shaping your dreams

STEEL-PRO

Anti-Vibration Carbide End Mills

STEEL-PRO • STEEL-PRO+



한국OSG주식회사
OSG KOREA Corporation

Vol. 1 (2020.11)

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ISO 13399에 따른 기호 목록

- OSG 엔드밀 카탈로그는 ISO 13399 기준으로 엔드밀 각 부 명칭을 나타냅니다.

명 칭	설 명	영 문
APMX	날길이	Depth of cut maximum
CHW	코너 챔퍼 폭	Corner chamfer width
DC	외경	Cutting diameter
DCON	샹크경	Connection diameter
DCX	대단경	Cutting diameter maximum
DN	목부경	Neck diameter
KAPR	선단각	Tool cutting edge angle
LF	전장	Functional length
LU	유효장	Usable length
RE	코너 래디우스	Corner radius
ZEFF	바닥날 갯수	Face effective cutting edge count
ZEFP	옆날 갯수	Peripheral effective cutting edge count

■아이콘 설명

1 재질 Tool Materials
CARBIDE 초경합금 Tungsten Carbide

2 표면처리 Surface Treatment
RADIA 코팅
DUROREY 코팅

3 비틀림각 Helix Angle
30° 엔드밀 홈 비틀림각을 표시 Helix angle of flute for end mills

4 R공차 Tolerance od Radius
R ±0.02 엔드밀 R의 공차를 표시 Identifies the tolerance of the radius for end mills

5 외경공차 Tolerance for milling diameter
0~-0.02 엔드밀 외경의 공차를 표시 Tolerance for milling diameter

6 슈링크 Shrink
SHRINK FIT 열박음홀더에 사용가능함을 표시 Suitable for the shrink holder system

STEEL-PRO

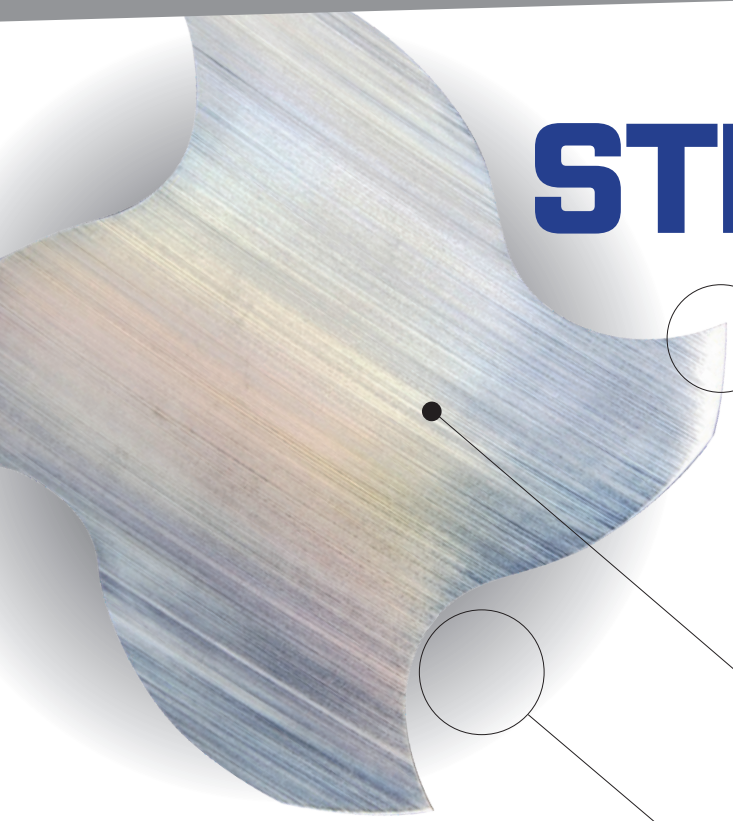
Cu • SUS • S45C ~ 50HRC 의 폭 넓은 피삭재 영역에서 탁월한 성능 발휘!

시리즈 Series	형상 Figure	날수 Flutes	분류 Type	주문번호 EDP No	사 진 Photo	코 팅 Coating	사이즈 Size	페이지 Page	절삭조건 Cutting Condition
STEEL PRO	볼	2날	볼	SP2B		RADIA [Smooth 코팅]	Φ0.15~Φ25	P8	P50
			롱넥 볼	SP2BN			Φ0.2~Φ12	P9	P51
	플랫	2날	플랫	SP2F			Φ0.15~Φ25	P14	P60
			롱 플랫	SP2F			Φ1~Φ20	P16	P62
			롱넥 플랫	SP2FN			Φ0.2~Φ12	P18	P63
		4날	플랫	SP4F			Φ1~Φ25	P22	P68
			롱 플랫	SP4F			Φ1~Φ20	P23	P69
			롱넥 플랫	SP4FN			Φ1~Φ12	P25	P70
	코너R	2날	코너R	SP2C			Φ1~Φ20	P27	P71
			롱넥 코너R	S2			Φ0.4~Φ20	P30	–
		4날	코너R	SP4C			Φ1~Φ20	P40	P72
			롱넥 코너R	S4			Φ1~Φ20	P43	–
	V컷	2날	V컷	SP2V			Φ3~Φ12	P46	–

STEEL-PRO+

30HRC ~ 65HRC 고경도 및 열처리강 가공의 高품질 • 長수명 실현!

시리즈 Series	형상 Figure	날수 Flutes	분류 Type	주문번호 EDP No	사 진 Photo	코 팅 Coating	사이즈 Size	페이지 Page	절삭조건 Cutting Condition
STEEL PRO+	볼	2날	볼	SPP2B		DUROREY [고경도코팅]	Φ0.4~Φ12	P47	P50
	플랫	4날	45도 플랫	SPP4FH			Φ3~Φ16	P48	P73



STEEL-PRO

Anti-Vibration Carbide End Mills

STEEL 쾌삭 가공

경사각 Sharp Angle 적용으로 절삭저항 감소

높은 공구강성

사상 및 중 · 황삭까지 다양한 가공 가능

칩배출 최적화

신규 홈 형상 채택으로 원할한 칩배출

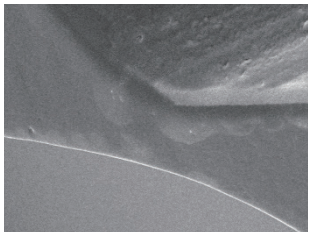
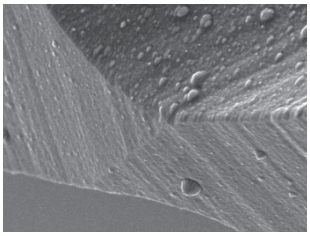


NEW!

RADIA 코팅

新 코팅으로 高품질 · 長수명 실현

· 매끄러운 SMOOTH 코팅으로 치핑없는 안정된 성능
· 이중 코팅 구조로 내산화성 및 내마모성 우수
· 코팅 밀착력 개선으로 향상된 공구 신뢰성 제공

STEEL-PRO	기 존
	

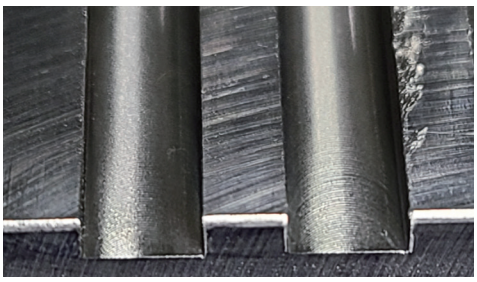
• 볼 엔드밀 중심부 확대 비교 •

안정적 가공

공구 부하 감소

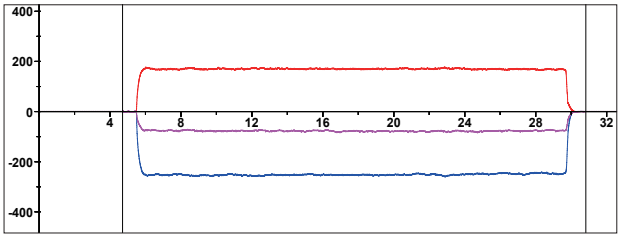
- 경사각 Sharp Angle 적용으로 절삭 저항 최소화
- 원할한 칩배출을 위한 고강성 타입의 신규 홈 형상 적용

- 피삭재 : SUS316L (84-86HRB)
- 방　식 : 홈절삭 (수용성)
- 조　건 : S3700, F370, Ap 3mm
- 장　비 : 수직머시닝센터(BT40)

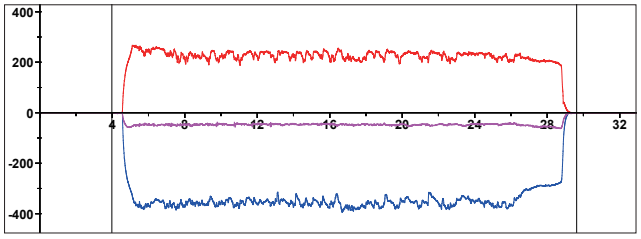


STEEL-PRO Ø6　　타사품 Ø6

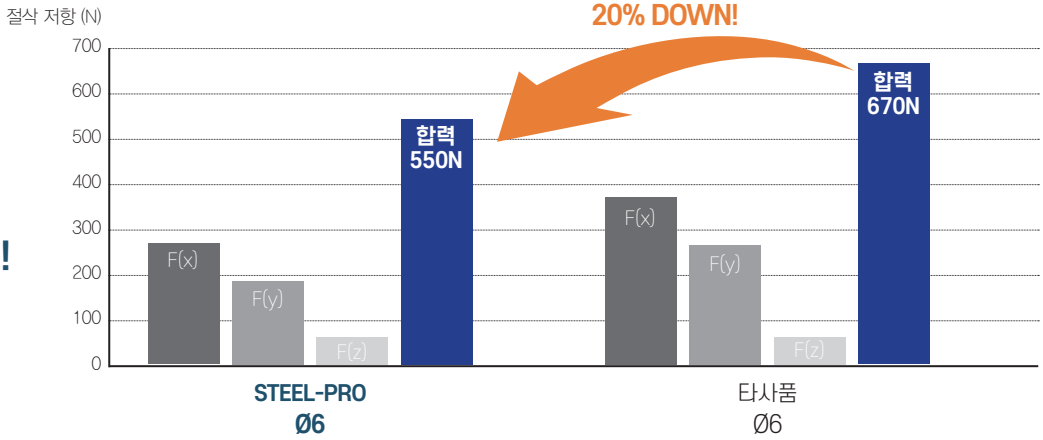
STEEL-PRO 4날 플랫 Ø6



타사품 4날 플랫 Ø6



절삭저항 타사품대비 약 20% DOWN!

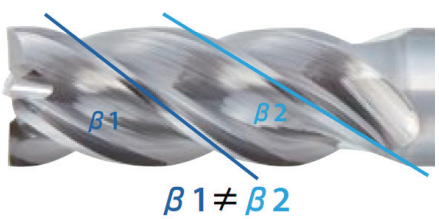


부등리드 적용

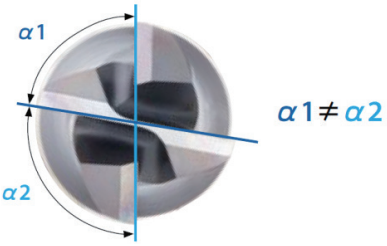
가공 떨림 억제

- 부등리드, 부등분할 적용으로 뛰어난 진동 억제 효과
- 안정된 고능률, 고이송 가공을 실현

• 부등리드 •



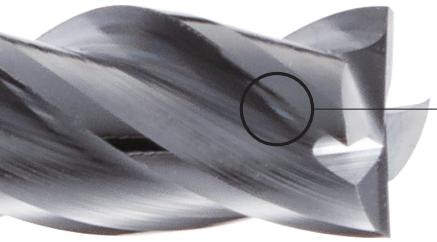
• 부등분할 •

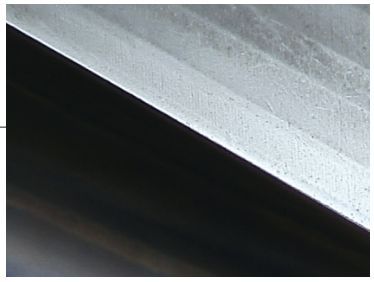


高품위 가공

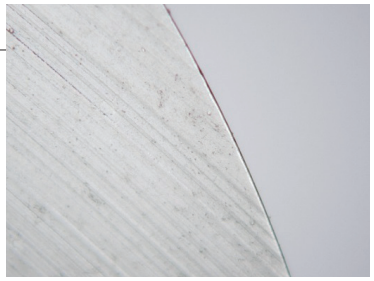
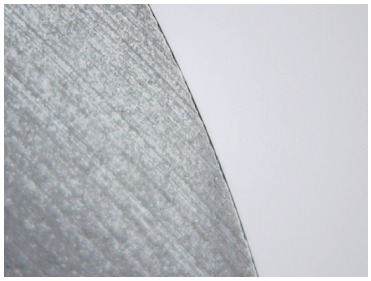
고품위 가공을 위한 매끄러운 인선부 처리 기술 적용

- OSG만이 할 수 있는 기술 노하우 집약
- 매끄러운 인선부 처리로 부드럽고 안정된 절삭가공 가능



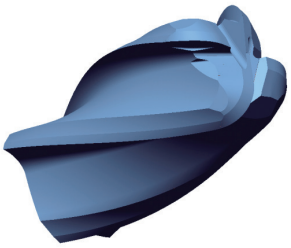
STEEL-PRO	타 사 품
	

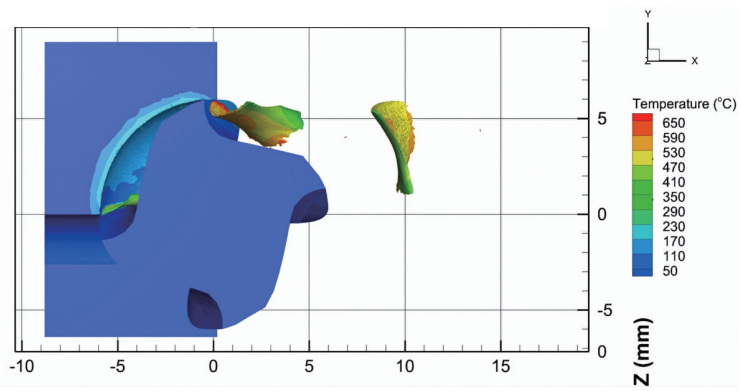


STEEL-PRO	타 사 품
	

가공 해석 시뮬레이션을 통한 최적 설계

- 가공 해석을 통한 최적 설계로 공구 수명 향상
- Edge 특수 인선처리로 절삭열을 효율적으로 배출



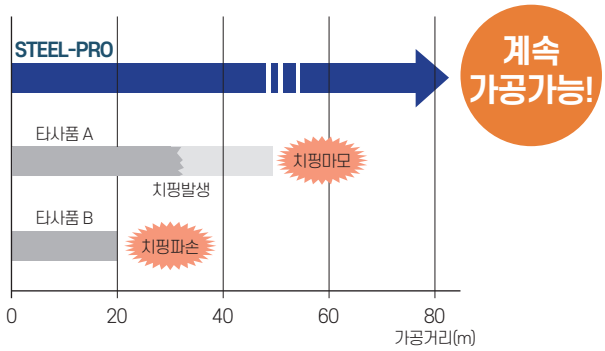


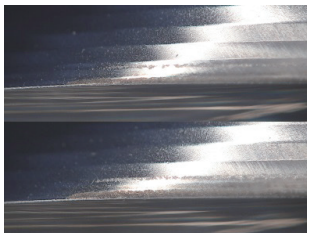
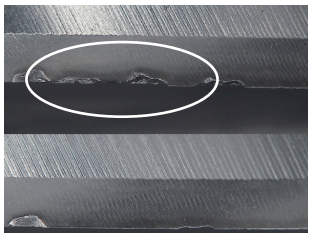
절삭성능

엔드밀 가공에서 치핑없는 안정된 절삭성능 발휘!

• 4날 플랫 Φ8 측면 가공

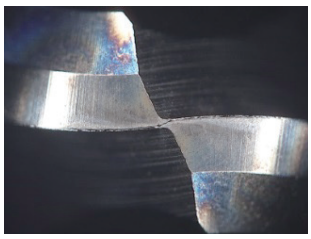
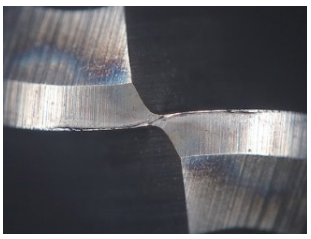
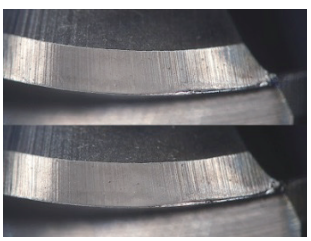
테스트	52m 가공 후 마모량 비교
사용공구	STEEL-PRO 4날 플랫 Φ8
피삭재	KP4M (28~30HRC)
가공방식	측면가공 (수용성)
가공조건	4,800 RPM · 1,540 mm/min
가공깊이	Ap=8mm Ae=1.2mm
가공장비	수직머시닝센터 (BT30)



STEEL-PRO	타사품 A	타사품 B
		

• 2날 볼 R3 포켓 가공

테스트	1,240m 가공 후 마모량 및 조도 비교
사용공구	STEEL-PRO 2날 볼 R3
피삭재	KP4M (28~30HRC)
가공방식	포켓가공 (에어미스트)
회전속도	13,500 RPM
이송속도	4,300 mm/min
가공깊이	Ap=0.2mm Pf=2mm
가공장비	수직머시닝센터 (HSK E40)

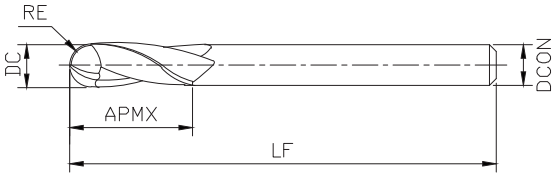
STEEL-PRO	타 사 품
	
	

SP2B / 2날 볼

CARBIDE | RADIA | R ±0.005 (RE<3) | R 0~0.010 (3≤RE≤6) | R ±0.01 (6<RE) | SHRINK FIT | 30° | SPEED FEED P50







- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 매끄러운 인선부 처리로 부드럽고 안정된 절삭!

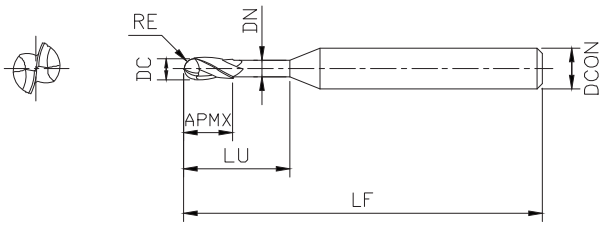
주문번호 EDP No.	반지름 X 외경 RE X DC	전장 LF	날길이 APMX	자루경 DCON
SP2BX0P15X0P3	R0.075 X 0.15	40	0.3	4
SP2BX0P2X0P4	R0.1 X 0.2	40	0.4	4
SP2BX0P3X0P6	R0.15 X 0.3	40	0.6	4
SP2BX0P4X0P8	R0.2 X 0.4	40	0.8	4
SP2BX0P5X1	R0.25 X 0.5	40	1	4
SP2BX0P6X1P2	R0.3 X 0.6	40	1.2	4
SP2BX0P7X1P4	R0.35 X 0.7	40	1.4	4
SP2BX0P8X1P6	R0.4 X 0.8	40	1.6	4
SP2BX0P9X1P8	R0.45 X 0.9	40	1.8	4
SP2BX1X2P5	R0.5 X 1	50	2.5	6
SP2BX1P2X3	R0.6 X 1.2	50	3	6
SP2BX1P5X4	R0.75 X 1.5	50	4	6
SP2BX1P5X4L		70	4	6
SP2BX2X5	R1 X 2	50	5	6
SP2BX2X5L		80	5	6
SP2BX2P5X6	R1.25 X 2.5	60	6	6
SP2BX3X6	R1.5 X 3	60	6	6
SP2BX3X6L		80	6	6
SP2BX3P5X8	R1.75 X 3.5	70	8	6
SP2BX4X8	R2 X 4	70	8	6
SP2BX4X8L		100	8	4
SP2BX4P5X9	R2.25 X 4.5	80	9	6
SP2BX5X10	R2.5 X 5	80	10	6
SP2BX5P5X11	R2.75 X 5.5	90	11	6
SP2BX6X9	R3 X 6	60	9	6
SP2BX6X12		90	12	6
SP2BX6X12L		150	12	6
SP2BX6P5X13	R3.25 X 6.5	90	13	8
SP2BX7X14	R3.5 X 7	90	14	8
SP2BX8X12	R4 X 8	60	12	8
SP2BX8X14		100	14	8
SP2BX8X14L		150	14	8
SP2BX8P5X16	R4.25 X 8.5	100	16	10
SP2BX9X18	R4.5 X 9	100	18	10
SP2BX10X18	R5 X 10	100	18	10
SP2BX10X18L		150	18	10
SP2BX11X20	R5.5 X 11	100	20	12
SP2BX12X22	R6 X 12	110	22	12
SP2BX12X22L		150	22	12
SP2BX13X24	R6.5 X 13	100	24	12
SP2BX14X26	R7 X 14	100	26	12
SP2BX15X28	R7.5 X 15	140	28	16
SP2BX16X30	R8 X 16	150	30	16
SP2BX18X34	R9 X 18	150	34	16
SP2BX20X38	R10 X 20	150	38	20
SP2BX25X50	R12.5 X 25	180	50	25

SP2BN / 2날 롱넥 볼



- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 매끄러운 인선부 처리로 부드럽고 안정된 절삭!



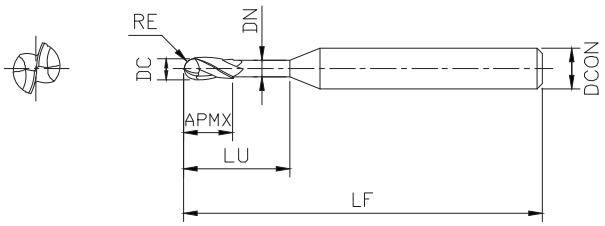


주문번호 EDP No.	반지름 X 유효장 RE X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2BNX0P2X0P5	R0.1 X 0.5	45	0.16	4	0.175
SP2BNX0P2X1	R0.1 X 1	45	0.16	4	0.175
SP2BNX0P2X1P5	R0.1 X 1.5	45	0.16	4	0.175
SP2BNX0P2X2	R0.1 X 2	45	0.16	4	0.175
SP2BNX0P3X1	R0.15 X 1	45	0.24	4	0.275
SP2BNX0P3X1P5	R0.15 X 1.5	45	0.24	4	0.275
SP2BNX0P3X2	R0.15 X 2	45	0.24	4	0.275
SP2BNX0P3X2P5	R0.15 X 2.5	45	0.24	4	0.275
SP2BNX0P3X3	R0.15 X 3	45	0.24	4	0.275
SP2BNX0P3X4	R0.15 X 4	45	0.24	4	0.275
SP2BNX0P3X5	R0.15 X 5	45	0.24	4	0.275
SP2BNX0P4X1	R0.2 X 1	45	0.3	4	0.37
SP2BNX0P4X1P5	R0.2 X 1.5	45	0.3	4	0.37
SP2BNX0P4X2	R0.2 X 2	45	0.3	4	0.37
SP2BNX0P4X2P5	R0.2 X 2.5	45	0.3	4	0.37
SP2BNX0P4X3	R0.2 X 3	45	0.3	4	0.37
SP2BNX0P4X4	R0.2 X 4	45	0.3	4	0.37
SP2BNX0P4X5	R0.2 X 5	45	0.3	4	0.37
SP2BNX0P4X6	R0.2 X 6	45	0.3	4	0.37
SP2BNX0P4X8	R0.2 X 8	45	0.3	4	0.37
SP2BNX0P4X10	R0.2 X 10	45	0.3	4	0.37
SP2BNX0P5X1	R0.25 X 1	45	0.4	4	0.45
SP2BNX0P5X2	R0.25 X 2	45	0.4	4	0.45
SP2BNX0P5X3	R0.25 X 3	45	0.4	4	0.45
SP2BNX0P5X4	R0.25 X 4	45	0.4	4	0.45
SP2BNX0P5X5	R0.25 X 5	45	0.4	4	0.45
SP2BNX0P5X6	R0.25 X 6	45	0.4	4	0.45
SP2BNX0P5X8	R0.25 X 8	45	0.4	4	0.45
SP2BNX0P5X10	R0.25 X 10	45	0.4	4	0.45
SP2BNX0P5X12	R0.25 X 12	45	0.4	4	0.45
SP2BNX0P6X1	R0.3 X 1	45	0.5	4	0.55
SP2BNX0P6X2	R0.3 X 2	45	0.5	4	0.55
SP2BNX0P6X3	R0.3 X 3	45	0.5	4	0.55
SP2BNX0P6X4	R0.3 X 4	45	0.5	4	0.55
SP2BNX0P6X5	R0.3 X 5	45	0.5	4	0.55
SP2BNX0P6X6	R0.3 X 6	45	0.5	4	0.55
SP2BNX0P6X8	R0.3 X 8	45	0.5	4	0.55
SP2BNX0P6X10	R0.3 X 10	45	0.5	4	0.55
SP2BNX0P6X12	R0.3 X 12	45	0.5	4	0.55
SP2BNX0P6X14	R0.3 X 14	45	0.5	4	0.55

SP2BN / 2날 롱넥 볼



- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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- 매끄러운 인선부 처리로 부드럽고 안정된 절삭!

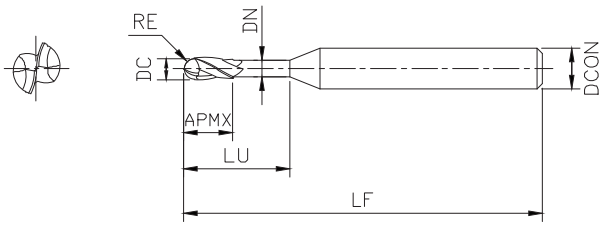


주문번호 EDP No.	반지름 X 유효장 RE X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2BNX0P7X2	R0.35 X 2	45	0.6	4	0.65
SP2BNX0P7X4	R0.35 X 4	45	0.6	4	0.65
SP2BNX0P7X6	R0.35 X 6	45	0.6	4	0.65
SP2BNX0P7X8	R0.35 X 8	45	0.6	4	0.65
SP2BNX0P7X10	R0.35 X 10	45	0.6	4	0.65
SP2BNX0P8X2	R0.4 X 2	45	0.6	4	0.75
SP2BNX0P8X3	R0.4 X 3	45	0.6	4	0.75
SP2BNX0P8X4	R0.4 X 4	45	0.6	4	0.75
SP2BNX0P8X5	R0.4 X 5	45	0.6	4	0.75
SP2BNX0P8X6	R0.4 X 6	45	0.6	4	0.75
SP2BNX0P8X7	R0.4 X 7	45	0.6	4	0.75
SP2BNX0P8X8	R0.4 X 8	45	0.6	4	0.75
SP2BNX0P8X10	R0.4 X 10	45	0.6	4	0.75
SP2BNX0P8X12	R0.4 X 12	45	0.6	4	0.75
SP2BNX0P8X14	R0.4 X 14	45	0.6	4	0.75
SP2BNX0P9X4	R0.45 X 4	45	0.7	4	0.85
SP2BNX0P9X8	R0.45 X 8	45	0.7	4	0.85
SP2BNX1X2	R0.5 X 2	45	0.8	4	0.95
SP2BNX1X2P5	R0.5 X 2.5	45	0.8	4	0.95
SP2BNX1X3	R0.5 X 3	45	0.8	4	0.95
SP2BNX1X4	R0.5 X 4	45	0.8	4	0.95
SP2BNX1X5	R0.5 X 5	45	0.8	4	0.95
SP2BNX1X6	R0.5 X 6	45	0.8	4	0.95
SP2BNX1X7	R0.5 X 7	45	0.8	4	0.95
SP2BNX1X8	R0.5 X 8	45	0.8	4	0.95
SP2BNX1X9	R0.5 X 9	45	0.8	4	0.95
SP2BNX1X10	R0.5 X 10	45	0.8	4	0.95
SP2BNX1X12	R0.5 X 12	45	0.8	4	0.95
SP2BNX1X14	R0.5 X 14	45	0.8	4	0.95
SP2BNX1X16	R0.5 X 16	45	0.8	4	0.95
SP2BNX1X20	R0.5 X 20	45	0.8	4	0.95
SP2BNX1P2X4	R0.6 X 4	45	1	4	1.15
SP2BNX1P2X6	R0.6 X 6	45	1	4	1.15
SP2BNX1P2X8	R0.6 X 8	45	1	4	1.15
SP2BNX1P2X10	R0.6 X 10	45	1	4	1.15
SP2BNX1P2X12	R0.6 X 12	45	1	4	1.15
SP2BNX1P2X14	R0.6 X 14	50	1	4	1.15
SP2BNX1P2X16	R0.6 X 16	50	1	4	1.15
SP2BNX1P2X20	R0.6 X 20	50	1	4	1.15
SP2BNX1P4X6	R0.7 X 6	45	1.2	4	1.35

SP2BN / 2날 롱넥 볼

CARBIDE | RADIA | R ±0.005 RE<3 | R 0~0.010 3≤RE≤6 | SHRINK FIT | 30° | SPEED FEED P51~P59





- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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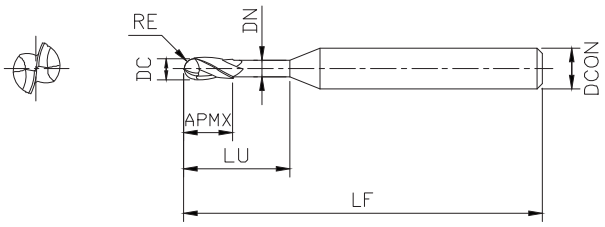
주문번호 EDP No.	반지름 X 유효장 RE X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2BNX1P4X8	R0.7 X 8	45	1.2	4	1.35
SP2BNX1P4X12	R0.7 X 12	50	1.2	4	1.35
SP2BNX1P4X16	R0.7 X 16	50	1.2	4	1.35
SP2BNX1P5X3	R0.75 X 3	45	1.6	4	1.45
SP2BNX1P5X4	R0.75 X 4	45	1.6	4	1.45
SP2BNX1P5X6	R0.75 X 6	45	1.6	4	1.45
SP2BNX1P5X8	R0.75 X 8	45	1.6	4	1.45
SP2BNX1P5X10	R0.75 X 10	45	1.6	4	1.45
SP2BNX1P5X12	R0.75 X 12	45	1.6	4	1.45
SP2BNX1P5X14	R0.75 X 14	50	1.6	4	1.45
SP2BNX1P5X16	R0.75 X 16	50	1.6	4	1.45
SP2BNX1P5X18	R0.75 X 18	55	1.6	4	1.45
SP2BNX1P5X20	R0.75 X 20	55	1.6	4	1.45
SP2BNX1P5X22	R0.75 X 22	60	1.6	4	1.45
SP2BNX1P5X25	R0.75 X 25	65	1.6	4	1.45
SP2BNX1P5X30	R0.75 X 30	70	1.6	4	1.45
SP2BNX2X4	R1 X 4	45	1.6	4	1.95
SP2BNX2X5	R1 X 5	45	1.6	4	1.95
SP2BNX2X6	R1 X 6	45	1.6	4	1.95
SP2BNX2X8	R1 X 8	45	1.6	4	1.95
SP2BNX2X10	R1 X 10	45	1.6	4	1.95
SP2BNX2X12	R1 X 12	45	1.6	4	1.95
SP2BNX2X14	R1 X 14	50	1.6	4	1.95
SP2BNX2X16	R1 X 16	50	1.6	4	1.95
SP2BNX2X18	R1 X 18	55	1.6	4	1.95
SP2BNX2X20	R1 X 20	55	1.6	4	1.95
SP2BNX2X22	R1 X 22	60	1.6	4	1.95
SP2BNX2X25	R1 X 25	65	1.6	4	1.95
SP2BNX2X30	R1 X 30	70	1.6	4	1.95
SP2BNX2P5X10	R1.25 X 10	45	2	4	2.45
SP2BNX2P5X12	R1.25 X 12	45	2	4	2.45
SP2BNX2P5X16	R1.25 X 16	50	2	4	2.45
SP2BNX2P5X20	R1.25 X 20	55	2	4	2.45
SP2BNX3X6	R1.5 X 6	50	2.4	6	2.85
SP2BNX3X8	R1.5 X 8	50	2.4	6	2.85
SP2BNX3X10	R1.5 X 10	50	2.4	6	2.85
SP2BNX3X12	R1.5 X 12	50	2.4	6	2.85
SP2BNX3X14	R1.5 X 14	55	2.4	6	2.85
SP2BNX3X16	R1.5 X 16	55	2.4	6	2.85
SP2BNX3X18	R1.5 X 18	60	2.4	6	2.85

SP2BN / 2날 롱넥 볼



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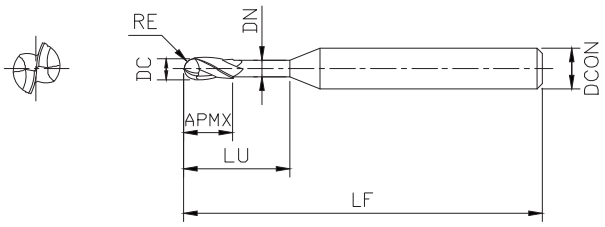




주문번호 EDP No.	반지름 X 유효장 RE X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2BNX3X20	R1.5 X 20	60	2.4	6	2.85
SP2BNX3X26	R1.5 X 26	65	2.4	6	2.85
SP2BNX3X30	R1.5 X 30	70	2.4	6	2.85
SP2BNX3X35	R1.5 X 35	80	2.4	6	2.85
SP2BNX3X40	R1.5 X 40	90	2.4	6	2.85
SP2BNX3X45	R1.5 X 45	90	2.4	6	2.85
SP2BNX3X50	R1.5 X 50	100	2.4	6	2.85
SP2BNX4X8	R2 X 8	60	3.2	6	3.85
SP2BNX4X10	R2 X 10	60	3.2	6	3.85
SP2BNX4X12	R2 X 12	60	3.2	6	3.85
SP2BNX4X14	R2 X 14	60	3.2	6	3.85
SP2BNX4X16	R2 X 16	60	3.2	6	3.85
SP2BNX4X20	R2 X 20	65	3.2	6	3.85
SP2BNX4X25	R2 X 25	70	3.2	6	3.85
SP2BNX4X30	R2 X 30	80	3.2	6	3.85
SP2BNX4X35	R2 X 35	80	3.2	6	3.85
SP2BNX4X40	R2 X 40	90	3.2	6	3.85
SP2BNX4X45	R2 X 45	90	3.2	6	3.85
SP2BNX4X50	R2 X 50	100	3.2	6	3.85
SP2BNX5X16	R2.5 X 16	60	6	6	4.85
SP2BNX5X20	R2.5 X 20	60	6	6	4.85
SP2BNX5X26	R2.5 X 26	70	6	6	4.85
SP2BNX5X30	R2.5 X 30	70	6	6	4.85
SP2BNX5X35	R2.5 X 35	70	6	6	4.85
SP2BNX5X40	R2.5 X 40	80	6	6	4.85
SP2BNX5X45	R2.5 X 45	90	6	6	4.85
SP2BNX5X50	R2.5 X 50	100	6	6	4.85
SP2BNX5X55	R2.5 X 55	100	6	6	4.85
SP2BNX5X60	R2.5 X 60	100	6	6	4.85
SP2BNX6X20	R3 X 20	60	8	6	5.85
SP2BNX6X20L	R3 X 20	90	12	6	5.85
SP2BNX6X30	R3 X 30	60	8	6	5.85
SP2BNX6X30L	R3 X 30	90	12	6	5.85
SP2BNX8X25	R4 X 25	70	10	8	7.7
SP2BNX8X25L	R4 X 25	100	14	8	7.7
SP2BNX8X35	R4 X 35	70	10	8	7.7
SP2BNX8X35L	R4 X 35	100	14	8	7.7
SP2BNX10X30	R5 X 30	75	12	10	9.7
SP2BNX10X30L	R5 X 30	100	18	10	9.7
SP2BNX10X40	R5 X 40	75	12	10	9.7

SP2BN / 2날 롱넥 볼





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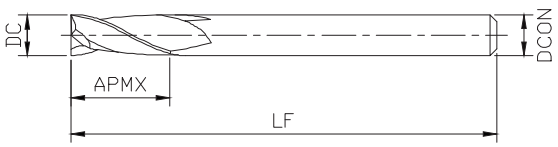
주문번호 EDP No.	반지름 X 유효장 RE X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2BNX10X40L	R5 X 40	100	18	10	9.7
SP2BNX12X32	R6 X 32	80	14	12	11.7
SP2BNX12X32L	R6 X 32	110	22	12	11.7
SP2BNX12X45	R6 X 45	80	14	12	11.7
SP2BNX12X45L	R6 X 45	110	22	12	11.7

SP2F / 2날 플랫엔드밀

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P60~P61







- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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- 날끝 Touch 추가로 안정적 가공 지향

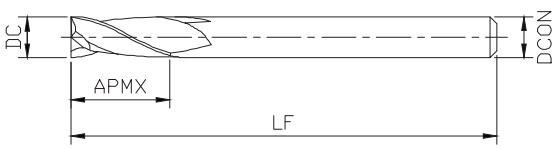
주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP2FX0P15X0P3	0.15	40	0.3	4
SP2FX0P2X0P4	0.2	40	0.4	4
SP2FX0P25X0P5	0.25	40	0.5	4
SP2FX0P3X0P6	0.3	40	0.6	4
SP2FX0P35X0P7	0.35	40	0.7	4
SP2FX0P4X0P8	0.4	40	0.8	4
SP2FX0P45X0P9	0.45	40	0.9	4
SP2FX0P5X1	0.5	40	1	4
SP2FX0P55X1P1	0.55	40	1.1	4
SP2FX0P6X1P2	0.6	40	1.2	4
SP2FX0P65X1P3	0.65	40	1.3	4
SP2FX0P7X1P4	0.7	40	1.4	4
SP2FX0P75X1P5	0.75	40	1.5	4
SP2FX0P8X1P6	0.8	40	1.6	4
SP2FX0P85X1P7	0.85	40	1.7	4
SP2FX0P9X1P8	0.9	40	1.8	4
SP2FX0P95X2	0.95	40	2	4
SP2FX1X2P5	1	50	2.5	6
SP2FX1P1X3	1.1	50	3	6
SP2FX1P2X3	1.2	50	3	6
SP2FX1P5X4	1.5	50	4	6
SP2FX2X6	2	50	6	6
SP2FX2P5X7	2.5	50	7	6
SP2FX3X8	3	50	8	6
SP2FX3P5X10	3.5	50	10	6
SP2FX4X10	4	50	10	6
SP2FX4P5X12	4.5	50	12	6
SP2FX5X15	5	60	15	6
SP2FX5P5X15	5.5	60	15	6
SP2FX6X15	6	60	15	6
SP2FX6P5X18	6.5	60	18	8
SP2FX7X20	7	60	20	8
SP2FX7P5X20	7.5	60	20	8
SP2FX8X20	8	70	20	8
SP2FX8P5X22	8.5	70	22	10
SP2FX9X22	9	70	22	10
SP2FX9P5X24	9.5	70	24	10
SP2FX10X25	10	75	25	10
SP2FX10P5X26	10.5	75	26	12
SP2FX11X30	11	75	30	12

SP2F / 2날 플랫엔드밀

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P60~P61







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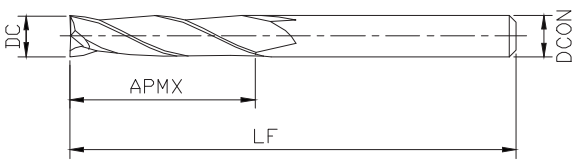
주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP2FX12X30	12	80	30	12
SP2FX13X35	13	100	35	12
SP2FX14X35	14	100	35	16
SP2FX15X38	15	100	38	16
SP2FX16X40	16	100	40	16
SP2FX17X42	17	100	42	16
SP2FX18X45	18	100	45	16
SP2FX19X45	19	100	45	20
SP2FX20X45	20	100	45	20
SP2FX21X45	21	100	45	20
SP2FX22X45	22	100	45	20
SP2FX23X50	23	120	50	25
SP2FX24X50	24	120	50	25
SP2FX25X50	25	120	50	25

SP2F / 2날 롱 플랫엔드밀

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P62







- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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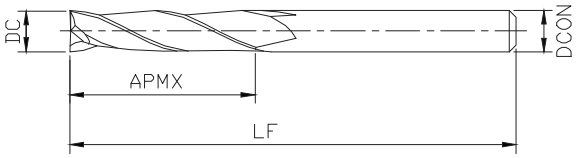
주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP2FX1X4	1	60	4	6
SP2FX1P5X6	1.5	60	6	6
SP2FX2X10	2	60	10	6
SP2FX2X16		60	16	6
SP2FX2P5X12	2.5	60	12	6
SP2FX2P5X16		60	16	6
SP2FX3X12	3	70	12	6
SP2FX3X16		70	16	6
SP2FX4X12	4	70	12	6
SP2FX4X16		70	16	6
SP2FX4X20		70	20	6
SP2FX4X30		70	30	6
SP2FX5X20	5	70	20	6
SP2FX5X25		70	25	6
SP2FX5X30		80	30	6
SP2FX6X20	6	70	20	6
SP2FX6X20L		90	20	6
SP2FX6X25		75	25	6
SP2FX6X30		80	30	6
SP2FX6X40		120	40	6
SP2FX8X25	8	80	25	8
SP2FX8X30		80	30	8
SP2FX8X40		90	40	8
SP2FX8X40L		120	40	8
SP2FX8X45		100	45	8
SP2FX10X30	10	80	30	10
SP2FX10X30L		100	30	10
SP2FX10X35		90	35	10
SP2FX10X40		90	40	10
SP2FX10X45		100	45	10
SP2FX10X50		100	50	10
SP2FX10X60		110	60	10
SP2FX12X35	12	90	35	12
SP2FX12X40		100	40	12
SP2FX12X40L		120	40	12
SP2FX12X45		130	45	12
SP2FX12X50		100	50	12
SP2FX12X55		110	55	12
SP2FX12X60		110	60	12
SP2FX16X50	16	110	50	16

SP2F / 2날 롱 플랫엔드밀

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P62







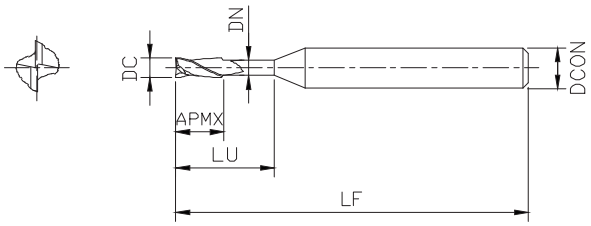
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!

주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP2FX16X60	16	120	60	16
SP2FX16X70		130	70	16
SP2FX20X60	20	130	60	20
SP2FX20X70		130	70	20
SP2FX20X80		150	80	20

SP2FN / 2날 롱넥 플랫

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30° | SPEED FEED P63~P67





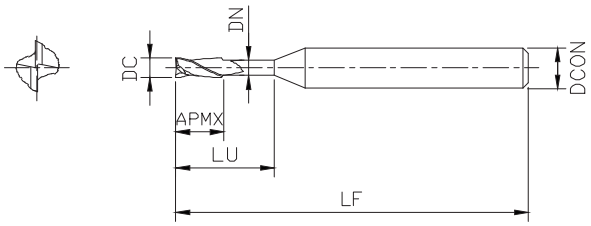
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 날끝 Touch 추가로 안정적 가공 지향

주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2FNX0P2X0P5	0.2 X 0.5	45	0.3	4	0.175
SP2FNX0P2X1	0.2 X 1	45	0.3	4	0.175
SP2FNX0P2X1P5	0.2 X 1.5	45	0.3	4	0.175
SP2FNX0P2X2	0.2 X 2	45	0.3	4	0.175
SP2FNX0P3X1	0.3 X 1	45	0.45	4	0.275
SP2FNX0P3X1P5	0.3 X 1.5	45	0.45	4	0.275
SP2FNX0P3X2	0.3 X 2	45	0.45	4	0.275
SP2FNX0P3X2P5	0.3 X 2.5	45	0.45	4	0.275
SP2FNX0P3X3	0.3 X 3	45	0.45	4	0.275
SP2FNX0P3X4	0.3 X 4	45	0.45	4	0.275
SP2FNX0P3X5	0.3 X 5	45	0.45	4	0.275
SP2FNX0P4X1	0.4 X 1	45	0.6	4	0.37
SP2FNX0P4X1P5	0.4 X 1.5	45	0.6	4	0.37
SP2FNX0P4X2	0.4 X 2	45	0.6	4	0.37
SP2FNX0P4X2P5	0.4 X 2.5	45	0.6	4	0.37
SP2FNX0P4X3	0.4 X 3	45	0.6	4	0.37
SP2FNX0P4X4	0.4 X 4	45	0.6	4	0.37
SP2FNX0P4X5	0.4 X 5	45	0.6	4	0.37
SP2FNX0P4X6	0.4 X 6	45	0.6	4	0.37
SP2FNX0P4X8	0.4 X 8	45	0.6	4	0.37
SP2FNX0P4X10	0.4 X 10	45	0.6	4	0.37
SP2FNX0P5X1	0.5 X 1	45	0.7	4	0.45
SP2FNX0P5X1P5	0.5 X 1.5	45	0.7	4	0.45
SP2FNX0P5X2	0.5 X 2	45	0.7	4	0.45
SP2FNX0P5X2P5	0.5 X 2.5	45	0.7	4	0.45
SP2FNX0P5X3	0.5 X 3	45	0.7	4	0.45
SP2FNX0P5X4	0.5 X 4	45	0.7	4	0.45
SP2FNX0P5X5	0.5 X 5	45	0.7	4	0.45
SP2FNX0P5X6	0.5 X 6	45	0.7	4	0.45
SP2FNX0P5X8	0.5 X 8	45	0.7	4	0.45
SP2FNX0P5X10	0.5 X 10	45	0.7	4	0.45
SP2FNX0P5X12	0.5 X 12	45	0.7	4	0.45
SP2FNX0P6X2	0.6 X 2	45	0.9	4	0.55
SP2FNX0P6X3	0.6 X 3	45	0.9	4	0.55
SP2FNX0P6X4	0.6 X 4	45	0.9	4	0.55
SP2FNX0P6X5	0.6 X 5	45	0.9	4	0.55
SP2FNX0P6X6	0.6 X 6	45	0.9	4	0.55
SP2FNX0P6X8	0.6 X 8	45	0.9	4	0.55
SP2FNX0P6X10	0.6 X 10	45	0.9	4	0.55
SP2FNX0P6X12	0.6 X 12	45	0.9	4	0.55

SP2FN / 2날 롱넥 플랫

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30° | SPEED FEED P63~P67





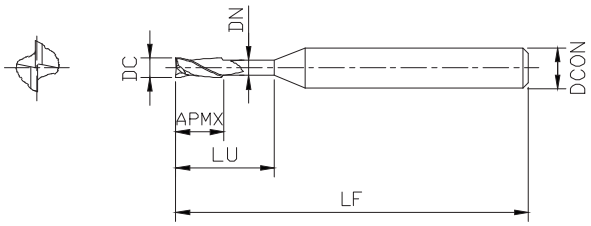
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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- 날끝 Touch 추가로 안정적 가공 지향

주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2FNX0P6X14	0.6 X 14	45	0.9	4	0.55
SP2FNX0P7X2	0.7 X 2	45	1	4	0.65
SP2FNX0P7X4	0.7 X 4	45	1	4	0.65
SP2FNX0P7X6	0.7 X 6	45	1	4	0.65
SP2FNX0P7X8	0.7 X 8	45	1	4	0.65
SP2FNX0P7X10	0.7 X 10	45	1	4	0.65
SP2FNX0P7X12	0.7 X 12	45	1	4	0.65
SP2FNX0P8X2	0.8 X 2	45	1.2	4	0.75
SP2FNX0P8X3	0.8 X 3	45	1.2	4	0.75
SP2FNX0P8X4	0.8 X 4	45	1.2	4	0.75
SP2FNX0P8X5	0.8 X 5	45	1.2	4	0.75
SP2FNX0P8X6	0.8 X 6	45	1.2	4	0.75
SP2FNX0P8X8	0.8 X 8	45	1.2	4	0.75
SP2FNX0P8X10	0.8 X 10	45	1.2	4	0.75
SP2FNX0P8X12	0.8 X 12	45	1.2	4	0.75
SP2FNX0P8X14	0.8 X 14	45	1.2	4	0.75
SP2FNX1X2	1 X 2	45	1.5	4	0.95
SP2FNX1X3	1 X 3	45	1.5	4	0.95
SP2FNX1X4	1 X 4	45	1.5	4	0.95
SP2FNX1X5	1 X 5	45	1.5	4	0.95
SP2FNX1X6	1 X 6	45	1.5	4	0.95
SP2FNX1X8	1 X 8	45	1.5	4	0.95
SP2FNX1X10	1 X 10	45	1.5	4	0.95
SP2FNX1X12	1 X 12	45	1.5	4	0.95
SP2FNX1X14	1 X 14	50	1.5	4	0.95
SP2FNX1X16	1 X 16	50	1.5	4	0.95
SP2FNX1X20	1 X 20	50	1.5	4	0.95
SP2FNX1P2X4	1.2 X 4	45	1.5	4	1.15
SP2FNX1P2X6	1.2 X 6	45	1.5	4	1.15
SP2FNX1P2X8	1.2 X 8	45	1.5	4	1.15
SP2FNX1P2X10	1.2 X 10	45	1.5	4	1.15
SP2FNX1P2X12	1.2 X 12	45	1.5	4	1.15
SP2FNX1P5X4	1.5 X 4	45	2.3	4	1.45
SP2FNX1P5X6	1.5 X 6	45	2.3	4	1.45
SP2FNX1P5X8	1.5 X 8	45	2.3	4	1.45
SP2FNX1P5X10	1.5 X 10	45	2.3	4	1.45
SP2FNX1P5X12	1.5 X 12	45	2.3	4	1.45
SP2FNX1P5X14	1.5 X 14	50	2.3	4	1.45
SP2FNX1P5X16	1.5 X 16	50	2.3	4	1.45
SP2FNX1P5X18	1.5 X 18	55	2.3	4	1.45

SP2FN / 2날 롱넥 플랫

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30° | SPEED FEED P63~P67





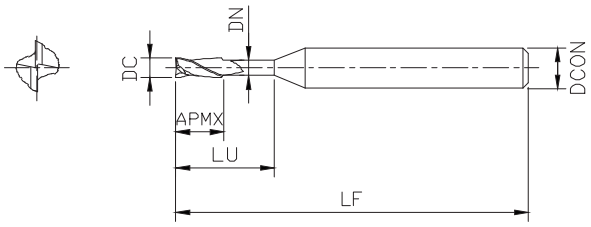
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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- 날끝 Touch 추가로 안정적 가공 지향

주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2FNX1P5X20	1.5 X 20	55	2.3	4	1.45
SP2FNX1P8X8	1.8 X 8	45	2.7	4	1.75
SP2FNX2X6	2 X 6	45	3	4	1.95
SP2FNX2X8	2 X 8	45	3	4	1.95
SP2FNX2X10	2 X 10	45	3	4	1.95
SP2FNX2X12	2 X 12	45	3	4	1.95
SP2FNX2X14	2 X 14	50	3	4	1.95
SP2FNX2X16	2 X 16	50	3	4	1.95
SP2FNX2X18	2 X 18	55	3	4	1.95
SP2FNX2X20	2 X 20	55	3	4	1.95
SP2FNX2X26	2 X 26	60	3	4	1.95
SP2FNX2X30	2 X 30	70	3	4	1.95
SP2FNX2X35	2 X 35	70	3	4	1.95
SP2FNX2X40	2 X 40	80	3	4	1.95
SP2FNX2X50	2 X 50	90	3	4	1.95
SP2FNX2P5X8	2.5 X 8	45	3.7	4	2.45
SP2FNX2P5X10	2.5 X 10	45	3.7	4	2.45
SP2FNX2P5X12	2.5 X 12	45	3.7	4	2.45
SP2FNX2P5X14	2.5 X 14	50	3.7	4	2.45
SP2FNX2P5X16	2.5 X 16	50	3.7	4	2.45
SP2FNX2P5X18	2.5 X 18	50	3.7	4	2.45
SP2FNX2P5X20	2.5 X 20	55	3.7	4	2.45
SP2FNX2P5X26	2.5 X 26	60	3.7	4	2.45
SP2FNX2P5X30	2.5 X 30	70	3.7	4	2.45
SP2FNX2P5X35	2.5 X 35	70	3.7	4	2.45
SP2FNX2P5X40	2.5 X 40	80	3.7	4	2.45
SP2FNX2P5X50	2.5 X 50	90	3.7	4	2.45
SP2FNX3X8	3 X 8	45	4.5	6	2.85
SP2FNX3X10	3 X 10	45	4.5	6	2.85
SP2FNX3X12	3 X 12	45	4.5	6	2.85
SP2FNX3X14	3 X 14	50	4.5	6	2.85
SP2FNX3X16	3 X 16	55	4.5	6	2.85
SP2FNX3X18	3 X 18	55	4.5	6	2.85
SP2FNX3X20	3 X 20	60	4.5	6	2.85
SP2FNX3X26	3 X 26	65	4.5	6	2.85
SP2FNX3X30	3 X 30	80	4.5	6	2.85
SP2FNX3X35	3 X 35	90	4.5	6	2.85
SP2FNX3X40	3 X 40	90	4.5	6	2.85
SP2FNX3X45	3 X 45	90	4.5	6	2.85
SP2FNX3X50	3 X 50	90	4.5	6	2.85

SP2FN / 2날 롱넥 플랫

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30° | SPEED FEED P63~P67





- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 날끝 Touch 추가로 안정적 가공 지향

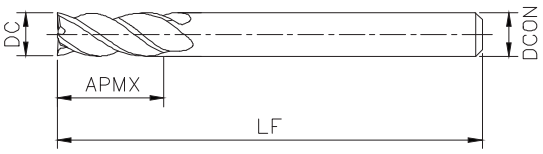
주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP2FNX4X10	4 X 10	45	6	6	3.85
SP2FNX4X12	4 X 12	50	6	6	3.85
SP2FNX4X14	4 X 14	60	6	6	3.85
SP2FNX4X16	4 X 16	60	6	6	3.85
SP2FNX4X18	4 X 18	60	6	6	3.85
SP2FNX4X20	4 X 20	70	6	6	3.85
SP2FNX4X26	4 X 26	80	6	6	3.85
SP2FNX4X30	4 X 30	90	6	6	3.85
SP2FNX4X35	4 X 35	90	6	6	3.85
SP2FNX4X40	4 X 40	100	6	6	3.85
SP2FNX4X45	4 X 45	100	6	6	3.85
SP2FNX4X50	4 X 50	100	6	6	3.85
SP2FNX4X60	4 X 60	100	6	6	3.85
SP2FNX5X16	5 X 16	60	8	6	4.85
SP2FNX5X20	5 X 20	60	8	6	4.85
SP2FNX5X26	5 X 26	70	8	6	4.85
SP2FNX5X30	5 X 30	80	8	6	4.85
SP2FNX5X35	5 X 35	90	8	6	4.85
SP2FNX5X40	5 X 40	90	8	6	4.85
SP2FNX5X50	5 X 50	100	8	6	4.85
SP2FNX5X60	5 X 60	100	8	6	4.85
SP2FNX6X15	6 X 15	60	9	6	5.85
SP2FNX6X20	6 X 20	60	9	6	5.85
SP2FNX6X30	6 X 30	70	9	6	5.85
SP2FNX6X32	6 X 32	90	9	6	5.85
SP2FNX8X25	8 X 25	70	12	8	7.7
SP2FNX8X30	8 X 30	80	12	8	7.7
SP2FNX8X42	8 X 42	100	12	8	7.7
SP2FNX10X30	10 X 30	75	15	10	9.7
SP2FNX10X35	10 X 35	80	15	10	9.7
SP2FNX10X45	10 X 45	100	15	10	9.7
SP2FNX12X35	12 X 35	80	20	12	11.7
SP2FNX12X40	12 X 40	90	20	12	11.7
SP2FNX12X50	12 X 50	110	20	12	11.7

SP4F / 4날 플랫

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P68







- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 부등리드 · 부등분할 적용으로 뛰어난 진동 억제 효과
- 신규 홈 형상 채택으로 사상 및 중 · 황삭까지 가능

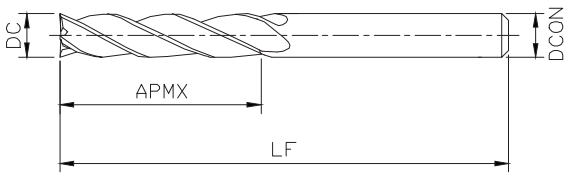
주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP4FX1X2P5	1	50	2.5	6
SP4FX1P2X3	1.2	50	3	6
SP4FX1P5X4	1.5	50	4	6
SP4FX2X6	2	50	6	6
SP4FX2P5X7	2.5	50	7	6
SP4FX3X8	3	50	8	6
SP4FX3P5X10	3.5	50	10	6
SP4FX4X10	4	50	10	6
SP4FX4P5X12	4.5	50	12	6
SP4FX5X15	5	60	15	6
SP4FX5P5X15	5.5	60	15	6
SP4FX6X15	6	60	15	6
SP4FX6P5X18	6.5	60	18	8
SP4FX7X20	7	60	20	8
SP4FX7P5X20	7.5	60	20	8
SP4FX8X20	8	70	20	8
SP4FX8P5X22	8.5	70	22	10
SP4FX9X22	9	70	22	10
SP4FX9P5X24	9.5	70	24	10
SP4FX10X25	10	75	25	10
SP4FX10P5X26	10.5	75	26	12
SP4FX11X30	11	75	30	12
SP4FX12X30	12	80	30	12
SP4FX13X35	13	100	35	12
SP4FX14X35	14	100	35	16
SP4FX15X38	15	100	38	16
SP4FX16X40	16	100	40	16
SP4FX17X42	17	100	42	16
SP4FX18X45	18	100	45	16
SP4FX19X45	19	100	45	20
SP4FX20X45	20	100	45	20
SP4FX21X45	21	100	45	20
SP4FX22X45	22	100	45	20
SP4FX23X50	23	120	50	25
SP4FX24X50	24	120	50	25
SP4FX25X50	25	120	50	25

SP4F / 4날 롱 플랫

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P69







- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!

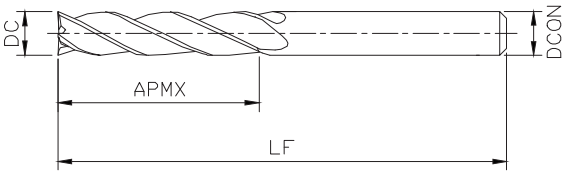
주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP4FX1X4	1	60	4	6
SP4FX1P5X6	1.5	60	6	6
SP4FX2X10	2	60	10	6
SP4FX2X16		60	16	6
SP4FX2P5X12	2.5	60	12	6
SP4FX2P5X16		60	16	6
SP4FX3X12	3	70	12	6
SP4FX3X16		70	16	6
SP4FX4X12	4	70	12	6
SP4FX4X16		70	16	6
SP4FX4X20		70	20	6
SP4FX4X30		70	30	6
SP4FX5X20	5	70	20	6
SP4FX5X25		70	25	6
SP4FX5X30		80	30	6
SP4FX6X20	6	70	20	6
SP4FX6X20L		90	20	6
SP4FX6X25		75	25	6
SP4FX6X30		80	30	6
SP4FX6X40		120	40	6
SP4FX8X25	8	80	25	8
SP4FX8X30		80	30	8
SP4FX8X40		90	40	8
SP4FX8X40L		120	40	8
SP4FX8X45		100	45	8
SP4FX10X30	10	80	30	10
SP4FX10X30L		100	30	10
SP4FX10X35		90	35	10
SP4FX10X40		90	40	10
SP4FX10X45		100	45	10
SP4FX10X50		100	50	10
SP4FX10X60		110	60	10
SP4FX12X35	12	90	35	12
SP4FX12X40		100	40	12
SP4FX12X40L		120	40	12
SP4FX12X45		130	45	12
SP4FX12X50		100	50	12
SP4FX12X55		110	55	12
SP4FX12X60		110	60	12
SP4FX16X50	16	110	50	16

SP4F / 4날 롱 플랫

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P69







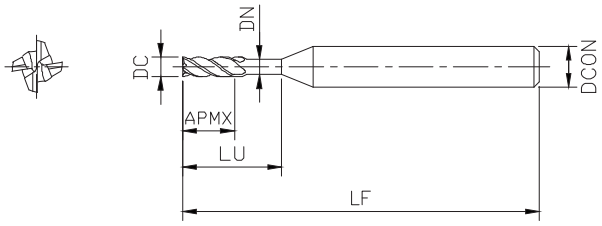
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!

주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SP4FX16X60	16	120	60	16
SP4FX16X70		130	70	16
SP4FX20X60	20	130	60	20
SP4FX20X70		130	70	20
SP4FX20X80		150	80	20

SP4FN / 4날 롱넥 플랫

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P70





- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
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- 부등리드 · 부등분할 적용으로 뛰어난 진동 억제 효과

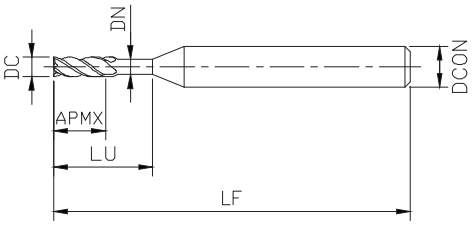
주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP4FNX1X4	1 X 4	45	1.5	4	0.95
SP4FNX1X6	1 X 6	45	1.5	4	0.95
SP4FNX1X8	1 X 8	45	1.5	4	0.95
SP4FNX1X10	1 X 10	45	1.5	4	0.95
SP4FNX1P5X6	1.5 X 6	45	2.3	4	1.45
SP4FNX1P5X8	1.5 X 8	45	2.3	4	1.45
SP4FNX1P5X10	1.5 X 10	45	2.3	4	1.45
SP4FNX1P5X12	1.5 X 12	45	2.3	4	1.45
SP4FNX2X8	2 X 8	45	3	4	1.95
SP4FNX2X10	2 X 10	45	3	4	1.95
SP4FNX2X12	2 X 12	45	3	4	1.95
SP4FNX2X16	2 X 16	50	3	4	1.95
SP4FNX2P5X12	2.5 X 12	45	3.7	4	2.45
SP4FNX2P5X16	2.5 X 16	50	3.7	4	2.45
SP4FNX3X14	3 X 14	50	4.5	6	2.85
SP4FNX3X16	3 X 16	50	4.5	6	2.85
SP4FNX3X26	3 X 26	65	4.5	6	2.85
SP4FNX4X10	4 X 10	45	6	6	3.85
SP4FNX4X12	4 X 12	50	6	6	3.85
SP4FNX4X14	4 X 14	60	6	6	3.85
SP4FNX4X16	4 X 16	60	6	6	3.85
SP4FNX4X20	4 X 20	60	6	6	3.85
SP4FNX4X26	4 X 26	70	6	6	3.85
SP4FNX4X30	4 X 30	80	6	6	3.85
SP4FNX4X35	4 X 35	90	6	6	3.85
SP4FNX4X40	4 X 40	90	6	6	3.85
SP4FNX4X45	4 X 45	100	6	6	3.85
SP4FNX4X50	4 X 50	100	6	6	3.85
SP4FNX4X60	4 X 60	100	6	6	3.85
SP4FNX5X16	5 X 16	60	8	6	4.85
SP4FNX5X20	5 X 20	60	8	6	4.85
SP4FNX5X26	5 X 26	70	8	6	4.85
SP4FNX5X30	5 X 30	80	8	6	4.85
SP4FNX5X35	5 X 35	90	8	6	4.85
SP4FNX5X40	5 X 40	90	8	6	4.85
SP4FNX5X50	5 X 50	100	8	6	4.85
SP4FNX5X60	5 X 60	100	8	6	4.85
SP4FNX6X15	6 X 15	60	9	6	5.85
SP4FNX6X20	6 X 20	60	9	6	5.85
SP4FNX6X30	6 X 30	70	9	6	5.85

SP4FN / 4날 롱넥 플랫

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P70







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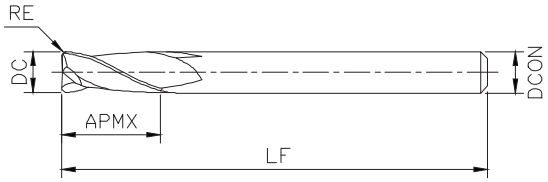
주문번호 EDP No.	외경 X 유효장 DC X LU	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
SP4FNX8X25	8 X 25	70	12	8	7.7
SP4FNX8X30	8 X 30	80	12	8	7.7
SP4FNX10X30	10 X 30	75	15	10	9.7
SP4FNX10X35	10 X 35	80	15	10	9.7
SP4FNX10X45	10 X 45	100	15	10	9.7
SP4FNX12X35	12 X 35	80	20	12	11.7
SP4FNX12X40	12 X 40	90	20	12	11.7
SP4FNX12X50	12 X 50	110	20	12	11.7

SP2C / 2날 코너R









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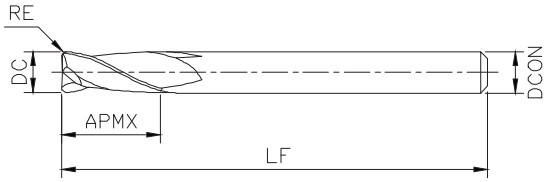
주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP2CX1XR0P05	1 X R0.05	50	2.5	6
SP2CX1XR0P1	1 X R0.1	50	2.5	6
SP2CX1XR0P3	1 X R0.3	50	2.5	6
SP2CX1XR0P2	1 X R02	50	2.5	6
SP2CX1P5XRP05	1.5 X R0.05	50	4	6
SP2CX1P5XR0P1	1.5 X R0.1	50	4	6
SP2CX1P5XR0P2	1.5 X R0.2	50	4	6
SP2CX1P5XR0P3	1.5 X R0.3	50	4	6
SP2CX1P5XR0P5	1.5 X R0.5	50	4	6
SP2CX2XR0P1	2 X R0.1	50	6	6
SP2CX2XR0P2	2 X R0.2	50	6	6
SP2CX2XR0P3	2 X R0.3	50	6	6
SP2CX2XR0P5	2 X R0.5	50	6	6
SP2CX2P5XR0P1	2.5 X R0.1	60	7	6
SP2CX2P5XR0P2	2.5 X R0.2	60	7	6
SP2CX2P5XR0P3	2.5 X R0.3	60	7	6
SP2CX2P5XR0P5	2.5 X R0.5	60	7	6
SP2CX3XR0P1	3 X R0.1	60	8	6
SP2CX3XR0P2	3 X R0.2	60	8	6
SP2CX3XR0P3	3 X R0.3	60	8	6
SP2CX3XR0P5	3 X R0.5	60	8	6
SP2CX3XR1	3 X R1	60	8	6
SP2CX3P5XR0P5	3.5 X R0.5	70	10	6
SP2CX4XR0P1	4 X R0.1	70	10	6
SP2CX4XR0P2	4 X R0.2	70	10	6
SP2CX4XR0P3	4 X R0.3	70	10	6
SP2CX4XR0P5	4 X R0.5	70	10	6
SP2CX4XR1	4 X R1	70	10	6
SP2CX5XR0P1	5 X R0.1	90	13	6
SP2CX5XR0P2	5 X R0.2	90	13	6
SP2CX5XR0P3	5 X R0.3	90	13	6
SP2CX5XR0P5	5 X R0.5	90	13	6
SP2CX5XR1	5 X R1	90	13	6
SP2CX6XR0P1	6 X R0.1	90	15	6
SP2CX6XR0P2	6 X R0.2	90	15	6
SP2CX6XR0P3S	6 X R0.3	60	15	6
SP2CX6XR0P3	6 X R0.3	90	15	6
SP2CX6XR0P5S	6 X R0.5	60	15	6
SP2CX6XR0P5	6 X R0.5	90	15	6
SP2CX6XR0P5L	6 X R0.5	110	15	6

SP2C / 2날 코너R









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- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

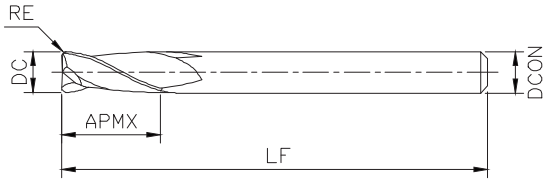
주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP2CX6XR1S	6 X R1	60	15	6
SP2CX6XR1	6 X R1	90	15	6
SP2CX6XR1L	6 X R1	110	15	6
SP2CX6XR1P5	6 X R1.5	90	15	6
SP2CX6XR2	6 X R2	90	15	6
SP2CX7XR0P2	7 X R0.2	90	16	8
SP2CX8XR0P1	8 X R0.1	100	20	8
SP2CX8XR0P2	8 X R0.2	100	20	8
SP2CX8XR0P3S	8 X R0.3	70	20	8
SP2CX8XR0P3	8 X R0.3	100	20	8
SP2CX8XR0P5S	8 X R0.5	70	20	8
SP2CX8XR0P5	8 X R0.5	100	20	8
SP2CX8XR0P5L	8 X R0.5	120	20	8
SP2CX8XR1S	8 X R1	70	20	8
SP2CX8XR1	8 X R1	100	20	8
SP2CX8XR1L	8 X R1	120	20	8
SP2CX8XR1P5	8 X R1.5	100	20	8
SP2CX8XR2	8 X R2	100	20	8
SP2CX8XR2P5	8 X R2.5	100	20	8
SP2CX8XR3	8 X R3	100	20	8
SP2CX10XR0P1	10 X R0.1	100	25	10
SP2CX10XR0P2	10 X R0.2	100	25	10
SP2CX10XR0P3	10 X R0.3	100	25	10
SP2CX10XR0P5S	10 X R0.5	75	25	10
SP2CX10XR0P5	10 X R0.5	100	25	10
SP2CX10XR0P5L	10 X R0.5	130	25	10
SP2CX10XR1	10 X R1	100	25	10
SP2CX10XR1L	10 X R1	130	25	10
SP2CX10XR1P5	10 X R1.5	100	25	10
SP2CX10XR2	10 X R2	100	25	10
SP2CX10XR2P5	10 X R2.5	100	25	10
SP2CX10XR3	10 X R3	100	25	10
SP2CX10XR4	10 X R4	100	25	10
SP2CX12XR0P1	12 X R0.1	110	30	12
SP2CX12XR0P2	12 X R0.2	110	30	12
SP2CX12XR0P3	12 X R0.3	110	30	12
SP2CX12XR0P5	12 X R0.5	110	30	12
SP2CX12XR0P5L	12 X R0.5	130	30	12
SP2CX12XR1	12 X R1	110	30	12
SP2CX12XR1L	12 X R1	130	30	12

SP2C / 2날 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 30° | SPEED FEED P71







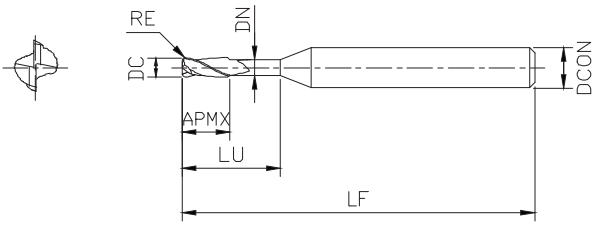
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주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP2CX12XR1P5	12 X R1.5	110	30	12
SP2CX12XR2	12 X R2	110	30	12
SP2CX12XR2P5	12 X R2.5	110	30	12
SP2CX12XR3	12 X R3	110	30	12
SP2CX12XR4	12 X R4	110	30	12
SP2CX12XR5	12 X R5	110	30	12
SP2CX14XR1	14 X R1	150	32	16
SP2CX16XR0P5	16 X R0.5	150	32	16
SP2CX16XR1	16 X R1	150	32	16
SP2CX16XR2	16 X R2	150	32	16
SP2CX16XR3	16 X R3	150	32	16
SP2CX20XR0P5	20 X R0.5	150	38	20
SP2CX20XR1	20 X R1	150	38	20
SP2CX20XR2	20 X R2	150	38	20
SP2CX20XR3	20 X R3	150	38	20

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°





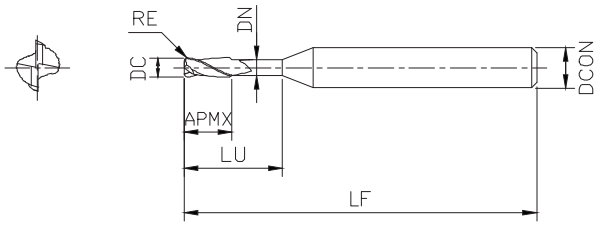
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주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2XP4X1XP05	0.4 X 1 X R0.05	45	0.6	4	0.37
S2XP4X1X0P1	0.4 X 1 X R0.1	45	0.6	4	0.37
S2XP4X1P5XP05	0.4 X 1.5 X R0.05	45	0.6	4	0.37
S2XP4X1P5X0P1	0.4 X 1.5 X R0.1	45	0.6	4	0.37
S2XP4X2XP05	0.4 X 2 X R0.05	45	0.6	4	0.37
S2XP4X2X0P1	0.4 X 2 X R0.1	45	0.6	4	0.37
S2XP4X2P5XP05	0.4 X 2.5 X R0.05	45	0.6	4	0.37
S2XP4X2P5X0P1	0.4 X 2.5 X R0.1	45	0.6	4	0.37
S2XP4X3XP05	0.4 X 3 X R0.05	45	0.6	4	0.37
S2XP4X3X0P1	0.4 X 3 X R0.1	45	0.6	4	0.37
S2XP4X4XP05	0.4 X 4 X R0.05	45	0.6	4	0.37
S2XP4X4X0P1	0.4 X 4 X R0.1	45	0.6	4	0.37
S2XP5X1XP05	0.5 X 1 X R0.05	45	0.7	4	0.45
S2XP5X1X0P1	0.5 X 1 X R0.1	45	0.7	4	0.45
S2XP5X1P5XP05	0.5 X 1.5 X R0.05	45	0.7	4	0.45
S2XP5X1P5X0P1	0.5 X 1.5 X R0.1	45	0.7	4	0.45
S2XP5X2XP05	0.5 X 2 X R0.05	45	0.7	4	0.45
S2XP5X2X0P1	0.5 X 2 X R0.1	45	0.7	4	0.45
S2XP5X2P5XP05	0.5 X 2.5 X R0.05	45	0.7	4	0.45
S2XP5X2P5X0P1	0.5 X 2.5 X R0.1	45	0.7	4	0.45
S2XP5X3XP05	0.5 X 3 X R0.05	45	0.7	4	0.45
S2XP5X3X0P1	0.5 X 3 X R0.1	45	0.7	4	0.45
S2XP5X4XP05	0.5 X 4 X R0.05	45	0.7	4	0.45
S2XP5X4X0P1	0.5 X 4 X R0.1	45	0.7	4	0.45
S2XP5X5XP05	0.5 X 5 X R0.05	45	0.7	4	0.45
S2XP5X5X0P1	0.5 X 5 X R0.1	45	0.7	4	0.45
S2XP5X6XP05	0.5 X 6 X R0.05	45	0.7	4	0.45
S2XP5X6X0P1	0.5 X 6 X R0.1	45	0.7	4	0.45
S2XP6X2XP05	0.6 X 2 X R0.05	45	0.9	4	0.55
S2XP6X2X0P1	0.6 X 2 X R0.1	45	0.9	4	0.55
S2XP6X2X0P2	0.6 X 2 X R0.2	45	0.9	4	0.55
S2XP6X3XP05	0.6 X 3 X R0.05	45	0.9	4	0.55
S2XP6X3X0P1	0.6 X 3 X R0.1	45	0.9	4	0.55
S2XP6X3X0P2	0.6 X 3 X R0.2	45	0.9	4	0.55
S2XP6X4XP05	0.6 X 4 X R0.05	45	0.9	4	0.55
S2XP6X4X0P1	0.6 X 4 X R0.1	45	0.9	4	0.55
S2XP6X4X0P2	0.6 X 4 X R0.2	45	0.9	4	0.55
S2XP6X6XP05	0.6 X 6 X R0.05	45	0.9	4	0.55
S2XP6X6X0P1	0.6 X 6 X R0.1	45	0.9	4	0.55
S2XP6X6X0P2	0.6 X 6 X R0.2	45	0.9	4	0.55

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°



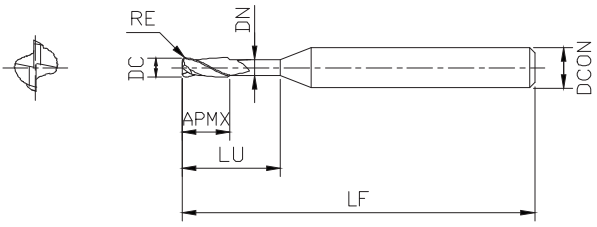


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주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2XP6X8XP05	0.6 X 8 X R0.05	45	0.9	4	0.55
S2XP6X8X0P1	0.6 X 8 X R0.1	45	0.9	4	0.55
S2XP6X8X0P2	0.6 X 8 X R0.2	45	0.9	4	0.55
S2XP6X10XP05	0.6 X 10 X R0.05	45	0.9	4	0.55
S2XP6X10X0P1	0.6 X 10 X R0.1	45	0.9	4	0.55
S2XP6X10X0P2	0.6 X 10 X R0.2	45	0.9	4	0.55
S2XP7X2XP05	0.7 X 2 X R0.05	45	1	4	0.65
S2XP7X2X0P1	0.7 X 2 X R0.1	45	1	4	0.65
S2XP7X2X0P2	0.7 X 2 X R0.2	45	1	4	0.65
S2XP7X4XP05	0.7 X 4 X R0.05	45	1	4	0.65
S2XP7X4X0P1	0.7 X 4 X R0.1	45	1	4	0.65
S2XP7X4X0P2	0.7 X 4 X R0.2	45	1	4	0.65
S2XP7X6XP05	0.7 X 6 X R0.05	45	1	4	0.65
S2XP7X6X0P1	0.7 X 6 X R0.1	45	1	4	0.65
S2XP7X6X0P2	0.7 X 6 X R0.2	45	1	4	0.65
S2XP7X8XP05	0.7 X 8 X R0.05	45	1	4	0.65
S2XP7X8X0P1	0.7 X 8 X R0.1	45	1	4	0.65
S2XP7X8X0P2	0.7 X 8 X R0.2	45	1	4	0.65
S2XP7X10XP05	0.7 X 10 X R0.05	45	1	4	0.65
S2XP7X10X0P1	0.7 X 10 X R0.1	45	1	4	0.65
S2XP7X10X0P2	0.7 X 10 X R0.2	45	1	4	0.65
S2XP8X2XP05	0.8 X 2 X R0.05	45	1.2	4	0.75
S2XP8X2X0P1	0.8 X 2 X R0.1	45	1.2	4	0.75
S2XP8X2X0P2	0.8 X 2 X R0.2	45	1.2	4	0.75
S2XP8X3XP05	0.8 X 3 X R0.05	45	1.2	4	0.75
S2XP8X3X0P1	0.8 X 3 X R0.1	45	1.2	4	0.75
S2XP8X3X0P2	0.8 X 3 X R0.2	45	1.2	4	0.75
S2XP8X4XP05	0.8 X 4 X R0.05	45	1.2	4	0.75
S2XP8X4X0P1	0.8 X 4 X R0.1	45	1.2	4	0.75
S2XP8X4X0P2	0.8 X 4 X R0.2	45	1.2	4	0.75
S2XP8X6XP05	0.8 X 6 X R0.05	45	1.2	4	0.75
S2XP8X6X0P1	0.8 X 6 X R0.1	45	1.2	4	0.75
S2XP8X6X0P2	0.8 X 6 X R0.2	45	1.2	4	0.75
S2XP8X8XP05	0.8 X 8 X R0.05	45	1.2	4	0.75
S2XP8X8X0P1	0.8 X 8 X R0.1	45	1.2	4	0.75
S2XP8X8X0P2	0.8 X 8 X R0.2	45	1.2	4	0.75
S2XP8X10XP05	0.8 X 10 X R0.05	45	1.2	4	0.75
S2XP8X10X0P1	0.8 X 10 X R0.1	45	1.2	4	0.75
S2XP8X10X0P2	0.8 X 10 X R0.2	45	1.2	4	0.75
S2X1X2XP05	1 X 3 X R0.05	45	1.5	4	0.95

S2 / 2날 롱넥 코너R





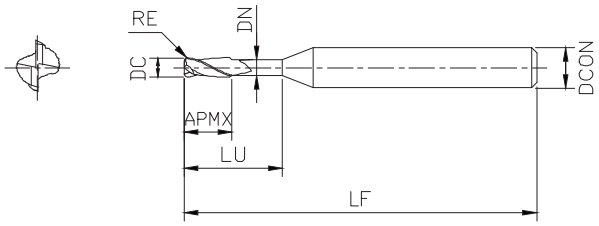
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- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X1X3X0P1	1 X 3 X R0.1	45	1.5	4	0.95
S2X1X3X0P2	1 X 3 X R0.2	45	1.5	4	0.95
S2X1X3X0P3	1 X 3 X R0.3	45	1.5	4	0.95
S2X1X4XP05	1 X 4 X R0.05	45	1.5	4	0.95
S2X1X4X0P1	1 X 4 X R0.1	45	1.5	4	0.95
S2X1X4X0P2	1 X 4 X R0.2	45	1.5	4	0.95
S2X1X4X0P3	1 X 4 X R0.3	45	1.5	4	0.95
S2X1X6XP05	1 X 6 X R0.05	45	1.5	4	0.95
S2X1X6X0P1	1 X 6 X R0.1	45	1.5	4	0.95
S2X1X6X0P2	1 X 6 X R0.2	45	1.5	4	0.95
S2X1X6X0P3	1 X 6 X R0.3	45	1.5	4	0.95
S2X1X8XP05	1 X 8 X R0.05	45	1.5	4	0.95
S2X1X8X0P1	1 X 8 X R0.1	45	1.5	4	0.95
S2X1X8X0P2	1 X 8 X R0.2	45	1.5	4	0.95
S2X1X8X0P3	1 X 8 X R0.3	45	1.5	4	0.95
S2X1X10XP05	1 X 10 X R0.05	45	1.5	4	0.95
S2X1X10X0P1	1 X 10 X R0.1	45	1.5	4	0.95
S2X1X10X0P2	1 X 10 X R0.2	45	1.5	4	0.95
S2X1X10X0P3	1 X 10 X R0.3	45	1.5	4	0.95
S2X1X12XP05	1 X 12 X R0.05	45	1.5	4	0.95
S2X1X12X0P1	1 X 12 X R0.1	45	1.5	4	0.95
S2X1X12X0P2	1 X 12 X R0.2	45	1.5	4	0.95
S2X1X12X0P3	1 X 12 X R0.3	45	1.5	4	0.95
S2X1X14XP05	1 X 14 X R0.05	50	1.5	4	0.95
S2X1X14X0P1	1 X 14 X R0.1	50	1.5	4	0.95
S2X1X14X0P2	1 X 14 X R0.2	50	1.5	4	0.95
S2X1X14X0P3	1 X 14 X R0.3	50	1.5	4	0.95
S2X1X16XP05	1 X 16 X R0.05	50	1.5	4	0.95
S2X1X16X0P1	1 X 16 X R0.1	50	1.5	4	0.95
S2X1X16X0P2	1 X 16 X R0.2	50	1.5	4	0.95
S2X1X16X0P3	1 X 16 X R0.3	50	1.5	4	0.95
S2X1X20XP05	1 X 20 X R0.05	50	1.5	4	0.95
S2X1X20X0P1	1 X 20 X R0.1	50	1.5	4	0.95
S2X1X20X0P2	1 X 20 X R0.2	50	1.5	4	0.95
S2X1X20X0P3	1 X 20 X R0.3	50	1.5	4	0.95
S2X1P2X4XP05	1.2 X 4 X R0.05	45	1.5	4	1.15
S2X1P2X4X0P1	1.2 X 4 X R0.1	45	1.5	4	1.15
S2X1P2X4X0P2	1.2 X 4 X R0.2	45	1.5	4	1.15
S2X1P2X4X0P3	1.2 X 4 X R0.3	45	1.5	4	1.15
S2X1P2X6XP05	1.2 X 6 X R0.05	45	1.5	4	1.15

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°





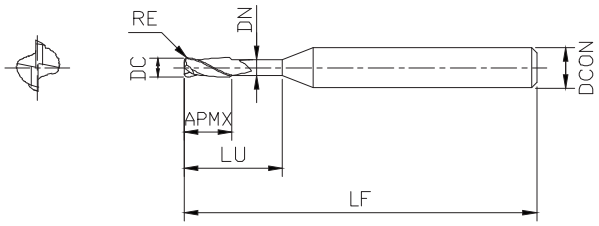
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주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X1P2X6X0P1	1.2 X 6 X R0.1	45	1.5	4	1.15
S2X1P2X6X0P2	1.2 X 6 X R0.2	45	1.5	4	1.15
S2X1P2X6X0P3	1.2 X 6 X R0.3	45	1.5	4	1.15
S2X1P2X8XP05	1.2 X 8 X R0.05	45	1.5	4	1.15
S2X1P2X8X0P1	1.2 X 8 X R0.1	45	1.5	4	1.15
S2X1P2X8X0P2	1.2 X 8 X R0.2	45	1.5	4	1.15
S2X1P2X8X0P3	1.2 X 8 X R0.3	45	1.5	4	1.15
S2X1P2X10XP05	1.2 X 10 X R0.05	45	1.5	4	1.15
S2X1P2X10X0P1	1.2 X 10 X R0.1	45	1.5	4	1.15
S2X1P2X10X0P2	1.2 X 10 X R0.2	45	1.5	4	1.15
S2X1P2X10X0P3	1.2 X 10 X R0.3	45	1.5	4	1.15
S2X1P2X12XP05	1.2 X 12 X R0.05	45	1.5	4	1.15
S2X1P2X12X0P1	1.2 X 12 X R0.1	45	1.5	4	1.15
S2X1P2X12X0P2	1.2 X 12 X R0.2	45	1.5	4	1.15
S2X1P2X12X0P3	1.2 X 12 X R0.3	45	1.5	4	1.15
S2X1P5X4XP05	1.5 X 4 X R0.05	45	2.3	4	1.45
S2X1P5X4X0P1	1.5 X 4 X R0.1	45	2.3	4	1.45
S2X1P5X4X0P2	1.5 X 4 X R0.2	45	2.3	4	1.45
S2X1P5X4X0P3	1.5 X 4 X R0.3	45	2.3	4	1.45
S2X1P5X4X0P5	1.5 X 4 X R0.5	45	2.3	4	1.45
S2X1P5X6XP05	1.5 X 6 X R0.05	45	2.3	4	1.45
S2X1P5X6X0P1	1.5 X 6 X R0.1	45	2.3	4	1.45
S2X1P5X6X0P2	1.5 X 6 X R0.2	45	2.3	4	1.45
S2X1P5X6X0P3	1.5 X 6 X R0.3	45	2.3	4	1.45
S2X1P5X6X0P5	1.5 X 6 X R0.5	45	2.3	4	1.45
S2X1P5X8XP05	1.5 X 8 X R0.05	45	2.3	4	1.45
S2X1P5X8X0P1	1.5 X 8 X R0.1	45	2.3	4	1.45
S2X1P5X8X0P2	1.5 X 8 X R0.2	45	2.3	4	1.45
S2X1P5X8X0P3	1.5 X 8 X R0.3	45	2.3	4	1.45
S2X1P5X8X0P5	1.5 X 8 X R0.5	45	2.3	4	1.45
S2X1P5X10XP05	1.5 X 10 X R0.05	45	2.3	4	1.45
S2X1P5X10X0P1	1.5 X 10 X R0.1	45	2.3	4	1.45
S2X1P5X10X0P2	1.5 X 10 X R0.2	45	2.3	4	1.45
S2X1P5X10X0P3	1.5 X 10 X R0.3	45	2.3	4	1.45
S2X1P5X10X0P5	1.5 X 10 X R0.5	45	2.3	4	1.45
S2X1P5X12XP05	1.5 X 12 X R0.05	45	2.3	4	1.45
S2X1P5X12X0P1	1.5 X 12 X R0.1	45	2.3	4	1.45
S2X1P5X12X0P2	1.5 X 12 X R0.2	45	2.3	4	1.45
S2X1P5X12X0P3	1.5 X 12 X R0.3	45	2.3	4	1.45
S2X1P5X12X0P5	1.5 X 12 X R0.5	45	2.3	4	1.45

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°





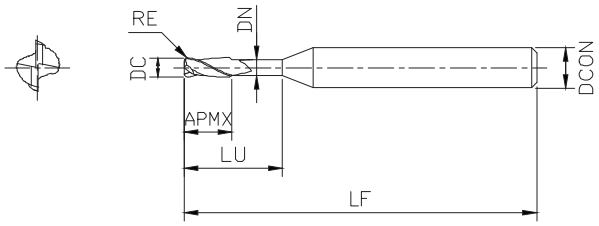
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주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X1P5X14XP05	1.5 X 14 X R0.05	50	2.3	4	1.45
S2X1P5X14X0P1	1.5 X 14 X R0.1	50	2.3	4	1.45
S2X1P5X14X0P2	1.5 X 14 X R0.2	50	2.3	4	1.45
S2X1P5X14X0P3	1.5 X 14 X R0.3	50	2.3	4	1.45
S2X1P5X14X0P5	1.5 X 14 X R0.5	50	2.3	4	1.45
S2X1P5X16XP05	1.5 X 16 X R0.05	50	2.3	4	1.45
S2X1P5X16X0P1	1.5 X 16 X R0.1	50	2.3	4	1.45
S2X1P5X16X0P2	1.5 X 16 X R0.2	50	2.3	4	1.45
S2X1P5X16X0P3	1.5 X 16 X R0.3	50	2.3	4	1.45
S2X1P5X16X0P5	1.5 X 16 X R0.5	50	2.3	4	1.45
S2X1P5X20XP05	1.5 X 20 X R0.05	55	2.3	4	1.45
S2X1P5X20X0P1	1.5 X 20 X R0.1	55	2.3	4	1.45
S2X1P5X20X0P2	1.5 X 20 X R0.2	55	2.3	4	1.45
S2X1P5X20X0P3	1.5 X 20 X R0.3	55	2.3	4	1.45
S2X1P5X20X0P5	1.5 X 20 X R0.5	55	2.3	4	1.45
S2X2X6X0P1	2 X 6 X R0.1	45	3	4	1.95
S2X2X6X0P2	2 X 6 X R0.2	45	3	4	1.95
S2X2X6X0P3	2 X 6 X R0.3	45	3	4	1.95
S2X2X6X0P5	2 X 6 X R0.5	45	3	4	1.95
S2X2X8X0P1	2 X 8 X R0.1	45	3	4	1.95
S2X2X8X0P2	2 X 8 X R0.2	45	3	4	1.95
S2X2X8X0P3	2 X 8 X R0.3	45	3	4	1.95
S2X2X8X0P5	2 X 8 X R0.5	45	3	4	1.95
S2X2X10X0P1	2 X 10 X R0.1	45	3	4	1.95
S2X2X10X0P2	2 X 10 X R0.2	45	3	4	1.95
S2X2X10X0P3	2 X 10 X R0.3	45	3	4	1.95
S2X2X10X0P5	2 X 10 X R0.5	45	3	4	1.95
S2X2X12X0P1	2 X 12 X R0.1	45	3	4	1.95
S2X2X12X0P2	2 X 12 X R0.2	45	3	4	1.95
S2X212X0P3X	2 X 12 X R0.3	45	3	4	1.95
S2X2X12X0P5	2 X 12 X R0.5	45	3	4	1.95
S2X2X14X0P1	2 X 14 X R0.1	50	3	4	1.95
S2X2X14X0P2	2 X 14 X R0.2	50	3	4	1.95
S2X2X14X0P3	2 X 14 X R0.3	50	3	4	1.95
S2X2X14X0P5	2 X 14 X R0.5	50	3	4	1.95
S2X2X16X0P2	2 X 16 X R0.2	50	3	4	1.95
S2X2X16X0P3	2 X 16 X R0.3	50	3	4	1.95
S2X2X16X0P5	2 X 16 X R0.5	50	3	4	1.95
S2X2X20X0P1	2 X 20 X R0.1	55	3	4	1.95
S2X2X20X0P2	2 X 20 X R0.2	55	3	4	1.95

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°



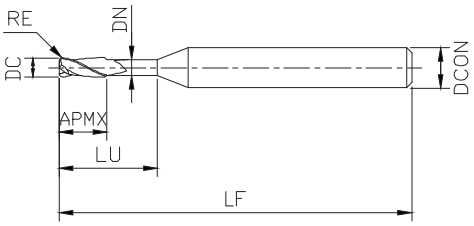


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S2X2X20X0P3	2 X 20 X R0.3	55	3	4	1.95
S2X2X20X0P5	2 X 20 X R0.5	55	3	4	1.95
S2X2X26X0P1	2 X 26 X R0.1	60	3	4	1.95
S2X2X26X0P2	2 X 26 X R0.2	60	3	4	1.95
S2X2X26X0P3	2 X 26 X R0.3	60	3	4	1.95
S2X2X26X0P5	2 X 26 X R0.5	60	3	4	1.95
S2X2X30X0P1	2 X 30 X R0.1	70	3	4	1.95
S2X2X30X0P2	2 X 30 X R0.2	70	3	4	1.95
S2X2X30X0P3	2 X 30 X R0.3	70	3	4	1.95
S2X2X30X0P5	2 X 30 X R0.5	70	3	4	1.95
S2X2P5X8X0P1	2.5 X 8 X R0.1	45	3.7	4	2.45
S2X2P5X8X0P2	2.5 X 8 X R0.2	45	3.7	4	2.45
S2X2P5X8X0P3	2.5 X 8 X R0.3	45	3.7	4	2.45
S2X2P5X8X0P5	2.5 X 8 X R0.5	45	3.7	4	2.45
S2X2P5X10X0P1	2.5 X 10 X R0.1	45	3.7	4	2.45
S2X2P5X10X0P2	2.5 X 10 X R0.2	45	3.7	4	2.45
S2X2P5X10X0P3	2.5 X 10 X R0.3	45	3.7	4	2.45
S2X2P5X10X0P5	2.5 X 10 X R0.5	45	3.7	4	2.45
S2X2P5X12X0P1	2.5 X 12 X R0.1	45	3.7	4	2.45
S2X2P5X12X0P2	2.5 X 12 X R0.2	45	3.7	4	2.45
S2X2P5X12X0P3	2.5 X 12 X R0.3	45	3.7	4	2.45
S2X2P5X12X0P5	2.5 X 12 X R0.5	45	3.7	4	2.45
S2X2P5X14X0P1	2.5 X 14 X R0.1	50	3.7	4	2.45
S2X2P5X14X0P2	2.5 X 14 X R0.2	50	3.7	4	2.45
S2X2P5X14X0P3	2.5 X 14 X R0.3	50	3.7	4	2.45
S2X2P5X14X0P5	2.5 X 14 X R0.5	50	3.7	4	2.45
S2X2P5X16X0P1	2.5 X 16 X R0.1	50	3.7	4	2.45
S2X2P5X16X0P2	2.5 X 16 X R0.2	50	3.7	4	2.45
S2X2P5X16X0P3	2.5 X 16 X R0.3	50	3.7	4	2.45
S2X2P5X16X0P5	2.5 X 16 X R0.5	50	3.7	4	2.45
S2X2P5X20X0P1	2.5 X 20 X R0.1	55	3.7	4	2.45
S2X2P5X20X0P2	2.5 X 20 X R0.2	55	3.7	4	2.45
S2X2P5X20X0P3	2.5 X 20 X R0.3	55	3.7	4	2.45
S2X2P5X20X0P5	2.5 X 20 X R0.5	55	3.7	4	2.45
S2X2P5X26X0P1	2.5 X 26 X R0.1	60	3.7	4	2.45
S2X2P5X26X0P2	2.5 X 26 X R0.2	60	3.7	4	2.45
S2X2P5X26X0P3	2.5 X 26 X R0.3	60	3.7	4	2.45
S2X2P5X26X0P5	2.5 X 26 X R0.5	60	3.7	4	2.45
S2X2P5X30X0P1	2.5 X 30 X R0.1	70	3.7	4	2.45
S2X2P5X30X0P2	2.5 X 30 X R0.2	70	3.7	4	2.45

S2 / 2날 롱넥 코너R





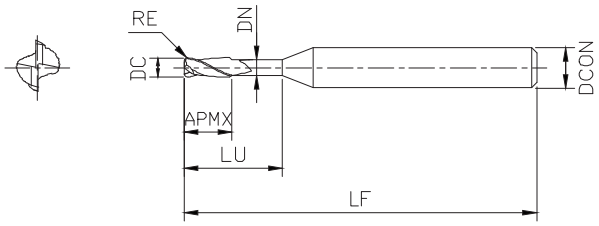
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X2P5X30X0P3	2.5 X 30 X R0.3	70	3.7	4	2.45
S2X2P5X30X0P5	2.5 X 30 X R0.5	70	3.7	4	2.45
S2X3X8X0P1	3 X 8 X R0.1	45	4.5	6	2.85
S2X3X8X0P2	3 X 8 X R0.2	45	4.5	6	2.85
S2X3X8X0P3	3 X 8 X R0.3	45	4.5	6	2.85
S2X3X8X0P5	3 X 8 X R0.5	45	4.5	6	2.85
S2X3X8X1	3 X 8 X R1.0	45	4.5	6	2.85
S2X3X10X0P1	3 X 10 X R0.1	45	4.5	6	2.85
S2X3X10X0P2	3 X 10 X R0.2	45	4.5	6	2.85
S2X3X10X0P3	3 X 10 X R0.3	45	4.5	6	2.85
S2X3X10X0P5	3 X 10 X R0.5	45	4.5	6	2.85
S2X3X10X1	3 X 10 X R1.0	45	4.5	6	2.85
S2X3X12X0P1	3 X 12 X R0.1	45	4.5	6	2.85
S2X3X12X0P2	3 X 12 X R0.2	45	4.5	6	2.85
S2X3X12X0P3	3 X 12 X R0.3	45	4.5	6	2.85
S2X3X12X0P5	3 X 12 X R0.5	45	4.5	6	2.85
S2X3X12X1	3 X 12 X R1.0	45	4.5	6	2.85
S2X3X14X0P1	3 X 14 X R0.1	50	4.5	6	2.85
S2X3X14X0P2	3 X 14 X R0.2	50	4.5	6	2.85
S2X3X14X0P3	3 X 14 X R0.3	50	4.5	6	2.85
S2X3X14X0P5	3 X 14 X R0.5	50	4.5	6	2.85
S2X3X14X1	3 X 14 X R1.0	50	4.5	6	2.85
S2X3X16X0P1	3 X 16 X R0.1	55	4.5	6	2.85
S2X3X16X0P2	3 X 16 X R0.2	55	4.5	6	2.85
S2X3X16X0P3	3 X 16 X R0.3	55	4.5	6	2.85
S2X3X16X0P5	3 X 16 X R0.5	55	4.5	6	2.85
S2X3X16X1	3 X 16 X R1.0	55	4.5	6	2.85
S2X3X20X0P1	3 X 20 X R0.1	60	4.5	6	2.85
S2X3X20X0P2	3 X 20 X R0.2	60	4.5	6	2.85
S2X3X20X0P3	3 X 20 X R0.3	60	4.5	6	2.85
S2X3X20X0P5	3 X 20 X R0.5	60	4.5	6	2.85
S2X3X20X1	3 X 20 X R1.0	60	4.5	6	2.85
S2X3X26X0P1	3 X 26 X R0.1	65	4.5	6	2.85
S2X3X26X0P2	3 X 26 X R0.2	65	4.5	6	2.85
S2X3X26X0P3	3 X 26 X R0.3	65	4.5	6	2.85
S2X3X26X0P5	3 X 26 X R0.5	65	4.5	6	2.85
S2X3X26X1	3 X 26 X R1.0	65	4.5	6	2.85
S2X3X30X0P1	3 X 30 X R0.1	80	4.5	6	2.85
S2X3X30X0P2	3 X 30 X R0.2	80	4.5	6	2.85
S2X3X30X0P3	3 X 30 X R0.3	80	4.5	6	2.85

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°



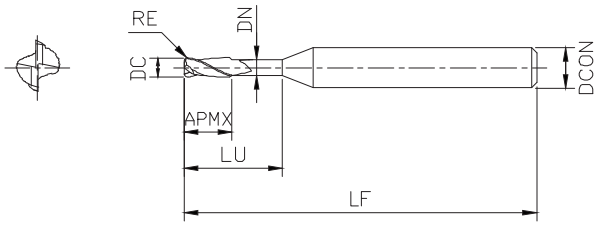


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주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X3X30X0P5	3 X 30 X R0.5	80	4.5	6	2.85
S2X3X30X1	3 X 30 X R1.0	80	4.5	6	2.85
S2X3X35X0P1	3 X 35 X R0.1	90	4.5	6	2.85
S2X3X35X0P2	3 X 35 X R0.2	90	4.5	6	2.85
S2X3X35X0P3	3 X 35 X R0.3	90	4.5	6	2.85
S2X3X35X0P5	3 X 35 X R0.5	90	4.5	6	2.85
S2X3X35X1	3 X 35 X R1.0	90	4.5	6	2.85
S2X3X40X0P1	3 X 40 X R0.1	90	4.5	6	2.85
S2X3X40X0P2	3 X 40 X R0.2	90	4.5	6	2.85
S2X3X40X0P3	3 X 40 X R0.3	90	4.5	6	2.85
S2X3X40X0P5	3 X 40 X R0.5	90	4.5	6	2.85
S2X3X40X1	3 X 40 X R1.0	90	4.5	6	2.85
S2X4X10X0P1	4 X 10 X R0.1	45	6	6	3.85
S2X4X10X0P2	4 X 10 X R0.2	45	6	6	3.85
S2X4X10X0P3	4 X 10 X R0.3	45	6	6	3.85
S2X4X10X0P5	4 X 10 X R0.5	45	6	6	3.85
S2X4X10X1	4 X 10 X R1.0	45	6	6	3.85
S2X4X12X0P1	4 X 12 X R0.1	50	6	6	3.85
S2X4X12X0P2	4 X 12 X R0.2	50	6	6	3.85
S2X4X12X0P3	4 X 12 X R0.3	50	6	6	3.85
S2X4X12X0P5	4 X 12 X R0.5	50	6	6	3.85
S2X4X12X1	4 X 12 X R1.0	50	6	6	3.85
S2X4X14X0P1	4 X 14 X R0.1	60	6	6	3.85
S2X4X14X0P2	4 X 14 X R0.2	60	6	6	3.85
S2X4X14X0P3	4 X 14 X R0.3	60	6	6	3.85
S2X4X14X0P5	4 X 14 X R0.5	60	6	6	3.85
S2X4X14X1	4 X 14 X R1.0	60	6	6	3.85
S2X4X16X0P1	4 X 16 X R0.1	60	6	6	3.85
S2X4X16X0P2	4 X 16 X R0.2	60	6	6	3.85
S2X4X16X0P3	4 X 16 X R0.3	60	6	6	3.85
S2X4X16X0P5	4 X 16 X R0.5	60	6	6	3.85
S2X4X16X1	4 X 16 X R1.0	60	6	6	3.85
S2X4X20X0P1	4 X 20 X R0.1	60	6	6	3.85
S2X4X20X0P2	4 X 20 X R0.2	60	6	6	3.85
S2X4X20X0P3	4 X 20 X R0.3	60	6	6	3.85
S2X4X20X0P5	4 X 20 X R0.5	60	6	6	3.85
S2X4X20X1	4 X 20 X R1.0	60	6	6	3.85
S2X4X26X0P1	4 X 26 X R0.1	70	6	6	3.85
S2X4X26X0P2	4 X 26 X R0.2	70	6	6	3.85
S2X4X26X0P3	4 X 26 X R0.3	70	6	6	3.85

S2 / 2날 롱넥 코너R





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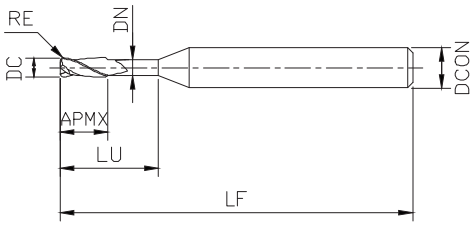
주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X4X26X0P5	4 X 26 X R0.5	70	6	6	3.85
S2X4X26X1	4 X 26 X R1.0	70	6	6	3.85
S2X4X30X0P1	4 X 30 X R0.1	80	6	6	3.85
S2X4X30X0P2	4 X 30 X R0.2	80	6	6	3.85
S2X4X30X0P3	4 X 30 X R0.3	80	6	6	3.85
S2X4X30X0P5	4 X 30 X R0.5	80	6	6	3.85
S2X4X30X1	4 X 30 X R1.0	80	6	6	3.85
S2X4X35X0P1	4 X 35 X R0.1	90	6	6	3.85
S2X4X35X0P2	4 X 35 X R0.2	90	6	6	3.85
S2X4X35X0P3	4 X 35 X R0.3	90	6	6	3.85
S2X4X35X0P5	4 X 35 X R0.5	90	6	6	3.85
S2X4X35X1	4 X 35 X R1.0	90	6	6	3.85
S2X4X40X0P1	4 X 40 X R0.1	90	6	6	3.85
S2X4X40X0P2	4 X 40 X R0.2	90	6	6	3.85
S2X4X40X0P3	4 X 40 X R0.3	90	6	6	3.85
S2X4X40X0P5	4 X 40 X R0.5	90	6	6	3.85
S2X4X40X1	4 X 40 X R1.0	90	6	6	3.85
S2X4X45X0P1	4 X 45 X R0.1	100	6	6	3.85
S2X4X45X0P2	4 X 45 X R0.2	100	6	6	3.85
S2X4X45X0P3	4 X 45 X R0.3	100	6	6	3.85
S2X4X45X0P5	4 X 45 X R0.5	100	6	6	3.85
S2X4X45X1	4 X 45 X R1.0	100	6	6	3.85
S2X4X50X0P1	4 X 50 X R0.1	100	6	6	3.85
S2X4X50X0P2	4 X 50 X R0.2	100	6	6	3.85
S2X4X50X0P3	4 X 50 X R0.3	100	6	6	3.85
S2X4X50X0P5	4 X 50 X R0.5	100	6	6	3.85
S2X4X50X1	4 X 50 X R1.0	100	6	6	3.85
S2X6X20X0P1	6 X 20 X R0.1	60	9	6	5.85
S2X6X20X0P2	6 X 20 X R0.2	60	9	6	5.85
S2X6X20X0P3	6 X 20 X R0.3	60	9	6	5.85
S2X6X20X0P5	6 X 20 X R0.5	60	9	6	5.85
S2X6X20X1	6 X 20 X R1.0	60	9	6	5.85
S2X6X20X1P5	6 X 20 X R1.5	60	9	6	5.85
S2X6X20X2	6 X 20 X R2.0	60	9	6	5.85
S2X6X30X0P3	6 X 30 X R0.3	70	15	6	5.85
S2X6X30X0P5	6 X 30 X R0.5	70	15	6	5.85
S2X6X30X1	6 X 30 X R1.0	70	15	6	5.85
S2X8X25X0P1	8 X 25 X R0.1	70	12	8	7.7
S2X8X25X0P2	8 X 25 X R0.2	70	12	8	7.7
S2X8X25X0P3	8 X 25 X R0.3	70	12	8	7.7

S2 / 2날 롱넥 코너R

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°







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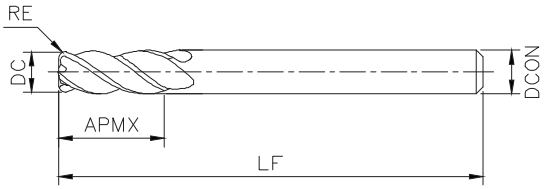
주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S2X8X25X0P5	8 X 25 X R0.5	70	12	8	7.7
S2X8X25X1	8 X 25 X R1.0	70	12	8	7.7
S2X8X25X1P5	8 X 25 X R1.5	70	12	8	7.7
S2X8X25X2	8 X 25 X R2.0	70	12	8	7.7
S2X8X35X0P5	8 X 35 X R0.5	100	20	8	7.7
S2X10X30X0P1	10 X 30 X R0.1	75	15	10	9.7
S2X10X30X0P2	10 X 30 X R0.2	75	15	10	9.7
S2X10X30X0P3	10 X 30 X R0.3	75	15	10	9.7
S2X10X30X0P5	10 X 30 X R0.5	75	15	10	9.7
S2X10X30X1	10 X 30 X R1.0	75	15	10	9.7
S2X10X30X1P5	10 X 30 X R1.5	75	15	10	9.7
S2X10X30X2	10 X 30 X R2.0	75	15	10	9.7
S2X10X40X1	10 X 40 X R1	100	25	10	9.7
S2X12X50X0P3	12 X 50 X R0.3	110	20	12	11.7
S2X12X50X0P5	12 X 50 X R0.5	110	20	12	11.7
S2X12X50X1	12 X 50 X R1.0	110	20	12	11.7
S2X16X35X0P5	16 X 35 X R0.5	100	20	16	15.5
S2X16X35X1	16 X 35 X R1.0	100	20	16	15.5
S2X16X50X0P5	16 X 50 X R0.5	150	35	16	15.5
S2X16X50X1	16 X 50 X R1.0	150	35	16	15.5
S2X20X40X0P5	20 X 40 X R0.5	100	25	20	19.5
S2X20X40X1	20 X 40 X R1.0	100	25	20	19.5
S2X20X55X0P5	20 X 55 X R0.5	150	40	20	19.5
S2X20X55X1	20 X 55 X R1.0	150	40	20	19.5

SP4C / 4날 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P72







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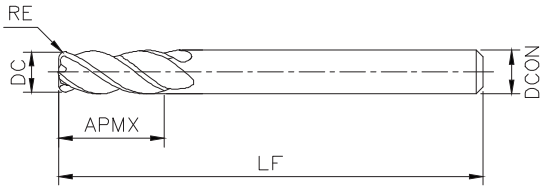
주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP4CX1XR0P05	1 X R0.05	50	2.5	6
SP4CX1XR0P1	1 X R0.1	50	2.5	6
SP4CX1XR0P2	1 X R0.3	50	2.5	6
SP4CX1XR0P3	1 X R02	50	2.5	6
SP4CX1P5XRP05	1.5 X R0.05	50	4	6
SP4CX1P5XR0P1	1.5 X R0.1	50	4	6
SP4CX1P5XR0P2	1.5 X R0.2	50	4	6
SP4CX1P5XR0P3	1.5 X R0.3	50	4	6
SP4CX1P5XR0P5	1.5 X R0.5	50	4	6
SP4CX2XR0P1	2 X R0.1	50	6	6
SP4CX2XR0P2	2 X R0.2	50	6	6
SP4CX2XR0P3	2 X R0.3	50	6	6
SP4CX2XR0P5	2 X R0.5	50	6	6
SP4CX2P5XR0P1	2.5 X R0.1	60	7	6
SP4CX2P5XR0P2	2.5 X R0.2	60	7	6
SP4CX2P5XR0P3	2.5 X R0.3	60	7	6
SP4CX2P5XR0P5	2.5 X R0.5	60	7	6
SP4CX3XR0P1	3 X R0.1	60	8	6
SP4CX3XR0P2	3 X R0.2	60	8	6
SP4CX3XR0P3	3 X R0.3	60	8	6
SP4CX3XR0P5	3 X R0.5	60	8	6
SP4CX3XR1	3 X R1	60	8	6
SP4CX3P5XR0P5	3.5 X R0.5	70	10	6
SP4CX4XR0P1	4 X R0.1	70	10	6
SP4CX4XR0P2	4 X R0.2	70	10	6
SP4CX4XR0P3	4 X R0.3	70	10	6
SP4CX4XR0P5	4 X R0.5	70	10	6
SP4CX4XR1	4 X R1	70	10	6
SP4CX5XR0P1	5 X R0.1	90	13	6
SP4CX5XR0P2	5 X R0.2	90	13	6
SP4CX5XR0P3	5 X R0.3	90	13	6
SP4CX5XR0P5	5 X R0.5	90	13	6
SP4CX5XR1	5 X R1	90	13	6
SP4CX6XR0P1	6 X R0.1	90	15	6
SP4CX6XR0P2	6 X R0.2	90	15	6
SP4CX6XR0P3S	6 X R0.3	60	15	6
SP4CX6XR0P3	6 X R0.3	90	15	6
SP4CX6XR0P5S	6 X R0.5	60	15	6
SP4CX6XR0P5	6 X R0.5	90	15	6
SP4CX6XR0P5L	6 X R0.5	110	15	6

SP4C / 4날 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P72







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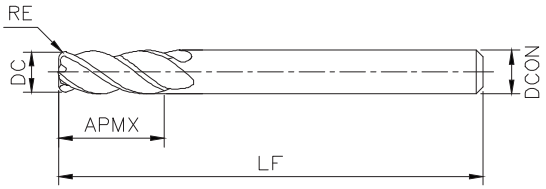
주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP4CX6XR1S	6 X R1	60	15	6
SP4CX6XR1	6 X R1	90	15	6
SP4CX6XR1L	6 X R1	110	15	6
SP4CX6XR1P5	6 X R1.5	90	15	6
SP4CX6XR2	6 X R2	90	15	6
SP4CX7XR0P2	7 X R0.2	90	16	8
SP4CX8XR0P1	8 X R0.1	100	20	8
SP4CX8XR0P2	8 X R0.2	100	20	8
SP4CX8XR0P3S	8 X R0.3	70	20	8
SP4CX8XR0P3	8 X R0.3	100	20	8
SP4CX8XR0P5S	8 X R0.5	70	20	8
SP4CX8XR0P5	8 X R0.5	100	20	8
SP4CX8XR0P5L	8 X R0.5	120	20	8
SP4CX8XR1S	8 X R1	70	20	8
SP4CX8XR1	8 X R1	100	20	8
SP4CX8XR1L	8 X R1	120	20	8
SP4CX8X1P5	8 X R1.5	100	20	8
SP4CX8XR2	8 X R2	100	20	8
SP4CX8XR2P5	8 X R2.5	100	20	8
SP4CX8XR3	8 X R3	100	20	8
SP4CX10XR0P1	10 X R0.1	100	25	10
SP4CX10XR0P2	10 X R0.2	100	25	10
SP4CX10XR0P3	10 X R0.3	100	25	10
SP4CX10XR0P5S	10 X R0.5	75	25	10
SP4CX10XR0P5	10 X R0.5	100	25	10
SP4CX10XR0P5L	10 X R0.5	130	25	10
SP4CX10XR1	10 X R1	100	25	10
SP4CX10XR1L	10 X R1	130	25	10
SP4CX10XR1P5	10 X R1.5	100	25	10
SP4CX10XR2	10 X R2	100	25	10
SP4CX10XR2P5	10 X R2.5	100	25	10
SP4CX10XR3	10 X R3	100	25	10
SP4CX10XR4	10 X R4	100	25	10
SP4CX12XR0P1	12 X R0.1	110	30	12
SP4CX12XR0P2	12 X R0.2	110	30	12
SP4CX12XR0P3	12 X R0.3	110	30	12
SP4CX12XR0P5	12 X R0.5	110	30	12
SP4CX12XR0P5L	12 X R0.5	130	30	12
SP4CX12XR1	12 X R1	110	30	12
SP4CX12XR1L	12 X R1	130	30	12

SP4C / 4날 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX | SPEED FEED P72







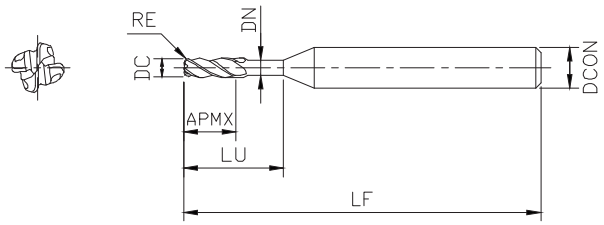
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 코너R DC X RE	전장 LF	날길이 APMX	자루경 DCON
SP4CX12XR1P5	12 X R1.5	110	30	12
SP4CX12XR2	12 X R2	110	30	12
SP4CX12XR2P5	12 X R2.5	110	30	12
SP4CX12XR3	12 X R3	110	30	12
SP4CX12XR4	12 X R4	110	30	12
SP4CX12XR5	12 X R5	110	30	12
SP4CX14XR1	14 X R1	150	32	16
SP4CX16XR0P5	16 X R0.5	150	32	16
SP4CX16XR1	16 X R1	150	32	16
SP4CX16XR2	16 X R2	150	32	16
SP4CX16XR3	16 X R3	150	32	16
SP4CX20XR0P5	20 X R0.5	150	38	20
SP4CX20XR1	20 X R1	150	38	20
SP4CX20XR2	20 X R2	150	38	20
SP4CX20XR3	20 X R3	150	38	20

S4 / 4날 롱넥 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX





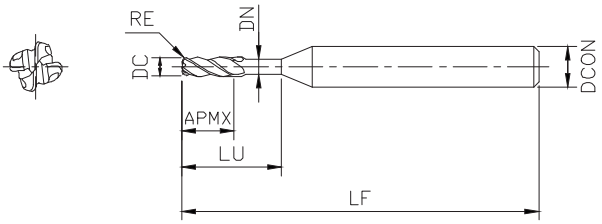
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S4X1X6X0P2	1 X 6 X R0.2	45	1.5	4	0.95
S4X1X8X0P1	1 X 8 X R0.1	45	1.5	4	0.95
S4X1P5X8X0P2	1.5 X 8 X R0.2	45	2.3	4	1.45
S4X1P5X10X0P2	1.5 X 10 X R0.2	45	2.3	4	1.45
S4X1P5X10X0P5	1.5 X 10 X R0.5	45	2.3	4	1.45
S4X1P5X12X0P1	1.5 X 12 X R0.1	45	2.3	4	1.45
S4X1P5X12X0P2	1.5 X 12 X R0.2	45	2.3	4	1.45
S4X1P5X12X0P5	1.5 X 12 X R0.5	45	2.3	4	1.45
S4X2X8X0P5	2 X 8 X R0.5	45	3	4	1.95
S4X2X10X0P2	2 X 10 X R0.2	45	3	4	1.95
S4X2X10X0P5	2 X 10 X R0.5	45	3	4	1.95
S4X2X12X0P2	2 X 12 X R0.2	45	3	4	1.95
S4X2X12X0P5	2 X 12 X R0.5	45	3	4	1.95
S4X2X16X0P5	2 X 16 X R0.5	50	3	4	1.95
S4X2X20X0P5	2 X 20 X R0.5	55	3	4	1.95
S4X3X10X0P5	3 X 10 X R0.5	45	4.5	6	2.85
S4X3X12X0P2	3 X 12 X R0.2	45	4.5	6	2.85
S4X3X12X0P5	3 X 12 X R0.5	45	4.5	6	2.85
S4X3X16X0P2	3 X 16 X R0.2	55	4.5	6	2.85
S4X3X16X0P5	3 X 16 X R0.5	55	4.5	6	2.85
S4X3X20X0P5	3 X 20 X R0.5	60	4.5	6	2.85
S4X3X26X0P5	3 X 26 X R0.5	65	4.5	6	2.85
S4X3X30X0P5	3 X 30 X R0.5	80	4.5	6	2.85
S4X4X10X0P1	4 X 10 X R0.1	45	6	6	3.85
S4X4X10X0P2	4 X 10 X R0.2	45	6	6	3.85
S4X4X10X0P3	4 X 10 X R0.3	45	6	6	3.85
S4X4X10X0P5	4 X 10 X R0.5	45	6	6	3.85
S4X4X10X1	4 X 10 X R1.0	45	6	6	3.85
S4X4X12X0P1	4 X 12 X R0.1	50	6	6	3.85
S4X4X12X0P2	4 X 12 X R0.2	50	6	6	3.85
S4X4X12X0P3	4 X 12 X R0.3	50	6	6	3.85
S4X4X12X0P5	4 X 12 X R0.5	50	6	6	3.85
S4X4X12X1	4 X 12 X R1.0	50	6	6	3.85
S4X4X14X0P1	4 X 14 X R0.1	60	6	6	3.85
S4X4X14X0P2	4 X 14 X R0.2	60	6	6	3.85
S4X4X14X0P3	4 X 14 X R0.3	60	6	6	3.85
S4X4X14X0P5	4 X 14 X R0.5	60	6	6	3.85
S4X4X14X1	4 X 14 X R1.0	60	6	6	3.85
S4X4X16X0P1	4 X 16 X R0.1	60	6	6	3.85
S4X4X16X0P2	4 X 16 X R0.2	60	6	6	3.85

S4 / 4날 롱넥 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX





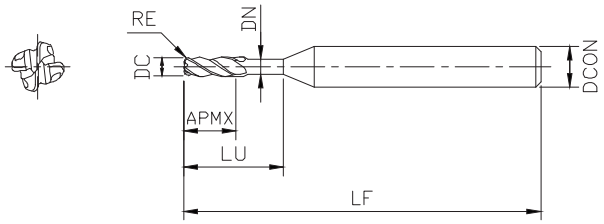
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S4X4X16X0P3	4 X 16 X R0.3	60	6	6	3.85
S4X4X16X0P5	4 X 16 X R0.5	60	6	6	3.85
S4X4X16X1	4 X 16 X R1.0	60	6	6	3.85
S4X4X20X0P1	4 X 20 X R0.1	60	6	6	3.85
S4X4X20X0P2	4 X 20 X R0.2	60	6	6	3.85
S4X4X20X0P3	4 X 20 X R0.3	60	6	6	3.85
S4X4X20X0P5	4 X 20 X R0.5	60	6	6	3.85
S4X4X20X1	4 X 20 X R1.0	60	6	6	3.85
S4X4X26X0P1	4 X 26 X R0.1	70	6	6	3.85
S4X4X26X0P2	4 X 26 X R0.2	70	6	6	3.85
S4X4X26X0P3	4 X 26 X R0.3	70	6	6	3.85
S4X4X26X0P5	4 X 26 X R0.5	70	6	6	3.85
S4X4X26X1	4 X 26 X R1.0	70	6	6	3.85
S4X4X30X0P1	4 X 30 X R0.1	80	6	6	3.85
S4X4X30X0P2	4 X 30 X R0.2	80	6	6	3.85
S4X4X30X0P3	4 X 30 X R0.3	80	6	6	3.85
S4X4X30X0P5	4 X 30 X R0.5	80	6	6	3.85
S4X4X30X1	4 X 30 X R1.0	80	6	6	3.85
S4X4X35X0P1	4 X 35 X R0.1	90	6	6	3.85
S4X4X35X0P2	4 X 35 X R0.2	90	6	6	3.85
S4X4X35X0P3	4 X 35 X R0.3	90	6	6	3.85
S4X4X35X0P5	4 X 35 X R0.5	90	6	6	3.85
S4X4X35X1	4 X 35 X R1.0	90	6	6	3.85
S4X4X40X0P1	4 X 40 X R0.1	90	6	6	3.85
S4X4X40X0P2	4 X 40 X R0.2	90	6	6	3.85
S4X4X40X0P3	4 X 40 X R0.3	90	6	6	3.85
S4X4X40X0P5	4 X 40 X R0.5	90	6	6	3.85
S4X4X40X1	4 X 40 X R1.0	90	6	6	3.85
S4X4X45X0P1	4 X 45 X R0.1	100	6	6	3.85
S4X4X45X0P2	4 X 45 X R0.2	100	6	6	3.85
S4X4X45X0P3	4 X 45 X R0.3	100	6	6	3.85
S4X4X45X0P5	4 X 45 X R0.5	100	6	6	3.85
S4X4X45X1	4 X 45 X R1.0	100	6	6	3.85
S4X4X50X0P1	4 X 50 X R0.1	100	6	6	3.85
S4X4X50X0P2	4 X 50 X R0.2	100	6	6	3.85
S4X4X50X0P3	4 X 50 X R0.3	100	6	6	3.85
S4X4X50X0P5	4 X 50 X R0.5	100	6	6	3.85
S4X4X50X1	4 X 50 X R1.0	100	6	6	3.85
S4X6X20X0P1	6 X 20 X R0.1	60	9	6	5.85
S4X6X20X0P2	6 X 20 X R0.2	60	9	6	5.85

S4 / 4날 롱넥 코너R

CARBIDE | RADIA | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | UNEQUAL HELIX





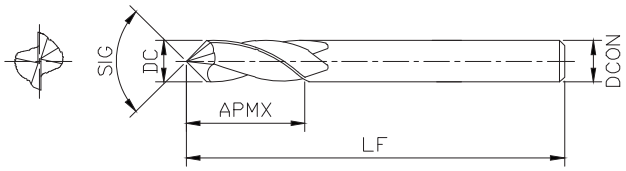
- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 코너 래디우스 FACET Shape 적용으로 공구강성 극대화

주문번호 EDP No.	외경 X 유효장 X 코너R DC X LU X RE	전장 LF	날길이 APMX	자루경 DCON	목부경 DN
S4X6X20X0P3	6 X 20 X R0.3	60	9	6	5.85
S4X6X20X0P5	6 X 20 X R0.5	60	9	6	5.85
S4X6X20X1	6 X 20 X R1.0	60	9	6	5.85
S4X6X20X1P5	6 X 20 X R1.5	60	9	6	5.85
S4X6X20X2	6 X 20 X R2.0	60	9	6	5.85
S4X6X30X0P3	6 X 30 X R0.3	70	15	6	5.85
S4X6X30X0P5	6 X 30 X R0.5	70	15	6	5.85
S4X6X30X1	6 X 30 X R1.0	70	15	6	5.85
S4X8X25X0P1	8 X 25 X R0.1	70	12	8	7.7
S4X8X25X0P2	8 X 25 X R0.2	70	12	8	7.7
S4X8X25X0P3	8 X 25 X R0.3	70	12	8	7.7
S4X8X25X0P5	8 X 25 X R0.5	70	12	8	7.7
S4X8X25X1	8 X 25 X R1.0	70	12	8	7.7
S4X8X25X1P5	8 X 25 X R1.5	70	12	8	7.7
S4X8X25X2	8 X 25 X R2.0	70	12	8	7.7
S4X8X35X0P5	8 X 35 X R0.5	100	20	8	7.7
S4X8X35X1	8 X 35 X R1	100	20	8	7.7
S4X10X30X0P1	10 X 30 X R0.1	75	15	10	9.7
S4X10X30X0P2	10 X 30 X R0.2	75	15	10	9.7
S4X10X30X0P3	10 X 30 X R0.3	75	15	10	9.7
S4X10X30X0P4	10 X 30 X R0.5	75	15	10	9.7
S4X10X30X1	10 X 30 X R1.0	75	15	10	9.7
S4X10X30X1P5	10 X 30 X R1.5	75	15	10	9.7
S4X10X30X2	10 X 30 X R2.0	75	15	10	9.7
S4X10X40X0P5	10 X 40 X R0.5	100	25	10	9.7
S4X10X40X1	10 X 40 X R1	100	25	10	9.7
S4X12X50X0P3	12 X 50 X R0.3	110	20	12	11.7
S4X12X50X0P5	12 X 50 X R0.5	110	20	12	11.7
S4X12X50X1	12 X 50 X R1.0	110	20	12	11.7
S4X16X35X0P5	16 X 35 X R0.5	100	20	16	15.7
S4X16X35X1	16 X 35 X R1.0	100	20	16	15.7
S4X16X50X0P5	16 X 50 X R0.5	150	35	16	15.7
S4X16X50X1	16 X 50 X R1.0	150	35	16	15.7
S4X20X40X0P5	20 X 40 X R0.5	100	25	20	19.6
S4X20X40X1	20 X 40 X R1.0	100	25	20	19.6
S4X20X55X0P5	20 X 55 X R0.5	150	40	20	19.6
S4X20X55X1	20 X 55 X R1.0	150	40	20	19.6

SP2V / 2날 V컷

CARBIDE | RADIA | 0~-0.015 | SHRINK FIT | 30°





- Cu · SUS · 45C ~ 50HRC에서 탁월한 성능 발휘!
- 新 RADIA 코팅 적용으로 高품질 · 長수명 실현!
- 다양한 선단각으로 챔퍼가공 및 형상가공 가능

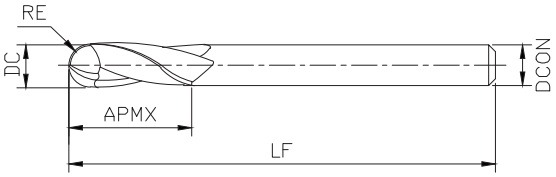
주문번호 EDP No.	외경 X 챔퍼각도 DC X SIG	전장 LF	날길이 APMX	자루경 DCON
SP2VX3X60	3 X 60°	50	6	6
SP2VX3X90	3 X 90°	50	6	6
SP2VX3X120	3 X 120°	50	6	6
SP2VX4X60	4 X 60°	50	8	6
SP2VX4X90	4 X 90°	50	8	6
SP2VX4X120	4 X 120°	50	8	6
SP2VX5X60	5 X 60°	55	10	6
SP2VX5X90	5 X 90°	55	10	6
SP2VX5X120	5 X 120°	55	10	6
SP2VX6X60	6 X 60°	60	12	6
SP2VX6X90	6 X 90°	60	12	6
SP2VX6X120	6 X 120°	60	12	6
SP2VX7X90	7 X 90°	65	14	8
SP2VX8X60	8 X 60°	70	16	8
SP2VX8X90	8 X 90°	70	16	8
SP2VX8X120	8 X 120°	70	16	8
SP2VX9X90	9 X 90°	75	18	10
SP2VX10X60	10 X 60°	80	20	10
SP2VX10X90	10 X 90°	80	20	10
SP2VX10X120	10 X 120°	80	20	10
SP2VX12X60	12 X 60°	90	24	12
SP2VX12X90	12 X 90°	90	24	12
SP2VX12X120	12 X 120°	90	24	12

SPP2B / 2날 볼

CARBIDE | DUROREY | R ±0.005 (RE<3) | R 0~0.010 (3≤RE≤6) | R ±0.01 (6<RE) | SHRINK FIT | 30° | SPEED FEED P50







- 30HRC ~ 50HRC 고경도 및 열처리강에서 탁월한 성능 발휘!
- 新 DUROREY 코팅 적용으로 高품질 · 長수명 실현!
- 매끄러운 인선부 처리로 부드럽고 안정된 절삭!

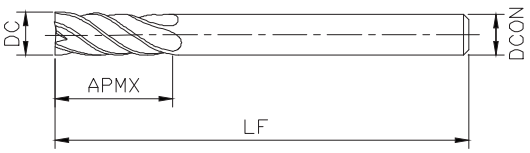
주문번호 EDP No.	반지름 X 외경 RE X DC	전장 LF	날길이 APMX	자루경 DCON
SPP2BX0P4X0P8	R0.2 X 0.4	40	0.8	4
SPP2BX0P6X1P2	R0.3 X 0.6	40	1.2	4
SPP2BX0P8X1P6	R0.4 X 0.8	40	1.6	4
SPP2BX1X2P5	R0.5 X 1	50	2.5	6
SPP2BX2X5	R1 X 2	50	5	6
SPP2BX3X6	R1.5 X 3	60	6	6
SPP2BX4X8	R2 X 4	70	8	6
SPP2BX6X12	R3 X 6	90	12	6
SPP2BX8X14	R4 X 8	100	14	8
SPP2BX10X18	R5 X 10	100	18	10
SPP2BX12X22	R6 X 12	110	22	12

SPP4FH / 4날 45도 플랫

CARBIDE | DUROREY | 0~-0.02 (DC≤12) | 0~-0.03 (12<DC) | SHRINK FIT | 45° | SPEED FEED P73







- 30HRC ~ 50HRC 고경도 및 열처리강에서 탁월한 성능 발휘!
- 新 DUROREY 코팅 적용으로 高품질 · 長수명 실현!
- 칩배출성과 공구 강성을 높여 고능률 중절삭 가능

주문번호 EDP No.	외경 DC	전장 LF	날길이 APMX	자루경 DCON
SPP4FHX3X8	3	50	8	6
SPP4FHX4X10	4	50	10	6
SPP4FHX5X15	5	60	15	6
SPP4FHX6X15	6	60	15	6
SPP4FHX6X20		70	20	6
SPP4FHX8X20	8	70	20	8
SPP4FHX8X30		80	30	8
SPP4FHX10X25	10	75	25	10
SPP4FHX10X30		80	30	10
SPP4FHX12X30	12	80	30	12
SPP4FHX12X40		90	40	12
SPP4FHX12X50		100	50	12
SPP4FHX16X40	16	100	40	16
SPP4FHX16X60		120	60	16

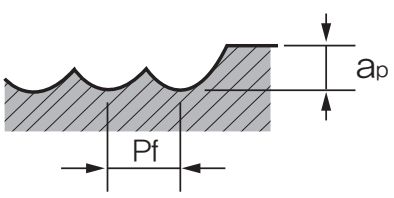
절삭조건 Cutting Condition

SP2B / 2날 볼
- 일반절삭조건

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 (HRC)	~32 HRC				33~41 HRC				42~50 HRC			
반지름 RE	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf
R 0.05	32,000	80	0.005	0.005	32,000	50	0.005	0.005	32,000	35	0.005	0.005
R 0.075	32,000	130	0.0075	0.0075	32,000	130	0.0075	0.0075	32,000	130	0.005	0.005
R 0.1	32,000	210	0.010	0.010	32,000	210	0.010	0.010	32,000	210	0.005	0.005
R 0.15	32,000	330	0.015	0.015	32,000	290	0.015	0.015	32,000	215	0.015	0.005
R 0.2	32,000	430	0.02	0.08	32,000	350	0.020	0.080	32,000	215	0.02	0.04
R 0.25	32,000	480	0.025	0.10	32,000	400	0.025	0.10	32,000	240	0.025	0.05
R 0.3	32,000	520	0.03	0.12	32,000	440	0.030	0.12	32,000	280	0.03	0.06
R 0.35	32,000	530	0.035	0.14	32,000	440	0.035	0.14	32,000	285	0.035	0.07
R 0.4	32,000	580	0.04	0.16	27,500	440	0.040	0.16	19,000	305	0.04	0.08
R 0.45	28,500	620	0.045	0.18	24,000	430	0.045	0.18	16,500	295	0.045	0.09
R 0.5	27,000	650	0.05	0.20	21,000	420	0.050	0.20	15,000	300	0.05	0.10
R 0.6	22,600	650	0.06	0.24	17,500	420	0.060	0.24	12,500	300	0.06	0.12
R 0.75	18,100	650	0.075	0.30	14,000	420	0.075	0.30	10,100	305	0.075	0.15
R 1	13,500	650	0.20	0.40	10,500	420	0.20	0.40	7,600	305	0.10	0.20
R 1.25	11,000	655	0.25	0.50	8,500	420	0.25	0.50	6,100	305	0.125	0.25
R 1.5	9,200	660	0.30	0.60	7,100	425	0.30	0.60	5,100	305	0.15	0.30
R 1.75	7,900	660	0.35	0.70	6,300	440	0.35	0.70	4,900	345	0.175	0.35
R 2	6,900	660	0.40	0.80	5,850	465	0.40	0.80	4,800	390	0.20	0.40
R 2.25	6,400	690	0.45	0.90	5,250	470	0.45	0.90	4,400	395	0.225	0.45
R 2.5	5,800	700	0.50	1.0	4,800	480	0.50	1.0	4,000	400	0.25	0.50
R 2.75	5,300	700	0.55	1.1	4,400	480	0.55	1.1	3,700	405	0.275	0.55
R 3	4,900	705	0.60	1.2	4,100	490	0.60	1.2	3,400	410	0.30	0.60
R 3.25	4,850	755	0.65	1.3	4,000	520	0.65	1.3	3,250	425	0.325	0.65
R 3.5	4,600	775	0.70	1.4	3,950	550	0.70	1.4	3,100	435	0.35	0.70
R 4	4,300	830	0.80	1.6	3,650	580	0.80	1.6	3,000	480	0.40	0.80
R 4.25	4,000	815	0.85	1.7	3,400	580	0.85	1.7	2,750	470	0.425	0.85
R 4.5	3,750	815	0.90	1.8	3,200	580	0.9	1.8	2,600	470	0.45	0.9
R 5	3,250	780	1.0	2.0	2,750	550	1.0	2.0	2,300	460	0.5	1.0
R 5.5	2,900	770	1.1	2.2	2,450	540	1.1	2.2	2,100	465	0.55	1.1
R 6	2,800	735	1.2	2.4	2,150	515	1.2	2.4	1,900	445	0.6	1.2
R 6.5	2,600	680	1.3	2.6	2,000	480	1.3	2.6	1,800	420	0.65	1.3
R 7	2,400	635	1.4	2.8	1,850	445	1.4	2.8	1,700	395	0.7	1.4
R 7.5	2,250	590	1.5	3.0	1,750	415	1.5	3.0	1,550	365	0.75	1.5
R 8	2,100	550	1.6	3.2	1,600	390	1.6	3.2	1,500	340	0.8	1.6
R 9	1,850	490	1.8	3.6	1,400	340	1.8	3.6	1,300	300	0.9	1.8
R 10	1,650	440	2.0	4.0	1,250	305	2.0	4.0	1,150	270	1.0	2.0
R 12.5	1,350	350	2.5	5.0	1,000	240	2.5	5.0	920	215	1.25	2.5

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut



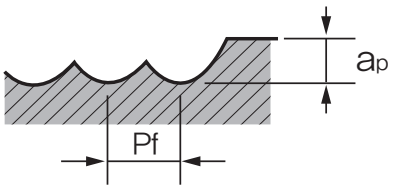
SP2BN / 2날 롱넥 볼

- 일반절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 (HRC)		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	Pf
R0.1	0.5	32,000	200	0.010	0.010	32,000	200	0.010	0.010	32,000	200	0.005	0.005
	1	32,000	100	0.010	0.010	32,000	100	0.010	0.010	32,000	80	0.005	0.005
	1.5	32,000	100	0.010	0.010	32,000	100	0.010	0.010	32,000	80	0.005	0.005
	2	32,000	100	0.005	0.005	32,000	100	0.005	0.005	32,000	80	0.005	0.005
R0.15	1	32,000	300	0.010	0.015	32,000	200	0.010	0.015	32,000	200	0.005	0.005
	1.5	32,000	300	0.010	0.015	32,000	200	0.010	0.015	32,000	200	0.005	0.005
	2	32,000	300	0.010	0.015	32,000	200	0.010	0.015	32,000	200	0.005	0.005
	2.5	32,000	300	0.010	0.010	32,000	200	0.010	0.010	32,000	200	0.010	0.010
	3	32,000	300	0.010	0.010	32,000	200	0.010	0.010	32,000	200	0.005	0.010
	4	32,000	180	0.010	0.010	32,000	120	0.010	0.010	32,000	120	0.005	0.005
	5	32,000	100	0.005	0.010	32,000	70	0.005	0.010	32,000	70	0.003	0.005
R0.2	1	32,000	400	0.015	0.025	32,000	300	0.015	0.020	32,000	300	0.010	0.010
	1.5	32,000	400	0.015	0.025	32,000	300	0.015	0.020	32,000	300	0.010	0.010
	2	27,000	300	0.015	0.025	27,000	200	0.015	0.020	27,000	200	0.010	0.010
	2.5	27,000	300	0.015	0.025	27,000	200	0.015	0.020	27,000	200	0.010	0.010
	3	27,000	300	0.015	0.025	27,000	200	0.015	0.020	27,000	200	0.010	0.010
	4	27,000	300	0.005	0.015	27,000	200	0.005	0.012	27,000	200	0.005	0.010
	5	27,000	200	0.005	0.015	27,000	100	0.005	0.012	27,000	100	0.005	0.010
	6	27,000	100	0.005	0.008	27,000	80	0.005	0.006	27,000	80	0.003	0.005
	8	27,000	80	0.005	0.008	27,000	60	0.005	0.006	27,000	60	0.003	0.005
	10	27,000	80	0.005	0.008	27,000	60	0.005	0.006	27,000	60	0.003	0.005
R0.25	1	32,000	500	0.020	0.025	32,000	400	0.020	0.020	32,000	400	0.010	0.010
	2	32,000	400	0.020	0.025	32,000	300	0.020	0.020	32,000	300	0.010	0.010
	3	27,000	300	0.020	0.025	27,000	200	0.020	0.020	27,000	200	0.010	0.010
	4	27,000	300	0.020	0.025	27,000	200	0.020	0.020	27,000	200	0.010	0.010
	5	20,000	200	0.020	0.025	20,000	150	0.020	0.020	20,000	150	0.010	0.010
	6	20,000	200	0.010	0.015	20,000	150	0.010	0.010	20,000	150	0.010	0.010
	8	15,000	200	0.010	0.015	15,000	150	0.010	0.010	15,000	150	0.005	0.010
	10	15,000	100	0.005	0.005	15,000	80	0.005	0.005	15,000	80	0.003	0.005
	12	15,000	80	0.005	0.005	15,000	70	0.005	0.005	15,000	60	0.003	0.005
R0.3	1	32,000	600	0.030	0.030	32,000	500	0.030	0.050	32,000	500	0.030	0.030
	2	32,000	450	0.030	0.030	32,000	300	0.030	0.050	32,000	300	0.030	0.030
	3	25,000	250	0.030	0.030	24,000	200	0.030	0.050	24,000	200	0.030	0.030
	4	25,000	250	0.030	0.030	24,000	200	0.030	0.040	24,000	200	0.030	0.030
	5	25,000	250	0.030	0.030	24,000	200	0.030	0.040	24,000	200	0.020	0.020
	6	20,000	150	0.030	0.030	20,000	150	0.030	0.040	20,000	150	0.020	0.020
	8	20,000	150	0.030	0.030	20,000	150	0.030	0.040	20,000	150	0.020	0.020

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
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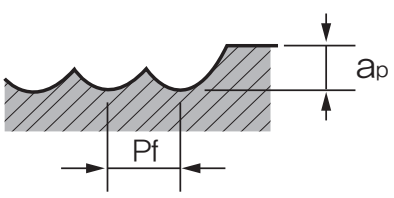
SP2BN / 2날 롱넥 볼

- 일반절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R0.3	10	17,000	100	0.015	0.025	17,000	100	0.015	0.020	17,000	100	0.005	0.005
	12	17,000	80	0.015	0.025	17,000	80	0.010	0.012	17,000	80	0.005	0.005
	14	17,000	60	0.010	0.025	17,000	60	0.010	0.012	17,000	60	0.005	0.005
R0.35	2	28,000	450	0.040	0.035	27,500	350	0.030	0.050	27,500	350	0.030	0.035
	4	28,000	450	0.040	0.035	27,500	300	0.030	0.050	27,500	300	0.030	0.035
R0.3	10	17,000	100	0.02	0.03	17,000	100	0.02	0.02	17,000	100	0.01	0.01
	12	17,000	80	0.02	0.03	17,000	80	0.01	0.01	17,000	80	0.01	0.01
	14	17,000	60	0.01	0.03	17,000	60	0.01	0.01	17,000	60	0.01	0.01
R0.35	2	28,000	450	0.04	0.04	27,500	350	0.03	0.05	27,500	350	0.03	0.04
	4	28,000	450	0.04	0.04	27,500	300	0.03	0.05	27,500	300	0.03	0.04
	6	20,000	400	0.03	0.04	25,000	250	0.03	0.05	25,000	250	0.03	0.04
	8	17,000	250	0.03	0.04	23,000	200	0.03	0.05	23,000	200	0.03	0.04
	10	15,000	200	0.02	0.04	21,000	150	0.02	0.05	21,000	150	0.02	0.04
R0.4	2	23,000	450	0.04	0.08	21,000	300	0.04	0.06	21,000	300	0.04	0.04
	3	23,000	450	0.04	0.08	21,000	300	0.04	0.06	21,000	300	0.04	0.04
	4	23,000	450	0.04	0.08	21,000	300	0.04	0.06	21,000	300	0.04	0.04
	5	21,000	250	0.04	0.06	19,000	200	0.04	0.05	19,000	200	0.02	0.03
	6	21,000	250	0.04	0.06	19,000	200	0.04	0.05	19,000	200	0.02	0.03
	7	21,000	250	0.04	0.06	19,000	200	0.04	0.05	19,000	200	0.02	0.03
	8	19,000	150	0.04	0.06	17,000	150	0.04	0.05	17,000	150	0.02	0.03
	10	19,000	150	0.04	0.06	17,000	150	0.04	0.05	17,000	150	0.02	0.03
	12	19,000	150	0.04	0.06	17,000	150	0.04	0.05	17,000	150	0.02	0.03
	14	17,000	100	0.03	0.06	15,000	100	0.03	0.05	15,000	100	0.02	0.03
R0.45	4	23,000	450	0.04	0.07	21,000	300	0.04	0.07	21,000	300	0.04	0.05
	8	19,000	250	0.04	0.07	17,000	200	0.04	0.07	17,000	250	0.04	0.05
R0.5	2	25,000	600	0.05	0.10	21,000	400	0.05	0.08	21,000	400	0.05	0.05
	2.5	25,000	600	0.05	0.10	21,000	400	0.05	0.08	21,000	400	0.05	0.05
	3	25,000	500	0.05	0.10	21,000	300	0.05	0.08	21,000	300	0.05	0.05
	4	25,000	500	0.05	0.10	21,000	300	0.05	0.08	21,000	300	0.05	0.05
	5	19,000	300	0.05	0.10	16,000	200	0.05	0.08	16,000	200	0.05	0.05
	6	19,000	300	0.05	0.10	16,000	200	0.05	0.08	16,000	200	0.05	0.05
	7	19,000	300	0.05	0.08	16,000	200	0.05	0.06	16,000	200	0.03	0.03
	8	19,000	300	0.05	0.08	16,000	200	0.05	0.06	16,000	200	0.03	0.03
	9	19,000	300	0.05	0.08	16,000	200	0.05	0.06	16,000	200	0.03	0.03
	10	17,000	200	0.03	0.05	14,000	150	0.03	0.04	14,000	150	0.01	0.02
	12	17,000	200	0.03	0.05	14,000	150	0.03	0.04	14,000	150	0.01	0.02
	14	17,000	200	0.03	0.05	14,000	150	0.03	0.04	14,000	150	0.01	0.02

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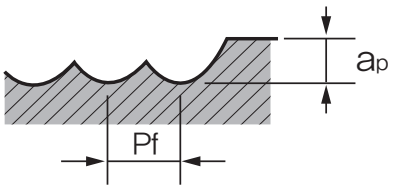


SP2BN / 2날 롱넥 볼
- 일반절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R0.5	16	13,000	200	0.03	0.05	10,000	150	0.03	0.04	10,000	150	0.01	0.02
	20	13,000	200	0.03	0.05	10,000	150	0.03	0.04	10,000	150	0.01	0.02
R0.6	4	17,000	500	0.06	0.12	14,000	300	0.06	0.10	14,000	300	0.06	0.06
	6	17,000	300	0.06	0.12	14,000	200	0.06	0.10	14,000	200	0.06	0.06
	8	17,000	300	0.06	0.12	14,000	200	0.06	0.10	14,000	200	0.06	0.06
R0.6	10	17,000	300	0.06	0.09	14,000	200	0.06	0.07	14,000	200	0.03	0.03
	12	14,000	200	0.06	0.09	11,000	150	0.06	0.07	11,000	150	0.03	0.03
	14	14,000	200	0.06	0.09	11,000	150	0.06	0.07	11,000	150	0.01	0.03
	16	14,000	200	0.06	0.09	11,000	150	0.06	0.07	11,000	150	0.01	0.03
	20	14,000	200	0.06	0.09	11,000	150	0.06	0.07	11,000	150	0.01	0.03
R0.7	6	15,500	300	0.07	0.14	12,000	250	0.07	0.10	12,000	250	0.07	0.07
	8	15,500	300	0.07	0.14	12,000	250	0.07	0.10	12,000	250	0.07	0.07
	12	15,500	300	0.07	0.10	12,000	250	0.07	0.08	12,000	250	0.07	0.07
	16	12,000	200	0.06	0.09	9,000	150	0.04	0.07	9,000	150	0.01	0.03
R0.75	3	15,000	600	0.08	0.15	12,000	500	0.08	0.12	12,000	300	0.08	0.10
	4	15,000	600	0.08	0.15	12,000	500	0.08	0.12	12,000	300	0.08	0.10
	6	15,000	500	0.08	0.15	12,000	350	0.08	0.12	12,000	300	0.08	0.10
	8	15,000	300	0.08	0.15	12,000	250	0.08	0.12	12,000	250	0.08	0.10
	10	15,000	300	0.08	0.15	12,000	250	0.08	0.12	12,000	250	0.08	0.10
	12	15,000	300	0.08	0.12	12,000	250	0.08	0.09	12,000	250	0.05	0.06
	14	15,000	300	0.08	0.12	12,000	250	0.08	0.09	12,000	250	0.05	0.06
	16	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
	18	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
	20	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
	22	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
	25	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
	30	12,000	200	0.06	0.10	9,500	150	0.06	0.07	9,500	150	0.01	0.03
R1	4	16,500	700	0.10	0.28	13,500	500	0.10	0.28	13,500	500	0.10	0.20
	5	16,500	700	0.10	0.28	13,500	500	0.10	0.28	13,500	500	0.10	0.20
	6	16,500	700	0.10	0.28	13,500	500	0.10	0.28	13,500	500	0.10	0.20
	8	16,500	700	0.10	0.28	13,500	500	0.10	0.28	13,500	500	0.10	0.20
	10	13,000	500	0.10	0.28	10,000	300	0.10	0.28	10,000	300	0.10	0.20
	12	13,000	500	0.10	0.28	10,000	300	0.10	0.28	10,000	300	0.10	0.20
	14	13,000	500	0.10	0.28	10,000	300	0.10	0.28	10,000	300	0.10	0.20
	16	13,000	500	0.10	0.21	10,000	300	0.10	0.18	10,000	300	0.06	0.10
	18	13,000	500	0.10	0.21	10,000	300	0.10	0.18	10,000	300	0.06	0.10
	20	10,000	250	0.10	0.21	8,000	200	0.10	0.18	8,000	200	0.06	0.10

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

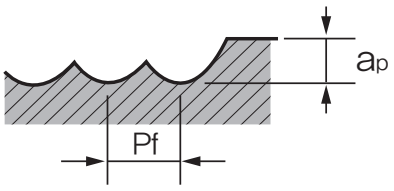


SP2BN / 2날 롱넥 볼
- 일반절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R1	22	10,000	250	0.10	0.21	8,000	200	0.10	0.18	8,000	200	0.06	0.10
	25	10,000	250	0.10	0.21	8,000	200	0.10	0.18	8,000	200	0.06	0.10
	30	10,000	250	0.10	0.21	8,000	200	0.10	0.18	8,000	200	0.06	0.10
R1.25	10	12,000	700	0.12	0.35	10,000	600	0.12	0.30	10,000	600	0.10	0.25
	12	12,000	600	0.12	0.35	9,500	500	0.12	0.30	9,500	500	0.10	0.25
	16	12,000	500	0.12	0.28	9,000	400	0.12	0.30	9,000	400	0.08	0.25
	20	12,000	400	0.12	0.28	8,500	300	0.12	0.30	8,500	300	0.08	0.15
R1.5	6	9,500	800	0.15	0.42	7,500	600	0.15	0.42	7,500	600	0.15	0.30
	8	9,500	600	0.15	0.42	7,500	400	0.15	0.36	7,500	400	0.15	0.30
	10	9,500	600	0.15	0.42	7,500	400	0.15	0.36	7,500	400	0.15	0.30
	12	9,500	600	0.15	0.42	7,500	400	0.15	0.36	7,500	400	0.15	0.30
	14	9,500	600	0.15	0.42	7,500	400	0.15	0.36	7,500	400	0.15	0.30
	16	8,500	300	0.15	0.42	6,500	250	0.15	0.36	6,500	250	0.15	0.30
	18	8,500	300	0.15	0.42	6,500	250	0.15	0.36	6,500	250	0.15	0.30
	20	8,500	300	0.15	0.42	6,500	250	0.15	0.36	6,500	250	0.15	0.30
	26	7,500	250	0.15	0.42	6,000	200	0.15	0.36	6,000	200	0.09	0.30
	30	7,500	250	0.15	0.42	6,000	200	0.15	0.30	6,000	200	0.09	0.15
	35	7,500	250	0.15	0.42	6,000	200	0.15	0.30	6,000	200	0.09	0.15
	40	7,500	250	0.15	0.42	6,000	200	0.15	0.30	6,000	200	0.09	0.15
	45	6,500	200	0.10	0.42	5,500	150	0.10	0.30	5,500	150	0.08	0.15
	50	6,500	200	0.10	0.42	5,500	150	0.10	0.30	5,500	150	0.08	0.15
R2	8	7,500	800	0.20	0.64	6,000	700	0.20	0.60	6,000	700	0.20	0.40
	10	7,500	600	0.20	0.64	6,000	400	0.20	0.60	6,000	400	0.20	0.40
	12	7,500	600	0.20	0.64	6,000	400	0.20	0.60	6,000	400	0.20	0.40
	14	7,500	600	0.20	0.64	6,000	400	0.20	0.60	6,000	400	0.20	0.40
	16	7,500	600	0.20	0.64	6,000	400	0.20	0.60	6,000	400	0.20	0.40
	20	6,000	400	0.20	0.64	5,000	250	0.20	0.60	5,000	250	0.20	0.40
	25	6,000	400	0.20	0.64	5,000	250	0.20	0.60	5,000	250	0.20	0.40
	30	6,000	400	0.20	0.64	5,000	250	0.20	0.56	5,000	250	0.12	0.20
	35	6,000	400	0.20	0.64	5,000	250	0.20	0.56	5,000	250	0.12	0.20
	40	5,000	250	0.20	0.64	4,000	200	0.20	0.56	4,000	200	0.12	0.20
	45	5,000	250	0.20	0.64	4,000	200	0.20	0.56	4,000	200	0.12	0.20
	50	5,000	250	0.20	0.64	4,000	200	0.20	0.56	4,000	200	0.12	0.20
R2.5	16	6,500	500	0.25	0.90	5,000	400	0.25	0.70	5,000	400	0.25	0.50
	20	6,500	500	0.25	0.90	5,000	400	0.25	0.70	5,000	400	0.25	0.50
	26	5,000	500	0.25	0.90	4,000	250	0.25	0.70	4,000	250	0.25	0.50
	30	5,000	500	0.25	0.90	4,000	250	0.25	0.70	4,000	250	0.25	0.50

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

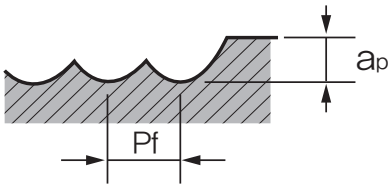


SP2BN / 2날 롱넥 볼
- 일반절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R2.5	35	5,000	500	0.25	0.90	4,000	250	0.25	0.70	4,000	250	0.25	0.50
	40	4,000	400	0.25	0.90	4,000	200	0.25	0.60	4,000	200	0.20	0.25
	45	4,000	400	0.25	0.90	4,000	200	0.25	0.60	4,000	200	0.20	0.25
	50	4,000	300	0.25	0.90	4,000	200	0.25	0.60	4,000	200	0.20	0.25
	55	4,000	200	0.20	0.90	3,500	150	0.20	0.60	3,500	150	0.15	0.25
	60	4,000	200	0.20	0.90	3,500	150	0.20	0.60	3,500	150	0.15	0.25
R3	20	5,500	800	0.30	1.20	4,500	600	0.30	0.96	4,500	600	0.30	0.60
	30	4,000	400	0.30	1.20	4,000	300	0.30	0.96	4,000	300	0.30	0.60
R4	25	4,000	500	0.40	1.60	3,500	400	0.40	1.60	3,500	500	0.30	1.60
	35	4,000	450	0.40	1.60	3,500	350	0.30	1.60	3,500	500	0.25	1.60
R5	30	3,500	400	0.50	2.00	3,500	350	0.50	2.00	3,500	400	0.30	2.00
	40	3,500	350	0.50	2.00	3,000	300	0.40	2.00	3,500	400	0.25	2.00
R6	32	3,000	300	0.60	2.40	2,800	300	0.60	2.40	2,800	300	0.30	2.40
	45	3,000	250	0.60	2.40	2,500	250	0.50	2.40	2,500	250	0.25	2.40

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

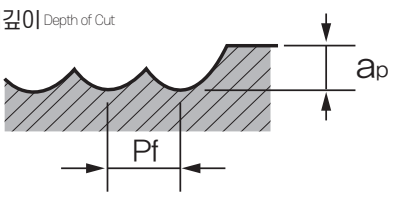


SP2BN / 2날 롱넥 볼
- 고속절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R0.1	0.5	50,000	400	0.005	0.005	50,000	380	0.005	0.005	50,000	380	0.005	0.005
	1	50,000	360	0.005	0.005	50,000	340	0.005	0.005	50,000	340	0.005	0.005
	1.5	45,000	300	0.005	0.005	45,000	280	0.005	0.005	45,000	280	0.005	0.005
	2	38,000	230	0.005	0.005	38,000	210	0.005	0.005	37,000	200	0.005	0.005
R0.15	1	50,000	600	0.005	0.010	50,000	570	0.005	0.010	50,000	570	0.005	0.010
	1.5	50,000	600	0.005	0.010	50,000	570	0.005	0.010	50,000	570	0.005	0.010
	2	45,000	480	0.005	0.005	45,000	450	0.005	0.005	45,000	450	0.005	0.005
	2.5	40,000	300	0.005	0.005	40,000	280	0.005	0.005	40,000	280	0.005	0.005
	3	38,000	250	0.005	0.005	38,000	230	0.005	0.005	37,000	230	0.005	0.005
R0.2	1	50,000	900	0.010	0.020	50,000	850	0.010	0.020	50,000	850	0.010	0.020
	1.5	50,000	800	0.010	0.020	50,000	760	0.010	0.020	50,000	760	0.010	0.020
	2	50,000	700	0.010	0.020	50,000	680	0.010	0.020	50,000	660	0.010	0.020
	2.5	45,000	550	0.008	0.015	45,000	520	0.008	0.015	45,000	520	0.008	0.015
	3	43,000	500	0.005	0.010	43,000	470	0.005	0.010	43,000	470	0.005	0.010
	4	36,000	370	0.005	0.005	36,000	350	0.005	0.005	35,000	340	0.005	0.005
R0.25	1	50,000	1,100	0.015	0.030	50,000	1,050	0.015	0.030	50,000	1,050	0.015	0.030
	2	50,000	1,000	0.015	0.030	50,000	950	0.015	0.030	50,000	950	0.015	0.030
	3	48,000	900	0.010	0.020	48,000	850	0.010	0.020	48,000	850	0.010	0.020
	4	43,000	600	0.010	0.010	43,000	570	0.010	0.010	43,000	570	0.010	0.010
	5	30,000	400	0.005	0.010	30,000	380	0.005	0.010	29,000	360	0.005	0.010
R0.3	1	50,000	1,400	0.030	0.050	50,000	1,300	0.030	0.050	50,000	1,300	0.030	0.050
	2	50,000	1,300	0.030	0.050	50,000	1,200	0.030	0.050	50,000	1,200	0.030	0.050
	3	50,000	1,200	0.020	0.030	50,000	1,100	0.020	0.030	50,000	1,100	0.020	0.030
	4	40,000	900	0.010	0.020	40,000	850	0.010	0.020	40,000	850	0.010	0.020
	5	30,000	680	0.010	0.020	30,000	640	0.010	0.020	30,000	640	0.010	0.020
	6	26,000	600	0.010	0.020	26,000	570	0.010	0.020	25,000	540	0.010	0.020
R0.35	2	50,000	1,600	0.030	0.060	50,000	1,500	0.030	0.060	50,000	1,500	0.030	0.060
	4	48,000	1,000	0.020	0.050	45,000	1,000	0.020	0.050	45,000	1,000	0.020	0.050
	6	30,000	600	0.010	0.030	28,000	650	0.010	0.030	28,000	650	0.010	0.030
R0.4	2	50,000	2,000	0.040	0.080	50,000	1,900	0.040	0.080	50,000	1,900	0.040	0.080
	3	48,000	1,600	0.040	0.080	48,000	1,500	0.040	0.080	48,000	1,500	0.040	0.080
	4	40,000	1,200	0.040	0.080	40,000	1,100	0.040	0.080	40,000	1,100	0.040	0.080
	5	34,000	950	0.030	0.050	34,000	900	0.030	0.050	34,000	900	0.030	0.050
	6	30,000	800	0.030	0.050	30,000	760	0.030	0.050	30,000	760	0.030	0.050
	7	25,000	600	0.010	0.020	25,000	570	0.010	0.020	25,000	570	0.010	0.020
	8	23,000	450	0.005	0.010	23,000	420	0.005	0.010	23,000	420	0.005	0.010
R0.45	4	40,000	2,700	0.040	0.080	40,000	2,700	0.040	0.080	40,000	2,700	0.040	0.080

1. 고속 고정도의 머시닝센터를 이용할 때의 절삭속도와 이송속도 기준표입니다.
2. 마모가 진행되면 불꽃이 발생 할 수 있으므로 발화성이 있는 절삭유는 사용하지 마십시오.
3. 에어 블로우를 사용하시고, 만약 절삭유를 사용시, 발화성이 적은 것으로 선정 하십시오.

• 절입깊이 Depth of Cut

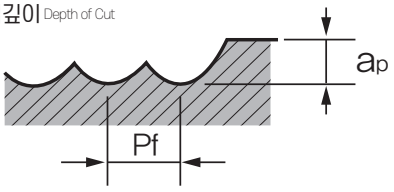


SP2BN / 2날 롱넥 볼
- 고속절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R0.45	8	25,000	1,200	0.030	0.050	25,000	1,200	0.030	0.050	25,000	1,200	0.030	0.050
R0.5	2	50,000	3,400	0.050	0.100	50,000	3,200	0.050	0.100	50,000	3,200	0.050	0.100
	2.5	50,000	3,400	0.050	0.100	50,000	3,200	0.050	0.100	50,000	3,200	0.050	0.100
	3	45,000	3,200	0.050	0.100	45,000	3,000	0.050	0.100	45,000	3,000	0.050	0.100
	4	40,000	3,000	0.050	0.100	40,000	2,850	0.050	0.100	40,000	2,850	0.050	0.100
	5	36,000	2,300	0.050	0.100	36,000	2,100	0.050	0.100	36,000	2,100	0.050	0.100
	6	30,000	2,000	0.050	0.100	30,000	1,900	0.050	0.100	30,000	1,900	0.050	0.100
	7	27,000	1,700	0.050	0.100	27,000	1,600	0.050	0.100	27,000	1,600	0.050	0.100
	8	26,000	1,600	0.050	0.100	26,000	1,500	0.050	0.100	26,000	1,500	0.050	0.100
	9	24,000	1,200	0.030	0.050	24,000	1,100	0.030	0.050	24,000	1,100	0.030	0.050
	10	22,000	1,100	0.010	0.020	22,000	1,000	0.010	0.020	21,000	950	0.010	0.020
R0.6	4	40,000	3,000	0.060	0.120	40,000	2,850	0.060	0.120	40,000	2,850	0.060	0.120
	6	32,000	2,100	0.060	0.120	32,000	2,000	0.060	0.120	32,000	2,000	0.060	0.120
	8	25,000	1,700	0.060	0.120	25,000	1,600	0.060	0.120	25,000	1,600	0.060	0.120
	10	20,000	1,200	0.050	0.100	20,000	1,100	0.050	0.100	18,000	990	0.050	0.100
	12	19,000	900	0.030	0.050	17,000	850	0.030	0.050	16,000	800	0.030	0.050
R0.7	6	25,000	1,700	0.070	0.140	25,000	1,600	0.070	0.140	25,000	1,600	0.070	0.140
	8	25,000	1,700	0.070	0.140	25,000	1,600	0.070	0.140	25,000	1,600	0.070	0.140
	12	19,000	1,000	0.030	0.070	19,000	950	0.030	0.070	19,000	950	0.030	0.070
R0.75	3	50,000	4,800	0.075	0.150	50,000	4,800	0.075	0.150	50,000	4,800	0.075	0.150
	4	40,000	3,900	0.075	0.150	40,000	3,700	0.075	0.150	40,000	3,700	0.075	0.150
	6	30,000	2,900	0.075	0.150	30,000	2,700	0.075	0.150	30,000	2,700	0.075	0.150
	8	24,000	2,300	0.075	0.150	24,000	2,100	0.075	0.150	24,000	2,100	0.075	0.150
	10	24,000	2,000	0.075	0.150	24,000	1,900	0.075	0.150	24,000	1,900	0.075	0.150
	12	21,000	1,400	0.075	0.100	21,000	1,300	0.075	0.100	21,000	1,300	0.075	0.100
	14	18,000	1,200	0.050	0.100	18,000	1,100	0.050	0.100	17,000	1,100	0.050	0.100
R1	4	50,000	5,600	0.100	0.200	50,000	5,600	0.100	0.200	47,000	5,300	0.100	0.200
	5	40,000	4,000	0.100	0.200	40,000	3,800	0.100	0.200	37,000	3,600	0.100	0.200
	6	36,000	3,000	0.100	0.200	36,000	2,800	0.100	0.200	34,000	2,600	0.100	0.200
	8	25,000	2,600	0.100	0.200	25,000	2,400	0.100	0.200	23,000	2,200	0.100	0.200
	10	20,000	2,400	0.100	0.200	20,000	2,200	0.100	0.200	19,000	2,000	0.100	0.200
	12	16,000	2,000	0.100	0.200	16,000	1,900	0.100	0.200	15,000	1,700	0.100	0.200
	14	15,000	1,800	0.100	0.200	15,000	1,700	0.100	0.200	14,000	1,500	0.100	0.200
	16	14,000	1,700	0.100	0.100	14,000	1,600	0.100	0.100	13,000	1,400	0.100	0.100
	18	13,000	1,600	0.100	0.100	13,000	1,500	0.100	0.100	12,000	1,300	0.100	0.100
	20	12,000	1,200	0.050	0.100	11,000	1,100	0.050	0.100	10,000	1,000	0.050	0.100
R1.25	10	20,000	3,300	0.100	0.200	20,000	3,100	0.100	0.200	18,000	2,700	0.100	0.200

1. 고속 고정도의 머시닝센터를 이용할 때의 절삭속도와 이송속도 기준표입니다.
2. 마모가 진행되면 불꽃이 발생 할 수 있으므로 발화성이 있는 절삭유는 사용하지 마십시오.
3. 에어 블로우를 사용하시고, 만약 절삭유를 사용시, 발화성이 적은 것으로 선정 하십시오.

• 절입깊이 Depth of Cut

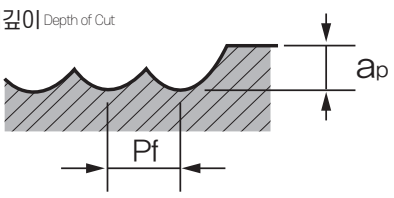


SP2BN / 2날 롱넥 볼
- 고속절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R1.25	12	18,000	2,600	0.100	0.200	18,000	2,400	0.100	0.200	16,000	2,300	0.100	0.200
	16	16,000	2,000	0.100	0.200	16,000	1,900	0.100	0.200	14,000	1,800	0.100	0.200
	20	15,000	1,800	0.100	0.200	15,000	1,700	0.100	0.200	14,000	1,500	0.100	0.200
R1.5	6	41,500	6,200	0.150	0.300	41,500	6,200	0.150	0.300	32,000	4,800	0.150	0.300
	8	30,000	4,500	0.150	0.300	30,000	4,200	0.150	0.300	25,000	3,500	0.150	0.300
	10	25,000	3,800	0.150	0.300	25,000	3,600	0.150	0.300	20,000	2,800	0.150	0.300
	12	20,000	3,000	0.150	0.300	20,000	2,800	0.150	0.300	18,000	2,500	0.150	0.300
	14	18,000	2,700	0.150	0.300	18,000	2,500	0.150	0.300	15,000	2,000	0.150	0.300
	16	16,000	2,000	0.100	0.200	16,000	1,900	0.100	0.200	13,000	1,500	0.100	0.200
	18	15,000	1,900	0.100	0.200	15,000	1,800	0.100	0.200	12,000	1,400	0.100	0.200
	20	14,000	1,800	0.100	0.200	14,000	1,700	0.100	0.200	11,000	1,300	0.100	0.200
	26	12,000	1,400	0.030	0.050	11,000	1,400	0.030	0.050	8,500	700	0.030	0.050
	30	10,000	800	0.030	0.050	9,000	760	0.030	0.050	7,800	590	0.030	0.050
R2	8	31,000	5,700	0.200	0.500	31,000	5,700	0.200	0.500	24,000	4,400	0.200	0.500
	10	25,000	4,500	0.200	0.500	25,000	4,200	0.200	0.500	20,000	3,300	0.200	0.500
	12	20,000	3,600	0.200	0.500	20,000	3,400	0.200	0.500	16,000	2,700	0.200	0.500
	14	20,000	3,600	0.200	0.500	20,000	3,400	0.200	0.500	16,000	2,700	0.200	0.500
	16	18,000	3,200	0.200	0.500	18,000	3,000	0.200	0.500	14,000	2,300	0.200	0.500
	20	16,000	2,800	0.200	0.400	16,000	2,600	0.200	0.400	12,000	1,900	0.200	0.400
	25	16,000	2,800	0.100	0.300	16,000	2,600	0.100	0.300	12,000	1,900	0.100	0.300
	30	14,000	2,400	0.100	0.200	14,000	2,200	0.100	0.200	11,000	1,700	0.100	0.200
	35	12,000	1,800	0.100	0.200	12,000	1,700	0.100	0.200	9,000	1,700	0.100	0.200
	40	10,000	1,300	0.050	0.100	10,000	1,200	0.050	0.100	7,000	840	0.050	0.100
R2.5	16	18,000	4,000	0.250	0.500	18,000	3,800	0.250	0.500	14,000	2,800	0.250	0.500
	20	16,000	3,500	0.250	0.500	16,000	3,300	0.250	0.500	12,000	2,400	0.250	0.500
	26	15,000	3,000	0.250	0.300	15,000	2,800	0.100	0.300	11,000	1,800	0.100	0.300
	30	14,000	2,500	0.100	0.300	14,000	2,300	0.100	0.300	11,000	1,800	0.100	0.300
	35	12,000	1,600	0.100	0.300	12,000	1,500	0.100	0.300	9,000	1,100	0.100	0.300
	40	10,000	1,200	0.100	0.200	10,000	1,100	0.100	0.200	8,000	880	0.100	0.200
	45	9,000	900	0.100	0.100	9,000	850	0.100	0.100	7,000	660	0.100	0.100
	50	8,000	800	0.100	0.100	8,000	760	0.100	0.100	6,000	570	0.100	0.100
R3	20	16,000	4,200	0.300	0.500	16,000	3,900	0.300	0.500	12,000	2,900	0.300	0.500
	30	10,000	2,600	0.300	0.500	10,000	2,400	0.300	0.500	8,000	1,900	0.300	0.500
R4	25	13,000	3,600	0.300	0.500	13,000	3,600	0.300	0.500	11,000	2,600	0.300	0.500
	35	8,000	2,100	0.300	0.400	8,000	2,100	0.300	0.400	7,000	1,600	0.300	0.400
R5	30	10,000	2,600	0.400	0.500	10,000	2,600	0.400	0.500	9,000	1,900	0.400	0.500
	40	6,000	1,600	0.400	0.400	6,000	1,600	0.400	0.400	5,500	1,300	0.400	0.400

1. 고속 고정도의 머시닝센터를 이용할 때의 절삭속도와 이송속도 기준표입니다.
2. 마모가 진행되면 불꽃이 발생 할 수 있으므로 발화성이 있는 절삭유는 사용하지 마십시오.
3. 에어 블로우를 사용하시고, 만약 절삭유를 사용시, 발화성이 적은 것으로 선정 하십시오.

• 절입깊이 Depth of Cut

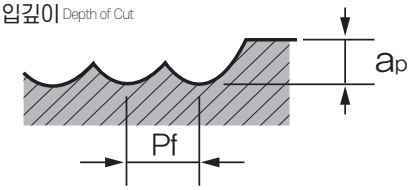


SP2BN / 2날 롱넥 볼
- 고속절삭조건

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]				조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]							
경도 HARDNESS		~32HRC				33~41 HRC				42~50 HRC			
반지름 RE	유효길이 LU	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF	회전속도 (min-1)	이송속도 (mm/min)	절입깊이 (mm) ap	절입깊이 (mm) PF
R6	32	7,500	2,000	0.500	0.600	7,500	2,000	0.500	0.600	5,500	1,300	0.500	0.600
	45	4,000	1,100	0.500	0.500	4,000	1,100	0.500	0.500	3,500	700	0.500	0.500

1. 고속 고정도의 머시닝센터를 이용할 때의 절삭속도와 이송속도 기준표입니다.
2. 마모가 진행되면 불꽃이 발생 할 수 있으므로 발화성이 있는 절삭유는 사용하지 마십시오.
3. 에어 블로우를 사용하시고, 만약 절삭유를 사용시, 발화성이 적은 것으로 선정 하십시오.

• 절입깊이 Depth of Cut



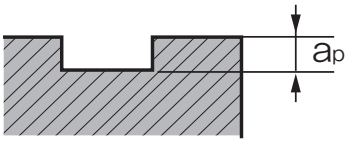
SP2F / 2날 플랫
홈 절삭 (SLOTTING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]			
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC	
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
0.1	32,000	70	32,000	60	32,000	30
0.15	32,000	80	32,000	60	32,000	30
0.2	32,000	90	32,000	80	32,000	35
0.25	32,000	100	32,000	90	32,000	40
0.3	32,000	110	32,000	90	32,000	55
0.35	32,000	110	32,000	90	29,000	55
0.4	32,000	120	32,000	100	27,500	60
0.45	32,000	120	28,000	100	25,000	60
0.5	31,000	120	25,000	100	22,000	60
0.55	29,000	120	22,000	100	19,000	60
0.6	27,000	120	19,500	100	17,000	60
0.65	26,000	120	18,000	100	16,000	60
0.7	24,000	120	17,000	100	15,000	60
0.75	23,000	120	16,000	100	14,000	60
0.8	21,500	120	15,500	100	13,500	65
0.85	20,000	120	14,500	100	12,500	65
0.9	19,000	120	13,500	100	12,000	65
0.95	18,000	120	11,500	100	11,500	65
1	17,500	120	12,500	100	11,000	65
1.2	15,000	120	10,500	100	9,300	65
1.5	12,500	120	8,900	100	7,900	65
2	9,700	140	7,000	100	6,300	70
2.5	8,200	160	6,100	100	5,300	70
3	6,900	170	5,300	110	4,400	65
3.5	6,000	200	4,600	130	3,800	70
4	5,600	220	4,200	130	3,500	80
4.5	5,300	250	3,900	140	3,200	80
5	5,200	280	3,500	140	3,100	85
5.5	4,700	280	3,200	140	2,700	85
6	4,300	280	2,900	140	2,500	85
6.5	3,900	280	2,700	140	2,300	85
7	3,600	280	2,500	140	2,100	85
7.5	3,400	280	2,300	140	2,000	85
8	3,200	270	2,200	130	1,900	85
8.5	3,000	270	2,000	130	1,800	85
9	2,900	270	1,900	130	1,700	85
9.5	2,800	270	1,800	130	1,550	80

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• **절입깊이** Depth of Cut

Dc 〈 Ø1	0.1D
Ø1 ≤ Dc ≤ Ø3	0.3D
Ø3 〈 Dc	0.5D



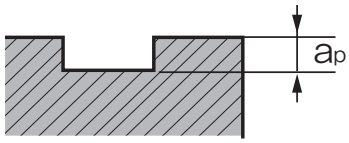
SP2F / 2날 플랫
홈 절삭 (SLOTTING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]			
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC	
외경 DC	회전속도 (min-1)	이송속도 (mm/min)	회전속도 (min-1)	이송속도 (mm/min)	회전속도 (min-1)	이송속도 (mm/min)
10	2,700	270	1,700	130	1,500	80
10.5	2,650	270	1,650	130	1,450	80
11	2,600	270	1,600	130	1,400	80
12	2,450	260	1,550	130	1,250	75
13	2,350	250	1,430	120	1,170	70
14	2,260	240	1,430	120	1,080	65
15	2,070	220	1,310	110	1,080	65
16	1,970	210	1,250	105	1,000	60
17	1,880	200	1,190	100	1,000	60
18	1,690	180	1,130	95	1,000	60
19	1,600	170	1,070	90	1,000	60
20	1,500	160	1,010	85	920	55
21	1,410	150	950	80	830	50
22	1,310	140	890	75	770	46
23	1,220	130	890	75	700	42
24	1,130	120	830	70	630	38
25	1,030	110	830	70	580	35

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• **절입깊이** Depth of Cut

Dc 〈 Ø1	0.1D
Ø1 ≤ Dc ≤ Ø3	0.3D
Ø3 〈 Dc	0.5D



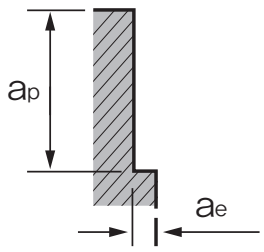
SP2F / 2날 롱 플랫
측면절삭 (SIDE MILLING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]			
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC	
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
1	11,000	80	9,500	60	6,350	30
1.5	8,000	80	7,000	60	4,500	30
2	5,550	80	4,750	60	3,150	30
2.5	4,500	80	3,850	60	2,550	30
3	3,700	80	3,150	60	2,100	30
4	2,750	80	2,350	60	1,550	30
5	2,200	80	1,900	60	1,250	30
6	1,850	80	1,550	60	1,050	30
8	1,550	90	1,350	70	995	40
10	1,250	90	1,100	70	795	40
12	1,050	90	925	70	660	40
16	795	70	695	60	495	30
20	635	55	555	50	395	25

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• **절입깊이** Depth of Cut

a_p = 2.5D
a_e = 0.05d



※ 롱타입 엔드밀은 아래 표를 참고해 절삭조건을 수정하십시오.

$L/D = \frac{\text{날길이 (L)}}{\text{외경 (D)}}$	a_p	a_e	회전속도 (min–1)	이동속도 (mm/min)
L/D ≤ 4	100%	100%	100%	100%
4 〈 L/D ≤ 6	50~70%	50~70%	50~70%	60~80%
6 〈 L/D	30~50%	30~50%	30~50%	50~70%

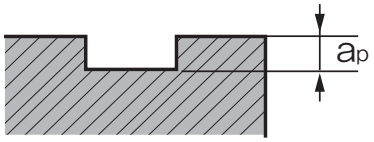
SP2FN / 2날 롱넥 플랫

홈 절삭 (SLOTTING)

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]			조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]					
경도 HARDNESS		~32HRC			33~41 HRC			42~50 HRC		
외경 DC	유효길이 LU	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap
0.2	0.5	32,000	450	0.018	32,000	450	0.015	29,000	250	0.012
	1	32,000	350	0.013	32,000	350	0.011	29,000	200	0.009
	1.5	28,000	250	0.008	28,000	250	0.007	25,000	150	0.005
	2	22,000	200	0.005	22,000	200	0.004	20,000	120	0.003
0.3	1	32,000	400	0.027	32,000	350	0.023	29,000	300	0.018
	1.5	32,000	360	0.023	32,000	300	0.02	29,000	250	0.015
	2	28,000	300	0.02	28,000	250	0.017	25,000	200	0.013
	2.5	28,000	280	0.014	28,000	230	0.012	25,000	190	0.008
	3	22,000	250	0.009	22,000	160	0.007	20,000	150	0.005
	4	20,000	190	0.007	20,000	150	0.005	20,000	130	0.003
	5	20,000	160	0.005	20,000	140	0.003	18,000	120	0.002
0.4	1	32,000	460	0.03	32,000	400	0.024	29,000	350	0.018
	1.5	32,000	440	0.027	32,000	380	0.023	29,000	330	0.018
	2	32,000	400	0.026	32,000	350	0.022	29,000	300	0.018
	2.5	30,000	350	0.022	30,000	300	0.02	27,000	250	0.011
	3	28,000	300	0.017	28,000	250	0.014	25,000	200	0.011
	4	22,000	250	0.012	22,000	200	0.01	20,000	150	0.008
	5	20,000	200	0.006	20,000	160	0.005	20,000	130	0.003
	6	20,000	180	0.005	20,000	140	0.004	20,000	120	0.002
	8	20,000	130	0.002	20,000	110	0.002	20,000	100	0.002
	10	20,000	110	0.002	20,000	85	0.002	18,000	70	0.002
0.5	1	32,000	600	0.045	32,000	450	0.038	29,000	350	0.03
	1.5	32,000	550	0.045	32,000	420	0.038	29,000	330	0.03
	2	32,000	500	0.045	32,000	400	0.038	29,000	300	0.03
	2.5	30,000	450	0.04	30,000	380	0.028	28,000	300	0.022
	3	30,000	450	0.03	30,000	360	0.028	27,000	280	0.022
	4	28,000	400	0.021	28,000	320	0.018	25,000	250	0.014
	5	28,000	380	0.014	25,000	300	0.01	22,000	230	0.008
	6	22,000	350	0.006	22,000	220	0.005	20,000	180	0.004
	8	20,000	270	0.005	20,000	180	0.003	20,000	150	0.003
	10	20,000	200	0.002	18,000	150	0.002	1,000	130	0.002
	12	20,000	160	0.002	18,000	120	0.002	18,000	100	0.002
0.6	2	32,000	600	0.054	32,000	400	0.045	27,000	300	0.036
	3	32,000	550	0.05	32,000	360	0.04	27,000	280	0.03
	4	28,000	450	0.04	28,000	300	0.033	25,000	200	0.026
	5	28,000	400	0.03	25,000	220	0.02	22,000	180	0.02
	6	22,000	250	0.018	22,000	200	0.015	20,000	150	0.012

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut



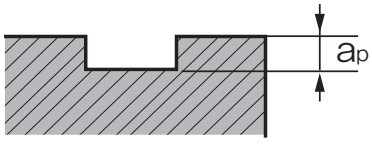
SP2FN / 2날 롱넥 플랫

홈 절삭 (SLOTTING)

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]			조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]					
경도 HARDNESS		~32HRC			33~41 HRC			42~50 HRC		
외경 DC	유효길이 LU	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap
0.6	8	22,000	250	0.007	22,000	200	0.006	20,000	150	0.005
	10	20,000	200	0.005	18,000	150	0.004	18,000	130	0.003
	12	18,000	190	0.002	18,000	150	0.002	18,000	120	0.002
	14	18,000	130	0.002	16,000	110	0.002	16,000	100	0.002
0.7	2	32,000	600	0.063	32,000	500	0.053	26,000	400	0.042
	4	28,000	450	0.046	28,000	300	0.039	22,000	300	0.031
	6	28,000	450	0.029	28,000	200	0.025	22,000	200	0.02
	8	22,000	250	0.017	22,000	200	0.014	20,000	150	0.011
	10	22,000	250	0.008	22,000	200	0.007	20,000	150	0.006
	12	22,000	250	0.005	22,000	200	0.004	20,000	150	0.003
0.8	2	32,000	700	0.07	32,000	600	0.06	25,000	500	0.05
	3	32,000	650	0.06	32,000	550	0.05	25,000	450	0.04
	4	32,000	600	0.053	32,000	500	0.044	25,000	400	0.035
	5	28,000	500	0.04	26,000	450	0.04	23,000	350	0.022
	6	26,000	450	0.034	26,000	400	0.028	21,000	300	0.022
	8	22,000	350	0.024	22,000	300	0.02	18,000	250	0.016
	10	22,000	350	0.01	22,000	300	0.008	18,000	240	0.006
	12	17,000	300	0.007	17,000	300	0.006	15,000	200	0.004
	14	17,000	270	0.003	17,000	250	0.003	13,000	170	0.002
1	2	30,000	1,300	0.09	30,000	1,200	0.08	22,000	850	0.06
	3	30,000	1,200	0.09	30,000	1,100	0.08	22,000	800	0.06
	4	30,000	1,150	0.08	30,000	1,100	0.07	22,000	650	0.05
	5	30,000	1,100	0.08	28,000	950	0.07	20,000	600	0.045
	6	27,000	1,000	0.07	26,000	900	0.06	20,000	600	0.04
	8	23,000	800	0.04	22,000	700	0.04	18,000	400	0.03
	10	19,000	600	0.03	18,000	500	0.028	15,000	300	0.02
	12	19,000	600	0.02	18,000	500	0.019	15,000	300	0.01
	14	15,000	400	0.01	15,000	400	0.009	12,000	200	0.008
	16	15,000	300	0.008	15,000	300	0.007	12,000	200	0.006
	20	12,000	190	0.004	11,000	180	0.004	10,000	130	0.003
1.2	4	24,000	1,100	0.09	23,000	1,000	0.08	18,000	700	0.06
	6	23,000	1,000	0.08	22,000	900	0.07	17,000	600	0.05
	8	20,000	700	0.07	19,000	700	0.05	14,000	400	0.04
	10	20,000	700	0.05	19,000	700	0.04	14,000	400	0.03
	12	17,000	600	0.04	16,000	500	0.03	11,000	300	0.02
1.5	4	18,000	1,000	0.14	18,000	900	0.11	14,000	600	0.09
	6	18,000	1,000	0.14	18,000	900	0.11	14,000	600	0.09

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut



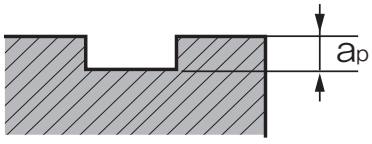
SP2FN / 2날 롱넥 플랫

홈 절삭 (SLOTTING)

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]			조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]					
경도 HARDNESS		~32HRC			33~41 HRC			42~50 HRC		
외경 DC	유효길이 LU	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap
1.5	8	16,000	800	0.1	15,000	700	0.08	12,000	400	0.07
	10	16,000	800	0.08	15,000	700	0.07	12,000	400	0.05
	12	16,000	800	0.06	15,000	700	0.05	12,000	400	0.04
	14	16,000	800	0.05	15,000	700	0.045	12,000	400	0.035
	16	14,000	600	0.05	13,000	500	0.04	10,000	300	0.03
	18	14,000	600	0.03	13,000	500	0.02	10,000	300	0.02
	20	12,000	420	0.02	11,000	380	0.015	10,000	300	0.01
1.8	8	16,000	1,100	0.21	15,000	1,000	0.17	12,000	700	0.13
2	6	15,000	1,100	0.31	14,000	1,000	0.26	11,000	700	0.21
	8	15,000	1,100	0.26	14,000	1,000	0.22	11,000	700	0.18
	10	13,000	800	0.24	12,000	700	0.2	9,000	500	0.16
	12	13,000	800	0.13	12,000	700	0.11	9,000	500	0.09
	14	13,000	800	0.11	12,000	700	0.09	9,000	500	0.07
	16	13,000	800	0.08	12,000	700	0.07	9,000	500	0.06
	18	13,000	800	0.07	12,000	700	0.06	9,000	500	0.05
	20	11,000	600	0.05	10,000	500	0.05	7,000	400	0.04
	26	11,000	600	0.03	10,000	500	0.02	7,000	400	0.02
	30	11,000	600	0.02	10,000	500	0.01	7,000	400	0.01
	35	9,000	390	0.009	8,000	380	0.008	6,000	270	0.007
	40	6,500	200	0.005	6,000	180	0.004	6,000	140	0.003
	50	5,800	100	0.002	5,700	95	0.002	5,000	80	0.002
2.5	8	12,000	1,100	0.39	11,000	1,000	0.33	9,000	700	0.26
	10	12,000	1,100	0.33	11,000	1,000	0.28	9,000	700	0.22
	12	12,000	1,100	0.23	11,000	1,000	0.19	9,000	700	0.15
	14	10,000	800	0.17	9,000	700	0.14	7,000	500	0.11
	16	10,000	800	0.12	9,000	700	0.1	7,000	500	0.08
	18	10,000	800	0.11	9,000	700	0.09	7,000	500	0.07
	20	10,000	800	0.09	9,000	700	0.08	7,000	500	0.06
	26	8,000	600	0.08	8,000	500	0.06	6,000	400	0.05
	30	8,000	600	0.03	8,000	500	0.03	6,000	400	0.02
	35	7,500	400	0.01	7,500	350	0.008	6,000	300	0.005
	40	6,500	280	0.007	6,000	270	0.005	6,000	240	0.005
	50	5,800	170	0.002	5,700	160	0.002	5,000	130	0.002
3	8	10,000	1,100	0.36	10,000	1,000	0.3	8,000	700	0.24
	10	10,000	1,100	0.29	10,000	1,000	0.24	8,000	700	0.19
	12	10,000	1,100	0.27	10,000	1,000	0.23	8,000	700	0.18
	14	10,000	1,100	0.25	10,000	1,000	0.21	8,000	700	0.17

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut



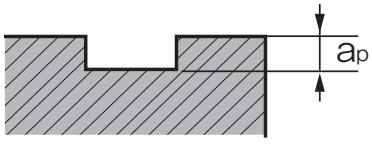
SP2FN / 2날 롱넥 플랫

홈 절삭 (SLOTTING)

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]			조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]					
경도 HARDNESS		~32HRC			33~41 HRC			42~50 HRC		
외경 DC	유효길이 LU	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap
3	16	10,000	800	0.2	9,000	700	0.17	6,000	500	0.13
	18	10,000	800	0.14	9,000	700	0.12	6,000	500	0.1
	20	10,000	800	0.13	9,000	700	0.11	6,000	500	0.08
	26	10,000	800	0.11	9,000	700	0.09	6,000	500	0.07
	30	8,000	600	0.09	7,000	500	0.08	5,000	400	0.06
	35	8,000	600	0.07	7,000	500	0.06	5,000	400	0.05
	40	8,000	600	0.04	7,000	500	0.03	5,000	400	0.02
	45	6,500	400	0.01	6,200	350	0.008	5,000	300	0.006
	50	5,800	270	0.009	5,700	240	0.005	5,000	200	0.004
4	10	7,000	1,100	0.4	7,000	1,000	0.34	6,000	700	0.28
	12	7,000	1,100	0.38	7,000	1,000	0.32	6,000	700	0.26
	14	7,000	1,100	0.36	7,000	1,000	0.3	6,000	700	0.24
	16	7,000	1,100	0.36	7,000	1,000	0.3	6,000	700	0.24
	18	7,000	950	0.34	7,000	700	0.3	5,000	500	0.22
	20	7,000	800	0.34	6,000	700	0.28	5,000	500	0.22
	26	7,000	800	0.26	6,000	700	0.22	5,000	500	0.18
	30	7,000	800	0.19	6,000	700	0.16	5,000	500	0.13
	35	7,000	800	0.17	6,000	700	0.14	5,000	500	0.11
	40	6,000	600	0.14	5,000	600	0.12	4,000	400	0.1
	45	6,000	600	0.12	5,000	600	0.1	4,000	400	0.08
	50	6,000	600	0.05	5,000	600	0.04	4,000	400	0.03
	60	5,000	280	0.02	5,000	270	0.02	4,000	250	0.01
5	16	6,000	1,100	0.45	5,000	900	0.38	5,000	600	0.3
	20	6,000	950	0.43	5,000	780	0.36	5,000	600	0.29
	26	5,000	800	0.42	5,000	700	0.35	5,000	600	0.28
	30	5,000	800	0.38	5,000	700	0.3	5,000	600	0.25
	35	5,000	800	0.33	5,000	700	0.28	5,000	600	0.22
	40	5,000	600	0.28	4,000	580	0.2	4,000	500	0.18
	50	4,000	500	0.15	3,000	400	0.13	3,000	400	0.1
	60	4,000	350	0.06	3,000	330	0.06	3,000	300	0.04
6	15	5,000	1,200	0.5	4,200	800	0.4	4,200	600	0.3
	20	5,000	1,000	0.5	4,200	780	0.4	4,200	600	0.3
	30	5,000	800	0.43	4,200	700	0.35	4,200	600	0.26
	32	4,800	600	0.3	4,000	600	0.3	4,000	500	0.2
8	25	5,000	750	0.8	4,800	700	0.7	4,600	600	0.55
	30	4,500	600	0.7	4,000	600	0.6	3,800	500	0.5
	42	3,800	450	0.68	3,200	540	0.54	3,200	450	0.43

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

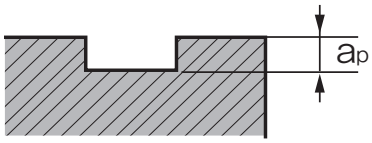


SP2FN / 2날 롱넥 플랫
홈 절삭 (SLOTTING)

피삭재 Work Material		일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]			조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]					
경도 HARDNESS		~32HRC			33~41 HRC			42~50 HRC		
외경 DC	유효길이 LU	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap	회전속도 (min–1)	이송속도 (mm/min)	절입깊이 (mm) ap
10	30	4,000	600	1	3,500	550	0.8	3,500	460	0.7
	35	3,500	500	0.9	3,000	450	0.7	3,000	390	0.6
	45	3,000	360	0.85	2,500	400	0.68	2,500	350	0.54
12	35	3,500	500	1.2	3,200	460	1	3,200	420	0.8
	40	3,000	400	1.1	2,700	360	0.9	2,700	350	0.7
	50	2,500	300	1.02	2,100	340	0.81	2,100	300	0.64

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut



SP4F / 4날 플랫

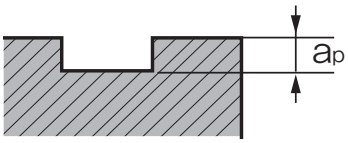
홈절삭 (SLOTTING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리레스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
3	7,200	600	6,500	450	4,800	150	5,900	350
4	5,400	610	4,700	450	3,600	160	4,500	400
5	4,300	640	4,200	520	2,900	170	3,600	400
6	3,600	670	3,600	570	2,300	170	2,900	420
8	2,700	600	2,600	540	1,800	170	2,200	340
10	2,200	570	1,930	470	1,450	170	1,700	320
12	1,800	540	1,700	470	1,200	150	1,500	300
16	1,300	390	1,300	360	810	110	1,000	250
20	1,000	300	1,050	290	650	100	700	200
25	800	240	800	220	450	80	500	140

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

a_p
1D



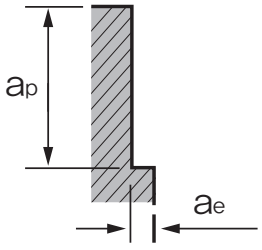
측면절삭 (SIDE MILLING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리레스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
3	9,500	950	8,000	480	5,400	300	6,000	370
4	7,200	1000	6,000	620	4,000	320	4,500	400
5	5,700	1100	4,800	730	3,200	340	3,600	430
6	4,800	1210	4,000	760	2,800	380	3,100	470
8	3,600	1120	3,000	720	2,200	380	2,400	470
10	2,800	1060	2,400	670	1,600	330	1,800	420
12	2,400	1100	2,000	680	1,400	320	1,500	380
16	1,800	830	1,500	510	900	250	1,000	310
20	1,400	650	1,200	410	700	210	800	270
25	1,100	500	1,000	340	550	170	600	210

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

a_p	a_e
1.5D	0.2D



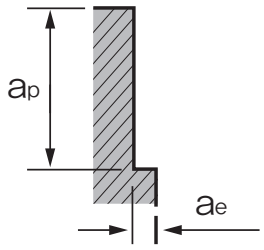
SP4F / 4날 롱 플랫
측면절삭 (SIDE MILLING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]			
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC	
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
1	7900	150	7200	130	5600	75
1.5	6100	150	5400	130	3800	75
2	5200	150	4600	130	3000	75
2.5	4700	150	4100	130	2500	75
3	4200	150	3700	130	2100	75
4	3150	150	2750	130	1550	75
5	2500	150	2200	130	1250	75
6	2100	150	1850	130	1050	75
8	1550	150	1350	130	995	70
10	1250	150	1100	130	795	60
12	1050	125	925	110	660	50
16	795	95	695	80	495	40
20	635	75	555	65	395	30

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• **절입깊이** Depth of Cut

a_p = 2.5D
a_e = 0.05d



※ 롱타입 엔드밀은 아래 표를 참고해 절삭조건을 수정하십시오.

$L/D = \frac{\text{날길이 (L)}}{\text{외경 (D)}}$	a_p	a_e	회전속도 (min–1)	이동속도 (mm/min)
L/D ≤ 4	100%	100%	100%	100%
4 〈 L/D ≤ 6	50~70%	50~70%	50~70%	60~80%
6 〈 L/D	30~50%	30~50%	30~50%	50~70%

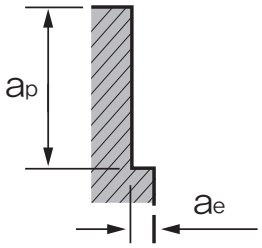
SP4FN / 4날 롱넥 플랫
측면절삭 (SIDE MILLING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리레스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
1	19,600	390	17,300	350	10,600	170	12,400	150
1.5	15,500	560	13,700	490	8,500	240	9,800	210
2	12,200	730	10,800	650	6,800	330	7,800	280
2.5	9,600	840	8,500	750	5,400	380	6,100	320
3	7,600	910	6,400	770	4,300	410	4,800	350
4	5,800	1,040	4,800	860	3,200	460	3,600	490
5	4,600	1,200	3,800	990	2,600	540	2,900	450
6	3,800	1,140	3,200	960	2,200	530	2,500	450
8	2,900	990	2,400	820	1,800	190	1,900	390
10	2,200	880	1,900	760	1,300	420	1,400	240
12	1,900	760	1,600	640	1,100	350	1,200	290

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• **절입깊이** Depth of Cut

a_p	a_e
1.5D	0.02D



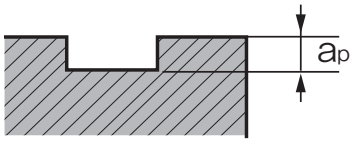
SP2C / 2날 코너R
홈절삭 (SLOTTING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 · 스테인레스 Hardened Steel – Prehardened Steel – Stainless Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]			
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC	
외경 DC	회전속도 (min-1)	이송속도 (mm/min)	회전속도 (min-1)	이송속도 (mm/min)	회전속도 (min-1)	이송속도 (mm/min)
1	17,500	112	12,500	72	11,000	53
1.5	12,500	112	8,900	72	7,900	53
2	9,700	121	7,000	72	6,300	57
2.5	8,200	149	6,100	72	5,300	57
3	6,900	158	5,300	80	4,400	61
4	5,400	195	4,200	100	3,500	72
5	4,800	251	3,500	104	3,000	80
6	4,000	251	2,900	116	2,500	89
8	3,000	242	2,200	113	1,900	89
10	2,400	233	1,700	114	1,500	87
12	2,000	233	1,400	111	1,200	86
16	1,500	175	1,100	87	800	57
20	1,200	140	800	63	600	43

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

Dc 〈 Ø1	0.1D
Ø1 ≤ Dc ≤ Ø3	0.3D
Ø3 ≤ Dc	0.5D



SP4C / 4날 코너R

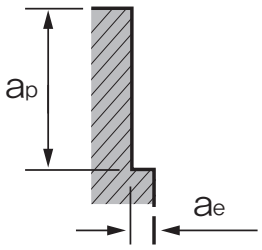
측면절삭 (SIDE MILLING)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리레스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
1	28,500	700	24,000	600	16,400	420	18,000	160
1.5	19,100	920	16,000	700	10,800	500	12,000	120
2	14,300	1,000	12,000	800	8,100	550	9,000	150
2.5	11,500	1,400	9,500	980	6,500	650	7,300	200
3	9,500	1,660	8,000	1,070	5,400	760	6,000	220
4	7,200	1,830	6,000	1,150	4,000	800	4,500	240
5	5,700	1,990	4,800	1,220	3,200	900	3,600	250
6	4,800	2,070	4,000	1,540	2,800	1,060	3,100	250
8	3,600	1,770	3,000	1,540	2,200	1,040	2,400	230
10	2,800	1,640	2,400	1,370	1,600	900	1,800	220
12	2,400	1,400	2,000	1,280	1,400	760	1,500	210
16	1,800	1,050	1,500	960	900	640	1,000	140
20	1,400	820	1,200	770	700	510	800	110

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

• 절입깊이 Depth of Cut

a_p	a_e
1.5D	0.2D



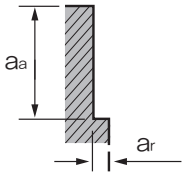
SPP4FH / 4날 45도 플랫

일반 측면절삭 (SIDE MILLING - REGULAR)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
3	8,300	760	7,000	560	6,350	485	6,600	555
4	6,200	820	5,250	565	4,750	515	4,950	590
5	4,950	845	4,200	590	3,800	535	3,950	630
6	4,150	945	3,500	700	3,200	545	3,300	660
8	3,100	895	2,650	660	2,450	555	2,450	640
10	2,500	855	2,100	605	1,900	525	1,950	590
12	2,050	850	1,750	565	1,600	475	1,650	535
16	1,500	745	1,300	500	1,200	400	1,250	445
20	1,250	595	1,050	455	955	355	985	395

• 절입깊이 Depth of Cut

a_a	a_r
1.5D	0.2D



• 절입깊이 Depth of Cut

a_a	a_r
1D	0.05D

1. 기계, 홀더는 강성과 정도가 높은 것을 사용해 주십시오.
2. 채터링 발생시, 회전속도, 이송속도를 같이 낮추어 사용해 주십시오.
3. 절삭유는 발화성이 적은 것으로 선정해 주십시오.

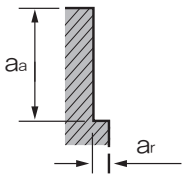
고속 측면절삭 (SIDE MILLING - HIGH-SPEED LIGHT)

피삭재 Work Material	일반구조용강 · 탄소강 Mild Steel – Carbon Steel [FC250 – SS400 – S45C]		조질강 · 프리하든강 Hardened Steel – Prehardened Steel [SKT – SKD61 – NAK55 – NAK80 – HPM1 – DH]				스테인리스 · 티타늄 · 인코넬 Stainless Steel – Titanium – Inconel	
경도 HARDNESS	~32HRC		33~41 HRC		42~50 HRC			
외경 DC	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)	회전속도 (min–1)	이송속도 (mm/min)
3	21,200	2,400	21,200	1,300	10,600	680	15,900	1,150
4	15,900	2,300	15,900	1,300	7,950	795	11,900	1,250
5	12,700	2,150	12,700	1,250	6,350	840	9,550	1,350
6	10,600	2,650	10,600	2,000	5,300	910	7,950	1,450
8	7,950	2,400	7,950	1,900	4,000	860	5,950	1,400
10	6,350	2,200	6,350	1,850	3,200	830	4,750	1,350
12	5,300	2,200	5,300	1,800	2,650	830	4,000	1,350
16	4,000	1,900	4,000	1,700	2,000	830	3,000	1,350
20	3,200	1,550	3,200	1,550	1,600	730	3,200	1,150

• 절입깊이 Depth of Cut

	a_a	a_r
Dc 〈 Ø6	1.5D	0.02D
Ø6 ≤ D	1.5D	0.05D

ar Max = 0.5mm



• 절입깊이 Depth of Cut

	a_a	a_r
Dc 〈 ∮6	1D	0.01D
Ø6 ≤ D	1D	0.02D

ar Max = 0.5mm

1. 고속 고정도의 머시닝센터를 이용할 때의 절삭속도와 이송속도 기준표입니다.
2. 마모가 진행되면 불꽃이 발생 할 수 있으므로 발화성이 있는 절삭유는 사용하지 마십시오.
3. 에어 블로우를 사용하시고, 만약 절삭유를 사용시, 발화성이 적은 것으로 선정 하십시오.

- MEMO -

- MEMO -

shaping your dreams

⚠ 안전하게 사용하기 위해서…

- 공구를 사용하실 때에는 파손될 위험이 있으므로 반드시 커버, 보호안경, 안전화 등을 착용해 주시기 바랍니다.
- 날은 맨손으로 만지지 마십시오.
- 칩도 맨손으로 만지지 마십시오.
- 공구가 마모된 경우 사용을 중지해 주십시오.
- 이상음·이상진동이 발생하는 경우 즉시 사용을 중지해 주십시오.
- 공구를 임의 변경하지 마십시오.
- 가공 전·후에도 공구의 치수를 반드시 확인하여 주십시오.

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