

• 중저경도강(HRC52이하), 프리하든강 계열, 탄소강, 금형강등 다양한 피삭재 가공 엔드밀

• 고품량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.

• 넓은 영역의 피삭재 가공에 적합한 형상으로 설계 하였습니다.

• 항절력이 높은 미립자 초경합금(0.5µm)을 채택, 엔드밀의 파손을 최소화 하였습니다.

• Endmills for various work materials(~HRC52), pre-hardened steel, carbon steel, mold steel.

• Good wear resistance by high quality Si-based PVD coating.

• Suitable shape is designed for tooling in wide areas.

• Minimize fracturing by high TRS fine(0.5µm) WC grade.



0.1 ~ 2.5R3 ~ 6R

318P

D Size	D Tolerance
Ø 0.2 ~ 5	+0 ~ -0.01 mm
Ø 6 ~ 12	-0.005 ~ -0.015 mm

단위: mm

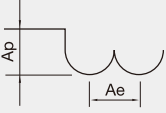
Order Number	날경 Diameter R × D	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고	Order Number	날경 Diameter R × D	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
2HRBE 002 005 S04	0.1R X 0.2	0.2	0.5	40	4		2HRBE 009 060 S04	0.45R X 0.9	0.9	6	45	4	
2HRBE 002 010 S04	0.1R X 0.2	0.2	1	40	4		2HRBE 009 080 S04	0.45R X 0.9	0.9	8	45	4	
2HRBE 002 015 S04	0.1R X 0.2	0.2	1.5	40	4		2HRBE 009 100 S04	0.45R X 0.9	0.9	10	50	4	
2HRBE 002 020 S04	0.1R X 0.2	0.2	2	40	4		2HRBE 010 020 S04	0.5R X 1	1	2	45	4	
2HRBE 003 010 S04	0.15R X 0.3	0.3	1	40	4		2HRBE 010 030 S04	0.5R X 1	1	3	45	4	
2HRBE 003 015 S04	0.15R X 0.3	0.3	1.5	40	4		2HRBE 010 040 S04	0.5R X 1	1	4	45	4	
2HRBE 003 020 S04	0.15R X 0.3	0.3	2	40	4		2HRBE 010 050 S04	0.5R X 1	1	5	45	4	
2HRBE 003 030 S04	0.15R X 0.3	0.3	3	40	4		2HRBE 010 060 S04	0.5R X 1	1	6	45	4	
2HRBE 003 040 S04	0.15R X 0.3	0.3	4	40	4		2HRBE 010 080 S04	0.5R X 1	1	8	45	4	
2HRBE 004 010 S04	0.2R X 0.4	0.4	1	40	4		2HRBE 010 100 S04	0.5R X 1	1	10	50	4	
2HRBE 004 020 S04	0.2R X 0.4	0.4	2	40	4		2HRBE 010 120 S04	0.5R X 1	1	12	50	4	
2HRBE 004 030 S04	0.2R X 0.4	0.4	3	40	4		2HRBE 010 140 S04	0.5R X 1	1	14	50	4	
2HRBE 004 040 S04	0.2R X 0.4	0.4	4	40	4		2HRBE 010 160 S04	0.5R X 1	1	16	50	4	
2HRBE 004 050 S04	0.2R X 0.4	0.4	5	40	4		2HRBE 010 180 S04	0.5R X 1	1	18	50	4	
2HRBE 004 060 S04	0.2R X 0.4	0.4	6	40	4		2HRBE 010 200 S04	0.5R X 1	1	20	50	4	
2HRBE 004 080 S04	0.2R X 0.4	0.4	8	40	4		2HRBE 010 220 S04	0.5R X 1	1	22	60	4	
2HRBE 005 010 S04	0.25R X 0.5	0.5	1	45	4		2HRBE 010 250 S04	0.5R X 1	1	25	60	4	
2HRBE 005 020 S04	0.25R X 0.5	0.5	2	45	4		2HRBE 012 040 S04	0.6R X 1.2	1.2	4	45	4	
2HRBE 005 030 S04	0.25R X 0.5	0.5	3	45	4		2HRBE 012 060 S04	0.6R X 1.2	1.2	6	45	4	
2HRBE 005 040 S04	0.25R X 0.5	0.5	4	45	4		2HRBE 012 080 S04	0.6R X 1.2	1.2	8	45	4	
2HRBE 005 050 S04	0.25R X 0.5	0.5	5	45	4		2HRBE 012 100 S04	0.6R X 1.2	1.2	10	50	4	
2HRBE 005 060 S04	0.25R X 0.5	0.5	6	45	4		2HRBE 012 120 S04	0.6R X 1.2	1.2	12	50	4	
2HRBE 005 080 S04	0.25R X 0.5	0.5	8	45	4		2HRBE 012 160 S04	0.6R X 1.2	1.2	16	50	4	
2HRBE 005 100 S04	0.25R X 0.5	0.5	10	45	4		2HRBE 012 200 S04	0.6R X 1.2	1.2	20	50	4	
2HRBE 005 120 S04	0.25R X 0.5	0.5	12	45	4		2HRBE 012 240 S04	0.6R X 1.2	1.2	24	60	4	
2HRBE 006 010 S04	0.3R X 0.6	0.6	1	45	4		2HRBE 014 060 S04	0.7R X 1.4	1.4	6	45	4	
2HRBE 006 020 S04	0.3R X 0.6	0.6	2	45	4		2HRBE 014 080 S04	0.7R X 1.4	1.4	8	45	4	
2HRBE 006 030 S04	0.3R X 0.6	0.6	3	45	4		2HRBE 014 120 S04	0.7R X 1.4	1.4	12	50	4	
2HRBE 006 040 S04	0.3R X 0.6	0.6	4	45	4		2HRBE 014 160 S04	0.7R X 1.4	1.4	16	50	4	
2HRBE 006 050 S04	0.3R X 0.6	0.6	5	45	4		2HRBE 015 030 S04	0.75R X 1.5	1.5	3	45	4	
2HRBE 006 060 S04	0.3R X 0.6	0.6	6	45	4		2HRBE 015 040 S04	0.75R X 1.5	1.5	4	45	4	
2HRBE 006 080 S04	0.3R X 0.6	0.6	8	45	4		2HRBE 015 060 S04	0.75R X 1.5	1.5	6	45	4	
2HRBE 006 100 S04	0.3R X 0.6	0.6	10	45	4		2HRBE 015 080 S04	0.75R X 1.5	1.5	8	45	4	
2HRBE 006 120 S04	0.3R X 0.6	0.6	12	45	4		2HRBE 015 100 S04	0.75R X 1.5	1.5	10	50	4	
2HRBE 006 140 S04	0.3R X 0.6	0.6	14	45	4		2HRBE 015 120 S04	0.75R X 1.5	1.5	12	50	4	
2HRBE 007 020 S04	0.35R X 0.7	0.7	2	45	4		2HRBE 015 140 S04	0.75R X 1.5	1.5	14	50	4	
2HRBE 007 040 S04	0.35R X 0.7	0.7	4	45	4		2HRBE 015 160 S04	0.75R X 1.5	1.5	16	50	4	
2HRBE 007 060 S04	0.35R X 0.7	0.7	6	45	4		2HRBE 015 180 S04	0.75R X 1.5	1.5	18	50	4	
2HRBE 007 080 S04	0.35R X 0.7	0.7	8	45	4		2HRBE 015 200 S04	0.75R X 1.5	1.5	20	50	4	
2HRBE 007 100 S04	0.35R X 0.7	0.7	10	45	4		2HRBE 015 220 S04	0.75R X 1.5	1.5	22	60	4	
2HRBE 007 120 S04	0.35R X 0.7	0.7	12	45	4		2HRBE 015 250 S04	0.75R X 1.5	1.5	25	60	4	
2HRBE 008 020 S04	0.4R X 0.8	0.8	2	45	4		2HRBE 015 300 S04	0.75R X 1.5	1.5	30	70	4	
2HRBE 008 030 S04	0.4R X 0.8	0.8	3	45	4		2HRBE 016 060 S04	0.8R X 1.6	1.6	6	45	4	
2HRBE 008 040 S04	0.4R X 0.8	0.8	4	45	4		2HRBE 016 080 S04	0.8R X 1.6	1.6	8	45	4	
2HRBE 008 050 S04	0.4R X 0.8	0.8	5	45	4		2HRBE 016 120 S04	0.8R X 1.6	1.6	12	50	4	
2HRBE 008 060 S04	0.4R X 0.8	0.8	6	45	4		2HRBE 016 160 S04	0.8R X 1.6	1.6	16	50	4	
2HRBE 008 080 S04	0.4R X 0.8	0.8	8	45	4		2HRBE 016 200 S04	0.8R X 1.6	1.6	20	50	4	
2HRBE 008 100 S04	0.4R X 0.8	0.8	10	45	4		2HRBE 018 060 S04	0.9R X 1.8	1.8	6	45	4	
2HRBE 008 120 S04	0.4R X 0.8	0.8	12	45	4		2HRBE 018 080 S04	0.9R X 1.8	1.8	8	45	4	
2HRBE 009 040 S04	0.45R X 0.9	0.9	4	45	4		2HRBE 018 120 S04	0.9R X 1.8	1.8	12	50	4	

단위: mm

Order Number	날경 Diameter R × D	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고	Order Number	날경 Diameter R × D	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
2HRBE 018 160 S04	0.9R X 1.8	1.8	16	50	4		2HRBE 100 300 070	5R X 10	16	30	70	10	
2HRBE 018 200 S04	0.9R X 1.8	1.8	20	50	4		2HRBE 120 300 075	6R X 12	18	30	75	12	
2HRBE 020 040 S04	1R X 2	2	4	45	4								
2HRBE 020 060 S04	1R X 2	2	6	45	4								
2HRBE 020 080 S04	1R X 2	2	8	45	4								
2HRBE 020 100 S04	1R X 2	2	10	50	4								
2HRBE 020 120 S04	1R X 2	2	12	50	4								
2HRBE 020 140 S04	1R X 2	2	14	50	4								
2HRBE 020 160 S04	1R X 2	2	16	50	4								
2HRBE 020 180 S04	1R X 2	2	18	50	4								
2HRBE 020 200 S04	1R X 2	2	20	50	4								
2HRBE 020 220 S04	1R X 2	2	22	60	4								
2HRBE 020 250 S04	1R X 2	2	25	60	4								
2HRBE 020 300 S04	1R X 2	2	30	60	4								
2HRBE 025 080 S04	1.25R X 2.5	2.5	8	45	4								
2HRBE 025 100 S04	1.25R X 2.5	2.5	10	50	4								
2HRBE 025 120 S04	1.25R X 2.5	2.5	12	50	4								
2HRBE 025 160 S04	1.25R X 2.5	2.5	16	50	4								
2HRBE 025 200 S04	1.25R X 2.5	2.5	20	60	4								
2HRBE 025 250 S04	1.25R X 2.5	2.5	25	60	4								
2HRBE 025 300 S04	1.25R X 2.5	2.5	30	70	4								
2HRBE 030 060 S06	1.5R X 3	3	6	50	6								
2HRBE 030 080 S06	1.5R X 3	3	8	50	6								
2HRBE 030 100 S06	1.5R X 3	3	10	50	6								
2HRBE 030 120 S06	1.5R X 3	3	12	50	6								
2HRBE 030 160 S06	1.5R X 3	3	16	60	6								
2HRBE 030 200 S06	1.5R X 3	3	20	60	6								
2HRBE 030 250 S06	1.5R X 3	3	25	65	6								
2HRBE 030 300 S06	1.5R X 3	3	30	70	6								
2HRBE 030 350 S06	1.5R X 3	3	35	75	6								
2HRBE 030 400 S06	1.5R X 3	3	40	80	6								
2HRBE 030 450 S06	1.5R X 3	3	45	90	6								
2HRBE 040 080 S06	2R X 4	4	8	50	6								
2HRBE 040 100 S06	2R X 4	4	10	50	6								
2HRBE 040 120 S06	2R X 4	4	12	50	6								
2HRBE 040 160 S06	2R X 4	4	16	60	6								
2HRBE 040 200 S06	2R X 4	4	20	60	6								
2HRBE 040 250 S06	2R X 4	4	25	65	6								
2HRBE 040 300 S06	2R X 4	4	30	70	6								
2HRBE 040 350 S06	2R X 4	4	35	75	6								
2HRBE 040 400 S06	2R X 4	4	40	80	6								
2HRBE 040 450 S06	2R X 4	4	45	90	6								
2HRBE 050 160 S06	2.5R X 5	6	16	60	6								
2HRBE 050 200 S06	2.5R X 5	6	20	60	6								
2HRBE 050 250 S06	2.5R X 5	6	25	70	6								
2HRBE 050 300 S06	2.5R X 5	6	30	75	6								
2HRBE 050 400 S06	2.5R X 5	6	40	80	6								
2HRBE 050 500 S06	2.5R X 5	6	50	90	6								
2HRBE 060 150 S06	3R X 6	10	15	55	6								
2HRBE 080 250 060	4R X 8	12	25	60	8								

피삭재 Material		합금강 Alloy Steels				프리하든강 Prehardened Steels				고경도강 Hardened Steels			
경도 Hardness		30 ~ 40HRC				40 ~ 50HRC				50 ~ 52HRC			
반경 Corner Radius	유효장 Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R 0.1	0.5	54,000	430	0.010	0.010	48,000	350	0.006	0.007	48,000	280	0.006	0.007
"	1	54,000	380	0.008	0.008	48,000	330	0.005	0.005	48,000	250	0.005	0.005
"	1.5	47,000	320	0.006	0.006	47,000	250	0.004	0.004	47,000	200	0.004	0.004
"	2	42,000	290	0.004	0.004	42,000	200	0.003	0.003	42,000	200	0.003	0.003
R 0.15	1	54,000	640	0.014	0.015	48,000	480	0.010	0.010	41,000	370	0.009	0.010
"	2	49,000	530	0.011	0.011	43,000	370	0.008	0.008	37,000	270	0.008	0.008
"	3	43,000	460	0.009	0.010	38,000	320	0.007	0.006	32,000	240	0.006	0.006
"	4	37,000	300	0.004	0.006	28,000	200	0.003	0.004	24,000	160	0.003	0.004
R 0.2	1	54,000	870	0.023	0.036	48,000	660	0.018	0.024	37,000	450	0.015	0.024
"	2	54,000	790	0.022	0.036	48,000	590	0.018	0.024	37,000	400	0.015	0.020
"	3	50,000	660	0.017	0.018	41,000	420	0.012	0.012	31,000	280	0.011	0.012
"	4	50,000	640	0.012	0.018	38,000	400	0.009	0.012	30,000	270	0.009	0.012
"	5	37,000	410	0.009	0.018	29,000	330	0.008	0.012	26,000	260	0.007	0.012
"	6	37,000	360	0.006	0.010	29,000	260	0.005	0.006	26,000	200	0.004	0.006
"	8	27,000	200	0.003	0.006	27,000	170	0.003	0.003	23,000	150	0.002	0.003
R 0.25	1	57,000	1,380	0.029	0.054	42,000	830	0.023	0.036	32,000	550	0.018	0.036
"	2	57,000	1,250	0.028	0.054	42,000	750	0.022	0.036	32,000	500	0.018	0.036
"	3	55,000	1,010	0.021	0.036	38,000	580	0.017	0.024	31,000	400	0.014	0.024
"	4	55,000	1,010	0.021	0.036	38,000	580	0.017	0.024	31,000	400	0.014	0.024
"	5	48,000	800	0.016	0.018	33,000	480	0.012	0.012	30,000	390	0.009	0.012
"	6	36,000	610	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
"	8	36,000	590	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
"	10	36,000	460	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
"	12	24,000	280	0.004	0.010	26,000	280	0.004	0.006	24,000	280	0.002	0.006
R 0.3	1	57,000	1,670	0.035	0.144	37,000	840	0.027	0.096	27,000	540	0.023	0.096
"	2	57,000	1,540	0.034	0.144	37,000	770	0.027	0.096	27,000	500	0.021	0.096
"	3	57,000	1,540	0.034	0.144	37,000	770	0.027	0.096	27,000	500	0.021	0.096
"	4	54,000	1,130	0.026	0.108	35,000	600	0.020	0.072	26,000	380	0.016	0.072
"	5	46,000	960	0.019	0.072	28,000	460	0.016	0.048	26,000	370	0.012	0.048
"	6	46,000	960	0.019	0.072	28,000	460	0.016	0.048	26,000	370	0.012	0.048
"	8	30,000	570	0.010	0.054	24,000	400	0.009	0.036	23,000	320	0.006	0.036
"	10	30,000	490	0.007	0.036	24,000	330	0.006	0.024	23,000	290	0.004	0.024
"	12	30,000	490	0.007	0.036	24,000	330	0.006	0.024	23,000	290	0.004	0.024
"	14	20,000	300	0.004	0.027	22,000	300	0.004	0.018	20,000	250	0.002	0.018
R 0.35	2	56,000	1,800	0.050	0.162	35,000	740	0.039	0.108	27,000	500	0.031	0.108
"	4	54,500	1,500	0.045	0.063	33,000	600	0.035	0.042	26,500	410	0.029	0.096
"	8	32,000	800	0.019	0.072	12,215	420	0.020	0.048	22,500	355	0.012	0.048
"	10	26,500	540	0.017	0.063	22,500	380	0.014	0.042	21,500	330	0.011	0.042
"	12	23,000	420	0.017	0.063	21,500	380	0.012	0.032	21,500	320	0.010	0.042
R 0.4	2	55,000	2,060	0.063	0.180	33,000	710	0.050	0.120	27,000	500	0.041	0.120
"	4	55,000	1,860	0.063	0.180	31,000	600	0.050	0.120	27,000	440	0.041	0.120
"	6	47,000	1,410	0.038	0.108	28,000	570	0.030	0.072	22,000	390	0.024	0.072
"	8	34,000	1,040	0.027	0.090	21,000	430	0.021	0.060	22,000	390	0.018	0.060
"	10	23,000	600	0.027	0.090	21,000	430	0.021	0.060	20,000	370	0.017	0.060
"	12	16,000	350	0.027	0.090	19,000	430	0.018	0.040	20,000	350	0.016	0.060
R 0.45	6	50,500	1,900	0.067	0.190	32,000	685	0.054	0.130	24,500	460	0.043	0.180
R 0.5	2	46,000	2,000	0.072	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
"	3	46,000	2,000	0.072	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
"	4	46,000	2,000	0.071	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
"	5	46,000	2,000	0.071	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
"	6	39,000	1,500	0.071	0.180	26,000	760	0.055	0.120	17,600	480	0.009	0.120
"	8	39,000	1,500	0.043	0.180	26,000	760	0.034	0.120	17,600	480	0.027	0.120
"	10	29,000	1,110	0.028	0.090	17,600	530	0.024	0.060	16,500	420	0.018	0.060
"	12	18,700	660	0.027	0.090	17,600	530	0.024	0.060	16,500	420	0.018	0.060
"	14	18,700	640	0.022	0.090	15,400	440	0.018	0.060	14,300	360	0.014	0.060
"	16	18,700	640	0.022	0.090	15,400	440	0.018	0.060	14,300	360	0.014	0.060
"	18	18,700	540	0.017	0.090	14,300	440	0.013	0.060	13,200	360	0.009	0.060
"	20	18,700	540	0.017	0.054	14,300	360	0.013	0.036	13,200	300	0.009	0.036
"	22	18,700	540	0.017	0.054	14,300	360	0.013	0.036	13,200	300	0.009	0.036
"	25	18,700	540	0.016	0.052	14,300	360	0.013	0.030	13,200	300	0.009	0.030
R 0.6	4	38,000	2,000	0.085	0.360	26,000	770	0.068	0.240	18,200	480	0.054	0.240
"	6	38,000	2,000	0.085	0.360	26,000	770	0.068	0.240	18,200	480	0.054	0.240
"	8	32,000	1,490	0.084	0.360	21,000	700	0.067	0.240	15,100	440	0.054	0.240
"	10	24,000	1,080	0.036	0.180	16,400	530	0.027	0.120	15,100	420	0.022	0.120
"	12	24,000	1,080	0.036	0.180	15,300	530	0.027	0.120	14,100	420	0.022	0.120
"	16	15,400	580	0.024	0.144	13,100	460	0.019	0.096	11,900	380	0.016	0.096
"	20	15,400	580	0.017	0.090	12,100	380	0.013	0.060	11,000	320	0.009	0.060
"	24	15,400	580	0.010	0.060	11,100	320	0.009	0.040	9,800	290	0.070	0.040

피삭재 Material		합금강 Alloy Steels				프리하든강 Prehardened Steels				고경도강 Hardened Steels			
경도 Hardness		30 ~ 40HRC				40 ~ 50HRC				50 ~ 52HRC			
반경 Corner Radius	유효장 Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R 0.7	6	28,000	1,470	0.099	0.270	17,600	680	0.076	0.180	13,600	440	0.063	0.180
"	8	28,000	1,470	0.099	0.270	17,600	680	0.079	0.180	13,600	440	0.063	0.180
"	12	19,800	1,080	0.042	0.270	13,800	530	0.033	0.180	13,600	420	0.027	0.180
"	16	13,200	620	0.033	0.180	13,100	480	0.027	0.120	11,900	390	0.021	0.120
R 0.75	3	30,000	2,200	0.171	0.324	21,000	1060	0.137	0.216	14,800	660	0.110	0.216
"	4	30,000	2,200	0.171	0.324	21,000	1060	0.137	0.216	14,800	660	0.110	0.216
"	6	30,000	1,980	0.147	0.324	21,000	940	0.117	0.216	14,800	580	0.090	0.216
"	8	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
"	10	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
"	12	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
"	14	18,700	1,100	0.045	0.180	12,600	530	0.036	0.120	12,100	440	0.027	0.120
"	16	12,100	620	0.036	0.180	12,400	480	0.027	0.120	11,600	390	0.022	0.120
"	18	12,100	620	0.036	0.180	12,400	480	0.027	0.120	11,600	390	0.022	0.120
"	20	12,100	620	0.019	0.090	12,400	480	0.016	0.060	11,600	390	0.012	0.060
"	22	12,100	620	0.019	0.090	12,400	480	0.016	0.060	11,000	390	0.012	0.060
"	25	11,000	500	0.019	0.090	12,400	440	0.016	0.060	11,000	390	0.012	0.060
"	30	10,700	450	0.019	0.090	10,900	400	0.016	0.060	11,000	390	0.012	0.060
R 0.8	6	27,040	2,600	0.220	0.580	18,900	1200	0.180	0.390	1,650	760	0.150	0.390
"	8	26,000	1,970	0.157	0.324	18,900	940	0.126	0.216	13,800	580	0.102	0.216
"	12	25,000	1,490	0.112	0.180	15,100	700	0.090	0.120	11,500	440	0.072	0.120
"	16	17,600	110	0.046	0.144	12,300	530	0.036	0.096	11,400	440	0.030	0.096
"	20	11,000	630	0.036	0.090	11,500	480	0.030	0.060	10,900	400	0.024	0.060
R 0.9	6	32,000	2,600	0.230	0.021	18,400	1200	0.185	0.320	18,400	738	0.150	0.320
"	8	26,000	1,950	0.165	0.270	16,300	930	0.132	0.240	13,800	570	0.108	0.240
"	12	21,000	1,480	0.120	0.270	13,800	700	0.094	0.180	10,300	440	0.077	0.180
"	16	15,400	1,080	0.048	0.180	10,800	530	0.039	0.120	9,900	420	0.031	0.120
"	20	10,500	630	0.039	0.090	10,200	480	0.031	0.060	9,700	400	0.025	0.060
R 1	4	22,000	2,140	0.232	0.540	18,500	1260	0.185	0.360	13,200	960	0.150	0.360
"	6	22,000	2,140	0.232	0.540	18,500	1260	0.185	0.360	13,200	960	0.150	0.360
"	8	22,000	1,920	0.185	0.360	18,500	1120	0.147	0.240	13,200	870	0.120	0.240
"	10	22,000	1,920	0.185	0.360	18,500	1120	0.147	0.240	13,200	870	0.120	0.240
"	12	18,700	1,470	0.166	0.360	16,000	990	0.133	0.240	11,700	780	0.107	0.240
"	14	18,700	1,470	0.166	0.360	16,000	990	0.133	0.240	11,700	780	0.107	0.240
"	16	18,700	1,470	0.148	0.360	16,000	990	0.118	0.240	11,700	780	0.090	0.240
"	18	14,300	1,070	0.093	0.180	14,700	580	0.074	0.120	11,600	580	0.061	0.120
"	20	14,300	1,070	0.093	0.180	14,700	580	0.074	0.120	11,600	580	0.061	0.120
"	22	9,500	630	0.074	0.180	10,600	450	0.058	0.120	10,200	450	0.045	0.120
"	25	9,500	630	0.074	0.180	10,600	450	0.058	0.120	10,200	450	0.045	0.120
"	30	9,500	530	0.033	0.090	10,600	450	0.026	0.060	10,200	380	0.021	0.060
R 1.25	8	18,400	2,400	0.232	0.360	14,500	1400	0.185	0.240	9,700	1080	0.150	0.240
"	10	18,400	2,400	0.232	0.360	14,500	1400	0.185	0.240	9,700	1080	0.150	0.240
"	16	16,100	1,810	0.208	0.360	13,500	1230	0.166	0.240	8,400	980	0.135	0.240
"	20	11,500	1,330	0.116	0.180	10,200	950	0.093	0.120	8,400	980	0.074	0.120
"	25	6,900	770	0.093	0.180	8,400	540	0.074	0.120	8,400	560	0.061	0.120
"	30	6,900	770	0.040	0.090	8,400	540	0.033	0.060	8,400	560	0.026	0.060
R 1.5	6	15,000	2,890	0.278	0.540	12,900	1680	0.222	0.360	9,200	1300	0.180	0.360
"	8	15,000	2,890	0.278	0.540	12,900	1680	0.222	0.360	9,200	1300	0.180	0.360
"	10	15,000	2,600	0.278	0.540	12,900	1680	0.222	0.360	9,200	1300	0.180	0.360
"	12	15,000	2,600	0.278	0.540	12,900	1510	0.222	0.360	9,200	1170	0.180	0.360
"	16	12,700	1,970	0.029	0.504	11,300	1330	0.166	0.360	8,100	1040	0.135	0.360
"	20	12,700	1,970	0.029	0.504	11,300	1330	0.166	0.360	8,100	1040	0.135	0.360
"	25	10,100	1,450	0.139	0.270	8,800	1040	0.111	0.180	8,100	1040	0.090	0.180
"	30	10,100	1,450	0.139	0.270	8,800	780	0.111	0.180	8,100	780	0.090	0.180
"	35	6,600	840	0.073	0.270	7,900	620	0.055	0.180	7,500	650	0.045	0.180
"	40	6,600	840	0.073	0.270	7,900	620	0.055	0.180	7,500	520	0.045	0.180
"	45	4,500	500	0.040	0.270	6,200	500	0.035	0.100	7,000	450	0.023	0.180
R 2	8	11,500	2,710	0.370	0.900	9,700	1560	0.297	0.600	6,800	1210	0.241	0.600
"	10	11,500	2,710	0.370	0.900	9,700	1560	0.297	0.600	6,800	1210	0.241	0.600
"	12	11,500	2,710	0.390	0.900	9,700	1560	0.297	0.600	6,800	1210	0.241	0.600
"	16	11,500	2,710	0.390	0.900	9,700	1560	0.297	0.600	6,800	1210	0.241	0.600
"	20	11,500	2,710	0.390	0.900	9,700	1560	0.297	0.600	6,800	1210	0.241	0.600
"	25	10,300	1,850	0.279	0.540	8,400	1250	0.223	0.360	6,000	980	0.180	0.360
"	30	10,300	1,850	0.279	0.540	8,400	1250	0.223	0.360	6,000	980	0.180	0.361
"	35	7,500	1,360	0.185	0.540	6,600	950	0.148	0.360	6,000	700	0.120	0.360
"	40	7,500	1,360	0.185	0.540	6,600	950	0.148	0.360	6,000	700	0.120	0.360
"	45	5,000	780	0.093	0.360	5,900	470	0.074	0.240	5,600	490	0.060	0.240

피삭재 Material		합금강 Alloy Steels				프리하든강 Prehardened Steels				고경도강 Hardened Steels			
경도 Hardness		30 ~ 40HRC				40 ~ 50HRC				50 ~ 52HRC			
반경 Corner Radius	유효장 Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R 2.5	16	9,600	2,590	0.406	0.900	7,800	1350	0.324	0.800	5,600	1050	0.252	0.800
"	20	9,600	2,100	0.406	0.900	7,800	1240	0.324	0.600	5,600	950	0.252	0.600
"	25	9,600	2,100	0.406	0.900	7,800	1240	0.324	0.600	5,600	950	0.252	0.600
"	30	8,200	1,320	0.305	0.900	7,800	760	0.243	0.600	4,800	600	0.197	0.600
"	40	7,000	830	0.230	0.900	7,800	470	0.200	0.600	4,300	380	0.154	0.600
R 3	15	8,000	2,530	0.555	1.800	7,400	1670	0.443	1.200	5,200	1300	0.360	1.200
R 4	25	9,000	2,400	0.600	1.500	7,200	1200	0.500	1.000	5,200	920	0.350	1.000
R 5	30	7,800	1,300	0.300	0.900	6,800	720	0.230	0.600	4,600	570	0.190	0.570
R 6	30	7,410	1,235	0.285	0.855	6,350	684	0.210	0.570	4,370	541	0.181	0.550
절입량 Depth of Cut		 Ap : Axial Depth 축방향의절입깊이(mm) Ae : Radial Depth 반경방향의절입깊이(mm) D : Outside Diameter 외경(mm) n : Speed 회전속도 (min⁻¹) Vf : Feed 이송속도 (mm/min)											

- HRC52 이상 고경도강 가공시 52HRC 조건의 같은 직경 대비 상기 절삭조건의 20% DOWN 해주십시오.
- 유효장이 없는 절삭조건은 같은 직경에 더 짧은 유효장 대비 같은 비율로 DOWN 해주십시오.
- 유효장 길이가 긴 경우, RPM과 FEED를 동일 비율로 낮춰주세요.
- 에어브로 혹은 미스트 쿨러를 추천하며, 동가공시 습식 쿨러를 추천 합니다.
- 이 절삭 조건표는 절삭 조건의 참고 수치 입니다. 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망 합니다.
- 진동이 적고 강성이 좋은 공작기계 사용 요망 합니다 (Ø1이하 사용시 진동 허용 관리 5 μ m 이내 일것.)
- 칩 제거 주의 및 가공시 발열, 발화에 주의 하십시오.
- When milling workpiece HRC over 52 hardened steel , reduce 20% of the RPM and feed compared to the same diameter.
- If the effective length of your tool does not show above the table, use the shorten effective length of parameter and reduce the parameters in the same proportion.
- In case of long effective length, reduce the RPM and feed in same proportion.
- Air blow or oil mist is recommended for smooth chip emission, and dry milling is recommended for copper material.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Use a machine with low vibration and good rigidity (Ø1 or less, the vibration tolerance management should be within 5 μ m).
- During the chip evacuation, note for heat and ignition.

당신의스페셜은우리의표준품입니다.

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