M Stainless Steel
N Aluminium Alloy
N Copper
O Resin
Long Neck Corner Radius Coating