

- 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 steels, carbon steels, mold steels

- 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.

E series

2

WC
미립자

BLUE
Coating

R
± 0.005

R
± 0.01

30°
Helix Angle

CUTTING
DATA

0.1 ~ 2.5R 3 ~ 6R 440P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.2 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø6 ~ 12	-0.005 ~ -0.015mm

단위 : mm

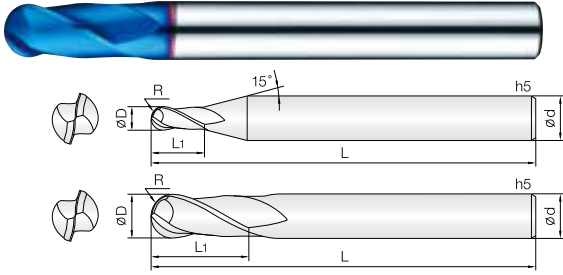
Order Number	날경 Diameter R × D	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
2HRBE 002 005 S04	0.1R X 0.2	0.2	0.5	40	4	
2HRBE 002 010 S04	0.1R X 0.2	0.2	1	40	4	
2HRBE 002 015 S04	0.1R X 0.2	0.2	1.5	40	4	
2HRBE 002 020 S04	0.1R X 0.2	0.2	2	40	4	
2HRBE 003 010 S04	0.15R X 0.3	0.3	1	40	4	
2HRBE 003 015 S04	0.15R X 0.3	0.3	1.5	40	4	
2HRBE 003 020 S04	0.15R X 0.3	0.3	2	40	4	
2HRBE 003 030 S04	0.15R X 0.3	0.3	3	40	4	
2HRBE 003 040 S04	0.15R X 0.3	0.3	4	40	4	
2HRBE 004 010 S04	0.2R X 0.4	0.4	1	40	4	
2HRBE 004 020 S04	0.2R X 0.4	0.4	2	40	4	
2HRBE 004 030 S04	0.2R X 0.4	0.4	3	40	4	
2HRBE 004 040 S04	0.2R X 0.4	0.4	4	40	4	
2HRBE 004 050 S04	0.2R X 0.4	0.4	5	40	4	
2HRBE 004 060 S04	0.2R X 0.4	0.4	6	40	4	
2HRBE 004 080 S04	0.2R X 0.4	0.4	8	40	4	
2HRBE 005 010 S04	0.25R X 0.5	0.5	1	45	4	
2HRBE 005 020 S04	0.25R X 0.5	0.5	2	45	4	
2HRBE 005 030 S04	0.25R X 0.5	0.5	3	45	4	
2HRBE 005 040 S04	0.25R X 0.5	0.5	4	45	4	
2HRBE 005 050 S04	0.25R X 0.5	0.5	5	45	4	
2HRBE 005 060 S04	0.25R X 0.5	0.5	6	45	4	
2HRBE 005 080 S04	0.25R X 0.5	0.5	8	45	4	
2HRBE 005 100 S04	0.25R X 0.5	0.5	10	45	4	
2HRBE 005 120 S04	0.25R X 0.5	0.5	12	45	4	
2HRBE 006 010 S04	0.3R X 0.6	0.6	1	45	4	
2HRBE 006 020 S04	0.3R X 0.6	0.6	2	45	4	
2HRBE 006 030 S04	0.3R X 0.6	0.6	3	45	4	
2HRBE 006 040 S04	0.3R X 0.6	0.6	4	45	4	
2HRBE 006 050 S04	0.3R X 0.6	0.6	5	45	4	
2HRBE 006 060 S04	0.3R X 0.6	0.6	6	45	4	
2HRBE 006 080 S04	0.3R X 0.6	0.6	8	45	4	
2HRBE 006 100 S04	0.3R X 0.6	0.6	10	45	4	
2HRBE 006 120 S04	0.3R X 0.6	0.6	12	45	4	
2HRBE 006 140 S04	0.3R X 0.6	0.6	14	45	4	
2HRBE 007 020 S04	0.35R X 0.7	0.7	2	45	4	
2HRBE 007 040 S04	0.35R X 0.7	0.7	4	45	4	
2HRBE 007 060 S04	0.35R X 0.7	0.7	6	45	4	
2HRBE 007 080 S04	0.35R X 0.7	0.7	8	45	4	
2HRBE 007 100 S04	0.35R X 0.7	0.7	10	45	4	
2HRBE 007 120 S04	0.35R X 0.7	0.7	12	45	4	
2HRBE 008 020 S04	0.4R X 0.8	0.8	2	45	4	
2HRBE 008 030 S04	0.4R X 0.8	0.8	3	45	4	
2HRBE 008 040 S04	0.4R X 0.8	0.8	4	45	4	
2HRBE 008 050 S04	0.4R X 0.8	0.8	5	45	4	
2HRBE 008 060 S04	0.4R X 0.8	0.8	6	45	4	
2HRBE 008 080 S04	0.4R X 0.8	0.8	8	45	4	
2HRBE 008 100 S04	0.4R X 0.8	0.8	10	45	4	
2HRBE 008 120 S04	0.4R X 0.8	0.8	12	45	4	
2HRBE 009 040 S04	0.45R X 0.9	0.9	4	45	4	

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

2날 강력 절삭용 볼 엔드밀



- 중저경도강(HRc52이하), 프리하든강 계열, 탄소강, 금형강등 다양한 피삭재 가공 엔드밀
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- 경제적인 가격으로 가공 생산비 절감을 극대화합니다.
- 항절삭력이 높은 미립자 초경합금(0.5 μ m)을 채택, 엔드밀의 파손을 최소화 하였습니다.

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- Maximize the manufacturing cost saving with low price of products.
- Minimize fracturing by high TRS fine(0.5 μ m) WC grade.

E series

2

WC
미립자

BLUE
Coating

R
± 0.005

R
± 0.01

R
± 0.015

30°
Helix Angle

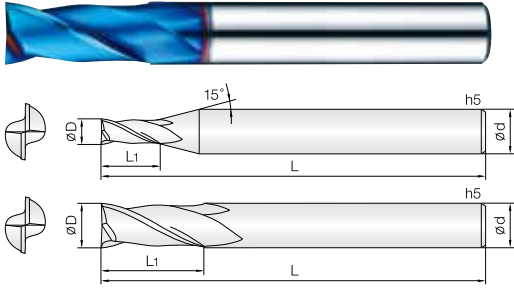
CUTTING
DATA

0.1 ~ 2.5R
3 ~ 6R
8R
443P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 0.2 \sim 16$	$+0 \sim -0.01\text{mm}$	$\varnothing D = \varnothing d$	$\varnothing 4 \sim 12$	$-0.005 \sim -0.015\text{mm}$
				$\varnothing 16$	$-0.01 \sim -0.02\text{mm}$

단위 : mm

Order Number	날경 Diameter R × D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고	Order Number	날경 Diameter R × D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2HCBE 002 004 S04	0.1R X 0.2	0.4	40	4							
2HCBE 003 006 S04	0.15R X 0.3	0.6	40	4							
2HCBE 004 008 S04	0.2R X 0.4	0.8	40	4							
2HCBE 005 010 S04	0.25R X 0.5	1	45	4							
2HCBE 006 012 S04	0.3R X 0.6	1.2	45	4							
2HCBE 007 014 S04	0.35R X 0.7	1.4	45	4							
2HCBE 008 016 S04	0.4R X 0.8	1.6	45	4							
2HCBE 009 018 S04	0.45R X 0.9	1.8	45	4							
2HCBE 010 025 S04	0.5R X 1	2.5	50	4							
2HCBE 010 025 S06	0.5R X 1	2.5	50	6							
2HCBE 012 030 S04	0.6R X 1.2	3	50	4							
2HCBE 015 040 S04	0.75R X 1.5	4	50	4							
2HCBE 015 040 S06	0.75R X 1.5	4	50	6							
2HCBE 020 050 S04	1R X 2	5	50	4							
2HCBE 020 050 S06	1R X 2	5	50	6							
2HCBE 025 050 S04	1.25R X 2.5	5	50	4							
2HCBE 025 050 S06	1.25R X 2.5	5	50	6							
2HCBE 030 060 S04	1.5R X 3	6	50	4							
2HCBE 030 060 S06	1.5R X 3	6	50	6							
2HCBE 030 060 060	1.5R X 3	6	60	6							
2HCBE 040 080 S04	2R X 4	8	50	4							
2HCBE 040 080 080	2R X 4	8	80	4							
2HCBE 040 080 S06	2R X 4	8	50	6							
2HCBE 040 080 070	2R X 4	8	70	6							
2HCBE 050 100 S06	2.5R X 5	10	50	6							
2HCBE 050 120 S06	2.5R X 5	12	80	6							
2HCBE 060 100 050	3R X 6	10	50	6							
2HCBE 060 100 060	3R X 6	10	60	6							
2HCBE 060 120 080	3R X 6	12	80	6							
2HCBE 060 120 100	3R X 6	12	100	6							
2HCBE 080 120 060	4R X 8	12	60	8							
2HCBE 080 140 080	4R X 8	14	80	8							
2HCBE 080 140 100	4R X 8	14	100	8							
2HCBE 100 150 075	5R X 10	15	75	10							
2HCBE 100 180 100	5R X 10	18	100	10							
2HCBE 120 180 080	6R X 12	18	80	12							
2HCBE 120 220 110	6R X 12	22	110	12							
2HCBE 160 300 110	8R X 16	30	110	16							



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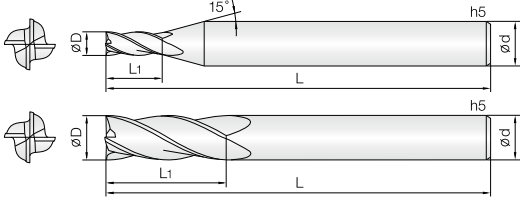
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Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 0.2 \sim 6$	+0 ~ -0.01mm	$\varnothing D = \varnothing d$	$\varnothing 4 \sim 6$	-0.005 ~ -0.015mm
	$\varnothing 8 \sim 16$	+0 ~ -0.015mm		$\varnothing 8 \sim 12$	-0.01 ~ -0.025mm
		$\varnothing 16$		-0.015 ~ -0.03mm	

단위 : mm

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고	Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2HCEE 002 004 S04	0.2	0.4	40	4							
2HCEE 003 006 S04	0.3	0.6	40	4							
2HCEE 004 008 S04	0.4	0.8	40	4							
2HCEE 005 010 S04	0.5	1	40	4							
2HCEE 006 012 S04	0.6	1.2	40	4							
2HCEE 007 014 S04	0.7	1.4	40	4							
2HCEE 008 016 S04	0.8	1.6	40	4							
2HCEE 009 018 S04	0.9	1.8	40	4							
2HCEE 010 025 S04	1	2.5	45	4							
2HCEE 012 030 S04	1.2	3	45	4							
2HCEE 015 040 S04	1.5	4	45	4							
2HCEE 020 060 S04	2	6	45	4							
2HCEE 025 080 S04	2.5	8	45	4							
2HCEE 030 080 S04	3	8	50	4							
2HCEE 030 080 S06	3	8	50	6							
2HCEE 040 110 S04	4	11	50	4							
2HCEE 040 110 S06	4	11	50	6							
2HCEE 050 130 S06	5	13	50	6							
2HCEE 060 130 050	6	13	50	6							
2HCEE 060 160 055	6	16	55	6							
2HCEE 080 200 060	8	20	60	8							
2HCEE 080 240 070	8	24	70	8							
2HCEE 100 220 070	10	22	70	10							
2HCEE 100 250 075	10	25	75	10							
2HCEE 120 260 075	12	26	75	12							
2HCEE 120 300 080	12	30	80	12							
2HCEE 160 400 090	16	40	90	16							



- 중저경도강 (HRC52이하), 프리하든강 계열, 탄소강, 금형강등 다양한 피삭재 가공 엔드밀
- 고품질 실리콘계 코팅 (Si) 처리하여 내마모성이 우수합니다.
- 넓은 영역의 피삭재 가공에 적합한 형상으로 설계 하였습니다.
- 경제적인 가격으로 가공 생산비 절감을 극대화합니다.
- 항절삭력이 높은 미립자 초경합금 (0.5 μ m) 을 채택, 엔드밀의 파손을 최소화 하였습니다.

Endmills for various work materials (~HRC52), pre-hardened steels, carbon steels, mold steels

- Good wear resistance by high quality Si-based PVD coating.
- Suitable shape is designed for tooling in wide areas.
- Maximize the manufacturing cost saving with low price of products.
- Minimize fracturing by high TRS fine (0.5 μ m) WC grade.

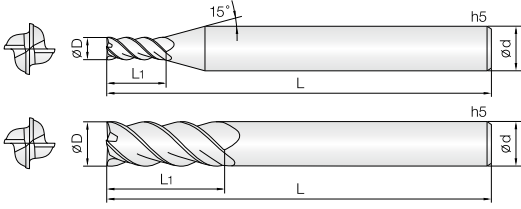
Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 1 \sim 6$	+0 ~ -0.01mm	$\varnothing D = \varnothing d$	$\varnothing 4 \sim 6$	-0.005 ~ -0.015mm
	$\varnothing 8 \sim 16$	+0 ~ -0.015mm		$\varnothing 8 \sim 12$	-0.01 ~ -0.025mm
		$\varnothing 16$		-0.015 ~ -0.03mm	

단위 : mm

4
WC 미립자
BLUE Coating
30° Helix Angle
Shield Edge
CUTTING DATA
444P

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Dia d	비고
4HCEE 010 025 S04	1	2.5	45	4	
4HCEE 015 040 S04	1.5	4	45	4	
4HCEE 020 060 S04	2	6	45	4	
4HCEE 025 080 S04	2.5	8	45	4	
4HCEE 025 080 S06	2.5	8	45	6	
4HCEE 025 120 S06	2.5	12	50	6	
4HCEE 030 080 S04	3	8	50	4	
4HCEE 030 080 S06	3	8	50	6	
4HCEE 040 110 S04	4	11	50	4	
4HCEE 040 110 S06	4	11	50	6	
4HCEE 050 130 S06	5	13	50	6	
4HCEE 060 130 050	6	13	50	6	
4HCEE 060 160 055	6	16	55	6	
4HCEE 080 200 060	8	20	60	8	
4HCEE 080 240 070	8	24	70	8	
4HCEE 100 220 070	10	22	70	10	
4HCEE 100 250 075	10	25	75	10	
4HCEE 120 260 075	12	26	75	12	
4HCEE 120 300 080	12	30	80	12	
4HCEE 160 400 090	16	40	90	16	

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	생크 Dia d	비고



- 중저경도강(HRc52이하), 프리하든강 계열, 탄소강, 금형강등 다양한 피삭재 가공 엔드밀
- 고탍량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 넓은 영역의 피삭재 가공에 적합한 형상으로 설계 하였습니다.
- 45° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 적합합니다.
- 항절력이 높은 미립자 초경합금(0.5 μ m)을 채택, 엔드밀의 파손을 최소화 하였습니다.
- Endmills for various work materials(~HRc52), pre-hardened steels, carbon steels, mold steels
- Good wear resistance by high quality Si-based PVD coating.
- Suitable shape is designed for tooling in wide areas.
- 45° degree helix design for high speed, feed condition.
- Minimize fracturing by high TRS fine(0.5 μ m) WC grade.

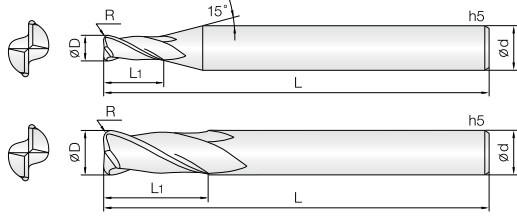


Shield Edge 446P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\phi D \neq \phi d$	$\phi 1 \sim 6$	+0 ~ -0.01mm	$\phi D = \phi d$	$\phi 6$	-0.005 ~ -0.015mm
	$\phi 8 \sim 16$	+0 ~ -0.015mm		$\phi 8 \sim 12$	-0.01 ~ -0.025mm
		$\phi 14 \sim 16$		-0.015 ~ -0.03mm	

단위 : mm

Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	샤프트 Shank Dia d	비고	Order Number	날경 Diameter D	날장 Length of cut L1	전장 Overall Length L	샤프트 Shank Dia d	비고
4HEME 010 025 S04	1	2.5	40	4							
4HEME 010 025 S06	1	2.5	40	6							
4HEME 010 035 S04	1	3.5	40	4							
4HEME 010 035 S06	1	3.5	40	6							
4HEME 012 030 S04	1.2	3	40	4							
4HEME 012 030 S06	1.2	3	40	6							
4HEME 015 040 S04	1.5	4	40	4							
4HEME 015 060 S04	1.5	6	40	4							
4HEME 015 060 S06	1.5	6	40	6							
4HEME 020 050 S04	2	5	40	4							
4HEME 020 080 S04	2	8	40	4							
4HEME 020 080 S06	2	8	45	6							
4HEME 030 080 S06	3	8	45	6							
4HEME 030 120 S06	3	12	50	6							
4HEME 040 110 S06	4	11	45	6							
4HEME 040 160 S06	4	16	55	6							
4HEME 050 130 S06	5	13	50	6							
4HEME 050 180 S06	5	18	60	6							
4HEME 060 130 S06	6	13	50	6							
4HEME 060 200 S06	6	20	60	6							
4HEME 080 200 S08	8	20	60	8							
4HEME 080 250 S08	8	25	70	8							
4HEME 080 300 S08	8	30	75	8							
4HEME 100 220 S10	10	22	70	10							
4HEME 100 300 S10	10	30	80	10							
4HEME 100 400 S10	10	40	90	10							
4HEME 120 260 S12	12	26	75	12							
4HEME 120 400 S12	12	40	90	12							
4HEME 120 500 S12	12	50	100	12							
4HEME 140 300 S14	14	30	80	14							
4HEME 140 500 S14	14	50	110	14							
4HEME 160 350 S16	16	35	90	16							
4HEME 160 500 S16	16	50	110	16							



- 중저경도강 (HRc52이하), 프리하든강 계열, 탄소강, 금형강, SUS계열, Ti/Ni계 합금, 인코넬 등 다양한 피삭재 가공 엔드밀
- 고함량 실리콘계 코팅 (Si) 처리하여 내마모성이 우수합니다.
- 코너R 형상을 날부치평이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.
- 경제적인 가격으로 가공 생산비 절감을 극대화합니다.
- 항절삭력이 높은 미립자 초경합금 (0.5µm)을 채택, 엔드밀의 파손을 최소화 하였습니다.

• Endmills for various work materials (~HRc52), pre-hardened steels, carbon steels, mold steels

- Good wear resistance by high quality Si-based PVD coating.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.
- Maximize the manufacturing cost saving with low price of products.
- Minimize fracturing by high TRS fine (0.5µm) WC grade.

E series

2

WC
미립자

BLUE
Coating

R
± 0.005

R
± 0.01

R
± 0.015

30°
Helix Angle

CUTTING
DATA

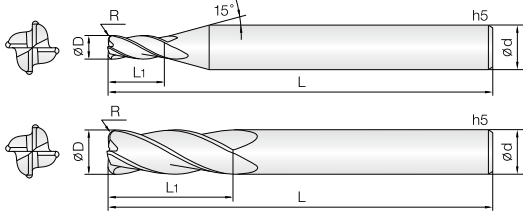
0.1 ~ 0.5R 1 ~ 1.5R 2R 447P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø1 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø4 ~ 12	-0.005 ~ -0.015mm

단위 : mm

Order Number	날경 Diameter D × R	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2NCRE 010 001 S04	1 X R0.1	3	50	4	
2NCRE 010 002 S04	1 X R0.2	3	50	4	
2NCRE 010 003 S04	1 X R0.3	3	50	4	
2NCRE 012 001 S04	1.2 X R0.1	4	50	4	
2NCRE 012 002 S04	1.2 X R0.2	4	50	4	
2NCRE 012 003 S04	1.2 X R0.3	4	50	4	
2NCRE 015 001 S04	1.5 X R0.1	4	50	4	
2NCRE 015 002 S04	1.5 X R0.2	4	50	4	
2NCRE 015 003 S04	1.5 X R0.3	4	50	4	
2NCRE 015 005 S04	1.5 X R0.5	4	50	4	
2NCRE 020 001 S04	2 X R0.1	6	50	4	
2NCRE 020 002 S04	2 X R0.2	6	50	4	
2NCRE 020 003 S04	2 X R0.3	6	50	4	
2NCRE 020 005 S04	2 X R0.5	6	50	4	
2NCRE 025 001 S04	2.5 X R0.1	6	50	4	
2NCRE 025 002 S04	2.5 X R0.2	6	50	4	
2NCRE 025 003 S04	2.5 X R0.3	6	50	4	
2NCRE 025 005 S04	2.5 X R0.5	6	50	4	
2NCRE 030 001 S06	3 X R0.1	8	60	6	
2NCRE 030 002 S06	3 X R0.2	8	60	6	
2NCRE 030 003 S06	3 X R0.3	8	60	6	
2NCRE 030 005 S06	3 X R0.5	8	60	6	
2NCRE 030 010 S06	3 X R1	8	60	6	
2NCRE 040 001 S04	4 X R0.1	10	50	4	
2NCRE 040 001 S06	4 X R0.1	10	70	6	
2NCRE 040 002 S04	4 X R0.2	10	50	4	
2NCRE 040 002 S06	4 X R0.2	10	70	6	
2NCRE 040 003 S04	4 X R0.3	10	50	4	
2NCRE 040 003 S06	4 X R0.3	10	70	6	
2NCRE 040 005 S04	4 X R0.5	10	50	4	
2NCRE 040 005 S06	4 X R0.5	10	70	6	
2NCRE 040 010 S04	4 X R1	10	50	4	
2NCRE 040 010 S06	4 X R1	10	70	6	
2NCRE 050 001 S06	5 X R0.1	13	75	6	
2NCRE 050 002 S06	5 X R0.2	13	75	6	
2NCRE 050 003 S06	5 X R0.3	13	75	6	
2NCRE 050 005 S06	5 X R0.5	13	75	6	
2NCRE 050 010 S06	5 X R1	13	75	6	
2NCRE 060 002 080	6 X R0.2	13	80	6	
2NCRE 060 003 080	6 X R0.3	13	80	6	
2NCRE 060 005 080	6 X R0.5	13	80	6	
2NCRE 060 010 080	6 X R1	13	80	6	
2NCRE 080 003 090	8 X R0.3	19	90	8	
2NCRE 080 005 090	8 X R0.5	19	90	8	
2NCRE 080 010 090	8 X R1	19	90	8	
2NCRE 100 003 100	10 X R0.3	22	100	10	
2NCRE 100 005 100	10 X R0.5	22	100	10	
2NCRE 100 010 100	10 X R1	22	100	10	
2NCRE 120 003 110	12 X R0.3	26	110	12	
2NCRE 120 005 110	12 X R0.5	26	110	12	

Order Number	날경 Diameter D × R	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
2NCRE 120 010 110	12 X R1	26	110	12	
2NCRE 120 020 110	12 X R2	26	110	12	



- 중저경도강 (HRC52이하), 프리하드강 계열, 탄소강, 금형강, SUS계열, Ti/Ni계 합금, 인코넬 등 다양한 피삭재 가공 엔드밀
- 고품량 실리코네 코팅 (Si) 처리하여 내마모성이 우수합니다.
- 코너R 형상을 날부치평이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.
- 경제적인 가격으로 가공 생산비 절감을 극대화합니다.
- 항절력이 높은 미립자 초경합금 (0.5µm)을 채택, 엔드밀의 파손을 최소화 하였습니다.

Endmills for various work materials (~HRC52), pre-hardened steels, carbon steels, mold steels

- Good wear resistance by high quality Si-based PVD coating.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.
- Maximize the manufacturing cost saving with low price of products.
- Minimize fracturing by high TRS fine (0.5µm) WC grade.

4

WC
미립자

BLUE
Coating

R
± 0.005

R
± 0.01

R
± 0.015

30°
Helix Angle

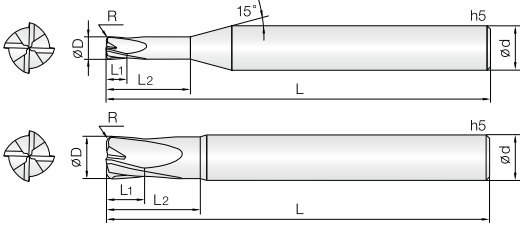
CUTTING
DATA

0.1 ~ 0.5R 1 ~ 1.5R 2R 447P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø1 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø4 ~ 12	-0.005 ~ -0.015mm

단위 : mm

Order Number	날경 Diameter D × R	날장 Length of cut L1	전장 Overall Length L	샤프크 Shank Dia d	비고	Order Number	날경 Diameter D × R	날장 Length of cut L1	전장 Overall Length L	샤프크 Shank Dia d	비고
4NCRE 010 001 S04	1 X R0.1	3	50	4		4NCRE 050 002 S06	5 X R0.2	10	50	6	
4NCRE 010 002 S04	1 X R0.2	3	50	4		4NCRE 050 002 075	5 X R0.2	13	75	6	
4NCRE 010 003 S04	1 X R0.3	3	50	4		4NCRE 050 003 S06	5 X R0.3	10	50	6	
4NCRE 012 001 S04	1.2 X R0.1	4	50	4		4NCRE 050 003 075	5 X R0.3	13	75	6	
4NCRE 012 002 S04	1.2 X R0.2	4	50	4		4NCRE 050 005 S06	5 X R0.5	10	50	6	
4NCRE 012 003 S04	1.2 X R0.3	4	50	4		4NCRE 050 005 075	5 X R0.5	13	75	6	
4NCRE 015 001 S04	1.5 X R0.1	4	50	4		4NCRE 050 010 S06	5 X R1	10	50	6	
4NCRE 015 002 S04	1.5 X R0.2	4	50	4		4NCRE 050 010 075	5 X R1	13	75	6	
4NCRE 015 003 S04	1.5 X R0.3	4	50	4		4NCRE 060 001 050	6 X R0.1	10	50	6	
4NCRE 015 005 S04	1.5 X R0.5	4	50	4		4NCRE 060 001 080	6 X R0.1	13	80	6	
4NCRE 020 001 S04	2 X R0.1	6	50	4		4NCRE 060 002 050	6 X R0.2	10	50	6	
4NCRE 020 002 S04	2 X R0.2	6	50	4		4NCRE 060 002 080	6 X R0.2	13	80	6	
4NCRE 020 003 S04	2 X R0.3	6	50	4		4NCRE 060 003 050	6 X R0.3	10	50	6	
4NCRE 020 005 S04	2 X R0.5	6	50	4		4NCRE 060 003 080	6 X R0.3	13	80	6	
4NCRE 025 001 S04	2.5 X R0.1	6	50	4		4NCRE 060 005 050	6 X R0.5	10	50	6	
4NCRE 025 002 S04	2.5 X R0.2	6	50	4		4NCRE 060 005 080	6 X R0.5	13	80	6	
4NCRE 025 003 S04	2.5 X R0.3	6	50	4		4NCRE 060 010 050	6 X R1	10	50	6	
4NCRE 025 005 S04	2.5 X R0.5	6	50	4		4NCRE 060 010 080	6 X R1	13	80	6	
4NCRE 030 001 S04	3 X R0.1	8	50	4		4NCRE 080 002 060	8 X R0.2	16	60	8	
4NCRE 030 001 S06	3 X R0.1	8	50	6		4NCRE 080 002 090	8 X R0.2	19	90	8	
4NCRE 030 001 060	3 X R0.1	8	60	6		4NCRE 080 003 060	8 X R0.3	16	60	8	
4NCRE 030 002 S04	3 X R0.2	8	50	4		4NCRE 080 003 090	8 X R0.3	19	90	8	
4NCRE 030 002 S06	3 X R0.2	8	50	6		4NCRE 080 005 060	8 X R0.5	16	60	8	
4NCRE 030 002 060	3 X R0.2	8	60	6		4NCRE 080 005 090	8 X R0.5	19	90	8	
4NCRE 030 003 S04	3 X R0.3	8	50	4		4NCRE 080 010 060	8 X R1	16	60	8	
4NCRE 030 003 S06	3 X R0.3	8	50	6		4NCRE 080 010 090	8 X R1	19	90	8	
4NCRE 030 003 060	3 X R0.3	8	60	6		4NCRE 080 020 060	8 X R2	16	60	8	
4NCRE 030 005 S04	3 X R0.5	8	50	4		4NCRE 080 020 090	8 X R2	19	90	8	
4NCRE 030 005 S06	3 X R0.5	8	50	6		4NCRE 100 002 075	10 X R0.2	18	75	10	
4NCRE 030 005 060	3 X R0.5	8	60	6		4NCRE 100 002 100	10 X R0.2	22	100	10	
4NCRE 030 010 S04	3 X R1	8	50	4		4NCRE 100 003 075	10 X R0.3	18	75	10	
4NCRE 030 010 S06	3 X R1	8	50	6		4NCRE 100 003 100	10 X R0.3	22	100	10	
4NCRE 030 010 060	3 X R1	8	60	6		4NCRE 100 005 075	10 X R0.5	18	75	10	
4NCRE 040 001 S04	4 X R0.1	10	50	4		4NCRE 100 005 100	10 X R0.5	22	100	10	
4NCRE 040 001 S06	4 X R0.1	10	50	6		4NCRE 100 010 075	10 X R1	18	75	10	
4NCRE 040 001 070	4 X R0.1	10	70	6		4NCRE 100 010 100	10 X R1	22	100	10	
4NCRE 040 002 S04	4 X R0.2	10	50	4		4NCRE 100 020 075	10 X R2	18	75	10	
4NCRE 040 002 S06	4 X R0.2	10	50	6		4NCRE 100 020 100	10 X R2	22	100	10	
4NCRE 040 002 070	4 X R0.2	10	70	6		4NCRE 120 002 075	12 X R0.2	22	75	12	
4NCRE 040 003 S04	4 X R0.3	10	50	4		4NCRE 120 002 110	12 X R0.2	26	110	12	
4NCRE 040 003 S06	4 X R0.3	10	50	6		4NCRE 120 003 075	12 X R0.3	22	75	12	
4NCRE 040 003 070	4 X R0.3	10	70	6		4NCRE 120 003 110	12 X R0.3	26	110	12	
4NCRE 040 005 S04	4 X R0.5	10	50	4		4NCRE 120 005 075	12 X R0.5	22	75	12	
4NCRE 040 005 S06	4 X R0.5	10	50	6		4NCRE 120 005 110	12 X R0.5	26	110	12	
4NCRE 040 005 070	4 X R0.5	10	70	6		4NCRE 120 010 075	12 X R1	22	75	12	
4NCRE 040 010 S04	4 X R1	10	50	4		4NCRE 120 010 110	12 X R1	26	110	12	
4NCRE 040 010 S06	4 X R1	10	50	6		4NCRE 120 020 075	12 X R2	22	75	12	
4NCRE 040 010 070	4 X R1	10	70	6		4NCRE 120 020 110	12 X R2	26	110	12	
4NCRE 050 001 S06	5 X R0.1	10	50	6							
4NCRE 050 001 075	5 X R0.1	13	75	6							



- 중저경도강(HRc52이하), 프리하든강 계열, 탄소강, 금형강 등 가공
- 고품질 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 저속 RPM에서 고이송 작업이 가능 하도록 설계하였습니다.
- 종삭 및 황삭 가공시 작업 효율이 극대화 됩니다.
- 항절력이 높은 미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Endmills for various work materials (~HRc52), pre-hardened steels, carbon steels, mold steels

- Good wear resistance by high quality Si-based PVD coating.
- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.

E series

4

WC
미립자

BLUE
Coating

R
± 0.005

R
± 0.01

R
± 0.015

15°
Helix Angle

CUTTING
DATA

0.2 ~ 0.5R 1 ~ 1.5R 2 ~ 3R 448P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø1 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø6 ~ 12	-0.005 ~ -0.015mm

단위 : mm

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
4RCUE 010 002 025	1 X R0.2	0.75	2.5	50	4								
4RCUE 015 005 040	1.5 X R0.5	1.2	4	50	4								
4RCUE 020 005 060	2 X R0.5	1.5	6	50	6								
4RCUE 030 005 080	3 X R0.5	2.3	8	50	6								
4RCUE 040 005 120	4 X R0.5	3	12	60	6								
4RCUE 040 005 160	4 X R0.5	3	16	60	6								
4RCUE 040 010 120	4 X R1	3	12	60	6								
4RCUE 040 010 160	4 X R1	3	16	60	6								
4RCUE 050 005 150	5 X R0.5	4	15	60	6								
4RCUE 050 010 150	5 X R1	4	15	60	6								
4RCUE 060 005 150	6 X R0.5	4.5	15	60	6								
4RCUE 060 005 250	6 X R0.5	4.5	25	80	6								
4RCUE 060 010 150	6 X R1	4.5	15	60	6								
4RCUE 060 010 250	6 X R1	4.5	25	80	6								
4RCUE 060 015 150	6 X R1.5	4.5	15	60	6								
4RCUE 060 015 250	6 X R1.5	4.5	25	80	6								
4RCUE 080 005 200	8 X R0.5	6	20	60	8								
4RCUE 080 005 300	8 X R0.5	6	30	90	8								
4RCUE 080 010 200	8 X R1	6	20	60	8								
4RCUE 080 010 300	8 X R1	6	30	90	8								
4RCUE 080 020 200	8 X R2	6	20	60	8								
4RCUE 080 020 300	8 X R2	6	30	90	8								
4RCUE 100 005 250	10 X R0.5	7.5	25	70	10								
4RCUE 100 005 400	10 X R0.5	7.5	40	100	10								
4RCUE 100 010 250	10 X R1	7.5	25	70	10								
4RCUE 100 010 400	10 X R1	7.5	40	100	10								
4RCUE 100 020 250	10 X R2	7.5	25	70	10								
4RCUE 100 020 400	10 X R2	7.5	40	100	10								
4RCUE 120 005 300	12 X R0.5	9	30	80	12								
4RCUE 120 005 400	12 X R0.5	9	40	100	12								
4RCUE 120 010 300	12 X R1	9	30	80	12								
4RCUE 120 010 400	12 X R1	9	40	100	12								
4RCUE 120 020 300	12 X R2	9	30	80	12								
4RCUE 120 020 400	12 X R2	9	40	100	12								
4RCUE 120 030 300	12 X R3	9	30	80	12								