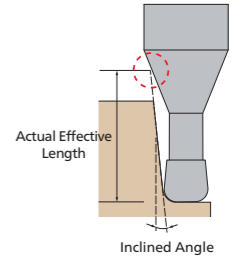
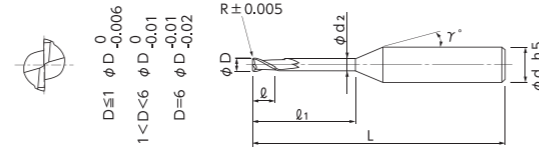
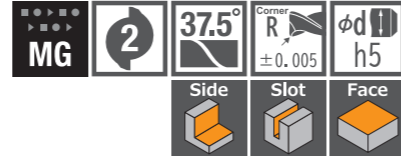
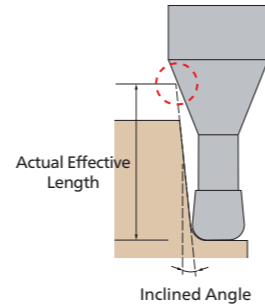


Long neck corner radius end mill specialized for machining copper alloy
 Sharpe cutting edge makes less burr and high quality surface



- Long neck radius end mill specialized for machining copper electrode.
- 37.5°helix angle provides both sharpness shearing ability and finishing surface quality, combining the most suitable cutting edge design realizes the higher quality of finishing surface.
- High quality and stable milling performance with long tool life by optimized design and DLC COATING.
- Machining copper tungsten electrodes is also effective.



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°
07-00110-02021	0.2	R0.02	0.5	0.4	0.18	12°	4	45	0.56	0.59	0.62	0.65	0.71
07-00110-02023			1	0.4	0.18	12°	4	45	1.09	1.13	1.19	1.24	1.38
07-00110-02025			1.5	0.4	0.18	12°	4	45	1.61	1.68	1.76	1.84	2.04
07-00110-02051		R0.05	0.5	0.4	0.18	12°	4	45	0.56	0.59	0.61	0.64	0.71
07-00110-02053			1	0.4	0.18	12°	4	45	1.08	1.13	1.18	1.24	1.37
07-00110-02055			1.5	0.4	0.18	12°	4	45	1.61	1.68	1.75	1.84	2.03
07-00110-03021	0.3	R0.02	1	0.6	0.28	12°	4	45	1.09	1.13	1.19	1.24	1.38
07-00110-03022			1.5	0.6	0.28	12°	4	45	1.61	1.68	1.76	1.84	2.04
07-00110-03023			2	0.6	0.28	12°	4	45	2.13	2.22	2.33	2.44	2.71
07-00110-03051		R0.05	1	0.6	0.28	12°	4	45	1.08	1.13	1.18	1.24	1.37
07-00110-03052			1.5	0.6	0.28	12°	4	45	1.61	1.68	1.75	1.84	2.03
07-00110-03053			2	0.6	0.28	12°	4	45	2.13	2.22	2.32	2.43	2.70
07-00110-04021	0.4	R0.02	1	0.8	0.37	12°	4	45	1.11	1.16	1.21	1.27	1.41
07-00110-04023			2	0.8	0.37	12°	4	45	2.15	2.25	2.35	2.47	2.74
07-00110-04025			3	0.8	0.37	12°	4	45	3.20	3.34	3.49	3.67	4.06
07-00110-04027			4	0.8	0.37	12°	4	45	4.24	4.43	4.63	4.86	5.39
07-00110-04051		R0.05	1	0.8	0.37	12°	4	45	1.11	1.16	1.21	1.27	1.40
07-00110-04053			2	0.8	0.37	12°	4	45	2.15	2.25	2.35	2.46	2.73
07-00110-04055			3	0.8	0.37	12°	4	45	3.19	3.34	3.49	3.66	4.05
07-00110-04057			4	0.8	0.37	12°	4	45	4.24	4.43	4.63	4.86	5.38
07-00110-04101		R0.1	1	0.8	0.37	12°	4	45	1.11	1.15	1.20	1.26	1.38
07-00110-04103			2	0.8	0.37	12°	4	45	2.15	2.24	2.34	2.45	2.71
07-00110-04105			3	0.8	0.37	12°	4	45	3.19	3.33	3.48	3.65	4.04
07-00110-04107			4	0.8	0.37	12°	4	45	4.24	4.42	4.62	4.85	5.37

How to Order

When you order, indicate DHR237R (D)×(R)×(l1). ※(γ) is reference value.

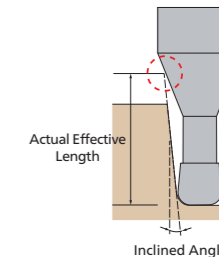
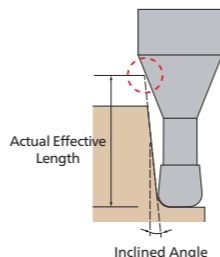
Machining case

S-032

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°	
07-00110-05022	0.5	R0.02	2	1	0.46	12°	4	45	2.18	2.27	2.38	2.50	2.77	
07-00110-05023			3	1	0.46	12°	4	45	3.22	3.36	3.52	3.69	4.10	
07-00110-05024			4	1	0.46	12°	4	45	4.26	4.45	4.66	4.89	5.42	
07-00110-05025			5	1	0.46	12°	4	45	5.31	5.54	5.80	6.09	6.75	
07-00110-05052			R0.05	2	1	0.46	12°	4	45	2.18	2.27	2.38	2.49	2.76
07-00110-05053		3		1	0.46	12°	4	45	3.22	3.36	3.52	3.69	4.09	
07-00110-05054		4		1	0.46	12°	4	45	4.26	4.45	4.66	4.88	5.41	
07-00110-05055		5		1	0.46	12°	4	45	5.31	5.54	5.80	6.08	6.74	
07-00110-05102		R0.1		2	1	0.46	12°	4	45	2.17	2.27	2.37	2.48	2.74
07-00110-05103			3	1	0.46	12°	4	45	3.22	3.36	3.51	3.68	4.07	
07-00110-05104			4	1	0.46	12°	4	45	4.26	4.45	4.65	4.87	5.40	
07-00110-05105			5	1	0.46	12°	4	45	5.30	5.54	5.79	6.07	6.72	
07-00110-06022			0.6	R0.02	2	1.2	0.56	12°	4	45	2.18	2.27	2.38	2.50
07-00110-06024		4			1.2	0.56	12°	4	45	4.26	4.45	4.66	4.89	5.42
07-00110-06026		6			1.2	0.56	12°	4	45	6.35	6.63	6.94	7.28	8.08
07-00110-06052	R0.05	2		1.2	0.56	12°	4	45	2.18	2.27	2.38	2.49	2.76	
07-00110-06054		4		1.2	0.56	12°	4	45	4.26	4.45	4.66	4.88	5.41	
07-00110-06056		6		1.2	0.56	12°	4	45	6.35	6.63	6.94	7.28	8.07	
07-00110-06102	R0.1	2		1.2	0.56	12°	4	45	2.17	2.27	2.37	2.48	2.74	
07-00110-06104		4		1.2	0.56	12°	4	45	4.26	4.45	4.65	4.87	5.40	
07-00110-06106		6		1.2	0.56	12°	4	45	6.35	6.63	6.93	7.27	8.05	
07-00110-08024	0.8	R0.02		4	1.6	0.76	12°	4	45	4.26	4.45	4.66	4.89	5.42
07-00110-08026				6	1.6	0.76	12°	4	45	6.35	6.63	6.94	7.28	8.08
07-00110-08028				8	1.6	0.76	12°	4	50	8.43	8.81	9.22	9.68	10.73
07-00110-08054		R0.05		4	1.6	0.76	12°	4	45	4.26	4.45	4.66	4.88	5.41
07-00110-08056				6	1.6	0.76	12°	4	45	6.35	6.63	6.94	7.28	8.07
07-00110-08058				8	1.6	0.76	12°	4	50	8.43	8.81	9.22	9.67	10.72
07-00110-08104		R0.1	4	1.6	0.76	12°	4	45	4.26	4.45	4.65	4.87	5.40	
07-00110-08106			6	1.6	0.76	12°	4	45	6.35	6.63	6.93	7.27	8.05	
07-00110-08108			8	1.6	0.76	12°	4	50	8.43	8.80	9.21	9.66	10.71	
07-00110-10053		1	R0.05	3	2	0.95	12°	4	45	3.24	3.39	3.54	3.72	4.12
07-00110-10054				4	2	0.95	12°	4	45	4.29	4.48	4.68	4.91	5.44
07-00110-10055				5	2	0.95	12°	4	45	5.33	5.57	5.82	6.11	6.77
07-00110-10056				6	2	0.95	12°	4	45	6.37	6.66	6.97	7.31	8.10
07-00110-10058				8	2	0.95	12°	4	50	8.46	8.83	9.25	9.70	10.75
07-00110-10060			R0.1	10	2	0.95	12°	4	50	10.54	11.01	11.53	12.09	13.41
07-00110-10103	3			2	0.95	12°	4	45	3.24	3.38	3.54	3.71	4.10	
07-00110-10104	4			2	0.95	12°	4	45	4.28	4.47	4.68	4.90	5.43	
07-00110-10105	5			2	0.95	12°	4	45	5.33	5.56	5.82	6.10	6.76	
07-00110-10106	6			2	0.95	12°	4	45	6.37	6.65	6.96	7.30	8.08	
07-00110-10108	R0.2		8	2	0.95	12°	4	50	8.46	8.83	9.24	9.69	10.74	
07-00110-10110			10	2	0.95	12°	4	50	10.54	11.01	11.52	12.08	13.39	
07-00110-10203			3	2	0.95	12°	4	45	3.24	3.37	3.52	3.69	4.07	
07-00110-10204			4	2	0.95	12°	4	45	4.28	4.46	4.66	4.88	5.40	
07-00110-10205			5	2	0.95	12°	4	45	5.32	5.55	5.80	6.08	6.72	
07-00110-10206	R0.2	6	2	0.95	12°	4	45	6.37	6.64	6.94	7.28	8.05		
07-00110-10208		8	2	0.95	12°	4	50	8.45	8.82	9.23	9.67	10.71		
07-00110-10210		10	2	0.95	12°	4	50	10.54	11.00	11.51	12.06	13.36		

Long Neck Radius End Mill for Copper Electrode

Long Neck Radius End Mill for Copper Electrode



Unit : mm

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°	
07-00110-15105	1.5	R0.1	5	3	1.45	12°	4	45	5.33	5.56	5.82	6.10	6.76	
07-00110-15110			10	3	1.45	12°	4	50	10.54	11.01	11.52	12.08	13.39	
07-00110-15115			15	3	1.45	12°	4	50	15.76	16.46	17.22	18.07	20.03	
07-00110-15205			R0.2	5	3	1.45	12°	4	45	5.32	5.55	5.80	6.08	6.72
07-00110-15210				10	3	1.45	12°	4	50	10.54	11.00	11.51	12.06	13.36
07-00110-15215				15	3	1.45	12°	4	50	15.75	16.45	17.21	18.05	20.00
07-00110-15305		R0.3	5	3	1.45	12°	4	45	5.32	5.54	5.79	6.06	6.69	
07-00110-15310			10	3	1.45	12°	4	50	10.53	10.99	11.49	12.04	13.33	
07-00110-15315			15	3	1.45	12°	4	50	15.75	16.44	17.20	18.03	19.96	
07-00110-15505		R0.5	5	3	1.45	12°	4	45	5.31	5.53	5.76	6.02	6.63	
07-00110-15510			10	3	1.45	12°	4	50	10.52	10.97	11.46	12.01	13.26	
07-00110-15515			15	3	1.45	12°	4	50	15.74	16.42	17.17	17.99	19.90	
07-00110-15520			20	3	1.45	12°	4	60	20.95	21.87	22.87	23.97	Free	
07-00110-20105		2	R0.1	5	4	1.94	12°	4	45	5.35	5.59	5.84	6.13	6.79
07-00110-20108				8	4	1.94	12°	4	50	8.48	8.86	9.27	9.72	10.77
07-00110-20110				10	4	1.94	12°	4	50	10.57	11.03	11.55	12.11	13.42
07-00110-20115	15			4	1.94	12°	4	50	15.78	16.48	17.25	18.09	Free	
07-00110-20120	R0.2		5	4	1.94	12°	4	45	5.35	5.58	5.83	6.11	6.75	
07-00110-20205			8	4	1.94	12°	4	50	8.48	8.85	9.25	9.70	10.74	
07-00110-20208			10	4	1.94	12°	4	50	10.56	11.03	11.53	12.09	13.39	
07-00110-20210			15	4	1.94	12°	4	50	15.78	16.47	17.24	18.07	Free	
07-00110-20215	20		4	1.94	12°	4	60	20.99	21.92	22.94	24.06	Free		
07-00110-20220	R0.3		5	4	1.94	12°	4	45	5.34	5.57	5.82	6.09	6.72	
07-00110-20305			8	4	1.94	12°	4	50	8.47	8.84	9.24	9.68	10.70	
07-00110-20310			10	4	1.94	12°	4	50	10.56	11.02	11.52	12.07	13.36	
07-00110-20315		15	4	1.94	12°	4	50	15.77	16.46	17.22	18.05	Free		
07-00110-20320	R0.5	20	4	1.94	12°	4	60	20.99	21.91	22.92	24.04	Free		
07-00110-20505		5	4	1.94	12°	4	45	5.33	5.55	5.79	6.05	6.66		
07-00110-20508		8	4	1.94	12°	4	50	8.46	8.82	9.21	9.64	10.64		
07-00110-20510		10	4	1.94	12°	4	50	10.55	11.00	11.49	12.03	13.30		
07-00110-20515	15	4	1.94	12°	4	50	15.76	16.45	17.19	18.02	Free			
07-00110-20520	20	4	1.94	12°	4	60	20.98	21.89	22.90	24.00	Free			
07-00110-25208	2.5	R0.2	8	5	2.4	12°	4	50	8.57	8.95	9.36	9.81	10.86	
07-00110-25214			14	5	2.4	12°	4	50	14.83	15.49	16.20	16.99	Free	
07-00110-25220			20	5	2.4	12°	4	60	21.09	22.02	23.05	Free	Free	
07-00110-25508		R0.5	8	5	2.4	12°	4	50	8.56	8.92	9.32	9.75	10.77	
07-00110-25514			14	5	2.4	12°	4	50	14.82	15.46	16.16	16.93	Free	
07-00110-25520			20	5	2.4	12°	4	60	21.08	22.00	23.00	Free	Free	

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°	
07-00110-30112	3	R0.1	12	6	2.85	12°	6	50	12.87	13.44	14.07	14.76	16.36	
07-00110-30118			18	6	2.85	12°	6	60	19.13	19.97	20.91	21.94	24.32	
07-00110-30124			24	6	2.85	12°	6	70	25.39	26.52	27.76	29.12	Free	
07-00110-30212		R0.2	12	6	2.85	12°	6	50	12.87	13.44	14.06	14.74	16.33	
07-00110-30218			18	6	2.85	12°	6	60	19.13	19.97	20.90	21.92	24.29	
07-00110-30224			24	6	2.85	12°	6	70	25.38	26.51	27.74	29.10	Free	
07-00110-30312		R0.3	12	6	2.85	12°	6	50	12.86	13.43	14.04	14.72	16.29	
07-00110-30318			18	6	2.85	12°	6	60	19.12	19.96	20.88	21.90	24.26	
07-00110-30324			24	6	2.85	12°	6	70	25.38	26.50	27.73	29.08	Free	
07-00110-30512		R0.5	12	6	2.85	12°	6	50	12.86	13.41	14.01	14.68	16.23	
07-00110-30515			15	6	2.85	12°	6	60	15.98	16.68	17.44	18.27	20.21	
07-00110-30518			18	6	2.85	12°	6	60	19.11	19.95	20.86	21.86	24.19	
07-00110-30524			24	6	2.85	12°	6	70	25.37	26.48	27.70	29.04	Free	
07-00110-30530			30	6	2.85	12°	6	70	31.63	33.02	34.54	36.22	Free	
07-00110-40116		4	R0.1	16	8	3.8	12°	6	60	17.17	17.93	18.77	19.68	Free
07-00110-40124				24	8	3.8	12°	6	60	25.51	26.65	27.89	Free	Free
07-00110-40132				32	8	3.8	12°	6	70	33.85	35.36	37.01	Free	Free
07-00110-40216			R0.2	16	8	3.8	12°	6	60	17.16	17.92	18.75	19.66	Free
07-00110-40224	24			8	3.8	12°	6	60	25.50	26.64	27.88	Free	Free	
07-00110-40232	32			8	3.8	12°	6	70	33.85	35.35	37.00	Free	Free	
07-00110-40316	R0.3		16	8	3.8	12°	6	60	17.16	17.91	18.74	19.65	Free	
07-00110-40324			24	8	3.8	12°	6	60	25.50	26.63	27.86	Free	Free	
07-00110-40332			32	8	3.8	12°	6	70	33.84	35.34	36.99	Free	Free	
07-00110-40516			R0.5	16	8	3.8	12°	6	60	17.15	17.89	18.71	19.61	Free
07-00110-40524	24			8	3.8	12°	6	60	25.49	26.61	27.83	Free	Free	
07-00110-40532	32			8	3.8	12°	6	70	33.83	35.33	36.96	Free	Free	
07-00110-41016	R1	16	8	3.8	12°	6	60	17.13	17.85	18.64	19.51	Free		
07-00110-41024		24	8	3.8	12°	6	60	25.47	26.57	27.77	29.08	Free		
07-00110-41032		32	8	3.8	12°	6	70	33.81	35.28	36.89	Free	Free		
07-00110-50120	5	R0.1	20	10	4.8	12°	6	60	21.34	22.29	Free	Free	Free	
07-00110-50140			40	10	4.8	12°	6	80	42.19	Free	Free	Free	Free	
07-00110-60124	6	R0.1	24	12	5.8	-	6	60	Free	Free	Free	Free	Free	
07-00110-60148			48	12	5.8	-	6	90	Free	Free	Free	Free	Free	
07-00110-60224			R0.2	24	12	5.8	-	6	60	Free	Free	Free	Free	Free
07-00110-60248		48		12	5.8	-	6	90	Free	Free	Free	Free	Free	
07-00110-60324		R0.3		24	12	5.8	-	6	60	Free	Free	Free	Free	Free
07-00110-60348			48	12	5.8	-	6	90	Free	Free	Free	Free	Free	
07-00110-60524			R0.5	24	12	5.8	-	6	60	Free	Free	Free	Free	Free
07-00110-60530		30		12	5.8	-	6	70	Free	Free	Free	Free	Free	
07-00110-60548		48		12	5.8	-	6	90	Free	Free	Free	Free	Free	
07-00110-61024		R1	24	12	5.8	-	6	60	Free	Free	Free	Free	Free	
07-00110-61048			48	12	5.8	-	6	90	Free	Free	Free	Free	Free	

How to Order

When you order, indicate DHR237R (D)×(R)×(ℓ1). ※(γ) is reference value.

Machining case

S-032

Recommended Milling Conditions

Recommended Milling Conditions

Work Material				Copper				Copper Tungsten (W70%-Cu30%)			
Dia.	Corner Radius	Under Neck Length	L/D	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
0.2	0.02	0.5	2.5	40,000	400	0.01	0.1	36,000	360	0.009	0.09
		1	5	40,000	320	0.008	0.1	36,000	280	0.007	0.09
		1.5	7.5	30,000	180	0.005	0.1	27,000	160	0.005	0.09
	0.05	0.5	2.5	40,000	400	0.03	0.1	36,000	360	0.027	0.09
		1	5	40,000	320	0.02	0.1	36,000	280	0.018	0.09
		1.5	7.5	30,000	180	0.01	0.1	27,000	160	0.009	0.09
0.3	0.02	1	3.3	40,000	480	0.01	0.15	36,000	420	0.009	0.14
		1.5	5	40,000	360	0.008	0.15	36,000	320	0.007	0.14
		2	6.7	30,000	240	0.005	0.15	27,000	210	0.005	0.14
	0.05	1	3.3	40,000	480	0.03	0.15	36,000	420	0.027	0.14
		1.5	5	40,000	360	0.024	0.15	36,000	320	0.022	0.14
		2	6.7	30,000	240	0.018	0.15	27,000	210	0.016	0.14
0.4	0.02	1	2.5	40,000	640	0.01	0.2	36,000	580	0.009	0.18
		2	5	40,000	560	0.01	0.2	36,000	500	0.009	0.18
		3	7.5	30,000	420	0.008	0.2	27,000	380	0.007	0.18
		4	10	30,000	360	0.005	0.2	27,000	320	0.005	0.18
	0.05	1	2.5	40,000	640	0.03	0.2	36,000	580	0.027	0.18
		2	5	40,000	560	0.024	0.2	36,000	500	0.022	0.18
		3	7.5	30,000	420	0.018	0.2	27,000	380	0.016	0.18
		4	10	30,000	360	0.012	0.2	27,000	320	0.01	0.18
	0.1	1	2.5	40,000	640	0.06	0.2	36,000	580	0.054	0.18
		2	5	40,000	560	0.05	0.2	36,000	500	0.045	0.18
		3	7.5	30,000	420	0.036	0.2	27,000	380	0.032	0.18
		4	10	30,000	360	0.024	0.2	27,000	320	0.022	0.18
0.5	0.02	2	4	40,000	800	0.01	0.25	36,000	720	0.009	0.23
		3	6	35,000	640	0.01	0.25	32,000	580	0.009	0.23
		4	8	30,000	480	0.008	0.25	27,000	420	0.007	0.23
		5	10	25,000	400	0.005	0.25	23,000	360	0.005	0.23
		2	4	40,000	800	0.03	0.25	36,000	720	0.027	0.23
	0.05	3	6	35,000	640	0.024	0.25	32,000	580	0.022	0.23
		4	8	30,000	480	0.018	0.25	27,000	420	0.016	0.23
		5	10	25,000	400	0.012	0.25	23,000	360	0.01	0.23
		2	4	40,000	800	0.06	0.25	36,000	720	0.054	0.23
		3	6	35,000	640	0.05	0.25	32,000	580	0.045	0.23
0.1	4	8	30,000	480	0.036	0.25	27,000	420	0.032	0.23	
	5	10	25,000	400	0.024	0.25	23,000	360	0.022	0.23	
	2	3.3	30,000	1,000	0.01	0.3	27,000	900	0.009	0.27	
0.6	0.02	4	6.7	25,000	800	0.01	0.3	23,000	720	0.009	0.27
		6	10	20,000	600	0.008	0.3	18,000	540	0.007	0.27
		2	3.3	30,000	1,000	0.03	0.3	27,000	900	0.027	0.27
	0.05	4	6.7	25,000	800	0.02	0.3	23,000	720	0.018	0.27
		6	10	20,000	600	0.012	0.3	18,000	540	0.01	0.27
		2	3.3	30,000	1,000	0.06	0.3	27,000	900	0.054	0.27
	0.1	4	6.7	25,000	800	0.05	0.3	23,000	720	0.045	0.27
		6	10	20,000	600	0.036	0.3	18,000	540	0.032	0.27

Work Material				Copper				Copper Tungsten (W70%-Cu30%)			
Dia.	Corner Radius	Under Neck Length	L/D	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
0.8	0.02	4	5	25,000	1,600	0.01	0.4	23,000	1,400	0.009	0.36
		6	7.5	20,000	1,200	0.01	0.4	18,000	1,100	0.009	0.36
		8	10	16,000	800	0.01	0.4	14,000	720	0.009	0.36
	0.05	4	5	25,000	1,600	0.03	0.4	23,000	1,400	0.027	0.36
		6	7.5	20,000	1,200	0.024	0.4	18,000	1,100	0.022	0.36
		8	10	16,000	800	0.02	0.4	14,000	720	0.018	0.36
	0.1	4	5	25,000	1,600	0.06	0.4	23,000	1,400	0.054	0.36
		6	7.5	20,000	1,200	0.05	0.4	18,000	1,100	0.045	0.36
		8	10	16,000	800	0.04	0.4	14,000	720	0.036	0.36
1	0.05	3	3	25,000	2,400	0.03	0.6	23,000	2,200	0.027	0.55
		4	4	25,000	2,200	0.03	0.6	23,000	2,000	0.027	0.55
		5	5	22,000	2,000	0.024	0.6	20,000	1,800	0.022	0.55
		6	6	20,000	1,800	0.024	0.6	18,000	1,600	0.022	0.55
		8	8	16,000	1,400	0.02	0.6	14,000	1,200	0.018	0.55
	0.1	10	10	12,000	1,000	0.02	0.6	11,000	900	0.018	0.55
		3	3	25,000	2,400	0.06	0.6	23,000	2,200	0.054	0.55
		4	4	25,000	2,200	0.055	0.6	23,000	2,000	0.05	0.55
		5	5	22,000	2,000	0.05	0.6	20,000	1,800	0.045	0.55
		6	6	20,000	1,800	0.045	0.6	18,000	1,600	0.04	0.55
0.2	8	8	16,000	1,400	0.04	0.6	14,000	1,200	0.036	0.55	
	10	10	12,000	1,000	0.03	0.6	11,000	900	0.027	0.55	
	3	3	25,000	2,400	0.12	0.6	23,000	2,200	0.11	0.55	
	4	4	25,000	2,200	0.11	0.6	23,000	2,000	0.1	0.55	
	5	5	22,000	2,000	0.1	0.6	20,000	1,800	0.09	0.55	
1.5	0.1	6	6	20,000	1,800	0.09	0.6	18,000	1,600	0.08	0.55
		8	8	16,000	1,400	0.08	0.6	14,000	1,200	0.07	0.55
		10	10	12,000	1,000	0.06	0.6	11,000	900	0.054	0.55
		5	3.3	20,000	2,400	0.06	0.9	18,000	2,200	0.054	0.8
		10	6.6	16,000	1,600	0.05	0.9	14,000	1,400	0.045	0.8
	0.2	15	10	12,000	1,000	0.04	0.9	11,000	900	0.036	0.8
		5	3.3	20,000	2,400	0.12	0.9	18,000	2,200	0.11	0.8
		10	6.6	16,000	1,600	0.1	0.9	14,000	1,400	0.09	0.8
		15	10	12,000	1,000	0.08	0.9	11,000	900	0.07	0.8
		5	3.3	20,000	2,400	0.18	0.9	18,000	2,200	0.16	0.8
0.3	10	6.6	16,000	1,600	0.15	0.9	14,000	1,400	0.14	0.8	
	15	10	12,000	1,000	0.12	0.9	11,000	900	0.11	0.8	
	5	3.3	20,000	2,400	0.25	0.5	18,000	2,200	0.23	0.8	
0.5	10	6.6	16,000	1,600	0.2	0.5	14,000	1,400	0.18	0.8	
	15	10	12,000	1,000	0.12	0.5	11,000	900	0.11	0.8	
	20	13.3	8,000	600	0.06	0.5	7,000	540	0.054	0.8	

Aluminium Alloy **N**

Copper **N**
Copper Tungsten

Resin **O**

Aluminium Alloy **N**

Copper **N**
Copper Tungsten

Resin **O**

Long Neck Corner Radius Coating

Long Neck Corner Radius Coating

Recommended Milling Conditions

Recommended Milling Conditions

Work Material				Copper				Copper Tungsten (W70%-Cu30%)			
Dia.	Corner Radius	Under Neck Length	L/D	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
2	0.1	5	2.5	16,000	3,000	0.06	1.2	14,000	2,700	0.054	1.1
		8	4	14,000	2,600	0.06	1.2	13,000	2,400	0.054	1.1
		10	5	12,000	2,000	0.06	1.2	11,000	1,800	0.054	1.1
		15	7.5	10,000	1,600	0.05	1.2	9,000	1,400	0.045	1.1
		20	10	8,000	1,200	0.04	1.2	7,000	1,100	0.036	1.1
	0.2	5	2.5	16,000	3,000	0.12	1.2	14,000	2,700	0.11	1.1
		8	4	14,000	2,600	0.12	1.2	13,000	2,400	0.11	1.1
		10	5	12,000	2,000	0.12	1.2	11,000	1,800	0.11	1.1
		15	7.5	10,000	1,600	0.1	1.2	9,000	1,400	0.09	1.1
		20	10	8,000	1,200	0.08	1.2	7,000	1,100	0.07	1.1
	0.3	5	2.5	16,000	3,000	0.18	1.2	14,000	2,700	0.16	1.1
		8	4	14,000	2,600	0.18	1.2	13,000	2,400	0.16	1.1
		10	5	12,000	2,000	0.18	1.2	11,000	1,800	0.16	1.1
		15	7.5	10,000	1,600	0.14	1.2	9,000	1,400	0.13	1.1
		20	10	8,000	1,200	0.1	1.2	7,000	1,100	0.09	1.1
	0.5	5	2.5	16,000	3,000	0.3	1.2	14,000	2,700	0.27	1.1
		8	4	14,000	2,600	0.3	1.2	13,000	2,400	0.27	1.1
		10	5	12,000	2,000	0.3	1.2	11,000	1,800	0.27	1.1
		15	7.5	10,000	1,600	0.2	1.2	9,000	1,400	0.18	1.1
		20	10	8,000	1,200	0.15	1.2	7,000	1,100	0.14	1.1
2.5	0.2	8	3.2	15,000	3,000	0.12	1.5	13,500	2,700	0.11	1.4
		14	5.6	12,000	2,200	0.1	1.5	11,000	2,000	0.09	1.4
		20	8	10,000	1,600	0.08	1.5	9,000	1,400	0.04	1.4
	0.5	8	3.2	15,000	3,000	0.3	1.5	13,500	2,700	0.027	1.4
		14	5.6	12,000	2,200	0.25	1.5	11,000	2,000	0.23	1.4
3	0.1	12	4	14,000	3,000	0.06	1.8	13,000	2,700	0.054	1.6
		18	6	12,000	2,400	0.05	1.8	11,000	2,200	0.045	1.6
		24	8	10,000	1,800	0.04	1.8	9,000	1,600	0.036	1.6
	0.2	12	4	14,000	3,000	0.12	1.8	13,000	2,700	0.11	1.6
		18	6	12,000	2,400	0.1	1.8	11,000	2,200	0.09	1.6
		24	8	10,000	1,800	0.08	1.8	9,000	1,600	0.07	1.6
	0.3	12	4	14,000	3,000	0.18	1.8	13,000	2,700	0.16	1.6
		18	6	12,000	2,400	0.15	1.8	11,000	2,200	0.14	1.6
		24	8	10,000	1,800	0.12	1.8	9,000	1,600	0.11	1.6
	0.5	12	4	14,000	3,000	0.3	1.8	13,000	2,700	0.27	1.6
		15	5	13,000	2,600	0.3	1.8	12,000	2,400	0.27	1.6
		18	6	12,000	2,400	0.25	1.8	11,000	2,200	0.23	1.6
		24	8	10,000	1,800	0.2	1.8	9,000	1,600	0.18	1.6
		30	10	8,000	1,400	0.16	1.8	7,000	1,200	0.14	1.6

Work Material				Copper				Copper Tungsten (W70%-Cu30%)				
Dia.	Corner Radius	Under Neck Length	L/D	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	
4	0.1	16	4	10,000	2,800	0.06	2.8	9,000	2,500	0.054	2.5	
		24	6	8,000	2,200	0.05	2.8	7,000	1,900	0.045	2.5	
		32	8	6,000	1,600	0.04	2.8	5,500	1,400	0.036	2.5	
	0.2	16	4	10,000	2,800	0.14	2.8	9,000	2,500	0.13	2.5	
		24	6	8,000	2,200	0.12	2.8	7,000	1,900	0.11	2.5	
		32	8	6,000	1,600	0.1	2.8	5,500	1,400	0.09	2.5	
	0.3	16	4	10,000	2,800	0.18	2.8	9,000	2,500	0.16	2.5	
		24	6	8,000	2,200	0.15	2.8	7,000	1,900	0.14	2.5	
		32	8	6,000	1,600	0.12	2.8	5,500	1,400	0.11	2.5	
		32	8	6,000	1,600	0.12	2.8	5,500	1,400	0.11	2.5	
	0.5	16	4	10,000	2,800	0.3	2.4	9,000	2,500	0.27	2.2	
		24	6	8,000	2,200	0.24	2.4	7,000	1,900	0.22	2.2	
		32	8	6,000	1,600	0.18	2.4	5,500	1,400	0.16	2.2	
	1	16	4	10,000	2,800	0.6	2	9,000	2,500	0.54	1.8	
		24	6	8,000	2,200	0.48	2	7,000	1,900	0.43	1.8	
		32	8	6,000	1,600	0.36	2	5,500	1,400	0.32	1.8	
	5	0.1	20	4	8,000	2,700	0.06	3.5	7,000	2,400	0.054	3.2
			40	8	5,000	1,600	0.04	3.5	4,500	1,400	0.036	3.2
	6	0.1	24	4	6,000	2,600	0.06	4.2	5,500	2,300	0.054	3.8
			48	8	4,000	1,600	0.03	4.2	3,500	1,400	0.027	3.8
0.2		24	4	6,000	2,600	0.12	4.2	5,500	2,300	0.11	3.8	
		48	8	4,000	1,600	0.06	4.2	3,500	1,400	0.054	3.8	
0.3		24	4	6,000	2,600	0.18	4.2	5,500	2,300	0.16	3.8	
		48	8	4,000	1,600	0.09	4.2	3,500	1,400	0.08	3.8	
0.5	24	4	6,000	2,600	0.3	3.6	5,500	2,300	0.27	3.2		
	30	5	5,000	2,200	0.24	3.6	4,500	1,900	0.22	3.2		
	48	8	4,000	1,600	0.16	3.6	3,500	1,400	0.14	3.2		
	48	8	4,000	1,600	0.16	3.6	3,500	1,400	0.14	3.2		
1	24	4	6,000	2,600	0.6	3	5,500	2,300	0.54	2.7		
	48	8	4,000	1,600	0.3	3	3,500	1,400	0.27	2.7		
Notes				※1 Recommend to use the milling condition as just reference. Adjust milling conditions according to machining shape and machine status. ※2 Depth of Cut : ap=Axial Depth of Cut / ae=Radial Depth of Cut. ※3 Recommend to apply helical or ramping for approaching into axial direction. ※4 For slotting, recommend reciprocating milling by adjusting feed & ap in below 60% of recommended milling condition. ※5 Reduce both spindle speed and feed at same rate for chattering and also for insufficient spindle speed of a machine. ※6 Water-insoluble fluid is recommended.								

○ Aluminium Alloy **N**

● Copper **N**
● Copper Tungsten

○ Resin **O**

N Aluminium Alloy ○

N Copper ●
N Copper Tungsten ●

O Resin ○

