

- 고정도강(HRC52~68), 프리하든강 계열의 고정밀 가공 엔드밀
- 고품량 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.
- 초미립자 초경합금(0.2 μ m)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.

• Endmills for pre-hardened and hardened steels(HRC52~68)

- Good wear resistance by high quality Si-based PVD coating.
- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.
- Outstanding performance at high speed machining by ultra fine (0.2 μ m) WC grade.



Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 3 \sim 12$	+0 ~ -0.01mm	$\varnothing D = \varnothing d$	$\varnothing 6 \sim 12$	-0.005 ~ -0.015mm

단위 : mm

Order Number	날경 Diameter D x R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고	Order Number	날경 Diameter D x R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
6JJCR 030 001 120	3 X R0.1	3	12	55	6		6JJCR 050 001 160	5 X R0.1	5	16	60	6	
6JJCR 030 001 160	3 X R0.1	3	16	60	6		6JJCR 050 001 200	5 X R0.1	5	20	65	6	
6JJCR 030 001 200	3 X R0.1	3	20	65	6		6JJCR 050 001 300	5 X R0.1	5	30	75	6	
6JJCR 030 001 250	3 X R0.1	3	25	70	6		6JJCR 050 002 160	5 X R0.2	5	16	60	6	
6JJCR 030 001 300	3 X R0.1	3	30	75	6		6JJCR 050 002 200	5 X R0.2	5	20	65	6	
6JJCR 030 002 120	3 X R0.2	3	12	55	6		6JJCR 050 002 300	5 X R0.2	5	30	75	6	
6JJCR 030 002 160	3 X R0.2	3	16	60	6		6JJCR 050 003 160	5 X R0.3	5	16	60	6	
6JJCR 030 002 200	3 X R0.2	3	20	65	6		6JJCR 050 003 200	5 X R0.3	5	20	65	6	
6JJCR 030 002 250	3 X R0.2	3	25	70	6		6JJCR 050 003 300	5 X R0.3	5	30	75	6	
6JJCR 030 002 300	3 X R0.2	3	30	75	6		6JJCR 050 005 160	5 X R0.5	5	16	60	6	
6JJCR 030 003 120	3 X R0.3	3	12	55	6		6JJCR 050 005 200	5 X R0.5	5	20	65	6	
6JJCR 030 003 160	3 X R0.3	3	16	60	6		6JJCR 050 005 300	5 X R0.5	5	30	75	6	
6JJCR 030 003 200	3 X R0.3	3	20	65	6		6JJCR 050 010 160	5 X R1	5	16	60	6	
6JJCR 030 003 250	3 X R0.3	3	25	70	6		6JJCR 050 010 200	5 X R1	5	20	65	6	
6JJCR 030 003 300	3 X R0.3	3	30	75	6		6JJCR 050 010 300	5 X R1	5	30	75	6	
6JJCR 030 005 120	3 X R0.5	3	12	55	6		6JJCR 060 001 210	6 X R0.1	6	21	60	6	
6JJCR 030 005 160	3 X R0.5	3	16	60	6		6JJCR 060 001 310	6 X R0.1	6	31	70	6	
6JJCR 030 005 200	3 X R0.5	3	20	65	6		6JJCR 060 001 410	6 X R0.1	6	41	80	6	
6JJCR 030 005 250	3 X R0.5	3	25	70	6		6JJCR 060 002 210	6 X R0.2	6	21	60	6	
6JJCR 030 005 300	3 X R0.5	3	30	75	6		6JJCR 060 002 310	6 X R0.2	6	31	70	6	
6JJCR 030 010 120	3 X R1	3	12	55	6		6JJCR 060 002 410	6 X R0.2	6	41	80	6	
6JJCR 030 010 160	3 X R1	3	16	60	6		6JJCR 060 003 210	6 X R0.3	6	21	60	6	
6JJCR 030 010 200	3 X R1	3	20	65	6		6JJCR 060 003 310	6 X R0.3	6	31	70	6	
6JJCR 030 010 250	3 X R1	3	25	70	6		6JJCR 060 003 410	6 X R0.3	6	41	80	6	
6JJCR 030 010 300	3 X R1	3	30	75	6		6JJCR 060 005 210	6 X R0.5	6	21	60	6	
6JJCR 040 001 120	4 X R0.1	4	12	55	6		6JJCR 060 005 310	6 X R0.5	6	31	70	6	
6JJCR 040 001 160	4 X R0.1	4	16	60	6		6JJCR 060 005 410	6 X R0.5	6	41	80	6	
6JJCR 040 001 200	4 X R0.1	4	20	65	6		6JJCR 060 010 210	6 X R1	6	21	60	6	
6JJCR 040 001 250	4 X R0.1	4	25	70	6		6JJCR 060 010 310	6 X R1	6	31	70	6	
6JJCR 040 001 300	4 X R0.1	4	30	75	6		6JJCR 060 010 410	6 X R1	6	41	80	6	
6JJCR 040 002 120	4 X R0.2	4	12	55	6		6JJCR 080 003 260	8 X R0.3	8	26	70	8	
6JJCR 040 002 160	4 X R0.2	4	16	60	6		6JJCR 080 003 360	8 X R0.3	8	36	80	8	
6JJCR 040 002 200	4 X R0.2	4	20	65	6		6JJCR 080 003 460	8 X R0.3	8	46	90	8	
6JJCR 040 002 250	4 X R0.2	4	25	70	6		6JJCR 080 005 260	8 X R0.5	8	26	70	8	
6JJCR 040 002 300	4 X R0.2	4	30	75	6		6JJCR 080 005 360	8 X R0.5	8	36	80	8	
6JJCR 040 003 120	4 X R0.3	4	12	55	6		6JJCR 080 005 460	8 X R0.5	8	46	90	8	
6JJCR 040 003 160	4 X R0.3	4	16	60	6		6JJCR 080 010 260	8 X R1	8	26	70	8	
6JJCR 040 003 200	4 X R0.3	4	20	65	6		6JJCR 080 010 360	8 X R1	8	36	80	8	
6JJCR 040 003 250	4 X R0.3	4	25	70	6		6JJCR 080 010 460	8 X R1	8	46	90	8	
6JJCR 040 003 300	4 X R0.3	4	30	75	6		6JJCR 100 003 310	10 X R0.3	10	31	80	10	
6JJCR 040 005 120	4 X R0.5	4	12	55	6		6JJCR 100 003 410	10 X R0.3	10	41	90	10	
6JJCR 040 005 160	4 X R0.5	4	16	60	6		6JJCR 100 003 510	10 X R0.3	10	51	100	10	
6JJCR 040 005 200	4 X R0.5	4	20	65	6		6JJCR 100 005 310	10 X R0.5	10	31	80	10	
6JJCR 040 005 250	4 X R0.5	4	25	70	6		6JJCR 100 005 410	10 X R0.5	10	41	90	10	
6JJCR 040 005 300	4 X R0.5	4	30	75	6		6JJCR 100 005 510	10 X R0.5	10	51	100	10	
6JJCR 040 010 120	4 X R1	4	12	55	6		6JJCR 100 010 310	10 X R1	10	31	80	10	
6JJCR 040 010 160	4 X R1	4	16	60	6		6JJCR 100 010 410	10 X R1	10	41	90	10	
6JJCR 040 010 200	4 X R1	4	20	65	6		6JJCR 100 010 510	10 X R1	10	51	100	10	
6JJCR 040 010 250	4 X R1	4	25	70	6		6JJCR 120 003 360	12 X R0.3	12	36	90	12	
6JJCR 040 010 300	4 X R1	4	30	75	6		6JJCR 120 003 460	12 X R0.3	12	46	100	12	



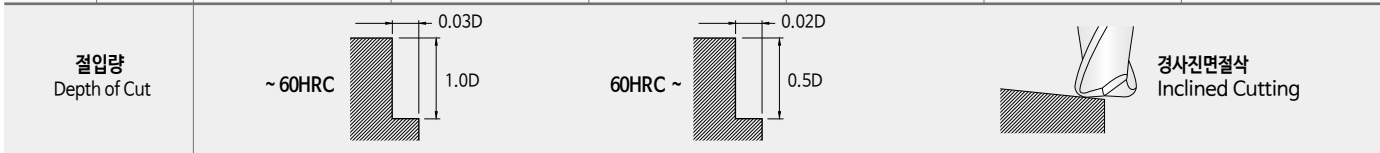
단위 : mm

Order Number	날경 Diameter D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Dia d	비고	Order Number	날경 Diameter D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Dia d	비고
6JJCR 120 003 560	12 X R0.3	12	56	110	12								
6JJCR 120 005 360	12 X R0.5	12	36	90	12								
6JJCR 120 005 460	12 X R0.5	12	46	100	12								
6JJCR 120 005 560	12 X R0.5	12	56	110	12								
6JJCR 120 010 360	12 X R1	12	36	90	12								
6JJCR 120 010 460	12 X R1	12	46	100	12								
6JJCR 120 010 560	12 X R1	12	56	110	12								

4JJCR/6JJCR/4JJTC

- 6JJCR은 RPM 동일, FEED만 최대 50% Up 적용.
- Use the same RPM and raise up the feed up to 50% for 6JJCR.

피삭재 Material		고경도강 Hardened Steels STAVAX/SKD11				열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61				열처리 / 고경도강 Heat-treated steels / Hardened Steels YXR7 / SKH51			
경도 Hardness		45 ~ 55Hrc				55 ~ 62Hrc				62 ~ 70Hrc			
외경 Outside Diameter	반경 Corner Radius	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
∅ 0.5	R 0.1	33,000	365	0.015	0.013	25,000	245	0.007	0.010	20,000	140	0.007	0.010
∅ 0.6	R 0.1	30,000	380	0.02	0.098	25,000	250	0.01	0.075	20,000	150	0.01	0.075
∅ 0.7	R 0.1	28,000	390	0.03	0.104	21,000	255	0.01	0.080	18,000	150	0.01	0.080
∅ 0.8	R 0.1	25,500	400	0.04	0.120	19,000	260	0.02	0.10	16,000	155	0.02	0.10
∅ 1	R 0.1	20,500	710	0.08	0.156	16,000	392	0.04	0.12	12,500	236	0.03	0.12
"	R 0.3	20,500	710	0.10	0.104	16,000	393	0.05	0.08	12,500	238	0.05	0.06
∅ 1.5	R 0.1	18,000	759	0.12	0.125	13,000	394	0.07	0.10	10,500	239	0.05	0.08
"	R 0.5	18,000	759	0.15	0.156	13,000	396	0.10	0.12	10,500	240	0.07	0.10
∅ 2	R 0.1	14,500	858	0.15	0.156	11,000	397	0.10	0.12	9,500	242	0.10	0.10
"	R 0.5	14,500	858	0.18	0.187	11,000	399	0.10	0.14	9,500	243	0.10	0.12
∅ 2.5	R 0.1	11,500	858	0.16	0.166	8,500	400	0.10	0.13	7,500	244	0.10	0.10
"	R 0.5	11,500	858	0.19	0.198	8,500	402	0.10	0.15	7,500	246	0.10	0.12
∅ 3	R 0.1	9,500	858	0.16	0.166	7,500	403	0.12	0.13	6,400	247	0.12	0.10
"	R 0.5	9,500	858	0.18	0.187	7,500	405	0.12	0.14	6,400	248	0.12	0.12
"	R 1	9,500	858	0.20	0.208	7,500	406	0.12	0.16	6,400	250	0.12	0.13
∅ 4	R 0.1	7,200	891	0.20	0.208	5,600	407	0.12	0.16	4,750	251	0.12	0.13
"	R 0.5	7,200	891	0.25	0.260	5,600	409	0.12	0.20	4,750	252	0.15	0.16
"	R 1	7,200	891	0.25	0.260	5,600	410	0.15	0.20	4,750	254	0.15	0.16
∅ 5	R 0.1	6,400	957	0.25	0.260	5,100	412	0.12	0.20	4,450	255	0.12	0.16
"	R 0.5	6,400	957	0.28	0.291	5,100	413	0.15	0.22	4,450	257	0.15	0.18
"	R 1	6,400	957	0.30	0.312	5,100	415	0.15	0.24	4,450	258	0.15	0.19
∅ 6	R 0.1	5,300	924	0.30	0.312	4,200	416	0.20	0.24	3,700	259	0.20	0.19
"	R 0.5	5,300	924	0.30	0.312	4,200	418	0.20	0.24	3,700	261	0.20	0.19
"	R 1	5,300	924	0.40	0.416	4,200	419	0.25	0.32	3,700	262	0.25	0.26
"	R 1.5	5,300	924	0.40	0.416	4,200	421	0.25	0.32	3,700	263	0.25	0.26
∅ 8	R 0.5	4,000	858	0.30	0.312	3,200	422	0.20	0.24	2,800	265	0.20	0.19
"	R 1	4,000	858	0.30	0.312	3,200	423	0.20	0.24	2,800	266	0.20	0.19
"	R 1.5	4,000	858	0.40	0.416	3,200	425	0.25	0.32	2,800	267	0.25	0.26
"	R 2	4,000	858	0.50	0.520	3,200	426	0.30	0.40	2,800	269	0.25	0.32
∅ 10	R 0.5	3,200	792	0.40	0.416	2,550	428	0.20	0.32	2,200	270	0.20	0.26
"	R 1	3,200	792	0.45	0.468	2,550	429	0.25	0.36	2,200	271	0.25	0.29
"	R 1.5	3,200	792	0.50	0.520	2,550	431	0.30	0.40	2,200	273	0.30	0.32
"	R 2	3,200	792	0.50	0.520	2,550	432	0.30	0.40	2,200	274	0.30	0.32
"	R 2.5	3,200	792	0.50	0.520	2,550	434	0.30	0.40	2,200	275	0.30	0.32
∅ 12	R 0.5	2,650	792	0.50	0.520	2,100	435	0.35	0.40	1,860	277	0.30	0.32
"	R 1	2,650	792	0.70	0.728	2,100	436	0.35	0.56	1,860	278	0.35	0.45
"	R 1.5	2,650	792	0.80	0.832	2,100	438	0.40	0.64	1,860	279	0.35	0.51
"	R 2	2,650	792	0.80	0.832	2,100	439	0.40	0.64	1,860	281	0.35	0.51
"	R 3	2,650	792	0.80	0.832	2,100	441	0.40	0.64	1,860	282	0.35	0.51



- 상기 조건표는 홈 절삭 조건표이며, 측면 절삭시 절입기준표를 참고바랍니다.
- HRC55 이하 피삭재 (합금강, 공구강) 가공시 같은 파이에 대비 상기 절삭조건 20% UP 해주십시오.
- 유효장이 긴 경우에는 회전수와 이송속도를 최대 30% 이하로 줄이십시오.
- 곡면 절삭시 날경의 코너R 보다 낮은 이동 PITCH를 설정 하십시오.
- 곡면 절삭시 안정적인 속도 내에서 피드를 최대 30%까지 UP 해주십시오.
- 6날시 회전수는 유지하고, 피드는 안정적인 속도 내에서 최대 50%까지 UP 해주십시오.
- Above the table is a reference for groove milling, and refer to the depth of cut for side milling.
- When milling workpiece, HRC below 55 (Alloy steel, tool steel), Raise up 20% RPM and feed compared to the same diameter.
- In case of long effective length, reduce the RPM and feed by 30% or less.
- For curved milling, use the lower value of pitch than corner radius value of tool diameter.
- For curved milling, raise up the feed up to 30% in stable condition.
- With 6flutes milling, raise up the feed up to 50% in stable condition.