

- 고경도강(HRc50~62), 프리하드강 계열의 고속 가공 엔드밀
- 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(0.2µm)을 채택, 고속절삭시 뛰어난 성능을 발휘합니다.
- Endmills for pre-hardened and hardened steels(HRc50~62)
- Good wear resistance by 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 (0.2µm) WC grade.

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UWC  
초미립자

TISIN  
Coating

R  
± 0.005

R  
± 0.01

R  
± 0.015

30°  
Helix Angle

CUTTING  
DATA

R0.02 ~ 0.5   R1 ~ 1.5   R2 ~ 3   434P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.8 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø4 ~ 12	-0.005 ~ -0.015mm

단위 : mm

Order Number	날경 D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고	Order Number	날경 D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
4CRE 008 0002 020	0.8 X R0.02	0.8	2	45	4		4CRE 010 002 080	1 X R0.2	1	8	45	4	
4CRE 008 0002 040	0.8 X R0.02	0.8	4	45	4		4CRE 010 002 100	1 X R0.2	1	10	50	4	
4CRE 008 0002 060	0.8 X R0.02	0.8	6	45	4		4CRE 010 002 120	1 X R0.2	1	12	50	4	
4CRE 008 0002 080	0.8 X R0.02	0.8	8	45	4		4CRE 010 002 140	1 X R0.2	1	14	50	4	
4CRE 008 0002 100	0.8 X R0.02	0.8	10	45	4		4CRE 010 002 160	1 X R0.2	1	16	50	4	
4CRE 008 0002 120	0.8 X R0.02	0.8	12	50	4		4CRE 010 002 200	1 X R0.2	1	20	50	4	
4CRE 008 0005 020	0.8 X R0.05	0.8	2	45	4		4CRE 010 002 250	1 X R0.2	1	25	60	4	
4CRE 008 0005 040	0.8 X R0.05	0.8	4	45	4		4CRE 010 002 300	1 X R0.2	1	30	70	4	
4CRE 008 0005 060	0.8 X R0.05	0.8	6	45	4		4CRE 010 003 040	1 X R0.3	1	4	45	4	
4CRE 008 0005 080	0.8 X R0.05	0.8	8	45	4		4CRE 010 003 060	1 X R0.3	1	6	45	4	
4CRE 008 0005 100	0.8 X R0.05	0.8	10	45	4		4CRE 010 003 080	1 X R0.3	1	8	45	4	
4CRE 008 0005 120	0.8 X R0.05	0.8	12	50	4		4CRE 010 003 100	1 X R0.3	1	10	50	4	
4CRE 008 001 020	0.8 X R0.1	0.8	2	45	4		4CRE 010 003 120	1 X R0.3	1	12	50	4	
4CRE 008 001 040	0.8 X R0.1	0.8	4	45	4		4CRE 010 003 140	1 X R0.3	1	14	50	4	
4CRE 008 001 060	0.8 X R0.1	0.8	6	45	4		4CRE 010 003 160	1 X R0.3	1	16	50	4	
4CRE 008 001 080	0.8 X R0.1	0.8	8	45	4		4CRE 010 003 200	1 X R0.3	1	20	50	4	
4CRE 008 001 100	0.8 X R0.1	0.8	10	45	4		4CRE 010 003 250	1 X R0.3	1	25	60	4	
4CRE 008 001 120	0.8 X R0.1	0.8	12	50	4		4CRE 010 003 300	1 X R0.3	1	30	70	4	
4CRE 010 0002 040	1 X R0.02	1	4	45	4		4CRE 012 0002 040	1.2 X R0.02	1.2	4	45	4	
4CRE 010 0002 060	1 X R0.02	1	6	45	4		4CRE 012 0002 060	1.2 X R0.02	1.2	6	45	4	
4CRE 010 0002 080	1 X R0.02	1	8	45	4		4CRE 012 0002 080	1.2 X R0.02	1.2	8	45	4	
4CRE 010 0002 100	1 X R0.02	1	10	50	4		4CRE 012 0002 100	1.2 X R0.02	1.2	10	50	4	
4CRE 010 0002 120	1 X R0.02	1	12	50	4		4CRE 012 0002 120	1.2 X R0.02	1.2	12	50	4	
4CRE 010 0002 140	1 X R0.02	1	14	50	4		4CRE 012 0002 140	1.2 X R0.02	1.2	14	50	4	
4CRE 010 0002 160	1 X R0.02	1	16	50	4		4CRE 012 0002 160	1.2 X R0.02	1.2	16	50	4	
4CRE 010 0002 200	1 X R0.02	1	20	50	4		4CRE 012 0002 200	1.2 X R0.02	1.2	20	50	4	
4CRE 010 0002 250	1 X R0.02	1	25	60	4		4CRE 012 0005 040	1.2 X R0.05	1.2	4	45	4	
4CRE 010 0002 300	1 X R0.02	1	30	70	4		4CRE 012 0005 060	1.2 X R0.05	1.2	6	45	4	
4CRE 010 0005 040	1 X R0.05	1	4	45	4		4CRE 012 0005 080	1.2 X R0.05	1.2	8	45	4	
4CRE 010 0005 060	1 X R0.05	1	6	45	4		4CRE 012 0005 100	1.2 X R0.05	1.2	10	50	4	
4CRE 010 0005 080	1 X R0.05	1	8	45	4		4CRE 012 0005 120	1.2 X R0.05	1.2	12	50	4	
4CRE 010 0005 100	1 X R0.05	1	10	50	4		4CRE 012 0005 140	1.2 X R0.05	1.2	14	50	4	
4CRE 010 0005 120	1 X R0.05	1	12	50	4		4CRE 012 0005 160	1.2 X R0.05	1.2	16	50	4	
4CRE 010 0005 140	1 X R0.05	1	14	50	4		4CRE 012 0005 200	1.2 X R0.05	1.2	20	50	4	
4CRE 010 0005 160	1 X R0.05	1	16	50	4		4CRE 012 001 040	1.2 X R0.1	1.2	4	45	4	
4CRE 010 0005 200	1 X R0.05	1	20	50	4		4CRE 012 001 060	1.2 X R0.1	1.2	6	45	4	
4CRE 010 0005 250	1 X R0.05	1	25	60	4		4CRE 012 001 080	1.2 X R0.1	1.2	8	45	4	
4CRE 010 0005 300	1 X R0.05	1	30	70	4		4CRE 012 001 100	1.2 X R0.1	1.2	10	50	4	
4CRE 010 001 040	1 X R0.1	1	4	45	4		4CRE 012 001 120	1.2 X R0.1	1.2	12	50	4	
4CRE 010 001 060	1 X R0.1	1	6	45	4		4CRE 012 001 140	1.2 X R0.1	1.2	14	50	4	
4CRE 010 001 080	1 X R0.1	1	8	45	4		4CRE 012 001 160	1.2 X R0.1	1.2	16	50	4	
4CRE 010 001 100	1 X R0.1	1	10	50	4		4CRE 012 001 200	1.2 X R0.1	1.2	20	50	4	
4CRE 010 001 120	1 X R0.1	1	12	50	4		4CRE 012 002 040	1.2 X R0.2	1.2	4	45	4	
4CRE 010 001 140	1 X R0.1	1	14	50	4		4CRE 012 002 060	1.2 X R0.2	1.2	6	45	4	
4CRE 010 001 160	1 X R0.1	1	16	50	4		4CRE 012 002 080	1.2 X R0.2	1.2	8	45	4	
4CRE 010 001 200	1 X R0.1	1	20	50	4		4CRE 012 002 100	1.2 X R0.2	1.2	10	50	4	
4CRE 010 001 250	1 X R0.1	1	25	60	4		4CRE 012 002 120	1.2 X R0.2	1.2	12	50	4	
4CRE 010 001 300	1 X R0.1	1	30	70	4		4CRE 012 002 140	1.2 X R0.2	1.2	14	50	4	
4CRE 010 002 040	1 X R0.2	1	4	45	4		4CRE 012 002 160	1.2 X R0.2	1.2	16	50	4	
4CRE 010 002 060	1 X R0.2	1	6	45	4		4CRE 012 002 200	1.2 X R0.2	1.2	20	50	4	

단위 : mm

Order Number	날경 Diameter D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d	비고	Order Number	날경 Diameter D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d	비고
4CRE 012 003 040	1.2 X R0.3	1.2	4	45	4		4CRE 020 0002 100	2 X R0.02	2	10	50	4	
4CRE 012 003 060	1.2 X R0.3	1.2	6	45	4		4CRE 020 0002 120	2 X R0.02	2	12	50	4	
4CRE 012 003 080	1.2 X R0.3	1.2	8	45	4		4CRE 020 0002 140	2 X R0.02	2	14	50	4	
4CRE 012 003 100	1.2 X R0.3	1.2	10	50	4		4CRE 020 0002 160	2 X R0.02	2	16	50	4	
4CRE 012 003 120	1.2 X R0.3	1.2	12	50	4		4CRE 020 0002 180	2 X R0.02	2	18	50	4	
4CRE 012 003 140	1.2 X R0.3	1.2	14	50	4		4CRE 020 0002 200	2 X R0.02	2	20	50	4	
4CRE 012 003 160	1.2 X R0.3	1.2	16	50	4		4CRE 020 0002 220	2 X R0.02	2	22	60	4	
4CRE 012 003 200	1.2 X R0.3	1.2	20	50	4		4CRE 020 0002 250	2 X R0.02	2	25	60	4	
4CRE 015 0002 060	1.5 X R0.02	1.5	6	45	4		4CRE 020 0002 300	2 X R0.02	2	30	70	4	
4CRE 015 0002 080	1.5 X R0.02	1.5	8	45	4		4CRE 020 0002 350	2 X R0.02	2	35	70	4	
4CRE 015 0002 100	1.5 X R0.02	1.5	10	50	4		4CRE 020 0005 060	2 X R0.05	2	6	45	4	
4CRE 015 0002 120	1.5 X R0.02	1.5	12	50	4		4CRE 020 0005 080	2 X R0.05	2	8	45	4	
4CRE 015 0002 140	1.5 X R0.02	1.5	14	50	4		4CRE 020 0005 100	2 X R0.05	2	10	50	4	
4CRE 015 0002 160	1.5 X R0.02	1.5	16	50	4		4CRE 020 0005 120	2 X R0.05	2	12	50	4	
4CRE 015 0002 200	1.5 X R0.02	1.5	20	50	4		4CRE 020 0005 140	2 X R0.05	2	14	50	4	
4CRE 015 0002 220	1.5 X R0.02	1.5	22	60	4		4CRE 020 0005 160	2 X R0.05	2	16	50	4	
4CRE 015 0002 250	1.5 X R0.02	1.5	25	60	4		4CRE 020 0005 180	2 X R0.05	2	18	50	4	
4CRE 015 0005 060	1.5 X R0.05	1.5	6	45	4		4CRE 020 0005 200	2 X R0.05	2	20	50	4	
4CRE 015 0005 080	1.5 X R0.05	1.5	8	45	4		4CRE 020 0005 220	2 X R0.05	2	22	60	4	
4CRE 015 0005 100	1.5 X R0.05	1.5	10	50	4		4CRE 020 0005 250	2 X R0.05	2	25	60	4	
4CRE 015 0005 120	1.5 X R0.05	1.5	12	50	4		4CRE 020 0005 300	2 X R0.05	2	30	70	4	
4CRE 015 0005 140	1.5 X R0.05	1.5	14	50	4		4CRE 020 0005 350	2 X R0.05	2	35	70	4	
4CRE 015 0005 160	1.5 X R0.05	1.5	16	50	4		4CRE 020 001 060	2 X R0.1	2	6	45	4	
4CRE 015 0005 200	1.5 X R0.05	1.5	20	50	4		4CRE 020 001 080	2 X R0.1	2	8	45	4	
4CRE 015 0005 220	1.5 X R0.05	1.5	22	60	4		4CRE 020 001 100	2 X R0.1	2	10	50	4	
4CRE 015 0005 250	1.5 X R0.05	1.5	25	60	4		4CRE 020 001 120	2 X R0.1	2	12	50	4	
4CRE 015 001 060	1.5 X R0.1	1.5	6	45	4		4CRE 020 001 140	2 X R0.1	2	14	50	4	
4CRE 015 001 080	1.5 X R0.1	1.5	8	45	4		4CRE 020 001 160	2 X R0.1	2	16	50	4	
4CRE 015 001 100	1.5 X R0.1	1.5	10	50	4		4CRE 020 001 180	2 X R0.1	2	18	50	4	
4CRE 015 001 120	1.5 X R0.1	1.5	12	50	4		4CRE 020 001 200	2 X R0.1	2	20	50	4	
4CRE 015 001 140	1.5 X R0.1	1.5	14	50	4		4CRE 020 001 220	2 X R0.1	2	22	60	4	
4CRE 015 001 160	1.5 X R0.1	1.5	16	50	4		4CRE 020 001 250	2 X R0.1	2	25	60	4	
4CRE 015 001 200	1.5 X R0.1	1.5	20	50	4		4CRE 020 001 300	2 X R0.1	2	30	70	4	
4CRE 015 001 220	1.5 X R0.1	1.5	22	60	4		4CRE 020 001 350	2 X R0.1	2	35	70	4	
4CRE 015 001 250	1.5 X R0.1	1.5	25	60	4		4CRE 020 002 060	2 X R0.2	2	6	45	4	
4CRE 015 002 060	1.5 X R0.2	1.5	6	45	4		4CRE 020 002 080	2 X R0.2	2	8	45	4	
4CRE 015 002 080	1.5 X R0.2	1.5	8	45	4		4CRE 020 002 100	2 X R0.2	2	10	50	4	
4CRE 015 002 100	1.5 X R0.2	1.5	10	50	4		4CRE 020 002 120	2 X R0.2	2	12	50	4	
4CRE 015 002 120	1.5 X R0.2	1.5	12	50	4		4CRE 020 002 140	2 X R0.2	2	14	50	4	
4CRE 015 002 140	1.5 X R0.2	1.5	14	50	4		4CRE 020 002 160	2 X R0.2	2	16	50	4	
4CRE 015 002 160	1.5 X R0.2	1.5	16	50	4		4CRE 020 002 180	2 X R0.2	2	18	50	4	
4CRE 015 002 200	1.5 X R0.2	1.5	20	50	4		4CRE 020 002 200	2 X R0.2	2	20	50	4	
4CRE 015 002 220	1.5 X R0.2	1.5	22	60	4		4CRE 020 002 220	2 X R0.2	2	22	60	4	
4CRE 015 002 250	1.5 X R0.2	1.5	25	60	4		4CRE 020 002 250	2 X R0.2	2	25	60	4	
4CRE 015 003 060	1.5 X R0.3	1.5	6	45	4		4CRE 020 002 300	2 X R0.2	2	30	70	4	
4CRE 015 003 080	1.5 X R0.3	1.5	8	45	4		4CRE 020 002 350	2 X R0.2	2	35	70	4	
4CRE 015 003 100	1.5 X R0.3	1.5	10	50	4		4CRE 020 003 060	2 X R0.3	2	6	45	4	
4CRE 015 003 120	1.5 X R0.3	1.5	12	50	4		4CRE 020 003 080	2 X R0.3	2	8	45	4	
4CRE 015 003 140	1.5 X R0.3	1.5	14	50	4		4CRE 020 003 100	2 X R0.3	2	10	50	4	
4CRE 015 003 160	1.5 X R0.3	1.5	16	50	4		4CRE 020 003 120	2 X R0.3	2	12	50	4	
4CRE 015 003 200	1.5 X R0.3	1.5	20	50	4		4CRE 020 003 140	2 X R0.3	2	14	50	4	
4CRE 015 003 220	1.5 X R0.3	1.5	22	60	4		4CRE 020 003 160	2 X R0.3	2	16	50	4	
4CRE 015 003 250	1.5 X R0.3	1.5	25	60	4		4CRE 020 003 180	2 X R0.3	2	18	50	4	
4CRE 015 005 060	1.5 X R0.5	1.5	6	45	4		4CRE 020 003 200	2 X R0.3	2	20	50	4	
4CRE 015 005 080	1.5 X R0.5	1.5	8	45	4		4CRE 020 003 220	2 X R0.3	2	22	60	4	
4CRE 015 005 100	1.5 X R0.5	1.5	10	50	4		4CRE 020 003 250	2 X R0.3	2	25	60	4	
4CRE 015 005 120	1.5 X R0.5	1.5	12	50	4		4CRE 020 003 300	2 X R0.3	2	30	70	4	
4CRE 015 005 140	1.5 X R0.5	1.5	14	50	4		4CRE 020 003 350	2 X R0.3	2	35	70	4	
4CRE 015 005 160	1.5 X R0.5	1.5	16	50	4		4CRE 020 005 060	2 X R0.5	2	6	45	4	
4CRE 015 005 200	1.5 X R0.5	1.5	20	50	4		4CRE 020 005 080	2 X R0.5	2	8	45	4	
4CRE 015 005 220	1.5 X R0.5	1.5	22	60	4		4CRE 020 005 100	2 X R0.5	2	10	50	4	
4CRE 015 005 250	1.5 X R0.5	1.5	25	60	4		4CRE 020 005 120	2 X R0.5	2	12	50	4	
4CRE 020 0002 060	2 X R0.02	2	6	45	4		4CRE 020 005 140	2 X R0.5	2	14	50	4	
4CRE 020 0002 080	2 X R0.02	2	8	45	4		4CRE 020 005 160	2 X R0.5	2	16	50	4	

HARD series

단위 : mm

HARD series

Order Number	날경 Diameter D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고	Order Number	날경 Diameter D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
4CRE 020 005 180	2 X R0.5	2	18	50	4		4CRE 030 005 400	3 X R0.5	3	40	80	6	
4CRE 020 005 200	2 X R0.5	2	20	50	4		4CRE 030 005 500	3 X R0.5	3	50	100	6	
4CRE 020 005 220	2 X R0.5	2	22	60	4		4CRE 030 005 600	3 X R0.5	3	60	110	6	
4CRE 020 005 250	2 X R0.5	2	25	60	4		4CRE 030 010 100	3 X R1	3	10	50	6	
4CRE 020 005 300	2 X R0.5	2	30	70	4		4CRE 030 010 120	3 X R1	3	12	50	6	
4CRE 020 005 350	2 X R0.5	2	35	70	4		4CRE 030 010 160	3 X R1	3	16	55	6	
4CRE 025 001 100	2.5 X R0.1	2.5	10	50	4		4CRE 030 010 200	3 X R1	3	20	60	6	
4CRE 025 001 120	2.5 X R0.1	2.5	12	50	4		4CRE 030 010 250	3 X R1	3	25	65	6	
4CRE 025 001 160	2.5 X R0.1	2.5	16	50	4		4CRE 030 010 300	3 X R1	3	30	70	6	
4CRE 025 001 200	2.5 X R0.1	2.5	20	50	4		4CRE 030 010 350	3 X R1	3	35	75	6	
4CRE 025 001 250	2.5 X R0.1	2.5	25	60	4		4CRE 030 010 400	3 X R1	3	40	80	6	
4CRE 025 001 300	2.5 X R0.1	2.5	30	70	4		4CRE 030 010 500	3 X R1	3	50	100	6	
4CRE 025 002 100	2.5 X R0.2	2.5	10	50	4		4CRE 030 010 600	3 X R1	3	60	110	6	
4CRE 025 002 120	2.5 X R0.2	2.5	12	50	4		4CRE 040 001 050	4 X R0.1	4	12	50	4	
4CRE 025 002 160	2.5 X R0.2	2.5	16	50	4		4CRE 040 001 070	4 X R0.1	4	20	70	4	
4CRE 025 002 200	2.5 X R0.2	2.5	20	50	4		4CRE 040 001 130	4 X R0.1	4	13	55	6	
4CRE 025 002 250	2.5 X R0.2	2.5	25	60	4		4CRE 040 001 160	4 X R0.1	4	16	55	6	
4CRE 025 002 300	2.5 X R0.2	2.5	30	70	4		4CRE 040 001 200	4 X R0.1	4	20	60	6	
4CRE 025 003 100	2.5 X R0.3	2.5	10	50	4		4CRE 040 001 250	4 X R0.1	4	25	65	6	
4CRE 025 003 120	2.5 X R0.3	2.5	12	50	4		4CRE 040 001 300	4 X R0.1	4	30	70	6	
4CRE 025 003 160	2.5 X R0.3	2.5	16	50	4		4CRE 040 001 350	4 X R0.1	4	35	75	6	
4CRE 025 003 200	2.5 X R0.3	2.5	20	50	4		4CRE 040 001 400	4 X R0.1	4	40	80	6	
4CRE 025 003 250	2.5 X R0.3	2.5	25	60	4		4CRE 040 001 450	4 X R0.1	4	45	90	6	
4CRE 025 003 300	2.5 X R0.3	2.5	30	70	4		4CRE 040 001 500	4 X R0.1	4	50	100	6	
4CRE 025 005 100	2.5 X R0.5	2.5	10	50	4		4CRE 040 001 600	4 X R0.1	4	60	110	6	
4CRE 025 005 120	2.5 X R0.5	2.5	12	50	4		4CRE 040 002 050	4 X R0.2	4	12	50	4	
4CRE 025 005 160	2.5 X R0.5	2.5	16	50	4		4CRE 040 002 070	4 X R0.2	4	20	70	4	
4CRE 025 005 200	2.5 X R0.5	2.5	20	50	4		4CRE 040 002 130	4 X R0.2	4	13	55	6	
4CRE 025 005 250	2.5 X R0.5	2.5	25	60	4		4CRE 040 002 160	4 X R0.2	4	16	55	6	
4CRE 025 005 300	2.5 X R0.5	2.5	30	70	4		4CRE 040 002 200	4 X R0.2	4	20	60	6	
4CRE 030 001 100	3 X R0.1	3	10	50	6		4CRE 040 002 250	4 X R0.2	4	25	65	6	
4CRE 030 001 120	3 X R0.1	3	12	50	6		4CRE 040 002 300	4 X R0.2	4	30	70	6	
4CRE 030 001 160	3 X R0.1	3	16	55	6		4CRE 040 002 350	4 X R0.2	4	35	75	6	
4CRE 030 001 200	3 X R0.1	3	20	60	6		4CRE 040 002 400	4 X R0.2	4	40	80	6	
4CRE 030 001 250	3 X R0.1	3	25	65	6		4CRE 040 002 450	4 X R0.2	4	45	90	6	
4CRE 030 001 300	3 X R0.1	3	30	70	6		4CRE 040 002 500	4 X R0.2	4	50	100	6	
4CRE 030 001 350	3 X R0.1	3	35	75	6		4CRE 040 002 600	4 X R0.2	4	60	110	6	
4CRE 030 001 400	3 X R0.1	3	40	80	6		4CRE 040 003 050	4 X R0.3	4	12	50	4	
4CRE 030 001 500	3 X R0.1	3	50	100	6		4CRE 040 003 070	4 X R0.3	4	20	70	4	
4CRE 030 002 100	3 X R0.2	3	10	50	6		4CRE 040 003 130	4 X R0.3	4	13	55	6	
4CRE 030 002 120	3 X R0.2	3	12	50	6		4CRE 040 003 160	4 X R0.3	4	16	55	6	
4CRE 030 002 160	3 X R0.2	3	16	55	6		4CRE 040 003 200	4 X R0.3	4	20	60	6	
4CRE 030 002 200	3 X R0.2	3	20	60	6		4CRE 040 003 250	4 X R0.3	4	25	65	6	
4CRE 030 002 250	3 X R0.2	3	25	65	6		4CRE 040 003 300	4 X R0.3	4	30	70	6	
4CRE 030 002 300	3 X R0.2	3	30	70	6		4CRE 040 003 350	4 X R0.3	4	35	75	6	
4CRE 030 002 350	3 X R0.2	3	35	75	6		4CRE 040 003 400	4 X R0.3	4	40	80	6	
4CRE 030 002 400	3 X R0.2	3	40	80	6		4CRE 040 003 450	4 X R0.3	4	45	90	6	
4CRE 030 002 500	3 X R0.2	3	50	100	6		4CRE 040 003 500	4 X R0.3	4	50	100	6	
4CRE 030 003 100	3 X R0.3	3	10	50	6		4CRE 040 003 600	4 X R0.3	4	60	110	6	
4CRE 030 003 120	3 X R0.3	3	12	50	6		4CRE 040 005 050	4 X R0.5	4	12	50	4	
4CRE 030 003 160	3 X R0.3	3	16	55	6		4CRE 040 005 070	4 X R0.5	4	20	70	4	
4CRE 030 003 200	3 X R0.3	3	20	60	6		4CRE 040 005 130	4 X R0.5	4	13	55	6	
4CRE 030 003 250	3 X R0.3	3	25	65	6		4CRE 040 005 160	4 X R0.5	4	16	55	6	
4CRE 030 003 300	3 X R0.3	3	30	70	6		4CRE 040 005 200	4 X R0.5	4	20	60	6	
4CRE 030 003 350	3 X R0.3	3	35	75	6		4CRE 040 005 250	4 X R0.5	4	25	65	6	
4CRE 030 003 400	3 X R0.3	3	40	80	6		4CRE 040 005 300	4 X R0.5	4	30	70	6	
4CRE 030 003 500	3 X R0.3	3	50	100	6		4CRE 040 005 350	4 X R0.5	4	35	75	6	
4CRE 030 005 100	3 X R0.5	3	10	50	6		4CRE 040 005 400	4 X R0.5	4	40	80	6	
4CRE 030 005 120	3 X R0.5	3	12	50	6		4CRE 040 005 450	4 X R0.5	4	45	90	6	
4CRE 030 005 160	3 X R0.5	3	16	55	6		4CRE 040 005 500	4 X R0.5	4	50	100	6	
4CRE 030 005 200	3 X R0.5	3	20	60	6		4CRE 040 005 600	4 X R0.5	4	60	110	6	
4CRE 030 005 250	3 X R0.5	3	25	65	6		4CRE 040 010 050	4 X R1	4	12	50	4	
4CRE 030 005 300	3 X R0.5	3	30	70	6		4CRE 040 010 070	4 X R1	4	20	70	4	
4CRE 030 005 350	3 X R0.5	3	35	75	6		4CRE 040 010 130	4 X R1	4	13	55	6	

단위 : mm

Order Number	날경 D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Dia d	비고	Order Number	날경 D×R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Dia d	비고
4CRE 040 010 160	4 X R1	4	16	55	6		4CRE 080 020 220	8 X R2	9	22	65	8	
4CRE 040 010 200	4 X R1	4	20	60	6		4CRE 080 020 400	8 X R2	9	40	100	8	
4CRE 040 010 250	4 X R1	4	25	65	6		4CRE 100 002 240	10 X R0.2	11	24	70	10	
4CRE 040 010 300	4 X R1	4	30	70	6		4CRE 100 002 400	10 X R0.2	11	40	100	10	
4CRE 040 010 350	4 X R1	4	35	75	6		4CRE 100 003 240	10 X R0.3	11	24	70	10	
4CRE 040 010 400	4 X R1	4	40	80	6		4CRE 100 003 400	10 X R0.3	11	40	100	10	
4CRE 040 010 450	4 X R1	4	45	90	6		4CRE 100 005 240	10 X R0.5	11	24	70	10	
4CRE 040 010 500	4 X R1	4	50	100	6		4CRE 100 005 400	10 X R0.5	11	40	100	10	
4CRE 040 010 600	4 X R1	4	60	110	6		4CRE 100 005 600	10 X R0.5	11	60	120	10	
4CRE 050 001 160	5 X R0.1	5	16	60	6		4CRE 100 010 240	10 X R1	11	24	70	10	
4CRE 050 001 300	5 X R0.1	5	30	70	6		4CRE 100 010 400	10 X R1	11	40	100	10	
4CRE 050 001 400	5 X R0.1	5	40	80	6		4CRE 100 010 600	10 X R1	11	60	120	10	
4CRE 050 001 500	5 X R0.1	5	50	100	6		4CRE 100 015 240	10 X R1.5	11	24	70	10	
4CRE 050 002 160	5 X R0.2	5	16	60	6		4CRE 100 015 400	10 X R1.5	11	40	100	10	
4CRE 050 002 300	5 X R0.2	5	30	70	6		4CRE 100 020 240	10 X R2	11	24	70	10	
4CRE 050 002 400	5 X R0.2	5	40	80	6		4CRE 100 020 400	10 X R2	11	40	100	10	
4CRE 050 002 500	5 X R0.2	5	50	100	6		4CRE 100 025 240	10 X R2.5	11	24	70	10	
4CRE 050 003 160	5 X R0.3	5	16	60	6		4CRE 120 003 260	12 X R0.3	13	26	80	12	
4CRE 050 003 300	5 X R0.3	5	30	70	6		4CRE 120 005 260	12 X R0.5	13	26	80	12	
4CRE 050 003 400	5 X R0.3	5	40	80	6		4CRE 120 005 400	12 X R0.5	13	40	110	12	
4CRE 050 003 500	5 X R0.3	5	50	100	6		4CRE 120 005 600	12 X R0.5	13	60	130	12	
4CRE 050 005 160	5 X R0.5	5	16	60	6		4CRE 120 010 260	12 X R1	13	26	80	12	
4CRE 050 005 300	5 X R0.5	5	30	70	6		4CRE 120 010 400	12 X R1	13	40	110	12	
4CRE 050 005 400	5 X R0.5	5	40	80	6		4CRE 120 010 600	12 X R1	13	60	130	12	
4CRE 050 005 500	5 X R0.5	5	50	100	6		4CRE 120 015 260	12 X R1.5	13	26	80	12	
4CRE 050 005 600	5 X R0.5	5	60	110	6		4CRE 120 015 400	12 X R1.5	13	40	110	12	
4CRE 050 010 160	5 X R1	5	16	60	6		4CRE 120 020 260	12 X R2	13	26	80	12	
4CRE 050 010 300	5 X R1	5	30	70	6		4CRE 120 020 400	12 X R2	13	40	110	12	
4CRE 050 010 400	5 X R1	5	40	80	6		4CRE 120 030 260	12 X R3	13	26	80	12	
4CRE 050 010 500	5 X R1	5	50	100	6								
4CRE 050 010 600	5 X R1	5	60	110	6								
4CRE 060 001 200	6 X R0.1	7	20	60	6								
4CRE 060 001 400	6 X R0.1	7	40	80	6								
4CRE 060 001 500	6 X R0.1	7	50	100	6								
4CRE 060 002 200	6 X R0.2	7	20	60	6								
4CRE 060 002 400	6 X R0.2	7	40	80	6								
4CRE 060 002 500	6 X R0.2	7	50	100	6								
4CRE 060 002 600	6 X R0.2	7	60	110	6								
4CRE 060 003 200	6 X R0.3	7	20	60	6								
4CRE 060 003 400	6 X R0.3	7	40	80	6								
4CRE 060 003 500	6 X R0.3	7	50	100	6								
4CRE 060 005 200	6 X R0.5	7	20	60	6								
4CRE 060 005 400	6 X R0.5	7	40	80	6								
4CRE 060 005 500	6 X R0.5	7	50	100	6								
4CRE 060 005 600	6 X R0.5	7	60	110	6								
4CRE 060 010 200	6 X R1	7	20	60	6								
4CRE 060 010 400	6 X R1	7	40	80	6								
4CRE 060 010 500	6 X R1	7	50	100	6								
4CRE 060 010 600	6 X R1	7	60	110	6								
4CRE 060 015 200	6 X R1.5	7	20	60	6								
4CRE 060 015 400	6 X R1.5	7	40	80	6								
4CRE 060 015 500	6 X R1.5	7	50	100	6								
4CRE 080 002 220	8 X R0.2	9	22	65	8								
4CRE 080 002 400	8 X R0.2	9	40	100	8								
4CRE 080 003 220	8 X R0.3	9	22	65	8								
4CRE 080 003 400	8 X R0.3	9	40	100	8								
4CRE 080 005 220	8 X R0.5	9	22	65	8								
4CRE 080 005 400	8 X R0.5	9	40	100	8								
4CRE 080 005 600	8 X R0.5	9	60	120	8								
4CRE 080 010 220	8 X R1	9	22	65	8								
4CRE 080 010 400	8 X R1	9	40	100	8								
4CRE 080 010 600	8 X R1	9	60	120	8								
4CRE 080 015 220	8 X R1.5	9	22	65	8								
4CRE 080 015 400	8 X R1.5	9	40	100	8								

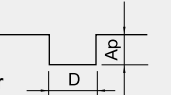
HARD series

피삭재 Material		합금강 / 프리하든강 Alloy Steels / Prehardened Steels NAK80/KP4M				고경도강 Hardened Steels STAVAX/SKD11			
경도 Hardness		40 ~ 45HRC				45 ~ 55HRC			
외경 Outside Diameter	유효장 Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
∅ 1	4	13,455	1,265	0.038	0.264	11,730	1,046	0.030	0.238
"	10	8,625	495	0.011	0.123	7,475	495	0.009	0.098
∅ 1.2	4	12,880	1,380	0.031	0.440	11,730	1,070	0.023	0.293
"	10	8,855	782	0.017	0.176	7,130	587	0.009	0.147
∅ 1.5	6	11,385	1,265	0.040	0.475	10,350	1,150	0.037	0.435
"	12	9,280	817	0.028	0.317	6,790	759	0.025	0.290
∅ 2	6	12,650	1,265	0.063	0.713	11,730	1,173	0.059	0.633
"	12	9,970	1,012	0.045	0.396	8,280	943	0.043	0.396
∅ 2.5	10	10,580	1,380	0.065	0.528	9,775	1,150	0.065	0.528
"	20	8,160	1,150	0.047	0.264	7,845	655	0.030	0.220
∅ 3	10	11,040	2,070	0.094	0.684	10,235	2,070	0.059	0.684
"	20	7,340	1,495	0.057	0.567	6,230	1,495	0.035	0.567
∅ 4	13	9,085	1,576	0.105	1.150	7,590	1,530	0.082	1.150
"	20	7,130	1,380	0.069	0.920	5,980	1,288	0.054	0.920
"	30	6,325	1,104	0.043	0.745	5,290	1,058	0.033	0.745
∅ 6	20	5,635	1,691	0.176	2.305	3,335	978	0.176	1.281
"	40	2,875	782	0.098	1.320	1,610	460	0.098	0.733
∅ 8	22	4,600	1,840	0.212	2.921	2,760	782	0.212	1.518
∅ 10	24	3,680	2,013	0.253	3.140	2,185	621	0.242	1.645
∅ 12	26	2,875	2,070	0.276	3.105	1,725	495	0.265	1.714

**절입량**  
Depth of Cut


Slotting

- Ap : Axial Depth
- D : Outside Diameter

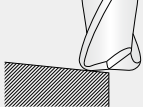


Side Milling

- Ap : Axial Depth
- Ae : Radial Depth



경사진면절삭  
Inclined Cutting



- HRC62 이상인 경우 같은 직경의 같은 비율로 20% DOWN 시켜주십시오.
- 유효장이 긴 경우에는 회전수와 이송 속도를 최대30% 이하로 줄이십시오.
- Ae값 설정시 코너R 치수를 고려해 주십시오.
- 곡면 절삭시 날경의 코너R 보다 낮은 이동 PITCH를 설정 하십시오.
- 곡면 절삭시 안정적인 속도 내에서 피드를 최대 30%까지 UP 해주십시오.
- When milling workpiece HRC over 62, reduce 20% of the RPM and feed with the same diameter.
- If the effective length is long, reduce the RPM and feed maximum 30%.
- Consider the corner radius value when you set up the Ae value.
- For curved milling, set up the lower value of the pitch than the corner radius value of tool diameter.
- For curved milling, raise up the feed up to 30% in stable milling condition.