

- **중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀**
- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내마모성 또한 향상 됩니다.
- 두드러진 볼방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.
- 4날 적용과 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.

- **Mid-low hardened steels (~HRC42), Mild steels, Cast irons, SUS**
- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch Ball design and helix enable decrease of chattering.
- 4flutes and deep pocket enable chip evacuation and increase surface roughness.



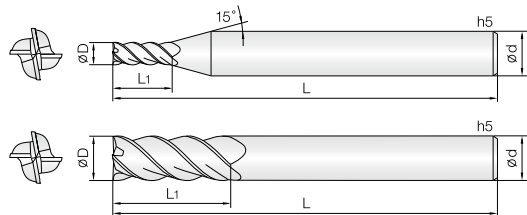
Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 1 \sim 6$	$+0 \sim -0.01\text{mm}$
	$\varnothing 8 \sim 25$	$+0 \sim -0.015\text{mm}$

Condition	D Size	D Tolerance
$\varnothing D = \varnothing d$	$\varnothing 4 \sim 6$	$-0.005 \sim -0.015\text{mm}$
	$\varnothing 8 \sim 12$	$-0.01 \sim -0.025\text{mm}$
	$\varnothing 16 \sim 25$	$-0.015 \sim -0.03\text{mm}$

단위 : mm

[illegible]

4날 고능률 범용 엔드밀



- **중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀**
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- 부동분할 방식과 펄스 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.
- 4날 변형과 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.

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Ø1~2,5

Ø3 ~ 20

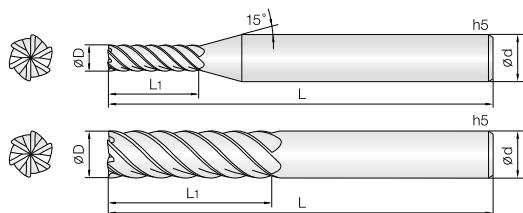
Shield Edge

466P

Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 1 \sim 6$	$+0 \sim -0.01\text{mm}$	$\varnothing D = \varnothing d$	$\varnothing 6$	$-0.005 \sim -0.015\text{mm}$
	$\varnothing 8 \sim 20$	$+0 \sim -0.015\text{mm}$		$\varnothing 8 \sim 12$	$-0.01 \sim -0.025\text{mm}$

단위 : mm

[illegible][illegible]



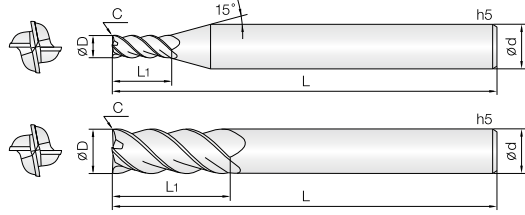
Ø 3~20 Shield Edge 466P

Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 3 \sim 6$	$+0 \sim -0.01 \text{ mm}$
	$\varnothing 8 \sim 20$	$+0 \sim -0.015 \text{ mm}$

Condition	D Size	D Tolerance
$\varnothing D = \varnothing d$	$\varnothing 6$	-0.005 ~ -0.015mm
	$\varnothing 8 \sim 12$	-0.01 ~ -0.025mm
	$\varnothing 14 \sim 20$	-0.015 ~ -0.03mm

단위 : mm

[illegible][illegible]



- 중저경도강(HRc 42이하), 연강, 주철, SUS계열 가공 엔드밀
- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내마모성 또한 향상 됩니다.
- 부등분할 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.
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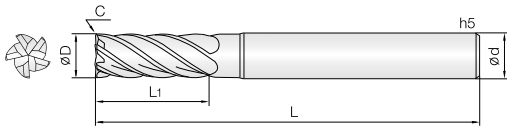


Condition	D Size	D Tolerance
ØD ≠ Ød	Ø1 ~ 6	+0 ~ -0.01mm
	Ø8 ~ 20	+0 ~ -0.015mm

Condition	D Size	D Tolerance
ØD = Ød	Ø4 ~ 6	-0.005 ~ -0.015mm
	Ø8 ~ 12	-0.01 ~ -0.025mm
	Ø14 ~ 20	-0.015 ~ -0.03mm

단위 : mm

Order Number	날경 Diameter D	날장 Length of cut L1	면취량 Chamfer C	전장 Overall Length L	생크 Shank Dia d	비고	Order Number	날경 Diameter D	날장 Length of cut L1	면취량 Chamfer C	전장 Overall Length L	생크 Shank Dia d	비고
4VCC 010 020 S04	1	2	0.03	45	4								
4VCC 010 025 S06	1	2.5	0.03	50	6								
4VCC 010 035 S06	1	3.5	0.03	50	6								
4VCC 012 020 S04	1.2	2	0.04	45	4								
4VCC 012 030 S06	1.2	3	0.04	50	6								
4VCC 012 050 S06	1.2	5	0.04	50	6								
4VCC 015 030 S04	1.5	3	0.05	45	4								
4VCC 015 040 S06	1.5	4	0.05	50	6								
4VCC 015 060 S06	1.5	6	0.05	50	6								
4VCC 020 040 S04	2	4	0.075	45	4								
4VCC 020 060 S06	2	6	0.075	50	6								
4VCC 020 090 S06	2	9	0.075	50	6								
4VCC 025 050 S04	2.5	5	0.08	50	4								
4VCC 025 070 S06	2.5	7	0.08	50	6								
4VCC 025 100 S06	2.5	10	0.08	50	6								
4VCC 030 060 S04	3	6	0.1	50	4								
4VCC 030 060 S06	3	6	0.1	50	6								
4VCC 030 080 S06	3	8	0.1	50	6								
4VCC 030 120 S06	3	12	0.1	50	6								
4VCC 040 080 S04	4	8	0.15	50	4								
4VCC 040 080 S06	4	8	0.15	50	6								
4VCC 040 100 S06	4	10	0.15	50	6								
4VCC 040 150 S06	4	15	0.15	60	6								
4VCC 050 100 S06	5	10	0.15	50	6								
4VCC 050 150 S06	5	15	0.15	60	6								
4VCC 050 200 S06	5	20	0.15	70	6								
4VCC 060 120 S06	6	12	0.2	50	6								
4VCC 060 150 S06	6	15	0.2	60	6								
4VCC 060 200 S06	6	20	0.2	70	6								
4VCC 080 160 S08	8	16	0.2	60	8								
4VCC 080 200 S08	8	20	0.2	70	8								
4VCC 080 300 S08	8	30	0.2	80	8								
4VCC 100 200 S10	10	20	0.3	75	10								
4VCC 100 250 S10	10	25	0.3	75	10								
4VCC 100 350 S10	10	35	0.3	90	10								
4VCC 120 240 S12	12	24	0.35	75	12								
4VCC 120 300 S12	12	30	0.35	80	12								
4VCC 120 450 S12	12	45	0.35	100	12								
New 4VCC 140 360 S14	14	36	0.38	90	14								
New 4VCC 140 500 S14	14	50	0.38	110	14								
4VCC 160 400 S16	16	40	0.4	100	16								
4VCC 160 600 S16	16	60	0.4	120	16								
4VCC 200 450 S20	20	45	0.5	100	20								
4VCC 200 650 S20	20	65	0.5	120	20								



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Ø6 ~ 20

C Cutting

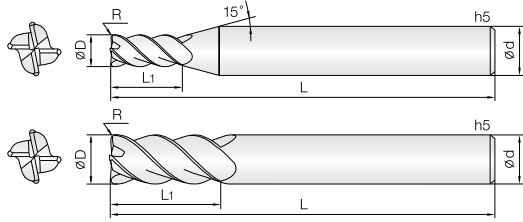
467P

Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 6$	$+0 \sim -0.01\text{mm}$
	$\varnothing 8 \sim 20$	$+0 \sim -0.015\text{mm}$

Condition	D Size	D Tolerance
$\varnothing D = \varnothing d$	$\varnothing 6$	-0.005 ~ -0.015mm
	$\varnothing 8 \sim 12$	-0.01 ~ -0.025mm
	$\varnothing 14 \sim 20$	-0.015 ~ -0.03mm

단위 : mm

[illegible][illegible]



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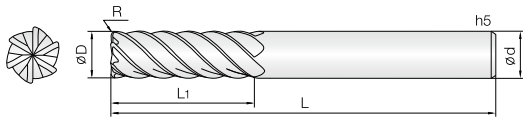


Condition	D Size	D Tolerance
ØD ≠ Ød	Ø1 ~ 20	+0 ~ -0.01mm

Condition	D Size	D Tolerance
ØD = Ød	Ø6 ~ 12	-0.005 ~ -0.015mm
	Ø14 ~ 20	-0.01 ~ -0.02mm

단위 : mm

Order Number	날경 Diameter D×R	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고	Order Number	날경 Diameter D×R	날장 Length of cut L1	전장 Overall Length L	생크 Shank Dia d	비고
4VSC 010 001 S06	1 X R0.1	2.5	50	6		New 4VSC 160 050 S16	16 X R5	40	100	16	
4VSC 010 002 S06	1 X R0.2	2.5	50	6		4VSC 200 005 S20	20 X R0.5	45	100	20	
4VSC 012 001 S06	1.2 X R0.1	3	50	6		4VSC 200 010 S20	20 X R1	45	100	20	
4VSC 012 002 S06	1.2 X R0.2	3	50	6		4VSC 200 020 S20	20 X R2	45	100	20	
4VSC 015 001 S06	1.5 X R0.1	4	50	6		4VSC 200 030 S20	20 X R3	45	100	20	
4VSC 015 002 S06	1.5 X R0.2	4	50	6		New 4VSC 200 040 S20	20 X R4	45	100	20	
4VSC 020 001 S06	2 X R0.1	6	50	6		New 4VSC 200 050 S20	20 X R5	45	100	20	
4VSC 020 002 S06	2 X R0.2	6	50	6							
4VSC 025 001 S06	2.5 X R0.1	7	50	6							
4VSC 025 002 S06	2.5 X R0.2	7	50	6							
4VSC 030 002 S06	3 X R0.2	8	50	6							
4VSC 030 003 S06	3 X R0.3	8	50	6							
4VSC 030 005 S06	3 X R0.5	8	50	6							
4VSC 040 002 S06	4 X R0.2	10	50	6							
4VSC 040 003 S06	4 X R0.3	10	50	6							
4VSC 040 005 S06	4 X R0.5	10	50	6							
New 4VSC 040 010 S06	4 X R1	10	50	6							
4VSC 050 002 S06	5 X R0.2	15	60	6							
4VSC 050 003 S06	5 X R0.3	15	60	6							
4VSC 050 005 S06	5 X R0.5	15	60	6							
New 4VSC 050 010 S06	5 X R1	15	60	6							
4VSC 060 002 S06	6 X R0.2	15	60	6							
4VSC 060 003 S06	6 X R0.3	15	60	6							
4VSC 060 005 S06	6 X R0.5	15	60	6							
4VSC 060 010 S06	6 X R1	15	60	6							
New 4VSC 060 015 S06	6 X R1.5	15	60	6							
4VSC 080 003 S08	8 X R0.3	20	70	8							
4VSC 080 005 S08	8 X R0.5	20	70	8							
4VSC 080 010 S08	8 X R1	20	70	8							
New 4VSC 080 020 S08	8 X R2	20	70	8							
4VSC 100 003 S10	10 X R0.3	25	75	10							
4VSC 100 005 S10	10 X R0.5	25	75	10							
4VSC 100 010 S10	10 X R1	25	75	10							
4VSC 100 015 S10	10 X R1.5	25	75	10							
4VSC 100 020 S10	10 X R2	25	75	10							
New 4VSC 100 030 S10	10 X R3	25	75	10							
4VSC 120 005 S12	12 X R0.5	30	80	12							
4VSC 120 010 S12	12 X R1	30	80	12							
4VSC 120 020 S12	12 X R2	30	80	12							
New 4VSC 120 030 S12	12 X R3	30	80	12							
New 4VSC 140 005 S14	14 X R0.5	36	90	14							
New 4VSC 140 010 S14	14 X R1	36	90	14							
New 4VSC 140 020 S14	14 X R2	36	90	14							
New 4VSC 140 030 S14	14 X R3	36	90	14							
New 4VSC 140 040 S14	14 X R4	36	90	14							
4VSC 160 005 S16	16 X R0.5	40	100	16							
4VSC 160 010 S16	16 X R1	40	100	16							
4VSC 160 020 S16	16 X R2	40	100	16							
4VSC 160 030 S16	16 X R3	40	100	16							
New 4VSC 160 040 S16	16 X R4	40	100	16							



- 중저경도강(HRc 42이하), 연강, 주철, SUS계열 가공 엔드밀
- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내마모성 또한 향상 됩니다.
- 45° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 적합 합니다.

- Mid-low hardened steels (~HRC42), Mild steels, Cast irons, SUS
- HR coating reduces stress of flute and enhances wear resistance.
- 45° helix design is suitable for high speed machining.



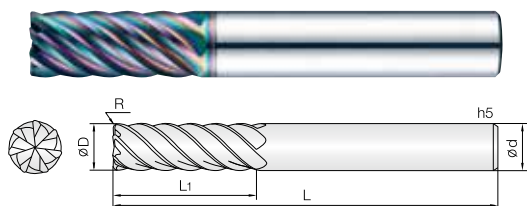
Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 6 \sim 20$	$+0 \sim -0.01\text{mm}$

Condition	D Size	D Tolerance
$\varnothing D = \varnothing d$	$\varnothing 6 \sim 12$	$-0.005 \sim -0.015\text{mm}$
	$\varnothing 14 \sim 20$	$-0.01 \sim -0.02\text{mm}$

단위 : mm

[illegible][illegible]

7날 SUS가공용 코너 레디우스 엔드밀



- **합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀**
- TISIN-R 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화하였습니다.
- 코너R부 적용으로 밀날 치핑을 방지 하였습니다.
- 항절력이 높은 미립자 조경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화.

- Endmills for alloy steel, SUS, Ti/Ni base alloys, Inconel and hard-to-cut materials.

- TISIN-R coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Strong design for protection against chattering..
- Preventing bottom edge chipping by corner R.
- Minimize fracturing at high feed by high TRS fine WC grade.



R0.5

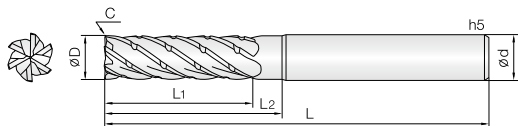
468P

Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 6 \sim 20$	$+0 \sim -0.01 \text{ mm}$

Condition	D Size	D Tolerance
$\varnothing D = \varnothing d$	$\varnothing 6 \sim 12$	$-0.005 \sim -0.015\text{mm}$
	$\varnothing 14 \sim 20$	$-0.01 \sim -0.02\text{mm}$

단위 : mm

[illegible]



- **합금강, SUS계열, 인코넬, 일반구조강 등 다양한 난삭재의 황삭가공**
- 열날 칩블레이더 설계와 TISIN-R 코팅 처리로 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상됩니다.
- 가변 헬릭스 적용으로 절삭 저항이 감소되어 장시간 가공에 적합합니다.
- 항절력이 높은 미립자 초경합금 (0.5 μ m)을 채택, 엔드밀의 파손을 최소화 하였습니다.
- **Roughing Endmills for alloy steels, SUS, Inconel, Mild steels and various hard-to-cut materials.**
- Chip breaker designed for side flute and TISIN-R coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Variable helix Design for minimizing cutting resistance and long time process.
- Minimize fracturing by high TRS fine (0.5 μ m) WC grade.



C Cutting

468P

Weldon Shank

Condition	D Size	D Tolerance
$\varnothing D \neq \varnothing d$	$\varnothing 6$	$+0 \sim -0.01\text{mm}$
	$\varnothing 8 \sim 20$	$+0 \sim -0.015\text{mm}$

Condition	D Size	D Tolerance
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	$\varnothing 8 \sim 12$	$-0.01 \sim -0.025\text{mm}$
	$\varnothing 14 \sim 20$	$-0.015 \sim -0.03\text{mm}$

단위 : mm

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