COGO TOOL

Vol.9 2023

Carbide Endmill & Drill

High Speed Series



www.cogotool.com

KDRILL
KDENTAL
KSHARD
KCBN
KBHARD
KHARD
KSPEED
KCOPPER
KGRAPHITE
KCOMPOSITE
KG-TAC
KSUS
KMULTI
KALUMINUM
KABS
KTAPER
KGENERAL
KBLUE
KGSERIES
KTHREAD
MIDAS

204 Items

13110 Tools

COGOTOOL, we always appreciate our customers.
As filling up new items like endmills of CBN / for SUS / for cutting copper in order to meet customer demands, We line up about 13,110 items.
It is every product of COGOTOOL that all of our staff pay attention to production and quality control without any careless.
Continued from now on, COGOTOOL make our best to supply excellent products low-priced by advanced technology and efficient process improvement.

COGOTOOLを愛用いただきいつも感謝の気持ちを申し上げます。
私たちはお客様のニーズを満足するために CBN / SUS / 銅 加工用などの シリーズを 13,110個の製品を具備しています. すべての製品は職員たちの努力で徹底的な品質管理をしています.
COGOTOOLLはレベル高い技術, 効率的なプロセス 改善で合理的な価格で製品を提供して います.

COGOTOOL을 애용하는 고객님께 항상 감사하는 마음입니다.
당사는 고객 만족을 위해 CBN / SUS / 동 가공용 등의 시리즈를 13,110가지 제품을 구비 하였습니다.
모든 제품은 직원들의 노력으로 철저한 품질 관리를 하고 있습니다.
COGOTOOL은 수준 높은 기술, 효율적인 프로세스 개선으로 합리적인 가격의 제품을 제공하고 있습니다.

COGO TOOL

Carbide Endmill & Drill

High Speed Series 13,110 Tools

- Line-up about 13,110 tools 204 items for various choice
- New special coating for maximizing anti-abrasion
- Strong cutting power for high speed and efficiency

- 幅広い選択をするために 204種類, 品目 13,110個の多様な製品ラインアップ
- 耐摩耗性を極大化する新しい コーティング法 適用
- 高性能, 高速加工の協力な切削力

- 폭넓은 선택을 위한 204가지 품목 13,110개의 다양한 제품 라인업
- 내마모성을 극대화하는 새로운 코팅법 적용
- 고성능, 고속가공의 강력한 절삭력

End mill for composite materials leading the processing of

new composite materials in the aerospace and automobile fields

Endmills for CFRP, GFRP, glass/carbon fiber, nonferrous and non-metallic materials.

- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.

宇宙航空及び自動車分野の複合新素材加工をリードする複合素材用エンドミル

強化プラスチック(CFRP, GFRP), ガラス/炭素繊維, などの非鉄・非金属系の多様な複合素材専用のエンドミル

- 様々な複合素材加工領域に優れた性能を発揮します。
- コーティング皮膜の硬度が高く, 耐摩耗性に優れています。

우주항공 및 자동차 분야의 복합신소재 가공을 선도하는 복합소재용 엔드밀

강화플라스틱(CFRP, GFRP), 동 및 동합금, 유리/탄소섬유 등 비철, 비금속 계열의 다양한 복합소재 전용 엔드밀

- 다양한 복합소재 가공영역에 뛰어난 성능을 발휘
- 코팅피막에 경도가 높아 내마모성이 우수



M series, minimizing vibration and preventing strong chattering!

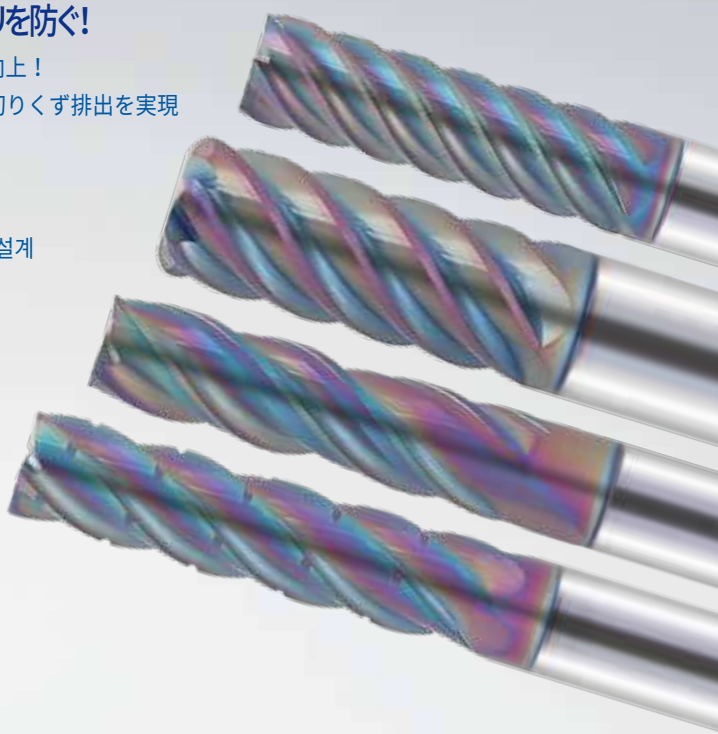
- Unequal pitch design
- Improved flute design for better tool life!
- Multiple Helix
- Wide chip pocket for excellent chip emission
- Application of the new TISIN-R coating

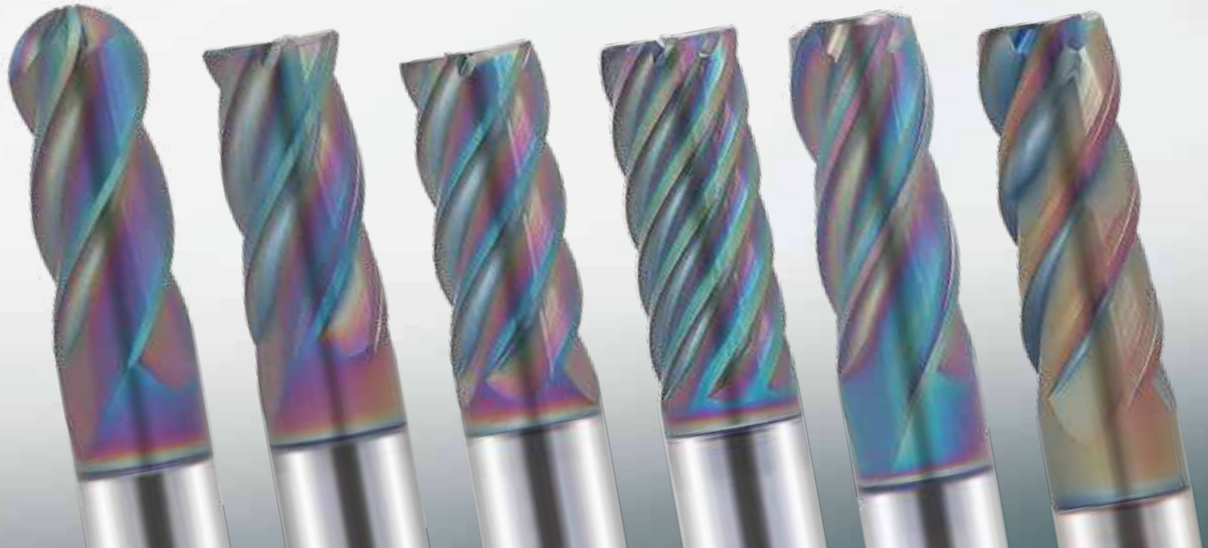
Mシリーズ, 振動を最小限に抑え、激しいビビリを防ぐ!

- 不等ピッチ設計
- 溝設計の改良により工具寿命が向上！
- 複数のらせん
- 広い切りくずポケットで優れた切りくず排出を実現
- 新コーティングTISIN-Rの採用

M시리즈, 진동을 최소화 및 강력한 채터링 방지!

- 부등분할 날부 설계
- 긴 공구 수명을 위한 향상된 코너 설계
- 부등리드
- 칩 배출이 용이한 넓은 칩 포켓
- 새로운 TISIN-R 코팅 적용



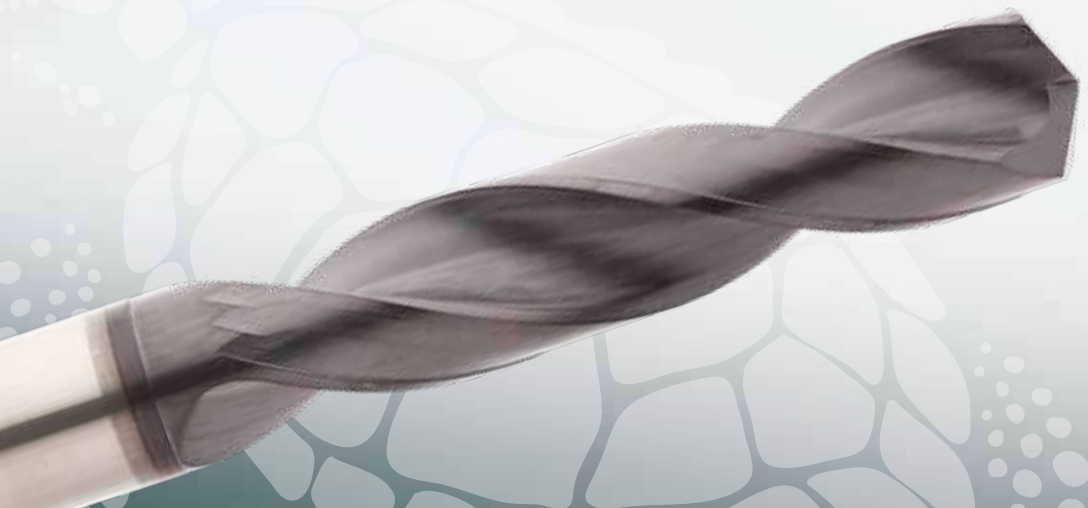


GBS/GPP Drill

Application: the best performance when drilling S45C, SCM, cast steels and cast iron etc. of automobile parts.
Flute design considering optimal tool stiffness and optimal chip evacuation.
New design enables high-precision work without the need for centering and reaming.
Unmanned work is possible by improving the life of the tool by using high-quality fine particles with excellent toughness and wear resistance.

用途：S45C、SCM、鋳鋼、鋳鉄などの自動車の部品素材加工にも最適な性能を発揮する。
長所：- 最適の工具剛性と最適のチップ排出を考慮したFLUTE設計
- New designで別途のcenteringとreamingの作業が必要ない高精密作業が可能
- 靭性と耐摩耗性が優れた超微粒子の高級素材を使って工具の寿命を向上し、無人で作業が可能

용도: S45C, SCM, 주강, 주철 등의 자동차 부품소재 가공에 최적의 성능을 발휘함.
장점: - 최적의 공구강성과 최적의 칩배출을 고려한 FLUTE 설계
- New design으로 별도의 centering과 reaming 작업이 필요없이 고정밀 작업이 가능
- 인성과 내마모성이 우수한 초미립자 고급재질을 사용하여 공구의 수명을 향상하여 무인작업이 가능.



GLASS CERAMIC | ZIRCONIA | PMMA | TITANIUM-ALLOY | CHROME COBALT

DENTAL CARBIDE ENDMILLS



Champion of high hardness! (HRC52~70)

高硬度の最強者! (HRC52~70)

고경도 최강자! (HRC52~70)



Design to increase the breakage-resistance.
New speacial coating for maximizing anti-abrasion.
Strong cutting power for high speed and efficiency.

破損に対する抵抗力を増大させた形状 設計。
耐摩耗性を極大化する新しいコーティング法 適用。
高性能, 高速加工の協力な切削力。

파손 저항을 증가시키는 디자인.
내마모성을 극대화하기 위한 신코팅.
고속 및 효율성을 위한 강력한 절삭력.

CBN Endmills

Cutting range < HRC90

10 times Longer life compared to Carbide Endmill Tool life: 50 Hours!

超硬 エンドミル 対比 10倍
工具 寿命 50時間
加工 範囲 < HRC 90

초경엔드밀 대비 10배
공구수명: 50시간
가공범위 < HRC90



First in Korea! Ultra precision R tolerance
한국최초! 초정밀 R공차



Ultra precision ball nose endmill
超精密 ボール エンドミル 誕生!
초정밀 볼 엔드밀

Don't say any more about the **QUALITY!**

最高の精密度を私たちが実現しました!

품질에 대해 더 이상 말하지 마십시오!

± 0.003mm

ULTRA PRECISION	
0.1R≤R≤1R	± 0.002mm
1R<R≤2R	± 0.003mm
2R<R	± 0.005mm

High abrasion resistance DIAMOND coating

탁월한 내마모성의 다이아몬드 코팅!

COGO's Own Coating Method (CVD Diamond Coating) High Resistance and Performance when to cut Graphite Multiple Product Line

DIAMOND Coated endmills for Graphite
CVD diamond is a binderless-pure crystal, delivering identical properties of single diamond crystal. COGO is applying the lastest CVD coating technology which has no residual Stress at the interface for extending tool life.

CVD 다이아몬드 코팅법이 적용된 엔드밀 시리즈로 그라파이트(흑연) 소재의 장시간 절삭에 최적화됨으로써 우수한 내마모성과 정밀도로 탁월한 생산성을 보장합니다.

CVD 다이아몬드 바인더(활성계면제)가 없는 순수결정체로서 단결정 다이아몬드와 동일한 특성을 나타내며, 변형 없는 코팅의 우수함으로 강력한 절삭력과 공구수명이 향상됩니다.

Property	CVD Diamond	Mono Diamond	PCD	K10
(W/m•K) Thermal Conductivity 열전도율	~ 1,000	2,000	560	110
(Gpa) Hardness 경도	80 ~ 100	50 ~ 100	50	18
(MPa•$m^{1/2}$) Toughness 표면 조밀도	5 ~ 6	3.4	8 ~ 9	10.5
(Gpa) Tensile force 인장력	400 ~ 800	1,000 ~ 3,000	1,260	-
(Gpa) Compressive strength 압축 강도	16.0	9.0	7.6	6.1
(Gpa) TRS 항절력	1.3	2.9	1.2	2.4



CARBIDE THREAD MILL

High quality and efficient machining!
Drilling, threading, and chamfering all at once!
Optimized lineup for threading for various workpiece materials!

超硬スレッドミル

高品質で効率的な加工を実現！
穴あけ・ねじ切り・面取りが一度に！
様々な被削材のねじ切り加工に最適なラインナップ！

초경 쓰레드밀

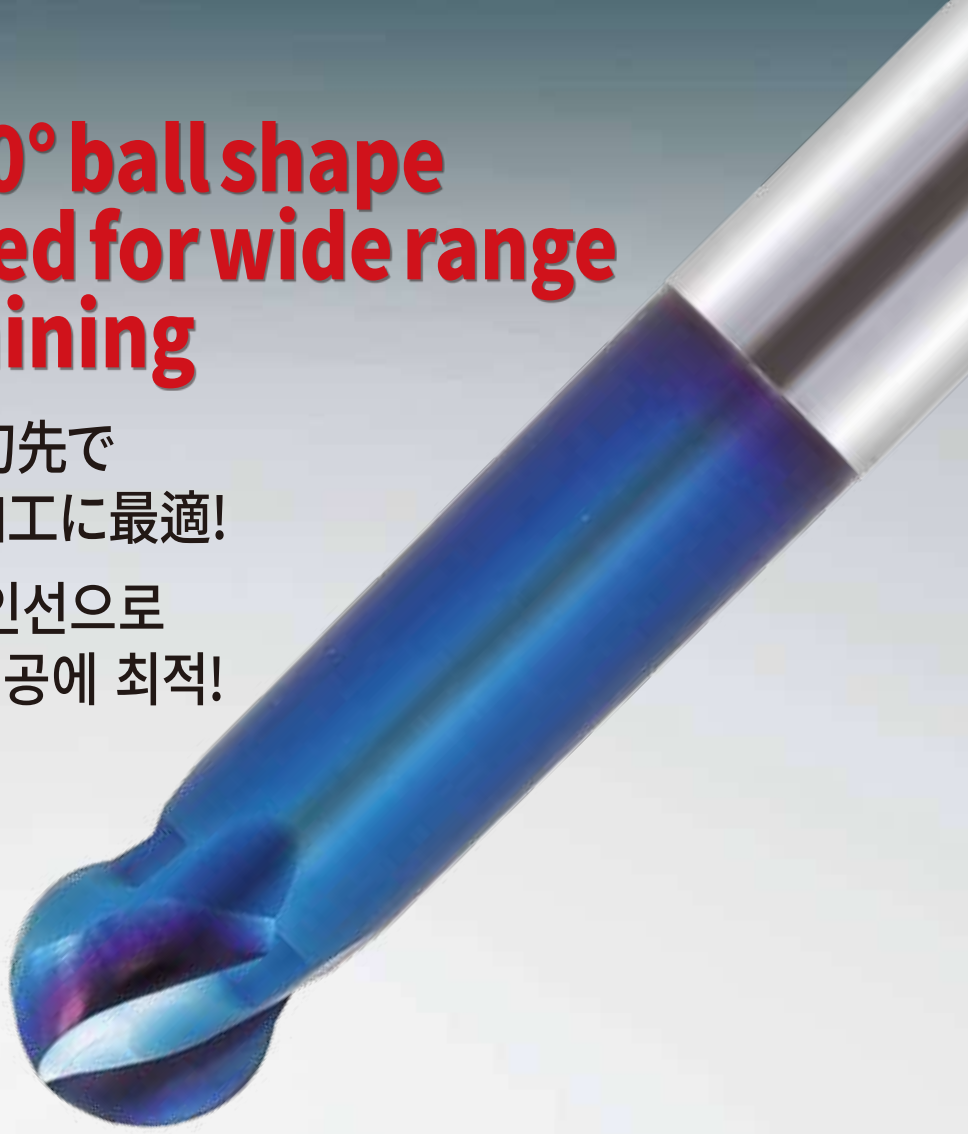
고품질의 효율적인 가공!
드릴링, 나사가공, 챔퍼링을 한번에!
다양한 피삭재에 맞춘 나사가공에 최적화된 라인업!



230°, 270° ball shape Optimized for wide range 3D machining

230°, 270°の刃先で 広範囲な3D加工に最適!

230, 270°의 인선으로 광범위한 3D가공에 최적!



Endmills for pre-hardened and hardened steel(HRc50~65)

高硬度鋼(HRC50~65), プレハードン鋼 系列の高精密加工

고경도강(HRC50~65), 프리하든강 계열의 고정밀가공

- 230°, 270°ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.
- Outstanding performance at high speed machining by ultra fine(0.2μm) WC grade.

- 230°, 270°丸形球形の刃先で広範囲な 3D 加工に適合
- 有効長を 直線 及び テーパ 設計して くび部破損 及び 振りを最小化
- 超微粒子 超硬合金(0.2μm)を採択, 高速切削時に優れた性能 発揮

- 230,270° 구형의 인선으로 광범위한 3D 가공에 적합
- 유효장을 직선 및 테이퍼 설계하여 목부파손 및 떨림을 최소화
- 초미립자 초경합금(0.2μm)을 채택, 고속절삭시 뛰어난 성능 발휘

Minimize chattering by unequal flute spacing design

不等分割 設計で振動を最小化
강력한 채터링 방지 설계로 진동을 최소화!



Excellent Chip Control

Endmills for SUS

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

- Minimize chattering by unequal flute spacing design.
- Excellent work surface finish by deep chip pocket.
- 42° helix design for high speed, feed condition.
- Outstanding performance at high speed machining by ultra fine(0.2μm) WC grade.

チップ排出が優れた

SUS 加工用エンドミル

合金鋼，SUS系列，Ti/Ni系 合金，インコネルなど 難削材専用

- 不等分割 方式で設計して エンドミルの振動を最小化
- 深い ポケットで チップ排出が円滑で被削材 面粗さが優れる
- 42° ヘリックス 形状に設計して 高速，高移送 加工に最適
- 超微粒子 超硬合金(0.2μm) 採択，高速切削時に優れた性能 発揮

칩배출이 뛰어난

SUS 가공용 엔드밀

SUS계열, Ti/Ni계 합금, 인코넬, 합금강 등 난삭재 전용

- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화 하였습니다.
- 깊은 포켓으로 칩배출이 원활하며 피삭재 면조도가 우수
- 42° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 최적
- 항절력이 높은 미립자 초경합금을 채택하여 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Ultra fine surface after machining

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

- Super G-TAC coating provides excellent work surface finish by high hardness and low friction.
- High precise edge tolerance.
- Outstanding performance at high speed machining by ultra fine(0.2μm) WC grade

卓越な被削材の境面粗さ!

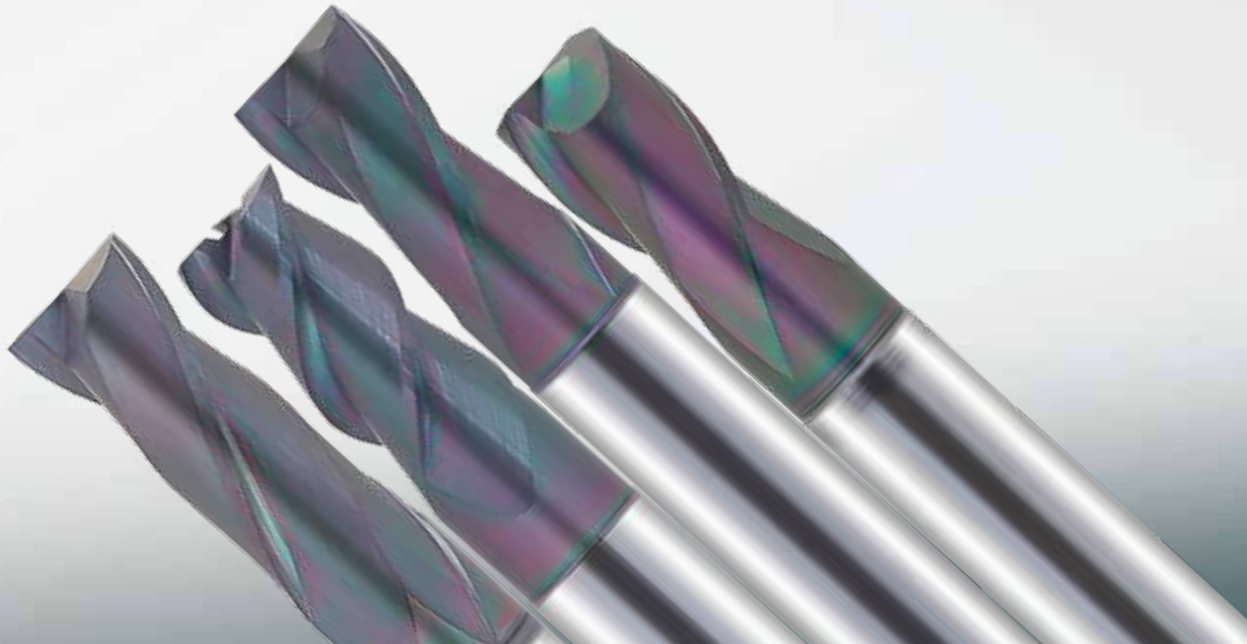
アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP), グラス/ 炭素繊維 など 非鉄, 非金属 被削材 専用

- コーティング被膜に硬度が高くて 摩擦係数が低い SUPER G-TACコーティングを 適用して耐摩耗性が優れていって,被削材 表面粗さが非常に優れる.
- 高精密 公差適用で超精密加工に適合
- 超微粒子 超硬合金(0.2μm)を採択, 高速切削時に優れた性能 発揮

탁월한 피삭재의 경면조도

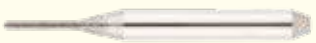
알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱 (CFRP, GFRP), 유리/탄소섬유 등 비철, 비금속 피삭재 전용

- 코팅피막에 경도가 높고 마찰계수가 낮은 SUPER G-TAC코팅을 적용해 내마모성이 우수하며, 피삭재 표면조도가 월등히 우수함.
- 고정밀 공차 적용으로 초정밀가공에 적합
- 항절력이 높은 미립자 초경합금(0.5μm)을 채택, 엔드밀의 파손을 최소화하였습니다.



Drill & Dental Endmill INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K DRILL	2GBS		2 Flutes	Solid Drill	37
	2GPP		2 Flutes	Solid Drill	41
	2GSS		2 Flutes	Solid Drill	44
	2GSL		2 Flutes	Solid Long Drill	48
	2MFD		2 Flutes	Flat Drill	53
	2MFL		2 Flutes	Flat Long Drill	58

Series	EDP. NO	Appearance	Flutes	Type	Page
K DENTAL	EPD		0	Electro Deposited Diamond	62
	2&3AMD		2&3 Flutes	AMANN GIRRBACH	63
	1&2AMN		1&2 Flutes	AMANN GIRRBACH	63
	2&3IMD		2&3 Flutes	IMES-ICORE	64
	2IMB		2 Flutes	IMES-ICORE	65
	1&2IMN		1&2 Flutes	IMES-ICORE	65
	2&3ROD		2&3 Flutes	ROLAND	66
	1&2RON		1&2 Flutes	ROLAND	67
	2ROB		2 Flutes	ROLAND	67
	2&3VHD		2&3 Flutes	VHF	68

EDP.No and Specification are can be changed without notification for quality improvement.
EDP.No와 규격은 품질개선으로 인해 예고없이 변경 될 수 있습니다.

Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
2GBS	○						○						
2GPP	○						○						
2GSS	○								○	○	○	○	
2GSL	○								○	○	○	○	
2MFD			●	○				○	○	○			
2MFL			●					○	○	○			

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Copper	Glass Ceramic	Zirconia	Cobalt Chrome & Titanium	Plastic	GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
EPD									●				
2&3AMD										●			
1&2AMN												●	
2&3IMD										●			
2IMB											●		
1&2IMN												●	
2&3ROD										●			
1&2RON												●	
2ROB											●		
2&3VHD										●			

Dental Endmill INDEX

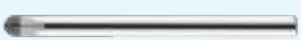
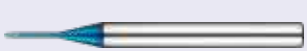
Series	EDP. NO	Appearance	Flutes	Type	Page
K DENTAL	2VHB		2 Flutes	VHF	68
	1&2&3 VHN		1&2&3 Flutes	VHF	69
	2&3WID		2&3 Flutes	WIELAND	70
	2WIB		2 Flutes	WIELAND	70
	1&2&3 WIN		1&2&3 Flutes	WIELAND	71
	2&3ZID		2&3 Flutes	ZIRKONZAHN	72
	2ZIB		2 Flutes	ZIRKONZAHN	72
	1&2&3 ZIN		1&2&3 Flutes	ZIRKONZAHN	73
	2SID		2 Flutes	SIRONA	74
	2SIB		2 Flutes	SIRONA	74
	2SIN		2 Flutes	SIRONA	74
	1ARD		1 Flutes	ARUM	75
	2&3ARD		2&3 Flutes	ARUM	75
	2ART		2 Flutes	ARUM	75

EDP.No and Specification are can be changed without notification for quality improvement.
EDP.No와 규격은 품질개선으로 인해 예고없이 변경 될 수 있습니다.

Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Copper	Glass Ceramic	Zirconia	Cobalt Chrome & Titanium	Plastic	GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
2VHB											●		
1&2&3 VHN												●	
2&3WID										●			
2WIB											●		
1&2&3 WIN												●	
2&3ZID										●			
2ZIB											●		
1&2&3 ZIN												●	
2SID										●			
2SIB											●		
2SIN												●	
1ARD												●	
2&3ARD										●			
2ART											●		

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
S HARD	2WCB		2 Flutes	Standard Ball	76
	2WSB		2 Flutes	Short Ball	78
	2WCE		2 Flutes	Square Endmills	79
	4WCE		4 Flutes	Square Endmills	81
	2WCR		2 Flutes	Rib Corner Radius	82
	4WCR		4 Flutes	Rib Corner Radius	84
K CBN	2CRB		2 Flutes	CBN Ball Endmills	86
	2CCR		2 Flutes	CBN Corner Radius	90
B HARD	2BRB		2 Flutes	Rib Ball Endmills	96
	2BCB		2 Flutes	Standard Ball	98
	2&3BSB		2&3 Flutes	Short ball	99
	2BRE		2 Flutes	Rib Endmills	100
	4BRE		4 Flutes	Rib Endmills	101
	4BCR		4 Flutes	Rib Corner Radius	102
	4&6BNR		4&6 Flutes	Corner Radius Endmills	104
	4BCE		4 Flutes	Square Endmills	105
K HARD	2KRB		2 Flutes	Rib Ball Endmills	106
	2KCB		2 Flutes	Standard Ball	109
	2KSB		2 Flutes	Short Ball	110

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
2WCB	○		○	●			●			○			
2WSB	○		○	●			●			○			
2WCE	○	○	○	●			●						
4WCE	○	○	○	●			●						
2WCR	○	○	○	●			●						
4WCR	○	○	○	●			●						
2CRB		●	○	●	●	●							
2CCR		●	○	●	●	●							
2BRB		○	○	○	○	●							
2BCB		○	○	○	○	●							
2&3BSB		○	○	○	○	●							
2BRE		○	○	○	○	●							
4BRE		○	○	○	○	●							
4BCR		○	○	○	○	●							
4&6BNR		○	○	○	○	●							
4BCE		○	○	○	○	●							
2KRB	○	○	●	●	●					○	○		
2KCB	○	○	●	●	●					○	○		
2KSB	○	○	●	●	●					○	○		

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K HARD	2KRE		2 Flutes	Rib Endmills	112
	4KRE		4 Flutes	Rib Endmills	115
	2KCR		2 Flutes	Rib Corner Radius	117
	4KCR		4 Flutes	Rib Corner Radius	122
	2KNR		2 Flutes	Corner Radius Endmills	127
	4KNR		4 Flutes	Corner Radius Endmills	129
	4KCU		4 Flutes	High Speed & Feedrate	131
	2KCE		2 Flutes	Square Endmills	132
	4KCE		4 Flutes	Square Endmills	134
	4KEM		4 Flutes	43° Square Endmills	135
	2KLE		2 Flutes	Long length Endmills	136
	4KLE		4 Flutes	Long length Endmills	138
K SPEED	2SSB		2 Flutes	Short Length Ball	139
	2UPB		2 Flutes	Ultra Precision Ball Endmills	141
	2SCB		2 Flutes	Standard Ball Endmills	142
	3SCB		3 Flutes	Standard Ball Endmills	145
	4SCB		4 Flutes	Standard Ball Endmills	147
	2SRB		2 Flutes	Rib Ball Endmills	149
	2SRE		2 Flutes	Rib Endmills	153

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
2KRE	○	○	●	●	●					○	○		
4KRE	○	●	●	●	●					○	○		
2KCR	○	●	●	●	●					○	○		
4KCR	○	●	●	●	●					○	○		
2KNR	○	●	●	●	●					○	○		
4KNR	○	●	●	●	●					○	○		
4KCU	○	●	●	●	●					○	○		
2KCE	○	○	●	●	●					○	○		
4KCE	○	●	●	●	●					○	○		
4KEM	○	●	●	●	●					○	○		
2KLE	○	○	●	●	●					○	○		
4KLE	○	○	●	●	●					○	○		
2SSB	●	●	●	●	○								
2UPB	●	●	●	●	○								
2SCB	●	●	●	●	○								
3SCB	●	●	●	●	○								
4SCB	●	●	●	●	○								
2SRB	●	●	●	●	○								
2SRE	●	●	●	○									

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K SPEED	4SRE		4 Flutes	Rib Endmills	156
	2SCE		2 Flutes	Standard Endmills	159
	4SCE		4 Flutes	Standard Endmills	161
	4SEM		4 Flutes	45° Helix Endmills	163
	6&8SEM		6&8 Flutes	45° Helix Endmills	165
	2LEM		2 Flutes	Long length Endmills	167
	4LEM		4 Flutes	Long length Endmills	170
	2RCR		2 Flutes	Rib Corner Radius	173
	4RCR		4 Flutes	Rib Corner Radius	180
	2CNR		2 Flutes	Corner Radius Endmills	187
	4CNR		4 Flutes	Corner Radius Endmills	190
	4HCR		4 Flutes	45° Helix Radius Long	193
	6HCR		6 Flutes	45° Helix Radius Long	196
	4SCU		4 Flutes	High Speed Radius Cutter	199
	6SCU		6 Flutes	High Speed Radius Cutter	200
	2TBE		2 Flutes	Taper Neck Ball Endmills	201
	2TCR		2 Flutes	Taper Neck Corner Radius	205
	4TCR		4 Flutes	Taper Neck Corner Radius	207
	2DPH		2 Flutes	Endmills for 3D Cut 230°	208

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
4SRE	●	●	●	●	○								
2SCE	●	●	●	○									
4SCE	●	●	●	●	○								
4SEM	●	●	●	●	○								
6&8SEM	●	●	●	●	○								
2LEM	●	●	●	○									
4LEM	●	●	●	●	○								
2RCR	●	●	●	●	○								
4RCR	●	●	●	●	○								
2CNR	●	●	●	●	○								
4CNR	●	●	●	●	○								
4HCR	●	●	●	●	○								
6HCR	●	●	●	●	○								
4SCU	●	●	●	●	○								
6SCU	●	●	●	●	○								
2TBE	●	●	●	●	○								
2TCR	●	●	●	●	○								
4TCR	●	●	●	●	○								
2DPH	●	●	●	●	○								

Carbide Endmills INDEX

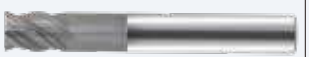
Series	EDP. NO	Appearance	Flutes	Type	Page
K SPEED	4DPH		4 Flutes	Endmills for 3D Cut 230°	209
	4DPM		4 Flutes	Endmills for 3D Cut 270°	210
	3&4SRM		3&4 Flutes	Roughing Endmills	211
	3&4HRM		3&4 Flutes	45°Helix Fine Pitch Roughing	213
K COPPER	2HOB		2 Flutes	45° Helix Rib Ball Endmills	215
	2OCR		2 Flutes	Rib Corner Radius	217
	3HOR		3 Flutes	45° Helix Rib Radius	219
K GRAPHITE	2DBL		2 Flutes	Diamond Coated Ball Endmills	221
	3DBL		3 Flutes	Diamond Coated Ball Endmills	223
	4DBL		4 Flutes	Diamond Coated Ball Endmills	224
	2&3DLM		2&3 Flutes	Diamond Coated Endmills	225
	4&6DLM		4&6 Flutes	Diamond Coated Endmills	227
	2DLR		2 Flutes	Diamond Coated Radius	228
	4DLR		4 Flutes	Diamond Coated Radius	230
K COMPOSITE	2BCP		2 Flutes	Ball Endmills for Composite	232
	8~12ECP		8~12 Flutes	Finishing Endmills for Composite	233
	3&4&6 RCP		3~6 Flutes	Router for Composite	234
	6~16RCP		6~16 Flutes	Router for Composite	235
	2DCA		2 Flutes	Diamond Coated Drill	236

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
4DPH	●	●	●	●	○								
4DPM	●	●	●	●	○								
3&4SRM	●	●	●										
3&4HRM	●	●	●	○									
2HOB									○	●	○	○	
2OCR									●	●	○		
3HOR							○		●	●	○		
2DBL											●		
3DBL											●		
4DBL											●		
2&3DLM											●		
4&6DLM											●		
2DLR											●		
4DLR											●		
2BCP												○	●
8~12ECP												○	●
3&4&6 RCP												○	●
6~16RCP												○	●
2DCA												○	●

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K G-TAC	2LCB		2 Flutes	G-TAC Coated Ball Endmills	237
	2LRB		2 Flutes	G-TAC Coated Rib Ball	238
	2LRE		2 Flutes	G-TAC Coated Rib Endmills	240
	3LHE		3 Flutes	45° Helix G-TAC Coated Rib	241
	2LCE		2 Flutes	G-TAC Coated Endmills	242
	2LCR		2 Flutes	G-TAC Coated Corner Radius	243
K SUS	4HSB		4 Flutes	45° Helix Ball Endmills	245
	3HSM		3 Flutes	45° Helix Endmills	246
	4NSM		4 Flutes	Non Symmetry Endmills	248
	4NSR		4 Flutes	Non Symmetry Corner Radius	250
	3RBS		3 Flutes	45° Helix Rib Ball	254
	4RES		4 Flutes	Rib Endmills	257
	4VSU		4 Flutes	Variable Helix Endmills	260
	4CRS		4 Flutes	Rib Corner Radius	262
	4CLS		4 Flutes	Long Length Corner Radius	265
	3&4&5 RRS		3~5 Flutes	45° Helix Roughing Core R	267
K MULTI	4MSB		4 Flutes	Ball Endmills for Various Symmetry	269
	4MSE		4 Flutes	Endmills for Various Symmetry	271
	6MSE		6 Flutes	Endmills for Various Symmetry	273

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
2LCB									●	●		●	
2LRB									●	●		●	
2LRE									●	●		●	
3LHE									●	●		●	
2LCE									●	●		●	
2LCR									●	●		●	
4HSB	●	●	●				●			●			
3HSM	●	●	●				●			●			
4NSM	●	●	●				●			●			
4NSR	●	●	●				●			●			
3RBS			○				●	○		○			
4RES			○				●	○		○			
4VSU			●	○			●	○		○			
4CRS			○				●	○		○			
4CLS			○				●	○		○			
3&4&5 RRS			○				●	○					
4MSB	○		●	○			○			○			
4MSE	○		●	○			○			○			
6MSE	○		●	○			○			○			

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K MULTI	4MCC		4 Flutes	C Endmills for Various Symmetry	275
	5MCC		5 Flutes	Corner C Endmills for Various Symmetry	277
	4MSC		4 Flutes	Corner Radius Endmills for Various Symmetry	278
	6MSC		6 Flutes	Corner Radius Endmills for Various Symmetry	280
	7MUC		7 Flutes	Corner Radius Endmills for Various Symmetry	282
	4MLE		4 Flutes	Slotting Endmills for Various Symmetry	284
	5&6MTR		5&6 Flutes	Trochoidal Endmills for Various Symmetry	286
K ALUMINUM	3AHM		3 Flutes	45° Helix Rib Endmills	288
	2AHE		2 Flutes	45° Helix Endmills	291
	3AHE		3 Flutes	45° Helix Endmills	295
	3AHF		3 Flutes	Mirror Finishing Cutting Endmills	299
	3AHR		3 Flutes	45° Helix Corner Radius	300
	3ARR		3 Flutes	Semi Finishing & Roughing Radius	302
	3ARM		3 Flutes	Semi Finishing & Roughing	303
	3ARH		3 Flutes	45° Helix Roughing Endmills	304
K ABS	2NBE		2 Flutes	Ball Endmills	306
	3NBE		3 Flutes	Ball Endmills	307
	2NLB		2 Flutes	Micro Long Ball	309
	2NLE		2 Flutes	Micro Long Endmills	311

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
4MCC	○		●	○			○			○			
5MCC	○		●	○			○			○			
4MSC	○		●	○			○			○			
6MSC	○		●	○			○			○			
7MUC	○		●	○			○			○			
4MLE	○		●	○			○			○			
5&6MTR	○		●	○			○			○			
3AHM									●				
2AHE									●				
3AHE									●				
3AHF									●			○	
3AHR									●	○			
3ARR									●	○			
3ARM									●	○			
3ARH									●	○			
2NBE									●	○		●	
3NBE									●	○		●	
2NLB									●	○		●	
2NLE									●	○		●	

Carbide Endmills INDEX

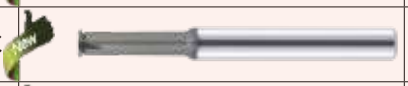
Series	EDP. NO	Appearance	Flutes	Type	Page
K ABS	1NEM		1 Flutes	Endmills	313
	1NRM		1 Flutes	Reverse Edge Endmills	315
	2NEM		2 Flutes	Endmills	317
	3NEM		3 Flutes	Endmills	318
K TAPER	3ITBD		3 Flutes	Taper Ball for Impeller	320
	2TBM		2 Flutes	Taper Ball Endmills	322
	2TEM		2 Flutes	Taper Endmills	325
	4TEM		4 Flutes	Taper Endmills	327
	4TRE		4 Flutes	Rib Taper Endmills	328
K GENERAL	2DRC		2 Flutes	Corner Rounding Cutter	330
	4DRC		4 Flutes	Corner Rounding Cutter	331
	1DTE		1 Flutes	Straight Flute Taper Endmills	332
	2ATE		2 Flutes	Straight Flute Taper Endmills	334
	4DTE		4 Flutes	Straight Flute Taper Endmills	336
	2AEN		2 Flutes	Centering Endmills	337
	2NPO		2 Flutes	NC spotting drill	338
	2&3CFC		2&3 Flutes	90° Chamfering Cutter	339
	2MCE		2 Flutes	Miniature Chamfering Endmills	340
	2CCE		2 Flutes	Corner C Endmills	342

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
1NEM									●	○		●	
1NRM									●	○		●	
2NEM									●	○		●	
3NEM									●	○		●	
3ITBD	●	●	●	○			●			●	●		
2TBM	●	●	●	○			●			●	●		
2TEM	●	●	●	○			●			●	●		
4TEM	●	●	●	●			●			●	●		
4TRE	●	●	●	●	○								
2DRC	●	●	●	○			○			●			
4DRC	●	●	●	●	○		○			●			
1DTE	●	●	●				○			●			
2ATE	●	●	●	○			○			●			
4DTE	○	○	●	○				○		○	○		
2AEN									●	●		●	
2NPO									●	●		●	
2&3CFC			●	○			○	○		○			
2MCE			●				○			○			
2CCE			●	○			○			○			

Carbide Endmills INDEX

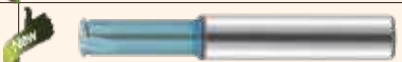
Series	EDP. NO	Appearance	Flutes	Type	Page
K GENERAL	4TSC		4 Flutes	T Slot Cutter	344
	4TSR		4 Flutes	T-R Slot Cutter	346
	3TDR		3 Flutes	T Double Corner Rouding Cutter	347
	4&6TDC		4&6 Flutes	T Double Angular Cutter	348
	3&4HTC		3&4 Flutes	Thread Milling Cutter	349
	4&6TAN		4&6 Flutes	T Angular Cutter	350
K BLUE	4FNR		4 Flutes	Roughing & Finishing	351
	4FCE		4 Flutes	Roughing & Finishing	352
	2ECB		2 Flutes	Ball Endmills for heavy cuts	353
	2ECE		2 Flutes	Standard Endmills for heavy cuts	355
	4ECE		4 Flutes	Standard Endmills for heavy cuts	356
	2ECR		2 Flutes	Corner Radius for heavy cuts	357
	4ECR		4 Flutes	Corner Radius for heavy cuts	359
	3ESE		3 Flutes	Endmills for Heavy cuts	361
	4ESE		4 Flutes	Endmills for Heavy cuts	361
K GSERIES	2HGB		2 Flutes	Ball Endmills for Generality	363
	2HGE		2 Flutes	Endmills for Generality	365
	4HGE		4 Flutes	Endmills for Generality	367
	2NGR		2 Flutes	Corner Radius for Generality	369

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Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
4TSC	○		●	○			○			○	○		
4TSR	○		●	○			○			○	○		
3TDR	○		●	○			○			○	○		
4&6TDC	○		●	○			○			○	○		
3&4HTC	○		●	○			○			○	○		
4&6TAN	○		●	○			○			○	○		
4FNR	○	○	○				○						
4FCE	○	●	○				○						
2ECB	●	●	●	●	○					●			
2ECE	●	●	●	●	○					●			
4ECE	●	●	●	●	○					●			
2ECR	●	●	●	●	○					●			
4ECR	●	●	●	●	○					●			
3ESE	●	●	●				●			●			
4ESE	●	●	●				●			●			
2HGB	●	●	●	○						○			
2HGE	●	●	●	○						○			
4HGE	●	●	●	○						○			
2NGR	●	●	●	○						○			

Carbide Endmills INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
K GSERIES	4NGR		4 Flutes	Corner Radius for Generality	371
	2LGM		2 Flutes	Long length Endmill for Generality	373
	4LGM		4 Flutes	Long length Endmill for Generality	374
K THREAD	4TMM		4 Flutes	Multi-functional Thread Mill	376
	4TMA		4 Flutes	Thread Milll for Aluminum	379
	4TMS		4 Flutes	Multi-functional Thread Mill for SUS	381
	4THM		4 Flutes	Thread Mill with One Thread	383
	4THA		4 Flutes	Thread Mill with One Thread for Aluminum	385
	4THS		4 Flutes	Thread Mill with One Thread for SUS	387
	4TSH		4 Flutes	Short Flute Thread Mill for Generality	389
	4TSA		4 Flutes	Short Flute Thread Mill for Aluminum	393
	4TSS		4 Flutes	Short Flute Thread Mill for SUS	397
	4TUM		4 Flutes	Helix Thread Mill for Generality	401
	4TUA		4 Flutes	Helix Thread Mill for Aluminum	403
	4TUS		4 Flutes	Helix Thread Mill for SUS	405
	4TNM		4 Flutes	Helix Nick Type Thread Mill for Generality	407
	4TNA		4 Flutes	Helix Nick Type Thread Mill for Aluminum	409
	4TNS		4 Flutes	Helix Nick Type Thread Mill for SUS	411

EDP.No and Specification are can be changed without notification for quality improvement.
EDP.No와 규격은 품질개선으로 인해 예고없이 변경 될 수 있습니다.

Most Suitable(최적)-●, Suitable(적합)-○

EDP. NO	Carbon Steels	Alloy Steels	Prehardened Steels	Heat treated steel			SUS	Titanum	Aluminum	Copper	Graphite	Plastic	CFRP GFRP
				~HRC52	~HRC62	~HRC70	Stainless Steels						
4NGR	●	●	●	○						○			
2LGM	●	●	●	○						○			
4LGM	●	●	●	○						○			
4TMM			●	●									
4TMA			○						●	●		○	
4TMS				●			●	●					
4THM			○										
4THA									○	○		○	
4THS			○				○	○					
4TSH			●	○									
4TSA									●	●		○	
4TSS				●			●	●					
4TUM			●										
4TUA									●	●			
4TUS				○			●	●					
4TNM			●		●								
4TNA									●	●			
4TNS		○		●			●	●					

INDEX

Series	EDP. NO	Appearance	Flutes	Type	Page
MIDAS	ABPF			Holder	413
	SP1Q			Square Insert	414
	SP1W			Ball Insert	414

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K DRILL 2GBS

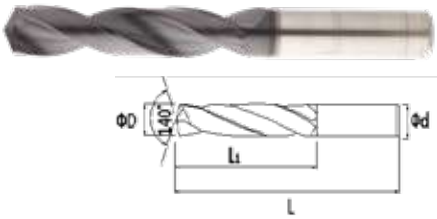


Application: the best performance when drilling S45C, SCM, cast steels and cast iron etc. of automobile parts.

- FLUTE design considering optimal tool stiffness and optimal chip evacuation
- New design enables high-precision work without the need for centering and reaming
- Unmanned work is possible by improving the life of the tool by using high-quality fine particles with excellent toughness and wear resistance.

- 用途 : S45C、SCM、鋳鋼、鋳鉄などの自動車の部品素材加工にも最適な性能を発揮する。
- 長所 : 最適の工具剛性と最適のチップ排出を考慮したFLUTE設計
  New designで別途のcenteringとreamingの作業が必要ない高精密作業が可能
  靭性と耐摩耗性が優れた超微粒子の高級素材を使って工具の寿命を向上し、無人で作業が可能

- 용도 : S45C, SCM, 주강, 주철 등의 자동차 부품소재 가공에 최적의 성능을 발휘함.
- 장점 : - 최적의 공구강성과 최적의 칩배출을 고려한 FLUTE 설계
  - New design으로 별도의 centering과 reaming 작업이 필요없이 고정밀 작업이 가능
  - 인성과 내마모성이 우수한 초미립자 고급재질을 사용하여 공구의 수명을 향상하여 무인작업이 가능.



単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GBS 015 120 S03	1.5	12	50	S03
2GBS 016 120 S03	1.6	12	50	S03
2GBS 017 120 S03	1.7	12	50	S03
2GBS 018 120 S03	1.8	12	50	S03
2GBS 019 120 S03	1.9	12	50	S03
2GBS 020 120 S03	2.0	12	50	S03
2GBS 021 120 S03	2.1	12	50	S03
2GBS 022 120 S03	2.2	12	50	S03
2GBS 023 200 S03	2.3	20	55	S03
2GBS 024 200 S03	2.4	20	55	S03
2GBS 025 200 S03	2.5	20	55	S03
2GBS 026 200 S03	2.6	20	55	S03
2GBS 027 200 S03	2.7	20	55	S03
2GBS 028 200 S03	2.8	20	55	S03
2GBS 029 200 S03	2.9	20	55	S03
2GBS 030 200 055	3.0	20	55	S03
2GBS 031 200 S03	3.1	20	55	S03
2GBS 032 200 S03	3.2	20	55	S03
2GBS 033 250 S04	3.3	25	55	S04
2GBS 034 250 S04	3.4	25	55	S04
2GBS 035 250 S04	3.5	25	55	S04
2GBS 036 250 S04	3.6	25	55	S04
2GBS 037 250 S04	3.7	25	55	S04
2GBS 038 250 S04	3.8	25	55	S04
2GBS 039 250 S04	3.9	25	55	S04
2GBS 040 250 055	4.0	25	55	S04
2GBS 041 250 S04	4.1	25	55	S04
2GBS 042 250 S04	4.2	25	55	S04
2GBS 043 320 S05	4.3	32	62	S05
2GBS 044 320 S05	4.4	32	62	S05
2GBS 045 320 S05	4.5	32	62	S05
2GBS 046 320 S05	4.6	32	62	S05
2GBS 047 320 S05	4.7	32	62	S05
2GBS 048 320 S05	4.8	32	62	S05
2GBS 049 320 S05	4.9	32	62	S05
2GBS 050 320 062	5.0	32	62	S05
2GBS 051 320 S05	5.1	32	62	S05
2GBS 052 320 S05	5.2	32	62	S05



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GBS 053 360 S06	5.3	36	66	S06
2GBS 054 360 S06	5.4	36	66	S06
2GBS 055 360 S06	5.5	36	66	S06
2GBS 056 360 S06	5.6	36	66	S06
2GBS 057 360 S06	5.7	36	66	S06
2GBS 058 360 S06	5.8	36	66	S06
2GBS 059 360 S06	5.9	36	66	S06
2GBS 060 360 066	6.0	36	66	S06
2GBS 061 360 S06	6.1	36	66	S06
2GBS 062 360 S06	6.2	36	66	S06
2GBS 063 420 S07	6.3	42	74	S07
2GBS 064 420 S07	6.4	42	74	S07
2GBS 065 420 S07	6.5	42	74	S07
2GBS 066 420 S07	6.6	42	74	S07
2GBS 067 420 S07	6.7	42	74	S07
2GBS 068 420 S07	6.8	42	74	S07
2GBS 069 420 S07	6.9	42	74	S07
2GBS 070 420 074	7.0	42	74	S07
2GBS 071 420 S07	7.1	42	74	S07
2GBS 072 420 S07	7.2	42	74	S07
2GBS 073 460 S08	7.3	46	79	S08
2GBS 074 460 S08	7.4	46	79	S08
2GBS 075 460 S08	7.5	46	79	S08
2GBS 076 460 S08	7.6	46	79	S08
2GBS 077 460 S08	7.7	46	79	S08
2GBS 078 460 S08	7.8	46	79	S08
2GBS 079 460 S08	7.9	46	79	S08
2GBS 080 460 079	8.0	46	79	S08
2GBS 081 460 S08	8.1	46	79	S08
2GBS 082 460 S08	8.2	46	79	S08
2GBS 083 500 S09	8.3	50	84	S09
2GBS 084 500 S09	8.4	50	84	S09
2GBS 085 500 S09	8.5	50	84	S09
2GBS 086 500 S09	8.6	50	84	S09
2GBS 087 500 S09	8.7	50	84	S09
2GBS 088 500 S09	8.8	50	84	S09
2GBS 089 500 S09	8.9	50	84	S09
2GBS 090 500 084	9.0	50	84	S09
2GBS 091 500 S09	9.1	50	84	S09
2GBS 092 500 S09	9.2	50	84	S09
2GBS 093 530 S10	9.3	53	89	S10
2GBS 094 530 S10	9.4	53	89	S10
2GBS 095 530 S10	9.5	53	89	S10
2GBS 096 530 S10	9.6	53	89	S10
2GBS 097 530 S10	9.7	53	89	S10
2GBS 098 530 S10	9.8	53	89	S10
2GBS 099 530 S10	9.9	53	89	S10
2GBS 100 530 089	10.0	53	89	S10
2GBS 101 530 S10	10.1	53	89	S10
2GBS 102 530 S10	10.2	53	89	S10
2GBS 103 550 S11	10.3	55	95	S11
2GBS 104 550 S11	10.4	55	95	S11
2GBS 105 550 S11	10.5	55	95	S11
2GBS 106 550 S11	10.6	55	95	S11



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GBS 107 550 S11	10.7	55	95	S11
2GBS 108 550 S11	10.8	55	95	S11
2GBS 109 550 S11	10.9	55	95	S11
2GBS 110 550 095	11.0	55	95	S11
2GBS 111 550 S11	11.1	55	95	S11
2GBS 112 550 S11	11.2	55	95	S11
2GBS 113 620 S12	11.3	62	102	S12
2GBS 114 620 S12	11.4	62	102	S12
2GBS 115 620 S12	11.5	62	102	S12
2GBS 116 620 S12	11.6	62	102	S12
2GBS 117 620 S12	11.7	62	102	S12
2GBS 118 620 S12	11.8	62	102	S12
2GBS 119 620 S12	11.9	62	102	S12
2GBS 120 620 102	12.0	62	102	S12
2GBS 121 620 S12	12.1	62	102	S12
2GBS 122 620 S12	12.2	62	102	S12
2GBS 123 620 S13	12.3	62	102	S13
2GBS 124 620 S13	12.4	62	102	S13
2GBS 125 620 S13	12.5	62	102	S13
2GBS 126 620 S13	12.6	62	102	S13
2GBS 127 620 S13	12.7	62	102	S13
2GBS 128 620 S13	12.8	62	102	S13
2GBS 129 620 S13	12.9	62	102	S13
2GBS 130 620 102	13.0	62	102	S13
2GBS 131 620 S13	13.1	62	102	S13
2GBS 132 620 S13	13.2	62	102	S13
2GBS 133 640 S14	13.3	64	107	S14
2GBS 134 640 S14	13.4	64	107	S14
2GBS 135 640 S14	13.5	64	107	S14
2GBS 136 640 S14	13.6	64	107	S14
2GBS 137 640 S14	13.7	64	107	S14
2GBS 138 640 S14	13.8	64	107	S14
2GBS 139 640 S14	13.9	64	107	S14
2GBS 140 640 107	14.0	64	107	S14
2GBS 141 640 S14	14.1	64	107	S14
2GBS 142 640 S14	14.2	64	107	S14
2GBS 143 670 S15	14.3	67	111	S15
2GBS 144 670 S15	14.4	67	111	S15
2GBS 145 670 S15	14.5	67	111	S15
2GBS 146 670 S15	14.6	67	111	S15
2GBS 147 670 S15	14.7	67	111	S15
2GBS 148 670 S15	14.8	67	111	S15
2GBS 149 670 S15	14.9	67	111	S15
2GBS 150 670 111	15.0	67	111	S15
2GBS 151 670 S15	15.1	67	111	S15
2GBS 152 670 S15	15.2	67	111	S15
2GBS 153 690 S16	15.3	69	115	S16
2GBS 154 690 S16	15.4	69	115	S16
2GBS 155 690 S16	15.5	69	115	S16
2GBS 156 690 S16	15.6	69	115	S16
2GBS 157 690 S16	15.7	69	115	S16
2GBS 158 690 S16	15.8	69	115	S16
2GBS 159 690 S16	15.9	69	115	S16
2GBS 160 690 115	16.0	69	115	S16

2GBS/2GPP

• RPM : rev./min • Feed : mm/min

Material	Low carbon steel *alloy steel (C<0.35%) SS400*SCM~710N/mm²		Carbon steel *alloy steel (C<0.35%) S50C~1,060N/mm²		SUJ2*SUS440		Stainless SUS300 series SUS400 series	
Vc	63~100m/min		63~100m/min		50~71m/min		25~40m/min	
Diameter (mm)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)
2	11,000	0.06 ~ 0.08	11,000	0.06 ~ 0.08	9,000	0.06 ~ 0.08	4,700	0.06 ~ 0.08
3	8,000	0.09 ~ 0.12	8,000	0.09 ~ 0.12	6,000	0.09 ~ 0.12	3,200	0.05 ~ 0.09
4	6,300	0.10 ~ 0.15	6,300	0.10 ~ 0.15	4,750	0.10 ~ 0.15	2,400	0.06 ~ 0.10
5	5,000	0.12 ~ 0.18	5,000	0.12 ~ 0.18	3,800	0.12 ~ 0.18	1,900	0.08 ~ 0.12
6	4,200	0.14 ~ 0.20	4,200	0.14 ~ 0.20	3,200	0.14 ~ 0.20	1,600	0.09 ~ 0.15
8	3,200	0.16 ~ 0.24	3,200	0.16 ~ 0.24	2,400	0.16 ~ 0.24	1,200	0.12 ~ 0.20
10	2,550	0.18 ~ 0.27	2,550	0.18 ~ 0.27	1,900	0.18 ~ 0.27	950	0.13 ~ 0.23
12	2,100	0.20 ~ 0.30	2,100	0.20 ~ 0.30	1,600	0.20 ~ 0.30	800	0.14 ~ 0.24
14	1,800	0.22 ~ 0.35	1,800	0.22 ~ 0.35	1,350	0.22 ~ 0.35	700	0.15 ~ 0.26
16	1,600	0.25 ~ 0.36	1,600	0.25 ~ 0.36	1,200	0.25 ~ 0.36	600	0.16 ~ 0.26
18	1,400	0.28 ~ 0.38	1,400	0.28 ~ 0.38	1,050	0.28 ~ 0.38	530	0.18 ~ 0.88
20	1,300	0.30 ~ 0.40	1,300	0.30 ~ 0.40	960	0.30 ~ 0.40	480	0.20 ~ 0.30

• RPM : rev./min • Feed : mm/min

Material	SKD61 34~43HRC		43~48HRC		Cast iron FC250~350N/mm²		Ductile iron FCD400~5000N/mm²	
Vc	40~63m/min		32~45m/min		63~100m/min		50~80m/min	
Diameter (mm)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)	RPM (mm²)	FEED (mm/rev)
2	7,600	0.06 ~ 0.08	6,000	0.06 ~ 0.08	12,000	0.06 ~ 0.08	10,000	0.06 ~ 0.08
3	5,000	0.09 ~ 0.12	4,000	0.09 ~ 0.12	8,000	0.09 ~ 0.12	6,900	0.09 ~ 0.12
4	3,800	0.10 ~ 0.15	3,000	0.10 ~ 0.15	6,300	0.10 ~ 0.15	5,200	0.10 ~ 0.15
5	3,000	0.12 ~ 0.18	2,450	0.12 ~ 0.18	5,000	0.12 ~ 0.18	4,000	0.12 ~ 0.18
6	2,550	0.14 ~ 0.20	2,050	0.14 ~ 0.20	4,200	0.14 ~ 0.20	3,450	0.14 ~ 0.20
8	1,900	0.16 ~ 0.24	1,550	0.16 ~ 0.24	3,200	0.16 ~ 0.24	2,600	0.16 ~ 0.24
10	1,550	0.18 ~ 0.27	1,250	0.18 ~ 0.27	2,600	0.18 ~ 0.27	2,100	0.18 ~ 0.27
12	1,300	0.20 ~ 0.30	1,050	0.20 ~ 0.30	2,200	0.20 ~ 0.30	1,750	0.20 ~ 0.30
14	1,100	0.22 ~ 0.35	880	0.22 ~ 0.35	1,800	0.22 ~ 0.35	1,500	0.22 ~ 0.35
16	950	0.25 ~ 0.36	770	0.25 ~ 0.36	1,600	0.25 ~ 0.36	1,300	0.25 ~ 0.36
18	850	0.28 ~ 0.38	680	0.28 ~ 0.38	1,400	0.28 ~ 0.38	1,200	0.28 ~ 0.38
20	760	0.30 ~ 0.40	610	0.30 ~ 0.40	1,300	0.30 ~ 0.40	1,050	0.30 ~ 0.40

K DRILL

2GPP

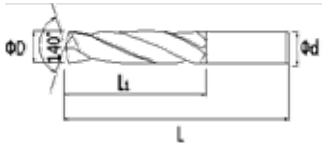


- Suitable for various processing such as carbon steel, alloy steel and special steel
- Stable tool life maintained by uniform honing treatment on the point part
- Optimum chip control capability according to the unique flute shape

- 炭素鋼、合金鋼、特殊鋼などの様々な加工に適合
- ポイント部に均一なホーニング処理で安定した寿命を維持
- 独自のフルート(flute) 形状による最適なチップの処理能

- 탄소강, 합금강, 특수강 등 다양한 가공에 적합
- 포인트부에 균일한 호닝처리로 안정적 수명유지
- 독자적 플루트(flute) 형상에 따른 최적의 칩처리 능력





単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GPP 020 200 064	2.0	20	64	3
2GPP 021 200 064	2.1	20	64	3
2GPP 022 200 064	2.2	20	64	3
2GPP 023 200 064	2.3	20	64	3
2GPP 024 200 064	2.4	20	64	3
2GPP 025 200 064	2.5	20	64	3
2GPP 026 200 064	2.6	20	64	3
2GPP 027 200 064	2.7	20	64	3
2GPP 028 200 064	2.8	20	64	3
2GPP 029 200 064	2.9	20	64	3
2GPP 030 200 064	3.0	20	64	3
2GPP 031 250 064	3.1	25	64	4
2GPP 032 250 064	3.2	25	64	4
2GPP 033 250 064	3.3	25	64	4
2GPP 034 250 064	3.4	25	64	4
2GPP 035 250 064	3.5	25	64	4
2GPP 036 250 064	3.6	25	64	4
2GPP 037 250 064	3.7	25	64	4
2GPP 038 250 064	3.8	25	64	4
2GPP 039 250 064	3.9	25	64	4
2GPP 040 250 064	4.0	25	64	4
2GPP 041 320 064	4.1	32	64	5
2GPP 042 320 064	4.2	32	64	5
2GPP 043 320 064	4.3	32	64	5
2GPP 044 320 064	4.4	32	64	5
2GPP 045 320 064	4.5	32	64	5
2GPP 046 320 064	4.6	32	64	5
2GPP 047 320 064	4.7	32	64	5
2GPP 048 320 064	4.8	32	64	5
2GPP 049 320 064	4.9	32	64	5
2GPP 050 320 064	5.0	32	64	5
2GPP 051 360 064	5.1	36	64	6

K DRILL

2GPP



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GPP 052 360 064	5.2	36	64	6
2GPP 053 360 064	5.3	36	64	6
2GPP 054 360 064	5.4	36	64	6
2GPP 055 360 064	5.5	36	64	6
2GPP 056 360 064	5.6	36	64	6
2GPP 057 360 064	5.7	36	64	6
2GPP 058 360 064	5.8	36	64	6
2GPP 059 360 064	5.9	36	64	6
2GPP 060 360 064	6.0	36	64	6
2GPP 061 420 082	6.1	42	82	7
2GPP 062 420 082	6.2	42	82	7
2GPP 063 420 082	6.3	42	82	7
2GPP 064 420 082	6.4	42	82	7
2GPP 065 420 082	6.5	42	82	7
2GPP 066 420 082	6.6	42	82	7
2GPP 067 420 082	6.7	42	82	7
2GPP 068 420 082	6.8	42	82	7
2GPP 069 420 082	6.9	42	82	7
2GPP 070 420 082	7.0	42	82	7
2GPP 071 460 082	7.1	46	82	8
2GPP 072 460 082	7.2	46	82	8
2GPP 073 460 082	7.3	46	82	8
2GPP 074 460 082	7.4	46	82	8
2GPP 075 460 082	7.5	46	82	8
2GPP 076 460 082	7.6	46	82	8
2GPP 077 460 082	7.7	46	82	8
2GPP 078 460 082	7.8	46	82	8
2GPP 079 460 082	7.9	46	82	8
2GPP 080 460 082	8.0	46	82	8
2GPP 081 500 082	8.1	50	82	9
2GPP 082 500 082	8.2	50	82	9
2GPP 083 500 082	8.3	50	82	9
2GPP 084 500 082	8.4	50	82	9
2GPP 085 500 082	8.5	50	82	9
2GPP 086 500 082	8.6	50	82	9
2GPP 087 500 082	8.7	50	82	9
2GPP 088 500 082	8.8	50	82	9
2GPP 089 500 082	8.9	50	82	9
2GPP 090 500 082	9.0	50	82	9
2GPP 091 530 082	9.1	53	82	10
2GPP 092 530 082	9.2	53	82	10
2GPP 093 530 082	9.3	53	82	10
2GPP 094 530 082	9.4	53	82	10
2GPP 095 530 082	9.5	53	82	10



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GPP 096 530 082	9.6	53	82	10
2GPP 097 530 082	9.7	53	82	10
2GPP 098 530 082	9.8	53	82	10
2GPP 099 530 082	9.9	53	82	10
2GPP 100 530 082	10.0	53	82	10

K DRILL

2GSS

Solid Caride Drill, Straight shank

- It is suitable for a wide range of workpiece materials such as cast steel, cast iron, non-ferrous metals and plastics by using high-grade tungsten carbide material.

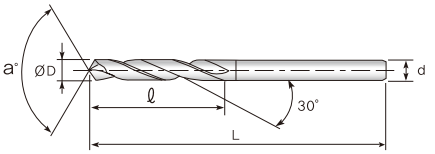
ソリッド超硬ドリル、ストレートシャンク

- 高級のタングステンカーバイド素材を使用し、鋳鋼、鋳鉄、非鉄金属及びプラスチックなどの幅広い被削材に適しています。

솔리드 초경 드릴, 스트레이트 샹크

- 고급 텅스텐 카바이드 소재를 사용하여 주강, 주철, 비철금속 및 플라스틱 등의 폭넓은 피삭재에 적합합니다.





単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSS 007 120 040	0.7	12	40	0.7
2GSS 0075 120 040	0.75	12	40	0.75
2GSS 008 120 040	0.8	12	40	0.8
2GSS 0085 120 040	0.85	12	40	0.85
2GSS 009 120 040	0.9	12	40	0.9
2GSS 0095 120 040	0.95	12	40	0.95
2GSS 010 120 040	1	12	40	1
2GSS 0105 120 040	1.05	12	40	1.05
2GSS 011 120 040	1.1	12	40	1.1
2GSS 0115 120 040	1.15	12	40	1.15
2GSS 012 120 040	1.2	12	40	1.2
2GSS 0125 120 040	1.25	12	40	1.25
2GSS 013 120 040	1.3	12	40	1.3
2GSS 0135 120 040	1.35	12	40	1.35
2GSS 014 120 040	1.4	12	40	1.4
2GSS 0145 150 040	1.45	15	40	1.45
2GSS 015 150 040	1.5	15	40	1.5
2GSS 0155 150 040	1.55	15	40	1.55
2GSS 016 150 040	1.6	15	40	1.6
2GSS 0165 150 040	1.65	15	40	1.65
2GSS 017 150 040	1.7	15	40	1.7
2GSS 0175 150 040	1.75	15	40	1.75
2GSS 018 150 040	1.8	15	40	1.8
2GSS 0185 150 040	1.85	15	40	1.85
2GSS 019 150 040	1.9	15	40	1.9
2GSS 0195 150 040	1.95	15	40	1.95
2GSS 020 180 045	2	18	45	2
2GSS 0205 180 045	2.05	18	45	2.05
2GSS 021 180 040	2.1	18	40	2.1
2GSS 0215 180 045	2.15	18	45	2.15
2GSS 022 180 045	2.2	18	45	2.2
2GSS 0225 180 045	2.25	18	45	2.25
2GSS 023 180 045	2.3	18	45	2.3
2GSS 0235 220 050	2.35	22	50	2.35



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSS 024 220 050	2.4	22	50	2.4
2GSS 0245 220 050	2.45	22	50	2.45
2GSS 025 220 050	2.5	22	50	2.5
2GSS 0255 220 050	2.55	22	50	2.55
2GSS 026 220 050	2.6	22	50	2.6
2GSS 0265 220 050	2.65	22	50	2.65
2GSS 027 240 050	2.7	24	50	2.7
2GSS 0275 240 050	2.75	24	50	2.75
2GSS 028 240 050	2.8	24	50	2.8
2GSS 0285 240 050	2.85	24	50	2.85
2GSS 029 240 050	2.9	24	50	2.9
2GSS 0295 240 050	2.95	24	50	2.95
2GSS 030 250 050	3	25	50	3
2GSS 031 250 050	3.1	25	50	3.1
2GSS 032 250 050	3.2	25	50	3.2
2GSS 033 250 050	3.3	25	50	3.3
2GSS 034 250 050	3.4	25	50	3.4
2GSS 035 250 050	3.5	25	50	3.5
2GSS 036 300 054	3.6	30	54	3.6
2GSS 037 300 054	3.7	30	54	3.7
2GSS 038 300 054	3.8	30	54	3.8
2GSS 039 300 054	3.9	30	54	3.9
2GSS 040 280 052	4	28	52	4
2GSS 041 320 060	4.1	32	60	4.1
2GSS 042 320 060	4.2	32	60	4.2
2GSS 043 320 060	4.3	32	60	4.3
2GSS 044 320 060	4.4	32	60	4.4
2GSS 045 320 060	4.5	32	60	4.5
2GSS 046 370 065	4.6	37	65	4.6
2GSS 047 370 065	4.7	37	65	4.7
2GSS 048 370 065	4.8	37	65	4.8
2GSS 049 370 065	4.9	37	65	4.9
2GSS 050 370 065	5	37	65	5
2GSS 051 380 065	5.1	38	65	5.1
2GSS 052 380 065	5.2	38	65	5.2
2GSS 053 380 065	5.3	38	65	5.3
2GSS 054 380 065	5.4	38	65	5.4
2GSS 055 380 065	5.5	38	65	5.5
2GSS 056 400 075	5.6	40	75	5.6
2GSS 057 400 075	5.7	40	75	5.7
2GSS 058 400 075	5.8	40	75	5.8
2GSS 059 400 075	5.9	40	75	5.9
2GSS 060 400 075	6	40	75	6
2GSS 061 400 075	6.1	40	75	6.1
2GSS 062 400 075	6.2	40	75	6.2



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSS 063 400 075	6.3	40	75	6.3
2GSS 064 400 075	6.4	40	75	6.4
2GSS 065 400 075	6.5	40	75	6.5
2GSS 066 470 080	6.6	47	80	6.6
2GSS 067 470 080	6.7	47	80	6.7
2GSS 068 470 080	6.8	47	80	6.8
2GSS 069 470 080	6.9	47	80	6.9
2GSS 070 470 080	7	47	80	7
2GSS 071 470 080	7.1	47	80	7.1
2GSS 072 470 080	7.2	47	80	7.2
2GSS 073 470 080	7.3	47	80	7.3
2GSS 074 470 080	7.4	47	80	7.4
2GSS 075 470 080	7.5	47	80	7.5
2GSS 076 500 082	7.6	50	82	7.6
2GSS 077 500 082	7.7	50	82	7.7
2GSS 078 500 082	7.8	50	82	7.8
2GSS 079 500 082	7.9	50	82	7.9
2GSS 080 500 082	8	50	82	8
2GSS 081 500 082	8.1	50	82	8.1
2GSS 082 500 082	8.2	50	82	8.2
2GSS 083 500 082	8.3	50	82	8.3
2GSS 084 500 082	8.4	50	82	8.4
2GSS 085 500 082	8.5	50	82	8.5
2GSS 086 520 095	8.6	52	95	8.6
2GSS 087 520 095	8.7	52	95	8.7
2GSS 088 520 095	8.8	52	95	8.8
2GSS 089 520 095	8.9	52	95	8.9
2GSS 090 520 095	9	52	95	9
2GSS 091 520 095	9.1	52	95	9.1
2GSS 092 520 095	9.2	52	95	9.2
2GSS 093 520 095	9.3	52	95	9.3
2GSS 094 520 095	9.4	52	95	9.4
2GSS 095 520 095	9.5	52	95	9.5
2GSS 096 520 095	9.6	52	95	9.6
2GSS 097 520 095	9.7	52	95	9.7
2GSS 098 520 095	9.8	52	95	9.8
2GSS 099 570 100	9.9	57	100	9.9
2GSS 100 570 100	10	57	100	10
2GSS 101 570 110	10.1	57	110	10.1
2GSS 102 570 110	10.2	57	110	10.2
2GSS 103 570 110	10.3	57	110	10.3
2GSS 104 570 110	10.4	57	110	10.4
2GSS 105 570 110	10.5	57	110	10.5
2GSS 106 620 110	10.6	62	110	10.6
2GSS 107 620 110	10.7	62	110	10.7



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSS 108 620 110	10.8	62	110	10.8
2GSS 109 620 110	10.9	62	110	10.9
2GSS 110 620 110	11	62	110	11
2GSS 111 650 110	11.1	65	110	11.1
2GSS 112 650 110	11.2	65	110	11.2
2GSS 113 650 110	11.3	65	110	11.3
2GSS 114 650 110	11.4	65	110	11.4
2GSS 115 650 110	11.5	65	110	11.5
2GSS 116 650 110	11.6	65	110	11.6
2GSS 117 650 110	11.7	65	110	11.7
2GSS 118 650 110	11.8	65	110	11.8
2GSS 119 650 110	11.9	65	110	11.9
2GSS 120 650 110	12	65	110	12
2GSS 121 650 110	12.1	65	110	12.1
2GSS 122 650 110	12.2	65	110	12.2
2GSS 123 650 110	12.3	65	110	12.3
2GSS 124 650 110	12.4	65	110	12.4
2GSS 125 650 110	12.5	65	110	12.5
2GSS 126 650 110	12.6	65	110	12.6
2GSS 127 650 110	12.7	65	110	12.7
2GSS 128 650 110	12.8	65	110	12.8
2GSS 129 650 110	12.9	65	110	12.9
2GSS 130 650 110	13	65	110	13

K DRILL

2GSL



Solid Carbide Long Drill

- It is suitable for a wide range of workpiece materials such as cast steel, cast iron, non-ferrous metals and plastics by using high-grade tungsten carbide material.

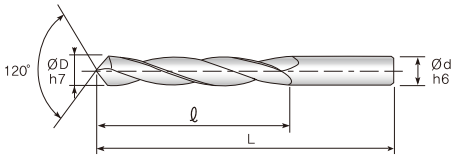
超硬ロングドリル

- 高級のタングステンカーバイド素材を使用し、鋳鋼、鋳鉄、非鉄金属及びプラスチックなどの幅広い被削材に適しています。

초경 롱 드릴

- 고급 텅스텐 카바이드 소재를 사용하여 주강, 주철, 비철금속 및 플라스틱 등의 폭넓은 피삭재에 적합합니다.





単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSL 007 150 054	0.7	15	54	0.7
2GSL 0075 150 054	0.75	15	54	0.75
2GSL 008 150 054	0.8	15	54	0.8
2GSL 0085 150 054	0.85	15	54	0.85
2GSL 009 160 054	0.9	16	54	0.9
2GSL 0095 160 054	0.95	16	54	0.95
2GSL 010 180 054	1	18	54	1
2GSL 010 250 075	1	25	75	1
2GSL 010 500 100	1	50	100	1
2GSL 0105 180 054	1.05	18	54	1.05
2GSL 0105 300 075	1.05	30	75	1.05
2GSL 011 180 054	1.1	18	54	1.1
2GSL 011 250 075	1.1	25	75	1.1
2GSL 011 500 100	1.1	50	100	1.1
2GSL 0115 180 054	1.15	18	54	1.15
2GSL 0115 300 080	1.15	30	80	1.15
2GSL 012 200 054	1.2	20	54	1.2
2GSL 012 250 075	1.2	25	75	1.2
2GSL 012 500 100	1.2	50	100	1.2
2GSL 0125 200 054	1.25	20	54	1.25
2GSL 0125 300 080	1.25	30	80	1.25
2GSL 013 200 054	1.3	20	54	1.3
2GSL 013 250 075	1.3	25	75	1.3
2GSL 013 500 100	1.3	50	100	1.3
2GSL 0135 200 054	1.35	20	54	1.35
2GSL 0135 300 080	1.35	30	80	1.35
2GSL 014 200 054	1.4	20	54	1.4
2GSL 014 300 075	1.4	30	75	1.4
2GSL 014 500 100	1.4	50	100	1.4
2GSL 0145 200 054	1.45	20	54	1.45
2GSL 0145 300 080	1.45	30	80	1.45
2GSL 015 240 054	1.5	24	54	1.5
2GSL 015 300 075	1.5	30	75	1.5
2GSL 015 500 100	1.5	50	100	1.5



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSL 0155 240 054	1.55	24	54	1.55
2GSL 0155 300 075	1.55	30	75	1.55
2GSL 016 240 054	1.6	24	54	1.6
2GSL 016 300 075	1.6	30	75	1.6
2GSL 016 500 100	1.6	50	100	1.6
2GSL 0165 240 054	1.65	24	54	1.65
2GSL 0165 300 080	1.65	30	80	1.65
2GSL 017 240 054	1.7	24	54	1.7
2GSL 017 300 075	1.7	30	75	1.7
2GSL 017 500 100	1.7	50	100	1.7
2GSL 0175 240 054	1.75	24	54	1.75
2GSL 0175 300 080	1.75	30	80	1.75
2GSL 018 240 054	1.8	24	54	1.8
2GSL 018 300 075	1.8	30	75	1.8
2GSL 018 500 100	1.8	50	100	1.8
2GSL 0185 240 054	1.85	24	54	1.85
2GSL 0185 300 080	1.85	30	80	1.85
2GSL 019 240 054	1.9	24	54	1.9
2GSL 019 300 075	1.9	30	75	1.9
2GSL 019 500 100	1.9	50	100	1.9
2GSL 0195 240 054	1.95	24	54	1.95
2GSL 0195 300 080	1.95	30	80	1.95
2GSL 020 240 054	2	24	54	2
2GSL 020 300 075	2	30	75	2
2GSL 020 500 100	2	50	100	2
2GSL 0205 240 054	2.05	24	54	2.05
2GSL 0205 300 075	2.05	30	75	2.05
2GSL 021 240 054	2.1	24	54	2.1
2GSL 021 300 075	2.1	30	75	2.1
2GSL 021 500 100	2.1	50	100	2.1
2GSL 0215 240 054	2.15	24	54	2.15
2GSL 0215 300 080	2.15	30	80	2.15
2GSL 022 260 058	2.2	26	58	2.2
2GSL 022 300 075	2.2	30	75	2.2
2GSL 022 500 100	2.2	50	100	2.2
2GSL 0225 260 054	2.25	26	54	2.25
2GSL 0225 300 080	2.25	30	80	2.25
2GSL 023 260 058	2.3	26	58	2.3
2GSL 023 300 075	2.3	30	75	2.3
2GSL 023 500 100	2.3	50	100	2.3
2GSL 0235 260 061	2.35	26	61	2.35
2GSL 0235 300 080	2.35	30	80	2.35
2GSL 024 260 061	2.4	26	61	2.4
2GSL 024 350 080	2.4	35	80	2.4
2GSL 024 350 100	2.4	35	100	2.4



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSL 024 500 100	2.4	50	100	2.4
2GSL 024 750 150	2.4	75	150	2.4
2GSL 0245 260 061	2.45	26	61	2.45
2GSL 0245 350 100	2.45	35	100	2.45
2GSL 025 260 061	2.5	26	61	2.5
2GSL 025 350 080	2.5	35	80	2.5
2GSL 025 350 100	2.5	35	100	2.5
2GSL 025 500 100	2.5	50	100	2.5
2GSL 025 750 150	2.5	75	150	2.5
2GSL 0252 300 075	2.52	30	75	2.52
2GSL 0255 280 064	2.55	28	64	2.55
2GSL 0255 350 100	2.55	35	100	2.55
2GSL 026 280 064	2.6	28	64	2.6
2GSL 026 350 080	2.6	35	80	2.6
2GSL 026 350 100	2.6	35	100	2.6
2GSL 026 500 100	2.6	50	100	2.6
2GSL 026 750 150	2.6	75	150	2.6
2GSL 0265 280 064	2.65	28	64	2.65
2GSL 0265 350 100	2.65	35	100	2.65
2GSL 027 280 064	2.7	28	64	2.7
2GSL 027 350 080	2.7	35	80	2.7
2GSL 027 350 100	2.7	35	100	2.7
2GSL 027 500 100	2.7	50	100	2.7
2GSL 027 750 150	2.7	75	150	2.7
2GSL 0275 300 067	2.75	30	67	2.75
2GSL 0275 350 100	2.75	35	100	2.75
2GSL 028 300 067	2.8	30	67	2.8
2GSL 028 350 080	2.8	35	80	2.8
2GSL 028 350 100	2.8	35	100	2.8
2GSL 028 500 100	2.8	50	100	2.8
2GSL 028 750 150	2.8	75	150	2.8
2GSL 0285 300 067	2.85	30	67	2.85
2GSL 0285 350 100	2.85	35	100	2.85
2GSL 029 300 071	2.9	30	71	2.9
2GSL 029 350 080	2.9	35	80	2.9
2GSL 029 350 100	2.9	35	100	2.9
2GSL 029 500 100	2.9	50	100	2.9
2GSL 029 750 150	2.9	75	150	2.9
2GSL 0295 300 071	2.95	30	71	2.95
2GSL 0295 350 100	2.95	35	100	2.95
2GSL 030 500 100	3	50	100	3
2GSL 030 750 150	3	75	150	3
2GSL 031 500 100	3.1	50	100	3.1
2GSL 031 750 150	3.1	75	150	3.1
2GSL 032 500 100	3.2	50	100	3.2



单位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSL 032 750 150	3.2	75	150	3.2
2GSL 033 500 100	3.3	50	100	3.3
2GSL 033 750 150	3.3	75	150	3.3
2GSL 034 500 100	3.4	50	100	3.4
2GSL 034 750 150	3.4	75	150	3.4
2GSL 035 500 100	3.5	50	100	3.5
2GSL 035 750 150	3.5	75	150	3.5
2GSL 036 500 100	3.6	50	100	3.6
2GSL 036 750 150	3.6	75	150	3.6
2GSL 037 500 100	3.7	50	100	3.7
2GSL 037 750 150	3.7	75	150	3.7
2GSL 038 500 100	3.8	50	100	3.8
2GSL 038 750 150	3.8	75	150	3.8
2GSL 039 500 100	3.9	50	100	3.9
2GSL 039 750 150	3.9	75	150	3.9
2GSL 040 500 100	4	50	100	4
2GSL 040 750 150	4	75	150	4
2GSL 041 500 100	4.1	50	100	4.1
2GSL 041 750 150	4.1	75	150	4.1
2GSL 042 500 100	4.2	50	100	4.2
2GSL 042 750 150	4.2	75	150	4.2
2GSL 043 500 100	4.3	50	100	4.3
2GSL 043 750 150	4.3	75	150	4.3
2GSL 044 500 100	4.4	50	100	4.4
2GSL 044 750 150	4.4	75	150	4.4
2GSL 045 500 100	4.5	50	100	4.5
2GSL 045 750 150	4.5	75	150	4.5
2GSL 046 500 100	4.6	50	100	4.6
2GSL 046 750 150	4.6	75	150	4.6
2GSL 047 500 100	4.7	50	100	4.7
2GSL 047 750 150	4.7	75	150	4.7
2GSL 048 500 100	4.8	50	100	4.8
2GSL 048 750 150	4.8	75	150	4.8
2GSL 049 500 100	4.9	50	100	4.9
2GSL 049 750 150	4.9	75	150	4.9
2GSL 050 1000 200	5	100	200	5
2GSL 050 550 110	5	55	110	5
2GSL 050 750 150	5	75	150	5
2GSL 051 750 150	5.1	75	150	5.1
2GSL 052 750 150	5.2	75	150	5.2
2GSL 053 750 150	5.3	75	150	5.3
2GSL 054 750 150	5.4	75	150	5.4
2GSL 055 600 110	5.5	60	110	5.5
2GSL 055 750 150	5.5	75	150	5.5
2GSL 056 750 150	5.6	75	150	5.6

K DRILL

2GSL



単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
2GSL 057 750 150	5.7	75	150	5.7
2GSL 058 750 150	5.8	75	150	5.8
2GSL 059 750 150	5.9	75	150	5.9
2GSL 060 1100 200	6	110	200	6
2GSL 060 650 110	6	65	110	6
2GSL 060 750 150	6	75	150	6
2GSL 070 1000 200	7	100	200	7

2GSS/2GSL

• RPM : rev./min • Feed : mm/min

Work Material	Low Carbon Steel		Aluminum Alloy		Copper Alloy	
Hardness	HB80~120		HB30~150		HB150~160	
Diameter	V/C	FZ	V/C	FZ	V/C	FZ
Ø2.5 ~ Ø4	35(20 ~ 65)	0.02 ~ 0.06	100(94 ~ 120)	0.03 ~ 0.06	80(65 ~ 95)	0.03 ~ 0.06
Ø4.1 ~ Ø8	35(20 ~ 65)	0.04 ~ 0.08	100(94 ~ 120)	0.05 ~ 0.08	80(65 ~ 95)	0.05 ~ 0.08
Ø8.1 ~ Ø12	35(20 ~ 65)	0.06 ~ 0.12	100(94 ~ 120)	0.08 ~ 0.12	80(65 ~ 95)	0.08 ~ 0.12
Ø12.1 ~ Ø15	35(20 ~ 65)	0.1 ~ 0.16	100(94 ~ 120)	0.12 ~ 0.18	80(65 ~ 95)	0.12 ~ 0.18

K DRILL

2MFD

Tolerance

Carbide 2 Flutes, Multi-processing Flat Drill

- Flat drill for material below HRC50, pre-hardened steel, alloy steel, cast iron and aluminum.
- With flat type of end face, excellent performance drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with 20 degree helix design.

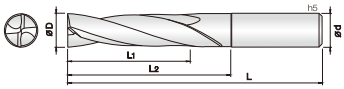
超硬2刃フラットドリル

- HRC50以下、フリーハードン鋼、合金鋼、鋳鉄、アルミ加工用のフラットドリル
- 下刃がフラットタイプで、様々な斜面と曲面のドリル加工に優れた性能を発揮します。
- 20°ヘリックス(helix)を採用し、チップ排出の性能に非常に優れています。

초경 2날 플랫 드릴

- HRC50이하, 프리하든강, 합금강, 주철, 알루미늄 가공용 플랫 드릴
- 밑날 플랫타입으로 다양한 경사면과 곡면 드릴 가공에 탁월한 성능을 발휘합니다.
- 20° 헬릭스(helix)를 채택하여 칩배출 성능이 매우 우수합니다.





単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFD 002 009 S03	0.2	0.8	0.9	50	3
2MFD 0025 011 S03	0.25	1	1.1	50	3
2MFD 003 013 S03	0.3	1.2	1.3	50	3
2MFD 0035 015 S03	0.35	1.4	1.5	50	3
2MFD 004 017 S03	0.4	1.6	1.7	50	3
2MFD 0045 019 S03	0.45	1.8	1.9	50	3
2MFD 005 022 S03	0.5	2	2.2	50	3
2MFD 0055 024 S03	0.55	2.2	2.4	50	3
2MFD 006 026 S03	0.6	2.4	2.6	50	3
2MFD 0065 028 S03	0.65	2.6	2.8	50	3
2MFD 007 030 S03	0.7	2.8	3	50	3
2MFD 0075 032 S03	0.75	3	3.2	50	3
2MFD 008 034 S03	0.8	3.2	3.4	50	3
2MFD 0085 037 S03	0.85	3.4	3.7	50	3
2MFD 009 039 S03	0.9	3.6	3.9	50	3
2MFD 0095 041 S03	0.95	3.8	4.1	50	3
2MFD 010 043 S03	1	4	4.3	50	3
2MFD 011 047 S03	1.1	4.4	4.7	50	3
2MFD 012 052 S03	1.2	4.8	5.2	50	3
2MFD 013 056 S03	1.3	5.2	5.6	50	3
2MFD 014 060 S03	1.4	5.6	6	50	3
2MFD 015 065 S03	1.5	6	6.5	50	3
2MFD 016 069 S03	1.6	6.4	6.9	50	3
2MFD 017 073 S03	1.7	6.8	7.3	50	3
2MFD 018 077 S03	1.8	7.2	7.7	50	3
2MFD 019 082 S03	1.9	7.6	8.2	50	3
2MFD 020 086 S04	2	8	8.6	50	4
2MFD 021 090 S04	2.1	8.4	9	50	4
2MFD 022 095 S04	2.2	8.8	9.5	50	4
2MFD 023 099 S04	2.3	9.2	9.9	50	4
2MFD 024 103 S04	2.4	9.6	10.3	50	4
2MFD 025 108 S04	2.5	10	10.8	50	4

Tolerance

单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFD 026 112 S04	2.6	10.4	11.2	50	4
2MFD 027 116 S04	2.7	10.8	11.6	50	4
2MFD 028 120 S04	2.8	11.2	12	50	4
2MFD 029 125 S04	2.9	11.6	12.5	50	4
2MFD 030 129 S06	3	12	12.9	50	6
2MFD 031 133 S06	3.1	12.4	13.3	50	6
2MFD 032 138 S06	3.2	12.8	13.8	50	6
2MFD 033 142 S06	3.3	13.2	14.2	50	6
2MFD 034 146 S06	3.4	13.6	14.6	50	6
2MFD 035 151 S06	3.5	14	15.1	50	6
2MFD 036 155 S06	3.6	14.4	15.5	50	6
2MFD 037 159 S06	3.7	14.8	15.9	50	6
2MFD 038 163 S06	3.8	15.2	16.3	50	6
2MFD 039 168 S06	3.9	15.6	16.8	50	6
2MFD 040 172 S06	4	16	17.2	50	6
2MFD 041 176 S06	4.1	16.4	17.6	60	6
2MFD 042 181 S06	4.2	16.8	18.1	60	6
2MFD 043 185 S06	4.3	17.2	18.5	60	6
2MFD 044 189 S06	4.4	17.6	18.9	60	6
2MFD 045 194 S06	4.5	18	19.4	60	6
2MFD 046 198 S06	4.6	18.4	19.8	60	6
2MFD 047 202 S06	4.7	18.8	20.2	60	6
2MFD 048 206 S06	4.8	19.2	20.6	60	6
2MFD 049 211 S06	4.9	19.6	21.1	60	6
2MFD 050 215 S06	5	20	21.5	60	6
2MFD 051 219 S06	5.1	20.4	21.9	60	6
2MFD 052 224 S06	5.2	20.8	22.4	60	6
2MFD 053 228 S06	5.3	21.2	22.8	60	6
2MFD 054 232 S06	5.4	21.6	23.2	60	6
2MFD 055 237 S06	5.5	22	23.7	60	6
2MFD 056 241 S06	5.6	22.4	24.1	60	6
2MFD 057 245 S06	5.7	22.8	24.5	60	6
2MFD 058 249 S06	5.8	23.2	24.9	60	6
2MFD 059 254 S06	5.9	23.6	25.4	60	6
2MFD 060 258 S06	6	25.8	25.8	60	6
2MFD 061 262 S08	6.1	24.4	26.2	70	8
2MFD 062 267 S08	6.2	24.8	26.7	70	8
2MFD 063 271 S08	6.3	25.2	27.1	70	8
2MFD 064 275 S08	6.4	25.6	27.5	70	8
2MFD 065 280 S08	6.5	26	28	70	8
2MFD 066 284 S08	6.6	26.4	28.4	70	8
2MFD 067 288 S08	6.7	26.8	28.8	70	8
2MFD 068 292 S08	6.8	27.2	29.2	70	8
2MFD 069 297 S08	6.9	27.6	29.7	70	8
2MFD 070 301 S08	7	28	30.1	70	8



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFD 071 305 S08	7.1	28.4	30.5	70	8
2MFD 072 310 S08	7.2	28.8	31	70	8
2MFD 073 314 S08	7.3	29.2	31.4	70	8
2MFD 074 318 S08	7.4	29.6	31.8	70	8
2MFD 075 323 S08	7.5	30	32.3	70	8
2MFD 076 327 S08	7.6	30.4	32.7	70	8
2MFD 077 331 S08	7.7	30.8	33.1	70	8
2MFD 078 335 S08	7.8	31.2	33.5	70	8
2MFD 079 340 S08	7.9	31.6	34	70	8
2MFD 080 344 S08	8	32	34.4	70	8
2MFD 081 348 S10	8.1	32.4	34.8	80	10
2MFD 082 353 S10	8.2	32.8	35.3	80	10
2MFD 083 357 S10	8.3	33.2	35.7	80	10
2MFD 084 361 S10	8.4	33.6	36.1	80	10
2MFD 085 366 S10	8.5	34	36.6	80	10
2MFD 086 370 S10	8.6	34.4	37	80	10
2MFD 087 374 S10	8.7	34.8	37.4	80	10
2MFD 088 378 S10	8.8	35.2	37.8	80	10
2MFD 089 383 S10	8.9	35.6	38.3	80	10
2MFD 090 387 S10	9	36	38.7	80	10
2MFD 091 391 S10	9.1	36.4	39.1	80	10
2MFD 092 396 S10	9.2	36.8	39.6	80	10
2MFD 093 400 S10	9.3	37.2	40	80	10
2MFD 094 404 S10	9.4	37.6	40.4	80	10
2MFD 095 409 S10	9.5	38	40.9	80	10
2MFD 096 413 S10	9.6	38.4	41.3	80	10
2MFD 097 417 S10	9.7	38.8	41.7	80	10
2MFD 098 421 S10	9.8	39.2	42.1	80	10
2MFD 099 426 S10	9.9	39.6	42.6	80	10
2MFD 100 430 S10	10	40	43	80	10
2MFD 101 434 S12	10.1	40.4	43.4	90	12
2MFD 102 439 S12	10.2	40.8	43.9	90	12
2MFD 103 443 S12	10.3	41.2	44.3	90	12
2MFD 104 447 S12	10.4	41.6	44.7	90	12
2MFD 105 452 S12	10.5	42	45.2	90	12
2MFD 106 456 S12	10.6	42.4	45.6	90	12
2MFD 107 460 S12	10.7	42.8	46	90	12
2MFD 108 464 S12	10.8	43.2	46.4	90	12
2MFD 109 469 S12	10.9	43.6	46.9	90	12
2MFD 110 473 S12	11	44	47.3	90	12
2MFD 111 477 S12	11.1	44.4	47.7	90	12
2MFD 112 482 S12	11.2	44.8	48.2	90	12
2MFD 113 486 S12	11.3	45.2	48.6	90	12
2MFD 114 490 S12	11.4	45.6	49	90	12
2MFD 115 495 S12	11.5	46	49.5	90	12

Tolerance

单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFD 116 499 S12	11.6	46.4	49.9	90	12
2MFD 117 503 S12	11.7	46.8	50.3	90	12
2MFD 118 507 S12	11.8	47.2	50.7	90	12
2MFD 119 512 S12	11.9	47.6	51.2	90	12
2MFD 120 516 S12	12	48	51.6	90	12
2MFD 121 520 S14	12.1	48.4	52	100	14
2MFD 122 525 S14	12.2	48.8	52.5	100	14
2MFD 123 529 S14	12.3	49.2	52.9	100	14
2MFD 124 533 S14	12.4	49.6	53.3	100	14
2MFD 125 538 S14	12.5	50	53.8	100	14
2MFD 126 542 S14	12.6	50.4	54.2	100	14
2MFD 127 546 S14	12.7	50.8	54.6	100	14
2MFD 128 550 S14	12.8	51.2	55	100	14
2MFD 129 555 S14	12.9	51.6	55.5	100	14
2MFD 130 559 S14	13	52	55.9	100	14
2MFD 131 563 S14	13.1	52.4	56.3	100	14
2MFD 132 568 S14	13.2	52.8	56.8	100	14
2MFD 133 572 S14	13.3	53.2	57.2	100	14
2MFD 134 576 S14	13.4	53.6	57.6	100	14
2MFD 135 581 S14	13.5	54	58.1	100	14
2MFD 136 585 S14	13.6	54.4	58.5	100	14
2MFD 137 589 S14	13.7	54.8	58.9	100	14
2MFD 138 593 S14	13.8	55.2	59.3	100	14
2MFD 139 598 S14	13.9	55.6	59.8	100	14
2MFD 140 602 S14	14	56	60.2	100	14
2MFD 141 606 S16	14.1	56.4	60.6	105	16
2MFD 142 611 S16	14.2	56.8	61.1	105	16
2MFD 143 615 S16	14.3	57.2	61.5	105	16
2MFD 144 619 S16	14.4	57.6	61.9	105	16
2MFD 145 624 S16	14.5	58	62.4	105	16
2MFD 146 628 S16	14.6	58.4	62.8	105	16
2MFD 147 632 S16	14.7	58.8	63.2	105	16
2MFD 148 636 S16	14.8	59.2	63.6	105	16
2MFD 149 641 S16	14.9	59.6	64.1	105	16
2MFD 150 645 S16	15	60	64.5	105	16
2MFD 151 649 S16	15.1	60.4	64.9	115	16
2MFD 152 654 S16	15.2	60.8	65.4	115	16
2MFD 153 658 S16	15.3	61.2	65.8	115	16
2MFD 154 662 S16	15.4	61.6	66.2	115	16
2MFD 155 667 S16	15.5	62	66.7	115	16
2MFD 156 671 S16	15.6	62.4	67.1	115	16
2MFD 157 675 S16	15.7	62.8	67.5	115	16
2MFD 158 679 S16	15.8	63.2	67.9	115	16
2MFD 159 684 S16	15.9	63.6	68.4	115	16
2MFD 160 688 S16	16	64	68.8	115	16

2MFD



単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFD 165 710 S18	16.5	66	71	125	18
2MFD 170 731 S18	17	68	73.1	125	18
2MFD 175 753 S18	17.5	70	75.3	125	18
2MFD 180 774 S18	18	72	77.4	125	18
2MFD 185 796 S20	18.5	74	79.6	135	20
2MFD 190 817 S20	19	76	81.7	135	20
2MFD 195 839 S20	19.5	78	83.9	145	20
2MFD 200 860 S20	20	80	86	145	20

2MFD

단위/Unit : mm

Material	SS/SC/FC ~200HB		SCM/NAK/HPM 20~30HRC		SKD 30~40HRC		Hardened steels 40~50HRC		FCD		SUS304		A7075		AC/ADC	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
Ø0.2	33,000	35	29,500	40	16,500	25	14,000	15	29,500	30	16,200	15	59,500	130	55,000	110
Ø0.3	31,500	55	25,000	40	15,500	30	12,500	15	26,500	35	15,300	15	59,000	200	52,500	120
Ø0.4	27,500	75	23,800	50	14,500	35	11,500	20	23,200	40	14,500	20	58,500	230	50,000	165
Ø0.5	25,800	85	22,000	60	13,200	40	11,000	25	21,500	45	13,200	20	58,300	280	48,500	190
Ø0.6	24,600	115	20,500	85	12,000	55	10,000	25	20,000	60	12,000	25	55,000	320	45,000	230
Ø0.7	22,500	135	19,500	115	11,000	70	9,000	30	18,500	90	11,500	30	51,000	400	41,000	280
Ø0.8	21,000	180	18,000	150	10,500	80	8,000	35	17,000	120	10,000	35	46,000	500	35,000	330
Ø0.9	20,500	240	16,800	190	9,500	95	7,500	35	16,000	145	9,850	40	43,000	630	31,500	380
Ø1	19,500	300	16,000	230	9,450	110	6,800	35	15,700	180	9,600	50	40,000	710	27,500	430
Ø2	12,000	340	10,000	290	5,800	150	4,100	60	10,000	230			24,500	750	18,000	510
Ø3	8,000	410	7,100	330	3,800	165	2,700	70	7,100	280			18,000	950	13,000	650
Ø4	6,100	425	5,200	380	2,700	170	2,100	80	5,250	300			13,000	1,000	10,000	680
Ø5	4,900	425	4,200	280	2,350	175	1,650	80	4,250	300			10,000	1,000	7,800	680
Ø6	4,150	425	3,550	330	1,800	175	1,350	80	3,550	300			8,600	1,000	6,500	680
Ø8	3,100	430	2,700	350	1,500	175	1,000	80	2,700	300			6,500	1,000	4,850	680
Ø10	2,600	430	2,200	360	1,100	175	850	80	2,000	300			5,200	1,000	3,850	680
Ø12	2,100	430	1,750	360	950	175	630	80	1,800	310			4,300	1,000	3,300	680
Ø18	1,600	430	1,400	360	750	175	520	80	1,350	310			3,300	1,000	2,550	680
Ø20	1,250	430	1,100	360	600	175	430	80	1,000	310			2,600	1,000	2,000	680

•Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.

K DRILL

2MFL

Tolerance

Carbide 2 Flutes, Multi-processing Flat Long Drill

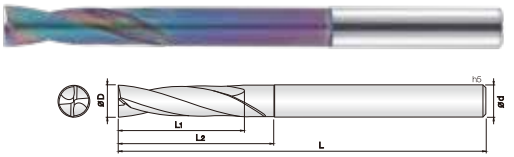
- Flat drill for material below HRC50, pre-hardened steel, alloy steel, cast iron and aluminum.
- With flat type of end face, excellent performance drilling is available to a variety of inclined and curved surfaces.
- Chip emission is great and stable drilling is available with 20 degree helix design.

超硬2刃フラットロングドリル

- HRC50以下、フリーハードン鋼、合金鋼、鋳鉄、アルミ加工用のフラットドリル。
- 下刃がフラットタイプで、様々な斜面と曲面のドリル加工に優れた性能を発揮します。
- 20°ヘリックス(helix)を採用し、チップ排出の性能に非常に優れています。

초경 2날 플랫 롱드릴

- HRC50이하, 프리하든강, 합금강, 주철, 알루미늄 가공용 플랫 드릴
- 밑날 플랫타입으로 다양한 경사면과 곡면 드릴 가공에 탁월한 성능을 발휘합니다.
- 20° 헬릭스(helix)를 채택하여 칩배출 성능이 매우 우수합니다.



単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFL 030 300 S06	3	12	30	100	6
2MFL 031 310 S06	3.1	12.4	31	100	6
2MFL 032 320 S06	3.2	12.8	32	100	6
2MFL 033 330 S06	3.3	13.2	33	100	6
2MFL 034 340 S06	3.4	13.6	34	100	6
2MFL 035 350 S06	3.5	14	35	100	6
2MFL 036 360 S06	3.6	14.4	36	100	6
2MFL 037 370 S06	3.7	14.8	37	100	6
2MFL 038 380 S06	3.8	15.2	38	100	6
2MFL 039 390 S06	3.9	15.6	39	100	6
2MFL 040 400 S06	4	16	40	100	6
2MFL 041 410 S06	4.1	16.4	41	100	6
2MFL 042 420 S06	4.2	16.8	42	100	6
2MFL 043 430 S06	4.3	17.2	43	100	6
2MFL 044 440 S06	4.4	17.6	44	100	6
2MFL 045 450 S06	4.5	18	45	100	6
2MFL 046 460 S06	4.6	18.4	46	100	6
2MFL 047 470 S06	4.7	18.8	47	100	6
2MFL 048 480 S06	4.8	19.2	48	100	6
2MFL 049 490 S06	4.9	19.6	49	100	6
2MFL 050 500 S06	5	20	50	100	6
2MFL 051 510 S06	5.1	20.4	51	110	6
2MFL 052 520 S06	5.2	20.8	52	110	6
2MFL 053 530 S06	5.3	21.2	53	110	6
2MFL 054 540 S06	5.4	21.6	54	110	6
2MFL 055 550 S06	5.5	22	55	110	6
2MFL 056 560 S06	5.6	22.4	56	110	6
2MFL 057 570 S06	5.7	22.8	57	110	6
2MFL 058 580 S06	5.8	23.2	58	110	6
2MFL 059 590 S06	5.9	23.6	59	110	6
2MFL 060 480 S06	6	24	48	110	6
2MFL 061 488 S08	6.1	24.4	48.8	120	8
2MFL 062 496 S08	6.2	24.8	49.6	120	8
2MFL 063 504 S08	6.3	25.2	50.4	120	8

单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFL 064 512 S08	6.4	25.6	51.2	120	8
2MFL 065 520 S08	6.5	26	52	120	8
2MFL 066 528 S08	6.6	26.4	52.8	120	8
2MFL 067 536 S08	6.7	26.8	53.6	120	8
2MFL 068 544 S08	6.8	27.2	54.4	120	8
2MFL 069 552 S08	6.9	27.6	55.2	120	8
2MFL 070 560 S08	7	28	56	120	8
2MFL 071 568 S08	7.1	28.4	56.8	120	8
2MFL 072 576 S08	7.2	28.8	57.6	120	8
2MFL 073 584 S08	7.3	29.2	58.4	120	8
2MFL 074 592 S08	7.4	29.6	59.2	120	8
2MFL 075 600 S08	7.5	30	60	120	8
2MFL 076 608 S08	7.6	30.4	60.8	120	8
2MFL 077 616 S08	7.7	30.8	61.6	120	8
2MFL 078 624 S08	7.8	31.2	62.4	120	8
2MFL 079 632 S08	7.9	31.6	63.2	120	8
2MFL 080 640 S08	8	32	64	120	8
2MFL 081 648 S10	8.1	32.4	64.8	130	10
2MFL 082 656 S10	8.2	32.8	65.6	130	10
2MFL 083 664 S10	8.3	33.2	66.4	130	10
2MFL 084 672 S10	8.4	33.6	67.2	130	10
2MFL 085 680 S10	8.5	34	68	130	10
2MFL 086 688 S10	8.6	34.4	68.8	130	10
2MFL 087 696 S10	8.7	34.8	69.6	130	10
2MFL 088 704 S10	8.8	35.2	70.4	130	10
2MFL 089 712 S10	8.9	35.6	71.2	130	10
2MFL 090 720 S10	9	36	72	130	10
2MFL 091 728 S10	9.1	36.4	72.8	130	10
2MFL 092 736 S10	9.2	36.8	73.6	130	10
2MFL 093 744 S10	9.3	37.2	74.4	130	10
2MFL 094 752 S10	9.4	37.6	75.2	130	10
2MFL 095 760 S10	9.5	38	76	130	10
2MFL 096 768 S10	9.6	38.4	76.8	130	10
2MFL 097 776 S10	9.7	38.8	77.6	130	10
2MFL 098 784 S10	9.8	39.2	78.4	130	10
2MFL 099 792 S10	9.9	39.6	79.2	130	10
2MFL 100 800 S10	10	40	80	130	10
2MFL 101 808 S12	10.1	40.4	80.8	150	12
2MFL 102 816 S12	10.2	40.8	81.6	150	12
2MFL 103 824 S12	10.3	41.2	82.4	150	12
2MFL 104 832 S12	10.4	41.6	83.2	150	12
2MFL 105 840 S12	10.5	42	84	150	12
2MFL 106 848 S12	10.6	42.4	84.8	150	12
2MFL 107 856 S12	10.7	42.8	85.6	150	12
2MFL 108 864 S12	10.8	43.2	86.4	150	12

单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2MFL 109 872 S12	10.9	43.6	87.2	150	12
2MFL 110 880 S12	11	44	88	150	12
2MFL 111 888 S12	11.1	44.4	88.8	150	12
2MFL 112 896 S12	11.2	44.8	89.6	150	12
2MFL 113 904 S12	11.3	45.2	90.4	150	12
2MFL 114 912 S12	11.4	45.6	91.2	150	12
2MFL 115 920 S12	11.5	46	92	150	12
2MFL 116 928 S12	11.6	46.4	92.8	150	12
2MFL 117 936 S12	11.7	46.8	93.6	150	12
2MFL 118 944 S12	11.8	47.2	94.4	150	12
2MFL 119 952 S12	11.9	47.6	95.2	150	12
2MFL 120 960 S12	12	48	96	150	12
2MFL 125 1000 S14	12.5	50	100	180	14
2MFL 130 1040 S14	13	52	104	180	14
2MFL 135 1080 S14	13.5	54	108	180	14
2MFL 140 1120 S14	14	56	112	180	14
2MFL 145 1160 S16	14.5	58	116	200	16
2MFL 150 1200 S16	15	60	120	200	16
2MFL 155 1240 S16	15.5	62	124	200	16
2MFL 160 1280 S16	16	64	128	200	16
2MFL 165 1320 S18	16.5	66	132	220	18
2MFL 170 1360 S18	17	68	136	220	18
2MFL 175 1400 S18	17.5	70	140	220	18
2MFL 180 1440 S18	18	72	144	220	18
2MFL 185 1480 S20	18.5	74	148	250	20
2MFL 190 1520 S20	19	76	152	250	20
2MFL 195 1560 S20	19.5	78	156	250	20
2MFL 200 1600 S20	20	80	160	250	20

2MFL

単位/Unit : mm

Material	SS/SC/FC ~200HB		SCM/NAK/HPM 20~30HRC		SKD 30~40HRC		Hardened steels 40~50HRC		FCD		A7075	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
Ø3	11,000	800	9,500	580	7,500	320	50,000	220	9,300	400	13,000	1,000
Ø4	8,000	800	7,200	580	5,600	320	4,100	220	7,300	400	10,000	1,000
Ø5	6,500	800	5,550	580	4,500	320	3,300	220	6,000	400	7,800	1,000
Ø6	5,500	810	4,800	590	3,550	320	2,700	220	5,000	400	6,600	1,000
Ø8	4,100	810	3,600	590	2,850	320	2,000	220	3,800	400	4,650	1,050
Ø10	3,300	810	3,000	590	2,350	320	1,650	220	3,000	410	3,900	1,050
Ø12	2,750	820	2,450	600	2,000	320	1,480	220	2,480	410	3,250	1,050
Ø16	2,100	820	1,800	600	1,550	330	1,000	220	1,850	410	2,450	1,100
Ø20	1,650	820	1,550	600	1,250	330	850	220	1,550	410	2,000	1,100

• Use the water soluble cutting oil. In case if you do not use water soluble cutting oil, reduce the RPM and the feed by 20%.

ELECTRO DEPOSITED DIAMOND EPD

- Endmills for Glass Ceramic
- ガラスセラミック加工用エンドミル
- 유리 세라믹용 엔드밀

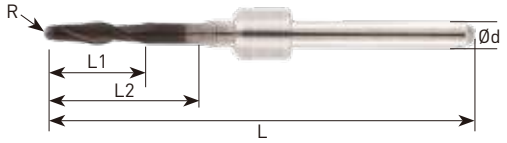


単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R X D	L1	L	d
EPD 006 060 340	0.3R X 0.6	6	40	3
EPD 006 060 350	0.3R X 0.6	6	50	3
EPD 006 060 440	0.3R X 0.6	6	40	4
EPD 006 060 450	0.3R X 0.6	6	50	4
EPD 006 060 640	0.3R X 0.6	6	40	6
EPD 006 060 650	0.3R X 0.6	6	50	6
EPD 010 100 340	0.5R X 1	10	40	3
EPD 010 100 350	0.5R X 1	10	50	3
EPD 010 100 440	0.5R X 1	10	40	4
EPD 010 100 450	0.5R X 1	10	50	4
EPD 010 100 640	0.5R X 1	10	40	6
EPD 010 100 650	0.5R X 1	10	50	6
EPD 015 080 450	0.75R X 1.5	8	50	4
EPD 015 120 450	0.75R X 1.5	12	50	4
EPD 015 120 650	0.75R X 1.5	12	50	6
EPD 020 120 340	1R X 2	12	40	3
EPD 020 120 350	1R X 2	12	50	3
EPD 020 120 440	1R X 2	12	40	4
EPD 020 120 450	1R X 2	12	50	4
EPD 020 120 640	1R X 2	12	40	6
EPD 020 120 650	1R X 2	12	50	6
EPD 025 150 340	1.25R X 2.5	15	40	3
EPD 025 150 350	1.25R X 2.5	15	50	3
EPD 025 150 440	1.25R X 2.5	15	40	4
EPD 025 150 450	1.25R X 2.5	15	50	4
EPD 025 150 640	1.25R X 2.5	15	40	6
EPD 025 150 650	1.25R X 2.5	15	50	6

AMANN GIRRBACH 2&3AMD

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3 날 지르코니아용 엔드밀

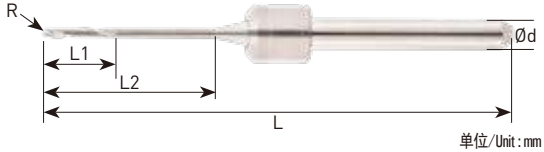


単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2AMD 006 070 347	R0.3 X 0.6	2	7	47	3
2AMD 006 140 347	R0.3 X 0.6	2	14	47	3
2AMD 010 160 347	R0.5 X 1	2	16	47	3
2AMD 010 170 347	R0.5 X 1	6	17	47	3
2AMD 025 185 347	R1.25 X 2.5	4	18.5	47	3
2AMD 025 170 347	R1.25 X 2.5	9	17	47	3
3AMD 010 170 347	R0.5 X 1	6	17	47	3
3AMD 025 170 347	R1.25 X 2.5	9	17	47	3

AMANN GIRRBACH 1&2AMN

- 1&2 Flutes Endmills for PEEK & PMMA & WAX
- 1&2 刃樹脂加工用エンドミル
- 1&2 날 PEEK & PMMA & WAX용 엔드밀



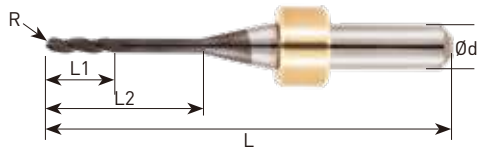
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1AMN 006 070 347	R0.3 X 0.6	2	7	47	3
1AMN 010 170 347	R0.5 X 1	6	17	47	3
1AMN 025 170 347	R1.25 X 2.5	9	17	47	3
2AMN 006 140 347	R0.3 X 0.6	2	14	47	3
2AMN 010 160 347	R0.5 X 1	2	16	47	3
2AMN 025 185 347	R1.25 X 2.5	4	18.5	47	3

IMES-ICORE

2&3IMD

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3날 지르코니아용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2IMD 006 082 348	R0.3 X 0.6	1.8	8.2	48	3
2IMD 006 070 348	R0.3 X 0.6	2	7	48	3
2IMD 006 070 653	R0.3 X 0.6	2	7	53	6
2IMD 0065 120 348	R0.325 X 0.65	2	12	48	3
2IMD 0065 120 653	R0.325 X 0.65	2	12	53	6
2IMD 010 160 348	R0.5 X 1	2	16	48	3
2IMD 010 160 653	R0.5 X 1	2	16	53	6
2IMD 010 120 348	R0.5 X 1	3	12	48	3
2IMD 020 200 348	R1 X 2	8	20	48	3
2IMD 020 200 653	R1 X 2	8	20	53	6
2IMD 025 125 348	R1.25 X 2.5	7.5	12.5	48	3
2IMD 025 200 348	R1.25 X 2.5	9	20	48	3
2IMD 025 200 653	R1.25 X 2.5	9	20	53	6
3IMD 010 160 348	R0.5 X 1	2	16	48	3
3IMD 010 160 653	R0.5 X 1	2	16	53	6
3IMD 020 200 348	R1 X 2	8	20	48	3
3IMD 020 200 653	R1 X 2	8	20	53	6
3IMD 025 200 348	R1.25 X 2.5	9	20	48	3
3IMD 025 200 653	R1.25 X 2.5	9	20	53	6

Applicable machine: Shank3 - Coritec one, 140i, 245i, 245i dry, 250i, 250i dry
Shank6 - Coritec 250i, 350i Loader, 650i,650i Loader

IMES-ICORE 2IMB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2IMB 008 080 650	R0.4 X 0.8	3.5	8	50	6
2IMB 010 080 339	R0.5 X 1	3	8	39	3
2IMB 010 080 650	R0.5 X 1	3	8	50	6
2IMB 010 100 650	R0.5 X 1	3	10	50	6
2IMB 010 120 348	R0.5 X 1	3	12	48	3
2IMB 015 120 650	R0.75 X 1.5	4	12	50	6
2IMB 025 125 348	R1.25 X 2.5	7.5	12.5	48	3

Applicable machine: Shank3 - Coritec one, 140i, 245i, 245i dry, 250i, 250i dry
Shank6 - Coritec 250i, 350i Loader, 650i,650i Loader

IMES-ICORE 1&2IMN

- 1&2 Flutes Endmills for PEEK & PMMA & WAX
- 1&2 刃樹脂加工用エンドミル
- 1&2날 PEEK & PMMA & WAX용 엔드밀



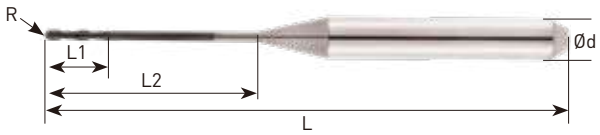
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1IMN 006 070 348	R0.3 X 0.6	2	7	48	3
1IMN 006 070 653	R0.3 X 0.6	2	7	53	6
1IMN 0065 120 348	R0.325 X 0.65	2	12	48	3
1IMN 0065 120 653	R0.325 X 0.65	2	12	53	6
1IMN 010 160 348	R0.5 X 1	2	16	48	3
1IMN 010 160 653	R0.5 X 1	2	16	53	6
1IMN 020 200 348	R1 X 2	8	20	48	3
1IMN 020 200 653	R1 X 2	8	20	53	6
1IMN 025 200 348	R1.25 X 2.5	9	20	48	3
1IMN 025 200 653	R1.25 X 2.5	9	20	53	6
2IMN 006 082 348	R0.3 X 0.6	1.8	8.2	48	3
2IMN 010 120 348	R0.5 X 1	3	12	48	3
2IMN 025 125 348	R1.25 X 2.5	7.5	12.5	48	3

Applicable machine: Shank3 - Coritec one, 140i, 245i, 245i dry, 250i, 250i dry
Shank6 - Coritec 250i, 350i Loader, 650i,650i Loader

ROLAND 2&3ROD

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3 날 지르코니아용 엔드밀



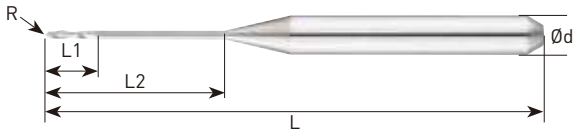
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ROD 006 060 450	R0.3 X 0.6	2	6	50	4
2ROD 006 082 450	R0.3 X 0.6	1.8	8.2	50	4
2ROD 006 140 450	R0.3 X 0.6	2	14	50	4
2ROD 010 120 450	R0.5 X 1	3	12	50	4
2ROD 010 160 348	R0.5 X 1	4	16	48	3
2ROD 010 160 450	R0.5 X 1	6	16	50	4
2ROD 010 200 450	R0.5 X 1	6	20	50	4
2ROD 020 140 450	R1 X 2	6	14	50	4
2ROD 020 200 348	R1 X 2	4.5	20	48	3
2ROD 020 200 450	R1 X 2	8	20	50	4
2ROD 025 220 348	R1.25 X 2.5	4.5	22	48	3
2ROD 030 200 450	R1.5 X 3	10	20	50	4
2ROD 030 250 348	R1.5 X 3	6	25	48	3
3ROD 010 160 450	R0.5 X 1	6	16	50	4
3ROD 010 200 450	R0.5 X 1	6	20	50	4
3ROD 020 200 450	R1 X 2	8	20	50	4
3ROD 030 200 450	R1.5 X 3	10	20	50	4

Appplicable machine: Roland DWX-4/50/51/52

ROLAND 1&2RON

- 1&2 Flutes Endmills for PEEK & PMMA & WAX
- 1&2 刃樹脂加工用エンドミル
- 1&2 날 PEEK&PMMA & WAX용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1RON 006 060 450	R0.3 X 0.6	2	6	50	4
1RON 006 140 450	R0.3 X 0.6	2	14	50	4
1RON 010 160 450	R0.5 X 1	6	16	50	4
1RON 010 200 450	R0.5 X 1	6	20	50	4
1RON 020 200 450	R1 X 2	8	20	50	4
1RON 030 200 450	R1.5 X 3	10	20	50	4
2RON 003 031 450	R0.15 X 0.3	0.9	3.1	50	4
2RON 006 060 450	R0.3 X 0.6	2	6	50	4
2RON 008 096 450	R0.4 X 0.8	2.4	9.6	50	4
2RON 010 120 450	R0.5 X 1	3	12	50	4
2RON 010 180 450	R0.5 X 1	4	18	50	4
2RON 020 140 450	R1 X 2	6	14	50	4
2RON 020 200 450	R1 X 2	5.5	20	50	4

Appplicable machine: Roland DWX-4/50/51/52

ROLAND 2ROB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2 刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



単位/Unit : mm

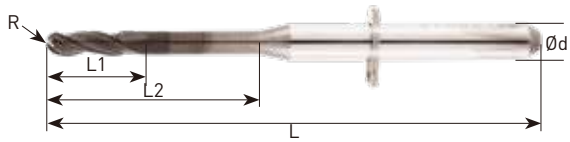
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ROB 006 060 450	R0.3 X 0.6	2	6	50	4
2ROB 010 120 450	R0.5 X 1	3	12	50	4
2ROB 020 140 450	R1 X 2	6	14	50	4

Appplicable machine: Roland DWX-4/50/51/52

VHF

2&3VHD

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3 날 지르코니아용 엔드밀



単位/Unit : mm

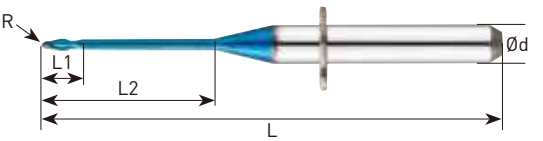
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2VHD 006 030 340	R0.3 X 0.6	1.2	3	40	3
2VHD 006 050 335	R0.3 X 0.6	1.2	5	35	3
2VHD 006 070 340	R0.3 X 0.6	2	7	40	3
2VHD 006 088 335	R0.3 X 0.6	1.2	8.8	35	3
2VHD 006 088 340	R0.3 X 0.6	1.2	8.8	40	3
2VHD 006 110 340	R0.3 X 0.6	2	11	40	3
2VHD 010 130 335	R0.5 X 1	2	13	35	3
2VHD 010 160 335	R0.5 X 1	2	16	35	3
2VHD 010 160 340	R0.5 X 1	2	16	40	3
2VHD 010 170 340	R0.5 X 1	5	17	40	3
2VHD 020 160 335	R1 X 2	4	16	35	3
2VHD 020 160 340	R1 X 2	4	16	40	3
2VHD 020 170 340	R1 X 2	8	17	40	3
3VHD 010 170 340	R0.5 X 1	5	17	40	3
3VHD 020 170 340	R1 X 2	8	17	40	3

Applicable machine: 35L - 4-axis, K3, K4 / 40L - K5, S1, S2

VHF

2VHB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2 刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



単位/Unit : mm

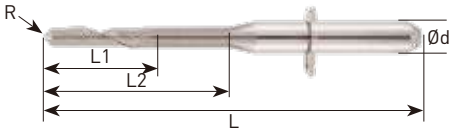
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2VHB 010 130 335	R0.5 X 1	2	13	35	3
2VHB 020 160 335	R1 X 2	4	16	35	3

Applicable machine: 35L - 4-axis, K3, K4 / 40L - K5, S1, S2

VHF

1&2&3VHN

- 1&2&3 Flutes Endmills for PEEK & PMMA & WAX
- 1&2&3 刃樹脂加工用エンドミル
- 1&2&3 날 PEEK & PMMA & WAX용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1VHN 006 070 335	R0.3 X 0.6	2	7	35	3
1VHN 006 110 335	R0.3 X 0.6	2	11	35	3
1VHN 010 160 335	R0.5 X 1	5	16	35	3
1VHN 020 170 335	R1 X 2	8	17	35	3
2VHN 006 030 335	R0.3 X 0.6	1.2	3	35	3
2VHN 006 030 340	R0.3 X 0.6	1.2	3	40	3
2VHN 006 070 335	R0.3 X 0.6	2	7	35	3
2VHN 006 088 335	R0.3 X 0.6	1.2	8.8	35	3
2VHN 006 088 340	R0.3 X 0.6	1.2	8.8	40	3
2VHN 006 110 335	R0.3 X 0.6	2	11	35	3
2VHN 010 130 335	R0.5 X 1	2	13	35	3
2VHN 010 160 335	R0.5 X 1	5	16	35	3
2VHN 010 160 340	R0.5 X 1	2	16	40	3
2VHN 020 160 335	R1 X 2	4	16	35	3
2VHN 020 160 340	R1 X 2	4	16	40	3
2VHN 020 170 335	R1 X 2	8	17	35	3
3VHN 010 160 335	R0.5 X 1	5	16	35	3
3VHN 020 170 335	R1 X 2	8	17	35	3

Applicable machine: 35L - 4-axis, K3, K4 / 40L - K5, S1, S2

WIELAND 2&3WID

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3 날 지르코니아용 엔드밀



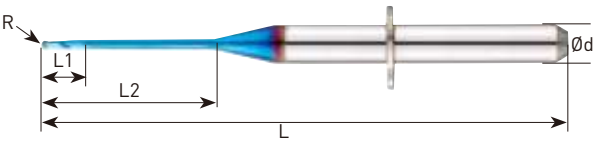
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2WID 006 070 340	R0.3 X 0.6	2	7	40	3
2WID 007 070 340	R0.35 X 0.7	2	7	40	3
2WID 007 086 335	R0.35 X 0.7	1.4	8.6	35	3
2WID 007 086 340	R0.35 X 0.7	1.4	8.6	40	3
2WID 010 130 335	R0.5 X 1	2	13	35	3
2WID 010 130 340	R0.5 X 1	2	13	40	3
2WID 010 170 340	R0.5 X 1	5	17	40	3
2WID 020 160 335	R1 X 2	4	16	35	3
2WID 020 160 340	R1 X 2	4	16	40	3
2WID 020 170 340	R1 X 2	8	17	40	3
2WID 025 150 335	R1.25 X 2.5	5	15	35	3
2WID 025 150 340	R1.25 X 2.5	5	15	40	3
2WID 025 200 340	R1.25 X 2.5	10	20	40	3
3WID 010 170 340	R0.5 X 1	5	17	40	3
3WID 020 170 340	R1 X 2	8	17	40	3
3WID 025 200 340	R1.25 X 2.5	10	20	40	3

Applicable machine: 35L - Wieland Zenotec Mini, 40L - Wieland Zenotec Select Hybrid

WIELAND 2WIB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2 刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



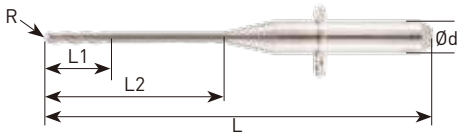
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2WIB 010 130 335	R0.5 X 1	2	13	35	3
2WIB 010 130 340	R0.5 X 1	2	13	40	3
2WIB 020 160 335	R1 X 2	4	16	35	3
2WIB 020 160 340	R1 X 2	4	16	40	3
2WIB 025 150 335	R1.25 X 2.5	5	15	35	3
2WIB 025 150 340	R1.25 X 2.5	5	15	40	3

Applicable machine: 35L - Wieland Zenotec Mini, 40L - Wieland Zenotec Select Hybrid

WIELAND 1&2&3WIN

- 1&2&3 Flutes Endmills for PEEK & PMMA & WAX
- 1&2&3 刃樹脂加工用エンドミル
- 1&2&3 날 PEEK & PMMA & WAX용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1WIN 006 070 335	R0.3 X 0.6	2	7	35	3
1WIN 006 070 340	R0.3 X 0.6	2	7	40	3
1WIN 007 070 335	R0.35 X 0.7	2	7	35	3
1WIN 007 070 340	R0.35 X 0.7	2	7	40	3
1WIN 010 160 335	R0.5 X 1	5	16	35	3
1WIN 010 170 340	R0.5 X 1	5	17	40	3
1WIN 020 170 335	R1 X 2	8	17	35	3
1WIN 020 170 340	R1 X 2	8	17	40	3
1WIN 025 200 335	R1.25 X 2.5	10	20	35	3
1WIN 025 200 340	R1.25 X 2.5	10	20	40	3
2WIN 003 034 335	R0.15 X 0.3	0.6	3.4	35	3
2WIN 003 034 340	R0.15 X 0.3	0.6	3.4	40	3
2WIN 006 070 335	R0.3 X 0.6	2	7	35	3
2WIN 007 070 335	R0.35 X 0.7	2	7	35	3
2WIN 007 086 335	R0.35 X 0.7	1.4	8.6	35	3
2WIN 007 086 340	R0.35 X 0.7	1.4	8.6	40	3
2WIN 010 130 335	R0.5 X 1	2	13	35	3
2WIN 010 130 340	R0.5 X 1	2	13	40	3
2WIN 010 160 335	R0.5 X 1	5	16	35	3
2WIN 020 160 335	R1 X 2	4	16	35	3
2WIN 020 160 340	R1 X 2	4	16	40	3
2WIN 020 170 335	R1 X 2	8	17	35	3
2WIN 025 150 335	R1.25 X 2.5	5	15	35	3
2WIN 025 150 340	R1.25 X 2.5	5	15	40	3
2WIN 025 200 335	R1.25 X 2.5	10	20	35	3
3WIN 010 160 335	R0.5 X 1	5	16	35	3
3WIN 020 170 335	R1 X 2	8	17	35	3
3WIN 025 200 335	R1.25 X 2.5	10	20	35	3

Applicable machine: 35L - Wieland Zenotec Mini, 40L - Wieland Zenotec Select Hybrid

ZIRKONZAHN

2&3ZID

- 2&3 Flutes Endmills for Zirconia
- 2&3 刃ジルコニア加工用エンドミル
- 2&3 날 지르코니아용 엔드밀



単位/Unit : mm

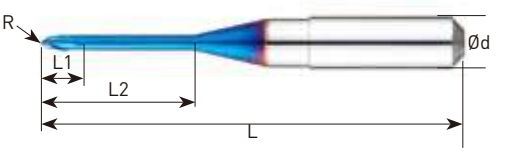
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ZID 005 050 357	R0.25 X 0.5	3	5	57	3
2ZID 005 050 650	R0.25 X 0.5	3	5	50	6
2ZID 010 120 650	R0.5 X 1	6	12	50	6
2ZID 010 160 357	R0.5 X 1	8	16	57	3
2ZID 020 180 357	R1 X 2	10	18	57	3
2ZID 020 180 650	R1 X 2	10	18	50	6
3ZID 010 120 650	R0.5 X 1	6	12	50	6
3ZID 010 160 357	R0.5 X 1	8	16	57	3
3ZID 020 180 357	R1 X 2	10	18	57	3
3ZID 020 180 650	R1 X 2	10	18	50	6

All items are step type of ZIRKONZAHN

ZIRKONZAHN

2ZIB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2 刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



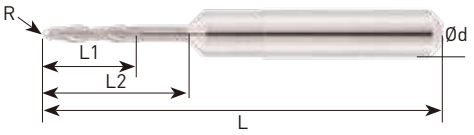
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ZIB 020 180 650	R1 X 2	3	18	50	6
2ZIB 030 180 650	R1.5 X 3	4	18	50	6

All items are step type of ZIRKONZAHN

ZIRKONZAHN 1&2&3ZIN

- 1&2&3 Flutes Endmills for PEEK & PMMA & WAX
- 1&2&3 刃樹脂加工用エンドミル
- 1&2&3 날 PEEK & PMMA & WAX용 엔드밀



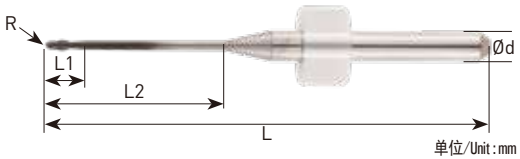
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1ZIN 005 050 357	R0.25 X 0.5	3	5	57	3
1ZIN 005 050 650	R0.25 X 0.5	3	5	50	6
1ZIN 010 120 650	R0.5 X 1	6	12	50	6
1ZIN 010 160 357	R0.5 X 1	8	16	57	3
1ZIN 020 180 357	R1 X 2	10	18	57	3
1ZIN 020 180 650	R1 X 2	10	18	50	6
2ZIN 005 050 357	R0.25 X 0.5	3	5	57	3
2ZIN 005 050 650	R0.25 X 0.5	3	5	50	6
2ZIN 010 120 650	R0.5 X 1	6	12	50	6
2ZIN 010 160 357	R0.5 X 1	8	16	57	3
2ZIN 020 180 357	R1 X 2	10	18	57	3
2ZIN 020 180 650	R1 X 2	10	18	50	6
3ZIN 010 120 650	R0.5 X 1	6	12	50	6
3ZIN 010 160 357	R0.5 X 1	8	16	57	3
3ZIN 020 180 357	R1 X 2	10	18	57	3
3ZIN 020 180 650	R1 X 2	10	18	50	6

All items are step type of ZIRKONZAHN

SIRONA 2SID

- 2 Flutes Endmills for Zirconia
- 2刃ジルコニア加工用エンドミル
- 2 날 지르코니아용 엔드밀



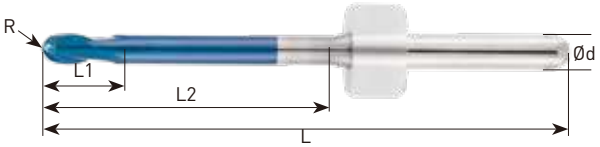
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2SID 005 040 342	R0.25 X 0.5	1	4	42	3
2SID 010 170 343	R0.5 X 1	3	17	43	3
2SID 025 200 344	R1.25 X 2.5	4	20	44	3

Applicable machine: MC X5

SIRONA 2SIB

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2刃コバルトクロム,チタン加工用エンドミル
- 2 날 코발트 크롬&티타늄용 엔드밀



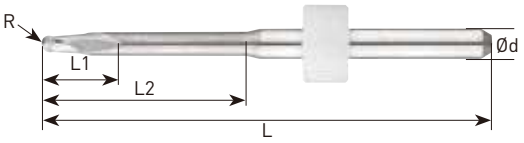
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2SIB 010 140 343	R0.5 X 1	3	14	43	3
2SIB 025 240 344	R1.25 X 2.5	4	24	44	3

Applicable machine: MC X5

SIRONA 2SIN

- 2 Flutes Endmills for PEEK & PMMA & WAX
- 2刃樹脂加工用エンドミル
- 2 날 PEEK & PMMA & WAX용 엔드밀



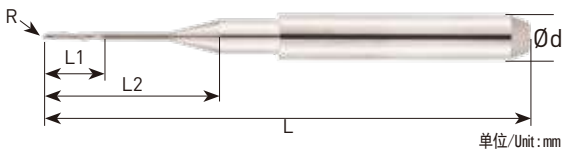
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2SIN 005 040 342	R0.25 X 0.5	1	4	42	3
2SIN 010 140 343	R0.5 X 1	3	14	43	3
2SIN 025 200 344	R1.25 X 2.5	4	20	44	3

Applicable machine: MC X5

ARUM 1ARD

- 1 Flutes Endmills for PEEK & PMMA & WAX
- 1刃樹脂加工用エンドミル
- 1날 PEEK & PMMA & WAX용 엔드밀

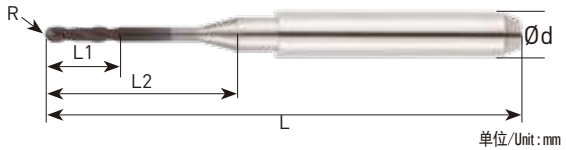


単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
1ARD 006 130 663	0.3R X 0.6	2	13	63	6
1ARD 010 160 663	0.5R X 1	6	16	63	6
1ARD 020 200 663	1R X 2	8	20	63	6

ARUM 2&3ARD

- 2&3 Flutes Endmills for Zirconia
- 2&3刃ジルコニア加工用エンドミル
- 2&3날 지르코니아용 엔드밀

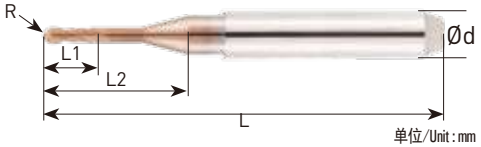


単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ARD 006 130 663	0.3R X 0.6	2	13	63	6
2ARD 010 160 663	0.5R X 1	6	16	63	6
2ARD 020 200 663	1R X 2	8	20	63	6
3ARD 010 160 663	0.5R X 1	6	16	63	6
3ARD 020 200 663	1R X 2	8	20	63	6

ARUM 2ART

- 2 Flutes Endmills for Cobalt Chrome & Titanium.
- 2刃コバルトクロム,チタン加工用エンドミル
- 2날 코발트 크롬&티타늄용 엔드밀



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
2ART 010 080 650	0.5R X 1	2	8	50	6
2ART 015 100 650	0.75R X 1.5	3	10	50	6
2ART 020 120 650	1R X 2	6	12	50	6
2ART 030 120 650	1.5R X 3	8	12	50	6

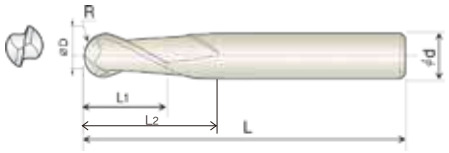
S HARD 2WCB

2Flutes Ball Endmill

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.





2刃ボールエンドミル

HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。

2날 볼 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이함.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능함.

Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	-0.005~-0.015

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	RxD	L1	L2	L	d
2WCB 002 003 S04	R0.1 X 0.2	0.3		40	4
2WCB 003 004 S04	R0.15 X 0.3	0.4		40	4
2WCB 004 004 S04	R0.2 X 0.4	0.4		40	4
2WCB 005 009 S04	R0.25 X 0.5	0.9		50	4
2WCB 006 012 S04	R0.3 X 0.6	1.2		50	4
2WCB 008 015 S06	R0.4 X 0.8	1.5		50	6
2WCB 010 020 S06	R0.5 X 1	2		50	6
2WCB 015 040 S06	R0.75 X 1.5	4		50	6
2WCB 020 050 S06	R1.0 X 2	5		60	6
2WCB 025 060 S06	R1.25 X 2.5	6		60	6
2WCB 030 080 S03	R1.5 X 3	8		60	3
2WCB 030 080 S06	R1.5 X 3	8		60	6
2WCB 035 080 S06	R1.75 X 3.5	8		60	6
2WCB 040 080 060	R2.0 X 4	8		60	4
2WCB 040 080 S06	R2.0 X 4	8		70	6
2WCB 050 100 S06	R2.5 X 5	10		80	6
2WCB 060 120 090	R3.0 X 6	12	22	90	6
2WCB 080 140 100	R4.0 X 8	14	24	100	8
2WCB 100 180 100	R5.0 X 10	18	30	100	10
2WCB 120 220 110	R6.0 X 12	22	32	110	12

2WCB/2WSB

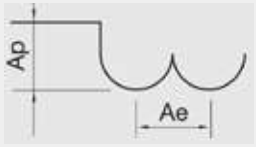
• RPM : rev./min • Feed : mm/min

Material	Copper				Hardened Steel/ Prehardened Steels NAK/ SKD			
Hardness					30~45HRc			
Radius	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth
R0.1	54000	430	0.012	0.008	54000	630	0.02	0.06
R0.15	54000	720	0.02	0.013	54000	750	0.03	0.09
R0.2	54000	870	0.028	0.016	54000	1000	0.04	0.12
R0.25	56000	1250	0.035	0.022	53000	1250	0.05	0.15
R0.3	58000	1510	0.042	0.026	52000	1380	0.06	0.18
R0.4	52000	1870	0.056	0.036	48000	1500	0.08	0.24
R0.5	41000	1660	0.063	0.04	45000	1560	0.1	0.3
R0.75	27000	1830	0.087	0.068	35000	1600	0.15	0.45
R1	20000	1780	0.112	0.089	30000	1850	0.2	0.6
R1.25	16000	1840	0.067	0.115	25500	1600	0.25	0.542
R1.5	13000	2220	0.197	0.171	25500	2520	0.3	0.957
R2	10000	2080	0.266	0.208	21000	2450	0.4	1.38
R2.5	8300	1990	0.215	0.24	18000	2560	0.5	1.66
R3	6900	1940	0.29	0.281	16000	2700	0.6	2.34
R4	5720	1000	0.4	0.175	12500	2300	0.8	3.1
R5	4550	700	0.5	0.154	10500	2200	1	3.75
R6	3770	600	0.6	0.159	9000	1850	1.2	4.42

Material	Hardened Steel SKD/SKT				Hardened Steel SKD/SKT			
Hardness	45HRC~55HRC				55HRC~65HRC			
Radius	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth
R0.1	44300	450	0.04	0.012	30000	300	0.023	0.008
R0.15	44300	600	0.024	0.072	32800	450	0.015	0.042
R0.2	44300	800	0.032	0.096	32800	600	0.02	0.056
R0.25	43500	1000	0.04	0.12	32200	750	0.025	0.07
R0.3	42650	1100	0.048	0.144	31500	825	0.03	0.086
R0.4	39500	1200	0.064	0.192	29250	900	0.04	0.112
R0.5	36900	1250	0.08	0.24	27300	940	0.05	0.14
R0.75	28700	1280	0.12	0.36	21500	960	0.075	0.21
R1	24600	1480	0.16	0.48	18250	1110	0.1	0.28
R1.25	21000	1280	0.2	0.43	15500	960	0.125	0.251
R1.5	21000	2050	0.24	0.766	15500	1530	0.15	0.447
R2	17300	1960	0.32	1.1	12800	1470	0.2	0.644
R2.5	14800	2050	0.4	1.33	11000	1530	0.25	0.77
R3	13000	2160	0.48	1.87	9600	1620	0.3	1.09
R4	10250	1840	0.64	2.48	7600	1380	0.4	1.446
R5	8650	1780	0.8	3	6400	1340	0.5	1.75
R6	7380	1480	0.96	3.54	5450	1110	0.6	2.06

Depth of Cut

- Ap : Axial Depth
- Ae : Radial Depth
- D : Outside Diameter
- n : Speed
- Vf : Feed



S HARD 2WSB

2Flutes Short Ball Endmill

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.



2刃ショートエンドミル

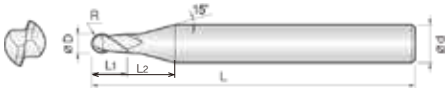
HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。

2날 짧은볼 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이합니다.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능합니다.



Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	-0.005~-0.015

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	RxD	L1	L2	L	d
2WSB 010 010 S06	R0.5 X 1.0	1	2.5	40	6
2WSB 015 015 S06	R0.75 X 1.5	1.5	3.8	40	6
2WSB 020 020 S06	R1.0 X 2.0	2	6	50	6
2WSB 025 025 S06	R1.25 X 2.5	2.5	6	50	6
2WSB 030 030 S06	R1.5 X 3.0	3	8	50	6
2WSB 040 050 S06	R2.0 X 4.0	5	10	50	6
2WSB 050 060 S06	R2.5 X 5.0	6	12	50	6
2WSB 060 070 060	R3.0 X 6.0	7	15	60	6
2WSB 080 100 060	R4..0 X 8.0	10	20	60	8
2WSB 100 120 070	R5.0 X 10.0	12	25	70	10
2WSB 120 140 080	R6.0 X 12.0	14	30	80	12

S HARD 2WCE

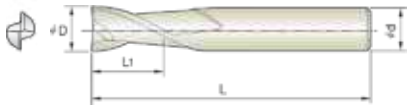
Sharp Edge

2Flutes Standard Endmill

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.





2刃標準長さエンドミル

HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。

2날 표준길이 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이합니다.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능합니다.

Size	D Tolerance
D < Ø6	+0~-0.01
Ø6~Ø12	-0.01~-0.025

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	L
2WCE 002 003 S04	0.2	0.3	40	4
2WCE 003 004 S04	0.3	0.4	40	4
2WCE 004 006 S04	0.4	0.6	40	4
2WCE 005 010 S04	0.5	1	45	4
2WCE 006 012 S04	0.6	1.2	45	4
2WCE 007 014 S04	0.7	1.4	45	4
2WCE 008 016 S04	0.8	1.6	45	4
2WCE 009 020 S04	0.9	2	45	4
2WCE 010 030 S06	1.0	3	45	6
2WCE 012 040 S06	1.2	4	45	6
2WCE 015 040 S06	1.5	4	45	6
2WCE 020 060 S06	2.0	6	45	6
2WCE 025 080 S06	2.5	8	50	6
2WCE 030 100 S06	3.0	10	50	6
2WCE 035 100 S06	3.5	10	50	6
2WCE 040 100 055	4.0	10	55	4
2WCE 040 120 S06	4.0	12	55	6
2WCE 045 150 S06	4.5	15	55	6
2WCE 050 150 S06	5.0	15	55	6
2WCE 060 150 055	6.0	15	55	6
2WCE 070 200 S08	7.0	20	65	8
2WCE 080 200 065	8.0	20	65	8
2WCE 090 250 S10	9.0	25	70	10
2WCE 100 250 070	10.0	25	70	10
2WCE 120 300 080	12.0	30	80	12

2WCE

• RPM : rev./min • Feed : mm/min

Slotting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SKD61		SKD/SKD11	
Hardness	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.2mm	50000	130	45000	115	40000	95	33000	60	33000	45
0.3mm	50000	190	45000	140	40000	115	33000	70	25000	50
0.4mm	50000	235	45000	180	40000	140	33000	90	25000	55
0.5mm	50000	370	45000	280	40000	220	33000	140	25000	85
0.6mm	50000	470	45000	360	40000	285	30000	160	25000	105
0.8mm	50000	600	40000	440	30000	295	25000	185	19000	110
0.9mm	49000	655	39000	520	27800	330	22700	205	17500	125
1mm	48000	750	38000	570	25500	360	20500	215	16000	135
2mm	33300	850	26000	680	17500	420	14500	260	11000	160
3mm	21800	850	17300	680	11500	420	9500	260	7500	160
4mm	16700	880	13200	700	8800	440	7200	270	5600	170
5mm	15700	1000	12500	805	8300	500	6400	285	5100	180
6mm	13100	950	10350	770	6900	480	5300	280	4200	180
8mm	9880	930	7800	720	5200	445	4000	255	3200	165
10mm	7800	850	6150	680	4100	415	3200	240	2550	155
12mm	6650	850	5250	680	3500	415	2650	240	2100	155
Depth of Cut										

Side cutting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SKD61		SKD/SKD11	
Hardness	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	50000	100	45000	100	40000	90	33000	50	33000	40
2mm	50000	130	45000	115	40000	95	33000	60	33000	45
3mm	50000	190	45000	140	40000	115	33000	70	25000	50
4mm	50000	235	45000	180	40000	140	33000	90	25000	55
5mm	50000	370	45000	280	40000	220	33000	140	25000	85
6mm	50000	470	45000	360	40000	285	30000	160	25000	105
8mm	50000	600	40000	440	30000	295	25000	185	19000	110
10mm	49000	655	39000	520	27800	330	22700	205	17500	125
12mm	48000	750	38000	570	25500	360	20500	215	16000	135
Depth of Cut										

S HARD

4WCE

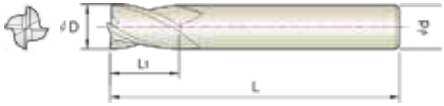
Sharp Edge

4Flutes Standard Endmill

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.





4刃標準長さエンドミル

HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。

4날 표준길이 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이합니다.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능합니다.

Size	D Tolerance
D < Ø6	+0~-0.01
Ø6~Ø12	-0.01~-0.025
Ø12~Ø16	-0.015~-0.03

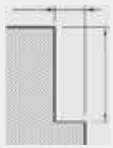
単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
4WCE 010 030 S04	1.0	3	45	4
4WCE 015 040 S04	1.5	4	45	4
4WCE 020 060 S06	2.0	6	45	6
4WCE 025 080 S06	2.5	8	50	6
4WCE 030 100 S06	3.0	10	50	6
4WCE 035 100 S06	3.5	10	50	6
4WCE 040 100 055	4.0	10	55	4
4WCE 040 120 S06	4.0	12	55	6
4WCE 045 150 S06	4.5	15	55	6
4WCE 050 150 S06	5.0	15	55	6
4WCE 060 150 055	6.0	15	55	6
4WCE 080 200 065	8.0	20	65	8
4WCE 100 250 070	10.0	25	70	10
4WCE 120 300 080	12	30	80	12
4WCE 140 450 S16	14	45	100	16
4WCE 160 450 100	16	45	100	16

4WCE

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/Heat Resistant Steels		Hardened Steels NAK/SKD	
Hardness	30HRc ~ 40HRc		40HRc ~ 50HRc	
Diameter	RPM	FEED	RPM	FEED
1mm	48000	1480	38000	1050
2mm	33300	1750	26000	1250
3mm	21800	1750	17300	1250
4mm	16700	1800	13200	1300
5mm	15700	2000	12500	1500
6mm	13100	1950	10350	1400
7mm	11000	1900	9000	1380
Depth of Cut	 0.03D 0.02D			

Material	Alloy Steels/Heat Resistant Steels		Hardened Steels NAK/SKD	
Hardness	30HRc ~ 40HRc		40HRc ~ 50HRc	
Diameter	RPM	FEED	RPM	FEED
8mm	9880	1880	7800	1350
9mm	7800	1750	6150	1260
10mm	6650	1750	5250	1260
11mm	5600	1680	4300	1150
12mm	5600	1680	4300	1150
14mm	4650	1600	3500	1050
16mm	4650	1600	3500	1050
Depth of Cut	 0.03D 0.02D			

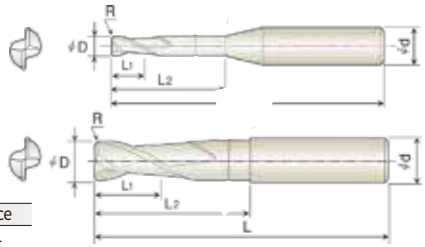
S HARD 2WCR

2Flutes Corner Radius Endmills

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.
- Various size of Corner Radius is applied for protection from chipping.





2刃コーナ半径エンドミル

HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。
- 微細チッピング防ぎのための様々なコーナーR適用

2날 코너레디우스 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이합니다.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능합니다.
- 내마모성 강화를 위해 다양한 사이즈의 코너레디우스를 적용 합니다.

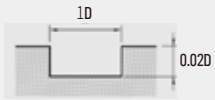
Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	-0.005~-0.015

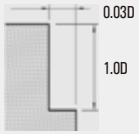
単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2WCR 010 001 S06	1 X R0.1	2.5	3	50	6
2WCR 010 002 S06	1 X R0.2	2.5	3	50	6
2WCR 010 003 S06	1 X R0.3	2.5	3	50	6
2WCR 015 001 S06	1.5 X R0.1	4.0	4.5	50	6
2WCR 015 002 S06	1.5 X R0.2	4.0	4.5	50	6
2WCR 015 003 S06	1.5 X R0.3	4.0	4.5	50	6
2WCR 020 002 S06	2 X R0.2	4.0	6	50	6
2WCR 020 003 S06	2 X R0.3	4.0	6	50	6
2WCR 020 005 S06	2 X R0.5	4.0	6	50	6
2WCR 025 002 S06	2.5 X R0.2	6.0	8	50	6
2WCR 025 003 S06	2.5 X R0.3	6.0	8	50	6
2WCR 025 005 S06	2.5 X R0.5	6.0	8	50	6
2WCR 030 002 S06	3 X R0.2	8.0	10	50	6
2WCR 030 003 S06	3 X R0.3	8.0	10	50	6
2WCR 030 005 S06	3 X R0.5	8.0	10	50	6
2WCR 040 002 S06	4 X R0.2	10.0	12	50	6
2WCR 040 003 S06	4 X R0.3	10.0	12	50	6
2WCR 040 005 S06	4 X R0.5	10.0	12	50	6
2WCR 040 010 S06	4 X R1.0	10.0	12	50	6
2WCR 050 002 S06	5 X R0.2	13.0	15	55	6
2WCR 050 003 S06	5 X R0.3	13.0	15	55	6
2WCR 050 005 S06	5 X R0.5	13.0	15	55	6
2WCR 050 010 S06	5 X R1.0	13.0	15	55	6
2WCR 060 002 055	6 X R0.2	13.0	15	55	6
2WCR 060 003 055	6 X R0.3	13.0	15	55	6
2WCR 060 005 055	6 X R0.5	13.0	15	55	6
2WCR 060 010 055	6 X R1.0	13.0	15	55	6
2WCR 080 002 065	8 X R0.2	16.0	20	65	8
2WCR 080 003 065	8 X R0.3	16.0	20	65	8
2WCR 080 005 065	8 X R0.5	16.0	20	65	8
2WCR 080 010 065	8 X R1.0	16.0	20	65	8
2WCR 080 015 065	8 X R1.5	16.0	20	65	8
2WCR 100 002 070	10 X R0.2	22.0	25	70	10
2WCR 100 003 070	10 X R0.3	22.0	25	70	10
2WCR 100 005 070	10 X R0.5	22.0	25	70	10
2WCR 100 010 070	10 X R1.0	22.0	25	70	10
2WCR 100 015 070	10 X R1.5	22.0	25	70	10
2WCR 100 020 070	10 X R2.0	22.0	25	70	10
2WCR 120 002 080	12 X R0.2	26.0	30	80	12
2WCR 120 003 080	12 X R0.3	26.0	30	80	12
2WCR 120 005 080	12 X R0.5	26.0	30	80	12
2WCR 120 010 080	12 X R1.0	26.0	30	80	12
2WCR 120 015 080	12 X R1.5	26.0	30	80	12
2WCR 120 020 080	12 X R2.0	26.0	30	80	12

2WCR

• RPM : rev./min • Feed : mm/min

Slotting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SKD61		SKD/SKD11	
Hardness			40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	48000	600	38000	456	25500	288	20500	172	16000	108
2mm	33300	680	26000	544	17500	336	14500	208	11000	128
3mm	21800	680	17300	544	11500	336	9500	208	7500	128
4mm	16700	704	13200	560	8800	352	7200	216	5600	136
5mm	15700	800	12500	644	8300	400	6400	228	5100	144
6mm	13100	760	10350	646	6900	384	5300	224	4200	144
8mm	9880	744	7800	576	5200	356	4000	204	3200	132
10mm	7800	680	6150	544	4100	332	3200	192	2550	124
12mm	6650	680	5250	544	3500	332	2650	192	2100	124
Depth of Cut	 									

Side Cutting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SKD61		SKD/SKD11	
Hardness			40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	48000	840	38000	656	25500	408	20500	248	16000	152
2mm	33300	960	26000	776	17500	480	14500	296	11000	184
3mm	21800	960	17300	776	11500	480	9500	296	7500	184
4mm	16700	1000	13200	800	8800	500	7200	308	5600	192
5mm	15700	1160	12500	920	8300	568	6400	328	5100	208
6mm	13100	1080	10350	880	6900	552	5300	320	4200	204
8mm	9880	1056	7800	824	5200	508	4000	292	3200	188
10mm	7800	960	6150	776	4100	472	3200	272	2550	176
12mm	6650	960	5250	776	3500	472	2650	272	2100	176
Depth of Cut										

S HARD

4WCR

4Flutes Corner Radius Endmills

Pre-hardened steels can be applied to medium to high hardness work pieces.(HRC40 ~ 62)

- Dividing and double flute make it easy to prevent shaking and chip ejection.
- Enables high performance milling in tough steels, low alloyed steels, high alloyed steels and hard to cut materials.
- Various size of Corner Radius is applied for protection from chipping.

4刃コーナ半径エンドミル

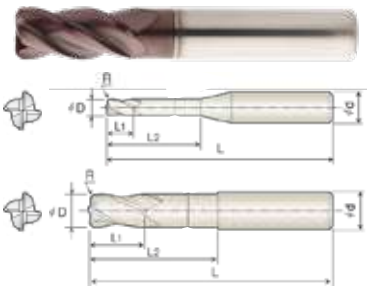
HRC40~62プレハードン鋼系の中硬度の被削材から高硬度の被削材まで加工可能

- 不等分割と二重フルート適用で、振動防ぎとチップ排出が容易である。
- 硬い鋼、低合金鋼、高合金鋼及び難削材の加工から高性能のミーリングが可能である。
- 微細チッピング防ぎのための様々なコーナーR適用

4날 코너레디우스 엔드밀

HRC40~62 프리하든강 계열의 중경도 피삭재에서 고경도 피삭재까지 적용 가능

- 부등분할과 이중플루트 적용으로 떨림방지와 칩배출이 용이합니다.
- 질긴 강, 저합금강, 고합금강 및 난삭재 가공에서 고성능 밀링이 가능합니다.
- 내마모성 강화를 위해 다양한 사이즈의 코너레디우스를 적용 합니다.



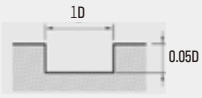
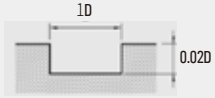
Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	-0.005~-0.015

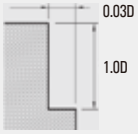
単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
4WCR 020 002 S06	2XR0.2	4.0	6	50	6
4WCR 020 003 S06	2XR0.3	4.0	6	50	6
4WCR 020 005 S06	2XR0.5	4.0	6	50	6
4WCR 030 002 S06	3XR0.2	8.0	12	50	6
4WCR 030 003 S06	3XR0.3	8.0	12	50	6
4WCR 030 005 S06	3XR0.5	8.0	12	50	6
4WCR 040 002 S06	4XR0.2	10.0	15	50	6
4WCR 040 003 S06	4XR0.3	10.0	15	50	6
4WCR 040 005 S06	4XR0.5	10.0	15	50	6
4WCR 040 010 S06	4XR1.0	10.0	15	50	6
4WCR 050 005 S06	5XR0.5	13.0	15	60	6
4WCR 050 010 S06	5XR1.0	13.0	15	60	6
4WCR 060 002 060	6XR0.2	13.0	18	60	6
4WCR 060 003 060	6XR0.3	13.0	18	60	6
4WCR 060 005 060	6XR0.5	13.0	18	60	6
4WCR 060 010 060	6XR1.0	13.0	18	60	6
4WCR 060 015 060	6XR1.5	13.0	18	60	6
4WCR 060 020 060	6XR2.0	13.0	18	60	6
4WCR 080 002 065	8XR0.2	19.0	24	65	8
4WCR 080 003 065	8XR0.3	19.0	24	65	8
4WCR 080 005 065	8XR0.5	19.0	24	65	8
4WCR 080 010 065	8XR1.0	19.0	24	65	8
4WCR 080 015 065	8XR1.5	19.0	24	65	8
4WCR 080 020 065	8XR2.0	19.0	24	65	8
4WCR 100 002 070	10XR0.2	22.0	30	70	10
4WCR 100 003 070	10XR0.3	22.0	30	70	10
4WCR 100 005 070	10XR0.5	22.0	30	70	10
4WCR 100 010 070	10XR1.0	22.0	30	70	10
4WCR 100 015 070	10XR1.5	22.0	30	70	10
4WCR 100 020 070	10XR2.0	22.0	30	70	10
4WCR 100 030 070	10XR3.0	22.0	30	70	10
4WCR 120 002 080	12XR0.2	26.0	36	80	12
4WCR 120 003 080	12XR0.3	26.0	36	80	12
4WCR 120 005 080	12XR0.5	26.0	36	80	12
4WCR 120 010 080	12XR1.0	26.0	36	80	12
4WCR 120 015 080	12XR1.5	26.0	36	80	12
4WCR 120 020 080	12XR2.0	26.0	36	80	12
4WCR 120 030 080	12XR3.0	26.0	36	80	12

4WCR

• RPM : rev./min • Feed : mm/min

Slotting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SDK61		SKD/SKD11	
Hardness			HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2mm	40000	820	31200	660	21000	410	17400	250	13200	160
3mm	26200	820	20800	660	13800	410	11400	250	9000	160
4mm	20100	850	15900	680	10600	430	8700	260	6800	170
5mm	18900	960	15000	780	10000	480	7700	280	6200	180
6mm	15800	920	12500	780	8300	470	6400	270	5100	180
8mm	11900	900	9400	700	6300	430	4800	250	3900	160
10mm	9400	820	7400	660	5000	400	3900	240	3100	150
12mm	8000	820	6300	660	4200	400	3200	240	2600	150
Depth of Cut	 									

Side Cutting										
Material	Alloy Steels/Heat Resistant Steels		Hardened Steels/ Prehardened steels				Hardened Steels			
			NAK/SKD		STAVX/SKD/SKT		SKD11/SDK61		SKD/SKD11	
Hardness			HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65	
Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2mm	40000	1150	31200	930	21000	580	17400	360	13200	220
3mm	26200	1150	20800	930	13800	580	11400	360	9000	220
4mm	20000	1200	15800	960	10600	600	8600	370	6700	230
5mm	18800	1390	15000	1180	10000	680	7700	390	6100	250
6mm	15700	1300	12400	1060	8300	660	6400	380	5000	240
8mm	11900	1270	9400	990	6200	610	4800	350	3800	230
10mm	9400	1150	7400	930	4900	570	3800	330	3100	210
12mm	8000	1150	6300	930	4200	570	3200	330	2500	210
Depth of Cut										

K CBN

2CRB



2 Flutes High Speed Rib Ball End Mills

- PCBN End Mill for precise finishing(±5㎛) of hardened steel(HRC50~72)
- Long tool life by high content PCBN.
- Excellent surface finish.

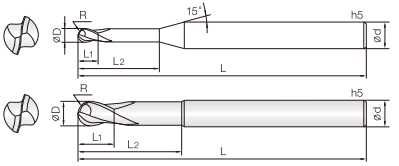


2刃CBN高速加工用のリブボールエンドミル

- 高硬度鋼 (HRC50～72) の高精度 (±5μm) 精密仕上げ加工用のエンドミル
- 高含量のPCBN素材を適用し、長時間の加工が可能です。
- 刃部線の粗度に優れ、鏡面の加工に適しています。

2날 CBN 고속가공용 리브 볼 엔드밀

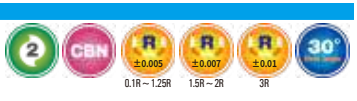
- 고경도강(HRC50~72)의 고정밀 (±5㎛) 정삭 가공용 엔드밀
- 고함량의 PCBN 소재를 적용하여 장시간 가공이 가능합니다.
- 날부인선의 조도가 뛰어나 경면 가공에 적합합니다.



Size	D Tolerance
Ø0.2~Ø6	+0~-0.01

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CRB 002 002 S04	0.1RX0.2	0.2		48	4
2CRB 002 004 S04	0.1RX0.2	0.4		48	4
2CRB 003 003 S04	0.15RX0.3	0.3		48	4
2CRB 003 005 S04	0.15RX0.3	0.5		48	4
2CRB 004 003 S04	0.2RX0.4	0.3		48	4
2CRB 004 010 S04	0.2RX0.4	0.3	1	48	4
2CRB 004 015 S04	0.2RX0.4	0.3	1.5	48	4
2CRB 004 020 S04	0.2RX0.4	0.3	2	48	4
2CRB 004 030 S04	0.2RX0.4	0.3	3	48	4
2CRB 004 040 S04	0.2RX0.4	0.3	4	48	4
2CRB 004 050 S04	0.2RX0.4	0.3	5	48	4
2CRB 004 060 S04	0.2RX0.4	0.3	6	48	4
2CRB 005 004 S04	0.25RX0.5	0.4		48	4
2CRB 005 010 S04	0.25RX0.5	0.4	1	48	4
2CRB 005 015 S04	0.25RX0.5	0.4	1.5	48	4
2CRB 005 020 S04	0.25RX0.5	0.4	2	48	4
2CRB 005 030 S04	0.25RX0.5	0.4	3	48	4
2CRB 005 040 S04	0.25RX0.5	0.4	4	48	4
2CRB 005 050 S04	0.25RX0.5	0.4	5	48	4
2CRB 005 060 S04	0.25RX0.5	0.4	6	48	4
2CRB 005 080 S04	0.25RX0.5	0.4	8	48	4
2CRB 006 005 S04	0.3RX0.6	0.5		48	4
2CRB 006 010 S04	0.3RX0.6	0.5	1	48	4
2CRB 006 015 S04	0.3RX0.6	0.5	1.5	48	4
2CRB 006 020 S04	0.3RX0.6	0.5	2	48	4
2CRB 006 030 S04	0.3RX0.6	0.5	3	48	4
2CRB 006 040 S04	0.3RX0.6	0.5	4	48	4
2CRB 006 050 S04	0.3RX0.6	0.5	5	48	4
2CRB 006 060 S04	0.3RX0.6	0.5	6	48	4
2CRB 006 080 S04	0.3RX0.6	0.5	8	48	4
2CRB 006 100 S04	0.3RX0.6	0.5	10	48	4
2CRB 007 005 S04	0.35RX0.7	0.5		48	4
2CRB 007 010 S04	0.35RX0.7	0.5	1	48	4
2CRB 007 020 S04	0.35RX0.7	0.5	2	48	4
2CRB 007 040 S04	0.35RX0.7	0.5	4	48	4
2CRB 008 006 S04	0.4RX0.8	0.6		48	4
2CRB 008 010 S04	0.4RX0.8	0.6	1	48	4
2CRB 008 020 S04	0.4RX0.8	0.6	2	48	4



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CRB 008 040 S04	0.4RX0.8	0.6	4	48	4
2CRB 008 060 S04	0.4RX0.8	0.6	6	48	4
2CRB 008 080 S04	0.4RX0.8	0.6	8	48	4
2CRB 008 100 S04	0.4RX0.8	0.6	10	48	4
2CRB 009 006 S04	0.45RX0.9	0.6		48	4
2CRB 009 010 S04	0.45RX0.9	0.6	1	48	4
2CRB 009 020 S04	0.45RX0.9	0.6	2	48	4
2CRB 009 040 S04	0.45RX0.9	0.6	4	48	4
2CRB 010 007 S04	0.5RX1	0.7		48	4
2CRB 010 015 S04	0.5RX1	0.7	1.5	48	4
2CRB 010 025 S04	0.5RX1	0.7	2.5	48	4
2CRB 010 040 S04	0.5RX1	0.7	4	48	4
2CRB 010 050 S04	0.5RX1	0.7	5	48	4
2CRB 010 060 S04	0.5RX1	0.7	6	48	4
2CRB 010 080 S04	0.5RX1	0.7	8	48	4
2CRB 010 100 S04	0.5RX1	0.7	10	48	4
2CRB 010 120 S04	0.5RX1	0.7	12	48	4
2CRB 010 160 S04	0.5RX1	0.7	16	48	4
2CRB 012 008 S04	0.6RX1.2	0.8		48	4
2CRB 012 020 S04	0.6RX1.2	0.8	2	48	4
2CRB 012 040 S04	0.6RX1.2	0.8	4	48	4
2CRB 012 060 S04	0.6RX1.2	0.8	6	48	4
2CRB 012 080 S04	0.6RX1.2	0.8	8	48	4
2CRB 012 100 S04	0.6RX1.2	0.8	10	48	4
2CRB 012 120 S04	0.6RX1.2	0.8	12	48	4
2CRB 012 160 S04	0.6RX1.2	0.8	16	48	4
2CRB 015 010 S04	0.75RX1.5	1		48	4
2CRB 015 020 S04	0.75RX1.5	1	2	48	4
2CRB 015 040 S04	0.75RX1.5	1	4	48	4
2CRB 015 060 S04	0.75RX1.5	1	6	48	4
2CRB 015 080 S04	0.75RX1.5	1	8	48	4
2CRB 015 100 S04	0.75RX1.5	1	10	48	4
2CRB 015 120 S04	0.75RX1.5	1	12	48	4
2CRB 015 140 S04	0.75RX1.5	1	14	48	4
2CRB 015 160 S04	0.75RX1.5	1	16	48	4
2CRB 015 180 S04	0.75RX1.5	1	18	48	4
2CRB 020 012 S04	1RX2	1.2		50	4
2CRB 020 030 S04	1RX2	1.2	3	50	4
2CRB 020 040 S04	1RX2	1.2	4	50	4
2CRB 020 060 S04	1RX2	1.2	6	50	4
2CRB 020 080 S04	1RX2	1.2	8	50	4
2CRB 020 100 S04	1RX2	1.2	10	50	4
2CRB 020 120 S04	1RX2	1.2	12	50	4
2CRB 020 140 S04	1RX2	1.2	14	50	4
2CRB 020 160 S04	1RX2	1.2	16	50	4
2CRB 020 180 S04	1RX2	1.2	18	50	4
2CRB 025 016 S06	1.25RX2.5	1.6		66	6
2CRB 025 030 S06	1.25RX2.5	1.6	3	66	6
2CRB 025 060 S06	1.25RX2.5	1.6	6	66	6
2CRB 025 100 S06	1.25RX2.5	1.6	10	66	6
2CRB 025 160 S06	1.25RX2.5	1.6	16	66	6
2CRB 025 200 S06	1.25RX2.5	1.6	20	66	6
2CRB 030 018 S06	1.5RX3	1.8		66	6
2CRB 030 030 S06	1.5RX3	1.8	3	66	6



단위/Unit : mm

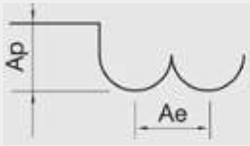
Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CRB 030 060 S06	1.5RX3	1.8	6	66	6
2CRB 030 080 S06	1.5RX3	1.8	8	66	6
2CRB 030 100 S06	1.5RX3	1.8	10	66	6
2CRB 030 120 S06	1.5RX3	1.8	12	66	6
2CRB 030 160 S06	1.5RX3	1.8	16	66	6
2CRB 030 200 S06	1.5RX3	1.8	20	66	6
2CRB 040 024 S06	2RX4	2.4		66	6
2CRB 040 040 S06	2RX4	2.4	4	66	6
2CRB 040 060 S06	2RX4	2.4	6	66	6
2CRB 040 080 S06	2RX4	2.4	8	66	6
2CRB 040 100 S06	2RX4	2.4	10	66	6
2CRB 040 120 S06	2RX4	2.4	12	66	6
2CRB 040 160 S06	2RX4	2.4	16	66	6
2CRB 040 200 S06	2RX4	2.4	20	66	6
2CRB 060 035 S06	3RX6	3.5		83	6
2CRB 060 100 S06	3RX6	3.5	10	83	6
2CRB 060 200 S06	3RX6	3.5	20	83	6

2CRB

• RPM : rev./min • Feed : mm/min

Material		Prehardened Steels/Hardened Steels/NAK/SKD61				Hardened Steels/STAVX/SKD61				Hardened Steels/SKD11/YXR7/SKH51			
Hardness		30~45HRC				45~55HRC				55~68HRC			
Radius	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R0.1	0.2	50,000	326	0.005	0.005	50,000	216	0.004	0.004	50,000	120	0.003	0.003
R0.1	0.5	50,000	308	0.004	0.004	50,000	198	0.003	0.003	50,000	110	0.002	0.003
R0.15	0.3	50,000	800	0.006	0.010	50,000	520	0.004	0.005	50,000	410	0.003	0.005
R0.15	0.5	50,000	720	0.006	0.010	50,000	450	0.003	0.005	50,000	390	0.003	0.005
R0.15	1	50,000	650	`	0.010	50,000	410	0.003	0.005	50,000	350	0.003	0.004
R0.2	0.3	50,000	1,120	0.010	0.010	50,000	750	0.005	0.006	50,000	650	0.005	0.005
R0.2	1	50,000	1,050	0.010	0.010	50,000	710	0.005	0.005	50,000	600	0.005	0.005
R0.2	3	50,000	540	0.005	0.005	50,000	360	0.003	0.003	50,000	310	0.002	0.003
R0.25	0.4	50,000	1,420	0.010	0.020	50,000	1,210	0.005	0.010	50,000	1,030	0.005	0.001
R0.25	1	50,000	1,290	0.010	0.015	50,000	1,100	0.005	0.010	50,000	980	0.005	0.010
R0.25	3	50,000	1,090	0.010	0.015	50,000	850	0.005	0.010	50,000	730	0.005	0.010
R0.3	0.5	50,000	2,300	0.020	0.020	50,000	1,890	0.015	0.015	50,000	1,520	0.010	0.010
R0.3	1	50,000	2,180	0.020	0.020	50,000	1,760	0.010	0.010	50,000	1,490	0.010	0.010
R0.3	3	40,000	1,300	0.015	0.020	40,000	1,060	0.010	0.010	40,000	870	0.010	0.010
R0.3	5	30,000	650	0.015	0.050	30,000	590	0.010	0.010	30,000	390	0.005	0.005
R0.4	0.6	50,000	2,600	0.020	0.030	50,000	1,980	0.020	0.020	50,000	1,720	0.010	0.020
R0.4	2	40,000	2,100	0.015	0.020	40,000	1,450	0.015	0.015	40,000	1,210	0.010	0.010
R0.4	4	30,000	1,540	0.015	0.015	30,000	940	0.010	0.015	30,000	840	0.010	0.010
R0.4	8	24,000	970	0.010	0.010	24,000	650	0.005	0.010	24,000	470	0.005	0.005
R0.5	1.5	40,000	2,560	0.030	0.040	40,000	1,980	0.020	0.030	40,000	1,590	0.020	0.020
R0.5	3	30,000	2,100	0.030	0.030	30,000	1,650	0.020	0.030	30,000	1,240	0.020	0.020
R0.5	5	30,000	1,700	0.030	0.030	30,000	1,360	0.015	0.020	30,000	1,080	0.010	0.015
R0.5	10	25,000	780	0.015	0.015	25,000	620	0.010	0.015	16,000	500	0.010	0.010
R0.75	2	40,000	2,300	0.040	0.040	40,000	1,920	0.030	0.030	40,000	1,530	0.020	0.030
R0.75	4	30,000	2,010	0.030	0.030	30,000	1,600	0.025	0.025	30,000	1,280	0.020	0.020
R0.75	8	30,000	1,700	0.030	0.030	30,000	1,360	0.020	0.030	30,000	1,080	0.010	0.010
R1	2	40,000	3,310	0.050	0.050	40,000	2,640	0.040	0.040	40,000	2,110	0.030	0.040
R1	6	40,000	3,020	0.030	0.040	40,000	2,410	0.030	0.030	40,000	1,930	0.020	0.030
R1	10	24,000	1,210	0.020	0.030	24,000	970	0.010	0.030	24,000	770	0.010	0.020
R1	14	16,000	920	0.010	0.020	16,000	780	0.010	0.010	16,000	630	0.010	0.010
R1.5	3	40,000	2,500	0.030	0.040	40,000	2,000	0.030	0.030	40,000	1,600	0.020	0.030
R1.5	6	32,000	2,100	0.030	0.030	32,000	1,680	0.020	0.030	32,000	1,340	0.020	0.030
R1.5	10	21,000	1,700	0.020	0.030	21,000	1,360	0.020	0.020	21,000	1,080	0.010	0.020
R1.5	16	16,000	1,100	0.020	0.030	16,000	880	0.010	0.020	16,000	700	0.010	0.010
R2	4	40,000	2,100	0.030	0.040	40,000	1,680	0.030	0.030	40,000	1,340	0.020	0.030
R2	10	21,000	1,620	0.020	0.030	21,000	1,290	0.020	0.020	21,000	1,030	0.010	0.020
R2	16	16,000	1,060	0.010	0.020	16,000	840	0.010	0.020	16,000	670	0.010	0.010
R3		16,000 ~ 50,000	960 ~ 8,000	0.050	0.060	13,000 ~ 50,000	780 ~ 6,000	0.050	0.060	11,000 ~ 50,000	540 ~ 4,000	0.050	0.060

Depth of Cut



- Ap : Axial Depth
- Ae : Radial Depth
- D : Outside Diameter
- n : Speed
- Vf : Feed

•In case machining Hardened steel HRC upper 68, reduce 20% of cutting parameter on the table.

K CBN 2CCR

2 Flutes High Speed Rib Corner Radius End Mills

- PCBN End Mill for precise finishing(±5) of hardened steel(HRC50~72)
- Long tool life by high content PCBN.
- Excellent surface finish.

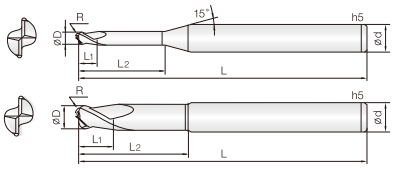


2刃CBN高速加工用のリブコーナーラディウスエンドミル

- 高硬度鋼 (HRC50~72) の高精度 (±5μm) 精密仕上げ加工用のエンドミル
- 高含量のPCBN素材を適用し、長時間の加工が可能です。
- 刃部線の粗度に優れ、鏡面の加工に適しています。

2날 CBN 고속가공용 리브 코너 레디우스 엔드밀

- 고경도강(HRC50~72)의 고정밀 (±5μm) 정삭 가공용 엔드밀
- 고함량의 PCBN 소재를 적용하여 장시간 가공이 가능합니다.
- 날부인선의 조도가 뛰어나 경면 가공에 적합합니다.



Size	D Tolerance
Ø0.2~Ø6	+0~-0.01

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CCR 002 0002 002	0.2XR0.02	0.2		48	4
2CCR 002 0002 004	0.2XR0.02	0.4		48	4
2CCR 002 0005 002	0.2XR0.05	0.2		48	4
2CCR 002 0005 004	0.2XR0.05	0.4		48	4
2CCR 003 0002 003	0.3XR0.02	0.3		48	4
2CCR 003 0002 005	0.3XR0.02	0.5		48	4
2CCR 003 0005 003	0.3XR0.05	0.3		48	4
2CCR 003 0005 005	0.3XR0.05	0.5		48	4
2CCR 004 0002 003	0.4XR0.02	0.3		48	4
2CCR 004 0002 015	0.4XR0.02	0.3	1.5	48	4
2CCR 004 0002 020	0.4XR0.02	0.3	2	48	4
2CCR 004 0005 003	0.4XR0.05	0.3		48	4
2CCR 004 0005 015	0.4XR0.05	0.3	1.5	48	4
2CCR 004 0005 020	0.4XR0.05	0.3	2	48	4
2CCR 004 001 003	0.4XR0.1	0.3		48	4
2CCR 004 001 015	0.4XR0.1	0.3	1.5	48	4
2CCR 004 001 020	0.4XR0.1	0.3	2	48	4
2CCR 005 0005 004	0.5XR0.05	0.4		48	4
2CCR 005 0005 015	0.5XR0.05	0.4	1.5	48	4
2CCR 005 0005 020	0.5XR0.05	0.4	2	48	4
2CCR 005 0005 030	0.5XR0.05	0.4	3	48	4
2CCR 005 0005 040	0.5XR0.05	0.4	4	48	4
2CCR 005 0005 050	0.5XR0.05	0.4	5	48	4
2CCR 005 001 004	0.5XR0.1	0.4		48	4
2CCR 005 001 015	0.5XR0.1	0.4	1.5	48	4
2CCR 005 001 020	0.5XR0.1	0.4	2	48	4
2CCR 005 001 030	0.5XR0.1	0.4	3	48	4
2CCR 005 001 040	0.5XR0.1	0.4	4	48	4
2CCR 005 001 050	0.5XR0.1	0.4	5	48	4
2CCR 006 0005 005	0.6XR0.05	0.5		48	4
2CCR 006 0005 020	0.6XR0.05	0.5	2	48	4
2CCR 006 0005 030	0.6XR0.05	0.5	3	48	4
2CCR 006 0005 040	0.6XR0.05	0.5	4	48	4
2CCR 006 0005 060	0.6XR0.05	0.5	6	48	4
2CCR 006 001 005	0.6XR0.1	0.5		48	4
2CCR 006 001 020	0.6XR0.1	0.5	2	48	4
2CCR 006 001 030	0.6XR0.1	0.5	3	48	4
2CCR 006 001 040	0.6XR0.1	0.5	4	48	4
2CCR 006 001 060	0.6XR0.1	0.5	6	48	4



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CCR 007 001 005	0.7XR0.1	0.5		48	4
2CCR 007 001 025	0.7XR0.1	0.5	2.5	48	4
2CCR 007 001 040	0.7XR0.1	0.5	4	48	4
2CCR 007 001 060	0.7XR0.1	0.5	6	48	4
2CCR 008 001 006	0.8XR0.1	0.6		48	4
2CCR 008 001 025	0.8XR0.1	0.6	2.5	48	4
2CCR 008 001 040	0.8XR0.1	0.6	4	48	4
2CCR 008 001 060	0.8XR0.1	0.6	6	48	4
2CCR 008 002 006	0.8XR0.2	0.6		48	4
2CCR 008 002 025	0.8XR0.2	0.6	2.5	48	4
2CCR 008 002 040	0.8XR0.2	0.6	4	48	4
2CCR 008 002 060	0.8XR0.2	0.6	6	48	4
2CCR 010 0002 007	1XR0.02	0.7		48	4
2CCR 010 0002 015	1XR0.02	0.7	1.5	48	4
2CCR 010 0002 025	1XR0.02	0.7	2.5	48	4
2CCR 010 0002 040	1XR0.02	0.7	4	48	4
2CCR 010 0002 060	1XR0.02	0.7	6	48	4
2CCR 010 0002 080	1XR0.02	0.7	8	48	4
2CCR 010 0002 100	1XR0.02	0.7	10	48	4
2CCR 010 0005 007	1XR0.05	0.7		48	4
2CCR 010 0005 015	1XR0.05	0.7	1.5	48	4
2CCR 010 0005 025	1XR0.05	0.7	2.5	48	4
2CCR 010 0005 040	1XR0.05	0.7	4	48	4
2CCR 010 0005 060	1XR0.05	0.7	6	48	4
2CCR 010 0005 080	1XR0.05	0.7	8	48	4
2CCR 010 0005 100	1XR0.05	0.7	10	48	4
2CCR 010 001 007	1XR0.1	0.7		48	4
2CCR 010 001 015	1XR0.1	0.7	1.5	48	4
2CCR 010 001 025	1XR0.1	0.7	2.5	48	4
2CCR 010 001 040	1XR0.1	0.7	4	48	4
2CCR 010 001 060	1XR0.1	0.7	6	48	4
2CCR 010 001 080	1XR0.1	0.7	8	48	4
2CCR 010 001 100	1XR0.1	0.7	10	48	4
2CCR 010 002 007	1XR0.2	0.7		48	4
2CCR 010 002 015	1XR0.2	0.7	1.5	48	4
2CCR 010 002 025	1XR0.2	0.7	2.5	48	4
2CCR 010 002 040	1XR0.2	0.7	4	48	4
2CCR 010 002 060	1XR0.2	0.7	6	48	4
2CCR 010 002 080	1XR0.2	0.7	8	48	4
2CCR 010 002 100	1XR0.2	0.7	10	48	4
2CCR 010 003 007	1XR0.3	0.7		48	4
2CCR 010 003 015	1XR0.3	0.7	1.5	48	4
2CCR 010 003 025	1XR0.3	0.7	2.5	48	4
2CCR 010 003 040	1XR0.3	0.7	4	48	4
2CCR 010 003 060	1XR0.3	0.7	6	48	4
2CCR 010 003 080	1XR0.3	0.7	8	48	4
2CCR 010 003 100	1XR0.3	0.7	10	48	4
2CCR 012 001 007	1.2XR0.1	0.7		48	4
2CCR 012 001 015	1.2XR0.1	0.7	1.5	48	4
2CCR 012 001 030	1.2XR0.1	0.7	3	48	4
2CCR 012 001 040	1.2XR0.1	0.7	4	48	4
2CCR 012 001 060	1.2XR0.1	0.7	6	48	4
2CCR 012 001 080	1.2XR0.1	0.7	8	48	4
2CCR 012 001 100	1.2XR0.1	0.7	10	48	4



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CCR 012 002 007	1.2XR0.2	0.7		48	4
2CCR 012 002 015	1.2XR0.2	0.7	1.5	48	4
2CCR 012 002 030	1.2XR0.2	0.7	3	48	4
2CCR 012 002 040	1.2XR0.2	0.7	4	48	4
2CCR 012 002 060	1.2XR0.2	0.7	6	48	4
2CCR 012 002 080	1.2XR0.2	0.7	8	48	4
2CCR 012 002 100	1.2XR0.2	0.7	10	48	4
2CCR 012 003 007	1.2XR0.3	0.7		48	4
2CCR 012 003 015	1.2XR0.3	0.7	1.5	48	4
2CCR 012 003 030	1.2XR0.3	0.7	3	48	4
2CCR 012 003 040	1.2XR0.3	0.7	4	48	4
2CCR 012 003 060	1.2XR0.3	0.7	6	48	4
2CCR 012 003 080	1.2XR0.3	0.7	8	48	4
2CCR 012 003 100	1.2XR0.3	0.7	10	48	4
2CCR 015 0002 008	1.5XR0.02	0.8		48	4
2CCR 015 0002 015	1.5XR0.02	0.8	1.5	48	4
2CCR 015 0002 030	1.5XR0.02	0.8	3	48	4
2CCR 015 0002 040	1.5XR0.02	0.8	4	48	4
2CCR 015 0002 060	1.5XR0.02	0.8	6	48	4
2CCR 015 0002 080	1.5XR0.02	0.8	8	48	4
2CCR 015 0002 100	1.5XR0.02	0.8	10	48	4
2CCR 015 0005 008	1.5XR0.05	0.8		48	4
2CCR 015 0005 015	1.5XR0.05	0.8	1.5	48	4
2CCR 015 0005 030	1.5XR0.05	0.8	3	48	4
2CCR 015 0005 040	1.5XR0.05	0.8	4	48	4
2CCR 015 0005 060	1.5XR0.05	0.8	6	48	4
2CCR 015 0005 080	1.5XR0.05	0.8	8	48	4
2CCR 015 0005 100	1.5XR0.05	0.8	10	48	4
2CCR 015 001 008	1.5XR0.1	0.8		48	4
2CCR 015 001 015	1.5XR0.1	0.8	1.5	48	4
2CCR 015 001 030	1.5XR0.1	0.8	3	48	4
2CCR 015 001 040	1.5XR0.1	0.8	4	48	4
2CCR 015 001 060	1.5XR0.1	0.8	6	48	4
2CCR 015 001 080	1.5XR0.1	0.8	8	48	4
2CCR 015 001 100	1.5XR0.1	0.8	10	48	4
2CCR 015 002 008	1.5XR0.2	0.8		48	4
2CCR 015 002 015	1.5XR0.2	0.8	1.5	48	4
2CCR 015 002 030	1.5XR0.2	0.8	3	48	4
2CCR 015 002 040	1.5XR0.2	0.8	4	48	4
2CCR 015 002 060	1.5XR0.2	0.8	6	48	4
2CCR 015 002 080	1.5XR0.2	0.8	8	48	4
2CCR 015 002 100	1.5XR0.2	0.8	10	48	4
2CCR 015 003 008	1.5XR0.3	0.8		48	4
2CCR 015 003 015	1.5XR0.3	0.8	1.5	48	4
2CCR 015 003 030	1.5XR0.3	0.8	3	48	4
2CCR 015 003 040	1.5XR0.3	0.8	4	48	4
2CCR 015 003 060	1.5XR0.3	0.8	6	48	4
2CCR 015 003 080	1.5XR0.3	0.8	8	48	4
2CCR 015 003 100	1.5XR0.3	0.8	10	48	4
2CCR 020 0002 009	2XR0.02	0.9		50	4
2CCR 020 0002 020	2XR0.02	0.9	2	50	4
2CCR 020 0002 030	2XR0.02	0.9	3	50	4
2CCR 020 0002 040	2XR0.02	0.9	4	50	4
2CCR 020 0002 060	2XR0.02	0.9	6	50	4



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CCR 020 0002 080	2XR0.02	0.9	8	50	4
2CCR 020 0002 100	2XR0.02	0.9	10	50	4
2CCR 020 0005 009	2XR0.05	0.9		50	4
2CCR 020 0005 020	2XR0.05	0.9	2	50	4
2CCR 020 0005 030	2XR0.05	0.9	3	50	4
2CCR 020 0005 060	2XR0.05	0.9	6	50	4
2CCR 020 0005 080	2XR0.05	0.9	8	50	4
2CCR 020 0005 100	2XR0.05	0.9	10	50	4
2CCR 020 001 009	2XR0.1	0.9		50	4
2CCR 020 001 020	2XR0.1	0.9	2	50	4
2CCR 020 001 030	2XR0.1	0.9	3	50	4
2CCR 020 001 060	2XR0.1	0.9	6	50	4
2CCR 020 001 080	2XR0.1	0.9	8	50	4
2CCR 020 001 100	2XR0.1	0.9	10	50	4
2CCR 020 002 009	2XR0.2	0.9		50	4
2CCR 020 002 020	2XR0.2	0.9	2	50	4
2CCR 020 002 030	2XR0.2	0.9	3	50	4
2CCR 020 002 060	2XR0.2	0.9	6	50	4
2CCR 020 002 080	2XR0.2	0.9	8	50	4
2CCR 020 002 100	2XR0.2	0.9	10	50	4
2CCR 020 003 009	2XR0.3	0.9		50	4
2CCR 020 003 020	2XR0.3	0.9	2	50	4
2CCR 020 003 030	2XR0.3	0.9	3	50	4
2CCR 020 003 060	2XR0.3	0.9	6	50	4
2CCR 020 003 080	2XR0.3	0.9	8	50	4
2CCR 020 003 100	2XR0.3	0.9	10	50	4
2CCR 020 005 009	2XR0.5	0.9		50	4
2CCR 020 005 020	2XR0.5	0.9	2	50	4
2CCR 020 005 030	2XR0.5	0.9	3	50	4
2CCR 020 005 060	2XR0.5	0.9	6	50	4
2CCR 020 005 080	2XR0.5	0.9	8	50	4
2CCR 020 005 100	2XR0.5	0.9	10	50	4
2CCR 025 001 012	2.5XR0.1	1.2		66	6
2CCR 025 001 030	2.5XR0.1	1.2	3	66	6
2CCR 025 001 060	2.5XR0.1	1.2	6	66	6
2CCR 025 001 100	2.5XR0.1	1.2	10	66	6
2CCR 025 002 012	2.5XR0.2	1.2		66	6
2CCR 025 002 030	2.5XR0.2	1.2	3	66	6
2CCR 025 002 060	2.5XR0.2	1.2	6	66	6
2CCR 025 002 100	2.5XR0.2	1.2	10	66	6
2CCR 025 003 012	2.5XR0.3	1.2		66	6
2CCR 025 003 030	2.5XR0.3	1.2	3	66	6
2CCR 025 003 060	2.5XR0.3	1.2	6	66	6
2CCR 025 003 100	2.5XR0.3	1.2	10	66	6
2CCR 030 001 012	3XR0.1	1.2		66	6
2CCR 030 001 030	3XR0.1	1.2	3	66	6
2CCR 030 001 060	3XR0.1	1.2	6	66	6
2CCR 030 001 100	3XR0.1	1.2	10	66	6
2CCR 030 001 160	3XR0.1	1.2	16	66	6
2CCR 030 001 200	3XR0.1	1.2	20	66	6
2CCR 030 002 012	3XR0.2	1.2		66	6
2CCR 030 002 030	3XR0.2	1.2	3	66	6
2CCR 030 002 060	3XR0.2	1.2	6	66	6
2CCR 030 002 100	3XR0.2	1.2	10	66	6

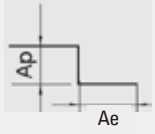


单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D X R	L1	L2	L	d
2CCR 030 002 160	3XR0.2	1.2	16	66	6
2CCR 030 002 200	3XR0.2	1.2	20	66	6
2CCR 030 003 012	3XR0.3	1.2		66	6
2CCR 030 003 030	3XR0.3	1.2	3	66	6
2CCR 030 003 060	3XR0.3	1.2	6	66	6
2CCR 030 003 100	3XR0.3	1.2	10	66	6
2CCR 030 003 160	3XR0.3	1.2	16	66	6
2CCR 030 003 200	3XR0.3	1.2	20	66	6
2CCR 030 005 012	3XR0.5	1.2		66	6
2CCR 030 005 030	3XR0.5	1.2	3	66	6
2CCR 030 005 060	3XR0.5	1.2	6	66	6
2CCR 030 005 100	3XR0.5	1.2	10	66	6
2CCR 030 005 160	3XR0.5	1.2	16	66	6
2CCR 030 005 200	3XR0.5	1.2	20	66	6
2CCR 030 010 012	3XR1	1.2		66	6
2CCR 030 010 030	3XR1	1.2	3	66	6
2CCR 030 010 060	3XR1	1.2	6	66	6
2CCR 030 010 100	3XR1	1.2	10	66	6
2CCR 030 010 160	3XR1	1.2	16	66	6
2CCR 030 010 200	3XR1	1.2	20	66	6
2CCR 040 001 015	4XR0.1	1.5		66	6
2CCR 040 001 030	4XR0.1	1.5	3	66	6
2CCR 040 001 060	4XR0.1	1.5	6	66	6
2CCR 040 001 100	4XR0.1	1.5	10	66	6
2CCR 040 001 160	4XR0.1	1.5	16	66	6
2CCR 040 002 015	4XR0.2	1.5		66	6
2CCR 040 002 030	4XR0.2	1.5	3	66	6
2CCR 040 002 060	4XR0.2	1.5	6	66	6
2CCR 040 002 100	4XR0.2	1.5	10	66	6
2CCR 040 002 160	4XR0.2	1.5	16	66	6
2CCR 040 003 015	4XR0.3	1.5		66	6
2CCR 040 003 030	4XR0.3	1.5	3	66	6
2CCR 040 003 060	4XR0.3	1.5	6	66	6
2CCR 040 003 100	4XR0.3	1.5	10	66	6
2CCR 040 003 160	4XR0.3	1.5	16	66	6
2CCR 040 005 015	4XR0.5	1.5		66	6
2CCR 040 005 030	4XR0.5	1.5	3	66	6
2CCR 040 005 060	4XR0.5	1.5	6	66	6
2CCR 040 005 100	4XR0.5	1.5	10	66	6
2CCR 040 005 160	4XR0.5	1.5	16	66	6
2CCR 040 010 015	4XR1	1.5		66	6
2CCR 040 010 030	4XR1	1.5	3	66	6
2CCR 040 010 060	4XR1	1.5	6	66	6
2CCR 040 010 100	4XR1	1.5	10	66	6
2CCR 040 010 160	4XR1	1.5	16	66	6
2CCR 060 003 030	6XR0.3	3		83	6
2CCR 060 003 150	6XR0.3	3	15	83	6
2CCR 060 005 030	6XR0.5	3		83	6
2CCR 060 005 150	6XR0.5	3	15	83	6
2CCR 060 010 030	6XR1	3		83	6
2CCR 060 010 150	6XR1	3	15	83	6

2CCR

• RPM : rev./min • Feed : mm/min

Material		Prehardened Steels/ Hardened Steels NAK/SKD61				Hardened Steels STAVX/SKD61				Hardened Steels SKD11/YXR7/SKH51			
Hardness		30~45HRC				45~55HRC				55~68HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø0.4	0.3	50,000	890	0.010	0.010	50,000	520	0.005	0.006	50,000	450	0.005	0.005
Ø0.4	1	50,000	730	0.010	0.010	50,000	500	0.005	0.005	50,000	430	0.005	0.005
Ø0.4	2	50,000	390	0.005	0.005	50,000	250	0.003	0.003	50,000	220	0.002	0.003
Ø0.5	0.4	50,000	990	0.010	0.020	50,000	850	0.005	0.010	50,000	770	0.005	0.010
Ø0.5	1	50,000	900	0.010	0.015	50,000	590	0.005	0.010	50,000	550	0.005	0.010
Ø0.5	3	50,000	630	0.010	0.015	50,000	560	0.005	0.010	50,000	530	0.005	0.010
Ø0.8	0.6	50,000	1,610	0.020	0.020	50,000	1,320	0.015	0.015	50,000	1,140	0.010	0.010
Ø0.8	2	50,000	1,520	0.020	0.020	50,000	1,230	0.010	0.010	50,000	1,120	0.010	0.010
Ø0.8	4	40,000	910	0.015	0.020	40,000	740	0.010	0.010	40,000	650	0.010	0.010
Ø0.8	6	30,000	460	0.015	0.050	30,000	410	0.010	0.010	30,000	290	0.005	0.005
Ø1	0.7	50,000	1,820	0.020	0.030	50,000	1,380	0.020	0.020	50,000	1,290	0.010	0.020
Ø1	2	40,000	1,470	0.015	0.200	40,000	1,010	0.015	0.015	40,000	910	0.010	0.010
Ø1	4	30,000	1,080	0.015	0.015	30,000	660	0.010	0.015	30,000	630	0.010	0.010
Ø1	8	24,000	680	0.010	0.010	24,000	460	0.005	0.010	24,000	360	0.005	0.005
Ø1.5	0.8	40,000	1,790	0.030	0.040	40,000	1,150	0.020	0.030	40,000	1,190	0.020	0.020
Ø1.5	2	30,000	1,470	0.030	0.030	30,000	1,160	0.020	0.030	30,000	930	0.020	0.020
Ø1.5	4	30,000	1,190	0.030	0.030	30,000	950	0.015	0.020	30,000	810	0.010	0.015
Ø1.5	8	24,000	550	0.015	0.015	24,000	430	0.010	0.015	24,000	370	0.010	0.010
Ø2	2	40,000	1,610	0.040	0.040	40,000	1,340	0.030	0.030	40,000	1,150	0.020	0.030
Ø2	4	30,000	1,400	0.030	0.030	30,000	1,120	0.025	0.025	30,000	960	0.020	0.020
Ø2	8	30,000	1,190	0.030	0.030	30,000	950	0.020	0.030	30,000	810	0.010	0.010
Ø2.5	1.2	40,000	2,317	0.050	0.050	40,000	1,850	0.040	0.040	40,000	1,580	0.030	0.040
Ø2.5	4	40,000	1,620	0.030	0.040	40,000	1,300	0.030	0.030	40,000	1,210	0.020	0.030
Ø2.5	10	24,000	850	0.020	0.030	24,000	680	0.010	0.030	24,000	280	0.010	0.020
Ø3	6	40,000	1,470	0.030	0.030	40,000	1,180	0.020	0.030	40,000	1,010	0.020	0.030
Ø3	10	21,000	1,190	0.020	0.030	21,000	950	0.020	0.020	21,000	810	0.010	0.020
Ø3	16	16,000	770	0.020	0.030	16,000	620	0.010	0.020	16,000	530	0.010	0.010
Ø4	6	40,000	1,510	0.030	0.040	40,000	1,180	0.030	0.030	40,000	1,100	0.020	0.030
Ø4	10	21,000	1,140	0.020	0.030	21,000	900	0.020	0.020	21,000	780	0.010	0.020
Ø4	16	16,000	740	0.010	0.020	16,000	590	0.010	0.020	16,000	500	0.010	0.010
Ø6		16,000 ~ 50,000	740 ~ 6,000	0.050	0.060	13,000 ~ 50,000	590 ~ 4,000	0.050	0.060	11,000 ~ 50,000	390 ~ 3,000	0.050	0.060
Depth of Cut		 • Ap : Axial Depth • Ae : Radial Depth											

• In case machining Hardened steel HRC upper 68, reduce 20% of cutting parameter on the table.
• In case of long effective length, reduce the RPM and feed by 30% or less.

B HARD 2BRB

2 Flutes Rib Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.

2刃 高硬度材 リブ加工用 ボール エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

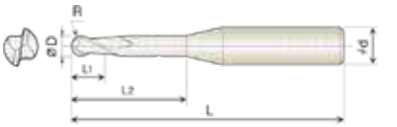
- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 고경도재 리브 볼 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.





Size	D Tolerance
D≦Ø5	+0~-0.01mm
Ø6~Ø12	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2BRB 001 002 S04	R0.05 X 0.1	0.1	0.2	45	4
2BRB 001 003 S04	R0.05 X 0.1	0.1	0.3	45	4
2BRB 001 005 S04	R0.05 X 0.1	0.1	0.5	45	4
2BRB 002 006 S04	R0.1 X 0.2	0.2	0.6	45	4
2BRB 002 010 S04	R0.1 X 0.2	0.2	1	45	4
2BRB 002 015 S04	R0.1 X 0.2	0.2	1.5	45	4
2BRB 003 010 S04	R0.15 X 0.3	0.3	1	45	4
2BRB 003 015 S04	R0.15 X 0.3	0.3	1.5	45	4
2BRB 003 020 S04	R0.15 X 0.3	0.3	2	45	4
2BRB 003 025 S04	R0.15 X 0.3	0.3	2.5	45	4
2BRB 003 030 S04	R0.15 X 0.3	0.3	3	45	4
2BRB 004 010 S04	R0.2 X 0.4	0.4	1	45	4
2BRB 004 015 S04	R0.2 X 0.4	0.4	1.5	45	4
2BRB 004 020 S04	R0.2 X 0.4	0.4	2	45	4
2BRB 004 025 S04	R0.2 X 0.4	0.4	2.5	45	4
2BRB 004 030 S04	R0.2 X 0.4	0.4	3	45	4
2BRB 004 040 S04	R0.2 X 0.4	0.4	4	45	4
2BRB 004 050 S04	R0.2 X 0.4	0.4	5	45	4
2BRB 005 010 S04	R0.25 X 0.5	0.5	1	45	4
2BRB 005 015 S04	R0.25 X 0.5	0.5	1.5	45	4
2BRB 005 020 S04	R0.25 X 0.5	0.5	2	45	4
2BRB 005 025 S04	R0.25 X 0.5	0.5	2.5	45	4
2BRB 005 030 S04	R0.25 X 0.5	0.5	3	45	4
2BRB 005 040 S04	R0.25 X 0.5	0.5	4	45	4
2BRB 005 050 S04	R0.25 X 0.5	0.5	5	45	4
2BRB 005 060 S04	R0.25 X 0.5	0.5	6	45	4
2BRB 005 080 S04	R0.25 X 0.5	0.5	8	45	4
2BRB 006 020 S04	R0.3 X 0.6	0.6	2	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2BRB 006 030 S04	R0.3 X 0.6	0.6	3	45	4
2BRB 006 040 S04	R0.3 X 0.6	0.6	4	45	4
2BRB 006 050 S04	R0.3 X 0.6	0.6	5	45	4
2BRB 006 060 S04	R0.3 X 0.6	0.6	6	45	4
2BRB 006 080 S04	R0.3 X 0.6	0.6	8	45	4
2BRB 006 100 S04	R0.3 X 0.6	0.6	10	45	4
2BRB 008 020 S04	R0.4 X 0.8	0.8	2	45	4
2BRB 008 030 S04	R0.4 X 0.8	0.8	3	45	4
2BRB 008 040 S04	R0.4 X 0.8	0.8	4	45	4
2BRB 008 050 S04	R0.4 X 0.8	0.8	5	45	4
2BRB 008 060 S04	R0.4 X 0.8	0.8	6	45	4
2BRB 008 080 S04	R0.4 X 0.8	0.8	8	45	4
2BRB 008 100 S04	R0.4 X 0.8	0.8	10	45	4
2BRB 008 120 S04	R0.4 X 0.8	0.8	12	45	4
2BRB 010 030 S04	R0.5 X 1	1	3	45	4
2BRB 010 040 S04	R0.5 X 1	1	4	45	4
2BRB 010 050 S04	R0.5 X 1	1	5	45	4
2BRB 010 060 S04	R0.5 X 1	1	6	45	4
2BRB 010 070 S04	R0.5 X 1	1	7	45	4
2BRB 010 080 S04	R0.5 X 1	1	8	45	4
2BRB 010 090 S04	R0.5 X 1	1	9	45	4
2BRB 010 100 S04	R0.5 X 1	1	10	45	4
2BRB 010 120 S04	R0.5 X 1	1	12	45	4
2BRB 010 140 S04	R0.5 X 1	1	14	50	4
2BRB 010 160 S04	R0.5 X 1	1	16	50	4
2BRB 010 180 S04	R0.5 X 1	1	18	50	4
2BRB 010 200 S04	R0.5 X 1	1	20	50	4
2BRB 012 040 S04	R0.6 X 1.2	1.2	4	45	4

B HARD

2BRB



单位/Unit : mm

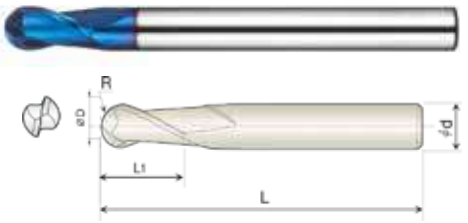
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2BRB 012 060 S04	R0.6 X 1.2	1.2	6	45	4
2BRB 012 080 S04	R0.6 X 1.2	1.2	8	45	4
2BRB 012 100 S04	R0.6 X 1.2	1.2	10	45	4
2BRB 012 120 S04	R0.6 X 1.2	1.2	12	45	4
2BRB 015 040 S04	R0.75 X 1.5	1.5	4	45	4
2BRB 015 060 S04	R0.75 X 1.5	1.5	6	45	4
2BRB 015 080 S04	R0.75 X 1.5	1.5	8	45	4
2BRB 015 100 S04	R0.75 X 1.5	1.5	10	45	4
2BRB 015 120 S04	R0.75 X 1.5	1.5	12	45	4
2BRB 015 140 S04	R0.75 X 1.5	1.5	14	50	4
2BRB 015 160 S04	R0.75 X 1.5	1.5	16	50	4
2BRB 015 180 S04	R0.75 X 1.5	1.5	18	50	4
2BRB 015 200 S04	R0.75 X 1.5	1.5	20	50	4
2BRB 020 060 S04	R1.0 X 2	2	6	45	4
2BRB 020 080 S04	R1.0 X 2	2	8	45	4
2BRB 020 100 S04	R1.0 X 2	2	10	45	4
2BRB 020 120 S04	R1.0 X 2	2	12	45	4
2BRB 020 140 S04	R1.0 X 2	2	14	50	4
2BRB 020 160 S04	R1.0 X 2	2	16	50	4
2BRB 020 180 S04	R1.0 X 2	2	18	50	4
2BRB 020 200 S04	R1.0 X 2	2	20	50	4
2BRB 020 250 S04	R1.0 X 2	2	25	60	4
2BRB 020 300 S04	R1.0 X 2	2	30	70	4
2BRB 025 080 S04	R1.25 X 2.5	2.5	8	45	4
2BRB 025 100 S04	R1.25 X 2.5	2.5	10	45	4
2BRB 025 120 S04	R1.25 X 2.5	2.5	12	45	4
2BRB 025 160 S04	R1.25 X 2.5	2.5	16	50	4
2BRB 025 200 S04	R1.25 X 2.5	2.5	20	50	4
2BRB 030 080 S06	R1.5 X 3	3	8	50	6
2BRB 030 100 S06	R1.5 X 3	3	10	50	6
2BRB 030 120 S06	R1.5 X 3	3	12	50	6
2BRB 030 140 S06	R1.5 X 3	3	14	60	6
2BRB 030 160 S06	R1.5 X 3	3	16	60	6
2BRB 030 180 S06	R1.5 X 3	3	18	60	6
2BRB 030 200 S06	R1.5 X 3	3	20	60	6
2BRB 030 250 S06	R1.5 X 3	3	25	65	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2BRB 030 300 S06	R1.5 X 3	3	30	70	6
2BRB 030 350 S06	R1.5 X 3	3	35	80	6
2BRB 040 100 S06	R2.0 X 4	4	10	50	6
2BRB 040 120 S06	R2.0 X 4	4	12	50	6
2BRB 040 160 S06	R2.0 X 4	4	16	60	6
2BRB 040 200 S06	R2.0 X 4	4	20	60	6
2BRB 040 250 S06	R2.0 X 4	4	25	65	6
2BRB 040 300 S06	R2.0 X 4	4	30	70	6
2BRB 040 350 S06	R2.0 X 4	4	35	80	6
2BRB 040 400 S06	R2.0 X 4	4	40	80	6
2BRB 050 120 S06	R2.5 X 5	5	12	50	6
2BRB 050 300 S06	R2.5 X 5	5	30	70	6
2BRB 060 150 S06	R3.0 X 6	7	15	60	6
2BRB 060 200 060	R3.0 X 6	6	20	60	6
2BRB 060 300 070	R3.0 X 6	6	30	70	6
2BRB 080 150 065	R4.0 X 8	8	15	65	8
2BRB 080 200 060	R4.0 X 8	8	20	60	8
2BRB 080 300 080	R4.0 X 8	8	30	80	8
2BRB 100 200 060	R5.0 X 10	10	20	60	10
2BRB 100 250 070	R5.0 X 10	10	25	70	10
2BRB 100 350 100	R5.0 X 10	10	35	100	10
2BRB 120 300 080	R6.0 X 12	12	30	80	12
2BRB 120 400 110	R6.0 X 12	12	40	110	12

B HARD

2BCB





2 Flutes Standard Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.

2刃 高硬度材標準長さボール エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 고경도재 표준 볼 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	+0~-0.015

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2BCB 001 002 S04	R0.05 X 0.1	0.2	45	4
2BCB 002 004 S04	R0.1 X 0.2	0.4	45	4
2BCB 003 006 S04	R0.15 X 0.3	0.6	45	4
2BCB 004 008 S04	R0.2 X 0.4	0.8	45	4
2BCB 005 010 S04	R0.25 X 0.5	1	45	4
2BCB 006 012 S04	R0.3 X 0.6	1.2	45	4
2BCB 007 015 S04	R0.35 X 0.7	1.5	45	4
2BCB 008 015 S04	R0.4 X 0.8	1.5	45	4
2BCB 010 020 S04	R0.5 X 1	2	50	4
2BCB 010 020 S06	R0.5 X 1	2	50	6
2BCB 012 025 S04	R0.6 X 1.2	2.5	50	4
2BCB 015 040 S04	R0.75 X 1.5	4	50	4
2BCB 015 040 S06	R0.75 X 1.5	4	50	6
2BCB 020 050 S04	R1.0 X 2	5	50	4
2BCB 020 050 S06	R1.0 X 2	5	60	6
2BCB 025 060 S06	R1.25 X 2.5	6	60	6
2BCB 030 080 S03	R1.5 X 3	8	60	3
2BCB 030 080 S04	R1.5 X 3	8	60	4
2BCB 030 080 S06	R1.5 X 3	8	80	6
2BCB 035 080 S06	R1.75 X 3.5	8	60	6
2BCB 040 080 S04	R2.0 X 4	8	80	4
2BCB 040 080 S06	R2.0 X 4	8	70	6
2BCB 045 100 S06	R2.25 X 4.5	10	70	6
2BCB 050 100 S06	R2.5 X 5	10	80	6
2BCB 055 120 S06	R2.75 X 5.5	12	80	6
2BCB 060 120 090	R3.0 X 6	12	90	6
2BCB 070 140 S08	R3.5 X 7	14	100	8
2BCB 080 140 100	R4.0 X 8	14	100	8
2BCB 090 180 S10	R4.5 X 9	18	100	10
2BCB 100 180 100	R5.0 X 10	18	100	10
2BCB 120 220 110	R6.0 X 12	22	110	12

B HARD

2&3BSB



2&3 Flutes Short Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

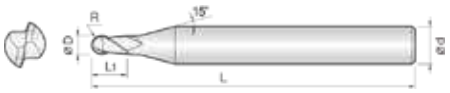
- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.



2&3刃 高硬度材短い長さ ボール エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.



2날 고경도재 짧은 볼 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2BSB 001 001 S04	R0.05 X 0.1	0.1	40	4
2BSB 002 002 S04	R0.1 X 0.2	0.2	40	4
2BSB 003 003 S04	R0.15 X 0.3	0.3	40	4
2BSB 004 004 S04	R0.2 X 0.4	0.4	40	4
2BSB 005 005 S04	R0.25 X 0.5	0.5	40	4
2BSB 006 006 S04	R0.3 X 0.6	0.6	40	4
2BSB 007 007 S04	R0.35 X 0.7	0.7	40	4
2BSB 008 008 S04	R0.4 X 0.8	0.8	40	4
2BSB 009 009 S04	R0.45 X 0.9	0.9	40	4
2BSB 010 015 S06	R0.5 X 1	1.5	40	6
2BSB 015 023 S06	R0.75 X 1.5	2.3	40	6
2BSB 020 030 S06	R1.0 X 2	3	45	6
2BSB 030 045 S06	R1.5 X 3	4.5	45	6
2BSB 040 060 S06	R2.0 X 4	6	45	6
2BSB 050 075 S06	R2.5 X 5	7.5	50	6
2BSB 060 080 060	R3.0 X 6	8	60	6
2BSB 080 110 060	R4.0 X 8	11	60	8
2BSB 100 130 060	R5.0 X 10	13	60	10
2BSB 120 150 060	R6.0 X 12	15	60	12
3BSB 010 015 S06	R0.5 X 1	1.5	40	6
3BSB 020 030 S06	R1.0 X 2	3	45	6
3BSB 030 045 S06	R1.5 X 3	4.5	45	6
3BSB 040 060 S06	R2.0 X 4	6	45	6
3BSB 050 075 S06	R2.5 X 5	7.5	50	6
3BSB 060 080 060	R3.0 X 6	8	60	6
3BSB 080 110 060	R4.0 X 8	11	60	8
3BSB 100 130 060	R5.0 X 10	13	60	10
3BSB 120 150 060	R6.0 X 12	15	60	12

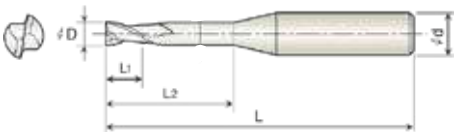
B HARD 2BRE

2 Flutes Square Rib Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.





2刃 高硬度材 リブ スクェア エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 고경도재 스퀘어 리브 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
Ø0.1~Ø0.5	+0~-0.005
Ø0.6~Ø0.9	+0~-0.01

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2BRE 001 003 S04	0.1	0.15	0.3	45	4
2BRE 001 005 S04	0.1	0.15	0.5	45	4
2BRE 002 005 S04	0.2	0.3	0.5	45	4
2BRE 002 010 S04	0.2	0.3	1	45	4
2BRE 003 005 S04	0.3	0.45	0.5	45	4
2BRE 003 010 S04	0.3	0.45	1	45	4
2BRE 003 015 S04	0.3	0.45	1.5	45	4
2BRE 003 020 S04	0.3	0.45	2	45	4
2BRE 003 025 S04	0.3	0.45	2.5	45	4
2BRE 003 030 S04	0.3	0.45	3	45	4
2BRE 004 010 S04	0.4	0.6	1	45	4
2BRE 004 015 S04	0.4	0.6	1.5	45	4
2BRE 004 020 S04	0.4	0.6	2	45	4
2BRE 004 025 S04	0.4	0.6	2.5	45	4
2BRE 004 030 S04	0.4	0.6	3	45	4
2BRE 004 035 S04	0.4	0.6	3.5	45	4
2BRE 004 040 S04	0.4	0.6	4	45	4
2BRE 005 010 S04	0.5	0.7	1	45	4
2BRE 005 020 S04	0.5	0.7	2	45	4
2BRE 005 030 S04	0.5	0.7	3	45	4
2BRE 005 040 S04	0.5	0.7	4	45	4
2BRE 005 050 S04	0.5	0.7	5	45	4
2BRE 005 060 S04	0.5	0.7	6	45	4
2BRE 005 080 S04	0.5	0.7	8	45	4
2BRE 006 020 S04	0.6	0.9	2	45	4
2BRE 006 030 S04	0.6	0.9	3	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2BRE 006 040 S04	0.6	0.9	4	45	4
2BRE 006 050 S04	0.6	0.9	5	45	4
2BRE 006 060 S04	0.6	0.9	6	45	4
2BRE 006 080 S04	0.6	0.9	8	45	4
2BRE 006 100 S04	0.6	0.9	10	45	4
2BRE 007 020 S04	0.7	1	2	45	4
2BRE 007 040 S04	0.7	1	4	45	4
2BRE 007 060 S04	0.7	1	6	45	4
2BRE 007 080 S04	0.7	1	8	45	4
2BRE 007 100 S04	0.7	1	10	45	4
2BRE 007 120 S04	0.7	1	12	45	4
2BRE 008 020 S04	0.8	1.2	2	45	4
2BRE 008 030 S04	0.8	1.2	3	45	4
2BRE 008 040 S04	0.8	1.2	4	45	4
2BRE 008 050 S04	0.8	1.2	5	45	4
2BRE 008 060 S04	0.8	1.2	6	45	4
2BRE 008 080 S04	0.8	1.2	8	45	4
2BRE 008 100 S04	0.8	1.2	10	45	4
2BRE 008 120 S04	0.8	1.2	12	45	4
2BRE 009 060 S04	0.9	1.3	6	45	4
2BRE 009 080 S04	0.9	1.3	8	45	4
2BRE 009 100 S04	0.9	1.3	10	45	4

4 Flutes Square Rib Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.

4刃 高硬度材 リブ スクェア エンドミル

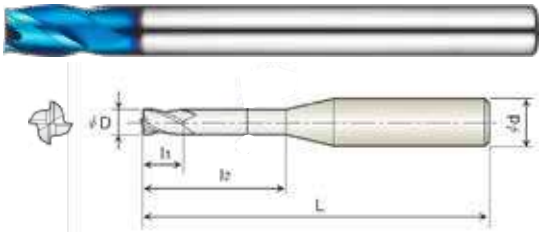
高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 고경도재 스퀘어 리브 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
Ø1~Ø5	+0~-0.01
Ø6~Ø12	+0~-0.015

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4BRE 010 030 S04	1	1.5	3	45	4
4BRE 010 040 S04	1	1.5	4	45	4
4BRE 010 060 S04	1	1.5	6	45	4
4BRE 010 080 S04	1	1.5	8	45	4
4BRE 010 100 S04	1	1.5	10	45	4
4BRE 015 040 S04	1.5	2.3	4	45	4
4BRE 015 060 S04	1.5	2.3	6	45	4
4BRE 015 080 S04	1.5	2.3	8	45	4
4BRE 015 100 S04	1.5	2.3	10	45	4
4BRE 015 120 S04	1.5	2.3	12	45	4
4BRE 015 160 S04	1.5	2.3	16	50	4
4BRE 020 060 S04	2	3	6	45	4
4BRE 020 080 S04	2	3	8	45	4
4BRE 020 100 S04	2	3	10	45	4
4BRE 020 120 S04	2	3	12	45	4
4BRE 020 160 S04	2	3	16	50	4
4BRE 020 200 S04	2	3	20	50	4
4BRE 030 080 S06	3	4.5	8	50	6
4BRE 030 100 S06	3	4.5	10	50	6
4BRE 030 120 S06	3	4.5	12	50	6
4BRE 030 160 S06	3	4.5	16	60	6
4BRE 030 200 S06	3	4.5	20	60	6
4BRE 040 100 S06	4	6	10	50	6
4BRE 040 120 S06	4	6	12	50	6
4BRE 040 160 S06	4	6	16	60	6
4BRE 040 200 S06	4	6	20	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4BRE 040 250 S06	4	6	25	65	6
4BRE 050 160 S06	5	8	16	60	6
4BRE 050 300 S06	5	8	30	70	6
4BRE 060 150 060	6	9	15	60	6
4BRE 060 200 060	6	9	20	60	6
4BRE 060 300 070	6	9	30	70	6
4BRE 080 200 065	8	12	20	65	8
4BRE 080 300 080	8	12	30	80	8
4BRE 080 400 100	8	12	40	100	8
4BRE 100 250 070	10	15	25	70	10
4BRE 100 350 100	10	15	35	100	10
4BRE 100 450 100	10	15	45	100	10
4BRE 120 300 080	12	18	30	80	12
4BRE 120 400 110	12	18	40	110	12
4BRE 120 500 110	12	18	50	110	12

B HARD 4BCR

4 Flutes Rib Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.

4刃 高硬度材 コーナー ラジウス エンドミル

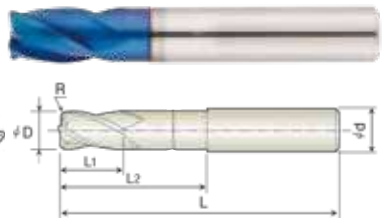
高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 고경도재 리브 코너레디우스 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
Ø1~Ø5	+0~-0.01
Ø6~Ø12	+0~-0.02

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
4BCR 008 0005 020	R0.05 X 0.8	1.2	2	45	4
4BCR 008 0005 040	R0.05 X 0.8	1.2	4	45	4
4BCR 008 0005 060	R0.05 X 0.8	1.2	6	45	4
4BCR 008 001 020	R0.1 X 0.8	1.2	2	45	4
4BCR 008 001 040	R0.1 X 0.8	1.2	4	45	4
4BCR 010 0005 040	R0.05 X 1	1.5	4	45	4
4BCR 010 0005 060	R0.05 X 1	1.5	6	45	4
4BCR 010 0005 080	R0.05 X 1	1.5	8	45	4
4BCR 010 0005 100	R0.05 X 1	1.5	10	45	4
4BCR 010 001 040	R0.1 X 1	1.5	4	45	4
4BCR 010 001 060	R0.1 X 1	1.5	6	45	4
4BCR 010 001 080	R0.1 X 1	1.5	8	45	4
4BCR 010 002 040	R0.2 X 1	1.5	4	45	4
4BCR 010 002 060	R0.2 X 1	1.5	6	45	4
4BCR 010 002 080	R0.2 X 1	1.5	8	45	4
4BCR 010 002 100	R0.2 X 1	1.5	10	45	4
4BCR 010 002 120	R0.2 X 1	1.5	12	45	4
4BCR 010 003 040	R0.3 X 1	1.5	4	45	4
4BCR 010 003 060	R0.3 X 1	1.5	6	45	4
4BCR 010 003 080	R0.3 X 1	1.5	8	45	4
4BCR 015 001 040	R0.1 X 1.5	2.3	4	45	4
4BCR 015 001 060	R0.1 X 1.5	2.3	6	45	4
4BCR 015 001 080	R0.1 X 1.5	2.3	8	45	4
4BCR 015 001 100	R0.1 X 1.5	2.3	10	45	4
4BCR 015 002 040	R0.2 X 1.5	2.3	4	45	4
4BCR 015 002 060	R0.2 X 1.5	2.3	6	45	4
4BCR 015 002 080	R0.2 X 1.5	2.3	8	45	4
4BCR 015 002 100	R0.2 X 1.5	2.3	10	45	4
4BCR 015 002 120	R0.2 X 1.5	2.3	12	45	4
4BCR 015 002 160	R0.2 X 1.5	2.3	16	50	4
4BCR 020 001 040	R0.1 X 2	3	4	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
4BCR 020 001 060	R0.1 X 2	3	6	45	4
4BCR 020 001 080	R0.1 X 2	3	8	45	4
4BCR 020 001 100	R0.1 X 2	3	10	45	4
4BCR 020 001 120	R0.1 X 2	3	12	45	4
4BCR 020 002 040	R0.2 X 2	3	4	45	4
4BCR 020 002 060	R0.2 X 2	3	6	45	4
4BCR 020 002 080	R0.2 X 2	3	8	45	4
4BCR 020 002 100	R0.2 X 2	3	10	45	4
4BCR 020 002 120	R0.2 X 2	3	12	45	4
4BCR 020 002 160	R0.2 X 2	3	16	50	4
4BCR 020 003 060	R0.3 X 2	3	6	45	4
4BCR 020 003 080	R0.3 X 2	3	8	45	4
4BCR 020 003 100	R0.3 X 2	3	10	45	4
4BCR 020 003 120	R0.3 X 2	3	12	45	4
4BCR 020 005 040	R0.5 X 2	3	4	45	4
4BCR 020 005 060	R0.5 X 2	3	6	45	4
4BCR 020 005 080	R0.5 X 2	3	8	45	4
4BCR 020 005 100	R0.5 X 2	3	10	45	4
4BCR 020 005 120	R0.5 X 2	3	12	45	4
4BCR 030 001 100	R0.1 X 3	4.5	10	50	4
4BCR 030 001 120	R0.1 X 3	4.5	12	50	6
4BCR 030 002 080	R0.2 X 3	4.5	8	50	6
4BCR 030 002 100	R0.2 X 3	4.5	10	50	3
4BCR 030 002 S04	R0.2 X 3	4.5	10	50	4
4BCR 030 002 S06	R0.2 X 3	4.5	10	50	6
4BCR 030 002 120	R0.2 X 3	4.5	12	50	6
4BCR 030 002 160	R0.2 X 3	4.5	16	60	6
4BCR 030 002 200	R0.2 X 3	4.5	20	60	6
4BCR 030 003 080	R0.3 X 3	4.5	8	50	6
4BCR 030 003 100	R0.3 X 3	4.5	10	50	3
4BCR 030 003 S04	R0.3 X 3	4.5	10	50	4

单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
4BCR 030 003 S06	R0.3 X 3	4.5	10	50	6
4BCR 030 003 120	R0.3 X 3	4.5	12	50	6
4BCR 030 003 160	R0.3 X 3	4.5	16	60	6
4BCR 030 003 200	R0.3 X 3	4.5	20	60	6
4BCR 030 005 080	R0.5 X 3	4.5	8	50	6
4BCR 030 005 100	R0.5 X 3	4.5	10	50	3
4BCR 030 005 S04	R0.5 X 3	4.5	10	50	4
4BCR 030 005 S06	R0.5 X 3	4.5	10	50	6
4BCR 030 005 120	R0.5 X 3	4.5	12	50	6
4BCR 030 005 160	R0.5 X 3	4.5	16	60	6
4BCR 030 005 200	R0.5 X 3	4.5	20	60	6
4BCR 030 010 080	R1.0 X 3	4.5	8	50	6
4BCR 030 010 100	R1.0 X 3	4.5	10	50	3
4BCR 030 010 S04	R1.0 X 3	4.5	10	50	4
4BCR 030 010 S06	R1.0 X 3	4.5	10	50	6
4BCR 030 010 120	R1.0 X 3	4.5	12	50	6
4BCR 030 010 160	R1.0 X 3	4.5	16	60	6
4BCR 030 010 200	R1.0 X 3	4.5	20	60	6
4BCR 040 001 120	R0.1 X 4	6	12	50	4
4BCR 040 002 100	R0.2 X 4	6	10	50	6
4BCR 040 002 120	R0.2 X 4	6	12	50	4
4BCR 040 002 S06	R0.2 X 4	6	12	50	6
4BCR 040 002 160	R0.2 X 4	6	16	60	6
4BCR 040 002 200	R0.2 X 4	6	20	60	6
4BCR 040 002 250	R0.2 X 4	6	25	65	6
4BCR 040 002 300	R0.2 X 4	6	30	70	6
4BCR 040 003 100	R0.3 X 4	6	10	50	6
4BCR 040 003 120	R0.3 X 4	6	12	50	4
4BCR 040 003 S06	R0.3 X 4	6	12	50	6
4BCR 040 003 160	R0.3 X 4	6	16	60	6
4BCR 040 003 200	R0.3 X 4	6	20	60	6
4BCR 040 005 100	R0.5 X 4	6	10	50	6
4BCR 040 005 120	R0.5 X 4	6	12	50	4
4BCR 040 005 S06	R0.5 X 4	6	12	50	6
4BCR 040 005 160	R0.5 X 4	6	16	50	4
4BCR 040 005 60L	R0.5 X 4	6	16	60	6
4BCR 040 005 100L	R0.5 X 4	6	16	100	4
4BCR 040 005 200	R0.5 X 4	6	20	60	6
4BCR 040 005 250	R0.5 X 4	6	25	65	6
4BCR 040 005 300	R0.5 X 4	6	30	70	6
4BCR 040 010 120	R1.0 X 4	6	12	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R X D	L1	L2	L	d
4BCR 050 005 180	R0.5 X 5	7.5	18	60	6
4BCR 060 001 200	R0.1 X 6	9	20	60	6
4BCR 060 002 200	R0.2 X 6	9	20	60	6
4BCR 060 002 75L	R0.2 X 6	9	20	75	6
4BCR 060 002 100L	R0.2 X 6	9	20	100	6
4BCR 060 003 200	R0.3 X 6	9	20	60	6
4BCR 060 003 75L	R0.3 X 6	9	20	75	6
4BCR 060 003 100L	R0.3 X 6	9	20	100	6
4BCR 060 005 200	R0.5 X 6	9	20	60	6
4BCR 060 005 75L	R0.5 X 6	9	20	75	6
4BCR 060 005 100L	R0.5 X 6	9	20	100	6
4BCR 060 010 200	R1.0 X 6	9	20	60	6
4BCR 060 010 75L	R1.0 X 6	9	20	75	6
4BCR 060 010 100L	R1.0 X 6	9	20	100	6
4BCR 080 001 240	R0.1 X 8	12	24	65	8
4BCR 080 002 240	R0.2 X 8	12	24	65	8
4BCR 080 002 75L	R0.2 X 8	12	24	75	8
4BCR 080 002 100L	R0.2 X 8	12	24	100	8
4BCR 080 003 240	R0.3 X 8	12	24	65	8
4BCR 080 003 75L	R0.3 X 8	12	24	75	8
4BCR 080 003 100L	R0.3 X 8	12	24	100	8
4BCR 080 005 240	R0.5 X 8	12	24	65	8
4BCR 080 005 75L	R0.5 X 8	12	24	75	8
4BCR 080 005 100L	R0.5 X 8	12	24	100	8
4BCR 080 010 240	R1.0 X 8	12	24	65	8
4BCR 080 010 75L	R1.0 X 8	12	24	75	8
4BCR 080 010 100L	R1.0 X 8	12	24	100	8
4BCR 100 002 300	R0.2 X 10	15	30	75	10
4BCR 100 002 100L	R0.2 X 10	15	30	100	10
4BCR 100 005 300	R0.5 X 10	15	30	75	10
4BCR 100 005 100L	R0.5 X 10	15	30	100	10
4BCR 100 010 300	R1.0 X 10	15	30	75	10
4BCR 100 010 100L	R1.0 X 10	15	30	100	10
4BCR 100 010 150L	R1.0 X 10	15	30	150	10
4BCR 120 005 300	R0.5 X 12	18	30	80	12
4BCR 120 005 110L	R0.5 X 12	18	30	110	12
4BCR 120 005 150L	R0.5 X 12	18	30	150	12
4BCR 120 010 300	R1.0 X 12	18	30	80	12
4BCR 120 010 110L	R1.0 X 12	18	30	110	12
4BCR 120 010 150L	R1.0 X 12	18	30	150	12

B HARD 4&6BNR

4&6 Flutes Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.

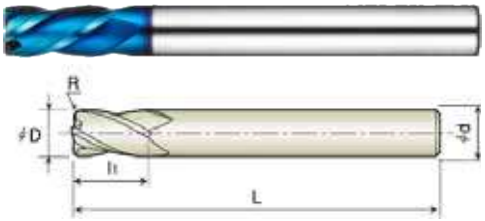
4&6刃 高硬度材 コーナー ラジウス エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4&6날 고경도재 코너레디우스 엔드밀

- 고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀
- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
Ø1~Ø5	+0~-0.01
Ø6~Ø12	+0~-0.02

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4BNR 010 001 S04	R0.1 X 1	2.5	45	4
4BNR 010 002 S04	R0.2 X 1	2.5	45	4
4BNR 010 003 S04	R0.3 X 1	2.5	45	4
4BNR 015 001 S04	R0.1 X 1.5	4	45	4
4BNR 015 002 S04	R0.2 X 1.5	4	45	4
4BNR 015 003 S04	R0.3 X 1.5	4	45	4
4BNR 015 005 S04	R0.5 X 1.5	4	45	4
4BNR 020 001 S04	R0.1 X 2	6	45	4
4BNR 020 002 S04	R0.2 X 2	6	45	4
4BNR 020 003 S04	R0.3 X 2	6	45	4
4BNR 020 005 S04	R0.5 X 2	6	45	4
4BNR 025 001 S04	R0.1 X 2.5	6	50	4
4BNR 025 002 S04	R0.2 X 2.5	6	50	4
4BNR 025 003 S04	R0.3 X 2.5	6	50	4
4BNR 025 005 S04	R0.5 X 2.5	6	50	4
4BNR 030 001 S06	R0.1 X 3	8	60	6
4BNR 030 002 S06	R0.2 X 3	8	60	6
4BNR 030 003 S06	R0.3 X 3	8	60	6
4BNR 030 005 S06	R0.5 X 3	8	60	6
4BNR 040 001 S06	R0.1 X 4	10	70	6
4BNR 040 002 S06	R0.2 X 4	10	70	6
4BNR 040 003 S06	R0.3 X 4	10	70	6
4BNR 040 005 S06	R0.5 X 4	10	70	6
4BNR 040 010 S06	R1.0 X 4	10	70	6
4BNR 050 001 S06	R0.1 X 5	13	75	6
4BNR 050 002 S06	R0.2 X 5	13	75	6
4BNR 050 003 S06	R0.3 X 5	13	75	6
4BNR 050 005 S06	R0.5 X 5	13	75	6

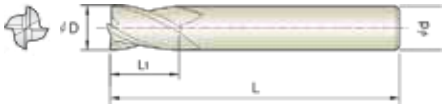
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4BNR 050 010 S06	R1.0 X 5	13	75	6
4BNR 060 001 090	R0.1 X 6	13	90	6
4BNR 060 002 090	R0.2 X 6	13	90	6
4BNR 060 003 090	R0.3 X 6	13	90	6
4BNR 060 005 090	R0.5 X 6	13	90	6
4BNR 060 010 090	R1.0 X 6	13	90	6
4BNR 080 001 100	R0.1 X 8	19	100	8
4BNR 080 002 100	R0.2 X 8	19	100	8
4BNR 080 003 100	R0.3 X 8	19	100	8
4BNR 080 005 100	R0.5 X 8	19	100	8
4BNR 080 010 100	R1.0 X 8	19	100	8
4BNR 080 020 100	R2.0 X 8	19	100	8
4BNR 100 002 100	R0.2 X 10	22	100	10
4BNR 100 003 100	R0.3 X 10	22	100	10
4BNR 100 005 100	R0.5 X 10	22	100	10
4BNR 100 010 100	R1.0 X 10	22	100	10
4BNR 100 020 100	R2.0 X 10	22	100	10
4BNR 120 002 110	R0.2 X 12	26	110	12
4BNR 120 003 110	R0.3 X 12	26	110	12
4BNR 120 005 110	R0.5 X 12	26	110	12
4BNR 120 010 110	R1.0 X 12	26	110	12
4BNR 120 020 110	R2.0 X 12	26	110	12
6BNR 030 005 S06	R0.5 X 3	8	50	6
6BNR 040 005 S06	R0.5 X 4	10	50	6
6BNR 060 005 S06	R0.5 X 6	13	50	6
6BNR 080 005 065	R0.5 X 8	19	65	8
6BNR 100 005 070	R0.5 X 10	22	70	10
6BNR 120 005 080	R0.5 X 12	26	80	12

4 Flutes Square Endmills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.





4刃 高硬度材 標準長さ エンドミル

高硬度鋼(HRC52~70), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 고경도재 스퀘어 엔드밀

고경도강(HRC52~70), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN-S 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
Ø1~Ø5	+0~-0.01
Ø6~Ø12	+0~-0.02

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4BCE 010 025 S04	1	2.5	45	4
4BCE 012 040 S04	1.2	4	45	4
4BCE 015 040 S04	1.5	4	45	4
4BCE 020 060 S04	2	6	45	4
4BCE 025 080 S04	2.5	8	45	4
4BCE 030 100 S04	3	10	50	4
4BCE 035 100 S06	3.5	10	50	6
4BCE 040 120 S04	4	12	50	4
4BCE 050 150 S06	5	15	50	6
4BCE 060 150 050	6	15	50	6
4BCE 070 200 S08	7	20	65	8
4BCE 080 200 065	8	20	65	8
4BCE 100 250 070	10	25	70	10
4BCE 120 300 080	12	30	80	12

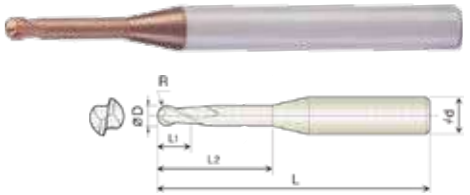
K HARD 2KRB



2 Flutes Rib Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.



2刃 高硬度材 リブ加工用 ボール エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 리브 볼 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D≧Ø5	+0~-0.01mm
Ø6~Ø12	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 001 003 S04	R0.05X0.1	0.1	0.3	45	4
2KRB 001 005 S04	R0.05X0.1	0.1	0.5	45	4
2KRB 0015 005 S04	R0.075X0.15	0.15	0.5	45	4
2KRB 0016 005 S04	R0.08X0.16	0.16	0.5	45	4
2KRB 002 005 S04	R0.1X0.2	0.2	0.5	45	4
2KRB 002 005 S06	R0.1X0.2	0.2	0.5	50	6
2KRB 002 010 S04	R0.1X0.2	0.2	1	45	4
2KRB 002 015 S04	R0.1X0.2	0.2	1.5	45	4
2KRB 002 020 S04	R0.1X0.2	0.2	2	45	4
2KRB 002 025 S04	R0.1X0.2	0.2	2.5	45	4
2KRB 002 030 S04	R0.1X0.2	0.2	3	45	4
2KRB 0025 008 S04	R0.125X0.25	0.25	0.8	45	4
2KRB 003 005 S04	R0.15X0.3	0.3	0.5	45	4
2KRB 003 010 S04	R0.15X0.3	0.3	1	45	4
2KRB 003 015 S04	R0.15X0.3	0.3	1.5	45	4
2KRB 003 020 S04	R0.15X0.3	0.3	2	45	4
2KRB 003 025 S04	R0.15X0.3	0.3	2.5	45	4
2KRB 003 030 S04	R0.15X0.3	0.3	3	45	4
2KRB 003 035 S04	R0.15X0.3	0.3	3.5	45	4
2KRB 003 040 S04	R0.15X0.3	0.3	4	45	4
2KRB 003 050 S04	R0.15X0.3	0.3	5	45	4
2KRB 004 010 S04	R0.2X0.4	0.4	1	45	4
2KRB 004 010 S06	R0.2X0.4	0.4	1	50	6
2KRB 004 015 S04	R0.2X0.4	0.4	1.5	45	4
2KRB 004 020 S04	R0.2X0.4	0.4	2	45	4
2KRB 004 025 S04	R0.2X0.4	0.4	2.5	45	4
2KRB 004 030 S04	R0.2X0.4	0.4	3	45	4
2KRB 004 035 S04	R0.2X0.4	0.4	3.5	45	4
2KRB 004 040 S04	R0.2X0.4	0.4	4	45	4
2KRB 004 045 S04	R0.2X0.4	0.4	4.5	45	4
2KRB 004 050 S04	R0.2X0.4	0.4	5	45	4
2KRB 004 060 S04	R0.2X0.4	0.4	6	45	4
2KRB 004 080 S04	R0.2X0.4	0.4	8	45	4
2KRB 004 100 S04	R0.2X0.4	0.4	10	45	4
2KRB 005 010 S04	R0.25X0.5	0.5	1	45	4
2KRB 005 015 S04	R0.25X0.5	0.5	1.5	45	4
2KRB 005 015 S06	R0.25X0.5	0.5	1.5	50	6
2KRB 005 020 S04	R0.25X0.5	0.5	2	45	4
2KRB 005 025 S04	R0.25X0.5	0.5	2.5	45	4
2KRB 005 030 S04	R0.25X0.5	0.5	3	45	4
2KRB 005 035 S04	R0.25X0.5	0.5	3.5	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 005 040 S04	R0.25X0.5	0.5	4	45	4
2KRB 005 045 S04	R0.25X0.5	0.5	4.5	45	4
2KRB 005 050 S04	R0.25X0.5	0.5	5	45	4
2KRB 005 060 S04	R0.25X0.5	0.5	6	45	4
2KRB 005 080 S04	R0.25X0.5	0.5	8	45	4
2KRB 005 100 S04	R0.25X0.5	0.5	10	45	4
2KRB 005 120 S04	R0.25X0.5	0.5	12	45	4
2KRB 005 140 S04	R0.25X0.5	0.5	14	45	4
2KRB 006 010 S04	R0.3X0.6	0.6	1	45	4
2KRB 006 015 S06	R0.3X0.6	0.6	1.5	50	6
2KRB 006 020 S04	R0.3X0.6	0.6	2	45	4
2KRB 006 030 S04	R0.3X0.6	0.6	3	45	4
2KRB 006 040 S04	R0.3X0.6	0.6	4	45	4
2KRB 006 050 S04	R0.3X0.6	0.6	5	45	4
2KRB 006 060 S04	R0.3X0.6	0.6	6	45	4
2KRB 006 080 S04	R0.3X0.6	0.6	8	45	4
2KRB 006 100 S04	R0.3X0.6	0.6	10	45	4
2KRB 006 120 S04	R0.3X0.6	0.6	12	45	4
2KRB 006 140 S04	R0.3X0.6	0.6	14	45	4
2KRB 006 160 S04	R0.3X0.6	0.6	16	45	4
2KRB 007 020 S04	R0.35X0.7	0.7	2	45	4
2KRB 007 040 S04	R0.35X0.7	0.7	4	45	4
2KRB 007 060 S04	R0.35X0.7	0.7	6	45	4
2KRB 007 080 S04	R0.35X0.7	0.7	8	45	4
2KRB 007 100 S04	R0.35X0.7	0.7	10	45	4
2KRB 007 120 S04	R0.35X0.7	0.7	12	45	4
2KRB 008 020 S04	R0.4X0.8	0.8	2	45	4
2KRB 008 020 S06	R0.4X0.8	0.8	2	50	6
2KRB 008 030 S04	R0.4X0.8	0.8	3	45	4
2KRB 008 040 S04	R0.4X0.8	0.8	4	45	4
2KRB 008 050 S04	R0.4X0.8	0.8	5	45	4
2KRB 008 060 S04	R0.4X0.8	0.8	6	45	4
2KRB 008 080 S04	R0.4X0.8	0.8	8	45	4
2KRB 008 100 S04	R0.4X0.8	0.8	10	45	4
2KRB 008 120 S04	R0.4X0.8	0.8	12	45	4
2KRB 008 140 S04	R0.4X0.8	0.8	14	45	4
2KRB 008 160 S04	R0.4X0.8	0.8	16	45	4
2KRB 009 040 S04	R0.45X0.9	0.9	4	45	4
2KRB 010 020 S04	R0.5X1	1	2	45	4
2KRB 010 025 S06	R0.5X1	1	2.5	50	6
2KRB 010 030 S04	R0.5X1	1	3	45	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 010 040 S04	R0.5X 1	1	4	45	4
2KRB 010 050 S04	R0.5X 1	1	5	45	4
2KRB 010 060 S04	R0.5X 1	1	6	45	4
2KRB 010 080 S04	R0.5X 1	1	8	45	4
2KRB 010 100 S04	R0.5X 1	1	10	45	4
2KRB 010 120 S04	R0.5X 1	1	12	45	4
2KRB 010 140 S04	R0.5X 1	1	14	50	4
2KRB 010 160 S04	R0.5X 1	1	16	50	4
2KRB 010 180 S04	R0.5X 1	1	18	50	4
2KRB 010 200 S04	R0.5X 1	1	20	50	4
2KRB 010 220 S04	R0.5X 1	1	22	60	4
2KRB 010 250 S04	R0.5X 1	1	25	60	4
2KRB 010 300 S04	R0.5X 1	1	30	70	4
2KRB 012 030 S06	R0.6X 1.2	1.2	3	50	6
2KRB 012 040 S04	R0.6X 1.2	1.2	4	45	4
2KRB 012 060 S04	R0.6X 1.2	1.2	6	45	4
2KRB 012 080 S04	R0.6X 1.2	1.2	8	45	4
2KRB 012 100 S04	R0.6X 1.2	1.2	10	45	4
2KRB 012 120 S04	R0.6X 1.2	1.2	12	45	4
2KRB 012 140 S04	R0.6X 1.2	1.2	14	50	4
2KRB 012 160 S04	R0.6X 1.2	1.2	16	50	4
2KRB 012 200 S04	R0.6X 1.2	1.2	20	50	4
2KRB 012 240 S04	R0.6X 1.2	1.2	24	60	4
2KRB 014 160 S04	R0.7X 1.4	1.4	16	50	4
2KRB 015 030 S04	R0.75X 1.5	1.5	3	45	4
2KRB 015 040 S04	R0.75X 1.5	1.5	4	45	4
2KRB 015 040 S06	R0.75X 1.5	1.5	4	50	6
2KRB 015 060 S04	R0.75X 1.5	1.5	6	45	4
2KRB 015 080 S04	R0.75X 1.5	1.5	8	45	4
2KRB 015 100 S04	R0.75X 1.5	1.5	10	45	4
2KRB 015 120 S04	R0.75X 1.5	1.5	12	45	4
2KRB 015 140 S04	R0.75X 1.5	1.5	14	50	4
2KRB 015 160 S04	R0.75X 1.5	1.5	16	50	4
2KRB 015 180 S04	R0.75X 1.5	1.5	18	50	4
2KRB 015 200 S04	R0.75X 1.5	1.5	20	50	4
2KRB 015 220 S04	R0.75X 1.5	1.5	22	60	4
2KRB 015 250 S04	R0.75X 1.5	1.5	25	60	4
2KRB 015 300 S04	R0.75X 1.5	1.5	30	70	4
2KRB 015 350 S04	R0.75X 1.5	1.5	35	70	4
2KRB 015 400 S04	R0.75X 1.5	1.5	40	80	4
2KRB 020 040 S04	R1.0X 2	2	4	45	4
2KRB 020 060 S04	R1.0X 2	2	6	45	4
2KRB 020 060 S06	R1.0X 2	2	6	50	6
2KRB 020 080 S04	R1.0X 2	2	8	45	4
2KRB 020 100 S04	R1.0X 2	2	10	45	4
2KRB 020 120 S04	R1.0X 2	2	12	45	4
2KRB 020 140 S04	R1.0X 2	2	14	50	4
2KRB 020 160 S04	R1.0X 2	2	16	50	4
2KRB 020 180 S04	R1.0X 2	2	18	50	4
2KRB 020 200 S04	R1.0X 2	2	20	50	4
2KRB 020 220 S04	R1.0X 2	2	22	60	4
2KRB 020 250 S04	R1.0X 2	2	25	60	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 020 300 S04	R1.0X 2	2	30	70	4
2KRB 020 350 S04	R1.0X 2	2	35	70	4
2KRB 025 060 S06	R1.25X 2.5	2.5	6	50	6
2KRB 025 080 S04	R1.25X 2.5	2.5	8	45	4
2KRB 025 100 S04	R1.25X 2.5	2.5	10	45	4
2KRB 025 120 S04	R1.25X 2.5	2.5	12	45	4
2KRB 025 160 S04	R1.25X 2.5	2.5	16	50	4
2KRB 025 200 S04	R1.25X 2.5	2.5	20	50	4
2KRB 025 250 S04	R1.25X 2.5	2.5	25	60	4
2KRB 025 300 S04	R1.25X 2.5	2.5	30	70	4
2KRB 025 350 S04	R1.25X 2.5	2.5	35	70	4
2KRB 030 060 S03	R1.5X 3	3	6	60	3
2KRB 030 060 S06	R1.5X 3	3	6	50	6
2KRB 030 080 S06	R1.5X 3	3	8	50	6
2KRB 030 100 S06	R1.5X 3	3	10	50	6
2KRB 030 120 S06	R1.5X 3	3	12	50	6
2KRB 030 140 S06	R1.5X 3	3	14	60	6
2KRB 030 160 S06	R1.5X 3	3	16	60	6
2KRB 030 180 S06	R1.5X 3	3	18	60	6
2KRB 030 200 S06	R1.5X 3	3	20	60	6
2KRB 030 250 S06	R1.5X 3	3	25	65	6
2KRB 030 300 S06	R1.5X 3	3	30	70	6
2KRB 030 350 S06	R1.5X 3	3	35	80	6
2KRB 030 400 S06	R1.5X 3	3	40	80	6
2KRB 030 500 S06	R1.5X 3	3	50	100	6
2KRB 040 080 070	R2.0X 4	4	8	70	4
2KRB 040 080 S06	R2.0X 4	4	8	50	6
2KRB 040 100 S06	R2.0X 4	4	10	50	6
2KRB 040 120 S06	R2.0X 4	4	12	50	6
2KRB 040 140 S06	R2.0X 4	4	14	60	6
2KRB 040 160 S06	R2.0X 4	4	16	60	6
2KRB 040 200 S06	R2.0X 4	4	20	60	6
2KRB 040 250 S06	R2.0X 4	4	25	65	6
2KRB 040 300 S06	R2.0X 4	4	30	70	6
2KRB 040 350 S06	R2.0X 4	4	35	80	6
2KRB 040 400 S06	R2.0X 4	4	40	80	6
2KRB 040 450 S06	R2.0X 4	4	45	90	6
2KRB 040 500 S06	R2.0X 4	4	50	100	6
2KRB 040 550 S06	R2.0X 4	4	55	110	6
2KRB 040 600 S06	R2.0X 4	4	60	110	6
2KRB 040 650 S06	R2.0X 4	4	65	110	6
2KRB 040 700 S06	R2.0X 4	4	70	110	6
2KRB 050 120 S06	R2.5X 5	5	12	50	6
2KRB 050 160 S06	R2.5X 5	5	16	60	6
2KRB 050 200 S06	R2.5X 5	5	20	60	6
2KRB 050 250 S06	R2.5X 5	5	25	65	6
2KRB 050 300 S06	R2.5X 5	5	30	70	6
2KRB 050 400 S06	R2.5X 5	5	40	80	6
2KRB 050 500 S06	R2.5X 5	5	50	100	6
2KRB 060 150 060	R3.0X 6	7	15	60	6
2KRB 060 300 070	R3.0X 6	6	30	70	6
2KRB 060 300 090	R3.0X 6	6	30	90	6

K HARD 2KRB



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 080 200 060	R4.0X 8	10	20	60	8
2KRB 080 300 080	R4.0X 8	8	30	80	8
2KRB 100 250 070	R5.0X 10	12	25	70	10

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 100 350 100	R5.0X 10	10	35	100	10
2KRB 120 300 080	R6.0X 12	14	30	80	12
2KRB 120 400 110	R6.0X 12	12	40	110	12

2KRB/2BRB

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11			COPPER ALLOYS		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65					
Radius of Ball Nose	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
R0.05	0.001 ~ 0.005	38,000 ~ 50,000	50 ~ 80	0.001 ~ 0.005	38,000 ~ 50,000	40 ~ 60	0.001 ~ 0.004	38,000 ~ 50,000	30 ~ 50	0.003 ~ 0.010	38,000 ~ 50,000	50 ~ 100
R0.1	0.001 ~ 0.010	38,000 ~ 50,000	200 ~ 350	0.001 ~ 0.009	38,000 ~ 50,000	200 ~ 280	0.001 ~ 0.005	38,000 ~ 50,000	150 ~ 240	0.010 ~ 0.020	38,000 ~ 50,000	200 ~ 500
R0.15	0.004 ~ 0.018	38,000 ~ 50,000	200 ~ 600	0.003 ~ 0.014	38,000 ~ 50,000	200 ~ 400	0.003 ~ 0.012	38,000 ~ 50,000	150 ~ 350	0.010 ~ 0.025	38,000 ~ 50,000	300 ~ 800
R0.2	0.005 ~ 0.020	30,000 ~ 45,000	250 ~ 800	0.003 ~ 0.014	30,000 ~ 45,000	200 ~ 500	0.003 ~ 0.011	30,000 ~ 45,000	160 ~ 400	0.010 ~ 0.030	30,000 ~ 42,000	300 ~ 1,000
R0.25	0.006 ~ 0.020	25,000 ~ 42,000	300 ~ 700	0.004 ~ 0.014	25,000 ~ 42,000	250 ~ 500	0.003 ~ 0.011	25,000 ~ 42,000	220 ~ 400	0.010 ~ 0.030	30,000 ~ 42,000	500 ~ 1,400
R0.3	0.006 ~ 0.030	22,000 ~ 40,000	300 ~ 1,200	0.006 ~ 0.030	22,000 ~ 40,000	250 ~ 800	0.003 ~ 0.015	20,000 ~ 27,000	210 ~ 380	0.010 ~ 0.100	24,000 ~ 40,000	350 ~ 1,600
R0.4	0.006 ~ 0.100	20,000 ~ 40,000	260 ~ 1,800	0.006 ~ 0.080	20,000 ~ 40,000	240 ~ 1,500	0.006 ~ 0.021	20,000 ~ 40,000	190 ~ 480	0.030 ~ 0.100	20,000 ~ 40,000	450 ~ 2,000
R0.5	0.010 ~ 0.200	20,000 ~ 38,000	500 ~ 2,800	0.010 ~ 0.080	20,000 ~ 38,000	300 ~ 2,400	0.007 ~ 0.025	12,000 ~ 17,000	230 ~ 420	0.050 ~ 0.200	20,000 ~ 40,000	800 ~ 3,000
R0.6	0.050 ~ 0.100	20,000 ~ 30,000	600 ~ 2,500	0.020 ~ 0.060	20,000 ~ 30,000	400 ~ 2,300	0.011 ~ 0.020	13,000 ~ 14,000	260 ~ 450	0.060 ~ 0.100	20,000 ~ 30,000	1,000 ~ 2,500
R0.75	0.050 ~ 0.200	18,000 ~ 30,000	600 ~ 3,100	0.020 ~ 0.180	18,000 ~ 30,000	550 ~ 2,500	0.010 ~ 0.030	8,500 ~ 11,000	200 ~ 400	0.100 ~ 0.300	18,000 ~ 30,000	1,200 ~ 3,000
R1.0	0.050 ~ 0.200	12,000 ~ 25,000	800 ~ 2,400	0.030 ~ 0.120	12,000 ~ 20,000	850 ~ 2,300	0.015 ~ 0.035	7,000 ~ 8,500	280 ~ 400	0.100 ~ 0.400	12,000 ~ 20,000	1,200 ~ 3,000
R1.5	0.050 ~ 0.200	10,000 ~ 20,000	1,100 ~ 3,800	0.030 ~ 0.180	10,000 ~ 20,000	900 ~ 2,900	0.020 ~ 0.050	5,200 ~ 6,000	380 ~ 550	0.200 ~ 0.500	16,000 ~ 20,000	1,800 ~ 4,000
R2.0	0.100 ~ 0.300	10,000 ~ 20,000	1,300 ~ 3,900	0.080 ~ 0.180	10,000 ~ 20,000	1,800 ~ 3,000	0.050 ~ 0.090	4,000 ~ 4,600	380 ~ 590	0.300 ~ 0.500	16,000 ~ 20,000	2,600 ~ 4,000
R2.5	0.100 ~ 0.300	9,000 ~ 20,000	1,500 ~ 3,900	0.050 ~ 0.200	8,000 ~ 18,000	1,300 ~ 3,800	0.030 ~ 0.160	6,000 ~ 16,000	450 ~ 1,000	0.300 ~ 0.500	9,000 ~ 20,000	2,600 ~ 4,000
R3.0	0.100 ~ 0.300	8,000 ~ 18,000	1,800 ~ 3,900	0.050 ~ 0.200	8,000 ~ 18,000	1,500 ~ 3,800	0.030 ~ 0.160	6,000 ~ 16,000	450 ~ 1,000	0.300 ~ 0.500	8,000 ~ 18,000	2,600 ~ 4,000
R4.0	0.150 ~ 0.350	8,000 ~ 12,000	2,000 ~ 4,000	0.100 ~ 0.250	6,000 ~ 10,000	1,800 ~ 3,700	0.080 ~ 0.200	4,000 ~ 8,000	800 ~ 1,500	0.300 ~ 0.500	8,000 ~ 12,000	2,600 ~ 5,000
R5.0	0.200 ~ 0.400	6,000 ~ 11,000	2,000 ~ 4,000	0.100 ~ 0.300	4,000 ~ 9,000	1,800 ~ 3,700	0.080 ~ 0.250	3,000 ~ 8,000	800 ~ 1,500	0.300 ~ 0.500	6,000 ~ 11,000	2,600 ~ 5,000
R6.0	0.300 ~ 0.500	5,000 ~ 10,000	2,000 ~ 4,000	0.200 ~ 0.400	3,000 ~ 8,000	1,800 ~ 3,700	0.150 ~ 0.350	2,000 ~ 6,000	800 ~ 1,500	0.300 ~ 0.500	5,000 ~ 10,000	2,600 ~ 5,000

Depth of Cut



K HARD 2KCB

2 Flutes Standard Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

2刃 高硬度材標準長さボール エンドミル

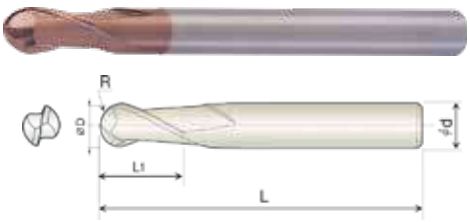
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 표준 볼 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø5	+0~-0.01
Ø6~Ø20	+0~-0.015

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KCB 001 002 S04	R0.05X 0.1	0.2	45	4
2KCB 0015 003 S04	R0.075X 0.15	0.3	45	4
2KCB 002 004 S04	R0.1X 0.2	0.4	45	4
2KCB 003 006 S04	R0.15X 0.3	0.6	45	4
2KCB 004 008 S04	R0.2X 0.4	0.8	45	4
2KCB 004 008 S06	R0.2X 0.4	0.8	45	6
2KCB 005 010 S04	R0.25X 0.5	1	45	4
2KCB 005 010 S06	R0.25X 0.5	1	45	6
2KCB 006 012 S04	R0.3X 0.6	1.2	45	4
2KCB 006 012 S06	R0.3X 0.6	1.2	45	6
2KCB 007 015 S04	R0.35X 0.7	1.5	45	4
2KCB 008 015 S04	R0.4X 0.8	1.5	45	4
2KCB 008 015 S06	R0.4X 0.8	1.5	45	6
2KCB 010 020 S03	R0.5X 1	2	50	3
2KCB 010 020 S04	R0.5X 1	2	50	4
2KCB 010 020 S06	R0.5X 1	2	50	6
2KCB 012 025 S03	R0.6X 1.2	2.5	50	3
2KCB 012 025 S04	R0.6X 1.2	2.5	50	4
2KCB 012 025 S06	R0.6X 1.2	2.5	50	6
2KCB 015 040 S03	R0.75X 1.5	4	50	3
2KCB 015 040 S04	R0.75X 1.5	4	50	4
2KCB 015 040 S06	R0.75X 1.5	4	50	6
2KCB 015 040 070	R0.75X 1.5	4	70	6
2KCB 015 040 100	R0.75X 1.5	4	100	6
2KCB 020 050 S03	R1.0X 2	5	50	3
2KCB 020 050 S04	R1.0X 2	5	50	4
2KCB 020 050 S06	R1.0X 2	5	60	6
2KCB 020 050 080	R1.0X 2	5	80	6
2KCB 020 050 100	R1.0X 2	5	100	6
2KCB 025 060 S03	R1.25X 2.5	6	50	3
2KCB 025 060 S04	R1.25X 2.5	6	50	4
2KCB 025 060 S06	R1.25X 2.5	6	60	6
2KCB 025 060 080	R1.25X 2.5	6	80	6
2KCB 025 060 100	R1.25X 2.5	6	100	6
2KCB 030 080 S03	R1.5X 3	8	60	3
2KCB 030 080 S04	R1.5X 3	8	60	4
2KCB 030 080 S06	R1.5X 3	8	60	6
2KCB 030 080 080	R1.5X 3	8	80	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KCB 030 080 100	R1.5X 3	8	100	6
2KCB 035 080 S06	R1.75X 3.5	8	60	6
2KCB 040 080 060	R2.0X 4	8	60	4
2KCB 040 080 080	R2.0X 4	8	80	4
2KCB 040 080 S06	R2.0X 4	8	70	6
2KCB 040 080 090	R2.0X 4	8	90	6
2KCB 040 080 120	R2.0X 4	8	120	6
2KCB 045 100 S06	R2.25X 4.5	10	70	6
2KCB 050 100 S06	R2.5X 5	10	80	6
2KCB 055 120 S06	R2.75X 5.5	12	80	6
2KCB 060 120 075	R3.0X 6	12	75	6
2KCB 060 120 080	R3.0X 6	12	80	6
2KCB 060 120 090	R3.0X 6	12	90	6
2KCB 060 120 120	R3.0X 6	12	120	6
2KCB 060 120 150	R3.0X 6	12	150	6
2KCB 070 140 S08	R3.5X 7	14	100	8
2KCB 080 140 075	R4.0X 8	14	75	8
2KCB 080 140 100	R4.0X 8	14	100	8
2KCB 080 140 130	R4.0X 8	14	130	8
2KCB 080 140 150	R4.0X 8	14	150	8
2KCB 090 180 S10	R4.5X 9	18	100	10
2KCB 100 180 075	R5.0X 10	18	75	10
2KCB 100 180 100	R5.0X 10	18	100	10
2KCB 100 180 130	R5.0X 10	18	130	10
2KCB 100 180 150	R5.0X 10	18	150	10
2KCB 100 180 180	R5.0X 10	18	180	10
2KCB 110 220 S12	R5.5X 11	22	110	12
2KCB 120 220 110	R6.0X 12	22	110	12
2KCB 120 220 130	R6.0X 12	22	130	12
2KCB 120 220 150	R6.0X 12	22	150	12
2KCB 120 220 200	R6.0X 12	22	200	12
2KCB 130 240 S14	R6.5X 13	24	110	14
2KCB 140 240 110	R7.0X 14	24	110	14
2KCB 160 300 110	R8.0X 16	30	110	16
2KCB 160 300 150	R8.0X 16	30	150	16
2KCB 200 380 110	R10.0X 20	38	110	20
2KCB 200 380 150	R10.0X 20	38	150	20

K HARD 2KSB



2 Flutes Short Ball Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.



2刃 高硬度材短い長さ ボール エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.



2날 짧은 볼 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KSB 001 001 S04	R0.05X 0.1	0.1	40	4
2KSB 002 002 S04	R0.1X 0.2	0.2	40	4
2KSB 002 003 S04	R0.1X 0.2	0.3	40	4
2KSB 003 003 S04	R0.15X 0.3	0.3	40	4
2KSB 004 004 S04	R0.2X 0.4	0.4	40	4
2KSB 004 006 S04	R0.2X 0.4	0.6	40	4
2KSB 005 005 S04	R0.25X 0.5	0.5	40	4
2KSB 006 006 S04	R0.3X 0.6	0.6	40	4
2KSB 007 007 S04	R0.35X 0.7	0.7	40	4
2KSB 008 008 S04	R0.4X 0.8	0.8	40	4
2KSB 009 009 S04	R0.45X 0.9	0.9	40	4
2KSB 010 010 S04	R0.5X 1	1	40	4
2KSB 010 010 S06	R0.5X 1	1	40	6
2KSB 010 015 S04	R0.5X 1	1.5	40	4
2KSB 010 015 S06	R0.5X 1	1.5	40	6
2KSB 015 015 S04	R0.75X 1.5	1.5	40	4
2KSB 015 015 S06	R0.75X 1.5	1.5	40	6
2KSB 015 023 S04	R0.75X 1.5	2.3	40	4
2KSB 015 023 S06	R0.75X 1.5	2.3	40	6
2KSB 020 020 S04	R1.0X 2	2	45	4
2KSB 020 020 S06	R1.0X 2	2	45	6
2KSB 020 030 S04	R1.0X 2	3	45	4
2KSB 020 030 S06	R1.0X 2	3	45	6
2KSB 030 030 S04	R1.5X 3	3	45	4
2KSB 030 030 S06	R1.5X 3	3	45	6
2KSB 030 045 S04	R1.5X 3	4.5	45	4
2KSB 030 045 S06	R1.5X 3	4.5	45	6
2KSB 040 040 045	R2.0X 4	4	45	4
2KSB 040 040 S06	R2.0X 4	4	45	6
2KSB 040 060 045	R2.0X 4	6	45	4
2KSB 040 060 S06	R2.0X 4	6	45	6
2KSB 050 050 S06	R2.5X 5	5	50	6
2KSB 050 075 S06	R2.5X 5	7.5	50	6
2KSB 060 060 050	R3.0X 6	6	50	6
2KSB 060 080 060	R3.0X 6	8	60	6
2KSB 080 080 050	R4.0X 8	8	50	8
2KSB 080 110 060	R4.0X 8	11	60	8
2KSB 100 100 060	R5.0X 10	10	60	10
2KSB 100 130 060	R5.0X 10	13	60	10
2KSB 120 120 060	R6.0X 12	12	60	12
2KSB 120 150 060	R6.0X 12	15	60	12

2KCB/2KSB/2BCB/2&3BSB

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
R0.05	0.003	50,000	170	0.002	42,000	150	0.001	40,000	100
R0.1	0.004	50,000	200	0.003	42,000	180	0.002	40,000	120
R0.15	0.005	45,000	320	0.004	42,000	300	0.003	40,000	180
R0.2	0.006	45,000	420	0.005	42,000	400	0.004	40,000	240
R0.25	0.007	45,000	530	0.006	42,000	500	0.005	40,000	300
R0.3	0.008	42,000	1,000	0.007	40,000	1,200	0.006	40,000	800
R0.4	0.100	42,000	1,400	0.009	40,000	1,600	0.008	40,000	1,000
R0.5	0.10	40,000	2,600	0.10	30,000	2,000	0.10	25,000	1,300
R0.75	0.15	30,000	3,000	0.10	30,000	2,500	0.10	25,000	1,800
R1.0	0.20	25,000	3,000	0.20	25,000	2,500	0.15	20,000	1,800
R1.25	0.20	25,000	3,000	0.20	20,000	2,500	0.15	16,000	1,800
R1.5	0.20	20,000	3,000	0.20	18,000	2,500	0.15	14,000	2,000
R2.0	0.25	20,000	3,000	0.20	16,000	2,500	0.15	12,000	2,000
R2.5	0.25	18,000	3,000	0.20	14,000	2,500	0.15	9,000	2,000
R3.0	0.30	18,000	3,300	0.25	16,000	2,800	0.15	8,000	2,000
R4.0	0.40	16,000	3,300	0.30	12,000	2,800	0.20	7,000	1,500
R5.0	0.50	13,000	3,400	0.40	10,000	2,600	0.30	5,000	1,300
R6.0	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R6.5	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R7.0	0.70	5,000	1,800	0.60	4,000	1,300	0.45	3,000	800
R8.0	0.70	4,000	1,500	0.60	3,500	1,000	0.45	2,500	800
R10.0	0.80	2,500	1,200	0.70	2,000	1,000	0.50	1,800	800

Depth of Cut



Pf=0.05D

K HARD 2KRE

2 Flutes Square Rib Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

2刃 高硬度材 リブ スクェア エンドミル

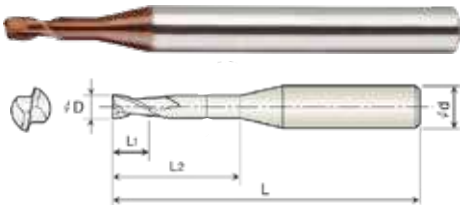
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 스퀘어 리브 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø6	+0~-0.01
D≧Ø6	+0~-0.015

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2KRE 001 003 S04	0.1	0.15	0.3	45	4
2KRE 001 005 S04	0.1	0.15	0.5	45	4
2KRE 002 005 S04	0.2	0.3	0.5	45	4
2KRE 002 010 S04	0.2	0.3	1	45	4
2KRE 002 015 S04	0.2	0.3	1.5	45	4
2KRE 002 020 S04	0.2	0.3	2	45	4
2KRE 002 025 S04	0.2	0.3	2.5	45	4
2KRE 002 030 S04	0.2	0.3	3	45	4
2KRE 003 005 S04	0.3	0.45	0.5	45	4
2KRE 003 010 S04	0.3	0.45	1	45	4
2KRE 003 015 S04	0.3	0.45	1.5	45	4
2KRE 003 020 S04	0.3	0.45	2	45	4
2KRE 003 025 S04	0.3	0.45	2.5	45	4
2KRE 003 030 S04	0.3	0.45	3	45	4
2KRE 003 035 S04	0.3	0.45	3.5	45	4
2KRE 003 040 S04	0.3	0.45	4	45	4
2KRE 003 050 S04	0.3	0.45	5	45	4
2KRE 004 010 S04	0.4	0.6	1	45	4
2KRE 004 015 S04	0.4	0.6	1.5	45	4
2KRE 004 020 S04	0.4	0.6	2	45	4
2KRE 004 025 S04	0.4	0.6	2.5	45	4
2KRE 004 030 S04	0.4	0.6	3	45	4
2KRE 004 035 S04	0.4	0.6	3.5	45	4
2KRE 004 040 S04	0.4	0.6	4	45	4
2KRE 004 050 S04	0.4	0.6	5	45	4
2KRE 004 060 S04	0.4	0.6	6	45	4
2KRE 004 080 S04	0.4	0.6	8	45	4
2KRE 004 100 S04	0.4	0.6	10	45	4
2KRE 005 010 S04	0.5	0.7	1	45	4
2KRE 005 020 S04	0.5	0.7	2	45	4
2KRE 005 030 S04	0.5	0.7	3	45	4
2KRE 005 040 S04	0.5	0.7	4	45	4
2KRE 005 050 S04	0.5	0.7	5	45	4
2KRE 005 060 S04	0.5	0.7	6	45	4
2KRE 005 080 S04	0.5	0.7	8	45	4
2KRE 005 100 S04	0.5	0.7	10	45	4
2KRE 005 120 S04	0.5	0.7	12	45	4
2KRE 005 140 S04	0.5	0.7	14	45	4
2KRE 006 020 S04	0.6	0.9	2	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2KRE 006 030 S04	0.6	0.9	3	45	4
2KRE 006 040 S04	0.6	0.9	4	45	4
2KRE 006 050 S04	0.6	0.9	5	45	4
2KRE 006 060 S04	0.6	0.9	6	45	4
2KRE 006 080 S04	0.6	0.9	8	45	4
2KRE 006 100 S04	0.6	0.9	10	45	4
2KRE 006 120 S04	0.6	0.9	12	45	4
2KRE 006 140 S04	0.6	0.9	14	45	4
2KRE 006 160 S04	0.6	0.9	16	45	4
2KRE 007 020 S04	0.7	1	2	45	4
2KRE 007 040 S04	0.7	1	4	45	4
2KRE 007 060 S04	0.7	1	6	45	4
2KRE 007 080 S04	0.7	1	8	45	4
2KRE 007 100 S04	0.7	1	10	45	4
2KRE 007 120 S04	0.7	1	12	45	4
2KRE 008 020 S04	0.8	1.2	2	45	4
2KRE 008 030 S04	0.8	1.2	3	45	4
2KRE 008 040 S04	0.8	1.2	4	45	4
2KRE 008 050 S04	0.8	1.2	5	45	4
2KRE 008 060 S04	0.8	1.2	6	45	4
2KRE 008 080 S04	0.8	1.2	8	45	4
2KRE 008 100 S04	0.8	1.2	10	45	4
2KRE 008 120 S04	0.8	1.2	12	45	4
2KRE 008 140 S04	0.8	1.2	14	45	4
2KRE 009 060 S04	0.9	1.3	6	45	4
2KRE 009 080 S04	0.9	1.3	8	45	4
2KRE 009 100 S04	0.9	1.3	10	45	4
2KRE 010 020 S04	1	1.5	2	45	4
2KRE 010 030 S04	1	1.5	3	45	4
2KRE 010 040 S04	1	1.5	4	45	4
2KRE 010 050 S04	1	1.5	5	45	4
2KRE 010 060 S04	1	1.5	6	45	4
2KRE 010 080 S04	1	1.5	8	45	4
2KRE 010 100 S04	1	1.5	10	45	4
2KRE 010 120 S04	1	1.5	12	45	4
2KRE 010 140 S04	1	1.5	14	50	4
2KRE 010 160 S04	1	1.5	16	50	4
2KRE 010 180 S04	1	1.5	18	50	4
2KRE 010 200 S04	1	1.5	20	50	4

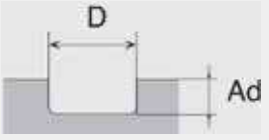
单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2KRE 010 250 S04	1	1.5	25	60	4
2KRE 012 040 S04	1.2	1.8	4	45	4
2KRE 012 060 S04	1.2	1.8	6	45	4
2KRE 012 080 S04	1.2	1.8	8	45	4
2KRE 012 100 S04	1.2	1.8	10	45	4
2KRE 012 120 S04	1.2	1.8	12	45	4
2KRE 012 160 S04	1.2	1.8	16	50	4
2KRE 012 200 S04	1.2	1.8	20	50	4
2KRE 015 040 S04	1.5	2.3	4	45	4
2KRE 015 060 S04	1.5	2.3	6	45	4
2KRE 015 080 S04	1.5	2.3	8	45	4
2KRE 015 100 S04	1.5	2.3	10	45	4
2KRE 015 120 S04	1.5	2.3	12	45	4
2KRE 015 140 S04	1.5	2.3	14	50	4
2KRE 015 160 S04	1.5	2.3	16	50	4
2KRE 015 180 S04	1.5	2.3	18	50	4
2KRE 015 200 S04	1.5	2.3	20	50	4
2KRE 015 250 S04	1.5	2.3	25	60	4
2KRE 015 300 S04	1.5	2.3	30	70	4
2KRE 020 040 S04	2	3	4	45	4
2KRE 020 060 S04	2	3	6	45	4
2KRE 020 080 S04	2	3	8	45	4
2KRE 020 100 S04	2	3	10	45	4
2KRE 020 120 S04	2	3	12	45	4
2KRE 020 140 S04	2	3	14	50	4
2KRE 020 160 S04	2	3	16	50	4
2KRE 020 180 S04	2	3	18	50	4
2KRE 020 200 S04	2	3	20	50	4
2KRE 020 220 S04	2	3	22	60	4
2KRE 020 250 S04	2	3	25	60	4
2KRE 020 300 S04	2	3	30	70	4
2KRE 020 350 S04	2	3	35	70	4
2KRE 025 080 S04	2.5	3.8	8	45	4
2KRE 025 100 S04	2.5	3.8	10	45	4
2KRE 025 120 S04	2.5	3.8	12	45	4
2KRE 025 160 S04	2.5	3.8	16	50	4
2KRE 025 200 S04	2.5	3.8	20	50	4
2KRE 025 250 S04	2.5	3.8	25	60	4
2KRE 025 300 S04	2.5	3.8	30	70	4
2KRE 025 350 S04	2.5	3.8	35	70	4
2KRE 030 080 S06	3	4.5	8	50	6
2KRE 030 100 S06	3	4.5	10	50	6
2KRE 030 120 S06	3	4.5	12	50	6
2KRE 030 140 S06	3	4.5	14	60	6
2KRE 030 160 S06	3	4.5	16	60	6
2KRE 030 180 S06	3	4.5	18	60	6
2KRE 030 200 S06	3	4.5	20	60	6
2KRE 030 250 S06	3	4.5	25	65	6
2KRE 030 300 S06	3	4.5	30	70	6
2KRE 030 350 S06	3	4.5	35	80	6
2KRE 030 400 S06	3	4.5	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2KRE 030 500 S06	3	4.5	50	100	6
2KRE 040 080 S06	4	6	8	50	6
2KRE 040 100 S06	4	6	10	50	6
2KRE 040 120 S06	4	6	12	50	6
2KRE 040 160 S06	4	6	16	60	6
2KRE 040 200 S06	4	6	20	60	6
2KRE 040 250 S06	4	6	25	65	6
2KRE 040 300 S06	4	6	30	70	6
2KRE 040 350 S06	4	6	35	80	6
2KRE 040 400 S06	4	6	40	80	6
2KRE 040 450 S06	4	6	45	90	6
2KRE 040 500 S06	4	6	50	100	6
2KRE 040 550 S06	4	6	55	110	6
2KRE 040 600 S06	4	6	60	110	6
2KRE 050 160 S06	5	8	16	60	6
2KRE 050 200 S06	5	8	20	60	6
2KRE 050 250 S06	5	8	25	65	6
2KRE 050 300 S06	5	8	30	70	6
2KRE 050 350 S06	5	8	35	80	6
2KRE 050 400 S06	5	8	40	80	6
2KRE 050 500 S06	5	8	50	100	6
2KRE 060 200 060	6	9	20	60	6
2KRE 060 300 070	6	9	30	70	6
2KRE 060 400 090	6	9	40	90	6
2KRE 060 500 100	6	9	50	100	6
2KRE 080 200 065	8	12	20	65	8
2KRE 080 300 080	8	12	30	80	8
2KRE 080 400 100	8	12	40	100	8
2KRE 100 250 070	10	15	25	70	10
2KRE 100 350 100	10	15	35	100	10
2KRE 100 450 100	10	15	45	100	10
2KRE 120 300 080	12	18	30	80	12
2KRE 120 400 110	12	18	40	110	12
2KRE 120 500 110	12	18	50	110	12

2KRE/2BRE

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.1	0.001 ~ 0.004	38,000 ~ 50,000	50 ~ 80	0.001 ~ 0.004	35,000 ~ 45,000	30 ~ 65	0.001 ~ 0.002	25,000 ~ 35,000	20 ~ 60
0.2	0.002 ~ 0.005	30,000 ~ 50,000	60 ~ 240	0.002 ~ 0.005	25,000 ~ 40,000	40 ~ 200	0.002 ~ 0.003	20,000 ~ 32,000	30 ~ 160
0.3	0.003 ~ 0.007	30,000 ~ 48,000	60 ~ 350	0.003 ~ 0.007	22,000 ~ 38,000	45 ~ 300	0.002 ~ 0.003	18,000 ~ 30,000	35 ~ 250
0.4	0.003 ~ 0.010	25,000 ~ 40,000	150 ~ 500	0.003 ~ 0.010	20,000 ~ 35,000	100 ~ 400	0.002 ~ 0.005	18,000 ~ 30,000	80 ~ 350
0.5	0.003 ~ 0.020	16,000 ~ 30,000	150 ~ 500	0.003 ~ 0.020	16,000 ~ 30,000	100 ~ 400	0.001 ~ 0.007	12,000 ~ 23,000	80 ~ 360
0.6	0.004 ~ 0.020	16,000 ~ 30,000	230 ~ 620	0.004 ~ 0.020	16,000 ~ 28,000	130 ~ 500	0.002 ~ 0.007	12,000 ~ 23,000	100 ~ 400
0.7	0.010 ~ 0.040	16,000 ~ 30,000	330 ~ 650	0.005 ~ 0.040	16,000 ~ 25,000	130 ~ 550	0.003 ~ 0.020	12,000 ~ 23,000	100 ~ 450
0.8	0.005 ~ 0.040	16,000 ~ 30,000	250 ~ 900	0.005 ~ 0.040	13,500 ~ 23,000	150 ~ 800	0.002 ~ 0.040	10,000 ~ 20,000	100 ~ 650
1	0.005 ~ 0.050	12,000 ~ 27,000	150 ~ 1,000	0.003 ~ 0.050	10,000 ~ 23,000	60 ~ 900	0.002 ~ 0.040	6,000 ~ 18,000	50 ~ 800
1.2	0.010 ~ 0.050	12,500 ~ 25,000	350 ~ 1,000	0.007 ~ 0.050	10,000 ~ 23,000	250 ~ 900	0.003 ~ 0.040	7,000 ~ 18,000	200 ~ 800
1.5	0.010 ~ 0.070	9,000 ~ 23,000	300 ~ 1,200	0.010 ~ 0.060	8,000 ~ 20,000	200 ~ 900	0.005 ~ 0.040	7,000 ~ 18,000	150 ~ 800
2	0.015 ~ 0.080	7,000 ~ 20,000	280 ~ 1,000	0.015 ~ 0.060	7,000 ~ 18,000	180 ~ 900	0.010 ~ 0.050	7,000 ~ 15,000	160 ~ 750
3	0.030 ~ 0.100	5,000 ~ 16,000	350 ~ 900	0.020 ~ 0.100	6,000 ~ 16,000	250 ~ 800	0.015 ~ 0.070	6,000 ~ 10,000	200 ~ 700
4	0.035 ~ 0.100	4,500 ~ 14,000	350 ~ 900	0.035 ~ 0.100	5,000 ~ 12,000	250 ~ 800	0.025 ~ 0.070	5,000 ~ 9,500	200 ~ 700
5	0.050 ~ 0.120	3,500 ~ 12,000	400 ~ 1,000	0.040 ~ 0.100	4,000 ~ 10,000	300 ~ 900	0.030 ~ 0.080	3,000 ~ 8,000	250 ~ 800
6	0.050 ~ 0.120	3,500 ~ 12,000	400 ~ 1,000	0.040 ~ 0.120	4,000 ~ 10,000	300 ~ 900	0.030 ~ 0.080	3,000 ~ 8,000	250 ~ 800
8	0.060 ~ 0.150	4,500 ~ 10,000	450 ~ 1,000	0.050 ~ 0.120	3,500 ~ 9,000	350 ~ 900	0.040 ~ 0.100	2,500 ~ 7,000	300 ~ 800
10	0.080 ~ 0.150	4,000 ~ 8,000	500 ~ 1,000	0.060 ~ 0.120	3,000 ~ 7,000	400 ~ 900	0.040 ~ 0.100	2,000 ~ 5,000	300 ~ 800
12	0.080 ~ 0.200	3,500 ~ 7,000	500 ~ 1,000	0.070 ~ 0.180	2,500 ~ 6,000	400 ~ 900	0.050 ~ 0.120	1,500 ~ 4,000	300 ~ 800
Depth of Cut									

K HARD

4KRE

4 Flutes Square Rib Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

4刃 高硬度材 リブ スクェア エンドミル

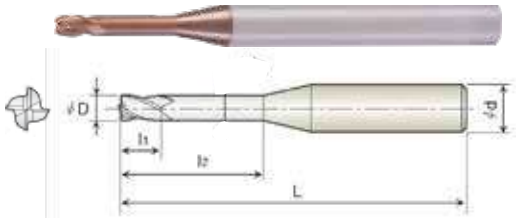
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 스퀘어 리브 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D＜Ø6	+0~-0.01
D≧Ø6	+0~-0.015

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4KRE 008 020 S04	0.8	1.2	2	45	4
4KRE 008 040 S04	0.8	1.2	4	45	4
4KRE 008 060 S04	0.8	1.2	6	45	4
4KRE 008 080 S04	0.8	1.2	8	45	4
4KRE 008 100 S04	0.8	1.2	10	45	4
4KRE 008 120 S04	0.8	1.2	12	45	4
4KRE 008 160 S04	0.8	1.2	16	45	4
4KRE 009 020 S04	0.9	1.4	2	45	4
4KRE 009 060 S04	0.9	1.4	6	45	4
4KRE 009 080 S04	0.9	1.4	8	45	4
4KRE 009 100 S04	0.9	1.4	10	45	4
4KRE 010 020 S04	1	1.5	2	45	4
4KRE 010 030 S04	1	1.5	3	45	4
4KRE 010 040 S04	1	1.5	4	45	4
4KRE 010 060 S04	1	1.5	6	45	4
4KRE 010 080 S04	1	1.5	8	45	4
4KRE 010 100 S04	1	1.5	10	45	4
4KRE 010 120 S04	1	1.5	12	45	4
4KRE 010 140 S04	1	1.5	14	50	4
4KRE 010 160 S04	1	1.5	16	50	4
4KRE 010 200 S04	1	1.5	20	50	4
4KRE 010 250 S04	1	1.5	25	60	4
4KRE 012 040 S04	1.2	1.8	4	45	4
4KRE 012 060 S04	1.2	1.8	6	45	4
4KRE 012 080 S04	1.2	1.8	8	45	4
4KRE 012 100 S04	1.2	1.8	10	45	4
4KRE 012 120 S04	1.2	1.8	12	45	4
4KRE 012 160 S04	1.2	1.8	16	50	4
4KRE 015 040 S04	1.5	2.3	4	45	4
4KRE 015 060 S04	1.5	2.3	6	45	4
4KRE 015 080 S04	1.5	2.3	8	45	4
4KRE 015 100 S04	1.5	2.3	10	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4KRE 015 120 S04	1.5	2.3	12	45	4
4KRE 015 160 S04	1.5	2.3	16	50	4
4KRE 015 200 S04	1.5	2.3	20	50	4
4KRE 015 250 S04	1.5	2.3	25	60	4
4KRE 020 040 S04	2	3	4	45	4
4KRE 020 060 S04	2	3	6	45	4
4KRE 020 080 S04	2	3	8	45	4
4KRE 020 100 S04	2	3	10	45	4
4KRE 020 120 S04	2	3	12	45	4
4KRE 020 140 S04	2	3	14	50	4
4KRE 020 160 S04	2	3	16	50	4
4KRE 020 180 S04	2	3	18	50	4
4KRE 020 200 S04	2	3	20	50	4
4KRE 020 250 S04	2	3	25	60	4
4KRE 020 300 S04	2	3	30	70	4
4KRE 025 100 S04	2.5	3.8	10	45	4
4KRE 025 120 S04	2.5	3.8	12	45	4
4KRE 025 160 S04	2.5	3.8	16	50	4
4KRE 025 200 S04	2.5	3.8	20	50	4
4KRE 025 250 S04	2.5	3.8	25	60	4
4KRE 025 300 S04	2.5	3.8	30	70	4
4KRE 030 060 S06	3	4.5	6	45	6
4KRE 030 080 S06	3	4.5	8	50	6
4KRE 030 100 S06	3	4.5	10	50	6
4KRE 030 120 S06	3	4.5	12	50	6
4KRE 030 160 S06	3	4.5	16	60	6
4KRE 030 200 S06	3	4.5	20	60	6
4KRE 030 250 S06	3	4.5	25	65	6
4KRE 030 300 S06	3	4.5	30	70	6
4KRE 030 350 S06	3	4.5	35	80	6
4KRE 030 400 S06	3	4.5	40	80	6
4KRE 040 080 S06	4	6	8	50	6

K HARD

4KRE

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4KRE 040 100 S06	4	6	10	50	6
4KRE 040 120 S06	4	6	12	50	6
4KRE 040 160 S06	4	6	16	60	6
4KRE 040 200 S06	4	6	20	60	6
4KRE 040 250 S06	4	6	25	65	6
4KRE 040 300 S06	4	6	30	70	6
4KRE 040 400 S06	4	6	40	80	6
4KRE 040 450 S06	4	6	45	90	6
4KRE 040 500 S06	4	6	50	100	6
4KRE 050 160 S06	5	8	16	60	6
4KRE 050 200 S06	5	8	20	60	6
4KRE 050 250 S06	5	8	25	65	6
4KRE 050 300 S06	5	8	30	70	6
4KRE 050 400 S06	5	8	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4KRE 050 500 S06	5	8	50	100	6
4KRE 060 200 060	6	9	20	60	6
4KRE 060 300 070	6	9	30	70	6
4KRE 060 400 090	6	9	40	90	6
4KRE 060 500 100	6	9	50	100	6
4KRE 080 200 065	8	12	20	65	8
4KRE 080 300 080	8	12	30	80	8
4KRE 080 400 100	8	12	40	100	8
4KRE 100 250 070	10	15	25	70	10
4KRE 100 350 100	10	15	35	100	10
4KRE 100 450 100	10	15	45	100	10
4KRE 120 300 080	12	18	30	80	12
4KRE 120 400 110	12	18	40	110	12
4KRE 120 500 110	12	18	50	110	12

4KRE/4BRE

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.8	0.005 ~ 0.040	15,000 ~ 28,000	250 ~ 900	0.005 ~ 0.025	12,000 ~ 25,000	250 ~ 900	0.002 ~ 0.040	10,000 ~ 20,000	100 ~ 650
1	0.010 ~ 0.050	12,000 ~ 25,000	400 ~ 2,000	0.003 ~ 0.030	10,000 ~ 20,000	300 ~ 1,800	0.002 ~ 0.040	8,000 ~ 18,000	200 ~ 1,200
1.2	0.010 ~ 0.050	10,000 ~ 25,000	500 ~ 2,000	0.007 ~ 0.050	9,000 ~ 20,000	300 ~ 1,600	0.003 ~ 0.040	7,000 ~ 18,000	200 ~ 1,200
1.5	0.020 ~ 0.060	9,000 ~ 23,000	700 ~ 2,000	0.010 ~ 0.030	8,000 ~ 20,000	400 ~ 1,600	0.005 ~ 0.040	7,000 ~ 18,000	200 ~ 1,200
2	0.030 ~ 0.080	7,000 ~ 20,000	800 ~ 2,000	0.015 ~ 0.050	6,000 ~ 18,000	400 ~ 1,600	0.010 ~ 0.050	5,000 ~ 15,000	200 ~ 1,200
3	0.050 ~ 0.100	5,000 ~ 16,000	800 ~ 2,000	0.020 ~ 0.060	5,000 ~ 15,000	400 ~ 1,600	0.015 ~ 0.070	4,000 ~ 10,000	200 ~ 1,200
4	0.050 ~ 0.150	4,500 ~ 14,000	800 ~ 2,000	0.025 ~ 0.080	4,000 ~ 10,000	400 ~ 2,000	0.025 ~ 0.070	3,000 ~ 8,000	200 ~ 1,200
5	0.050 ~ 0.120	3,500 ~ 12,000	600 ~ 1,500	0.040 ~ 0.100	3,000 ~ 8,000	400 ~ 1,000	0.030 ~ 0.080	2,500 ~ 6,000	250 ~ 800
6	0.050 ~ 0.120	3,500 ~ 12,000	600 ~ 1,500	0.040 ~ 0.120	3,000 ~ 8,000	400 ~ 1,000	0.030 ~ 0.080	2,500 ~ 6,000	250 ~ 800
8	0.060 ~ 0.150	4,500 ~ 10,000	450 ~ 1,000	0.050 ~ 0.120	2,500 ~ 7,000	350 ~ 900	0.040 ~ 0.100	2,000 ~ 5,000	300 ~ 700
10	0.080 ~ 0.150	4,000 ~ 8,000	500 ~ 1,000	0.060 ~ 0.120	2,000 ~ 5,000	300 ~ 800	0.040 ~ 0.100	2,000 ~ 4,500	300 ~ 700
12	0.080 ~ 0.200	3,500 ~ 7,000	500 ~ 1,000	0.070 ~ 0.180	2,000 ~ 4,000	300 ~ 800	0.050 ~ 0.120	1,500 ~ 4,000	300 ~ 650
Depth of Cut									

K HARD 2KCR

2 Flutes Rib Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

2刃 リブ コーナー ラジウス エンドミル

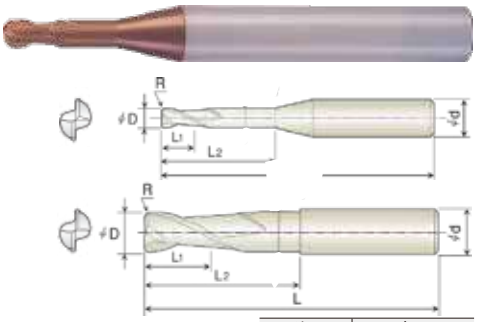
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 리브 코너 레디우스 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø6	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 002 0002 005	R0.02 X 0.2	0.3	0.5	45	4
2KCR 002 0002 010	R0.02 X 0.2	0.3	1	45	4
2KCR 002 0002 015	R0.02 X 0.2	0.3	1.5	45	4
2KCR 002 0005 010	R0.05 X 0.2	0.3	1	45	4
2KCR 002 0005 015	R0.05 X 0.2	0.3	1.5	45	4
2KCR 003 0005 010	R0.05 X 0.3	0.45	1	45	4
2KCR 003 0005 020	R0.05 X 0.3	0.45	2	45	4
2KCR 003 0005 030	R0.05 X 0.3	0.45	3	45	4
2KCR 004 0005 010	R0.05 X 0.4	0.6	1	45	4
2KCR 004 0005 020	R0.05 X 0.4	0.6	2	45	4
2KCR 004 0005 030	R0.05 X 0.4	0.6	3	45	4
2KCR 004 0005 040	R0.05 X 0.4	0.6	4	45	4
2KCR 004 001 010	R0.1 X 0.4	0.6	1	45	4
2KCR 004 001 015	R0.1 X 0.4	0.6	1.5	45	4
2KCR 004 001 020	R0.1 X 0.4	0.6	2	45	4
2KCR 004 001 030	R0.1 X 0.4	0.6	3	45	4
2KCR 004 001 040	R0.1 X 0.4	0.6	4	45	4
2KCR 005 0002 010	R0.02 X 0.5	0.7	1	45	4
2KCR 005 0002 015	R0.02 X 0.5	0.7	1.5	45	4
2KCR 005 0002 020	R0.02 X 0.5	0.7	2	45	4
2KCR 005 0002 025	R0.02 X 0.5	0.7	2.5	45	4
2KCR 005 0002 030	R0.02 X 0.5	0.7	3	45	4
2KCR 005 0002 040	R0.02 X 0.5	0.7	4	45	4
2KCR 005 0002 050	R0.02 X 0.5	0.7	5	45	4
2KCR 005 0002 060	R0.02 X 0.5	0.7	6	45	4
2KCR 005 0002 080	R0.02 X 0.5	0.7	8	45	4
2KCR 005 0002 100	R0.02 X 0.5	0.7	10	45	4
2KCR 005 0005 010	R0.05 X 0.5	0.7	1	45	4
2KCR 005 0005 015	R0.05 X 0.5	0.7	1.5	45	4
2KCR 005 0005 020	R0.05 X 0.5	0.7	2	45	4
2KCR 005 0005 025	R0.05 X 0.5	0.7	2.5	45	4
2KCR 005 0005 030	R0.05 X 0.5	0.7	3	45	4
2KCR 005 0005 040	R0.05 X 0.5	0.7	4	45	4
2KCR 005 0005 050	R0.05 X 0.5	0.7	5	45	4
2KCR 005 0005 060	R0.05 X 0.5	0.7	6	45	4
2KCR 005 0005 080	R0.05 X 0.5	0.7	8	45	4
2KCR 005 0005 100	R0.05 X 0.5	0.7	10	45	4
2KCR 005 001 010	R0.1 X 0.5	0.7	1	45	4
2KCR 005 001 015	R0.1 X 0.5	0.7	1.5	45	4
2KCR 005 001 020	R0.1 X 0.5	0.7	2	45	4
2KCR 005 001 025	R0.1 X 0.5	0.7	2.5	45	4
2KCR 005 001 030	R0.1 X 0.5	0.7	3	45	4
2KCR 005 001 040	R0.1 X 0.5	0.7	4	45	4
2KCR 005 001 050	R0.1 X 0.5	0.7	5	45	4
2KCR 005 001 060	R0.1 X 0.5	0.7	6	45	4
2KCR 005 001 080	R0.1 X 0.5	0.7	8	45	4
2KCR 005 001 100	R0.1 X 0.5	0.7	10	45	4
2KCR 006 0002 020	R0.02 X 0.6	0.9	2	45	4
2KCR 006 0002 030	R0.02 X 0.6	0.9	3	45	4
2KCR 006 0002 040	R0.02 X 0.6	0.9	4	45	4
2KCR 006 0002 060	R0.02 X 0.6	0.9	6	45	4
2KCR 006 0002 080	R0.02 X 0.6	0.9	8	45	4
2KCR 006 0002 100	R0.02 X 0.6	0.9	10	45	4
2KCR 006 0005 020	R0.05 X 0.6	0.9	2	45	4
2KCR 006 0005 030	R0.05 X 0.6	0.9	3	45	4
2KCR 006 0005 040	R0.05 X 0.6	0.9	4	45	4
2KCR 006 0005 060	R0.05 X 0.6	0.9	6	45	4
2KCR 006 0005 080	R0.05 X 0.6	0.9	8	45	4
2KCR 006 0005 100	R0.05 X 0.6	0.9	10	45	4
2KCR 006 001 020	R0.1 X 0.6	0.9	2	45	4
2KCR 006 001 030	R0.1 X 0.6	0.9	3	45	4
2KCR 006 001 040	R0.1 X 0.6	0.9	4	45	4
2KCR 006 001 060	R0.1 X 0.6	0.9	6	45	4
2KCR 006 001 080	R0.1 X 0.6	0.9	8	45	4
2KCR 006 001 100	R0.1 X 0.6	0.9	10	45	4
2KCR 007 001 020	R0.1 X 0.7	1	2	45	4
2KCR 007 001 040	R0.1 X 0.7	1	4	45	4
2KCR 007 001 060	R0.1 X 0.7	1	6	45	4
2KCR 008 0002 020	R0.02 X 0.8	1.2	2	45	4
2KCR 008 0002 040	R0.02 X 0.8	1.2	4	45	4
2KCR 008 0002 060	R0.02 X 0.8	1.2	6	45	4
2KCR 008 0002 080	R0.02 X 0.8	1.2	8	45	4
2KCR 008 0002 100	R0.02 X 0.8	1.2	10	45	4
2KCR 008 0005 020	R0.05 X 0.8	1.2	2	45	4
2KCR 008 0005 040	R0.05 X 0.8	1.2	4	45	4
2KCR 008 0005 060	R0.05 X 0.8	1.2	6	45	4
2KCR 008 0005 080	R0.05 X 0.8	1.2	8	45	4
2KCR 008 0005 100	R0.05 X 0.8	1.2	10	45	4
2KCR 008 001 020	R0.1 X 0.8	1.2	2	45	4
2KCR 008 001 040	R0.1 X 0.8	1.2	4	45	4
2KCR 008 001 060	R0.1 X 0.8	1.2	6	45	4
2KCR 008 001 080	R0.1 X 0.8	1.2	8	45	4
2KCR 008 001 100	R0.1 X 0.8	1.2	10	45	4
2KCR 008 002 020	R0.2 X 0.8	1.2	2	45	4

K HARD 2KCR



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 008 002 040	R0.2X0.8	1.2	4	45	4
2KCR 008 002 060	R0.2X0.8	1.2	6	45	4
2KCR 008 002 080	R0.2X0.8	1.2	8	45	4
2KCR 008 002 100	R0.2X0.8	1.2	10	45	4
2KCR 010 0005 040	R0.05X1	1.5	4	45	4
2KCR 010 0005 060	R0.05X1	1.5	6	45	4
2KCR 010 0005 080	R0.05X1	1.5	8	45	4
2KCR 010 0005 100	R0.05X1	1.5	10	45	4
2KCR 010 0005 120	R0.05X1	1.5	12	45	4
2KCR 010 0005 160	R0.05X1	1.5	16	50	4
2KCR 010 0005 200	R0.05X1	1.5	20	50	4
2KCR 010 0005 220	R0.05X1	1.5	22	60	4
2KCR 010 0005 250	R0.05X1	1.5	25	60	4
2KCR 010 001 040	R0.1X1	1.5	4	45	4
2KCR 010 001 060	R0.1X1	1.5	6	45	4
2KCR 010 001 080	R0.1X1	1.5	8	45	4
2KCR 010 001 100	R0.1X1	1.5	10	45	4
2KCR 010 001 120	R0.1X1	1.5	12	45	4
2KCR 010 001 160	R0.1X1	1.5	16	50	4
2KCR 010 001 200	R0.1X1	1.5	20	50	4
2KCR 010 001 220	R0.1X1	1.5	22	60	4
2KCR 010 001 250	R0.1X1	1.5	25	60	4
2KCR 010 002 040	R0.2X1	1.5	4	45	4
2KCR 010 002 060	R0.2X1	1.5	6	45	4
2KCR 010 002 080	R0.2X1	1.5	8	45	4
2KCR 010 002 100	R0.2X1	1.5	10	45	4
2KCR 010 002 120	R0.2X1	1.5	12	45	4
2KCR 010 002 160	R0.2X1	1.5	16	50	4
2KCR 010 002 200	R0.2X1	1.5	20	50	4
2KCR 010 002 220	R0.2X1	1.5	22	60	4
2KCR 010 002 250	R0.2X1	1.5	25	60	4
2KCR 010 0025 040	R0.25X1	1.5	4	65	6
2KCR 010 0025 080	R0.25X1	1.5	8	65	6
2KCR 010 003 040	R0.3X1	1.5	4	45	4
2KCR 010 003 060	R0.3X1	1.5	6	45	4
2KCR 010 003 080	R0.3X1	1.5	8	45	4
2KCR 010 003 100	R0.3X1	1.5	10	45	4
2KCR 010 003 120	R0.3X1	1.5	12	45	4
2KCR 010 003 160	R0.3X1	1.5	16	50	4
2KCR 010 003 200	R0.3X1	1.5	20	50	4
2KCR 010 003 220	R0.3X1	1.5	22	60	4
2KCR 010 003 250	R0.3X1	1.5	25	60	4
2KCR 012 001 040	R0.1X1.2	1.8	4	45	4
2KCR 012 001 060	R0.1X1.2	1.8	6	45	4
2KCR 012 001 080	R0.1X1.2	1.8	8	45	4
2KCR 012 001 100	R0.1X1.2	1.8	10	45	4
2KCR 012 001 120	R0.1X1.2	1.8	12	45	4
2KCR 012 001 160	R0.1X1.2	1.8	16	50	4
2KCR 012 001 200	R0.1X1.2	1.8	20	50	4
2KCR 012 002 040	R0.2X1.2	1.8	4	45	4
2KCR 012 002 060	R0.2X1.2	1.8	6	45	4
2KCR 012 002 080	R0.2X1.2	1.8	8	45	4
2KCR 012 002 100	R0.2X1.2	1.8	10	45	4
2KCR 012 002 120	R0.2X1.2	1.8	12	45	4
2KCR 012 002 160	R0.2X1.2	1.8	16	50	4
2KCR 012 002 200	R0.2X1.2	1.8	20	50	4
2KCR 012 003 040	R0.3X1.2	1.8	4	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 012 003 060	R0.3X1.2	1.8	6	45	4
2KCR 012 003 080	R0.3X1.2	1.8	8	45	4
2KCR 012 003 100	R0.3X1.2	1.8	10	45	4
2KCR 012 003 120	R0.3X1.2	1.8	12	45	4
2KCR 012 003 160	R0.3X1.2	1.8	16	50	4
2KCR 012 003 200	R0.3X1.2	1.8	20	50	4
2KCR 015 001 040	R0.1X1.5	2.3	4	45	4
2KCR 015 001 060	R0.1X1.5	2.3	6	45	4
2KCR 015 001 080	R0.1X1.5	2.3	8	45	4
2KCR 015 001 100	R0.1X1.5	2.3	10	45	4
2KCR 015 001 120	R0.1X1.5	2.3	12	45	4
2KCR 015 001 160	R0.1X1.5	2.3	16	50	4
2KCR 015 001 200	R0.1X1.5	2.3	20	50	4
2KCR 015 001 220	R0.1X1.5	2.3	22	60	4
2KCR 015 001 250	R0.1X1.5	2.3	25	60	4
2KCR 015 002 040	R0.2X1.5	2.3	4	45	4
2KCR 015 002 060	R0.2X1.5	2.3	6	45	4
2KCR 015 002 080	R0.2X1.5	2.3	8	45	4
2KCR 015 002 100	R0.2X1.5	2.3	10	45	4
2KCR 015 002 120	R0.2X1.5	2.3	12	45	4
2KCR 015 002 160	R0.2X1.5	2.3	16	50	4
2KCR 015 002 200	R0.2X1.5	2.3	20	50	4
2KCR 015 002 220	R0.2X1.5	2.3	22	60	4
2KCR 015 002 250	R0.2X1.5	2.3	25	60	4
2KCR 015 003 040	R0.3X1.5	2.3	4	45	4
2KCR 015 003 060	R0.3X1.5	2.3	6	45	4
2KCR 015 060 S06	R0.3X1.5	2.3	6	70	6
2KCR 015 003 080	R0.3X1.5	2.3	8	45	4
2KCR 015 080 S06	R0.3X1.5	2.3	8	70	6
2KCR 015 003 100	R0.3X1.5	2.3	10	45	4
2KCR 015 100 S06	R0.3X1.5	2.3	10	70	6
2KCR 015 003 120	R0.3X1.5	2.3	12	45	4
2KCR 015 003 160	R0.3X1.5	2.3	16	50	4
2KCR 015 003 200	R0.3X1.5	2.3	20	50	4
2KCR 015 003 220	R0.3X1.5	2.3	22	60	4
2KCR 015 003 250	R0.3X1.5	2.3	25	60	4
2KCR 015 005 040	R0.5X1.5	2.3	4	45	4
2KCR 015 005 060	R0.5X1.5	2.3	6	45	4
2KCR 015 005 080	R0.5X1.5	2.3	8	45	4
2KCR 015 005 100	R0.5X1.5	2.3	10	45	4
2KCR 015 005 120	R0.5X1.5	2.3	12	45	4
2KCR 015 005 160	R0.5X1.5	2.3	16	50	4
2KCR 015 005 200	R0.5X1.5	2.3	20	50	4
2KCR 015 005 220	R0.5X1.5	2.3	22	60	4
2KCR 015 005 250	R0.5X1.5	2.3	25	60	4
2KCR 020 001 040	R0.1X2	3	4	45	4
2KCR 020 001 060	R0.1X2	3	6	45	4
2KCR 020 001 080	R0.1X2	3	8	45	4
2KCR 020 001 100	R0.1X2	3	10	45	4
2KCR 020 001 120	R0.1X2	3	12	45	4
2KCR 020 001 160	R0.1X2	3	16	50	4
2KCR 020 001 200	R0.1X2	3	20	50	4
2KCR 020 001 250	R0.1X2	3	25	60	4
2KCR 020 001 300	R0.1X2	3	30	70	4
2KCR 020 002 040	R0.2X2	3	4	45	4
2KCR 020 002 060	R0.2X2	3	6	45	4
2KCR 020 002 080	R0.2X2	3	8	45	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 020 002 100	R0.2X2	3	10	45	4
2KCR 020 002 120	R0.2X2	3	12	45	4
2KCR 020 002 160	R0.2X2	3	16	50	4
2KCR 020 002 200	R0.2X2	3	20	50	4
2KCR 020 002 250	R0.2X2	3	25	60	4
2KCR 020 002 300	R0.2X2	3	30	70	4
2KCR 020 003 040	R0.3X2	3	4	45	4
2KCR 020 003 060	R0.3X2	3	6	45	4
2KCR 020 003 080	R0.3X2	3	8	45	4
2KCR 020 003 100	R0.3X2	3	10	45	4
2KCR 020 003 120	R0.3X2	3	12	45	4
2KCR 020 003 160	R0.3X2	3	16	50	4
2KCR 020 003 200	R0.3X2	3	20	50	4
2KCR 020 003 250	R0.3X2	3	25	60	4
2KCR 020 003 300	R0.3X2	3	30	70	4
2KCR 020 005 040	R0.5X2	3	4	45	4
2KCR 020 005 060	R0.5X2	3	6	45	4
2KCR 020 060 S06	R0.5X2	3	6	70	6
2KCR 020 005 080	R0.5X2	3	8	45	4
2KCR 020 005 100	R0.5X2	3	10	45	4
2KCR 020 100 S06	R0.5X2	3	10	70	6
2KCR 020 005 120	R0.5X2	3	12	45	4
2KCR 020 120 S06	R0.5X2	3	12	70	6
2KCR 020 005 160	R0.5X2	3	16	50	4
2KCR 020 160 S06	R0.5X2	3	16	70	6
2KCR 020 005 180	R0.5X2	3	18	50	4
2KCR 020 005 200	R0.5X2	3	20	50	4
2KCR 020 005 250	R0.5X2	3	25	60	4
2KCR 020 005 300	R0.5X2	3	30	70	4
2KCR 025 001 100	R0.1X2.5	3.8	10	45	4
2KCR 025 001 160	R0.1X2.5	3.8	16	50	4
2KCR 025 001 200	R0.1X2.5	3.8	20	50	4
2KCR 025 001 250	R0.1X2.5	3.8	25	60	4
2KCR 025 001 300	R0.1X2.5	3.8	30	70	4
2KCR 025 002 100	R0.2X2.5	3.8	10	45	4
2KCR 025 002 160	R0.2X2.5	3.8	16	50	4
2KCR 025 002 200	R0.2X2.5	3.8	20	50	4
2KCR 025 002 250	R0.2X2.5	3.8	25	60	4
2KCR 025 002 300	R0.2X2.5	3.8	30	70	4
2KCR 025 003 100	R0.3X2.5	3.8	10	45	4
2KCR 025 003 160	R0.3X2.5	3.8	16	50	4
2KCR 025 003 200	R0.3X2.5	3.8	20	50	4
2KCR 025 003 250	R0.3X2.5	3.8	25	60	4
2KCR 025 003 300	R0.3X2.5	3.8	30	70	4
2KCR 025 005 100	R0.5X2.5	3.8	10	45	4
2KCR 025 005 140	R0.5X2.5	3.8	14	50	4
2KCR 025 005 160	R0.5X2.5	3.8	16	50	4
2KCR 025 005 180	R0.5X2.5	3.8	18	50	4
2KCR 025 005 200	R0.5X2.5	3.8	20	50	4
2KCR 025 005 250	R0.5X2.5	3.8	25	60	4
2KCR 025 005 300	R0.5X2.5	3.8	30	70	4
2KCR 025 010 100	R1.0X2.5	3.8	10	45	4
2KCR 030 001 080	R0.1X3	4.5	8	50	6
2KCR 030 001 100	R0.1X3	4.5	10	50	6
2KCR 030 001 120	R0.1X3	4.5	12	50	6
2KCR 030 001 160	R0.1X3	4.5	16	60	6
2KCR 030 001 200	R0.1X3	4.5	20	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 030 001 250	R0.1X3	4.5	25	65	6
2KCR 030 001 300	R0.1X3	4.5	30	70	6
2KCR 030 001 350	R0.1X3	4.5	35	80	6
2KCR 030 001 400	R0.1X3	4.5	40	80	6
2KCR 030 002 080	R0.2X3	4.5	8	50	6
2KCR 030 002 100	R0.2X3	4.5	10	50	6
2KCR 030 002 120	R0.2X3	4.5	12	50	6
2KCR 030 002 160	R0.2X3	4.5	16	60	6
2KCR 030 002 200	R0.2X3	4.5	20	60	6
2KCR 030 002 250	R0.2X3	4.5	25	65	6
2KCR 030 002 300	R0.2X3	4.5	30	70	6
2KCR 030 002 350	R0.2X3	4.5	35	80	6
2KCR 030 002 400	R0.2X3	4.5	40	80	6
2KCR 030 003 080	R0.3X3	4.5	8	50	6
2KCR 030 003 100	R0.3X3	4.5	10	50	6
2KCR 030 003 120	R0.3X3	4.5	12	50	6
2KCR 030 003 160	R0.3X3	4.5	16	60	6
2KCR 030 003 200	R0.3X3	4.5	20	60	6
2KCR 030 003 250	R0.3X3	4.5	25	65	6
2KCR 030 003 300	R0.3X3	4.5	30	70	6
2KCR 030 003 350	R0.3X3	4.5	35	80	6
2KCR 030 003 400	R0.3X3	4.5	40	80	6
2KCR 030 005 080	R0.5X3	4.5	8	50	6
2KCR 030 080 75L	R0.5X3	4.5	8	75	6
2KCR 030 005 100	R0.5X3	4.5	10	50	6
2KCR 030 005 120	R0.5X3	4.5	12	50	6
2KCR 030 120 75L	R0.5X3	4.5	12	75	6
2KCR 030 005 160	R0.5X3	4.5	16	60	6
2KCR 030 005 200	R0.5X3	4.5	20	60	6
2KCR 030 200 75L	R0.5X3	4.5	20	75	6
2KCR 030 005 250	R0.5X3	4.5	25	65	6
2KCR 030 005 300	R0.5X3	4.5	30	70	6
2KCR 030 005 350	R0.5X3	4.5	35	80	6
2KCR 030 005 400	R0.5X3	4.5	40	80	6
2KCR 030 010 080	R1.0X3	4.5	8	50	6
2KCR 030 010 100	R1.0X3	4.5	10	50	6
2KCR 030 010 120	R1.0X3	4.5	12	50	6
2KCR 030 010 160	R1.0X3	4.5	16	60	6
2KCR 030 010 200	R1.0X3	4.5	20	60	6
2KCR 030 010 250	R1.0X3	4.5	25	65	6
2KCR 030 010 300	R1.0X3	4.5	30	70	6
2KCR 030 010 350	R1.0X3	4.5	35	80	6
2KCR 030 010 400	R1.0X3	4.5	40	80	6
2KCR 040 001 080	R0.1X4	6	8	50	6
2KCR 040 001 100	R0.1X4	6	10	50	6
2KCR 040 001 120	R0.1X4	6	12	50	6
2KCR 040 001 160	R0.1X4	6	16	60	6
2KCR 040 001 200	R0.1X4	6	20	60	6
2KCR 040 001 250	R0.1X4	6	25	65	6
2KCR 040 001 300	R0.1X4	6	30	70	6
2KCR 040 001 350	R0.1X4	6	35	80	6
2KCR 040 001 400	R0.1X4	6	40	80	6
2KCR 040 001 450	R0.1X4	6	45	90	6
2KCR 040 001 500	R0.1X4	6	50	100	6
2KCR 040 002 080	R0.2X4	6	8	50	6
2KCR 040 002 100	R0.2X4	6	10	50	6
2KCR 040 002 120	R0.2X4	6	12	50	6

K HARD 2KCR



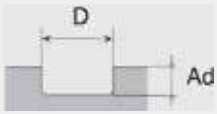
单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 040 002 160	R0.2X4	6	16	60	6
2KCR 040 002 200	R0.2X4	6	20	60	6
2KCR 040 002 250	R0.2X4	6	25	65	6
2KCR 040 002 300	R0.2X4	6	30	70	6
2KCR 040 002 350	R0.2X4	6	35	80	6
2KCR 040 002 400	R0.2X4	6	40	80	6
2KCR 040 002 450	R0.2X4	6	45	90	6
2KCR 040 002 500	R0.2X4	6	50	100	6
2KCR 040 003 080	R0.3X4	6	8	50	6
2KCR 040 003 100	R0.3X4	6	10	50	6
2KCR 040 003 120	R0.3X4	6	12	50	6
2KCR 040 003 160	R0.3X4	6	16	60	6
2KCR 040 003 200	R0.3X4	6	20	60	6
2KCR 040 003 250	R0.3X4	6	25	65	6
2KCR 040 003 300	R0.3X4	6	30	70	6
2KCR 040 003 350	R0.3X4	6	35	80	6
2KCR 040 003 400	R0.3X4	6	40	80	6
2KCR 040 003 450	R0.3X4	6	45	90	6
2KCR 040 003 500	R0.3X4	6	50	100	6
2KCR 040 005 080	R0.5X4	6	8	50	6
2KCR 040 005 100	R0.5X4	6	10	50	6
2KCR 040 005 120	R0.5X4	6	12	50	6
2KCR 040 120 75L	R0.5X4	6	12	75	6
2KCR 040 005 160	R0.5X4	6	16	60	6
2KCR 040 005 200	R0.5X4	6	20	60	6
2KCR 040 200 75L	R0.5X4	6	20	75	6
2KCR 040 005 250	R0.5X4	6	25	65	6
2KCR 040 250 75L	R0.5X4	6	25	75	6
2KCR 040 005 300	R0.5X4	6	30	70	6
2KCR 040 005 350	R0.5X4	6	35	80	6
2KCR 040 005 400	R0.5X4	6	40	80	6
2KCR 040 005 450	R0.5X4	6	45	90	6
2KCR 040 005 500	R0.5X4	6	50	100	6
2KCR 040 010 080	R1.0X4	6	8	50	6
2KCR 040 010 100	R1.0X4	6	10	50	6
2KCR 040 010 120	R1.0X4	6	12	50	6
2KCR 040 010 75L	R1.0X4	6	12	75	6
2KCR 040 010 160	R1.0X4	6	16	60	6
2KCR 040 010 200	R1.0X4	6	20	60	6
2KCR 040 010 250	R1.0X4	6	25	65	6
2KCR 040 010 300	R1.0X4	6	30	70	6
2KCR 040 010 350	R1.0X4	6	35	80	6
2KCR 040 010 400	R1.0X4	6	40	80	6
2KCR 040 010 450	R1.0X4	6	45	90	6
2KCR 040 010 500	R1.0X4	6	50	100	6
2KCR 050 002 150	R0.2X5	7.5	15	60	6
2KCR 050 002 250	R0.2X5	7.5	25	65	6
2KCR 050 002 300	R0.2X5	7.5	30	70	6
2KCR 050 002 400	R0.2X5	7.5	40	80	6
2KCR 050 002 500	R0.2X5	7.5	50	100	6
2KCR 050 005 180	R0.5X5	7.5	18	60	6
2KCR 050 005 250	R0.5X5	7.5	25	65	6
2KCR 050 005 300	R0.5X5	7.5	30	70	6
2KCR 050 005 400	R0.5X5	7.5	40	80	6
2KCR 050 005 500	R0.5X5	7.5	50	100	6
2KCR 050 010 180	R1.0X5	7.5	18	60	6
2KCR 050 010 250	R1.0X5	7.5	25	65	6
2KCR 050 010 300	R1.0X5	7.5	30	70	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KCR 050 010 400	R1.0X5	7.5	40	80	6
2KCR 050 010 500	R1.0X5	7.5	50	100	6
2KCR 060 001 200	R0.1X6	9	20	60	6
2KCR 060 001 400	R0.1X6	9	40	90	6
2KCR 060 002 200	R0.2X6	9	20	60	6
2KCR 060 002 400	R0.2X6	9	40	90	6
2KCR 060 003 200	R0.3X6	9	20	60	6
2KCR 060 003 400	R0.3X6	9	40	90	6
2KCR 060 005 200	R0.5X6	9	20	60	6
2KCR 060 005 400	R0.5X6	9	40	90	6
2KCR 060 010 200	R1.0X6	9	20	60	6
2KCR 060 010 400	R1.0X6	9	40	90	6
2KCR 060 015 200	R1.5X6	9	20	60	6
2KCR 060 015 400	R1.5X6	9	40	90	6
2KCR 080 002 240	R0.2X8	12	24	65	8
2KCR 080 002 400	R0.2X8	12	40	100	8
2KCR 080 003 240	R0.3X8	12	24	65	8
2KCR 080 003 400	R0.3X8	12	40	100	8
2KCR 080 005 240	R0.5X8	12	24	65	8
2KCR 080 005 80L	R0.5X8	12	24	80	8
2KCR 080 005 400	R0.5X8	12	40	100	8
2KCR 080 010 240	R1.0X8	12	24	65	8
2KCR 080 010 80L	R1.0X8	12	24	80	8
2KCR 080 010 400	R1.0X8	12	40	100	8
2KCR 080 015 240	R1.5X8	12	24	65	8
2KCR 080 015 400	R1.5X8	12	40	100	8
2KCR 080 020 240	R2.0X8	12	24	65	8
2KCR 100 002 300	R0.2X 10	15	30	70	10
2KCR 100 002 400	R0.2X 10	15	40	100	10
2KCR 100 003 300	R0.3X 10	15	30	70	10
2KCR 100 003 400	R0.3X 10	15	40	100	10
2KCR 100 005 300	R0.5X 10	15	30	70	10
2KCR 100 005 400	R0.5X 10	15	40	100	10
2KCR 100 010 300	R1.0X 10	15	30	70	10
2KCR 100 010 400	R1.0X 10	15	40	100	10
2KCR 100 015 300	R1.5X 10	15	30	70	10
2KCR 100 015 400	R1.5X 10	15	40	100	10
2KCR 100 020 300	R2.0X 10	15	30	70	10
2KCR 100 020 400	R2.0X 10	15	40	100	10
2KCR 120 002 300	R0.2X12	18	30	80	12
2KCR 120 002 500	R0.2X12	18	50	110	12
2KCR 120 003 300	R0.3X12	18	30	80	12
2KCR 120 003 500	R0.3X12	18	50	110	12
2KCR 120 005 300	R0.5X12	18	30	80	12
2KCR 120 005 500	R0.5X12	18	50	110	12
2KCR 120 010 300	R1.0X12	18	30	80	12
2KCR 120 010 500	R1.0X12	18	50	110	12
2KCR 120 015 300	R1.5X12	18	30	80	12
2KCR 120 015 500	R1.5X12	18	50	110	12
2KCR 120 020 300	R2.0X12	18	30	80	12
2KCR 120 020 500	R2.0X12	18	50	110	12
2KCR 120 030 300	R3.0X12	18	30	80	12
2KCR 120 030 500	R3.0X12	18	50	110	12
2KCR 160 005 400	R0.5X16	24	40	110	16
2KCR 160 005 150L	R0.5X16	24	40	150	16
2KCR 160 010 400	R1.0X16	24	40	110	16
2KCR 160 010 150L	R1.0X16	24	40	150	16

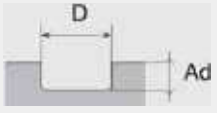
2KCR/2KNR

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			COPPER ALLOYS		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55					
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.2	0.002 ~ 0.005	30,000 ~ 38,000	80 ~ 150	0.002 ~ 0.005	32,000 ~ 42,000	60 ~ 120	0.002 ~ 0.005	30,000 ~ 38,000	120 ~ 220
0.3	0.005 ~ 0.007	28,000 ~ 35,000	100 ~ 200	0.003 ~ 0.006	30,000 ~ 36,000	80 ~ 160	0.005 ~ 0.018	28,000 ~ 35,000	180 ~ 260
0.4	0.005 ~ 0.010	25,000 ~ 30,000	200 ~ 350	0.003 ~ 0.008	28,000 ~ 35,000	120 ~ 300	0.005 ~ 0.024	25,000 ~ 30,000	200 ~ 360
0.5	0.005 ~ 0.020	18,000 ~ 30,000	200 ~ 500	0.005 ~ 0.010	20,000 ~ 25,000	150 ~ 350	0.005 ~ 0.030	22,000 ~ 30,000	220 ~ 600
0.6	0.006 ~ 0.030	18,000 ~ 30,000	180 ~ 600	0.006 ~ 0.020	12,000 ~ 25,000	100 ~ 400	0.006 ~ 0.030	18,000 ~ 30,000	250 ~ 650
0.7	0.007 ~ 0.030	18,000 ~ 30,000	140 ~ 650	0.007 ~ 0.020	12,000 ~ 25,000	100 ~ 450	0.007 ~ 0.050	18,000 ~ 30,000	250 ~ 700
0.8	0.008 ~ 0.030	14,000 ~ 25,000	250 ~ 1,100	0.008 ~ 0.025	12,000 ~ 25,000	150 ~ 900	0.008 ~ 0.060	14,000 ~ 25,000	400 ~ 1,400
1	0.010 ~ 0.050	14,000 ~ 25,000	250 ~ 1,100	0.005 ~ 0.050	10,000 ~ 20,000	150 ~ 900	0.010 ~ 0.080	14,000 ~ 25,000	500 ~ 2,000
1.2	0.010 ~ 0.050	11,000 ~ 25,000	300 ~ 1,100	0.008 ~ 0.050	10,000 ~ 18,000	150 ~ 800	0.010 ~ 0.080	11,000 ~ 25,000	600 ~ 2,000
1.5	0.015 ~ 0.090	10,000 ~ 20,000	300 ~ 1,600	0.005 ~ 0.060	8,000 ~ 18,000	180 ~ 1,000	0.015 ~ 0.090	10,000 ~ 20,000	800 ~ 2,000
2	0.020 ~ 0.120	9,000 ~ 18,000	300 ~ 2,000	0.010 ~ 0.050	8,000 ~ 16,000	250 ~ 1,000	0.020 ~ 0.130	9,000 ~ 18,000	1,200 ~ 2,500
2.5	0.050 ~ 0.130	8,000 ~ 18,000	300 ~ 2,000	0.035 ~ 0.070	8,000 ~ 16,000	250 ~ 1,000	0.050 ~ 0.130	8,000 ~ 18,000	1,200 ~ 2,800
3	0.030 ~ 0.150	5,000 ~ 18,000	400 ~ 1,800	0.010 ~ 0.080	6,000 ~ 10,000	250 ~ 1,000	0.030 ~ 0.200	5,000 ~ 18,000	1,500 ~ 3,000
4	0.030 ~ 0.200	5,000 ~ 14,000	500 ~ 1,500	0.025 ~ 0.200	4,000 ~ 10,000	300 ~ 1,000	0.030 ~ 0.300	5,000 ~ 14,000	1,500 ~ 3,200
5	0.100 ~ 0.200	5,000 ~ 14,000	500 ~ 1,800	0.100 ~ 0.200	4,000 ~ 13,000	400 ~ 1,500	0.100 ~ 0.400	5,000 ~ 14,000	1,500 ~ 3,200
6	0.100 ~ 0.200	4,000 ~ 9,000	1,000 ~ 2,000	0.100 ~ 0.200	4,000 ~ 13,000	800 ~ 1,200	0.200 ~ 0.400	8,000 ~ 14,000	2,500 ~ 3,500
8	0.100 ~ 0.200	3,500 ~ 6,000	1,000 ~ 2,000	0.100 ~ 0.200	3,500 ~ 7,500	800 ~ 1,200	0.200 ~ 0.400	7,000 ~ 12,000	2,500 ~ 4,000
10	0.100 ~ 0.200	3,000 ~ 5,000	1,000 ~ 2,000	0.100 ~ 0.200	3,000 ~ 6,000	800 ~ 1,200	0.200 ~ 0.400	5,000 ~ 12,000	2,500 ~ 4,500
12	0.100 ~ 0.200	3,000 ~ 5,000	1,000 ~ 2,000	0.100 ~ 0.200	3,000 ~ 5,000	800 ~ 1,200	0.200 ~ 0.400	3,000 ~ 9,000	2,500 ~ 4,500
16	0.100 ~ 0.200	1,800 ~ 3,000	1,000 ~ 2,000	0.100 ~ 0.200	1,800 ~ 3,000	800 ~ 1,200	0.200 ~ 0.400	1,800 ~ 3,000	2,500 ~ 4,500
20	0.100 ~ 0.200	1,200 ~ 2,500	1,000 ~ 2,000	0.100 ~ 0.200	1,200 ~ 2,500	800 ~ 1,200	0.200 ~ 0.400	1,200 ~ 2,500	2,500 ~ 4,500
Depth of Cut									

4KCR/4KNR/4BCR/4BNR

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.8	0.006 ~ 0.030	12,000 ~ 25,000	250 ~ 1,000	0.004 ~ 0.025	12,000 ~ 25,000	250 ~ 1,000	0.002 ~ 0.020	12,000 ~ 25,000	250 ~ 1,000
1	0.007 ~ 0.050	10,000 ~ 25,000	600 ~ 2,000	0.005 ~ 0.040	8,000 ~ 20,000	500 ~ 1,800	0.003 ~ 0.030	5,000 ~ 16,000	500 ~ 1,800
1.2	0.009 ~ 0.045	10,000 ~ 25,000	500 ~ 1,000	0.006 ~ 0.040	8,000 ~ 20,000	500 ~ 1,800	0.004 ~ 0.030	8,000 ~ 20,000	500 ~ 1,800
1.5	0.010 ~ 0.050	8,000 ~ 20,000	450 ~ 2,000	0.007 ~ 0.040	7,000 ~ 20,000	350 ~ 1,600	0.005 ~ 0.030	5,000 ~ 15,000	350 ~ 1,600
2	0.015 ~ 0.060	7,000 ~ 18,000	500 ~ 1,800	0.010 ~ 0.050	8,000 ~ 15,000	450 ~ 1,500	0.005 ~ 0.030	5,000 ~ 12,000	450 ~ 1,500
2.5	0.030 ~ 0.070	7,000 ~ 14,000	600 ~ 1,500	0.020 ~ 0.050	8,000 ~ 15,000	500 ~ 1,400	0.008 ~ 0.030	4,500 ~ 10,000	500 ~ 1,400
3	0.020 ~ 0.100	5,000 ~ 18,000	700 ~ 2,200	0.015 ~ 0.060	6,000 ~ 12,000	600 ~ 1,800	0.008 ~ 0.030	4,500 ~ 10,000	600 ~ 1,800
4	0.025 ~ 0.100	4,500 ~ 12,000	700 ~ 2,000	0.010 ~ 0.060	4,000 ~ 10,000	600 ~ 1,500	0.008 ~ 0.050	3,000 ~ 8,500	600 ~ 1,500
5	0.100 ~ 0.200	5,000 ~ 8,000	1,000 ~ 2,000	0.050 ~ 0.100	3,500 ~ 10,000	1,000 ~ 1,600	0.030 ~ 0.050	3,500 ~ 7,000	800 ~ 1,300
6	0.050 ~ 0.150	4,000 ~ 10,000	2,000 ~ 3,500	0.030 ~ 0.100	3,500 ~ 10,000	2,000 ~ 3,000	0.010 ~ 0.060	3,500 ~ 7,000	1,200 ~ 2,000
8	0.050 ~ 0.150	6,500 ~ 9,000	2,500 ~ 3,600	0.030 ~ 0.100	5,000 ~ 7,500	2,000 ~ 3,000	0.020 ~ 0.050	4,500 ~ 6,000	1,500 ~ 2,500
10	0.050 ~ 0.150	5,000 ~ 7,500	2,300 ~ 3,000	0.030 ~ 0.100	4,000 ~ 6,000	1,800 ~ 2,300	0.020 ~ 0.050	3,500 ~ 5,500	1,200 ~ 2,000
12	0.050 ~ 0.200	3,000 ~ 5,000	1,700 ~ 2,500	0.030 ~ 0.120	3,000 ~ 5,000	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600
16	0.050 ~ 0.200	1,500 ~ 2,800	1,500 ~ 3,000	0.030 ~ 0.120	1,500 ~ 2,800	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600
20	0.050 ~ 0.200	1,200 ~ 2,500	1,500 ~ 3,000	0.030 ~ 0.120	1,200 ~ 2,500	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600
Depth of Cut									

K HARD 4KCR

4 Flutes Rib Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

4刃 リブ コーナー ラジウス エンドミル

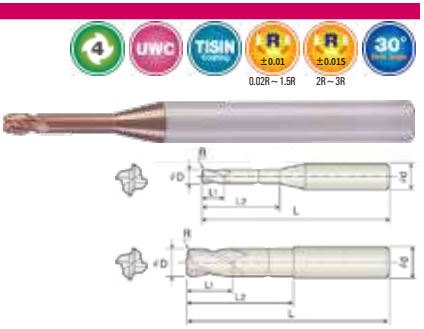
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 리브 코너 레디우스 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø6	+0~-0.010mm
D≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 008 0002 020	R0.02 X 0.8	1.2	2	45	4
4KCR 008 0002 040	R0.02 X 0.8	1.2	4	45	4
4KCR 008 0002 060	R0.02 X 0.8	1.2	6	45	4
4KCR 008 0002 080	R0.02 X 0.8	1.2	8	45	4
4KCR 008 0002 100	R0.02 X 0.8	1.2	10	45	4
4KCR 008 0005 020	R0.05 X 0.8	1.2	2	45	4
4KCR 008 0005 040	R0.05 X 0.8	1.2	4	45	4
4KCR 008 0005 060	R0.05 X 0.8	1.2	6	45	4
4KCR 008 0005 080	R0.05 X 0.8	1.2	8	45	4
4KCR 008 0005 100	R0.05 X 0.8	1.2	10	45	4
4KCR 008 001 020	R0.1 X 0.8	1.2	2	45	4
4KCR 008 001 040	R0.1 X 0.8	1.2	4	45	4
4KCR 008 001 060	R0.1 X 0.8	1.2	6	45	4
4KCR 008 001 080	R0.1 X 0.8	1.2	8	45	4
4KCR 008 001 100	R0.1 X 0.8	1.2	10	45	4
4KCR 010 0002 040	R0.02 X 1	1.5	4	45	4
4KCR 010 0002 060	R0.02 X 1	1.5	6	45	4
4KCR 010 0002 080	R0.02 X 1	1.5	8	45	4
4KCR 010 0002 100	R0.02 X 1	1.5	10	45	4
4KCR 010 0002 120	R0.02 X 1	1.5	12	45	4
4KCR 010 0002 160	R0.02 X 1	1.5	16	50	4
4KCR 010 0002 200	R0.02 X 1	1.5	20	50	4
4KCR 010 0005 040	R0.05 X 1	1.5	4	45	4
4KCR 010 0005 060	R0.05 X 1	1.5	6	45	4
4KCR 010 0005 080	R0.05 X 1	1.5	8	45	4
4KCR 010 0005 100	R0.05 X 1	1.5	10	45	4
4KCR 010 0005 120	R0.05 X 1	1.5	12	45	4
4KCR 010 0005 160	R0.05 X 1	1.5	16	50	4
4KCR 010 0005 200	R0.05 X 1	1.5	20	50	4
4KCR 010 001 040	R0.1 X 1	1.5	4	45	4
4KCR 010 001 060	R0.1 X 1	1.5	6	45	4
4KCR 010 001 080	R0.1 X 1	1.5	8	45	4
4KCR 010 001 100	R0.1 X 1	1.5	10	45	4
4KCR 010 001 120	R0.1 X 1	1.5	12	45	4
4KCR 010 001 160	R0.1 X 1	1.5	16	50	4
4KCR 010 001 200	R0.1 X 1	1.5	20	50	4
4KCR 010 002 040	R0.2 X 1	1.5	4	45	4
4KCR 010 002 060	R0.2 X 1	1.5	6	45	4
4KCR 010 002 080	R0.2 X 1	1.5	8	45	4
4KCR 010 002 100	R0.2 X 1	1.5	10	45	4
4KCR 010 002 120	R0.2 X 1	1.5	12	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 010 002 160	R0.2 X 1	1.5	16	50	4
4KCR 010 002 200	R0.2 X 1	1.5	20	50	4
4KCR 010 003 040	R0.3 X 1	1.5	4	45	4
4KCR 010 003 060	R0.3 X 1	1.5	6	45	4
4KCR 010 003 080	R0.3 X 1	1.5	8	45	4
4KCR 010 003 100	R0.3 X 1	1.5	10	45	4
4KCR 010 003 120	R0.3 X 1	1.5	12	45	4
4KCR 010 003 160	R0.3 X 1	1.5	16	50	4
4KCR 010 003 200	R0.3 X 1	1.5	20	50	4
4KCR 012 0002 040	R0.02 X 1.2	1.8	4	45	4
4KCR 012 0002 060	R0.02 X 1.2	1.8	6	45	4
4KCR 012 0002 080	R0.02 X 1.2	1.8	8	45	4
4KCR 012 0002 100	R0.02 X 1.2	1.8	10	45	4
4KCR 012 0002 120	R0.02 X 1.2	1.8	12	45	4
4KCR 012 0002 160	R0.02 X 1.2	1.8	16	50	4
4KCR 012 0002 200	R0.02 X 1.2	1.8	20	50	4
4KCR 012 0005 040	R0.05 X 1.2	1.8	4	45	4
4KCR 012 0005 060	R0.05 X 1.2	1.8	6	45	4
4KCR 012 0005 080	R0.05 X 1.2	1.8	8	45	4
4KCR 012 0005 100	R0.05 X 1.2	1.8	10	45	4
4KCR 012 0005 120	R0.05 X 1.2	1.8	12	45	4
4KCR 012 0005 160	R0.05 X 1.2	1.8	16	50	4
4KCR 012 0005 200	R0.05 X 1.2	1.8	20	50	4
4KCR 012 001 040	R0.1 X 1.2	1.8	4	45	4
4KCR 012 001 060	R0.1 X 1.2	1.8	6	45	4
4KCR 012 001 080	R0.1 X 1.2	1.8	8	45	4
4KCR 012 001 100	R0.1 X 1.2	1.8	10	45	4
4KCR 012 001 120	R0.1 X 1.2	1.8	12	45	4
4KCR 012 001 160	R0.1 X 1.2	1.8	16	50	4
4KCR 012 001 200	R0.1 X 1.2	1.8	20	50	4
4KCR 012 002 040	R0.2 X 1.2	1.8	4	45	4
4KCR 012 002 060	R0.2 X 1.2	1.8	6	45	4
4KCR 012 002 080	R0.2 X 1.2	1.8	8	45	4
4KCR 012 002 100	R0.2 X 1.2	1.8	10	45	4
4KCR 012 002 120	R0.2 X 1.2	1.8	12	45	4
4KCR 012 002 160	R0.2 X 1.2	1.8	16	50	4
4KCR 012 002 200	R0.2 X 1.2	1.8	20	50	4
4KCR 012 003 040	R0.3 X 1.2	1.8	4	45	4
4KCR 012 003 060	R0.3 X 1.2	1.8	6	45	4
4KCR 012 003 080	R0.3 X 1.2	1.8	8	45	4
4KCR 012 003 100	R0.3 X 1.2	1.8	10	45	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 012 003 120	R0.3X1.2	1.8	12	45	4
4KCR 012 003 160	R0.3X1.2	1.8	16	50	4
4KCR 012 003 200	R0.3X1.2	1.8	20	50	4
4KCR 015 0002 040	R0.02X1.5	2.3	4	45	4
4KCR 015 0002 060	R0.02X1.5	2.3	6	45	4
4KCR 015 0002 080	R0.02X1.5	2.3	8	45	4
4KCR 015 0002 100	R0.02X1.5	2.3	10	45	4
4KCR 015 0002 120	R0.02X1.5	2.3	12	45	4
4KCR 015 0002 160	R0.02X1.5	2.3	16	50	4
4KCR 015 0002 200	R0.02X1.5	2.3	20	50	4
4KCR 015 0002 220	R0.02X1.5	2.3	22	60	4
4KCR 015 0002 250	R0.02X1.5	2.3	25	60	4
4KCR 015 0005 040	R0.05X1.5	2.3	4	45	4
4KCR 015 0005 060	R0.05X1.5	2.3	6	45	4
4KCR 015 0005 080	R0.05X1.5	2.3	8	45	4
4KCR 015 0005 100	R0.05X1.5	2.3	10	45	4
4KCR 015 0005 120	R0.05X1.5	2.3	12	45	4
4KCR 015 0005 160	R0.05X1.5	2.3	16	50	4
4KCR 015 0005 200	R0.05X1.5	2.3	20	50	4
4KCR 015 0005 220	R0.05X1.5	2.3	22	60	4
4KCR 015 0005 250	R0.05X1.5	2.3	25	60	4
4KCR 015 001 040	R0.1X1.5	2.3	4	45	4
4KCR 015 001 060	R0.1X1.5	2.3	6	45	4
4KCR 015 001 080	R0.1X1.5	2.3	8	45	4
4KCR 015 001 100	R0.1X1.5	2.3	10	45	4
4KCR 015 001 120	R0.1X1.5	2.3	12	45	4
4KCR 015 001 160	R0.1X1.5	2.3	16	50	4
4KCR 015 001 200	R0.1X1.5	2.3	20	50	4
4KCR 015 001 220	R0.1X1.5	2.3	22	60	4
4KCR 015 001 250	R0.1X1.5	2.3	25	60	4
4KCR 015 002 040	R0.2X1.5	2.3	4	45	4
4KCR 015 002 060	R0.2X1.5	2.3	6	45	4
4KCR 015 002 080	R0.2X1.5	2.3	8	45	4
4KCR 015 002 100	R0.2X1.5	2.3	10	45	4
4KCR 015 002 120	R0.2X1.5	2.3	12	45	4
4KCR 015 002 160	R0.2X1.5	2.3	16	50	4
4KCR 015 002 200	R0.2X1.5	2.3	20	50	4
4KCR 015 002 220	R0.2X1.5	2.3	22	60	4
4KCR 015 002 250	R0.2X1.5	2.3	25	60	4
4KCR 015 003 040	R0.3X1.5	2.3	4	45	4
4KCR 015 003 060	R0.3X1.5	2.3	6	45	4
4KCR 015 003 080	R0.3X1.5	2.3	8	45	4
4KCR 015 003 100	R0.3X1.5	2.3	10	45	4
4KCR 015 003 120	R0.3X1.5	2.3	12	45	4
4KCR 015 003 160	R0.3X1.5	2.3	16	50	4
4KCR 015 003 200	R0.3X1.5	2.3	20	50	4
4KCR 015 003 220	R0.3X1.5	2.3	22	60	4
4KCR 015 003 250	R0.3X1.5	2.3	25	60	4
4KCR 015 005 040	R0.5X1.5	2.3	4	45	4
4KCR 015 005 060	R0.5X1.5	2.3	6	45	4
4KCR 015 005 080	R0.5X1.5	2.3	8	45	4
4KCR 015 005 100	R0.5X1.5	2.3	10	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 015 005 120	R0.5X1.5	2.3	12	45	4
4KCR 015 005 160	R0.5X1.5	2.3	16	50	4
4KCR 015 005 200	R0.5X1.5	2.3	20	50	4
4KCR 015 005 220	R0.5X1.5	2.3	22	60	4
4KCR 015 005 250	R0.5X1.5	2.3	25	60	4
4KCR 020 0002 040	R0.02X2	3	4	45	4
4KCR 020 0002 060	R0.02X2	3	6	45	4
4KCR 020 0002 080	R0.02X2	3	8	45	4
4KCR 020 0002 100	R0.02X2	3	10	45	4
4KCR 020 0002 120	R0.02X2	3	12	45	4
4KCR 020 0002 140	R0.02X2	3	14	50	4
4KCR 020 0002 160	R0.02X2	3	16	50	4
4KCR 020 0002 180	R0.02X2	3	18	50	4
4KCR 020 0002 200	R0.02X2	3	20	50	4
4KCR 020 0002 220	R0.02X2	3	22	60	4
4KCR 020 0002 250	R0.02X2	3	25	60	4
4KCR 020 0002 300	R0.02X2	3	30	70	4
4KCR 020 0002 350	R0.02X2	3	35	70	4
4KCR 020 0005 040	R0.05X2	3	4	45	4
4KCR 020 0005 060	R0.05X2	3	6	45	4
4KCR 020 0005 080	R0.05X2	3	8	45	4
4KCR 020 0005 100	R0.05X2	3	10	45	4
4KCR 020 0005 120	R0.05X2	3	12	45	4
4KCR 020 0005 140	R0.05X2	3	14	50	4
4KCR 020 0005 160	R0.05X2	3	16	50	4
4KCR 020 0005 180	R0.05X2	3	18	50	4
4KCR 020 0005 200	R0.05X2	3	20	50	4
4KCR 020 0005 220	R0.05X2	3	22	60	4
4KCR 020 0005 250	R0.05X2	3	25	60	4
4KCR 020 0005 300	R0.05X2	3	30	70	4
4KCR 020 0005 350	R0.05X2	3	35	70	4
4KCR 020 001 040	R0.1X2	3	4	45	4
4KCR 020 001 060	R0.1X2	3	6	45	4
4KCR 020 001 080	R0.1X2	3	8	45	4
4KCR 020 001 100	R0.1X2	3	10	45	4
4KCR 020 001 120	R0.1X2	3	12	45	4
4KCR 020 001 140	R0.1X2	3	14	50	4
4KCR 020 001 160	R0.1X2	3	16	50	4
4KCR 020 001 180	R0.1X2	3	18	50	4
4KCR 020 001 200	R0.1X2	3	20	50	4
4KCR 020 001 220	R0.1X2	3	22	60	4
4KCR 020 001 250	R0.1X2	3	25	60	4
4KCR 020 001 300	R0.1X2	3	30	70	4
4KCR 020 001 350	R0.1X2	3	35	70	4
4KCR 020 002 040	R0.2X2	3	4	45	4
4KCR 020 002 060	R0.2X2	3	6	45	4
4KCR 020 002 080	R0.2X2	3	8	45	4
4KCR 020 002 100	R0.2X2	3	10	45	4
4KCR 020 002 120	R0.2X2	3	12	45	4
4KCR 020 002 140	R0.2X2	3	14	50	4
4KCR 020 002 160	R0.2X2	3	16	50	4
4KCR 020 002 180	R0.2X2	3	18	50	4

K HARD 4KCR



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 020 002 200	R0.2X2	3	20	50	4
4KCR 020 002 220	R0.2X2	3	22	60	4
4KCR 020 002 250	R0.2X2	3	25	60	4
4KCR 020 002 300	R0.2X2	3	30	70	4
4KCR 020 002 350	R0.2X2	3	35	70	4
4KCR 020 003 040	R0.3X2	3	4	45	4
4KCR 020 003 060	R0.3X2	3	6	45	4
4KCR 020 003 080	R0.3X2	3	8	45	4
4KCR 020 003 100	R0.3X2	3	10	45	4
4KCR 020 003 120	R0.3X2	3	12	45	4
4KCR 020 003 140	R0.3X2	3	14	50	4
4KCR 020 003 160	R0.3X2	3	16	50	4
4KCR 020 003 180	R0.3X2	3	18	50	4
4KCR 020 003 200	R0.3X2	3	20	50	4
4KCR 020 003 220	R0.3X2	3	22	60	4
4KCR 020 003 250	R0.3X2	3	25	60	4
4KCR 020 003 300	R0.3X2	3	30	70	4
4KCR 020 003 350	R0.3X2	3	35	70	4
4KCR 020 005 040	R0.5X2	3	4	45	4
4KCR 020 005 060	R0.5X2	3	6	45	4
4KCR 020 005 080	R0.5X2	3	8	45	4
4KCR 020 005 100	R0.5X2	3	10	45	4
4KCR 020 005 120	R0.5X2	3	12	45	4
4KCR 020 005 140	R0.5X2	3	14	50	4
4KCR 020 005 160	R0.5X2	3	16	50	4
4KCR 020 005 180	R0.5X2	3	18	50	4
4KCR 020 005 200	R0.5X2	3	20	50	4
4KCR 020 005 220	R0.5X2	3	22	60	4
4KCR 020 005 250	R0.5X2	3	25	60	4
4KCR 020 005 300	R0.5X2	3	30	70	4
4KCR 020 005 350	R0.5X2	3	35	70	4
4KCR 025 001 060	R0.1X2.5	3.8	6	45	4
4KCR 025 001 080	R0.1X2.5	3.8	8	45	4
4KCR 025 001 100	R0.1X2.5	3.8	10	45	4
4KCR 025 001 120	R0.1X2.5	3.8	12	45	4
4KCR 025 001 160	R0.1X2.5	3.8	16	50	4
4KCR 025 001 200	R0.1X2.5	3.8	20	50	4
4KCR 025 001 250	R0.1X2.5	3.8	25	60	4
4KCR 025 001 300	R0.1X2.5	3.8	30	70	4
4KCR 025 002 060	R0.2X2.5	3.8	6	45	4
4KCR 025 002 080	R0.2X2.5	3.8	8	45	4
4KCR 025 002 100	R0.2X2.5	3.8	10	45	4
4KCR 025 002 120	R0.2X2.5	3.8	12	45	4
4KCR 025 002 160	R0.2X2.5	3.8	16	50	4
4KCR 025 002 200	R0.2X2.5	3.8	20	50	4
4KCR 025 002 250	R0.2X2.5	3.8	25	60	4
4KCR 025 002 300	R0.2X2.5	3.8	30	70	4
4KCR 025 003 060	R0.3X2.5	3.8	6	45	4
4KCR 025 003 080	R0.3X2.5	3.8	8	45	4
4KCR 025 003 100	R0.3X2.5	3.8	10	45	4
4KCR 025 003 120	R0.3X2.5	3.8	12	45	4
4KCR 025 003 160	R0.3X2.5	3.8	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 025 003 200	R0.3X2.5	3.8	20	50	4
4KCR 025 003 250	R0.3X2.5	3.8	25	60	4
4KCR 025 003 300	R0.3X2.5	3.8	30	70	4
4KCR 025 005 060	R0.5X2.5	3.8	6	45	4
4KCR 025 005 080	R0.5X2.5	3.8	8	45	4
4KCR 025 005 100	R0.5X2.5	3.8	10	45	4
4KCR 025 005 120	R0.5X2.5	3.8	12	45	4
4KCR 025 005 160	R0.5X2.5	3.8	16	50	4
4KCR 025 005 200	R0.5X2.5	3.8	20	50	4
4KCR 025 005 250	R0.5X2.5	3.8	25	60	4
4KCR 025 005 300	R0.5X2.5	3.8	30	70	4
4KCR 030 001 080	R0.1X3	4.5	8	50	6
4KCR 030 001 100	R0.1X3	4.5	10	50	4
4KCR 030 001 S06	R0.1X3	4.5	10	50	6
4KCR 030 001 120	R0.1X3	4.5	12	50	6
4KCR 030 001 160	R0.1X3	4.5	16	60	6
4KCR 030 001 200	R0.1X3	4.5	20	60	6
4KCR 030 001 250	R0.1X3	4.5	25	65	6
4KCR 030 001 300	R0.1X3	4.5	30	70	6
4KCR 030 001 350	R0.1X3	4.5	35	80	6
4KCR 030 001 400	R0.1X3	4.5	40	80	6
4KCR 030 001 500	R0.1X3	4.5	50	100	6
4KCR 030 002 080	R0.2X3	4.5	8	50	6
4KCR 030 002 100	R0.2X3	4.5	10	50	3
4KCR 030 002 S04	R0.2X3	4.5	10	50	4
4KCR 030 002 S06	R0.2X3	4.5	10	50	6
4KCR 030 002 120	R0.2X3	4.5	12	50	6
4KCR 030 002 160	R0.2X3	4.5	16	60	6
4KCR 030 002 200	R0.2X3	4.5	20	60	6
4KCR 030 002 250	R0.2X3	4.5	25	65	6
4KCR 030 002 300	R0.2X3	4.5	30	70	6
4KCR 030 002 350	R0.2X3	4.5	35	80	6
4KCR 030 002 400	R0.2X3	4.5	40	80	6
4KCR 030 002 500	R0.2X3	4.5	50	100	6
4KCR 030 003 080	R0.3X3	4.5	8	50	6
4KCR 030 003 100	R0.3X3	4.5	10	50	3
4KCR 030 003 S04	R0.3X3	4.5	10	50	4
4KCR 030 003 S06	R0.3X3	4.5	10	50	6
4KCR 030 003 120	R0.3X3	4.5	12	50	6
4KCR 030 003 160	R0.3X3	4.5	16	60	6
4KCR 030 003 200	R0.3X3	4.5	20	60	6
4KCR 030 003 250	R0.3X3	4.5	25	65	6
4KCR 030 003 300	R0.3X3	4.5	30	70	6
4KCR 030 003 350	R0.3X3	4.5	35	80	6
4KCR 030 003 400	R0.3X3	4.5	40	80	6
4KCR 030 003 500	R0.3X3	4.5	50	100	6
4KCR 030 005 080	R0.5X3	4.5	8	50	6
4KCR 030 005 100	R0.5X3	4.5	10	50	3
4KCR 030 005 S04	R0.5X3	4.5	10	50	4
4KCR 030 005 S06	R0.5X3	4.5	10	50	6
4KCR 030 005 120	R0.5X3	4.5	12	50	6
4KCR 030 005 160	R0.5X3	4.5	16	60	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 030 005 200	R0.5X3	4.5	20	60	6
4KCR 030 005 250	R0.5X3	4.5	25	65	6
4KCR 030 005 300	R0.5X3	4.5	30	70	6
4KCR 030 005 350	R0.5X3	4.5	35	75	6
4KCR 030 005 400	R0.5X3	4.5	40	80	6
4KCR 030 005 500	R0.5X3	4.5	50	100	6
4KCR 030 010 080	R1.0X3	4.5	8	50	6
4KCR 030 010 100	R1.0X3	4.5	10	50	3
4KCR 030 010 S04	R1.0X3	4.5	10	50	4
4KCR 030 010 S06	R1.0X3	4.5	10	50	6
4KCR 030 010 120	R1.0X3	4.5	12	50	6
4KCR 030 010 160	R1.0X3	4.5	16	60	6
4KCR 030 010 200	R1.0X3	4.5	20	60	6
4KCR 030 010 250	R1.0X3	4.5	25	65	6
4KCR 030 010 300	R1.0X3	4.5	30	70	6
4KCR 030 010 350	R1.0X3	4.5	35	80	6
4KCR 030 010 400	R1.0X3	4.5	40	80	6
4KCR 030 010 500	R1.0X3	4.5	50	100	6
4KCR 040 001 080	R0.1X4	6	8	50	6
4KCR 040 001 100	R0.1X4	6	10	50	6
4KCR 040 001 120	R0.1X4	6	12	50	4
4KCR 040 001 S06	R0.1X4	6	12	50	6
4KCR 040 001 160	R0.1X4	6	16	60	6
4KCR 040 001 200	R0.1X4	6	20	60	6
4KCR 040 001 250	R0.1X4	6	25	65	6
4KCR 040 001 300	R0.1X4	6	30	70	6
4KCR 040 001 350	R0.1X4	6	35	80	6
4KCR 040 001 400	R0.1X4	6	40	80	6
4KCR 040 001 450	R0.1X4	6	45	90	6
4KCR 040 001 500	R0.1X4	6	50	100	6
4KCR 040 002 080	R0.2X4	6	8	50	6
4KCR 040 002 100	R0.2X4	6	10	50	6
4KCR 040 002 120	R0.2X4	6	12	50	4
4KCR 040 002 S06	R0.2X4	6	12	50	6
4KCR 040 002 160	R0.2X4	6	16	60	6
4KCR 040 002 200	R0.2X4	6	20	60	6
4KCR 040 002 250	R0.2X4	6	25	65	6
4KCR 040 002 300	R0.2X4	6	30	70	6
4KCR 040 002 350	R0.2X4	6	35	80	6
4KCR 040 002 400	R0.2X4	6	40	80	6
4KCR 040 002 450	R0.2X4	6	45	90	6
4KCR 040 002 500	R0.2X4	6	50	100	6
4KCR 040 003 080	R0.3X4	6	8	50	6
4KCR 040 003 100	R0.3X4	6	10	50	6
4KCR 040 003 120	R0.3X4	6	12	50	4
4KCR 040 003 S06	R0.3X4	6	12	50	6
4KCR 040 003 160	R0.3X4	6	16	60	6
4KCR 040 003 200	R0.3X4	6	20	60	6
4KCR 040 003 250	R0.3X4	6	25	65	6
4KCR 040 003 300	R0.3X4	6	30	70	6
4KCR 040 003 350	R0.3X4	6	35	80	6
4KCR 040 003 400	R0.3X4	6	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 040 003 450	R0.3X4	6	45	90	6
4KCR 040 003 500	R0.3X4	6	50	100	6
4KCR 040 005 080	R0.5X4	6	8	50	6
4KCR 040 005 100	R0.5X4	6	10	50	6
4KCR 040 005 120	R0.5X4	6	12	50	4
4KCR 040 005 S06	R0.5X4	6	12	50	6
4KCR 040 005 160	R0.5X4	6	16	50	4
4KCR 040 005 100L	R0.5X4	6	16	100	4
4KCR 040 160 S06	R0.5X4	6	16	60	6
4KCR 040 005 200	R0.5X4	6	20	60	6
4KCR 040 005 250	R0.5X4	6	25	65	6
4KCR 040 005 300	R0.5X4	6	30	70	6
4KCR 040 005 350	R0.5X4	6	35	80	6
4KCR 040 005 400	R0.5X4	6	40	80	6
4KCR 040 005 450	R0.5X4	6	45	90	6
4KCR 040 005 500	R0.5X4	6	50	100	6
4KCR 040 010 080	R1.0X4	6	8	50	6
4KCR 040 010 100	R1.0X4	6	10	50	6
4KCR 040 010 120	R1.0X4	6	12	50	4
4KCR 040 120 S06	R1.0X4	6	12	50	6
4KCR 040 010 160	R1.0X4	6	16	50	4
4KCR 040 010 S06	R1.0X4	6	16	60	6
4KCR 040 010 200	R1.0X4	6	20	60	6
4KCR 040 010 250	R1.0X4	6	25	65	6
4KCR 040 010 300	R1.0X4	6	30	70	6
4KCR 040 010 350	R1.0X4	6	35	80	6
4KCR 040 010 400	R1.0X4	6	40	80	6
4KCR 040 010 450	R1.0X4	6	45	90	6
4KCR 040 010 500	R1.0X4	6	50	100	6
4KCR 050 001 180	R0.1X5	7.5	18	60	6
4KCR 050 001 300	R0.1X5	7.5	30	70	6
4KCR 050 001 400	R0.1X5	7.5	40	80	6
4KCR 050 001 500	R0.1X5	7.5	50	100	6
4KCR 050 002 180	R0.2X5	7.5	18	60	6
4KCR 050 002 300	R0.2X5	7.5	30	70	6
4KCR 050 002 400	R0.2X5	7.5	40	80	6
4KCR 050 002 500	R0.2X5	7.5	50	100	6
4KCR 050 003 180	R0.3X5	7.5	18	60	6
4KCR 050 003 300	R0.3X5	7.5	30	70	6
4KCR 050 003 400	R0.3X5	7.5	40	80	6
4KCR 050 003 500	R0.3X5	7.5	50	100	6
4KCR 050 005 180	R0.5X5	7.5	18	60	6
4KCR 050 005 300	R0.5X5	7.5	30	70	6
4KCR 050 005 400	R0.5X5	7.5	40	80	6
4KCR 050 005 500	R0.5X5	7.5	50	100	6
4KCR 050 010 180	R1.0X5	7.5	18	60	6
4KCR 050 010 300	R1.0X5	7.5	30	70	6
4KCR 050 010 400	R1.0X5	7.5	40	80	6
4KCR 050 010 500	R1.0X5	7.5	50	100	6
4KCR 060 001 200	R0.1X6	9	20	60	6
4KCR 060 001 400	R0.1X6	9	40	90	6
4KCR 060 001 500	R0.1X6	9	50	100	6

K HARD 4KCR



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 060 002 200	R0.2X6	9	20	60	6
4KCR 060 002 75L	R0.2X6	9	20	75	6
4KCR 060 002 100L	R0.2X6	9	20	100	6
4KCR 060 002 300	R0.2X6	9	30	80	6
4KCR 060 002 400	R0.2X6	9	40	90	6
4KCR 060 002 500	R0.2X6	9	50	100	6
4KCR 060 003 200	R0.3X6	9	20	60	6
4KCR 060 003 75L	R0.3X6	9	20	75	6
4KCR 060 003 100L	R0.3X6	9	20	100	6
4KCR 060 003 300	R0.3X6	9	30	80	6
4KCR 060 003 400	R0.3X6	9	40	90	6
4KCR 060 003 500	R0.3X6	9	50	100	6
4KCR 060 005 200	R0.5X6	9	20	60	6
4KCR 060 005 75L	R0.5X6	9	20	75	6
4KCR 060 005 100L	R0.5X6	9	20	100	6
4KCR 060 005 300	R0.5X6	9	30	80	6
4KCR 060 005 400	R0.5X6	9	40	90	6
4KCR 060 005 500	R0.5X6	9	50	100	6
4KCR 060 010 200	R1.0X6	9	20	60	6
4KCR 060 010 75L	R1.0X6	9	20	75	6
4KCR 060 010 100L	R1.0X6	9	20	100	6
4KCR 060 010 300	R1.0X6	9	30	80	6
4KCR 060 010 400	R1.0X6	9	40	90	6
4KCR 060 010 500	R1.0X6	9	50	100	6
4KCR 060 015 200	R1.5X6	9	20	60	6
4KCR 060 015 75L	R1.5X6	9	20	75	6
4KCR 060 015 100L	R1.5X6	9	20	100	6
4KCR 060 015 300	R1.5X6	9	30	80	6
4KCR 060 015 400	R1.5X6	9	40	90	6
4KCR 060 015 500	R1.5X6	9	50	100	6
4KCR 060 020 200	R2.0X6	9	20	60	6
4KCR 060 020 75L	R2.0X6	9	20	75	6
4KCR 060 020 100L	R2.0X6	9	20	100	6
4KCR 060 020 400	R2.0X6	9	40	90	6
4KCR 080 001 240	R0.1X8	12	24	65	8
4KCR 080 002 240	R0.2X8	12	24	65	8
4KCR 080 002 75L	R0.2X8	12	24	75	8
4KCR 080 002 100L	R0.2X8	12	24	100	8
4KCR 080 003 240	R0.3X8	12	24	65	8
4KCR 080 003 75L	R0.3X8	12	24	75	8
4KCR 080 003 100L	R0.3X8	12	24	100	8
4KCR 080 005 240	R0.5X8	12	24	65	8
4KCR 080 005 75L	R0.5X8	12	24	75	8
4KCR 080 005 100L	R0.5X8	12	24	100	8
4KCR 080 005 300	R0.5X8	12	30	90	8
4KCR 080 005 400	R0.5X8	12	40	100	8
4KCR 080 010 240	R1.0X8	12	24	65	8
4KCR 080 010 75L	R1.0X8	12	24	75	8
4KCR 080 010 100L	R1.0X8	12	24	100	8
4KCR 080 010 125L	R1.0X8	12	24	125	8
4KCR 080 010 300	R1.0X8	12	30	90	8
4KCR 080 010 400	R1.0X8	12	40	100	8

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCR 080 015 240	R1.5X8	12	24	65	8
4KCR 080 015 75L	R1.5X8	12	24	75	8
4KCR 080 015 100L	R1.5X8	12	24	100	8
4KCR 080 015 400	R1.5X8	12	40	100	8
4KCR 080 020 240	R2.0X8	12	24	65	8
4KCR 080 020 75L	R2.0X8	12	24	75	8
4KCR 080 020 300	R2.0X8	12	30	90	8
4KCR 100 002 300	R0.2X10	15	30	70	10
4KCR 100 002 75L	R0.2X10	15	30	75	10
4KCR 100 002 100L	R0.2X10	15	30	100	10
4KCR 100 003 300	R0.3X10	15	30	70	10
4KCR 100 003 75L	R0.3X10	15	30	75	10
4KCR 100 003 100L	R0.3X10	15	30	100	10
4KCR 100 005 300	R0.5X10	15	30	70	10
4KCR 100 005 75L	R0.5X10	15	30	75	10
4KCR 100 005 100L	R0.5X10	15	30	100	10
4KCR 100 005 400	R0.5X10	15	40	100	10
4KCR 100 010 300	R1.0X10	15	30	70	10
4KCR 100 010 75L	R1.0X10	15	30	75	10
4KCR 100 010 100L	R1.0X10	15	30	100	10
4KCR 100 010 150L	R1.0X10	15	30	150	10
4KCR 100 010 400	R1.0X10	15	40	100	10
4KCR 100 015 300	R1.5X10	15	30	70	10
4KCR 100 015 75L	R1.5X10	15	30	75	10
4KCR 100 015 100L	R1.5X10	15	30	100	10
4KCR 100 015 400	R1.5X10	15	40	100	10
4KCR 100 020 300	R2.0X10	15	30	70	10
4KCR 100 020 75L	R2.0X10	15	30	75	10
4KCR 100 020 100L	R2.0X10	15	30	100	10
4KCR 100 020 400	R2.0X10	15	40	100	10
4KCR 100 025 300	R2.5X10	15	30	70	10
4KCR 120 003 300	R0.3X12	18	30	80	12
4KCR 120 003 110L	R0.3X12	18	30	110	12
4KCR 120 005 300	R0.5X12	18	30	80	12
4KCR 120 005 110L	R0.5X12	18	30	110	12
4KCR 120 005 150L	R0.5X12	18	30	150	12
4KCR 120 005 400	R0.5X12	18	40	110	12
4KCR 120 010 300	R1.0X12	18	30	80	12
4KCR 120 010 110L	R1.0X12	18	30	110	12
4KCR 120 010 150L	R1.0X12	18	30	150	12
4KCR 120 010 400	R1.0X12	18	40	110	12
4KCR 120 015 300	R1.5X12	18	30	80	12
4KCR 120 015 110L	R1.5X12	18	30	110	12
4KCR 120 015 400	R1.5X12	18	40	110	12
4KCR 120 020 300	R2.0X12	18	30	80	12
4KCR 120 020 110L	R2.0X12	18	30	110	12
4KCR 120 020 150L	R2.0X12	18	30	150	12
4KCR 120 020 200L	R2.0X12	18	30	200	12
4KCR 120 020 400	R2.0X12	18	40	110	12
4KCR 120 030 300	R3.0X12	18	30	80	12
4KCR 120 030 110L	R3.0X12	18	30	110	12

K HARD 2KNR

0.02R ~ 1.5R 2R ~ 3R

2 Flutes Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.





2刃 コーナー ラジウス エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 코너 레디우스 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- TiSiN 코팅으로 내마모성을 극대화 하였습니다.
- 날부파손 방지 및 절삭성 증대를 위한 형상 설계를 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	+0~-0.015
D≧Ø14	+0~-0.02

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KNR 002 0002 S04	0.2 XR0.02	0.4	45	4
2KNR 002 0005 S04	0.2 XR0.05	0.4	45	4
2KNR 003 0002 S04	0.3 XR0.02	0.6	45	4
2KNR 003 0005 S04	0.3 XR0.05	0.6	45	4
2KNR 003 001 S04	0.3 XR0.1	0.6	45	4
2KNR 004 0002 S04	0.4 XR0.02	0.8	45	4
2KNR 004 0005 S04	0.4 XR0.05	0.8	45	4
2KNR 004 001 S04	0.4 XR0.1	0.8	45	4
2KNR 005 0002 S04	0.5 XR0.02	1	45	4
2KNR 005 0005 S04	0.5 XR0.05	1	45	4
2KNR 005 001 S04	0.5 XR0.1	1	45	4
2KNR 006 0002 S04	0.6 XR0.02	1.2	45	4
2KNR 006 0005 S04	0.6 XR0.05	1.2	45	4
2KNR 006 001 S04	0.6 XR0.1	1.2	45	4
2KNR 006 002 S04	0.6 XR0.2	1.2	45	4
2KNR 007 0005 S04	0.7 XR0.05	1.4	45	4
2KNR 007 001 S04	0.7 XR0.1	1.4	45	4
2KNR 007 002 S04	0.7 XR0.2	1.4	45	4
2KNR 008 0002 S04	0.8 XR0.02	1.6	45	4
2KNR 008 0005 S04	0.8 XR0.05	1.6	45	4
2KNR 008 001 S04	0.8 XR0.1	1.6	45	4
2KNR 008 002 S04	0.8 XR0.2	1.6	45	4
2KNR 009 0005 S04	0.9 XR0.05	1.8	45	4
2KNR 009 001 S04	0.9 XR0.1	1.8	45	4
2KNR 010 0002 S04	1 XR0.02	2.5	45	4
2KNR 010 0005 S04	1 XR0.05	2.5	45	4
2KNR 010 001 S04	1 XR0.1	2.5	45	4
2KNR 010 002 S04	1 XR0.2	2.5	45	4
2KNR 010 003 S04	1 XR0.3	2.5	45	4
2KNR 012 0002 S04	1.2 XR0.02	3.2	45	4
2KNR 012 0005 S04	1.2 XR0.05	3.2	45	4
2KNR 012 001 S04	1.2 XR0.1	3.2	45	4
2KNR 012 002 S04	1.2 XR0.2	3.2	45	4
2KNR 012 003 S04	1.2 XR0.3	3.2	45	4
2KNR 015 0002 S04	1.5 XR0.02	4	45	4
2KNR 015 0005 S04	1.5 XR0.05	4	45	4
2KNR 015 001 S04	1.5 XR0.1	4	45	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KNR 015 002 S04	1.5 XR0.2	4	45	4
2KNR 015 003 S04	1.5 XR0.3	4	45	4
2KNR 015 005 S04	1.5 XR0.5	4	45	4
2KNR 020 0002 S04	2 XR0.02	6	45	4
2KNR 020 0005 S04	2 XR0.05	6	45	4
2KNR 020 001 S04	2 XR0.1	6	45	4
2KNR 020 002 S04	2 XR0.2	6	45	4
2KNR 020 003 S04	2 XR0.3	6	45	4
2KNR 020 005 S04	2 XR0.5	6	45	4
2KNR 025 0005 S04	2.5 XR0.05	6	50	4
2KNR 025 001 S04	2.5 XR0.1	6	50	4
2KNR 025 002 S04	2.5 XR0.2	6	50	4
2KNR 025 003 S04	2.5 XR0.3	6	50	4
2KNR 025 005 S04	2.5 XR0.5	6	50	4
2KNR 030 0005 S06	3 XR0.05	8	60	6
2KNR 030 001 S06	3 XR0.1	8	60	6
2KNR 030 002 S06	3 XR0.2	8	60	6
2KNR 030 003 S06	3 XR0.3	8	60	6
2KNR 030 005 S06	3 XR0.5	8	60	6
2KNR 030 010 S06	3 XR1.0	8	60	6
2KNR 035 001 S06	3.5 XR0.1	9	70	6
2KNR 035 002 S06	3.5 XR0.2	9	70	6
2KNR 035 003 S06	3.5 XR0.3	9	70	6
2KNR 035 005 S06	3.5 XR0.5	9	70	6
2KNR 035 010 S06	3.5 XR1.0	9	70	6
2KNR 040 0005 060	4 XR0.05	10	60	4
2KNR 040 0005 S06	4 XR0.05	10	70	6
2KNR 040 001 060	4 XR0.1	10	60	4
2KNR 040 001 S06	4 XR0.1	10	70	6
2KNR 040 002 060	4 XR0.2	10	60	4
2KNR 040 002 S06	4 XR0.2	10	70	6
2KNR 040 003 060	4 XR0.3	10	60	4
2KNR 040 003 S06	4 XR0.3	10	70	6
2KNR 040 005 060	4 XR0.5	10	60	4
2KNR 040 005 S06	4 XR0.5	10	70	6
2KNR 040 010 060	4 XR1.0	10	60	4
2KNR 040 010 S06	4 XR1.0	10	70	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KNR 045 001 S06	4.5 XR0.1	11	75	6
2KNR 045 002 S06	4.5 XR0.2	11	75	6
2KNR 045 003 S06	4.5 XR0.3	11	75	6
2KNR 045 005 S06	4.5 XR0.5	11	75	6
2KNR 050 001 S06	5 XR0.1	13	75	6
2KNR 050 002 S06	5 XR0.2	13	75	6
2KNR 050 003 S06	5 XR0.3	13	75	6
2KNR 050 005 S06	5 XR0.5	13	75	6
2KNR 050 010 S06	5 XR1.0	13	75	6
2KNR 060 0005 060	6 XR0.05	11	60	6
2KNR 060 0005 090	6 XR0.05	13	90	6
2KNR 060 001 060	6 XR0.1	11	60	6
2KNR 060 001 090	6 XR0.1	13	90	6
2KNR 060 002 060	6 XR0.2	11	60	6
2KNR 060 002 090	6 XR0.2	13	90	6
2KNR 060 003 060	6 XR0.3	11	60	6
2KNR 060 003 090	6 XR0.3	13	90	6
2KNR 060 005 060	6 XR0.5	11	60	6
2KNR 060 005 090	6 XR0.5	13	90	6
2KNR 060 010 060	6 XR1.0	11	60	6
2KNR 060 010 090	6 XR1.0	13	90	6
2KNR 060 015 060	6 XR1.5	11	60	6
2KNR 060 015 090	6 XR1.5	13	90	6
2KNR 060 020 060	6 XR2.0	11	60	6
2KNR 060 020 090	6 XR2.0	13	90	6
2KNR 060 025 090	6 XR2.5	13	90	6
2KNR 080 001 070	8 XR0.1	16	70	8
2KNR 080 001 100	8 XR0.1	19	100	8
2KNR 080 002 070	8 XR0.2	16	70	8
2KNR 080 002 100	8 XR0.2	19	100	8
2KNR 080 003 070	8 XR0.3	16	70	8
2KNR 080 003 100	8 XR0.3	19	100	8
2KNR 080 005 070	8 XR0.5	16	70	8
2KNR 080 005 100	8 XR0.5	19	100	8
2KNR 080 010 070	8 XR1.0	16	70	8
2KNR 080 010 100	8 XR1.0	19	100	8
2KNR 080 015 070	8 XR1.5	16	70	8
2KNR 080 015 100	8 XR1.5	19	100	8
2KNR 080 020 070	8 XR2.0	16	70	8
2KNR 080 020 100	8 XR2.0	19	100	8
2KNR 080 025 100	8 XR2.5	19	100	8
2KNR 080 030 100	8 XR3.0	19	100	8
2KNR 080 035 100	8 XR3.5	19	100	8
2KNR 100 001 075	10 XR0.1	19	75	10
2KNR 100 001 100	10 XR0.1	22	100	10
2KNR 100 002 075	10 XR0.2	19	75	10
2KNR 100 002 100	10 XR0.2	22	100	10
2KNR 100 003 075	10 XR0.3	19	75	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2KNR 100 003 100	10 XR0.3	22	100	10
2KNR 100 005 075	10 XR0.5	19	75	10
2KNR 100 005 100	10 XR0.5	22	100	10
2KNR 100 010 075	10 XR1.0	19	75	10
2KNR 100 010 100	10 XR1.0	22	100	10
2KNR 100 015 075	10 XR1.5	19	75	10
2KNR 100 015 100	10 XR1.5	22	100	10
2KNR 100 020 075	10 XR2.0	19	75	10
2KNR 100 020 100	10 XR2.0	22	100	10
2KNR 100 025 100	10 XR2.5	22	100	10
2KNR 100 030 100	10 XR3.0	22	100	10
2KNR 100 040 100	10 XR4.0	22	100	10
2KNR 120 001 080	12 XR0.1	22	80	12
2KNR 120 001 110	12 XR0.1	26	110	12
2KNR 120 002 080	12 XR0.2	22	80	12
2KNR 120 002 110	12 XR0.2	26	110	12
2KNR 120 003 080	12 XR0.3	22	80	12
2KNR 120 003 110	12 XR0.3	26	110	12
2KNR 120 005 080	12 XR0.5	22	80	12
2KNR 120 005 110	12 XR0.5	26	110	12
2KNR 120 005 130	12 XR0.5	26	130	12
2KNR 120 010 080	12 XR1.0	22	80	12
2KNR 120 010 110	12 XR1.0	26	110	12
2KNR 120 010 130	12 XR1.0	26	130	12
2KNR 120 015 080	12 XR1.5	22	80	12
2KNR 120 015 110	12 XR1.5	26	110	12
2KNR 120 015 130	12 XR1.5	26	130	12
2KNR 120 020 080	12 XR2.0	22	80	12
2KNR 120 020 110	12 XR2.0	26	110	12
2KNR 120 020 130	12 XR2.0	26	130	12
2KNR 120 025 110	12 XR2.5	26	110	12
2KNR 120 030 110	12 XR3.0	26	110	12
2KNR 120 040 110	12 XR4.0	26	110	12
2KNR 120 050 110	12 XR5.0	26	110	12
2KNR 160 005 110	16 XR0.5	32	110	16
2KNR 160 005 150	16 XR0.5	32	150	16
2KNR 160 010 110	16 XR1.0	32	110	16
2KNR 160 010 150	16 XR1.0	32	150	16
2KNR 160 015 110	16 XR1.5	32	110	16
2KNR 160 020 110	16 XR2.0	32	110	16
2KNR 160 030 110	16 XR3.0	32	110	16
2KNR 200 005 110	20 XR0.5	38	110	20
2KNR 200 005 150	20 XR0.5	38	150	20
2KNR 200 010 110	20 XR1.0	38	110	20
2KNR 200 010 150	20 XR1.0	38	150	20
2KNR 200 015 110	20 XR1.5	38	110	20
2KNR 200 020 110	20 XR2.0	38	110	20
2KNR 200 030 110	20 XR3.0	38	110	20

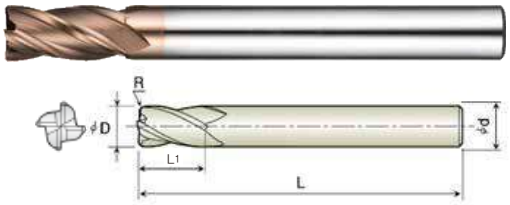
K HARD 4KNR



4 Flutes Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.



4刃 コーナー ラジウス エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 코너 레디우스 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	+0~-0.015
D≧Ø14	+0~-0.02

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank dia
	R×D	L1	L	d
4KNR 010 0002 S04	R0.02X1	2.5	45	4
4KNR 010 0005 S04	R0.05X1	2.5	45	4
4KNR 010 001 S04	R0.1X1	2.5	45	4
4KNR 010 002 S04	R0.2X1	2.5	45	4
4KNR 010 003 S04	R0.3X1	2.5	45	4
4KNR 012 0002 S04	R0.02X1.2	3.2	45	4
4KNR 012 0005 S04	R0.05X1.2	3.2	45	4
4KNR 012 001 S04	R0.1X1.2	3.2	45	4
4KNR 012 002 S04	R0.2X1.2	3.2	45	4
4KNR 012 003 S04	R0.3X1.2	3.2	45	4
4KNR 015 0002 S04	R0.02X1.5	4	45	4
4KNR 015 0005 S04	R0.05X1.5	4	45	4
4KNR 015 001 S04	R0.1X1.5	4	45	4
4KNR 015 002 S04	R0.2X1.5	4	45	4
4KNR 015 003 S04	R0.3X1.5	4	45	4
4KNR 015 005 S04	R0.5X1.5	4	45	4
4KNR 020 0002 S04	R0.02X2	6	45	4
4KNR 020 0005 S04	R0.05X2	6	45	4
4KNR 020 001 S04	R0.1X2	6	45	4
4KNR 020 002 S04	R0.2X2	6	45	4
4KNR 020 003 S04	R0.3X2	6	45	4
4KNR 020 005 S04	R0.5X2	6	45	4
4KNR 025 0005 S04	R0.05X2.5	6	50	4
4KNR 025 001 S04	R0.1X2.5	6	50	4
4KNR 025 002 S04	R0.2X2.5	6	50	4
4KNR 025 003 S04	R0.3X2.5	6	50	4
4KNR 025 005 S04	R0.5X2.5	6	50	4
4KNR 030 0005 S06	R0.05X3	8	60	6
4KNR 030 001 S06	R0.1X3	8	60	6
4KNR 030 002 S06	R0.2X3	8	60	6
4KNR 030 003 S06	R0.3X3	8	60	6
4KNR 030 005 S06	R0.5X3	8	60	6
4KNR 030 010 S06	R1X3	8	60	6

Order Number	Diameter	Length of cut	Overall Length	Shank dia
	R×D	L1	L	d
4KNR 035 001 S06	R0.1X3.5	9	70	6
4KNR 035 002 S06	R0.2X3.5	9	70	6
4KNR 035 003 S06	R0.3X3.5	9	70	6
4KNR 035 005 S06	R0.5X3.5	9	70	6
4KNR 035 010 S06	R1X3.5	9	70	6
4KNR 040 0005 060	R0.05X4	10	60	4
4KNR 040 0005 S06	R0.05X4	10	70	6
4KNR 040 001 060	R0.1X4	10	60	4
4KNR 040 001 S06	R0.1X4	10	70	6
4KNR 040 002 060	R0.2X4	10	60	4
4KNR 040 002 S06	R0.2X4	10	70	6
4KNR 040 003 060	R0.3X4	10	60	4
4KNR 040 003 S06	R0.3X4	10	70	6
4KNR 040 005 060	R0.5X4	10	60	4
4KNR 040 005 S06	R0.5X4	10	70	6
4KNR 040 010 060	R1X4	10	60	4
4KNR 040 010 S06	R1X4	10	70	6
4KNR 045 001 S06	R0.1X4.5	11	75	6
4KNR 045 002 S06	R0.2X4.5	11	75	6
4KNR 045 003 S06	R0.3X4.5	11	75	6
4KNR 045 005 S06	R0.5X4.5	11	75	6
4KNR 050 001 S06	R0.1X5	13	75	6
4KNR 050 002 S06	R0.2X5	13	75	6
4KNR 050 003 S06	R0.3X5	13	75	6
4KNR 050 005 S06	R0.5X5	13	75	6
4KNR 050 010 S06	R1X5	13	75	6
4KNR 060 0005 060	R0.05X6	11	60	6
4KNR 060 0005 090	R0.05X6	13	90	6
4KNR 060 001 060	R0.1X6	11	60	6
4KNR 060 001 090	R0.1X6	13	90	6
4KNR 060 002 060	R0.2X6	11	60	6
4KNR 060 002 090	R0.2X6	13	90	6
4KNR 060 003 060	R0.3X6	11	60	6

K HARD 4KNR



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank dia
	R×D	L1	L	d
4KNR 060 003 090	R0.3 X 6	13	90	6
4KNR 060 005 060	R0.5 X 6	11	60	6
4KNR 060 005 090	R0.5 X 6	13	90	6
4KNR 060 010 060	R1 X 6	11	60	6
4KNR 060 010 090	R1 X 6	13	90	6
4KNR 060 015 060	R1.5 X 6	11	60	6
4KNR 060 015 090	R1.5 X 6	13	90	6
4KNR 060 020 060	R2 X 6	11	60	6
4KNR 060 020 090	R2 X 6	13	90	6
4KNR 060 025 090	R2.5 X 6	13	90	6
4KNR 080 001 070	R0.1 X 8	16	70	8
4KNR 080 001 100	R0.1 X 8	19	100	8
4KNR 080 002 070	R0.2 X 8	16	70	8
4KNR 080 002 100	R0.2 X 8	19	100	8
4KNR 080 003 070	R0.3 X 8	16	70	8
4KNR 080 003 100	R0.3 X 8	19	100	8
4KNR 080 005 070	R0.5 X 8	16	70	8
4KNR 080 005 100	R0.5 X 8	19	100	8
4KNR 080 010 070	R1 X 8	16	70	8
4KNR 080 010 100	R1 X 8	19	100	8
4KNR 080 015 070	R1.5 X 8	16	70	8
4KNR 080 015 100	R1.5 X 8	19	100	8
4KNR 080 020 070	R2 X 8	16	70	8
4KNR 080 020 100	R2 X 8	19	100	8
4KNR 080 025 100	R2.5 X 8	19	100	8
4KNR 080 030 100	R3 X 8	19	100	8
4KNR 080 350 100	R3.5 X 8	19	100	8
4KNR 100 001 075	R0.1 X 10	19	75	10
4KNR 100 001 100	R0.1 X 10	22	100	10
4KNR 100 002 075	R0.2 X 10	19	75	10
4KNR 100 002 100	R0.2 X 10	22	100	10
4KNR 100 003 075	R0.3 X 10	19	75	10
4KNR 100 003 100	R0.3 X 10	22	100	10
4KNR 100 005 075	R0.5 X 10	19	75	10
4KNR 100 005 100	R0.5 X 10	22	100	10
4KNR 100 010 075	R1 X 10	19	75	10
4KNR 100 010 100	R1 X 10	22	100	10
4KNR 100 015 075	R1.5 X 10	19	75	10
4KNR 100 015 100	R1.5 X 10	22	100	10
4KNR 100 020 075	R2 X 10	19	75	10
4KNR 100 020 100	R2 X 10	22	100	10
4KNR 100 025 100	R2.5 X 10	22	100	10

Order Number	Diameter	Length of cut	Overall Length	Shank dia
	R×D	L1	L	d
4KNR 100 030 100	R3 X 10	22	100	10
4KNR 100 040 100	R4 X 10	22	100	10
4KNR 120 001 080	R0.1 X 12	22	80	12
4KNR 120 001 110	R0.1 X 12	26	110	12
4KNR 120 002 080	R0.2 X 12	22	80	12
4KNR 120 002 110	R0.2 X 12	26	110	12
4KNR 120 003 080	R0.3 X 12	22	80	12
4KNR 120 003 110	R0.3 X 12	26	110	12
4KNR 120 005 080	R0.5 X 12	22	80	12
4KNR 120 005 110	R0.5 X 12	26	110	12
4KNR 120 005 130	R0.5 X 12	26	130	12
4KNR 120 010 080	R1 X 12	22	80	12
4KNR 120 010 110	R1 X 12	26	110	12
4KNR 120 010 130	R1 X 12	26	130	12
4KNR 120 015 080	R1.5 X 12	22	80	12
4KNR 120 015 110	R1.5 X 12	26	110	12
4KNR 120 015 130	R1.5 X 12	26	130	12
4KNR 120 020 080	R2 X 12	22	80	12
4KNR 120 020 110	R2 X 12	26	110	12
4KNR 120 020 130	R2 X 12	26	130	12
4KNR 120 025 110	R2.5 X 12	26	110	12
4KNR 120 030 110	R3 X 12	26	110	12
4KNR 120 040 110	R4 X 12	26	110	12
4KNR 120 050 110	R5 X 12	26	110	12
4KNR 160 005 110	R0.5 X 16	32	110	16
4KNR 160 005 150	R0.5 X 16	32	150	16
4KNR 160 010 110	R1 X 16	32	110	16
4KNR 160 010 150	R1 X 16	32	150	16
4KNR 160 015 110	R1.5 X 16	32	110	16
4KNR 160 020 110	R2 X 16	32	110	16
4KNR 160 030 110	R3 X 16	32	110	16
4KNR 200 005 110	R0.5 X 20	38	110	20
4KNR 200 005 150	R0.5 X 20	38	150	20
4KNR 200 010 110	R1 X 20	38	110	20
4KNR 200 010 150	R1 X 20	38	150	20
4KNR 200 015 110	R1.5 X 20	38	110	20
4KNR 200 020 110	R2 X 20	38	110	20
4KNR 200 030 110	R3 X 20	38	110	20

K HARD

4KCU

4 Flutes Corner Radius for High Speed & Feedrate

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc50.
- Maximize the wear-resistance due to TiSiN coating.

4刃 高速高移送 コーナー ラジウス エンドミル

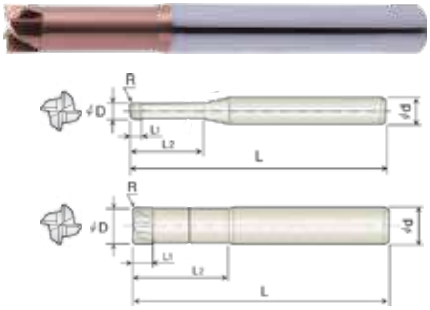
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 고이송 코너 레디우스 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø6	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCU 015 003 040	R0.3 X 1.5	0.8	4	45	6
4KCU 020 005 060	R0.5 X 2	1	6	50	6
4KCU 020 005 70L	R0.5 X 2	1	6	70	6
4KCU 030 005 080	R0.5 X 3	1.5	8	50	6
4KCU 030 005 70L	R0.5 X 3	1.5	8	70	6
4KCU 030 010 080	R1.0 X 3	1.5	8	50	6
4KCU 030 010 200	R1.0 X 3	1.5	20	60	6
4KCU 040 005 120	R0.5 X 4	2	12	60	6
4KCU 040 005 70L	R0.5 X 4	2	12	70	6
4KCU 040 005 160	R0.5 X 4	2	16	60	6
4KCU 040 160 70L	R0.5 X 4	2	16	70	6
4KCU 040 010 120	R1.0 X 4	2	12	60	6
4KCU 040 010 70L	R1.0 X 4	2	12	70	6
4KCU 040 010 160	R1.0 X 4	2	16	60	6
4KCU 040 160 070	R1.0 X 4	2	16	70	6
4KCU 050 010 150	R1.0 X 5	2.5	15	60	6
4KCU 060 005 120	R0.5 X 6	3	12	60	6
4KCU 060 005 150	R0.5 X 6	3	15	60	6
4KCU 060 005 80L	R0.5 X 6	3	15	80	6
4KCU 060 005 200	R0.5 X 6	3	20	80	6
4KCU 060 005 300	R0.5 X 6	3	30	80	6
4KCU 060 010 150	R1.0 X 6	3	15	60	6
4KCU 060 010 80L	R1.0 X 6	3	15	80	6
4KCU 060 010 200	R1.0 X 6	3	20	80	6
4KCU 060 010 300	R1.0 X 6	3	30	80	6
4KCU 060 015 150	R1.5 X 6	3	15	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4KCU 080 005 200	R0.5 X 8	4	20	65	8
4KCU 080 005 90L	R0.5 X 8	4	20	90	8
4KCU 080 005 100L	R0.5 X 8	4	20	100	8
4KCU 080 005 400	R0.5 X 8	4	40	90	8
4KCU 080 010 200	R1.0 X 8	4	20	65	8
4KCU 080 010 90L	R1.0 X 8	4	20	90	8
4KCU 080 010 100L	R1.0 X 8	4	20	100	8
4KCU 080 010 300	R1.0 X 8	4	30	90	8
4KCU 080 010 400	R1.0 X 8	4	40	90	8
4KCU 080 020 200	R2.0 X 8	4	20	65	8
4KCU 080 020 100L	R2.0 X 8	4	20	100	8
4KCU 100 005 250	R0.5 X 10	5	25	70	10
4KCU 100 005 100L	R0.5 X 10	5	25	100	10
4KCU 100 010 250	R1.0 X 10	5	25	70	10
4KCU 100 010 100L	R1.0 X 10	5	25	100	10
4KCU 100 010 110L	R1.0 X 10	5	25	110	10
4KCU 100 010 400	R1.0 X 10	5	40	100	10
4KCU 100 020 200	R2.0 X 10	5	20	70	10
4KCU 100 020 250	R2.0 X 10	5	25	70	10
4KCU 100 020 110L	R2.0 X 10	5	25	110	10
4KCU 120 010 300	R1.0 X 12	6	30	80	12
4KCU 120 010 110L	R1.0 X 12	6	30	110	12
4KCU 120 010 400	R1.0 X 12	6	40	110	12
4KCU 120 020 300	R2.0 X 12	6	30	80	12
4KCU 120 020 110L	R2.0 X 12	6	30	110	12
4KCU 120 020 400	R2.0 X 12	6	40	110	12

K HARD 2KCE

2 Flutes Square Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

2刃 高硬度材 標準長さ エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

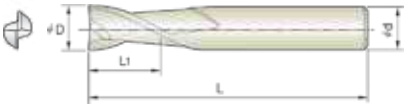
- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 스퀘어 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.





Size	D Tolerance
D＜Ø6	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

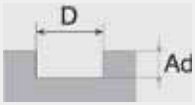
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2KCE 001 002 S04	0.1	0.2	45	4
2KCE 002 004 S04	0.2	0.4	45	4
2KCE 003 006 S04	0.3	0.6	45	4
2KCE 004 008 S04	0.4	0.8	45	4
2KCE 005 010 S03	0.5	1	45	3
2KCE 005 010 S04	0.5	1	45	4
2KCE 006 012 S03	0.6	1.2	45	3
2KCE 006 012 S04	0.6	1.2	45	4
2KCE 007 014 S04	0.7	1.4	45	4
2KCE 008 016 S03	0.8	1.6	45	3
2KCE 008 016 S04	0.8	1.6	45	4
2KCE 009 018 S04	0.9	1.8	45	4
2KCE 010 025 S03	1	2.5	45	3
2KCE 010 025 S04	1	2.5	45	4
2KCE 010 025 S06	1	2.5	45	6
2KCE 012 040 S03	1.2	4	45	3
2KCE 012 040 S04	1.2	4	45	4
2KCE 012 040 S06	1.2	4	45	6
2KCE 014 040 S06	1.4	4	45	6
2KCE 015 040 S03	1.5	4	45	3
2KCE 015 040 S04	1.5	4	45	4
2KCE 015 040 S06	1.5	4	45	6
2KCE 016 040 S06	1.6	4	45	6
2KCE 018 045 S06	1.8	4.5	45	6
2KCE 020 060 S03	2	6	45	3
2KCE 020 060 S04	2	6	45	4
2KCE 020 060 S06	2	6	45	6
2KCE 022 060 S06	2.2	6	45	6
2KCE 024 080 S06	2.4	8	50	6
2KCE 025 080 S03	2.5	8	50	3
2KCE 025 080 S04	2.5	8	50	4
2KCE 025 080 S06	2.5	8	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2KCE 026 080 S06	2.6	8	50	6
2KCE 028 080 S06	2.8	8	50	6
2KCE 030 080 S04	3	8	50	4
2KCE 030 100 S03	3	10	50	3
2KCE 030 100 S06	3	10	50	6
2KCE 035 100 S06	3.5	10	50	6
2KCE 040 120 050	4	12	50	4
2KCE 040 120 S06	4	12	50	6
2KCE 045 120 S06	4.5	12	50	6
2KCE 050 150 S06	5	15	50	6
2KCE 055 150 S06	5.5	15	50	6
2KCE 060 150 050	6	15	50	6
2KCE 065 160 S08	6.5	16	60	8
2KCE 070 200 S08	7	20	65	8
2KCE 075 200 S08	7.5	20	65	8
2KCE 080 200 065	8	20	65	8
2KCE 085 200 S10	8.5	20	65	10
2KCE 090 250 S10	9	25	70	10
2KCE 095 250 S10	9.5	25	70	10
2KCE 100 250 070	10	25	70	10
2KCE 105 250 S12	10.5	25	75	12
2KCE 110 250 S12	11	25	75	12
2KCE 115 250 S12	11.5	25	75	12
2KCE 120 300 080	12	30	80	12
2KCE 130 350 S14	13	35	90	14
2KCE 140 350 090	14	35	90	14
2KCE 150 350 S16	15	35	100	16
2KCE 160 400 100	16	40	100	16
2KCE 180 450 100	18	45	100	18
2KCE 200 450 100	20	45	100	20

2KCE

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.1	0.01	38,000 ~ 50,000	50 ~ 80	0.005	32,000 ~ 45,000	50 ~ 80	0.003	30,000 ~ 40,000	50 ~ 80
0.2	0.02	30,000 ~ 50,000	60 ~ 240	0.01	28,000 ~ 42,000	60 ~ 240	0.005	25,000 ~ 38,000	50 ~ 100
0.3	0.03	30,000 ~ 48,000	60 ~ 350	0.015	25,000 ~ 40,000	60 ~ 350	0.008	22,000 ~ 35,000	60 ~ 150
0.4	0.04	25,000 ~ 40,000	150 ~ 500	0.02	20,000 ~ 35,000	150 ~ 500	0.01	18,000 ~ 32,000	70 ~ 150
0.5	0.05	16,000 ~ 30,000	150 ~ 500	0.025	12,000 ~ 25,000	150 ~ 500	0.013	15,000 ~ 30,000	70 ~ 150
0.6	0.06	16,000 ~ 30,000	230 ~ 620	0.03	12,000 ~ 25,000	230 ~ 620	0.02	12,000 ~ 25,000	80 ~ 150
0.7	0.07	16,000 ~ 30,000	330 ~ 650	0.04	12,000 ~ 25,000	330 ~ 650	0.02	12,000 ~ 25,000	80 ~ 150
0.8	0.08	16,000 ~ 30,000	250 ~ 900	0.04	12,000 ~ 25,000	250 ~ 900	0.02	12,000 ~ 25,000	80 ~ 150
1	0.1	25,000 ~ 32,000	150 ~ 500	0.05	16,000 ~ 24,000	150 ~ 500	0.03	12,000 ~ 20,000	90 ~ 120
1.5	0.15	18,000 ~ 25,000	200 ~ 500	0.08	10,000 ~ 15,000	200 ~ 500	0.04	8,000 ~ 15,000	100 ~ 150
2	0.2	16,000 ~ 20,000	200 ~ 500	0.1	8,000 ~ 13,000	200 ~ 500	0.05	7,000 ~ 12,000	100 ~ 150
2.5	0.25	10,000 ~ 15,000	200 ~ 500	0.13	7,000 ~ 12,000	200 ~ 500	0.06	6,000 ~ 12,000	120 ~ 230
3	0.3	8,000 ~ 13,000	200 ~ 500	0.15	6,000 ~ 11,000	200 ~ 500	0.08	5,000 ~ 10,000	150 ~ 250
4	0.4	7,000 ~ 12,000	200 ~ 600	0.2	5,000 ~ 10,000	200 ~ 600	0.1	4,000 ~ 9,000	150 ~ 250
5	0.5	6,500 ~ 10,000	200 ~ 500	0.25	4,000 ~ 8,500	200 ~ 500	0.13	3,500 ~ 7,500	150 ~ 230
6	0.6	6,500 ~ 10,000	200 ~ 600	0.3	4,000 ~ 8,500	200 ~ 600	0.15	3,500 ~ 7,500	150 ~ 230
8	1.2	4,500 ~ 8,000	200 ~ 400	0.4	2,500 ~ 6,500	150 ~ 400	0.2	2,500 ~ 5,000	120 ~ 200
10	1.5	3,000 ~ 6,000	200 ~ 400	0.5	2,000 ~ 5,500	150 ~ 400	0.25	2,000 ~ 4,500	120 ~ 200
12	1.8	2,500 ~ 5,000	200 ~ 400	0.6	1,500 ~ 3,500	150 ~ 400	0.3	1,500 ~ 3,200	120 ~ 200
Depth of Cut									

4KCU

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
1.5	0.030 ~ 0.050	28,000 ~ 38,000	2,500 ~ 6,000	0.030 ~ 0.050	20,000 ~ 30,000	2,000 ~ 5,000	0.005 ~ 0.015	15,000 ~ 25,000	1,000 ~ 4,000
2	0.050 ~ 0.100	25,000 ~ 35,000	3,500 ~ 8,000	0.050 ~ 0.100	20,000 ~ 28,000	2,500 ~ 7,000	0.005 ~ 0.025	15,000 ~ 22,000	1,500 ~ 6,000
3	0.050 ~ 0.100	20,000 ~ 27,000	5,000 ~ 8,000	0.050 ~ 0.100	15,000 ~ 23,000	4,000 ~ 7,000	0.008 ~ 0.025	10,000 ~ 18,000	3,000 ~ 6,000
4	0.050 ~ 0.100	13,000 ~ 18,000	5,000 ~ 8,000	0.050 ~ 0.100	8,000 ~ 15,000	4,000 ~ 7,000	0.008 ~ 0.050	6,000 ~ 12,000	3,000 ~ 6,000
5	0.050 ~ 0.150	8,000 ~ 13,000	5,000 ~ 8,000	0.050 ~ 0.150	6,500 ~ 10,000	4,000 ~ 7,000	0.030 ~ 0.050	4,500 ~ 8,000	3,000 ~ 6,000
6	0.050 ~ 0.150	8,000 ~ 13,000	5,000 ~ 8,000	0.050 ~ 0.150	6,500 ~ 10,000	4,000 ~ 7,000	0.010 ~ 0.050	4,500 ~ 8,000	3,000 ~ 6,000
8	0.050 ~ 0.150	6,000 ~ 9,500	5,000 ~ 9,000	0.050 ~ 0.150	5,000 ~ 7,500	4,000 ~ 8,000	0.020 ~ 0.050	4,000 ~ 6,500	3,000 ~ 7,000
10	0.050 ~ 0.150	6,000 ~ 8,000	5,000 ~ 10,000	0.050 ~ 0.150	4,000 ~ 7,000	4,000 ~ 9,000	0.020 ~ 0.050	3,000 ~ 5,500	3,000 ~ 7,000
12	0.050 ~ 0.150	5,000 ~ 7,000	5,000 ~ 10,000	0.050 ~ 0.150	4,000 ~ 6,000	4,000 ~ 9,000	0.020 ~ 0.050	3,000 ~ 5,000	3,000 ~ 7,000
Depth of Cut									

K HARD

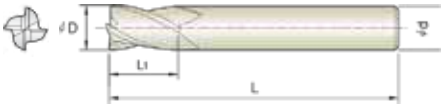
4KCE

4 Flutes Square Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.





4刃 高硬度材 標準長さ エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 스퀘어 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.

Size	D Tolerance
D<Ø6	+0~-0.010mm
D ≧Ø6	+0~-0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KCE 008 016 S04	0.8	1.6	45	4
4KCE 010 025 S04	1	2.5	45	4
4KCE 010 025 S06	1	2.5	45	6
4KCE 012 040 S04	1.2	4	45	4
4KCE 015 040 S04	1.5	4	45	4
4KCE 015 040 S06	1.5	4	45	6
4KCE 020 060 S04	2	6	45	4
4KCE 020 060 S06	2	6	45	6
4KCE 025 080 S04	2.5	8	45	4
4KCE 025 080 S06	2.5	8	45	6
4KCE 030 100 S03	3	10	50	3
4KCE 030 100 S04	3	10	50	4
4KCE 030 100 S06	3	10	50	6
4KCE 035 100 S06	3.5	10	50	6
4KCE 040 120 050	4	12	50	4
4KCE 040 120 S06	4	12	50	6
4KCE 045 120 S06	4.5	12	50	6
4KCE 050 150 S06	5	15	50	6

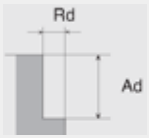
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KCE 055 150 S06	5.5	15	50	6
4KCE 060 150 050	6	15	50	6
4KCE 060 150 075	6	15	75	6
4KCE 060 150 100	6	15	100	6
4KCE 070 200 S08	7	20	65	8
4KCE 080 200 065	8	20	65	8
4KCE 080 200 075	8	20	75	8
4KCE 080 200 100	8	20	100	8
4KCE 100 250 070	10	25	70	10
4KCE 100 250 075	10	25	75	10
4KCE 100 250 100	10	25	100	10
4KCE 120 300 080	12	30	80	12
4KCE 120 300 100	12	30	100	12
4KCE 140 350 090	14	35	90	14
4KCE 160 400 100	16	40	100	16
4KCE 180 450 100	18	45	100	18
4KCE 200 450 100	20	45	100	20

4KCE/4BCE

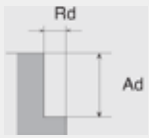
• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
0.8	0.04	15,000 ~ 28,000	250 ~ 900	0.04	12,000 ~ 25,000	250 ~ 900	0.01	10,000 ~ 20,000	100 ~ 650
1	0.05	12,000 ~ 25,000	400 ~ 2,000	0.05	10,000 ~ 20,000	300 ~ 1,800	0.02	8,000 ~ 18,000	200 ~ 1,200
1.2	0.06	10,000 ~ 25,000	500 ~ 2,000	0.06	9,000 ~ 20,000	300 ~ 1,600	0.02	7,000 ~ 18,000	200 ~ 1,200
1.5	0.08	9,000 ~ 23,000	700 ~ 2,000	0.08	8,000 ~ 20,000	400 ~ 1,600	0.03	7,000 ~ 18,000	200 ~ 1,200
2	0.1	7,000 ~ 20,000	800 ~ 2,000	0.1	6,000 ~ 18,000	400 ~ 1,600	0.04	5,000 ~ 15,000	200 ~ 1,200
3	0.3	5,000 ~ 16,000	800 ~ 2,000	0.3	5,000 ~ 15,000	400 ~ 1,600	0.06	4,000 ~ 10,000	200 ~ 1,200
4	0.4	4,500 ~ 14,000	800 ~ 2,000	0.4	4,000 ~ 10,000	400 ~ 2,000	0.08	3,000 ~ 8,000	200 ~ 1,200
5	0.5	3,500 ~ 12,000	600 ~ 1,500	0.5	3,000 ~ 8,000	400 ~ 1,000	0.1	2,500 ~ 6,000	250 ~ 800
6	0.6	3,500 ~ 12,000	600 ~ 1,500	0.6	3,000 ~ 8,000	400 ~ 1,000	0.12	2,500 ~ 6,000	250 ~ 800
8	1.2	2,500 ~ 10,000	450 ~ 1,000	0.8	2,500 ~ 7,000	350 ~ 900	0.16	2,000 ~ 5,000	300 ~ 700
10	1.5	2,000 ~ 7,500	500 ~ 1,000	1	2,000 ~ 5,000	300 ~ 800	0.2	2,000 ~ 4,500	300 ~ 700
12	1.8	1,800 ~ 7,000	500 ~ 1,000	1.2	2,000 ~ 4,000	300 ~ 800	0.24	1,500 ~ 4,000	300 ~ 650

Depth of Cut



Ad = 1.5D
Rd = 0.05D (0.8≤D≤Ø2)
Rd = 0.10D (3≤D≤Ø6)
Rd = 0.15D (7≤D≤Ø12)



Rd = 0.03D

K HARD 4KEM

4 Flutes 43° Square Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc50.
- Maximize the wear-resistance due to TiSiN coating.

4刃 高硬度材 43°ヘリックス エンドミル

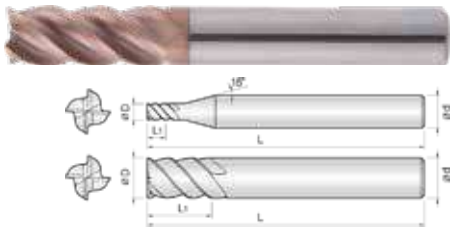
高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 43° 스퀘어 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- HRC52 이상의 고경도강을 고속가공 할 수 있도록 설계되었습니다.
- TiSiN 코팅으로 내마모성을 극대화 하였습니다.



Size	D Tolerance
D<Ø6	+0~0.010mm
D ≧Ø6	+0~0.015mm

単位/Unit : mm

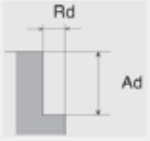
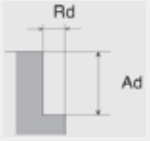
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KEM 010 020 S04	1	2	45	4
4KEM 010 020 S06	1	2	45	6
4KEM 015 040 S04	1.5	4	45	4
4KEM 015 040 S06	1.5	4	45	6
4KEM 020 050 S04	2	5	45	4
4KEM 020 050 S06	2	5	45	6
4KEM 030 080 S03	3	8	50	3
4KEM 030 080 S04	3	8	45	4
4KEM 030 080 S06	3	8	50	6
4KEM 040 100 060	4	10	60	4
4KEM 040 100 S06	4	10	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KEM 040 120 045	4	12	45	4
4KEM 050 130 S06	5	13	50	6
4KEM 060 150 050	6	15	50	6
4KEM 060 150 075	6	15	75	6
4KEM 080 200 065	8	20	65	8
4KEM 080 200 075	8	20	75	8
4KEM 100 250 070	10	25	70	10
4KEM 100 250 075	10	25	75	10
4KEM 120 300 080	12	30	80	12
4KEM 160 400 100	16	40	100	16
4KEM 200 450 100	20	45	100	20

4KEM

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
1	0.05	12,000 ~ 25,000	400 ~ 2,000	0.05	10,000 ~ 20,000	300 ~ 1,800	0.02	8,000 ~ 18,000	200 ~ 1,200
1.2	0.06	10,000 ~ 25,000	500 ~ 2,000	0.06	9,000 ~ 20,000	300 ~ 1,600	0.02	7,000 ~ 18,000	200 ~ 1,200
1.5	0.08	9,000 ~ 23,000	700 ~ 2,000	0.08	8,000 ~ 20,000	400 ~ 1,600	0.03	7,000 ~ 18,000	200 ~ 1,200
2	0.1	7,000 ~ 20,000	800 ~ 2,000	0.1	6,000 ~ 18,000	400 ~ 1,600	0.04	5,000 ~ 15,000	200 ~ 1,200
3	0.3	5,000 ~ 16,000	800 ~ 2,000	0.3	5,000 ~ 15,000	400 ~ 1,600	0.06	4,000 ~ 10,000	200 ~ 1,200
4	0.4	4,500 ~ 14,000	800 ~ 2,000	0.4	4,000 ~ 10,000	400 ~ 2,000	0.08	3,000 ~ 8,000	200 ~ 1,200
5	0.5	3,500 ~ 12,000	600 ~ 1,500	0.5	3,000 ~ 8,000	400 ~ 1,000	0.1	2,500 ~ 6,000	250 ~ 800
6	0.6	3,500 ~ 12,000	600 ~ 1,500	0.6	3,000 ~ 8,000	400 ~ 1,000	0.12	2,500 ~ 6,000	250 ~ 800
8	1.2	2,500 ~ 10,000	450 ~ 1,000	1.2	2,500 ~ 7,000	350 ~ 900	0.16	2,000 ~ 5,000	300 ~ 700
10	1.5	2,000 ~ 7,500	500 ~ 1,000	1.5	2,000 ~ 5,000	300 ~ 800	0.2	2,000 ~ 4,500	300 ~ 700
12	1.8	1,800 ~ 7,000	500 ~ 1,000	1.8	2,000 ~ 4,000	300 ~ 800	0.24	1,500 ~ 4,000	300 ~ 650

Depth of Cut		
		Ad=1.5D Rd=0.05D (0.8≤D≤Ø2) Rd=0.10D (3≤D≤Ø6) Rd=0.15D (7≤D≤Ø12)
		Rd=0.03D

K HARD 2KLE

2 Flutes Long Length Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.

2刃 高硬度材 長い 長さ エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

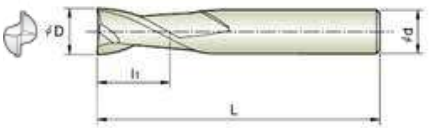
- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

2날 긴길이 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- TiSiN 코팅으로 내마모성을 극대화 하였습니다.
- 날부파손 방지 및 절삭성 증대를 위한 형상 설계를 하였습니다.





Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	+0~-0.02
D≧Ø14	+0~-0.03

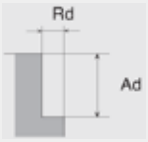
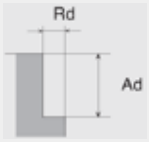
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2KLE 010 030 S06	1	3	60	6
2KLE 010 050 S06	1	5	60	6
2KLE 010 070 S06	1	7	60	6
2KLE 010 100 S06	1	10	60	6
2KLE 010 120 S06	1	12	60	6
2KLE 010 150 S06	1	15	60	6
2KLE 015 060 S06	1.5	6	60	6
2KLE 015 080 S06	1.5	8	60	6
2KLE 015 100 S06	1.5	10	60	6
2KLE 015 150 S06	1.5	15	60	6
2KLE 015 200 S06	1.5	20	60	6
2KLE 020 100 S06	2	10	60	6
2KLE 020 120 S06	2	12	60	6
2KLE 020 150 S06	2	15	60	6
2KLE 020 200 S06	2	20	60	6
2KLE 030 120 S06	3	12	70	6
2KLE 030 150 S06	3	15	70	6
2KLE 030 200 S06	3	20	70	6
2KLE 030 250 S06	3	25	70	6
2KLE 030 300 S06	3	30	70	6
2KLE 040 150 S06	4	15	70	6
2KLE 040 200 S06	4	20	70	6
2KLE 040 300 S06	4	30	75	6
2KLE 040 350 S06	4	35	75	6
2KLE 040 400 S06	4	40	80	6
2KLE 050 200 S06	5	20	70	6
2KLE 050 250 S06	5	25	70	6
2KLE 050 300 S06	5	30	75	6
2KLE 050 400 S06	5	40	80	6
2KLE 060 200 070	6	20	70	6
2KLE 060 200 100	6	20	100	6
2KLE 060 250 075	6	25	75	6
2KLE 060 300 080	6	30	80	6
2KLE 060 350 080	6	35	80	6
2KLE 060 400 090	6	40	90	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2KLE 080 250 075	8	25	75	8
2KLE 080 250 100	8	25	100	8
2KLE 080 300 080	8	30	80	8
2KLE 080 350 080	8	35	80	8
2KLE 080 400 090	8	40	90	8
2KLE 080 450 100	8	45	100	8
2KLE 080 500 100	8	50	100	8
2KLE 080 550 100	8	55	100	8
2KLE 100 300 080	10	30	80	10
2KLE 100 350 100	10	35	100	10
2KLE 100 400 100	10	40	100	10
2KLE 100 450 100	10	45	100	10
2KLE 100 500 100	10	50	100	10
2KLE 100 550 110	10	55	110	10
2KLE 100 600 110	10	60	110	10
2KLE 100 650 120	10	65	120	10
2KLE 100 700 120	10	70	120	10
2KLE 120 300 100	12	30	100	12
2KLE 120 350 100	12	35	100	12
2KLE 120 400 100	12	40	100	12
2KLE 120 450 100	12	45	100	12
2KLE 120 500 100	12	50	100	12
2KLE 120 550 110	12	55	110	12
2KLE 120 600 110	12	60	110	12
2KLE 120 700 130	12	70	130	12
2KLE 120 800 130	12	80	130	12
2KLE 140 500 110	14	50	110	14
2KLE 160 400 150	16	40	150	16
2KLE 160 550 120	16	55	120	16
2KLE 160 700 130	16	70	130	16
2KLE 160 800 150	16	80	150	16
2KLE 200 500 150	20	50	150	20
2KLE 200 600 130	20	60	130	20
2KLE 250 750 150	25	75	150	25

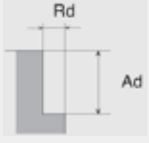
2KLE

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
1	1.0	10,000 ~ 15,000	40 ~ 80	1	7,000 ~ 12,000	40 ~ 80	0.5	7,000 ~ 12,000	40 ~ 80
1.5	1.5	9,000 ~ 13,000	40 ~ 80	1.5	6,000 ~ 10,000	40 ~ 80	0.75	6,000 ~ 10,000	40 ~ 80
2	2.0	5,000 ~ 8,000	40 ~ 80	2	3,000 ~ 6,000	40 ~ 80	1	3,000 ~ 6,000	40 ~ 80
2.5	2.5	4,500 ~ 7,000	40 ~ 80	2.5	2,500 ~ 5,000	40 ~ 80	1.25	2,500 ~ 5,000	40 ~ 80
3	3.0	4,000 ~ 6,000	40 ~ 80	3	2,000 ~ 4,000	40 ~ 80	1.5	2,000 ~ 4,000	40 ~ 80
4	4.0	3,000 ~ 5,000	50 ~ 100	4	1,500 ~ 3,000	50 ~ 100	2	1,500 ~ 3,000	50 ~ 100
5	5.0	2,500 ~ 4,500	50 ~ 100	5	1,500 ~ 2,500	50 ~ 100	2.5	1,500 ~ 2,500	50 ~ 100
6	6.0	2,000 ~ 4,000	50 ~ 100	6	1,500 ~ 2,000	50 ~ 100	3	1,500 ~ 2,000	50 ~ 100
8	8.0	1,800 ~ 2,500	50 ~ 100	8	1,800 ~ 2,500	50 ~ 100	4	1,800 ~ 2,500	50 ~ 100
10	10.0	1,500 ~ 2,000	50 ~ 100	10	1,500 ~ 2,000	50 ~ 100	5	1,500 ~ 2,000	50 ~ 100
12	12.0	1,200 ~ 1,800	40 ~ 80	12	600 ~ 1,000	40 ~ 80	6	600 ~ 1,000	40 ~ 80
16	16.0	800 ~ 1,500	40 ~ 80	16	400 ~ 800	40 ~ 80	8	400 ~ 800	40 ~ 80
20	20.0	700 ~ 1,200	40 ~ 80	20	300 ~ 700	40 ~ 80	10	300 ~ 700	40 ~ 80
25	25.0	500 ~ 800	40 ~ 80	25	250 ~ 600	40 ~ 80	12.5	250 ~ 600	40 ~ 80
Depth of Cut	 Rd=0.05D			 Rd=0.02D					

4KLE

• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min - 1)	FEED (mm/min)
1.0	1.0	10,000 ~ 15,000	40 ~ 80	1	7,000 ~ 12,000	40 ~ 80	0.5	7,000 ~ 12,000	40 ~ 80
1.5	1.5	9,000 ~ 13,000	40 ~ 80	1.5	6,000 ~ 10,000	40 ~ 80	0.75	6,000 ~ 10,000	40 ~ 80
2.0	2.0	5,000 ~ 8,000	40 ~ 80	2	3,000 ~ 6,000	40 ~ 80	1	3,000 ~ 6,000	40 ~ 80
2.5	2.5	4,500 ~ 7,000	40 ~ 80	2.5	2,500 ~ 5,000	40 ~ 80	1.25	2,500 ~ 5,000	40 ~ 80
3.0	3.0	4,000 ~ 6,000	40 ~ 80	3	2,000 ~ 4,000	40 ~ 80	1.5	2,000 ~ 4,000	40 ~ 80
4.0	4.0	3,000 ~ 5,000	50 ~ 100	4	1,500 ~ 3,000	50 ~ 100	2	1,500 ~ 3,000	50 ~ 100
5.0	5.0	2,500 ~ 4,500	50 ~ 100	5	1,500 ~ 2,500	50 ~ 100	2.5	1,500 ~ 2,500	50 ~ 100
6.0	6.0	2,000 ~ 4,000	50 ~ 100	6	1,500 ~ 2,000	50 ~ 100	3	1,500 ~ 2,000	50 ~ 100
8.0	8.0	1,800 ~ 2,500	50 ~ 100	8	1,800 ~ 2,500	50 ~ 100	4	1,800 ~ 2,500	50 ~ 100
10.0	10.0	1,500 ~ 2,000	50 ~ 100	10	1,500 ~ 2,000	50 ~ 100	5	1,500 ~ 2,000	50 ~ 100
12.0	12.0	1,200 ~ 1,800	40 ~ 80	12	600 ~ 1,000	40 ~ 80	6	600 ~ 1,000	40 ~ 80
16.0	16.0	800 ~ 1,500	40 ~ 80	16	400 ~ 800	40 ~ 80	8	400 ~ 800	40 ~ 80
20.0	20.0	700 ~ 1,200	40 ~ 80	20	300 ~ 700	40 ~ 80	10	300 ~ 700	40 ~ 80
25.0	25.0	500 ~ 800	40 ~ 80	25	250 ~ 600	40 ~ 80	12.5	250 ~ 600	40 ~ 80
Depth of Cut	 Rd=0.05D			 Rd=0.02D					

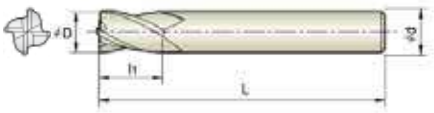
K HARD 4KLE

4 Flutes Long Length Endmills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.





4刃 高硬度材 長い 長さ エンドミル

高硬度鋼(HRC52~60), プレハードン鋼 系列の 高精密 加工 エンドミル

- Si含有 コーティングで 耐摩耗性を極大化しました.
- 改善されたくび部形状で破損に対する抵抗力が増大しました.

4날 긴길이 엔드밀

고경도강(HRC52~60), 프리하든강 계열의 고정밀 가공 엔드밀

- TiSiN 코팅으로 내마모성을 극대화 하였습니다.
- 날부파손 방지 및 절삭성 증대를 위한 형상 설계를 하였습니다.

Size	D Tolerance
D≦Ø5	+0~-0.01
Ø6~Ø12	+0~-0.02
D≧Ø14	+0~-0.03

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KLE 010 030 S06	1	3	60	6
4KLE 010 050 S06	1	5	60	6
4KLE 010 070 S06	1	7	60	6
4KLE 015 060 S06	1.5	6	60	6
4KLE 015 080 S06	1.5	8	60	6
4KLE 015 100 S06	1.5	10	60	6
4KLE 020 080 S06	2	8	60	6
4KLE 020 100 S06	2	10	60	6
4KLE 020 120 S06	2	12	60	6
4KLE 020 150 S06	2	15	60	6
4KLE 030 100 S06	3	10	70	6
4KLE 030 150 S06	3	15	70	6
4KLE 030 200 S06	3	20	70	6
4KLE 030 250 S06	3	25	70	6
4KLE 030 300 S06	3	30	70	6
4KLE 040 120 S06	4	12	70	6
4KLE 040 150 070	4	15	70	4
4KLE 040 150 S06	4	15	70	6
4KLE 040 200 070	4	20	70	4
4KLE 040 200 S06	4	20	70	6
4KLE 040 250 S06	4	25	70	6
4KLE 040 300 S06	4	30	75	6
4KLE 040 350 S06	4	35	75	6
4KLE 040 400 S06	4	40	80	6
4KLE 050 200 S06	5	20	70	6
4KLE 050 250 S06	5	25	70	6
4KLE 050 300 S06	5	30	75	6
4KLE 050 400 S06	5	40	80	6
4KLE 060 200 070	6	20	70	6
4KLE 060 200 100	6	20	100	6
4KLE 060 250 075	6	25	75	6
4KLE 060 250 100	6	25	100	6
4KLE 060 300 080	6	30	80	6
4KLE 060 350 080	6	35	80	6
4KLE 060 400 090	6	40	90	6
4KLE 080 250 075	8	25	75	8
4KLE 080 250 100	8	25	100	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KLE 080 300 080	8	30	80	8
4KLE 080 300 100	8	30	100	8
4KLE 080 300 150	8	30	150	8
4KLE 080 350 080	8	35	80	8
4KLE 080 400 090	8	40	90	8
4KLE 080 450 100	8	45	100	8
4KLE 080 500 100	8	50	100	8
4KLE 080 550 100	8	55	100	8
4KLE 100 300 080	10	30	80	10
4KLE 100 350 100	10	35	100	10
4KLE 100 350 150	10	35	150	10
4KLE 100 400 100	10	40	100	10
4KLE 100 450 100	10	45	100	10
4KLE 100 500 100	10	50	100	10
4KLE 100 550 110	10	55	110	10
4KLE 100 600 110	10	60	110	10
4KLE 100 650 120	10	65	120	10
4KLE 100 700 120	10	70	120	10
4KLE 120 300 100	12	30	100	12
4KLE 120 350 100	12	35	100	12
4KLE 120 400 100	12	40	100	12
4KLE 120 400 150	12	40	150	12
4KLE 120 450 100	12	45	100	12
4KLE 120 500 100	12	50	100	12
4KLE 120 550 110	12	55	110	12
4KLE 120 600 110	12	60	110	12
4KLE 120 700 130	12	70	130	12
4KLE 140 500 110	14	50	110	14
4KLE 160 400 150	16	40	150	16
4KLE 160 550 120	16	55	120	16
4KLE 160 700 130	16	70	130	16
4KLE 200 500 150	20	50	150	20
4KLE 200 600 130	20	60	130	20
4KLE 250 750 150	25	75	150	25

K SPEED 2SSB

2 Flutes High Speed Short Length Ball Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

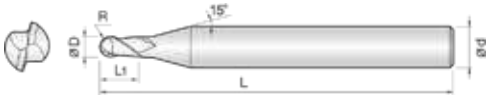
- High precise edge tolerance.
- Short overall length for easy use with shrinking chuck.
- Very nice work surface finish



2刃 高速加工用 短い長さ ボール エンドミル

高硬度鋼(HRC50以上),プレハードン鋼 系列の 高速加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 短い 全長を採択してshrink fit チャック使用が容易です.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.



2날 고속가공용 짧은길이 볼 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 짧은 전장을 채택하여 열박음척 사용이 용이합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SSB 001 001 S04	0.05RX0.1	0.1	40	4
2SSB 001 0015 S04	0.05RX0.1	0.15	40	4
2SSB 0015 0015 S04	0.075RX0.15	0.15	40	4
2SSB 0015 002 S04	0.075RX0.15	0.2	40	4
2SSB 002 002 S04	0.1RX0.2	0.2	40	4
2SSB 002 003 S04	0.1RX0.2	0.3	40	4
2SSB 0025 004 S04	0.125RX0.25	0.4	40	4
2SSB 003 003 S04	0.15RX0.3	0.3	40	4
2SSB 003 0045 S04	0.15RX0.3	0.45	40	4
2SSB 004 004 S04	0.2RX0.4	0.4	40	4
2SSB 004 006 S04	0.2RX0.4	0.6	40	4
2SSB 005 005 S04	0.25RX0.5	0.5	40	4
2SSB 005 0075 S04	0.25RX0.5	0.75	40	4
2SSB 006 006 S04	0.3RX0.6	0.6	40	4
2SSB 006 009 S04	0.3RX0.6	0.9	40	4
2SSB 007 007 S04	0.35RX0.7	0.7	40	4
2SSB 007 010 S04	0.35RX0.7	1	40	4
2SSB 008 008 S04	0.4RX0.8	0.8	40	4
2SSB 008 012 S04	0.4RX0.8	1.2	40	4
2SSB 009 009 S04	0.45RX0.9	0.9	40	4
2SSB 009 013 S04	0.45RX0.9	1.3	40	4
2SSB 010 010 S04	0.5RX1	1	40	4
2SSB 010 010 S06	0.5RX1	1	40	6
2SSB 010 015 S04	0.5RX1	1.5	40	4
2SSB 010 015 S06	0.5RX1	1.5	40	6
2SSB 012 012 S04	0.6RX1.2	1.2	40	4
2SSB 015 015 S04	0.75RX1.5	1.5	40	4
2SSB 015 015 S06	0.75RX1.5	1.5	40	6
2SSB 015 023 S04	0.75RX1.5	2.3	40	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SSB 015 023 S06	0.75R X 1.5	2.3	40	6
2SSB 020 020 S04	1R X 2	2	45	4
2SSB 020 020 S06	1R X 2	2	45	6
2SSB 020 030 S04	1R X 2	3	45	4
2SSB 020 030 S06	1R X 2	3	45	6
2SSB 025 025 S04	1.25R X 2.5	2.5	45	4
2SSB 025 025 S06	1.25R X 2.5	2.5	45	6
2SSB 030 030 S04	1.5R X 3	3	45	4
2SSB 030 030 S06	1.5R X 3	3	45	6
2SSB 030 045 S04	1.5R X 3	4.5	45	4
2SSB 030 045 S06	1.5R X 3	4.5	45	6
2SSB 040 040 S04	2R X 4	4	45	4
2SSB 040 040 S06	2R X 4	4	45	6
2SSB 040 060 S04	2R X 4	6	45	4
2SSB 040 060 S06	2R X 4	6	45	6
2SSB 050 050 S06	2.5R X 5	5	50	6
2SSB 050 075 S06	2.5R X 5	7.5	50	6
2SSB 060 060 050	3R X 6	6	50	6
2SSB 060 060 060	3R X 6	6	60	6
2SSB 080 080 050	4R X 8	8	50	8
2SSB 080 080 060	4R X 8	8	60	8
2SSB 100 100 060	5R X 10	10	60	10
2SSB 100 100 070	5R X 10	10	70	10
2SSB 120 120 060	6R X 12	12	60	12
2SSB 120 120 070	6R X 12	12	70	12

K SPEED 2UPB



2 Flutes Ultra Precision Standard Length Ball Endmills

Endmills for precise cutting (±2μm) of pre-hardened steel (HRC50~62)

- High precise edge tolerance.
- Very nice work surface finish.



2刃 超精密 標準 長さ ボール エンドミル

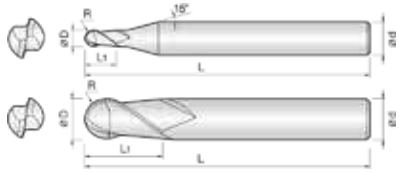
高硬度鋼(HRC50~62),プレハードン鋼系列の高精密(±2μm) 加工用

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です

2날 초정밀 표준 길이 볼 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀(±2μm) 가공용

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2UPB 002 004 S04	0.1R X 0.2	0.4	40	4
2UPB 003 006 S04	0.15R X 0.3	0.6	40	4
2UPB 004 008 S04	0.2R X 0.4	0.8	40	4
2UPB 005 010 S04	0.25R X 0.5	1	45	4
2UPB 006 012 S04	0.3R X 0.6	1.2	45	4
2UPB 007 015 S04	0.35R X 0.7	1.5	45	4
2UPB 008 020 S04	0.4R X 0.8	2	45	4
2UPB 009 020 S04	0.45R X 0.9	2	45	4
2UPB 010 025 S04	0.5R X 1	2.5	50	4
2UPB 010 025 S06	0.5R X 1	2.5	50	6
2UPB 012 030 S04	0.6R X 1.2	3	50	4
2UPB 015 040 S04	0.75R X 1.5	4	50	4
2UPB 015 040 S06	0.75R X 1.5	4	50	6
2UPB 020 050 S04	1R X 2	5	50	4
2UPB 020 050 S06	1R X 2	5	50	6
2UPB 025 060 S04	1.25R X 2.5	6	50	4
2UPB 030 080 S04	1.5R X 3	8	50	4
2UPB 030 080 S06	1.5R X 3	8	60	6
2UPB 035 080 S06	1.75R X 3.5	8	60	6
2UPB 040 080 S04	2R X 4	8	60	4
2UPB 040 080 S06	2R X 4	8	70	6
2UPB 045 080 S06	2.25R X 4.5	8	70	6
2UPB 050 100 S06	2.5R X 5	10	75	6
2UPB 055 100 S06	2.75R X 5.5	10	75	6
2UPB 060 120 080	3R X 6	12	80	6
2UPB 070 140 S08	3.5R X 7	14	80	8
2UPB 080 140 090	4R X 8	14	90	8
2UPB 100 180 100	5R X 10	18	100	10
2UPB 120 220 110	6R X 12	22	110	12

K SPEED 2SCB

2 Flutes High Speed Standard Length Ball Endmills

Endmills for pre-hardened and hardened steel(HRC50~62)

- High precise edge tolerance.
- Very nice work surface finish.

2刃 高速加工用 標準 長さ ボール エンドミル

高硬度鋼(HRC50~62),プレハードン鋼 系列の 高速加工 エンドミル

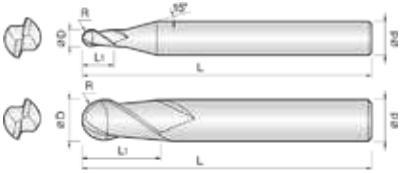
- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

2날 고속가공용 표준 길이 볼 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.



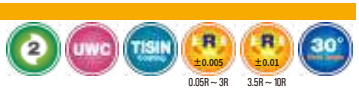


Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SCB 0006 001 S04	0.03R×0.06	0.1	40	4
2SCB 0007 0012 S04	0.035R×0.07	0.1	40	4
2SCB 0008 0015 S04	0.04R×0.08	0.2	40	4
2SCB 0009 0017 S04	0.045R×0.09	0.2	40	4
2SCB 001 002 S04	0.05R×0.1	0.2	40	4
2SCB 0015 003 S04	0.075R×0.15	0.3	40	4
2SCB 002 004 S04	0.1R×0.2	0.4	40	4
2SCB 003 006 S04	0.15R×0.3	0.6	40	4
2SCB 004 008 S04	0.2R×0.4	0.8	40	4
2SCB 005 010 S04	0.25R×0.5	1	45	4
2SCB 006 012 S04	0.3R×0.6	1.2	45	4
2SCB 007 015 S04	0.35R×0.7	1.5	45	4
2SCB 008 020 S04	0.4R×0.8	2	45	4
2SCB 009 020 S04	0.45R×0.9	2	45	4
2SCB 010 025 070	0.5R×1	2.5	70	6
2SCB 010 025 100	0.5R×1	2.5	100	6
2SCB 010 025 S03	0.5R×1	2.5	50	3
2SCB 010 025 S04	0.5R×1	2.5	50	4
2SCB 010 025 S06	0.5R×1	2.5	50	6
2SCB 011 027 S04	0.55R×1.1	2.7	50	4
2SCB 012 030 S03	0.6R×1.2	3	50	3
2SCB 012 030 S04	0.6R×1.2	3	50	4
2SCB 013 032 S04	0.65R×1.3	3.2	50	4
2SCB 014 035 S04	0.7R×1.4	3.5	50	4
2SCB 015 040 070	0.75R×1.5	4	70	6
2SCB 015 040 100	0.75R×1.5	4	100	6
2SCB 015 040 S03	0.75R×1.5	4	50	3
2SCB 015 040 S04	0.75R×1.5	4	50	4
2SCB 015 040 S06	0.75R×1.5	4	50	6
2SCB 016 040 S04	0.8R×1.6	4	50	4
2SCB 017 042 S04	0.85R×1.7	4.2	50	4
2SCB 018 045 S04	0.9R×1.8	4.5	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SCB 019 047 S04	0.95R×1.9	4.7	50	4
2SCB 020 050 S03	1R×2	5	50	3
2SCB 020 050 S04	1R×2	5	50	4
2SCB 020 050 S06	1R×2	5	50	6
2SCB 020 050 075	1R×2	5	75	6
2SCB 020 050 100	1R×2	5	100	6
2SCB 022 055 S04	1.1R×2.2	5.5	50	4
2SCB 024 060 S04	1.2R×2.4	6	50	4
2SCB 025 060 S03	1.25R×2.5	6	50	3
2SCB 025 060 S04	1.25R×2.5	6	50	4
2SCB 025 060 S06	1.25R×2.5	6	75	6
2SCB 025 060 100	1.25R×2.5	6	100	6
2SCB 026 060 S04	1.3R×2.6	6	50	4
2SCB 028 070 S04	1.4R×2.8	7	50	4
2SCB 030 080 S03	1.5R×3	8	60	3
2SCB 030 080 S04	1.5R×3	8	50	4
2SCB 030 080 S06	1.5R×3	8	60	6
2SCB 030 080 080	1.5R×3	8	80	6
2SCB 030 080 100	1.5R×3	8	100	6
2SCB 032 080 S04	1.6R×3.2	8	60	4
2SCB 034 080 S04	1.7R×3.4	8	60	4
2SCB 035 080 S06	1.75R×3.5	8	60	6
2SCB 036 090 S04	1.8R×3.6	9	60	4
2SCB 038 090 S04	1.9R×3.8	9	60	4
2SCB 040 080 060	2R×4	8	60	4
2SCB 040 080 080	2R×4	8	80	4
2SCB 040 080 S06	2R×4	8	70	6
2SCB 040 080 090	2R×4	8	90	6
2SCB 040 080 120	2R×4	8	120	6
2SCB 042 100 S06	2.1R×4.2	10	70	6
2SCB 044 100 S06	2.2R×4.4	10	70	6
2SCB 045 080 S06	2.25R×4.5	8	70	6



Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SCB 046 100 S06	2.3R X 4.6	10	70	6
2SCB 048 110 S06	2.4R X 4.8	11	70	6
2SCB 050 080 S05	2.5R X 5	8	80	5
2SCB 050 100 S06	2.5R X 5	10	75	6
2SCB 052 120 S06	2.6R X 5.2	12	75	6
2SCB 054 120 S06	2.7R X 5.4	12	75	6
2SCB 055 100 S06	2.75R X 5.5	10	75	6
2SCB 056 120 S06	2.8R X 5.6	12	75	6
2SCB 058 120 S06	2.9R X 5.8	12	75	6
2SCB 060 100 060	3R X 6	10	60	6
2SCB 060 120 080	3R X 6	12	80	6
2SCB 060 120 100	3R X 6	12	100	6
2SCB 060 120 120	3R X 6	12	120	6
2SCB 060 120 150	3R X 6	12	150	6
2SCB 070 140 S08	3.5R X 7	14	80	8
2SCB 080 140 090	4R X 8	14	90	8
2SCB 080 140 110	4R X 8	14	110	8
2SCB 080 140 150	4R X 8	14	150	8

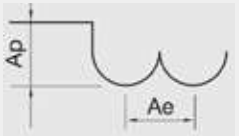
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2SCB 090 160 S10	4.5R X 9	16	100	10
2SCB 100 180 100	5R X 10	18	100	10
2SCB 100 180 120	5R X 10	18	120	10
2SCB 100 180 150	5R X 10	18	150	10
2SCB 100 180 180	5R X 10	18	180	10
2SCB 110 200 S12	5.5R X 11	20	110	12
2SCB 120 220 110	6R X 12	22	110	12
2SCB 120 220 130	6R X 12	22	130	12
2SCB 120 220 150	6R X 12	22	150	12
2SCB 120 220 200	6R X 12	22	200	12
2SCB 130 240 S14	6.5R X 13	24	110	14
2SCB 140 240 S14	7R X 14	24	110	14
2SCB 160 300 130	8R X 16	30	130	16
2SCB 160 300 160	8R X 16	30	160	16
2SCB 160 300 200	8R X 16	30	200	16
2SCB 200 380 160	10R X 20	38	160	20
2SCB 200 380 200	10R X 20	38	200	20

2UPB/2SCB/2SSB

• RPM : rev./min • Feed : mm/min

Material		Copper				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness						30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Radius	Cutting Length	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth
R0.05	0.2	40,000	250	0.040	0.008	40,000	250	0.040	0.004	30,000	180	0.030	0.003	X	X	X	X
R0.1	0.2	50,000	400	0.006	0.010	50,000	600	0.050	0.015	41,300	450	0.040	0.012	30,000	300	0.023	0.008
	0.4	50,000	400	0.005	0.004	50,000	230	0.035	0.015	41,300	240	0.030	0.080	30,000	220	0.018	0.006
R0.15	0.3	50,000	680	0.010	0.015	50,000	680	0.080	0.025	41,300	550	0.062	0.020	30,000	410	0.035	0.012
	0.6	50,000	680	0.010	0.010	50,000	620	0.065	0.022	41,300	530	0.045	0.020	30,000	380	0.025	0.010
R0.2	0.4	50,000	790	0.014	0.023	50,000	910	0.110	0.035	41,300	750	0.086	0.028	30,000	540	0.050	0.015
	0.8	50,000	790	0.014	0.010	50,000	800	0.100	0.035	41,300	600	0.080	0.028	30,000	490	0.044	0.015
R0.25	0.5	52,000	1,050	0.017	0.030	49,000	1,050	0.140	0.045	40,800	900	0.110	0.035	28,800	700	0.065	0.021
	1	52,000	1,050	0.017	0.018	46,000	950	0.120	0.040	38,300	700	0.080	0.030	26,600	550	0.053	0.020
R0.3	0.6	54,000	1,210	0.021	0.038	48,000	1,180	0.150	0.055	39,600	1,000	0.120	0.043	27,500	750	0.078	0.025
	1.2	54,000	1,210	0.020	0.020	45,500	920	0.145	0.050	37,500	720	0.110	0.040	27,000	520	0.067	0.020
R0.4	0.8	48,000	1,570	0.030	0.050	45,000	1,200	0.180	0.070	36,500	1,100	0.180	0.060	26,500	810	0.100	0.035
	2	48,000	1,570	0.025	0.030	42,000	980	0.150	0.060	33,500	800	0.150	0.050	23,800	550	0.080	0.035
R0.5	1	32,800	1,300	0.032	0.050	36,000	1,200	0.240	0.080	29,500	1,000	0.192	0.064	21,840	750	0.112	0.040
	2.5	32,800	1,300	0.032	0.020	33,600	1,000	0.204	0.080	28,000	800	0.160	0.064	20,700	600	0.094	0.040
R0.6	3	21,760	1,120	0.032	0.014	25,600	640	0.141	0.077	20,160	520	0.112	0.061	14,700	380	0.079	0.038
R0.75	1.5	21,600	1,500	0.054	0.070	28,000	1,280	0.360	0.120	23,000	1,024	0.288	0.096	17,200	760	0.168	0.060
	4	21,600	1,500	0.054	0.042	27,200	800	0.260	0.120	20,800	640	0.208	0.096	15,400	480	0.122	0.060
R1	2	16,000	1,500	0.071	0.090	24,000	1,480	0.480	0.160	20,000	1,184	0.360	0.128	14,600	890	0.224	0.080
	5	16,000	1,400	0.071	0.054	21,200	1,080	0.348	0.160	17,600	864	0.278	0.128	13,000	650	0.162	0.080
R1.25	6	12,800	1,500	0.012	0.054	20,400	1,280	0.434	0.200	16,800	1,024	0.344	0.160	12,400	760	0.201	0.100
R1.5	3	10,400	1,800	0.137	0.158	20,400	2,010	0.766	0.240	16,800	1,640	0.613	0.192	12,400	1,200	0.358	0.120
	8	10,400	1,800	0.137	0.080	20,400	1,900	0.612	0.240	16,800	1,500	0.490	0.192	12,400	1,100	0.286	0.120
R2	4	8,000	1,700	0.166	0.213	16,800	1,960	0.880	0.320	14,000	1,560	0.880	0.256	10,200	1,200	0.512	0.160
	8	8,000	1,700	0.166	0.107	16,800	1,880	0.800	0.320	14,000	1,500	0.653	0.256	10,200	1,120	0.381	0.160
R2.5	5	6,600	1,600	0.192	0.172	14,400	2,040	1.328	0.400	11,800	1,600	1.064	0.320	8,800	1,200	0.616	0.200
	10	6,600	1,600	0.192	0.160	14,400	1,960	1.200	0.400	11,800	1,600	0.960	0.320	8,800	1,170	0.560	0.200
R3	6	5,500	1,500	0.225	0.232	12,800	2,160	1.872	0.480	10,400	1,720	1.496	0.384	7,700	1,200	1.520	0.240
	12	5,500	1,500	0.225	0.184	12,800	1,920	1.224	0.480	10,400	1,500	0.980	0.384	7,700	1,150	0.572	0.240
R4	8	4,500	800	0.140	0.320	10,000	1,840	2.480	0.640	8,200	1,400	1.984	0.512	6,000	1,100	1.157	0.320
	14	4,500	800	0.140	0.320	10,000	1,600	2.000	0.640	8,200	1,200	1.312	0.512	6,000	960	0.766	0.320
R5	10	3,600	560	0.123	0.400	8,400	1,760	3.000	0.800	6,900	1,400	2.400	0.640	5,100	1,070	1.400	0.400
	18	3,600	560	0.123	0.400	8,400	1,300	2.040	0.800	6,900	1,100	1.632	0.640	5,100	810	0.952	0.400
R6	22	3,000	480	0.127	0.480	7,200	1,400	3.530	0.960	5,900	1,180	2.224	0.768	4,300	890	1.648	0.480
R8	30	2,200	460	0.115	0.450	6,800	1,630	3.870	1.120	4,900	1,100	2.350	0.790	4,000	810	1.742	0.500
R10	38	2,000	470	0.100	0.400	6,200	1,450	4.120	1.100	3,900	1,100	2.530	0.840	3,100	800	1.866	0.520

Depth of Cut



■ In case of slotting, decrease feed rate more than 50% the table. ■ 溝加工の場合, 上記表 Feedを50%以上 減少してください. ■ 홈가공의 경우, 상기표 Feed를 50%이상 감소하십시오.

K SPEED 3SCB

3 Flutes High Speed Standard Length Ball Endmills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- High speed, feed applicable by 3 flute ball edge.

3刃 高速加工用 標準 長さ ボール エンドミル

高硬度鋼(HRC50~62), プレハードン鋼 系列の高速加工 エンドミル

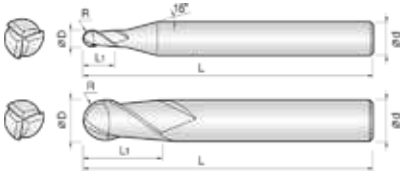
- 高精密 公差 適用で 超精密 加工に適合します.
- 3刃 ボール类型 適用で 高速,高移送 作業が可能です.

3날 고속가공용 표준 길이 볼 엔드밀

고경도강(HRC50~65), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 3날 볼타입 적용으로 고속,고이송 작업이 가능합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
3SCB 010 025 S04	0.5R X 1	2.5	50	4
3SCB 015 040 S04	0.75R X 1.5	4.0	50	4
3SCB 020 050 S06	1R X 2	5.0	50	6
3SCB 030 080 S06	1.5R X 3	8.0	65	6
3SCB 040 080 S04	2R X 4	8.0	60	4
3SCB 040 080 S06	2R X 4	8.0	70	6
3SCB 050 100 S06	2.5R X 5	10.0	75	6
3SCB 060 120 S06	3R X 6	12.0	80	6
3SCB 060 120 120	3R X 6	12.0	120	6
3SCB 080 140 S08	4R X 8	14.0	90	8
3SCB 080 140 150	4R X 8	14.0	150	8
3SCB 100 180 S10	5R X 10	18.0	100	10
3SCB 100 180 150	5R X 10	18.0	150	10
3SCB 120 220 S12	6R X 12	22.0	110	12
3SCB 120 220 150	6R X 12	22.0	150	12

3SCB

• RPM : rev./min • Feed : mm/min

Material	for Roughing								for Finishing							
	Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK				Hardened Steels SKD61				Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK				Hardened Steels SKD61			
Hardness	~ 45HRC				45 ~ 55HRC				~ 45HRC				45 ~ 55HRC			
Radius	α≦15°		α>15°		α≦15°		α>15°		α≦15°		α>15°		α≦15°		α>15°	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R1	28,800	2,700	22,500	1,100	16,200	1,300	14,400	580	28,800	2,900	28,800	1,400	22,500	1,800	18,000	700
R1.5	22,800	3,000	18,000	1,200	13,100	1,500	11,400	630	22,900	3,700	23,400	1,600	18,900	2,100	14,900	800
R2	16,700	3,300	13,000	1,300	10,000	1,600	8,300	670	23,000	4,500	18,000	1,800	15,300	2,400	11,700	900
R2.5	14,200	3,500	11,000	1,300	8,500	1,700	7,100	700	21,000	5,000	15,800	1,900	13,500	2,500	10,400	1,000
R3	11,700	3,600	9,000	1,400	6,900	1,700	5,800	720	18,000	5,500	13,500	2,000	11,700	2,900	9,000	1,100
R4	9,000	4,500	7,000	1,800	5,400	2,100	4,300	830	13,500	6,800	10,000	2,400	9,000	3,400	6,800	1,300
R5	7,200	4,500	5,900	1,800	4,300	2,000	3,400	780	10,800	6,800	8,100	2,400	7,200	3,400	5,400	1,300
R6	5,900	4,100	4,800	1,600	3,600	1,900	2,900	760	9,000	6,300	6,800	2,300	6,000	3,200	4,500	1,200
Depth of Cut																

K SPEED 4SCB

4 Flutes High Speed Standard Length Ball Endmills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- High speed, feed applicable by 4 flute ball edge.

4刃 高速加工用 標準 長さ ボール エンドミル

高硬度鋼(HRC50~62),プレハードン鋼 系列の高速加工 エンドミル

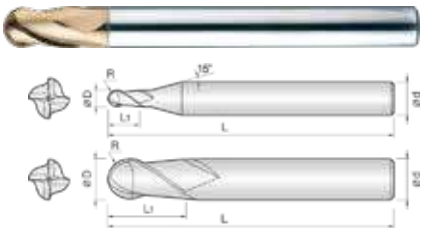
- 高精密 公差 適用で 超精密 加工に適合します.
- 4刃 ボール类型 適用で 高速,高移送 作業が可能です.

4날 고속가공용 표준 길이 볼 엔드밀

고경도강(HRC50~65), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 4날 볼타입 적용으로 고속,고이송 작업이 가능합니다.





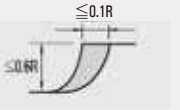
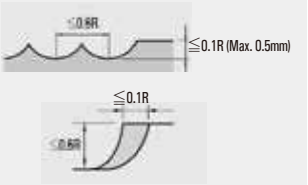
Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
4SCB 010 025 S06	0.5R X 1	2.5	50	6
4SCB 010 025 080	0.5R X 1	2.5	80	6
4SCB 015 040 S06	0.75R X 1.5	4	50	6
4SCB 015 040 080	0.75R X 1.5	4	80	6
4SCB 020 050 S06	1R X 2	5	50	6
4SCB 020 050 080	1R X 2	5	80	6
4SCB 025 070 S06	1.25R X 2.5	7	50	6
4SCB 025 070 080	1.25R X 2.5	7	80	6
4SCB 030 080 S06	1.5R X 3	8	60	6
4SCB 030 080 090	1.5R X 3	8	90	6
4SCB 040 080 090	2R X 4	8	90	4
4SCB 040 080 100	2R X 4	8	100	6
4SCB 040 080 S04	2R X 4	8	60	4
4SCB 040 080 S06	2R X 4	8	70	6
4SCB 050 100 S06	2.5R X 5	10	80	6
4SCB 050 100 110	2.5R X 5	10	110	6
4SCB 060 120 S06	3R X 6	12	90	6
4SCB 060 120 110	3R X 6	12	110	6
4SCB 080 140 S08	4R X 8	14	100	8
4SCB 080 140 150	4R X 8	14	150	8
4SCB 100 180 S10	5R X 10	18	100	10
4SCB 100 180 150	5R X 10	18	150	10
4SCB 120 220 S12	6R X 12	22	110	12
4SCB 120 220 150	6R X 12	22	150	12
4SCB 140 240 110	7R X 14	24	110	14
4SCB 160 300 S16	8R X 16	30	130	16
4SCB 160 300 160	8R X 16	30	160	16
4SCB 200 400 S20	10R X 20	40	160	20
4SCB 200 400 200	10R X 20	40	200	20

4SCB

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Prehardened Steels SCM / SKD61 / SKD11 / NAK		Hardened Steels SKD61 / SUS420		Hardened Steels SKD11 / SKH / SKS	
Hardness	~ 45HRC		45 ~ 55HRC		55 ~ 62HRC	
Radius	RPM	FEED	RPM	FEED	RPM	FEED
R1	28,000	1600 ~ 4800	20,000	1040 ~ 2880	12,800	640 ~ 1200
R1.5	26,400	1600 ~ 4800	16,000	960 ~ 2720	10,400	640 ~ 1200
R2	20,000	1600 ~ 4800	13,600	960 ~ 2720	8,000	640 ~ 1200
R2.5	18,400	1600 ~ 4800	12,000	960 ~ 2720	7,200	640 ~ 1200
R3	16,000	1440 ~ 4400	10,400	960 ~ 2960	6,600	560 ~ 1200
R4	12,000	1760 ~ 4000	8,000	1120 ~ 2720	5,000	560 ~ 1040
R5	9,600	1840 ~ 3680	6,400	1200 ~ 2400	4,000	560 ~ 800
R6	8,000	1520 ~ 3280	5,300	1040 ~ 2160	3,300	560 ~ 800
R8	6,000	1280 ~ 2560	4,000	880 ~ 1760	2,500	480 ~ 640
Depth of Cut						

K SPEED 2SRB

2 Flutes High Speed Rib Ball Endmills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- Very nice work surface finish.

2刃 高速加工用 リブ ボール エンドミル

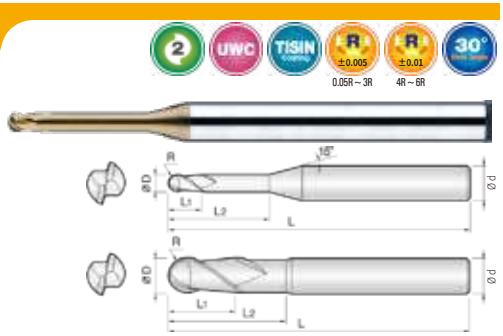
高硬度鋼(HRC50~62),プレハードン鋼 系列の高速加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

2날 고속가공용 리브 볼 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.

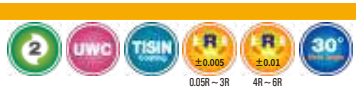


Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 001 003 S04	0.05R X 0.1	0.15	0.3	40	4
2SRB 001 005 S04	0.05R X 0.1	0.15	0.5	40	4
2SRB 0015 003 S04	0.075R X 0.15	0.15	0.3	40	4
2SRB 0015 005 S04	0.075R X 0.15	0.15	0.5	40	4
2SRB 0015 010 S04	0.075R X 0.15	0.15	1	40	4
2SRB 002 005 S04	0.1R X 0.2	0.2	0.5	40	4
2SRB 002 010 S04	0.1R X 0.2	0.2	1	40	4
2SRB 002 015 S04	0.1R X 0.2	0.2	1.5	40	4
2SRB 002 020 S04	0.1R X 0.2	0.2	2	40	4
2SRB 002 025 S04	0.1R X 0.2	0.2	2.5	40	4
2SRB 002 030 S04	0.1R X 0.2	0.2	3	40	4
2SRB 0025 005 S04	0.125R X 0.25	0.3	0.5	40	4
2SRB 0025 010 S04	0.125R X 0.25	0.3	1	40	4
2SRB 0025 015 S04	0.125R X 0.25	0.3	1.5	40	4
2SRB 0025 020 S04	0.125R X 0.25	0.3	2	40	4
2SRB 0025 025 S04	0.125R X 0.25	0.3	2.5	40	4
2SRB 0025 030 S04	0.125R X 0.25	0.3	3	40	4
2SRB 003 010 S04	0.15R X 0.3	0.3	1	40	4
2SRB 003 015 S04	0.15R X 0.3	0.3	1.5	40	4
2SRB 003 020 S04	0.15R X 0.3	0.3	2	40	4
2SRB 003 025 S04	0.15R X 0.3	0.3	2.5	40	4
2SRB 003 030 S04	0.15R X 0.3	0.3	3	40	4
2SRB 003 035 S04	0.15R X 0.3	0.3	3.5	40	4
2SRB 003 040 S04	0.15R X 0.3	0.3	4	40	4
2SRB 003 050 S04	0.15R X 0.3	0.3	5	40	4
2SRB 004 010 S04	0.2R X 0.4	0.4	1	40	4
2SRB 004 015 S04	0.2R X 0.4	0.4	1.5	40	4
2SRB 004 020 S04	0.2R X 0.4	0.4	2	40	4
2SRB 004 025 S04	0.2R X 0.4	0.4	2.5	40	4
2SRB 004 030 S04	0.2R X 0.4	0.4	3	40	4
2SRB 004 035 S04	0.2R X 0.4	0.4	3.5	40	4
2SRB 004 040 S04	0.2R X 0.4	0.4	4	40	4
2SRB 004 045 S04	0.2R X 0.4	0.4	4.5	40	4
2SRB 004 050 S04	0.2R X 0.4	0.4	5	40	4
2SRB 004 060 S04	0.2R X 0.4	0.4	6	40	4
2SRB 004 080 S04	0.2R X 0.4	0.4	8	40	4

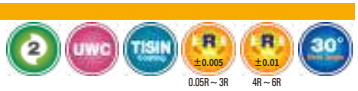
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 004 100 S04	0.2R X 0.4	0.4	10	40	4
2SRB 005 010 S04	0.25R X 0.5	0.5	1	45	4
2SRB 005 015 S04	0.25R X 0.5	0.5	1.5	45	4
2SRB 005 020 S04	0.25R X 0.5	0.5	2	45	4
2SRB 005 025 S04	0.25R X 0.5	0.5	2.5	45	4
2SRB 005 030 S04	0.25R X 0.5	0.5	3	45	4
2SRB 005 035 S04	0.25R X 0.5	0.5	3.5	45	4
2SRB 005 040 S04	0.25R X 0.5	0.5	4	45	4
2SRB 005 045 S04	0.25R X 0.5	0.5	4.5	45	4
2SRB 005 050 S04	0.25R X 0.5	0.5	5	45	4
2SRB 005 060 S04	0.25R X 0.5	0.5	6	45	4
2SRB 005 080 S04	0.25R X 0.5	0.5	8	45	4
2SRB 005 100 S04	0.25R X 0.5	0.5	10	45	4
2SRB 005 120 S04	0.25R X 0.5	0.5	12	45	4
2SRB 005 140 S04	0.25R X 0.5	0.5	14	45	4
2SRB 006 010 S04	0.3R X 0.6	0.6	1	45	4
2SRB 006 020 S04	0.3R X 0.6	0.6	2	45	4
2SRB 006 030 S04	0.3R X 0.6	0.6	3	45	4
2SRB 006 040 S04	0.3R X 0.6	0.6	4	45	4
2SRB 006 050 S04	0.3R X 0.6	0.6	5	45	4
2SRB 006 060 S04	0.3R X 0.6	0.6	6	45	4
2SRB 006 080 S04	0.3R X 0.6	0.6	8	45	4
2SRB 006 100 S04	0.3R X 0.6	0.6	10	45	4
2SRB 006 120 S04	0.3R X 0.6	0.6	12	45	4
2SRB 006 140 S04	0.3R X 0.6	0.6	14	45	4
2SRB 006 160 S04	0.3R X 0.6	0.6	16	45	4
2SRB 007 020 S04	0.35R X 0.7	0.7	2	45	4
2SRB 007 040 S04	0.35R X 0.7	0.7	4	45	4
2SRB 007 060 S04	0.35R X 0.7	0.7	6	45	4
2SRB 007 080 S04	0.35R X 0.7	0.7	8	45	4
2SRB 007 100 S04	0.35R X 0.7	0.7	10	45	4
2SRB 007 120 S04	0.35R X 0.7	0.7	12	45	4
2SRB 008 020 S04	0.4R X 0.8	0.8	2	45	4
2SRB 008 030 S04	0.4R X 0.8	0.8	3	45	4
2SRB 008 040 S04	0.4R X 0.8	0.8	4	45	4
2SRB 008 050 S04	0.4R X 0.8	0.8	5	45	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 008 060 S04	0.4R X 0.8	0.8	6	45	4
2SRB 008 080 S04	0.4R X 0.8	0.8	8	45	4
2SRB 008 100 S04	0.4R X 0.8	0.8	10	45	4
2SRB 008 120 S04	0.4R X 0.8	0.8	12	45	4
2SRB 008 140 S04	0.4R X 0.8	0.8	14	45	4
2SRB 008 160 S04	0.4R X 0.8	0.8	16	45	4
2SRB 009 040 S04	0.45R X 0.9	0.9	4	45	4
2SRB 010 020 S04	0.5R X 1	1	2	45	4
2SRB 010 020 S06	0.5R X 1	1	2	50	6
2SRB 010 030 S04	0.5R X 1	1	3	45	4
2SRB 010 030 S06	0.5R X 1	1	3	50	6
2SRB 010 040 S04	0.5R X 1	1	4	45	4
2SRB 010 040 S06	0.5R X 1	1	4	50	6
2SRB 010 050 S04	0.5R X 1	1	5	45	4
2SRB 010 050 S06	0.5R X 1	1	5	50	6
2SRB 010 060 S04	0.5R X 1	1	6	45	4
2SRB 010 060 S06	0.5R X 1	1	6	50	6
2SRB 010 080 S04	0.5R X 1	1	8	45	4
2SRB 010 080 S06	0.5R X 1	1	8	50	6
2SRB 010 100 S04	0.5R X 1	1	10	50	4
2SRB 010 100 S06	0.5R X 1	1	10	50	6
2SRB 010 120 S04	0.5R X 1	1	12	50	4
2SRB 010 120 S06	0.5R X 1	1	12	50	6
2SRB 010 140 S04	0.5R X 1	1	14	50	4
2SRB 010 140 S06	0.5R X 1	1	14	50	6
2SRB 010 160 S04	0.5R X 1	1	16	50	4
2SRB 010 160 S06	0.5R X 1	1	16	60	6
2SRB 010 180 S04	0.5R X 1	1	18	50	4
2SRB 010 180 S06	0.5R X 1	1	18	60	6
2SRB 010 200 S04	0.5R X 1	1	20	50	4
2SRB 010 200 S06	0.5R X 1	1	20	60	6
2SRB 010 220 S04	0.5R X 1	1	22	60	4
2SRB 010 220 S06	0.5R X 1	1	22	65	6
2SRB 010 250 S04	0.5R X 1	1	25	60	4
2SRB 010 300 S04	0.5R X 1	1	30	70	4
2SRB 012 040 S04	0.6R X 1.2	1.2	4	45	4
2SRB 012 040 S06	0.6R X 1.2	1.2	4	50	6
2SRB 012 060 S04	0.6R X 1.2	1.2	6	45	4
2SRB 012 060 S06	0.6R X 1.2	1.2	6	50	6
2SRB 012 080 S04	0.6R X 1.2	1.2	8	45	4
2SRB 012 080 S06	0.6R X 1.2	1.2	8	50	6
2SRB 012 100 S04	0.6R X 1.2	1.2	10	50	4
2SRB 012 100 S06	0.6R X 1.2	1.2	10	50	6
2SRB 012 120 S04	0.6R X 1.2	1.2	12	50	4
2SRB 012 120 S06	0.6R X 1.2	1.2	12	50	6
2SRB 012 160 S04	0.6R X 1.2	1.2	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 012 160 S06	0.6R X 1.2	1.2	16	60	6
2SRB 012 200 S04	0.6R X 1.2	1.2	20	50	4
2SRB 012 200 S06	0.6R X 1.2	1.2	20	60	6
2SRB 012 240 S04	0.6R X 1.2	1.2	24	60	4
2SRB 012 240 S06	0.6R X 1.2	1.2	24	65	6
2SRB 014 060 S04	0.7R X 1.4	1.4	6	45	4
2SRB 014 080 S04	0.7R X 1.4	1.4	8	45	4
2SRB 014 120 S04	0.7R X 1.4	1.4	12	50	4
2SRB 014 160 S04	0.7R X 1.4	1.4	16	50	4
2SRB 015 030 S04	0.75R X 1.5	1.5	3	45	4
2SRB 015 030 S06	0.75R X 1.5	1.5	3	50	6
2SRB 015 040 S04	0.75R X 1.5	1.5	4	45	4
2SRB 015 040 S06	0.75R X 1.5	1.5	4	50	6
2SRB 015 060 S04	0.75R X 1.5	1.5	6	45	4
2SRB 015 060 S06	0.75R X 1.5	1.5	6	50	6
2SRB 015 080 S04	0.75R X 1.5	1.5	8	45	4
2SRB 015 080 S06	0.75R X 1.5	1.5	8	50	6
2SRB 015 100 S04	0.75R X 1.5	1.5	10	50	4
2SRB 015 100 S06	0.75R X 1.5	1.5	10	50	6
2SRB 015 120 S04	0.75R X 1.5	1.5	12	50	4
2SRB 015 120 S06	0.75R X 1.5	1.5	12	50	6
2SRB 015 140 S04	0.75R X 1.5	1.5	14	50	4
2SRB 015 140 S06	0.75R X 1.5	1.5	14	50	6
2SRB 015 160 S04	0.75R X 1.5	1.5	16	50	4
2SRB 015 160 S06	0.75R X 1.5	1.5	16	60	6
2SRB 015 180 S04	0.75R X 1.5	1.5	18	50	4
2SRB 015 180 S06	0.75R X 1.5	1.5	18	60	6
2SRB 015 200 S04	0.75R X 1.5	1.5	20	50	4
2SRB 015 200 S06	0.75R X 1.5	1.5	20	60	6
2SRB 015 220 S04	0.75R X 1.5	1.5	22	60	4
2SRB 015 220 S06	0.75R X 1.5	1.5	22	65	6
2SRB 015 250 S04	0.75R X 1.5	1.5	25	60	4
2SRB 015 250 S06	0.75R X 1.5	1.5	25	65	6
2SRB 015 300 S04	0.75R X 1.5	1.5	30	70	4
2SRB 015 300 S06	0.75R X 1.5	1.5	30	70	6
2SRB 015 350 S04	0.75R X 1.5	1.5	35	70	4
2SRB 015 400 S04	0.75R X 1.5	1.5	40	80	4
2SRB 016 060 S04	0.8R X 1.6	1.6	6	45	4
2SRB 016 080 S04	0.8R X 1.6	1.6	8	45	4
2SRB 016 120 S04	0.8R X 1.6	1.6	12	50	4
2SRB 016 160 S04	0.8R X 1.6	1.6	16	50	4
2SRB 016 200 S04	0.8R X 1.6	1.6	20	50	4
2SRB 018 060 S04	0.9R X 1.8	1.8	6	45	4
2SRB 018 080 S04	0.9R X 1.8	1.8	8	45	4
2SRB 018 120 S04	0.9R X 1.8	1.8	12	50	4
2SRB 018 160 S04	0.9R X 1.8	1.8	16	50	4



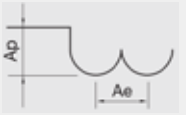
單位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 018 200 S04	0.9R X 1.8	1.8	20	50	4
2SRB 020 040 S04	1R X 2	2	4	45	4
2SRB 020 040 S06	1R X 2	2	4	50	6
2SRB 020 060 S04	1R X 2	2	6	45	4
2SRB 020 060 S06	1R X 2	2	6	50	6
2SRB 020 080 S04	1R X 2	2	8	45	4
2SRB 020 080 S06	1R X 2	2	8	50	6
2SRB 020 100 S04	1R X 2	2	10	50	4
2SRB 020 100 S06	1R X 2	2	10	50	6
2SRB 020 120 S04	1R X 2	2	12	50	4
2SRB 020 120 S06	1R X 2	2	12	50	6
2SRB 020 140 S04	1R X 2	2	14	50	4
2SRB 020 140 S06	1R X 2	2	14	50	6
2SRB 020 160 S04	1R X 2	2	16	50	4
2SRB 020 160 S06	1R X 2	2	16	60	6
2SRB 020 180 S04	1R X 2	2	18	50	4
2SRB 020 180 S06	1R X 2	2	18	60	6
2SRB 020 200 S04	1R X 2	2	20	50	4
2SRB 020 200 S06	1R X 2	2	20	60	6
2SRB 020 220 S04	1R X 2	2	22	60	4
2SRB 020 220 S06	1R X 2	2	22	65	6
2SRB 020 250 S04	1R X 2	2	25	60	4
2SRB 020 250 S06	1R X 2	2	25	65	6
2SRB 020 300 S04	1R X 2	2	30	70	4
2SRB 020 300 S06	1R X 2	2	30	70	6
2SRB 020 350 S04	1R X 2	2	35	70	4
2SRB 020 350 S06	1R X 2	2	35	75	6
2SRB 020 400 S04	1R X 2	2	40	80	4
2SRB 020 400 S06	1R X 2	2	40	80	6
2SRB 020 450 S04	1R X 2	2	45	80	4
2SRB 020 500 S04	1R X 2	2	50	90	4
2SRB 025 080 S04	1.25R X 2.5	2.5	8	45	4
2SRB 025 080 S06	1.25R X 2.5	2.5	8	50	6
2SRB 025 100 S04	1.25R X 2.5	2.5	10	50	4
2SRB 025 100 S06	1.25R X 2.5	2.5	10	50	6
2SRB 025 120 S04	1.25R X 2.5	2.5	12	50	4
2SRB 025 120 S06	1.25R X 2.5	2.5	12	50	6
2SRB 025 160 S04	1.25R X 2.5	2.5	16	50	4
2SRB 025 160 S06	1.25R X 2.5	2.5	16	60	6
2SRB 025 200 S04	1.25R X 2.5	2.5	20	60	4
2SRB 025 250 S04	1.25R X 2.5	2.5	25	60	4
2SRB 025 300 S04	1.25R X 2.5	2.5	30	70	4
2SRB 025 350 S04	1.25R X 2.5	2.5	35	70	4
2SRB 025 400 S04	1.25R X 2.5	2.5	40	80	4
2SRB 030 060 S06	1.5R X 3	3	6	50	6
2SRB 030 080 S06	1.5R X 3	3	8	50	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SRB 030 100 S06	1.5R X 3	3	10	50	6
2SRB 030 120 S06	1.5R X 3	3	12	50	6
2SRB 030 160 S06	1.5R X 3	3	16	60	6
2SRB 030 200 S06	1.5R X 3	3	20	60	6
2SRB 030 250 S06	1.5R X 3	3	25	65	6
2SRB 030 300 S06	1.5R X 3	3	30	70	6
2SRB 030 350 S06	1.5R X 3	3	35	75	6
2SRB 030 400 S06	1.5R X 3	3	40	80	6
2SRB 030 450 S06	1.5R X 3	3	45	90	6
2SRB 030 500 S06	1.5R X 3	3	50	100	6
2SRB 030 600 S06	1.5R X 3	3	60	100	6
2SRB 030 650 S06	1.5R X 3	3	65	110	6
2SRB 030 700 S06	1.5R X 3	3	70	110	6
2SRB 040 080 S06	2R X 4	4	8	50	6
2SRB 040 100 S06	2R X 4	4	10	50	6
2SRB 040 120 S06	2R X 4	4	12	50	6
2SRB 040 160 S06	2R X 4	4	16	60	6
2SRB 040 200 S06	2R X 4	4	20	60	6
2SRB 040 250 S06	2R X 4	4	25	65	6
2SRB 040 300 S06	2R X 4	4	30	70	6
2SRB 040 350 S06	2R X 4	4	35	75	6
2SRB 040 400 S06	2R X 4	4	40	80	6
2SRB 040 450 S06	2R X 4	4	45	90	6
2SRB 040 500 S06	2R X 4	4	50	100	6
2SRB 040 550 S06	2R X 4	4	55	100	6
2SRB 040 600 S06	2R X 4	4	60	100	6
2SRB 040 650 S06	2R X 4	4	65	110	6
2SRB 040 700 S06	2R X 4	4	70	110	6
2SRB 050 160 S06	2.5R X 5	6	16	60	6
2SRB 050 200 S06	2.5R X 5	6	20	60	6
2SRB 050 250 S06	2.5R X 5	6	25	70	6
2SRB 050 300 S06	2.5R X 5	6	30	75	6
2SRB 050 400 S06	2.5R X 5	6	40	80	6
2SRB 050 450 S06	2.5R X 5	6	45	90	6
2SRB 050 500 S06	2.5R X 5	6	50	100	6
2SRB 050 600 S06	2.5R X 5	6	60	100	6
2SRB 050 650 S06	2.5R X 5	6	65	110	6
2SRB 050 700 S06	2.5R X 5	6	70	110	6
2SRB 060 150 S06	3R X 6	10	15	55	6
2SRB 060 300 S06	3R X 6	10	30	110	6
2SRB 080 250 060	4R X 8	12	25	60	8
2SRB 080 300 100	4R X 8	12	30	100	8
2SRB 100 300 070	5R X 10	16	30	70	10
2SRB 100 350 100	5R X 10	16	35	100	10
2SRB 120 300 075	6R X 12	18	30	75	12
2SRB 120 400 110	6R X 12	18	40	110	12

2SRB

• RPM : rev./min • Feed : mm/min

Material		Copper				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness						30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Radius	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R0.05	0.3	50,000	80	0.004	0.004	45,000	70	0.004	0.004	45,000	50	0.002	0.002	45,000	40	0.002	0.002
	0.5	50,000	70	0.004	0.004	45,000	60	0.002	0.002	45,000	30	0.002	0.002	45,000	30	0.002	0.002
R0.1	0.5	50,000	410	0.010	0.010	45,000	330	0.006	0.007	45,000	260	0.006	0.006	45,000	220	0.005	0.006
	1	50,000	360	0.007	0.008	45,000	310	0.004	0.005	45,000	230	0.004	0.004	45,000	200	0.004	0.004
	1.5	42,000	300	0.006	0.006	42,000	230	0.003	0.004	42,000	180	0.003	0.004	42,000	150	0.003	0.003
R0.15	1	50,000	620	0.012	0.013	45,000	460	0.010	0.010	38,000	350	0.090	0.010	38,000	290	0.007	0.009
	3	40,000	440	0.008	0.009	34,000	300	0.006	0.007	28,000	220	0.005	0.005	28,000	180	0.004	0.005
	5	33,000	280	0.004	0.005	24,000	180	0.003	0.003	20,000	140	0.003	0.003	18,000	100	0.002	0.002
R0.2	1	51,000	850	0.021	0.034	45,000	640	0.016	0.022	33,000	430	0.013	0.022	33,000	360	0.011	0.021
	3	46,000	640	0.015	0.016	37,000	400	0.010	0.010	27,000	260	0.009	0.010	27,000	220	0.008	0.010
	5	33,000	390	0.008	0.016	25,000	310	0.008	0.010	22,000	240	0.006	0.010	22,000	190	0.004	0.005
R0.25	1	53,000	1,300	0.026	0.047	38,000	800	0.020	0.033	28,000	530	0.014	0.032	28,000	260	0.007	0.020
	5	44,000	860	0.012	0.014	29,000	460	0.008	0.008	26,000	370	0.007	0.010	26,000	180	0.006	0.009
	10	32,000	440	0.008	0.016	24,000	380	0.007	0.010	24,000	310	0.005	0.010	23,000	180	0.005	0.009
R0.3	1	53,000	1,630	0.030	0.140	33,000	800	0.022	0.091	23,000	500	0.019	0.091	22,000	430	0.014	0.091
	5	42,000	920	0.014	0.068	24,000	420	0.012	0.043	22,000	330	0.008	0.042	22,000	280	0.007	0.040
	10	26,000	450	0.006	0.032	20,000	300	0.005	0.020	19,000	260	0.004	0.020	19,000	200	0.003	0.018
R0.4	2	51,000	1,900	0.054	0.160	29,000	680	0.045	0.100	23,000	460	0.038	0.100	22,000	380	0.030	0.010
	6	43,000	1,210	0.035	0.100	24,000	530	0.028	0.068	18,000	350	0.020	0.068	18,000	290	0.015	0.065
	10	19,000	560	0.022	0.080	1,700	390	0.020	0.050	16,000	340	0.015	0.050	14,000	280	0.010	0.050
R0.5	2	42,000	1,800	0.068	0.320	28,000	750	0.052	0.220	18,000	450	0.040	0.220	15,000	450	0.008	0.140
	5	42,000	1,800	0.068	0.320	28,000	750	0.052	0.220	18,000	450	0.040	0.220	15,000	450	0.008	0.014
	10	25,000	970	0.024	0.086	13,600	500	0.020	0.056	12,500	380	0.014	0.056	11,400	260	0.008	0.050
	16	14,700	600	0.018	0.086	11,400	400	0.016	0.056	10,300	320	0.012	0.056	9,600	210	0.005	0.030
R0.75	3	26,000	2,000	0.167	0.320	18,000	960	0.120	0.210	10,800	560	0.100	0.210	10,000	500	0.090	0.210
	10	22,000	1,400	0.100	0.220	12,300	650	0.080	0.170	8,100	400	0.062	0.170	8,100	380	0.050	0.160
	18	10,100	520	0.030	0.160	10,100	420	0.022	0.110	8,000	360	0.020	0.110	8,000	340	0.012	0.110
	30	8,200	430	0.014	0.080	8,200	380	0.012	0.050	7,900	350	0.010	0.050	7,900	330	0.010	0.050
R1	4	22,000	2,040	0.220	0.520	17,500	1,160	0.180	0.350	12,200	900	0.140	0.350	12,200	750	0.120	0.350
	10	22,000	1,880	0.180	0.350	17,500	1,020	0.140	0.230	12,200	810	0.110	0.230	12,200	660	0.090	0.230
	20	13,300	970	0.090	0.165	13,300	500	0.060	0.110	10,600	500	0.055	0.110	10,600	410	0.035	0.110
	30	8,500	530	0.025	0.070	8,500	400	0.020	0.050	8,500	400	0.015	0.050	8,500	320	0.015	0.045
R1.5	6	14,000	2,700	0.250	0.500	12,000	1,520	0.200	0.340	8,200	1,100	0.160	0.320	5,400	610	0.160	0.320
	10	14,000	2,700	0.250	0.500	12,000	1,520	0.200	0.340	8,200	1,100	0.160	0.320	5,400	610	0.160	0.300
	20	11,700	1,870	0.200	0.450	10,300	1,230	0.145	0.320	7,100	940	0.120	0.310	4,800	550	0.080	0.300
	30	9,100	1,350	0.120	0.220	7,800	680	0.100	0.150	7,100	680	0.080	0.150	4,800	320	0.070	0.300
R2	8	10,500	2,510	0.350	0.850	8,700	1,460	0.290	0.550	6,000	1,110	0.220	0.500	6,000	880	0.150	0.500
	20	10,500	2,510	0.350	0.850	8,700	1,460	0.290	0.550	6,000	1,110	0.220	0.500	6,000	880	0.150	0.500
	30	9,300	1,700	0.250	0.500	7,400	1,150	0.200	0.320	5,500	880	0.150	0.300	5,500	680	0.130	0.300
	40	6,800	1,220	0.150	0.500	6,000	880	0.132	0.320	5,500	880	0.100	0.300	5,500	680	0.090	0.300
R2.5	15	9,000	2,400	0.380	0.800	7,000	1,250	0.300	0.700	5,000	950	0.220	0.700	5,000	750	0.200	0.650
	25	9,000	2,000	0.380	0.800	7,000	1,150	0.300	0.550	5,000	900	0.220	0.550	5,000	680	0.200	0.500
	40	7,800	1,100	0.250	0.800	5,600	700	0.200	0.550	4,100	550	0.150	0.550	4,100	420	0.130	0.500
R3	15	7,000	2,230	0.500	1.000	6,800	1,470	0.420	0.800	4,800	1,100	0.300	0.800	3,700	720	0.300	0.800
	30	7,000	1,510	0.380	0.900	6,000	1,400	0.300	0.650	4,200	980	0.220	0.650	3,700	660	0.220	0.600
R4	25	6,800	1,470	0.410	1.000	6,000	980	0.350	0.750	4,100	760	0.180	0.600	3,800	610	0.200	0.630
	30	6,400	1,400	0.380	1.000	5,800	940	0.300	0.750	4,000	720	0.160	0.600	3,600	600	0.200	0.600
R5	30	5,200	1,120	0.560	1.200	4,900	940	0.370	0.900	4,000	710	0.200	0.670	3,500	590	0.200	0.650
	35	5,000	1,080	0.500	1.000	4,500	900	0.350	0.850	3,800	680	0.150	0.600	3,200	540	0.200	0.600
R6	30	4,300	920	0.650	1.400	4,000	820	0.420	0.900	3,600	690	0.250	0.600	3,000	500	0.250	0.600
	40	4,100	900	0.600	1.200	3,800	8,000	0.400	0.850	3,400	650	0.200	0.600	3,000	500	0.200	0.600
Depth of Cut																	

K SPEED 2SRE



2 Flutes High Speed Rib Endmills

Endmills for pre-hardened and hardened steel (HRc50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.

2刃 高速加工用 リブ ボール エンドミル

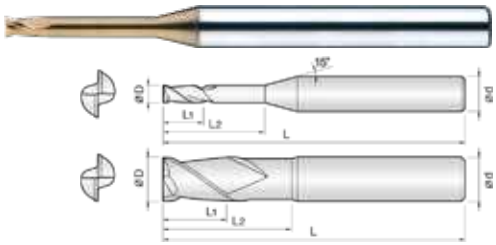
高硬度鋼(HRC50~62), プレハードン鋼 系列の 高速加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.

2날 고속가공용 리브 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SRE 001 003 S04	0.1	0.15	0.3	40	4
2SRE 001 005 S04	0.1	0.15	0.5	40	4
2SRE 0015 003 S04	0.2	0.15	0.3	40	4
2SRE 0015 005 S04	0.2	0.15	0.5	40	4
2SRE 0015 0075 S04	0.2	0.15	0.75	40	4
2SRE 0015 010 S04	0.2	0.15	1	40	4
2SRE 002 005 S04	0.2	0.2	0.5	40	4
2SRE 002 010 S04	0.2	0.2	1	40	4
2SRE 002 015 S04	0.2	0.2	1.5	40	4
2SRE 002 020 S04	0.2	0.2	2	40	4
2SRE 002 025 S04	0.2	0.2	2.5	40	4
2SRE 002 030 S04	0.2	0.2	3	40	4
2SRE 0025 005 S04	0.25	0.25	0.5	40	4
2SRE 0025 010 S04	0.25	0.25	1	40	4
2SRE 0025 015 S04	0.25	0.25	1.5	40	4
2SRE 0025 020 S04	0.25	0.25	2	40	4
2SRE 0025 030 S04	0.25	0.25	3	40	4
2SRE 003 010 S04	0.3	0.3	1	40	4
2SRE 003 015 S04	0.3	0.3	1.5	40	4
2SRE 003 020 S04	0.3	0.3	2	40	4
2SRE 003 025 S04	0.3	0.3	2.5	40	4
2SRE 003 030 S04	0.3	0.3	3	40	4
2SRE 003 035 S04	0.3	0.3	3.5	40	4
2SRE 003 040 S04	0.3	0.3	4	40	4
2SRE 003 050 S04	0.3	0.3	5	40	4
2SRE 004 010 S04	0.4	0.4	1	40	4
2SRE 004 015 S04	0.4	0.4	1.5	40	4
2SRE 004 020 S04	0.4	0.4	2	40	4
2SRE 004 025 S04	0.4	0.4	2.5	40	4
2SRE 004 030 S04	0.4	0.4	3	40	4
2SRE 004 035 S04	0.4	0.4	3.5	40	4
2SRE 004 040 S04	0.4	0.4	4	40	4
2SRE 004 050 S04	0.4	0.4	5	40	4
2SRE 004 060 S04	0.4	0.4	6	40	4
2SRE 004 080 S04	0.4	0.4	8	40	4
2SRE 004 100 S04	0.4	0.4	10	40	4
2SRE 005 010 S04	0.5	0.5	1	40	4
2SRE 005 020 S04	0.5	0.5	2	40	4
2SRE 005 030 S04	0.5	0.5	3	40	4
2SRE 005 040 S04	0.5	0.5	4	40	4
2SRE 005 050 S04	0.5	0.5	5	40	4
2SRE 005 060 S04	0.5	0.5	6	40	4
2SRE 005 080 S04	0.5	0.5	8	40	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SRE 005 100 S04	0.5	0.5	10	40	4
2SRE 005 120 S04	0.5	0.5	12	45	4
2SRE 005 140 S04	0.5	0.5	14	45	4
2SRE 006 010 S04	0.6	0.6	1	40	4
2SRE 006 020 S04	0.6	0.6	2	40	4
2SRE 006 030 S04	0.6	0.6	3	40	4
2SRE 006 040 S04	0.6	0.6	4	40	4
2SRE 006 050 S04	0.6	0.6	5	40	4
2SRE 006 060 S04	0.6	0.6	6	40	4
2SRE 006 080 S04	0.6	0.6	8	40	4
2SRE 006 100 S04	0.6	0.6	10	40	4
2SRE 006 120 S04	0.6	0.6	12	45	4
2SRE 006 140 S04	0.6	0.6	14	45	4
2SRE 006 160 S04	0.6	0.6	16	45	4
2SRE 007 020 S04	0.7	0.7	2	40	4
2SRE 007 040 S04	0.7	0.7	4	40	4
2SRE 007 060 S04	0.7	0.7	6	40	4
2SRE 007 080 S04	0.7	0.7	8	40	4
2SRE 007 100 S04	0.7	0.7	10	40	4
2SRE 007 120 S04	0.7	0.7	12	45	4
2SRE 008 020 S04	0.8	0.8	2	40	4
2SRE 008 030 S04	0.8	0.8	3	40	4
2SRE 008 040 S04	0.8	0.8	4	40	4
2SRE 008 050 S04	0.8	0.8	5	40	4
2SRE 008 060 S04	0.8	0.8	6	40	4
2SRE 008 080 S04	0.8	0.8	8	40	4
2SRE 008 100 S04	0.8	0.8	10	40	4
2SRE 008 120 S04	0.8	0.8	12	45	4
2SRE 008 140 S04	0.8	0.8	14	45	4
2SRE 009 060 S04	0.9	0.8	6	40	4
2SRE 009 080 S04	0.9	0.9	8	40	4
2SRE 009 100 S04	0.9	0.9	10	40	4
2SRE 010 020 S04	1	1	2	45	4
2SRE 010 030 S04	1	1	3	45	4
2SRE 010 040 S04	1	1	4	45	4
2SRE 010 050 S04	1	1	5	45	4
2SRE 010 060 S04	1	1	6	45	4
2SRE 010 080 S04	1	1	8	45	4
2SRE 010 100 S04	1	1	10	45	4
2SRE 010 120 S04	1	1	12	45	4
2SRE 010 140 S04	1	1	14	45	4
2SRE 010 160 S04	1	1	16	50	4
2SRE 010 180 S04	1	1	18	50	4

K SPEED 2SRE



單位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SRE 010 200 S04	1	1	20	50	4
2SRE 010 250 S04	1	1	25	60	4
2SRE 010 300 S04	1	1	30	70	4
2SRE 012 040 S04	1.2	1.2	4	45	4
2SRE 012 060 S04	1.2	1.2	6	45	4
2SRE 012 080 S04	1.2	1.2	8	45	4
2SRE 012 100 S04	1.2	1.2	10	45	4
2SRE 012 120 S04	1.2	1.2	12	45	4
2SRE 012 160 S04	1.2	1.2	16	50	4
2SRE 012 200 S04	1.2	1.2	20	50	4
2SRE 012 250 S04	1.2	1.2	25	60	4
2SRE 012 300 S04	1.2	1.2	30	70	4
2SRE 014 060 S04	1.4	1.4	6	45	4
2SRE 014 080 S04	1.4	1.4	8	45	4
2SRE 014 100 S04	1.4	1.4	10	45	4
2SRE 014 140 S04	1.4	1.4	14	45	4
2SRE 014 160 S04	1.4	1.4	16	50	4
2SRE 014 200 S04	1.4	1.4	20	50	4
2SRE 015 040 S04	1.5	1.5	4	45	4
2SRE 015 060 S04	1.5	1.5	6	45	4
2SRE 015 080 S04	1.5	1.5	8	45	4
2SRE 015 100 S04	1.5	1.5	10	45	4
2SRE 015 120 S04	1.5	1.5	12	45	4
2SRE 015 140 S04	1.5	1.5	14	50	4
2SRE 015 160 S04	1.5	1.5	16	50	4
2SRE 015 180 S04	1.5	1.5	18	50	4
2SRE 015 200 S04	1.5	1.5	20	50	4
2SRE 015 250 S04	1.5	1.5	25	60	4
2SRE 015 300 S04	1.5	1.5	30	70	4
2SRE 016 100 S04	1.6	1.6	10	45	4
2SRE 016 140 S04	1.6	1.6	14	45	4
2SRE 016 180 S04	1.6	1.6	18	60	4
2SRE 018 100 S04	1.8	1.8	10	45	4
2SRE 018 140 S04	1.8	1.8	14	45	4
2SRE 018 180 S04	1.8	1.8	18	50	4
2SRE 020 040 S04	2	2	4	45	4
2SRE 020 060 S04	2	2	6	45	4
2SRE 020 080 S04	2	2	8	45	4
2SRE 020 100 S04	2	2	10	45	4
2SRE 020 120 S04	2	2	12	45	4
2SRE 020 140 S04	2	2	14	45	4
2SRE 020 160 S04	2	2	16	50	4
2SRE 020 180 S04	2	2	18	50	4
2SRE 020 200 S04	2	2	20	50	4
2SRE 020 220 S04	2	2	22	60	4
2SRE 020 250 S04	2	2	25	60	4
2SRE 020 300 S04	2	2	30	60	4
2SRE 020 350 S04	2	2	35	70	4
2SRE 020 400 S04	2	2	40	80	4
2SRE 020 450 S04	2	2	45	80	4
2SRE 020 500 S04	2	2	50	90	4
2SRE 025 080 S04	2.5	2.5	8	45	4
2SRE 025 100 S04	2.5	2.5	10	45	4
2SRE 025 120 S04	2.5	2.5	12	45	4
2SRE 025 160 S04	2.5	2.5	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SRE 025 200 S04	2.5	2.5	20	50	4
2SRE 025 250 S04	2.5	2.5	25	60	4
2SRE 025 300 S04	2.5	2.5	30	70	4
2SRE 025 350 S04	2.5	2.5	35	70	4
2SRE 025 400 S04	2.5	2.5	40	80	4
2SRE 025 500 S04	2.5	2.5	50	90	4
2SRE 030 060 S06	3	3	6	45	6
2SRE 030 080 S06	3	3	8	45	6
2SRE 030 100 S06	3	3	10	45	6
2SRE 030 120 S06	3	3	12	50	6
2SRE 030 160 S06	3	3	16	55	6
2SRE 030 200 S06	3	3	20	60	6
2SRE 030 250 S06	3	3	25	65	6
2SRE 030 300 S06	3	3	30	70	6
2SRE 030 350 S06	3	3	35	75	6
2SRE 030 400 S06	3	3	40	80	6
2SRE 030 450 S06	3	3	45	90	6
2SRE 030 500 S06	3	3	50	100	6
2SRE 030 600 S06	3	3	60	100	6
2SRE 040 080 S06	4	4	8	50	6
2SRE 040 100 S06	4	4	10	50	6
2SRE 040 120 S06	4	4	12	50	6
2SRE 040 160 S06	4	4	16	55	6
2SRE 040 200 S06	4	4	20	60	6
2SRE 040 250 S06	4	4	25	65	6
2SRE 040 300 S06	4	4	30	70	6
2SRE 040 350 S06	4	4	35	75	6
2SRE 040 400 S06	4	4	40	80	6
2SRE 040 450 S06	4	4	45	90	6
2SRE 040 500 S06	4	4	50	100	6
2SRE 040 550 S06	4	4	55	100	6
2SRE 040 600 S06	4	4	60	100	6
2SRE 050 160 S06	5	6	16	55	6
2SRE 050 200 S06	5	6	20	60	6
2SRE 050 250 S06	5	6	25	65	6
2SRE 050 300 S06	5	6	30	70	6
2SRE 050 350 S06	5	6	35	75	6
2SRE 050 400 S06	5	6	40	80	6
2SRE 050 500 S06	5	6	50	100	6
2SRE 050 600 S06	5	6	60	100	6
2SRE 060 200 S06	6	10	20	60	6
2SRE 060 300 S06	6	10	30	75	6
2SRE 060 400 S06	6	10	40	80	6
2SRE 060 500 S06	6	10	50	90	6
2SRE 060 600 S06	6	10	60	110	6
2SRE 080 200 S08	8	12	20	65	8
2SRE 080 300 S08	8	12	30	80	8
2SRE 080 400 S08	8	12	40	100	8
2SRE 100 250 S10	10	15	25	70	10
2SRE 100 350 S10	10	15	35	80	10
2SRE 100 450 S10	10	15	45	100	10
2SRE 120 300 S12	12	18	30	80	12
2SRE 120 400 S12	12	18	40	100	12
2SRE 120 500 S12	12	18	50	120	12

2SRE

• RPM : rev./min • Feed : mm/min

Material		Carbon Steels			Alloy Steels SK / SCM / SUS			Prehardened Steels / Hardened Steels NAK / SKD			Hardened Steels SKD / SKT			Hardened Steels SKD / SKT			Ae Milling amount for side Milling
Hardness		(S45C/S50C) ~225HB			225 ~ 325HB			35HRC ~ 45HRC			45HRC ~ 55HRC			55HRC ~ 60HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
0.1mm	0.3	50,000	70	0.004	50,000	60	0.004	50,000	50	0.002	40,800	30	0.001	X	X	X	X
	0.5	50,000	60	0.004	50,000	50	0.004	50,000	40	0.002	40,800	20	0.001	X	X	X	X
0.2mm	0.5	52,000	310	0.006	52,000	290	0.005	52,000	250	0.003	40,800	160	0.002	13,000	8	0.001	0.096
	1	46,900	270	0.005	46,900	240	0.005	46,900	210	0.004	36,800	140	0.003	X	X	X	0.014
	1.5	45,200	220	0.003	45,200	210	0.003	45,200	180	0.002	35,500	120	0.002	X	X	X	0.004
0.3mm	1	56,000	520	0.009	56,000	460	0.008	56,000	410	0.006	48,100	310	0.004	11,600	12	0.003	0.064
	3	29,800	210	0.002	29,800	200	0.002	29,800	170	0.001	22,500	110	0.001	11,600	8	0.001	0.002
	5	20,400	90	0.001	20,400	80	0.001	20,400	70	0.001	16,300	50	0.001	X	X	X	X
0.4mm	1	52,000	610	0.012	52,000	580	0.010	44,600	420	0.008	35,700	280	0.005	11,600	17	0.003	0.024
	5	36,500	350	0.003	31,200	280	0.003	28,100	220	0.002	21,100	140	0.001	11,600	12	0.001	0.002
	10	30,000	140	0.001	22,500	100	0.001	20,700	80	0.001	16,500	60	0.001	X	X	X	0.001
0.5mm	2	52,800	840	0.020	50,000	720	0.016	37,600	470	0.014	28,500	310	0.010	11,000	15	0.005	0.072
	6	30,400	400	0.005	26,500	300	0.005	20,700	220	0.004	17,700	150	0.002	11,000	14	0.001	0.002
	10	22,500	220	0.002	19,200	160	0.001	17,900	140	0.001	12,600	90	0.001	11,000	11	0.001	0.001
0.8mm	4	34,100	830	0.032	28,100	650	0.028	21,100	450	0.022	17,300	300	0.015	7,000	17	0.010	0.056
	8	21,100	490	0.011	17,300	370	0.010	15,200	270	0.008	10,800	180	0.005	7,000	15	0.003	0.007
	12	16,700	310	0.005	11,800	240	0.004	11,000	180	0.003	9,300	120	0.002	7,000	10	0.001	0.002
1mm	4	30,100	1,070	0.050	24,400	770	0.040	19,500	480	0.030	15,200	370	0.025	5,700	13	0.010	0.136
	10	17,200	500	0.012	14,200	370	0.010	11,800	280	0.008	10,000	190	0.006	5,700	10	0.003	0.009
	20	10,500	180	0.004	9,600	140	0.003	8,800	120	0.002	6,900	80	0.001	X	X	X	0.002
	30	8,700	50	0.002	7,200	30	0.002	7,100	20	0.001	5,500	20	0.001	X	X	X	0.001
1.5mm	6	20,000	980	0.065	17,500	740	0.055	12,400	450	0.050	10,500	300	0.035	8,900	50	0.020	0.200
	10	14,600	650	0.040	12,800	500	0.030	10,200	350	0.025	7,800	250	0.020	8,900	11	0.010	0.040
	20	9,700	320	0.010	8,200	260	0.009	7,200	200	0.008	5,900	130	0.005	X	X	X	0.006
	30	7,900	180	0.006	6,500	130	0.005	6,000	110	0.004	4,800	80	0.002	X	X	X	0.002
2mm	6	18,500	1,250	0.085	16,400	930	0.070	11,500	550	0.055	9,000	400	0.042	8,900	200	0.020	0.656
	10	13,500	820	0.060	11,600	600	0.050	8,700	450	0.040	6,800	300	0.030	8,900	40	0.015	0.120
	20	8,700	450	0.025	7,500	360	0.022	6,000	260	0.015	5,000	170	0.012	X	X	X	0.016
	30	700	280	0.010	5,900	210	0.008	5,000	160	0.006	4,000	120	0.005	X	X	X	0.005
	40	5,300	180	0.005	4,500	130	0.004	4,200	110	0.003	3,000	60	0.002	X	X	X	0.002
2.5mm	8	14,000	1,240	0.100	11,800	950	0.080	8,800	650	0.070	7,200	420	0.050	8,900	200	0.030	0.680
	20	8,000	620	0.045	6,900	470	0.040	5,700	330	0.030	4,500	230	0.020	8,900	12	0.010	0.040
	30	6,000	420	0.018	5,300	300	0.015	4,500	230	0.012	3,700	150	0.008	X	X	X	0.012
	40	5,100	270	0.006	4,500	200	0.005	4,100	150	0.004	3,100	110	0.003	X	X	X	0.006
3mm	10	10,600	1,150	0.120	8,700	850	0.100	6,200	560	0.080	5,000	400	0.055	7,300	200	0.030	0.800
	20	6,800	670	0.060	6,000	520	0.055	4,900	380	0.040	3,900	260	0.030	7,300	25	0.015	0.088
	30	5,900	500	0.035	4,800	370	0.030	4,200	270	0.020	3,200	180	0.015	7,300	8	0.008	0.024
	40	4,900	350	0.015	4,200	260	0.015	3,600	200	0.010	2,800	130	0.008	X	X	X	0.011
4mm	10	8,500	1,280	0.130	7,100	950	0.100	5,100	600	0.090	4,100	410	0.060	6,000	380	0.040	1.456
	20	5,800	800	0.100	4,800	600	0.800	3,500	400	0.065	2,900	280	0.050	5,800	72	0.030	0.320
	30	4,800	590	0.060	3,700	440	0.050	3,100	310	0.045	2,300	210	0.025	5,800	22	0.015	0.080
	40	3,900	450	0.040	3,200	310	0.035	2,600	230	0.025	2,100	160	0.020	5,800	8	0.009	0.032
5mm	16	5,800	1,040	0.150	4,800	760	0.150	3,300	460	0.110	2,600	330	0.080	4,600	430	0.050	1.440
	30	4,100	610	0.120	3,200	480	0.100	2,400	320	0.070	1,800	200	0.060	4,600	60	0.025	0.200
6mm	20	3,900	890	0.160	3,600	680	0.140	2,400	440	0.120	1,900	310	0.080	3,800	580	0.050	1.480
	40	2,800	570	0.110	2,100	390	0.100	1,600	240	0.070	1,200	150	0.050	3,800	72	0.030	0.176
8mm	20	3,200	910	0.180	2,800	710	0.160	2,300	450	0.130	1,700	330	0.090	3,400	580	0.050	1.600
	40	2,600	600	0.120	2,000	410	0.100	1,500	250	0.800	1,100	160	0.060	3,400	84	0.035	0.200
10mm	25	2,900	890	0.200	2,700	680	0.180	2,100	430	0.130	1,500	310	0.080	3,200	540	0.050	1.760
	45	2,200	580	0.140	2,000	400	0.120	1,300	220	0.700	900	150	0.050	3,200	76	0.030	0.240
12mm	30	2,500	710	0.220	2,300	580	0.200	2,000	400	0.140	1,400	280	0.080	3,000	540	0.050	1.840
	50	1,900	420	0.160	1,700	350	0.130	1,500	200	0.800	800	140	0.050	3,000	72	0.030	0.280

Depth of Cut

Slotting
• Ap : Axial Depth
• D : Outside Diameter



Side Milling
• Ap : Axial Depth
• Ae : Radial Depth



K SPEED 4SRE



4 Flutes High Speed Rib Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.

4刃 高速加工用 リブ ボール エンドミル

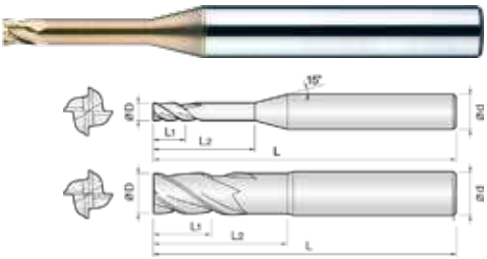
高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.

4날 고속가공용 리브 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4SRE 005 010 S04	0.5	0.5	1	45	4
4SRE 005 020 S04	0.5	0.5	2	45	4
4SRE 005 030 S04	0.5	0.5	3	45	4
4SRE 005 040 S04	0.5	0.5	4	45	4
4SRE 005 050 S04	0.5	0.5	5	45	4
4SRE 005 060 S04	0.5	0.5	6	45	4
4SRE 005 080 S04	0.5	0.5	8	45	4
4SRE 005 100 S04	0.5	0.5	10	50	4
4SRE 006 010 S04	0.6	0.6	1	45	4
4SRE 006 020 S04	0.6	0.6	2	45	4
4SRE 006 030 S04	0.6	0.6	3	45	4
4SRE 006 040 S04	0.6	0.6	4	45	4
4SRE 006 060 S04	0.6	0.6	6	45	4
4SRE 006 080 S04	0.6	0.6	8	45	4
4SRE 006 100 S04	0.6	0.6	10	50	4
4SRE 006 120 S04	0.6	0.6	12	50	4
4SRE 007 020 S04	0.7	0.7	2	45	4
4SRE 007 040 S04	0.7	0.7	4	45	4
4SRE 007 060 S04	0.7	0.7	6	45	4
4SRE 007 080 S04	0.7	0.7	8	45	4
4SRE 007 100 S04	0.7	0.7	10	50	4
4SRE 008 020 S04	0.8	0.8	2	45	4
4SRE 008 040 S04	0.8	0.8	4	45	4
4SRE 008 060 S04	0.8	0.8	6	45	4
4SRE 008 080 S04	0.8	0.8	8	45	4
4SRE 008 100 S04	0.8	0.8	10	45	4
4SRE 008 120 S04	0.8	0.8	12	45	4
4SRE 008 160 S04	0.8	0.8	16	50	4
4SRE 009 020 S04	0.9	0.9	2	45	4
4SRE 009 060 S04	0.9	0.9	6	45	4
4SRE 009 080 S04	0.9	0.9	8	45	4
4SRE 009 100 S04	0.9	0.9	10	45	4
4SRE 010 020 S04	1	1	2	45	4
4SRE 010 030 S04	1	1	3	45	4
4SRE 010 040 S04	1	1	4	45	4
4SRE 010 060 S04	1	1	6	45	4
4SRE 010 080 S04	1	1	8	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4SRE 010 100 S04	1	1	10	45	4
4SRE 010 120 S04	1	1	12	45	4
4SRE 010 140 S04	1	1	14	50	4
4SRE 010 160 S04	1	1	16	50	4
4SRE 010 200 S04	1	1	20	50	4
4SRE 010 250 S04	1	1	25	60	4
4SRE 012 040 S04	1.2	1.2	4	45	4
4SRE 012 060 S04	1.2	1.2	6	45	4
4SRE 012 080 S04	1.2	1.2	8	45	4
4SRE 012 100 S04	1.2	1.2	10	45	4
4SRE 012 120 S04	1.2	1.2	12	45	4
4SRE 012 160 S04	1.2	1.2	16	50	4
4SRE 015 040 S04	1.5	1.5	4	45	4
4SRE 015 060 S04	1.5	1.5	6	45	4
4SRE 015 080 S04	1.5	1.5	8	45	4
4SRE 015 100 S04	1.5	1.5	10	45	4
4SRE 015 120 S04	1.5	1.5	12	45	4
4SRE 015 160 S04	1.5	1.5	16	50	4
4SRE 015 200 S04	1.5	1.5	20	50	4
4SRE 015 250 S04	1.5	1.5	25	60	4
4SRE 020 040 S04	2	2	4	45	4
4SRE 020 060 S04	2	2	6	45	4
4SRE 020 080 S04	2	2	8	45	4
4SRE 020 100 S04	2	2	10	45	4
4SRE 020 120 S04	2	2	12	45	4
4SRE 020 140 S04	2	2	14	50	4
4SRE 020 160 S04	2	2	16	50	4
4SRE 020 180 S04	2	2	18	50	4
4SRE 020 200 S04	2	2	20	50	4
4SRE 020 250 S04	2	2	25	60	4
4SRE 020 300 S04	2	2	30	70	4
4SRE 025 100 S04	2.5	2.5	10	45	4
4SRE 025 120 S04	2.5	2.5	12	45	4
4SRE 025 160 S04	2.5	2.5	16	50	4
4SRE 025 200 S04	2.5	2.5	20	50	4
4SRE 025 250 S04	2.5	2.5	25	60	4
4SRE 025 300 S04	2.5	2.5	30	70	4

K SPEED 4SRE



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4SRE 030 060 S06	3	3	6	45	6
4SRE 030 080 S06	3	3	8	45	6
4SRE 030 100 S06	3	3	10	45	6
4SRE 030 120 S06	3	3	12	50	6
4SRE 030 160 S06	3	3	16	55	6
4SRE 030 200 S06	3	3	20	60	6
4SRE 030 250 S06	3	3	25	65	6
4SRE 030 300 S06	3	3	30	70	6
4SRE 030 350 S06	3	3	35	75	6
4SRE 030 400 S06	3	3	40	80	6
4SRE 030 450 S06	3	3	45	90	6
4SRE 030 500 S06	3	3	50	100	6
4SRE 035 120 S06	3.5	3.5	12	50	6
4SRE 035 160 S06	3.5	3.5	16	55	6
4SRE 035 200 S06	3.5	3.5	20	60	6
4SRE 035 250 S06	3.5	3.5	25	65	6
4SRE 035 300 S06	3.5	3.5	30	70	6
4SRE 040 060 S06	4	4	6	50	6
4SRE 040 080 S06	4	4	8	50	6
4SRE 040 100 S06	4	4	10	50	6
4SRE 040 120 S06	4	4	12	50	6
4SRE 040 160 S06	4	4	16	55	6
4SRE 040 200 S06	4	4	20	60	6
4SRE 040 250 S06	4	4	25	65	6
4SRE 040 300 S06	4	4	30	70	6
4SRE 040 400 S06	4	4	40	80	6
4SRE 040 450 S06	4	4	45	90	6
4SRE 040 500 S06	4	4	50	100	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4SRE 040 600 S06	4	4	60	110	6
4SRE 045 120 S06	4.5	4.5	12	50	6
4SRE 045 160 S06	4.5	4.5	16	55	6
4SRE 045 200 S06	4.5	4.5	20	60	6
4SRE 045 250 S06	4.5	4.5	25	65	6
4SRE 045 300 S06	4.5	4.5	30	70	6
4SRE 050 160 S06	5	5	16	55	6
4SRE 050 200 S06	5	5	20	60	6
4SRE 050 250 S06	5	5	25	65	6
4SRE 050 300 S06	5	5	30	70	6
4SRE 050 400 S06	5	5	40	80	6
4SRE 050 500 S06	5	5	50	100	6
4SRE 050 600 S06	5	5	60	110	6
4SRE 060 200 S06	6	6	20	60	6
4SRE 060 300 S06	6	6	30	75	6
4SRE 060 400 S06	6	6	40	80	6
4SRE 060 500 S06	6	6	50	90	6
4SRE 060 600 S06	6	6	60	110	6
4SRE 080 200 S08	8	10	20	65	8
4SRE 080 300 S08	8	10	30	80	8
4SRE 080 400 S08	8	10	40	100	8
4SRE 100 250 S10	10	15	25	70	10
4SRE 100 350 S10	10	15	35	90	10
4SRE 100 450 S10	10	15	45	110	10
4SRE 120 300 S12	12	18	30	80	12
4SRE 120 400 S12	12	18	40	100	12
4SRE 120 500 S12	12	18	50	120	12

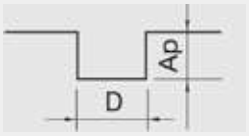
4SRE

• RPM : rev./min • Feed : mm/min

Material		Carbon Steels / Alloy Steels S45C / S50C / SK / SCM / SUS				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness		~ 325HB				30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
0.8mm	4	21,000	950	0.015	0.150	21,500	640	0.010	0.160	17,200	450	0.010	0.150	9,800	220	0.005	0.100
	8	17,800	710	0.010	0.020	13,800	480	0.007	0.019	11,000	340	0.005	0.018	8,500	170	0.003	0.012
	12	14,700	500	0.007	0.006	11,000	360	0.006	0.006	8,800	250	0.004	0.006	7,200	120	0.002	0.003
1mm	4	19,800	900	0.030	0.300	20,500	620	0.020	0.300	16,200	440	0.015	0.250	9,100	210	0.008	0.185
	10	15,800	620	0.012	0.020	12,000	430	0.010	0.020	9,400	300	0.008	0.018	7,300	140	0.004	0.010
	16	10,500	300	0.007	0.005	10,000	200	0.006	0.005	8,000	140	0.004	0.004	5,300	70	0.002	0.002
1.2mm	6	17,200	1,000	0.034	0.200	15,200	700	0.025	0.190	12,000	500	0.018	0.170	8,800	250	0.010	0.110
	10	15,000	750	0.025	0.040	12,000	520	0.020	0.030	9,500	360	0.012	0.035	7,000	180	0.007	0.026
	16	10,700	320	0.012	0.010	9,700	250	0.006	0.008	7,500	170	0.004	0.008	5,100	80	0.004	0.005
1.5mm	6	14,800	1,100	0.065	0.450	13,300	740	0.050	0.440	10,400	570	0.030	0.400	7,600	290	0.020	0.250
	10	13,100	850	0.041	0.100	10,300	600	0.038	0.100	8,500	430	0.025	0.080	6,500	210	0.015	0.050
	20	8,500	260	0.010	0.010	7,500	200	0.010	0.010	6,000	130	0.007	0.010	3,800	38	0.003	0.007
2mm	6	14,300	1,500	0.065	0.070	11,900	1,000	0.050	0.050	9,500	760	0.030	0.050	7,000	380	0.020	0.040
	10	12,000	980	0.050	0.340	9,500	800	0.040	0.300	7,500	570	0.025	0.250	6,000	280	0.015	0.200
	20	8,100	380	0.015	0.040	6,700	250	0.010	0.035	5,100	180	0.008	0.030	3,200	40	0.003	0.020
	30	6,300	220	0.006	0.010	5,400	160	0.005	0.010	4,300	110	0.003	0.010	2,200	10	0.001	0.005
2.5mm	12	10,000	800	0.050	0.450	7,600	680	0.040	0.420	6,000	480	0.025	0.400	5,300	310	0.016	0.250
	20	7,300	480	0.025	0.090	6,300	400	0.020	0.090	4,800	280	0.015	0.080	3,300	270	0.010	0.050
	30	5,600	300	0.010	0.025	4,200	330	0.009	0.025	3,300	230	0.006	0.025	2,100	200	0.002	0.015
3mm	10	8,600	820	0.070	0.925	6,800	710	0.050	0.900	5,200	500	0.030	0.800	4,800	380	0.020	0.550
	20	6,400	540	0.040	0.200	5,800	480	0.030	0.200	4,500	330	0.020	0.150	3,200	320	0.012	0.110
	30	5,000	370	0.020	0.060	4,100	400	0.015	0.055	3,200	270	0.012	0.050	2,100	240	0.008	0.035
	40	4,400	260	0.010	0.022	3,900	300	0.012	0.025	3,000	220	0.008	0.022	1,800	150	0.005	0.014
4mm	12	7,000	940	0.100	2.700	4,700	720	0.100	2.500	3,900	500	0.070	2.300	3,900	440	0.040	1.400
	20	5,100	600	0.060	0.650	4,100	540	0.074	0.612	3,400	380	0.060	0.500	3,100	360	0.032	0.350
	30	4,000	440	0.040	0.200	3,600	440	0.050	0.165	2,800	310	0.040	0.160	2,100	270	0.025	0.100
	40	3,400	340	0.025	0.080	2,800	360	0.040	0.070	2,200	250	0.025	0.070	1,700	170	0.015	0.050
5mm	16	5,000	850	0.120	2.800	3,900	650	0.100	2.700	3,100	460	0.070	2.600	3,100	460	0.043	1.530
	35	3,000	440	0.070	0.300	2,700	470	0.055	0.255	2,100	320	0.040	0.240	1,800	250	0.020	0.162
	50	2,300	280	0.030	0.090	1,800	300	0.020	0.090	1,400	210	0.012	0.080	1,300	100	0.009	0.055
6mm	20	3,700	760	0.150	3.220	3,100	680	0.120	3.200	2,400	480	0.090	3.000	3,100	570	0.050	2.000
	40	2,100	400	0.075	0.400	1,900	440	0.050	0.380	1,600	310	0.040	0.350	1,600	220	0.025	0.230
8mm	20	3,500	800	0.170	3.540	2,900	690	0.140	3.500	2,400	490	0.100	3.200	2,900	580	0.052	2.100
	40	2,000	430	0.085	0.550	1,800	450	0.055	0.350	1,400	320	0.040	0.420	1,800	230	0.027	0.240
10mm	25	2,700	820	0.175	3.620	2,500	700	0.150	3.560	2,100	490	0.110	3.250	2,500	580	0.055	2.250
	45	1,600	400	0.090	0.554	1,400	430	0.050	0.354	1,100	310	0.045	0.430	1,400	240	0.028	0.255
12mm	30	2,300	790	0.188	3.660	2,100	730	0.155	3.600	1,700	490	0.120	3.330	2,100	590	0.058	2.450
	50	1,300	360	0.094	0.560	1,050	380	0.052	0.360	1,000	320	0.050	0.440	1,000	250	0.029	0.260

Depth of Cut

Slotting
- Ap : Axial Depth
- D : Outside Diameter



Side Milling
- Ap : Axial Depth
- Ae : Radial Depth



K SPEED 2SCE



2 Flutes High Speed Standard Length Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.



2刃 高速加工用 標準 長さ エンドミル

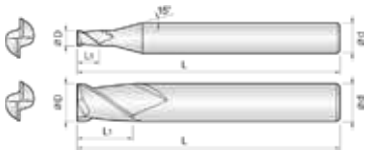
高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.

2날 고속가공용 표준 길이 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
D < Ø1	+0~ -0.005mm
D ≦ Ø5.5	+0~ -0.01mm
D > Ø5.5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2SCE 0005 0008 S04	0.05	0.08	40	4
2SCE 0006 001 S04	0.06	0.1	40	4
2SCE 0007 0012 S04	0.07	0.12	40	4
2SCE 0008 0015 S04	0.08	0.15	40	4
2SCE 0009 0017 S04	0.09	0.17	40	4
2SCE 001 002 S04	0.1	0.2	40	4
2SCE 0015 003 S04	0.15	0.3	40	4
2SCE 002 004 S04	0.2	0.4	40	4
2SCE 0025 005 S04	0.25	0.5	40	4
2SCE 003 006 S04	0.3	0.6	40	4
2SCE 0035 007 S04	0.35	0.7	40	4
2SCE 004 008 S04	0.4	0.8	40	4
2SCE 0045 009 S04	0.45	0.9	40	4
2SCE 005 010 S03	0.5	1	40	3
2SCE 005 010 S04	0.5	1	40	4
2SCE 0055 011 S04	0.55	1.1	40	4
2SCE 006 012 S03	0.6	1.2	40	3
2SCE 006 012 S04	0.6	1.2	40	4
2SCE 0065 013 S04	0.65	1.3	40	4
2SCE 007 014 S04	0.7	1.4	40	4
2SCE 0075 015 S04	0.75	1.5	40	4
2SCE 008 016 S03	0.8	1.6	40	3
2SCE 008 016 S04	0.8	1.6	40	4
2SCE 0085 017 S04	0.85	1.7	40	4
2SCE 009 020 S04	0.9	2	40	4
2SCE 0095 020 S04	0.95	2	40	4
2SCE 010 025 060	1	2.5	60	6
2SCE 010 025 S03	1	2.5	40	3
2SCE 010 025 S04	1	2.5	40	4
2SCE 010 025 S06	1	2.5	40	6
2SCE 0105 025 S04	1.05	2.5	40	4
2SCE 011 027 S04	1.1	2.7	40	4
2SCE 0115 025 S04	1.15	2.5	40	4
2SCE 012 030 060	1.2	3	60	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2SCE 012 030 S03	1.2	3	40	3
2SCE 012 030 S04	1.2	3	40	4
2SCE 0125 030 S04	1.25	3	40	4
2SCE 013 032 S04	1.3	3.2	40	4
2SCE 0135 032 S04	1.35	3.2	40	4
2SCE 014 035 S04	1.4	3.5	40	4
2SCE 0145 035 S04	1.45	3.5	40	4
2SCE 015 040 060	1.5	4	60	6
2SCE 015 040 S03	1.5	4	40	3
2SCE 015 040 S04	1.5	4	40	4
2SCE 015 040 S06	1.5	4	40	6
2SCE 0155 040 S04	1.55	4	40	4
2SCE 016 040 S04	1.6	4	40	4
2SCE 0165 040 S04	1.65	4	40	4
2SCE 017 042 S04	1.7	4.2	40	4
2SCE 0175 042 S04	1.75	4.2	40	4
2SCE 018 045 S04	1.8	4.5	40	4
2SCE 0185 045 S04	1.85	4.5	40	4
2SCE 019 050 S04	1.9	5	40	4
2SCE 0195 050 S04	1.95	5	40	4
2SCE 020 060 S03	2	6	40	3
2SCE 020 060 S04	2	6	40	4
2SCE 020 060 S06	2	6	40	6
2SCE 020 060 060	2	6	60	6
2SCE 021 060 S04	2.1	6	40	4
2SCE 022 060 S04	2.2	6	40	4
2SCE 023 060 S04	2.3	6	40	4
2SCE 024 080 S04	2.4	8	45	4
2SCE 025 080 S03	2.5	8	45	3
2SCE 025 080 S04	2.5	8	45	4
2SCE 025 080 S06	2.5	8	45	6
2SCE 025 080 070	2.5	8	70	6
2SCE 026 080 S04	2.6	8	45	4
2SCE 027 080 S04	2.7	8	45	4

K SPEED 2SCE

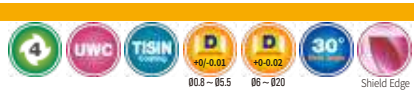


単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2SCE 028 080 S04	2.8	8	45	4
2SCE 029 080 S04	2.9	8	45	4
2SCE 030 080 S03	3	8	45	3
2SCE 030 080 S04	3	8	45	3
2SCE 030 080 S06	3	8	45	6
2SCE 030 080 070	3	8	70	6
2SCE 031 080 S06	3.1	8	45	6
2SCE 032 080 S06	3.2	8	45	6
2SCE 033 080 S06	3.3	8	45	6
2SCE 034 080 S06	3.4	8	45	6
2SCE 035 100 S06	3.5	10	45	6
2SCE 036 100 S06	3.6	10	45	6
2SCE 037 100 S06	3.7	10	45	6
2SCE 038 100 S06	3.8	10	45	6
2SCE 039 100 S06	3.9	10	45	6
2SCE 040 100 S04	4	10	45	4
2SCE 040 110 S06	4	11	45	6
2SCE 040 110 070	4	11	70	6
2SCE 041 110 S06	4.1	11	45	6
2SCE 042 110 S06	4.2	11	45	6
2SCE 043 110 S06	4.3	11	45	6
2SCE 044 110 S06	4.4	11	45	6
2SCE 045 110 S06	4.5	11	45	6
2SCE 046 110 S06	4.6	11	45	6
2SCE 047 110 S06	4.7	11	45	6
2SCE 048 110 S06	4.8	11	45	6
2SCE 049 110 S06	4.9	11	45	6
2SCE 050 130 S06	5	13	50	6
2SCE 050 130 080	5	13	80	6
2SCE 051 130 S06	5.1	13	50	6
2SCE 052 130 S06	5.2	13	50	6
2SCE 053 130 S06	5.3	13	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2SCE 054 130 S06	5.4	13	50	6
2SCE 055 130 S06	5.5	13	50	6
2SCE 056 130 S06	5.6	13	50	6
2SCE 057 130 S06	5.7	13	50	6
2SCE 058 130 S06	5.8	13	50	6
2SCE 059 130 S06	5.9	13	50	6
2SCE 060 130 S06	6	13	50	6
2SCE 060 130 080	6	13	80	6
2SCE 061 150 S08	6.1	15	70	8
2SCE 062 150 S08	6.2	15	70	8
2SCE 063 150 S08	6.3	15	70	8
2SCE 064 150 S08	6.4	15	70	8
2SCE 065 160 S08	6.5	16	60	8
2SCE 070 160 S08	7	16	60	8
2SCE 075 160 S08	7.5	16	60	8
2SCE 080 190 S08	8	19	60	8
2SCE 085 190 S10	8.5	19	70	10
2SCE 090 190 S10	9	19	70	10
2SCE 095 190 S10	9.5	19	70	10
2SCE 100 220 S10	10	22	70	10
2SCE 105 220 S12	10.5	22	75	12
2SCE 110 220 S12	11	22	75	12
2SCE 115 220 S12	11.5	22	75	12
2SCE 120 260 S12	12	26	75	12
2SCE 130 260 S14	13	26	80	14
2SCE 140 260 S14	14	26	80	14
2SCE 140 260 S16	14	26	90	16
2SCE 150 350 S16	15	35	100	16
2SCE 160 350 S16	16	35	100	16
2SCE 170 350 S18	17	35	100	18
2SCE 180 350 S18	18	35	100	18
2SCE 200 400 S20	20	40	100	20

K SPEED 4SCE

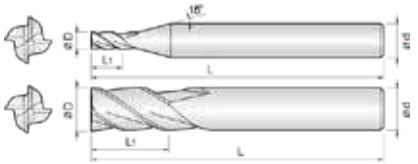


4 Flutes High Speed Standard Length Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.





4刃 高速加工用 標準 長さ エンドミル

高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.

4날 고속가공용 표준 길이 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.

Size	D Tolerance
D≦ Ø5.5	+0~ -0.01mm
D > Ø5.5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4SCE 003 006 S04	0.3	0.6	40	4
4SCE 004 008 S04	0.4	0.8	40	4
4SCE 005 010 S04	0.5	1	40	4
4SCE 006 012 S04	0.6	1.2	40	4
4SCE 007 014 S04	0.7	1.4	40	4
4SCE 008 020 S04	0.8	2	40	4
4SCE 009 018 S04	0.9	1.8	40	4
4SCE 010 025 060	1	2.5	60	6
4SCE 010 025 080	1	2.5	80	6
4SCE 010 025 S03	1	2.5	40	3
4SCE 010 025 S04	1	2.5	40	4
4SCE 010 025 S06	1	2.5	40	6
4SCE 012 030 S03	1.2	3	40	3
4SCE 012 030 S04	1.2	3	40	4
4SCE 012 030 S06	1.2	3	40	6
4SCE 012 030 060	1.2	3	60	6
4SCE 015 040 S03	1.5	4	40	3
4SCE 015 040 S04	1.5	4	40	4
4SCE 015 040 S06	1.5	4	40	6
4SCE 015 040 060	1.5	4	60	6
4SCE 015 040 080	1.5	4	80	6
4SCE 020 060 S03	2	6	40	3
4SCE 020 060 S04	2	6	40	4
4SCE 020 060 S06	2	6	40	6
4SCE 020 060 060	2	6	60	6
4SCE 020 060 100	2	6	100	6
4SCE 025 080 S03	2.5	8	45	3
4SCE 025 080 S04	2.5	8	45	4
4SCE 025 080 S06	2.5	8	45	6
4SCE 025 080 070	2.5	8	70	6
4SCE 025 080 100	2.5	8	100	6
4SCE 030 080 S03	3	8	45	3
4SCE 030 080 S04	3	8	45	4
4SCE 030 080 S06	3	8	45	6
4SCE 030 080 070	3	8	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4SCE 030 080 100	3	8	100	6
4SCE 035 100 S06	3.5	10	45	6
4SCE 040 110 S04	4	11	45	4
4SCE 040 110 S06	4	11	45	6
4SCE 040 110 070	4	11	70	6
4SCE 040 110 100	4	11	100	6
4SCE 045 110 S06	4.5	11	45	6
4SCE 050 130 S06	5	13	50	6
4SCE 050 130 080	5	13	80	6
4SCE 050 130 100	5	13	100	6
4SCE 055 130 S06	5.5	13	50	6
4SCE 060 130 S06	6	13	50	6
4SCE 060 130 080	6	13	80	6
4SCE 060 130 100	6	13	100	6
4SCE 065 160 S08	6.5	16	60	8
4SCE 070 160 S08	7	16	60	8
4SCE 075 160 S08	7.5	16	60	8
4SCE 080 190 S08	8	19	60	8
4SCE 085 190 S10	8.5	19	70	10
4SCE 090 190 S10	9	19	70	10
4SCE 095 190 S10	9.5	19	70	10
4SCE 100 220 S10	10	22	70	10
4SCE 105 220 S12	10.5	22	75	12
4SCE 110 220 S12	11	22	75	12
4SCE 115 220 S12	11.5	22	75	12
4SCE 120 260 S12	12	26	75	12
4SCE 130 260 S14	13	26	80	14
4SCE 140 260 S14	14	26	80	14
4SCE 140 260 S16	14	26	90	16
4SCE 150 350 S16	15	35	100	16
4SCE 160 350 S16	16	35	100	16
4SCE 170 350 S18	17	35	100	18
4SCE 180 350 S18	18	35	100	18
4SCE 200 400 S20	20	40	100	20

2SCE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels S45C / S50C / SK /SCM		Hardened Steels/ Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD11 / SKD61 / SKT		High Speed Spindle Milling
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	
0.05mm	40,000	40	40,000	35	40,000	30	40,000	20	o
0.08mm	40,000	70	40,000	60	40,000	55	40,000	40	o
0.1mm	40,000	90	40,000	80	40,000	70	40,000	60	o
0.3mm	40,000	140	40,000	130	40,000	130	40,000	80	o
0.5mm	40,000	300	40,000	280	30,000	220	30,000	100	o
1mm	28,000 (18,000)	550 (120)	18,000 (11,000)	350 (70)	14,000 (9,000)	28 (60)	14,000 (8,500)	140 (30)	o
2mm	14,000 (10,000)	850 (180)	9,000 (6800)	550 (110)	7,000 (5,500)	420 (90)	7,200 (4,500)	140 (45)	o
3mm	8,000	200	5,000	130	4,200	110	3,000	55	x
4mm	7,000	290	4,000	180	3,400	110	2,500	60	x
5mm	5,600	300	3,200	180	2,400	110	2,200	65	x
6mm	4,900	340	2,900	190	2,200	130	1,800	80	x
8mm	3,600	360	2,200	190	1,600	130	1,300	95	x
10mm	2,800	310	1,700	150	1,300	110	1,200	80	x
12mm	2,400	260	1,400	130	1,000	90	950	70	x
14mm	2,000	230	1,250	110	900	80	800	60	x
16mm	1,800	190	1,100	100	800	70	700	50	x
18mm	1,600	175	1,000	90	710	65	650	45	x
20mm	1,400	160	900	80	640	60	600	40	x
Depth of Cut	≦0.1D (D≦Ø3) ≦0.2D (D>Ø3) 1.5D D 0.1D (D<Ø2) 0.3D (Ø2D<Ø3) 0.5D (D>Ø3)						≦0.05D D ≦0.05D 1D		D 0.05D (D<Ø2) 0.1D (DØ2)

4SCE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels/ Alloy Steels S45C / S50C / SK / SCM		Hardened Steels/ Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD11 / SKD61 / SKT		Hardened Steels SKD / SKT	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.8mm	14,000	220	8,000	120	7,600	90	6,000	40	3,500	18
1mm	13,000	230	7,500	140	7,200	100	5,500	50	3,000	20
1.5mm	11,000	240	7,000	150	6,000	110	5,000	55	2,600	23
2mm	10,000	250	6,800	160	5,800	120	4,500	60	2,200	25
3mm	7,500	270	4,900	180	4,000	150	3,000	75	1,700	50
4mm	6,800	500	4,000	300	3,400	250	2,500	100	1,300	65
5mm	5,600	540	3,200	320	2,800	270	2,000	110	1,100	65
6mm	5,000	580	3,000	320	2,500	290	1,800	120	900	65
8mm	3,700	650	2,100	320	1,800	300	1,400	150	700	60
10mm	2,800	540	1,700	260	1,400	270	1,200	130	600	60
12mm	2,700	470	1,400	220	1,200	210	1,000	120	490	50
14mm	2,200	390	1,300	190	1,050	180	850	100	420	40
16mm	1,800	340	1,100	160	910	160	700	90	380	35
18mm	1,600	280	900	140	750	130	600	70	300	25
20mm	1,200	220	700	110	590	100	490	50	230	20
Depth of Cut	≦0.05D (Max. 0.5mm) ≦2.5D D 0.05D (D~Ø1) 0.1D (Ø1<D<Ø2) 0.15D (Ø2<D<Ø3) 0.3D (D>Ø3) (Max. 0.5mm)						0.02D (Max. 0.3mm) ≦2D D ≦0.5D (Max. 3mm)			

■ The table is based on side machining. In cace of slotting, please refer to only 80% of Feed and as for slotting for sus, RPM is 60% of above table / 40% of Feed.

■ 上記表は切込基準内の側面加工の基準です. 溝加工の場合には移送速度のみ上記表の 80%を基準にしてください. また、ステンレス鋼 溝加工の場合には, 回転速度は上記表の 60%, 移送速度は 40%が 基準です.

■ 상기표는 절입기준 내의 측면가공 기준입니다. 홈가공의 경우에는 이송속도 만 상기표의 80%를 기준으로 해 주십시오. 또한 스테인리스강 홈가공의 경우에, 회전속도는 상기표의 60%, 이송속도는 40% 기준입니다.

K SPEED 4SEM

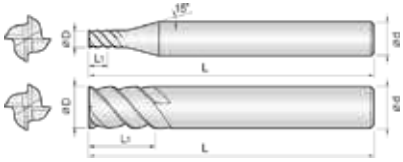


4 Flutes High Speed 45° Helix Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- 45° helix design for high speed, feed condition.





4刃 高速加工用 45° ヘリックス エンドミル

高硬度鋼(HRC50以上),プレハードン鋼 系列の高精密加工エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.
- 45°ヘリックス 形状で設計して高速,高移送 加工に適合します.

4날 고속가공용 45° 헬릭스 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 45°헬릭스 형상으로 설계하여 고속,고이송 가공에 적합합니다.

Size	D Tolerance
D≦Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

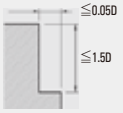
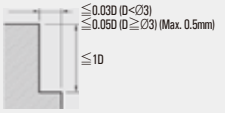
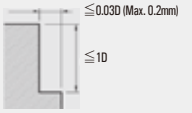
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4SEM 010 025 S06	1	2.5	40	6
4SEM 010 035 S06	1	3.5	40	6
4SEM 010 050 S06	1	5	45	6
4SEM 012 030 S06	1.2	3	40	6
4SEM 015 040 S06	1.5	4	40	6
4SEM 015 060 S06	1.5	6	40	6
4SEM 015 080 S06	1.5	8	45	6
4SEM 020 050 S06	2	5	40	6
4SEM 020 080 S06	2	8	45	6
4SEM 020 100 S06	2	10	50	6
4SEM 030 080 S06	3	8	45	6
4SEM 030 120 S06	3	12	50	6
4SEM 030 150 S06	3	15	55	6
4SEM 040 110 S06	4	11	45	6
4SEM 040 160 S06	4	16	55	6
4SEM 040 200 S06	4	20	60	6
4SEM 050 130 S06	5	13	50	6
4SEM 050 180 S06	5	18	60	6
4SEM 050 250 S06	5	25	70	6
4SEM 060 130 S06	6	13	50	6
4SEM 060 200 S06	6	20	60	6
4SEM 060 250 S06	6	25	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4SEM 080 200 S08	8	20	60	8
4SEM 080 250 S08	8	25	70	8
4SEM 080 300 S08	8	30	75	8
4SEM 080 400 S08	8	40	90	8
4SEM 100 220 S10	10	22	70	10
4SEM 100 300 S10	10	30	80	10
4SEM 100 400 S10	10	40	90	10
4SEM 100 500 S10	10	50	100	10
4SEM 120 260 S12	12	26	75	12
4SEM 120 400 S12	12	40	90	12
4SEM 120 500 S12	12	50	100	12
4SEM 120 600 S12	12	60	110	12
4SEM 140 300 S14	14	30	80	14
4SEM 140 500 S14	14	50	110	14
4SEM 160 350 S16	16	35	90	16
4SEM 160 500 S16	16	50	110	16
4SEM 160 650 S16	16	65	120	16
4SEM 200 400 S20	20	40	100	20
4SEM 200 500 S20	20	50	110	20
4SEM 200 700 S20	20	70	130	20
4SEM 250 800 S25	20	80	160	25

4SEM

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels / Tool Steels Prehardened Steels SKD11 / SKD61 / NAK		Hardened Steels SKD61 / SKD11 / STAVAX		Hardened Steels SKD11 / SKD / SKS	
Hardness	~ 55HRC		55 ~ 65HRC		60 ~ 65HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	32,000	800	16,000	400	8,000	200
1.5mm	28,000	1,000	14,000	500	7,000	250
2mm	25,600	1,200	12,800	600	6,400	300
3mm	21,600	2,500	10,400	1,300	5,500	660
4mm	16,800	3,000	8,000	1,400	4,500	800
5mm	14,400	3,400	7,100	1,700	3,600	900
6mm	12,800	4,600	6,400	2,300	3,200	1,120
8mm	9,600	4,600	4,800	2,300	2,400	1,120
10mm	7,600	4,600	3,800	2,300	1,900	1,120
12mm	6,400	3,800	3,200	1,900	1,600	960
16mm	4,800	2,900	2,400	1,400	1,200	720
20mm	3,800	2,300	1,900	1,100	1,000	570
Depth of Cut						

K SPEED 6&8SEM

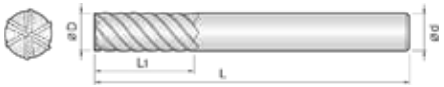


6&8 Flutes High Speed 45° Helix Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- Precise run-out and tolerance for finish machining.
- Reinforced edge design for preventing edge chipping.
- 45° helix design for high speed, feed condition.





6&8刃 高速加工用 45° ヘリックス エンドミル

高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密加工 エンドミル

- 均一なランアウットと高精密 公差 適用で超精密加工に適合します.
- 刃先部 剛性を補強して刃部チッピングを最小化しました.
- 45° ヘリックス 形状で設計して高速,高移送 加工に適合します.

6&8날 고속가공용 45° 헬릭스 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고경도가공 엔드밀

- 균일한 런아웃과 고정밀 공차 적용으로 초정밀가공에 적합합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 45°헬릭스 형상으로 설계하여 고속,고이송 가공에 적합합니다.

Size	D Tolerance
D ≦ Ø8	+0~ -0.02mm
D > Ø8	-0.01~-0.03mm

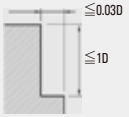
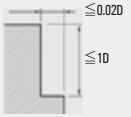
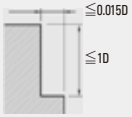
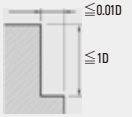
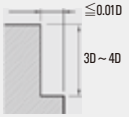
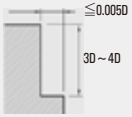
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
6SEM 030 100 S06	3.0	10	50	6
6SEM 030 150 S06	3.0	15	50	6
6SEM 040 120 S06	4.0	12	50	6
6SEM 040 160 S06	4.0	16	50	6
6SEM 050 150 S06	5.0	15	50	6
6SEM 050 200 S06	5.0	20	60	6
6SEM 060 150 S06	6.0	15	50	6
6SEM 060 200 S06	6.0	20	60	6
6SEM 060 250 S06	6.0	25	65	6
6SEM 060 300 S06	6.0	30	70	6
6SEM 060 350 S06	6.0	35	75	6
6SEM 080 200 S08	8.0	20	60	8
6SEM 080 250 S08	8.0	25	65	8
6SEM 080 300 S08	8.0	30	75	8
6SEM 080 350 S08	8.0	35	80	8
6SEM 080 400 S08	8.0	40	90	8
6SEM 080 450 S08	8.0	45	100	8
6SEM 080 500 S08	8.0	50	100	8
6SEM 100 250 S10	10.0	25	70	10
6SEM 100 350 S10	10.0	35	90	10
6SEM 100 450 S10	10.0	45	100	10
6SEM 100 500 S10	10.0	50	100	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
6SEM 100 600 S10	10.0	60	110	10
6SEM 120 300 S12	12.0	30	80	12
6SEM 120 400 S12	12.0	40	90	12
6SEM 120 500 S12	12.0	50	100	12
6SEM 120 600 S12	12.0	60	110	12
6SEM 120 700 S12	12.0	70	120	12
6SEM 160 350 S16	16.0	35	90	16
6SEM 160 500 S16	16.0	50	110	16
6SEM 160 650 S16	16.0	65	120	16
6SEM 160 800 S16	16.0	80	150	16
6SEM 160 900 S16	16.0	90	160	16
6SEM 160 1000 S16	16.0	100	160	16
6SEM 200 1000 S20	20.0	100	160	20
6SEM 200 1100 S20	20.0	110	170	20
6SEM 200 1200 S20	20.0	120	180	20
6SEM 200 450 S20	20.0	45	100	20
6SEM 200 600 S20	20.0	60	120	20
6SEM 200 800 S20	20.0	80	150	20
6SEM 200 900 S20	20.0	90	160	20
8SEM 250 1000 S25	25.0	100	160	25
8SEM 250 1250 S25	25.0	125	200	25

6SEM/8SEM

• RPM : rev./min • Feed : mm/min

Material		Alloy Steels / Tools Steels / Prehardened Steels SKD11 / SKD61 / NAK		Hardened Steels SKD61 / SKD11 / SUS420		Hardened Steels SKD11 / SKH / SKS		Hardened Steels SKD11 / SKH / SKS	
Hardness		~ 45HRC		45HRC ~ 55HRC		55HRC ~ 60HRC		60HRC ~ 65HRC	
Outside Diameter	Length of Cut	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	15	3,200	820	2,600	600	2,200	540	2,000	500
	25	1,700	360	1,300	260	1,100	190	900	150
8mm	20	2,400	750	2,000	600	1,700	510	1,500	470
	30	1,300	340	1,000	250	800	180	700	170
10mm	25	1,900	680	1,600	480	1,400	400	1,200	360
	45	1,000	330	800	230	700	180	500	120
12mm	30	1,600	650	1,300	500	1,100	440	1,000	380
	50	650	250	500	170	400	130	320	100
16mm	35	1,200	570	1,000	430	900	360	740	330
	65	640	250	500	180	400	130	320	100
20mm	45	1,000	500	800	370	660	320	600	290
	80	510	220	400	150	320	110	300	90
25mm (8F)	125	510	230	400	160	320	120	300	90
Depth of Cut	Short type								
	Long type								

K SPEED 2LEM



2 Flutes Long Length Endmills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron. (~HRC52)

- Improve tool performance by even run-out and tolerance control.
- Minimize edge chipping by improving corner strength.



2刃 長い 長さ エンドミル

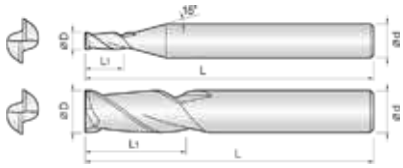
HRc52以下の高硬度鋼, プレハードン鋼,工具鋼, 鋳鉄など 被削材 加工

- 均一なランアウトと高精密 公差 適用で 超精密加工に適合します.
- コーナー部 剛性を補強して刃部チッピン グを最小化しました.

2날 긴 길이 엔드밀

HRC52이하의 고경도강, 프리하든강, 공구강, 주철등 피삭재 가공

- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.
- 코너부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
D≦Ø5	+0~ -0.01mm
D > Ø5	-0.01~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LEM 010 030 S06	1	3	60	6
2LEM 010 050 S06	1	5	60	6
2LEM 010 070 S06	1	7	60	6
2LEM 010 100 S06	1	10	60	6
2LEM 010 120 S06	1	12	60	6
2LEM 010 150 S06	1	15	60	6
2LEM 012 060 S06	1.2	6	60	6
2LEM 012 080 S06	1.2	8	60	6
2LEM 012 100 S06	1.2	10	60	6
2LEM 012 120 S06	1.2	12	60	6
2LEM 015 060 S06	1.5	6	60	6
2LEM 015 075 S06	1.5	7.5	60	6
2LEM 015 100 S06	1.5	10	60	6
2LEM 015 150 S06	1.5	15	60	6
2LEM 015 200 S06	1.5	20	60	6
2LEM 020 060 S06	2	6	60	6
2LEM 020 100 S06	2	10	60	6
2LEM 020 150 S06	2	15	60	6
2LEM 020 200 S06	2	20	60	6
2LEM 025 100 S06	2.5	10	60	6
2LEM 025 150 S06	2.5	15	60	6
2LEM 025 200 S06	2.5	20	60	6
2LEM 030 120 S06	3	12	70	6
2LEM 030 150 S06	3	15	70	6
2LEM 030 200 S06	3	20	70	6
2LEM 030 250 S06	3	25	70	6
2LEM 030 300 S06	3	30	70	6
2LEM 035 120 S06	3.5	12	70	6
2LEM 035 150 S06	3.5	15	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LEM 035 200 S06	3.5	20	70	6
2LEM 040 150 S06	4	15	70	6
2LEM 040 200 S06	4	20	70	6
2LEM 040 300 S06	4	30	75	6
2LEM 040 350 S06	4	35	75	6
2LEM 040 400 S06	4	40	80	6
2LEM 045 120 S06	4.5	12	70	6
2LEM 045 150 S06	4.5	15	70	6
2LEM 045 200 S06	4.5	20	70	6
2LEM 050 200 S06	5	20	70	6
2LEM 050 250 S06	5	25	75	6
2LEM 050 300 S06	5	30	80	6
2LEM 050 400 S06	5	40	80	6
2LEM 060 200 S06	6	20	75	6
2LEM 060 250 S06	6	25	75	6
2LEM 060 300 S06	6	30	80	6
2LEM 060 200 100	6	20	100	6
2LEM 060 350 S06	6	35	80	6
2LEM 060 400 S06	6	40	90	6
2LEM 060 450 S06	6	45	90	6
2LEM 060 500 S06	6	50	100	6
2LEM 080 250 S08	8	25	75	8
2LEM 080 250 100	8	25	100	8
2LEM 080 300 S08	8	30	80	8
2LEM 080 350 S08	8	35	80	8
2LEM 080 400 S08	8	40	90	8
2LEM 080 450 S08	8	45	100	8
2LEM 080 500 S08	8	50	100	8
2LEM 080 550 S08	8	55	100	8

K SPEED 2LEM



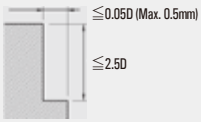
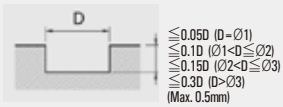
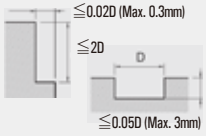
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LEM 080 600 S08	8	60	110	8
2LEM 100 300 S10	10	30	80	10
2LEM 100 300 110	10	30	110	10
2LEM 100 350 S10	10	35	90	10
2LEM 100 400 S10	10	40	90	10
2LEM 100 450 S10	10	45	100	10
2LEM 100 500 S10	10	50	100	10
2LEM 100 550 S10	10	55	110	10
2LEM 100 600 S10	10	60	110	10
2LEM 100 650 S10	10	65	120	10
2LEM 100 700 S10	10	70	120	10
2LEM 120 300 S12	12	30	90	12
2LEM 120 350 110	12	35	110	12
2LEM 120 400 S12	12	40	100	12
2LEM 120 450 S12	12	45	100	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LEM 120 500 S12	12	50	100	12
2LEM 120 550 S12	12	55	110	12
2LEM 120 600 S12	12	60	110	12
2LEM 120 700 S12	12	70	130	12
2LEM 120 800 S12	12	80	130	12
2LEM 140 500 S14	14	50	110	14
2LEM 160 400 160	16	40	160	16
2LEM 160 550 S16	16	55	120	16
2LEM 160 700 S16	16	70	130	16
2LEM 160 800 S16	16	80	160	16
2LEM 160 1000 S16	16	100	160	16
2LEM 200 500 160	20	50	160	20
2LEM 200 600 S20	20	60	130	20
2LEM 250 750 S25	25	75	160	25
2LEM 200 1000 S20	20	100	200	20

2LEM

• RPM : rev./min • Feed : mm/min

Side Milling								
Material	Carbon Steels / Alloy Steels S45C / S50C / SK / SCM		Hardened Steels / Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	9,400	40	7,700	30	5,500	15	4,900	15
1.5mm	6,000	45	5,500	35	4,000	20	3,500	18
2mm	5,100	50	4,100	40	3,000	25	2,600	20
3mm	3,600	55	2,900	50	2,200	35	1,800	25
4mm	2,900	70	2,300	55	1,800	45	1,400	30
5mm	2,500	85	2,000	70	1,500	50	1,300	35
6mm	2,100	100	1,700	85	1,300	65	1,100	45
8mm	1,600	110	1,300	85	1,000	70	900	45
10mm	1,400	110	1,100	85	800	65	700	45
12mm	1,100	85	950	80	700	50	600	35
16mm	900	70	700	55	500	40	430	25
20mm	700	55	550	40	400	35	340	20
25mm	600	40	440	35	300	25	300	15
Slotting								
1mm	9,400	40	7,700	30	5,500	15	4,900	12
1.5mm	6,000	45	5,500	35	4,000	20	3,500	12
2mm	5,100	45	4,100	40	3,000	25	2,600	12
3mm	3,600	55	2,900	50	2,200	35	1,800	15
4mm	2,900	35	2,300	25	1,400	15	1,400	15
5mm	2,500	40	2,000	35	1,200	20	1,300	15
6mm	2,100	50	1,700	45	1,000	25	1,100	20
8mm	1,600	55	1,300	45	800	30	900	20
10mm	1,400	55	1,100	45	650	25	700	20
12mm	1,100	40	950	40	550	20	600	15
16mm	900	35	700	25	400	15	430	12
20mm	700	25	550	20	320	13	340	11
25mm	600	20	440	15	250	10	300	8
Depth of Cut	 							

K SPEED 4LEM

4Flutes Long Length Endmills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron. (~HRC55)

- Improve tool performance by even run-out and tolerance control.
- Minimize edge chipping by improving corner strength.



4刃 長い 長さ エンドミル

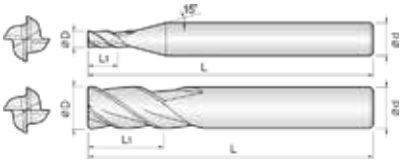
HRc52以下の高硬度鋼, プレハードン鋼, 工具鋼, 鋳鉄など 被削材 加工

- 均一なランアウトと高精密 公差 適用で超精密 加工に適合します.
- コーナー部 剛性を補強して刃部チッピングを最小 化しました.

4날 긴 길이 엔드밀

HRC55이하의 고경도강, 프리하든강, 공구강, 주철등 피삭재 가공

- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.
- 코너부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	-0.01~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LEM 005 015 S04	0.5	1.5	40	4
4LEM 005 020 S04	0.5	2	40	4
4LEM 006 018 S04	0.6	1.8	40	4
4LEM 006 024 S04	0.6	2.4	40	4
4LEM 008 024 S04	0.8	2.4	40	4
4LEM 008 032 S04	0.8	3.2	40	4
4LEM 010 030 S06	1	3	60	6
4LEM 010 050 S06	1	5	60	6
4LEM 010 070 S06	1	7	60	6
4LEM 010 100 S06	1	10	60	6
4LEM 010 120 S06	1	12	60	6
4LEM 012 040 S06	1.2	4	60	6
4LEM 012 060 S06	1.2	6	60	6
4LEM 012 080 S06	1.2	8	60	6
4LEM 012 100 S06	1.2	10	60	6
4LEM 015 060 S06	1.5	6	60	6
4LEM 015 080 S06	1.5	8	60	6
4LEM 015 100 S06	1.5	10	60	6
4LEM 015 120 S06	1.5	12	60	6
4LEM 015 150 S06	1.5	15	60	6
4LEM 020 080 S06	2	8	60	6
4LEM 020 100 S06	2	10	60	6
4LEM 020 120 S06	2	12	60	6
4LEM 020 150 S06	2	15	60	6
4LEM 020 200 S06	2	20	70	6
4LEM 030 100 S06	3	10	70	6
4LEM 030 150 S06	3	15	70	6
4LEM 030 200 S06	3	20	70	6
4LEM 030 250 S06	3	25	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LEM 030 300 S06	3	30	70	6
4LEM 030 350 S06	3	35	75	6
4LEM 030 400 S06	3	40	80	6
4LEM 035 120 S06	3.5	12	70	6
4LEM 035 150 S06	3.5	15	70	6
4LEM 035 200 S06	3.5	20	70	6
4LEM 040 120 S06	4	12	70	6
4LEM 040 150 S04	4	15	70	4
4LEM 040 150 S06	4	15	70	6
4LEM 040 200 S04	4	20	70	4
4LEM 040 200 S06	4	20	70	6
4LEM 040 250 S06	4	25	70	6
4LEM 040 300 S06	4	30	75	6
4LEM 040 350 S06	4	35	75	6
4LEM 040 400 S06	4	40	80	6
4LEM 040 450 S06	4	45	90	6
4LEM 040 500 S06	4	50	100	6
4LEM 045 150 S06	4.5	15	70	6
4LEM 045 200 S06	4.5	20	70	6
4LEM 050 200 S06	5	20	70	6
4LEM 050 250 S06	5	25	75	6
4LEM 050 300 S06	5	30	80	6
4LEM 050 400 S06	5	40	80	6
4LEM 050 500 S06	5	50	100	6
4LEM 060 200 S06	6	20	75	6
4LEM 060 200 100	6	20	100	6
4LEM 060 250 S06	6	25	75	6
4LEM 060 300 S06	6	30	80	6
4LEM 060 350 S06	6	35	80	6



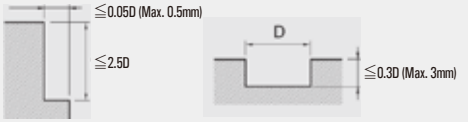
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LEM 060 400 S06	6	40	90	6
4LEM 060 450 S06	6	45	90	6
4LEM 060 500 S06	6	50	100	6
4LEM 080 250 S08	8	25	75	8
4LEM 080 250 100	8	25	100	8
4LEM 080 300 S08	8	30	80	8
4LEM 080 350 S08	8	35	90	8
4LEM 080 400 S08	8	40	90	8
4LEM 080 450 S08	8	45	100	8
4LEM 080 500 S08	8	50	100	8
4LEM 080 550 S08	8	55	100	8
4LEM 080 600 S08	8	60	110	8
4LEM 100 300 S10	10	30	80	10
4LEM 100 300 110	10	30	110	10
4LEM 100 350 S10	10	35	90	10
4LEM 100 400 S10	10	40	90	10
4LEM 100 450 S10	10	45	100	10
4LEM 100 500 S10	10	50	100	10
4LEM 100 550 S10	10	55	100	10
4LEM 100 600 S10	10	60	110	10
4LEM 100 650 S10	10	65	120	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LEM 100 700 S10	10	70	120	10
4LEM 120 300 S12	12	30	90	12
4LEM 120 350 110	12	35	110	12
4LEM 120 400 S12	12	40	100	12
4LEM 120 450 S12	12	45	100	12
4LEM 120 500 S12	12	50	100	12
4LEM 120 550 S12	12	55	110	12
4LEM 120 600 S12	12	60	110	12
4LEM 120 700 S12	12	70	130	12
4LEM 120 800 S12	12	80	130	12
4LEM 140 500 S14	14	50	110	14
4LEM 160 400 160	16	40	160	16
4LEM 160 550 S16	16	55	120	16
4LEM 160 700 S16	16	70	130	16
4LEM 160 900 S16	16	90	150	16
4LEM 160 1000 S16	16	100	160	16
4LEM 200 500 160	20	50	160	20
4LEM 200 600 S20	20	60	130	20
4LEM 200 800 S20	20	80	160	20
4LEM 200 1000 S20	20	100	200	20
4LEM 250 750 S25	25	75	160	25

4LEM

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61		Hardened Steels SKD11	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	4,500	60	4,000	50	3,000	40	2,500	20	2,000	15
1.5mm	4,200	70	3,600	60	2,700	45	2,200	25	1,800	18
2mm	4,000	80	3,300	70	2,500	50	2,000	30	1,600	20
3mm	3,600	90	2,900	80	2,200	60	1,800	40	1,500	25
4mm	2,900	120	2,300	90	1,800	70	1,400	50	1,200	30
5mm	2,500	150	2,000	120	1,500	90	1,300	60	1,000	30
6mm	2,100	170	1,700	150	1,300	110	1,100	70	900	40
8mm	1,600	190	1,300	150	1,000	130	900	70	680	40
10mm	1,400	190	1,100	150	800	110	700	70	550	40
12mm	1,100	150	900	120	700	90	570	60	450	30
16mm	900	120	700	90	500	70	420	40	340	25
20mm	680	90	550	70	400	60	340	35	270	20
25mm	550	70	450	60	300	40	270	30	210	17
Depth of Cut										

■ In case of slotting, decrease feed rate more than 50% the table.
60% of speed and 40% of feed on the table , when to slottting SUS.

■ 溝加工の場合, 上記表 Feedを 50%以上 減少してください.
また、SUS 溝加工時には回転速度は 上記表の 60%, 移送速度は 40%を基準としてください.

■ 홈가공의 경우, 상기표 Feed를 50%이상 감소하십시오.
또한 SUS 홈가공시에 회전속도는 상기표의 60%, 이송속도는 40%를 기준으로 하여 주십시오.

K SPEED 2RCR

2 Flutes Rib Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.

2刃 リブ コーナー ラジウス エンドミル

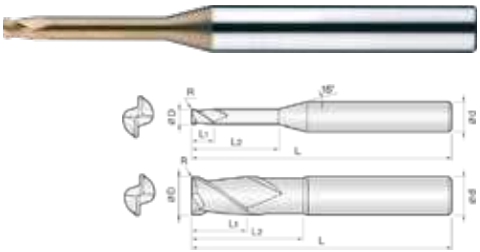
高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 高精密 公差適用で超精密 加工に適合します.
- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 多様な コーナーRと 有効長で合わせ加工が可能です.

2날 리브 코너 레디우스 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 002 0002 010	0.2 X R0.02	0.2	1	40	4
2RCR 002 0002 015	0.2 X R0.02	0.2	1.5	40	4
2RCR 002 0002 020	0.2 X R0.02	0.2	2	40	4
2RCR 002 0005 010	0.2 X R0.05	0.2	1	40	4
2RCR 002 0005 015	0.2 X R0.05	0.2	1.5	40	4
2RCR 002 0005 020	0.2 X R0.05	0.2	2	40	4
2RCR 003 0005 010	0.3 X R0.05	0.3	1	40	4
2RCR 003 0005 020	0.3 X R0.05	0.3	2	40	4
2RCR 003 0005 030	0.3 X R0.05	0.3	3	40	4
2RCR 003 0005 040	0.3 X R0.05	0.3	4	40	4
2RCR 003 0005 050	0.3 X R0.05	0.3	5	40	4
2RCR 004 0005 010	0.4 X R0.05	0.4	1	40	4
2RCR 004 0005 020	0.4 X R0.05	0.4	2	40	4
2RCR 004 0005 030	0.4 X R0.05	0.4	3	40	4
2RCR 004 0005 040	0.4 X R0.05	0.4	4	40	4
2RCR 004 0005 050	0.4 X R0.05	0.4	5	40	4
2RCR 004 0005 060	0.4 X R0.05	0.4	6	40	4
2RCR 004 001 010	0.4 X R0.1	0.4	1	40	4
2RCR 004 001 015	0.4 X R0.1	0.4	1.5	40	4
2RCR 004 001 020	0.4 X R0.1	0.4	2	40	4
2RCR 004 001 030	0.4 X R0.1	0.4	3	40	4
2RCR 004 001 040	0.4 X R0.1	0.4	4	40	4
2RCR 005 0002 010	0.5 X R0.02	0.5	1	45	4
2RCR 005 0002 015	0.5 X R0.02	0.5	1.5	45	4
2RCR 005 0002 020	0.5 X R0.02	0.5	2	45	4
2RCR 005 0002 025	0.5 X R0.02	0.5	2.5	45	4
2RCR 005 0002 030	0.5 X R0.02	0.5	3	45	4
2RCR 005 0002 040	0.5 X R0.02	0.5	4	45	4
2RCR 005 0002 050	0.5 X R0.02	0.5	5	45	4
2RCR 005 0002 060	0.5 X R0.02	0.5	6	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 005 0002 080	0.5 X R0.02	0.5	8	45	4
2RCR 005 0002 100	0.5 X R0.02	0.5	10	50	4
2RCR 005 0005 010	0.5 X R0.05	0.5	1	45	4
2RCR 005 0005 015	0.5 X R0.05	0.5	1.5	45	4
2RCR 005 0005 020	0.5 X R0.05	0.5	2	45	4
2RCR 005 0005 025	0.5 X R0.05	0.5	2.5	45	4
2RCR 005 0005 030	0.5 X R0.05	0.5	3	45	4
2RCR 005 0005 040	0.5 X R0.05	0.5	4	45	4
2RCR 005 0005 050	0.5 X R0.05	0.5	5	45	4
2RCR 005 0005 060	0.5 X R0.05	0.5	6	45	4
2RCR 005 0005 080	0.5 X R0.05	0.5	8	45	4
2RCR 005 0005 100	0.5 X R0.05	0.5	10	50	4
2RCR 005 0005 120	0.5 X R0.05	0.5	12	50	4
2RCR 005 001 010	0.5 X R0.1	0.5	1	45	4
2RCR 005 001 015	0.5 X R0.1	0.5	1.5	45	4
2RCR 005 001 020	0.5 X R0.1	0.5	2	45	4
2RCR 005 001 025	0.5 X R0.1	0.5	2.5	45	4
2RCR 005 001 030	0.5 X R0.1	0.5	3	45	4
2RCR 005 001 040	0.5 X R0.1	0.5	4	45	4
2RCR 005 001 050	0.5 X R0.1	0.5	5	45	4
2RCR 005 001 060	0.5 X R0.1	0.5	6	45	4
2RCR 005 001 080	0.5 X R0.1	0.5	8	45	4
2RCR 005 001 100	0.5 X R0.1	0.5	10	50	4
2RCR 005 001 120	0.5 X R0.1	0.5	12	50	4
2RCR 006 0002 020	0.6 X R0.02	0.6	2	45	4
2RCR 006 0002 030	0.6 X R0.02	0.6	3	45	4
2RCR 006 0002 040	0.6 X R0.02	0.6	4	45	4
2RCR 006 0002 060	0.6 X R0.02	0.6	6	45	4
2RCR 006 0002 080	0.6 X R0.02	0.6	8	45	4
2RCR 006 0002 100	0.6 X R0.02	0.6	10	50	4

K SPEED 2RCR



單位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 006 0005 020	0.6 X R0.05	0.6	2	45	4
2RCR 006 0005 030	0.6 X R0.05	0.6	3	45	4
2RCR 006 0005 040	0.6 X R0.05	0.6	4	45	4
2RCR 006 0005 060	0.6 X R0.05	0.6	6	45	4
2RCR 006 0005 080	0.6 X R0.05	0.6	8	45	4
2RCR 006 0005 100	0.6 X R0.05	0.6	10	50	4
2RCR 006 0005 120	0.6 X R0.05	0.6	12	50	4
2RCR 006 001 020	0.6 X R0.1	0.6	2	45	4
2RCR 006 001 030	0.6 X R0.1	0.6	3	45	4
2RCR 006 001 040	0.6 X R0.1	0.6	4	45	4
2RCR 006 001 060	0.6 X R0.1	0.6	6	45	4
2RCR 006 001 080	0.6 X R0.1	0.6	8	45	4
2RCR 006 001 100	0.6 X R0.1	0.6	10	50	4
2RCR 006 001 120	0.6 X R0.1	0.6	12	50	4
2RCR 007 001 020	0.7 X R0.1	0.7	2	45	4
2RCR 007 001 040	0.7 X R0.1	0.7	4	45	4
2RCR 007 001 060	0.7 X R0.1	0.7	6	45	4
2RCR 007 001 080	0.7 X R0.1	0.7	8	45	4
2RCR 007 001 100	0.7 X R0.1	0.7	10	45	4
2RCR 008 0002 020	0.8 X R0.02	0.8	2	45	4
2RCR 008 0002 040	0.8 X R0.02	0.8	4	45	4
2RCR 008 0002 060	0.8 X R0.02	0.8	6	45	4
2RCR 008 0002 080	0.8 X R0.02	0.8	8	45	4
2RCR 008 0002 100	0.8 X R0.02	0.8	10	50	4
2RCR 008 0005 020	0.8 X R0.05	0.8	2	45	4
2RCR 008 0005 040	0.8 X R0.05	0.8	4	45	4
2RCR 008 0005 060	0.8 X R0.05	0.8	6	45	4
2RCR 008 0005 080	0.8 X R0.05	0.8	8	45	4
2RCR 008 0005 100	0.8 X R0.05	0.8	10	50	4
2RCR 008 0005 120	0.8 X R0.05	0.8	12	50	4
2RCR 008 001 020	0.8 X R0.1	0.8	2	45	4
2RCR 008 001 040	0.8 X R0.1	0.8	4	45	4
2RCR 008 001 060	0.8 X R0.1	0.8	6	45	4
2RCR 008 001 080	0.8 X R0.1	0.8	8	45	4
2RCR 008 001 100	0.8 X R0.1	0.8	10	50	4
2RCR 008 001 120	0.8 X R0.1	0.8	12	50	4
2RCR 008 001 140	0.8 X R0.1	0.8	14	50	4
2RCR 008 002 020	0.8 X R0.2	0.8	2	45	4
2RCR 008 002 040	0.8 X R0.2	0.8	4	45	4
2RCR 008 002 060	0.8 X R0.2	0.8	6	45	4
2RCR 008 002 080	0.8 X R0.2	0.8	8	45	4
2RCR 008 002 100	0.8 X R0.2	0.8	10	50	4
2RCR 008 002 120	0.8 X R0.2	0.8	12	50	4
2RCR 008 002 140	0.8 X R0.2	0.8	14	50	4
2RCR 010 0005 040	1 X R0.05	1	4	45	4
2RCR 010 0005 060	1 X R0.05	1	6	45	4
2RCR 010 0005 080	1 X R0.05	1	8	45	4
2RCR 010 0005 100	1 X R0.05	1	10	50	4
2RCR 010 0005 120	1 X R0.05	1	12	50	4
2RCR 010 0005 140	1 X R0.05	1	14	50	4
2RCR 010 0005 160	1 X R0.05	1	16	50	4
2RCR 010 0005 200	1 X R0.05	1	20	50	4
2RCR 010 0005 220	1 X R0.05	1	22	60	4
2RCR 010 0005 250	1 X R0.05	1	25	60	4
2RCR 010 001 040	1 X R0.1	1	4	45	4
2RCR 010 001 060	1 X R0.1	1	6	45	4
2RCR 010 001 080	1 X R0.1	1	8	45	4
2RCR 010 001 100	1 X R0.1	1	10	50	4
2RCR 010 001 120	1 X R0.1	1	12	50	4
2RCR 010 001 140	1 X R0.1	1	14	50	4
2RCR 010 001 160	1 X R0.1	1	16	50	4
2RCR 010 001 200	1 X R0.1	1	20	50	4
2RCR 010 001 220	1 X R0.1	1	22	60	4
2RCR 010 001 250	1 X R0.1	1	25	60	4
2RCR 010 002 040	1 X R0.2	1	4	45	4
2RCR 010 002 060	1 X R0.2	1	6	45	4
2RCR 010 002 080	1 X R0.2	1	8	45	4
2RCR 010 002 100	1 X R0.2	1	10	50	4
2RCR 010 002 120	1 X R0.2	1	12	50	4
2RCR 010 002 140	1 X R0.2	1	14	50	4
2RCR 010 002 160	1 X R0.2	1	16	50	4
2RCR 010 002 200	1 X R0.2	1	20	50	4
2RCR 010 002 220	1 X R0.2	1	22	60	4
2RCR 010 002 250	1 X R0.2	1	25	60	4
2RCR 010 003 040	1 X R0.3	1	4	45	4
2RCR 010 003 060	1 X R0.3	1	6	45	4
2RCR 010 003 080	1 X R0.3	1	8	45	4
2RCR 010 003 100	1 X R0.3	1	10	50	4
2RCR 010 003 120	1 X R0.3	1	12	50	4
2RCR 010 003 140	1 X R0.3	1	14	50	4
2RCR 010 003 160	1 X R0.3	1	16	50	4
2RCR 010 003 200	1 X R0.3	1	20	50	4
2RCR 010 003 220	1 X R0.3	1	22	60	4
2RCR 010 003 250	1 X R0.3	1	25	60	4
2RCR 012 001 040	1.2 X R0.1	1.2	4	45	4
2RCR 012 001 060	1.2 X R0.1	1.2	6	45	4



单位/Unit : mm

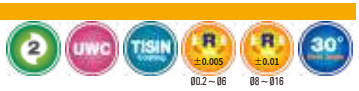
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 012 001 080	1.2 X R0.1	1.2	8	45	4
2RCR 012 001 100	1.2 X R0.1	1.2	10	50	4
2RCR 012 001 120	1.2 X R0.1	1.2	12	50	4
2RCR 012 001 140	1.2 X R0.1	1.2	14	50	4
2RCR 012 001 160	1.2 X R0.1	1.2	16	50	4
2RCR 012 001 200	1.2 X R0.1	1.2	20	50	4
2RCR 012 002 040	1.2 X R0.2	1.2	4	45	4
2RCR 012 002 060	1.2 X R0.2	1.2	6	45	4
2RCR 012 002 080	1.2 X R0.2	1.2	8	45	4
2RCR 012 002 100	1.2 X R0.2	1.2	10	50	4
2RCR 012 002 120	1.2 X R0.2	1.2	12	50	4
2RCR 012 002 140	1.2 X R0.2	1.2	14	50	4
2RCR 012 002 160	1.2 X R0.2	1.2	16	50	4
2RCR 012 002 200	1.2 X R0.2	1.2	20	50	4
2RCR 012 003 040	1.2 X R0.3	1.2	4	45	4
2RCR 012 003 060	1.2 X R0.3	1.2	6	45	4
2RCR 012 003 080	1.2 X R0.3	1.2	8	45	4
2RCR 012 003 100	1.2 X R0.3	1.2	10	50	4
2RCR 012 003 120	1.2 X R0.3	1.2	12	50	4
2RCR 012 003 140	1.2 X R0.3	1.2	14	50	4
2RCR 012 003 160	1.2 X R0.3	1.2	16	50	4
2RCR 012 003 200	1.2 X R0.3	1.2	20	50	4
2RCR 015 001 040	1.5 X R0.1	1.5	4	45	4
2RCR 015 001 060	1.5 X R0.1	1.5	6	45	4
2RCR 015 001 080	1.5 X R0.1	1.5	8	45	4
2RCR 015 001 100	1.5 X R0.1	1.5	10	50	4
2RCR 015 001 120	1.5 X R0.1	1.5	12	50	4
2RCR 015 001 140	1.5 X R0.1	1.5	14	50	4
2RCR 015 001 160	1.5 X R0.1	1.5	16	50	4
2RCR 015 001 200	1.5 X R0.1	1.5	20	50	4
2RCR 015 001 220	1.5 X R0.1	1.5	22	60	4
2RCR 015 001 250	1.5 X R0.1	1.5	25	60	4
2RCR 015 002 040	1.5 X R0.2	1.5	4	45	4
2RCR 015 002 060	1.5 X R0.2	1.5	6	45	4
2RCR 015 002 080	1.5 X R0.2	1.5	8	45	4
2RCR 015 002 100	1.5 X R0.2	1.5	10	50	4
2RCR 015 002 120	1.5 X R0.2	1.5	12	50	4
2RCR 015 002 140	1.5 X R0.2	1.5	14	50	4
2RCR 015 002 160	1.5 X R0.2	1.5	16	50	4
2RCR 015 002 200	1.5 X R0.2	1.5	20	50	4
2RCR 015 002 220	1.5 X R0.2	1.5	22	60	4
2RCR 015 002 250	1.5 X R0.2	1.5	25	60	4
2RCR 015 003 040	1.5 X R0.3	1.5	4	45	4
2RCR 015 003 060	1.5 X R0.3	1.5	6	45	4
2RCR 015 003 080	1.5 X R0.3	1.5	8	45	4
2RCR 015 003 100	1.5 X R0.3	1.5	10	50	4
2RCR 015 003 120	1.5 X R0.3	1.5	12	50	4
2RCR 015 003 140	1.5 X R0.3	1.5	14	50	4
2RCR 015 003 160	1.5 X R0.3	1.5	16	50	4
2RCR 015 003 200	1.5 X R0.3	1.5	20	50	4
2RCR 015 003 220	1.5 X R0.3	1.5	22	60	4
2RCR 015 003 250	1.5 X R0.3	1.5	25	60	4
2RCR 015 005 040	1.5 X R0.5	1.5	4	45	4
2RCR 015 005 060	1.5 X R0.5	1.5	6	45	4
2RCR 015 005 080	1.5 X R0.5	1.5	8	45	4
2RCR 015 005 100	1.5 X R0.5	1.5	10	50	4
2RCR 015 005 120	1.5 X R0.5	1.5	12	50	4
2RCR 015 005 140	1.5 X R0.5	1.5	14	50	4
2RCR 015 005 160	1.5 X R0.5	1.5	16	50	4
2RCR 015 005 200	1.5 X R0.5	1.5	20	50	4
2RCR 015 005 220	1.5 X R0.5	1.5	22	60	4
2RCR 015 005 250	1.5 X R0.5	1.5	25	60	4
2RCR 020 001 060	2 X R0.1	2	6	45	4
2RCR 020 001 080	2 X R0.1	2	8	45	4
2RCR 020 001 100	2 X R0.1	2	10	50	4
2RCR 020 001 120	2 X R0.1	2	12	50	4
2RCR 020 001 140	2 X R0.1	2	14	50	4
2RCR 020 001 160	2 X R0.1	2	16	50	4
2RCR 020 001 200	2 X R0.1	2	20	50	4
2RCR 020 001 250	2 X R0.1	2	25	60	4
2RCR 020 001 300	2 X R0.1	2	30	70	4
2RCR 020 001 350	2 X R0.1	2	35	80	4
2RCR 020 001 400	2 X R0.1	2	40	80	4
2RCR 020 002 060	2 X R0.2	2	6	45	4
2RCR 020 002 080	2 X R0.2	2	8	45	4
2RCR 020 002 100	2 X R0.2	2	10	50	4
2RCR 020 002 120	2 X R0.2	2	12	50	4
2RCR 020 002 140	2 X R0.2	2	14	50	4
2RCR 020 002 160	2 X R0.2	2	16	50	4
2RCR 020 002 200	2 X R0.2	2	20	50	4
2RCR 020 002 250	2 X R0.2	2	25	60	4
2RCR 020 002 300	2 X R0.2	2	30	70	4
2RCR 020 003 060	2 X R0.3	2	6	45	4
2RCR 020 003 080	2 X R0.3	2	8	45	4
2RCR 020 003 100	2 X R0.3	2	10	50	4
2RCR 020 003 120	2 X R0.3	2	12	50	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 020 003 140	2 X R0.3	2	14	50	4
2RCR 020 003 160	2 X R0.3	2	16	50	4
2RCR 020 003 200	2 X R0.3	2	20	50	4
2RCR 020 003 250	2 X R0.3	2	25	60	4
2RCR 020 003 300	2 X R0.3	2	30	70	4
2RCR 020 005 060	2 X R0.5	2	6	45	4
2RCR 020 005 080	2 X R0.5	2	8	45	4
2RCR 020 005 100	2 X R0.5	2	10	50	4
2RCR 020 005 120	2 X R0.5	2	12	50	4
2RCR 020 005 140	2 X R0.5	2	14	50	4
2RCR 020 005 160	2 X R0.5	2	16	50	4
2RCR 020 005 200	2 X R0.5	2	20	50	4
2RCR 020 005 250	2 X R0.5	2	25	60	4
2RCR 020 005 300	2 X R0.5	2	30	70	4
2RCR 020 005 350	2 X R0.5	2	35	80	4
2RCR 020 005 400	2 X R0.5	2	40	80	4
2RCR 025 001 100	2.5 X R0.1	2.5	10	50	4
2RCR 025 001 160	2.5 X R0.1	2.5	16	50	4
2RCR 025 001 200	2.5 X R0.1	2.5	20	50	4
2RCR 025 001 250	2.5 X R0.1	2.5	25	60	4
2RCR 025 001 300	2.5 X R0.1	2.5	30	70	4
2RCR 025 002 100	2.5 X R0.2	2.5	10	50	4
2RCR 025 002 160	2.5 X R0.2	2.5	16	50	4
2RCR 025 002 200	2.5 X R0.2	2.5	20	50	4
2RCR 025 002 250	2.5 X R0.2	2.5	25	60	4
2RCR 025 002 300	2.5 X R0.2	2.5	30	70	4
2RCR 025 003 100	2.5 X R0.3	2.5	10	50	4
2RCR 025 003 160	2.5 X R0.3	2.5	16	50	4
2RCR 025 003 200	2.5 X R0.3	2.5	20	50	4
2RCR 025 003 250	2.5 X R0.3	2.5	25	60	4
2RCR 025 003 300	2.5 X R0.3	2.5	30	70	4
2RCR 025 005 100	2.5 X R0.5	2.5	10	50	4
2RCR 025 005 160	2.5 X R0.5	2.5	16	50	4
2RCR 025 005 200	2.5 X R0.5	2.5	20	50	4
2RCR 025 005 250	2.5 X R0.5	2.5	25	60	4
2RCR 025 005 300	2.5 X R0.5	2.5	30	70	4
2RCR 030 001 100	3 X R0.1	3	10	50	6
2RCR 030 001 120	3 X R0.1	3	12	55	6
2RCR 030 001 160	3 X R0.1	3	16	55	6
2RCR 030 001 200	3 X R0.1	3	20	60	6
2RCR 030 001 250	3 X R0.1	3	25	65	6
2RCR 030 001 300	3 X R0.1	3	30	70	6
2RCR 030 001 350	3 X R0.1	3	35	75	6

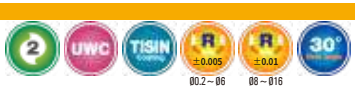
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 030 001 400	3 X R0.1	3	40	80	6
2RCR 030 002 100	3 X R0.2	3	10	50	6
2RCR 030 002 120	3 X R0.2	3	12	55	6
2RCR 030 002 160	3 X R0.2	3	16	55	6
2RCR 030 002 200	3 X R0.2	3	20	60	6
2RCR 030 002 250	3 X R0.2	3	25	65	6
2RCR 030 002 300	3 X R0.2	3	30	70	6
2RCR 030 002 350	3 X R0.2	3	35	75	6
2RCR 030 002 400	3 X R0.2	3	40	80	6
2RCR 030 002 450	3 X R0.2	3	45	90	6
2RCR 030 002 500	3 X R0.2	3	50	100	6
2RCR 030 003 100	3 X R0.3	3	10	50	6
2RCR 030 003 120	3 X R0.3	3	12	55	6
2RCR 030 003 160	3 X R0.3	3	16	55	6
2RCR 030 003 200	3 X R0.3	3	20	60	6
2RCR 030 003 250	3 X R0.3	3	25	65	6
2RCR 030 003 300	3 X R0.3	3	30	70	6
2RCR 030 003 350	3 X R0.3	3	35	75	6
2RCR 030 003 400	3 X R0.3	3	40	80	6
2RCR 030 005 100	3 X R0.5	3	10	50	6
2RCR 030 005 120	3 X R0.5	3	12	55	6
2RCR 030 005 160	3 X R0.5	3	16	55	6
2RCR 030 005 200	3 X R0.5	3	20	60	6
2RCR 030 005 250	3 X R0.5	3	25	65	6
2RCR 030 005 300	3 X R0.5	3	30	70	6
2RCR 030 005 350	3 X R0.5	3	35	75	6
2RCR 030 005 400	3 X R0.5	3	40	80	6
2RCR 030 005 450	3 X R0.5	3	45	90	6
2RCR 030 005 500	3 X R0.5	3	50	100	6
2RCR 030 010 100	3 X R1	3	10	50	6
2RCR 030 010 120	3 X R1	3	12	55	6
2RCR 030 010 160	3 X R1	3	16	55	6
2RCR 030 010 200	3 X R1	3	20	60	6
2RCR 030 010 250	3 X R1	3	25	65	6
2RCR 030 010 300	3 X R1	3	30	70	6
2RCR 030 010 350	3 X R1	3	35	75	6
2RCR 030 010 400	3 X R1	3	40	80	6
2RCR 040 001 050	4 X R0.1	4	12	50	4
2RCR 040 001 070	4 X R0.1	4	20	70	4
2RCR 040 001 120	4 X R0.1	4	12	55	6
2RCR 040 001 160	4 X R0.1	4	16	55	6
2RCR 040 001 200	4 X R0.1	4	20	60	6
2RCR 040 001 250	4 X R0.1	4	25	65	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 040 001 300	4 X R0.1	4	30	70	6
2RCR 040 001 350	4 X R0.1	4	35	75	6
2RCR 040 001 400	4 X R0.1	4	40	80	6
2RCR 040 001 450	4 X R0.1	4	45	90	6
2RCR 040 001 500	4 X R0.1	4	50	100	6
2RCR 040 002 050	4 X R0.2	4	12	50	4
2RCR 040 002 070	4 X R0.2	4	20	70	4
2RCR 040 002 120	4 X R0.2	4	12	55	6
2RCR 040 002 160	4 X R0.2	4	16	55	6
2RCR 040 002 200	4 X R0.2	4	20	60	6
2RCR 040 002 250	4 X R0.2	4	25	65	6
2RCR 040 002 300	4 X R0.2	4	30	70	6
2RCR 040 002 350	4 X R0.2	4	35	75	6
2RCR 040 002 400	4 X R0.2	4	40	80	6
2RCR 040 002 450	4 X R0.2	4	45	90	6
2RCR 040 002 500	4 X R0.2	4	50	100	6
2RCR 040 003 050	4 X R0.3	4	12	50	4
2RCR 040 003 070	4 X R0.3	4	20	70	4
2RCR 040 003 120	4 X R0.3	4	12	55	6
2RCR 040 003 160	4 X R0.3	4	16	55	6
2RCR 040 003 200	4 X R0.3	4	20	60	6
2RCR 040 003 250	4 X R0.3	4	25	65	6
2RCR 040 003 300	4 X R0.3	4	30	70	6
2RCR 040 003 350	4 X R0.3	4	35	75	6
2RCR 040 003 400	4 X R0.3	4	40	80	6
2RCR 040 003 450	4 X R0.3	4	45	90	6
2RCR 040 003 500	4 X R0.3	4	50	100	6
2RCR 040 005 050	4 X R0.5	4	12	50	4
2RCR 040 005 070	4 X R0.5	4	20	70	4
2RCR 040 005 120	4 X R0.5	4	12	55	6
2RCR 040 005 160	4 X R0.5	4	16	55	6
2RCR 040 005 200	4 X R0.5	4	20	60	6
2RCR 040 005 250	4 X R0.5	4	25	65	6
2RCR 040 005 300	4 X R0.5	4	30	70	6
2RCR 040 005 350	4 X R0.5	4	35	75	6
2RCR 040 005 400	4 X R0.5	4	40	80	6
2RCR 040 005 450	4 X R0.5	4	45	90	6
2RCR 040 005 500	4 X R0.5	4	50	100	6
2RCR 040 010 050	4 X R1	4	12	50	4
2RCR 040 010 070	4 X R1	4	20	70	4
2RCR 040 010 120	4 X R1	4	12	55	6
2RCR 040 010 160	4 X R1	4	16	55	6
2RCR 040 010 200	4 X R1	4	20	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 040 010 250	4 X R1	4	25	65	6
2RCR 040 010 300	4 X R1	4	30	70	6
2RCR 040 010 350	4 X R1	4	35	75	6
2RCR 040 010 400	4 X R1	4	40	80	6
2RCR 040 010 450	4 X R1	4	45	90	6
2RCR 040 010 500	4 X R1	4	50	100	6
2RCR 050 002 150	5 X R0.2	6	15	60	6
2RCR 050 002 250	5 X R0.2	6	25	70	6
2RCR 050 002 300	5 X R0.2	6	30	70	6
2RCR 050 002 400	5 X R0.2	6	40	80	6
2RCR 050 002 500	5 X R0.2	6	50	100	6
2RCR 050 005 150	5 X R0.5	6	15	60	6
2RCR 050 005 250	5 X R0.5	6	25	70	6
2RCR 050 005 300	5 X R0.5	6	30	70	6
2RCR 050 005 400	5 X R0.5	6	40	80	6
2RCR 050 005 500	5 X R0.5	6	50	100	6
2RCR 050 010 150	5 X R1	6	15	60	6
2RCR 050 010 250	5 X R1	6	25	70	6
2RCR 050 010 300	5 X R1	6	30	70	6
2RCR 050 010 400	5 X R1	6	40	80	6
2RCR 050 010 500	5 X R1	6	50	100	6
2RCR 060 001 200	6 X R0.1	7	20	60	6
2RCR 060 001 400	6 X R0.1	7	40	90	6
2RCR 060 002 200	6 X R0.2	7	20	60	6
2RCR 060 002 400	6 X R0.2	7	40	90	6
2RCR 060 002 600	6 X R0.2	7	60	110	6
2RCR 060 003 200	6 X R0.3	7	20	60	6
2RCR 060 003 400	6 X R0.3	7	40	90	6
2RCR 060 005 200	6 X R0.5	7	20	60	6
2RCR 060 005 400	6 X R0.5	7	40	90	6
2RCR 060 005 600	6 X R0.5	7	60	110	6
2RCR 060 010 200	6 X R1	7	20	60	6
2RCR 060 010 400	6 X R1	7	40	90	6
2RCR 060 010 600	6 X R1	7	60	110	6
2RCR 060 015 200	6 X R1.5	7	20	60	6
2RCR 060 015 400	6 X R1.5	7	40	90	6
2RCR 080 002 220	8 X R0.2	9	22	65	8
2RCR 080 002 400	8 X R0.2	9	40	100	8
2RCR 080 003 220	8 X R0.3	9	22	65	8
2RCR 080 003 400	8 X R0.3	9	40	100	8
2RCR 080 005 220	8 X R0.5	9	22	65	8
2RCR 080 005 400	8 X R0.5	9	40	100	8
2RCR 080 005 600	8X R0.5	9	60	120	8



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 080 010 220	8 X R1	9	22	65	8
2RCR 080 010 400	8 X R1	9	40	100	8
2RCR 080 010 600	8 X R1	9	60	120	8
2RCR 080 015 220	8 X R1.5	9	22	65	8
2RCR 080 015 400	8 X R1.5	9	40	100	8
2RCR 100 002 240	10 X R0.2	11	24	70	10
2RCR 100 002 450	10 X R0.2	11	45	100	10
2RCR 100 002 600	10 X R0.2	11	60	120	10
2RCR 100 003 240	10 X R0.3	11	24	70	10
2RCR 100 003 450	10 X R0.3	11	45	100	10
2RCR 100 005 240	10 X R0.5	11	24	70	10
2RCR 100 005 450	10 X R0.5	11	45	100	10
2RCR 100 005 600	10 X R0.5	11	60	120	10
2RCR 100 010 240	10 X R1	11	24	70	10
2RCR 100 010 450	10 X R1	11	45	100	10
2RCR 100 010 600	10 X R1	11	60	120	10
2RCR 100 015 240	10 X R1.5	11	24	70	10
2RCR 100 015 450	10 X R1.5	11	45	100	10
2RCR 100 020 240	10 X R2	11	24	70	10
2RCR 100 020 450	10 X R2	11	45	100	10

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2RCR 120 002 260	12 X R0.2	13	26	80	12
2RCR 120 002 500	12 X R0.2	13	50	110	12
2RCR 120 003 260	12 X R0.3	13	26	80	12
2RCR 120 003 500	12 X R0.3	13	50	110	12
2RCR 120 005 260	12 X R0.5	13	26	80	12
2RCR 120 005 500	12 X R0.5	13	50	110	12
2RCR 120 005 700	12 X R0.5	13	70	130	12
2RCR 120 010 260	12 X R1	13	26	80	12
2RCR 120 010 500	12 X R1	13	50	110	12
2RCR 120 010 700	12 X R1	13	70	130	12
2RCR 120 015 260	12 X R1.5	13	26	80	12
2RCR 120 015 500	12 X R1.5	13	50	110	12
2RCR 120 020 260	12 X R2	13	26	80	12
2RCR 120 020 500	12 X R2	13	50	110	12
2RCR 120 030 260	12 X R3	13	26	80	12
2RCR 120 030 500	12 X R3	13	50	110	12
2RCR 160 005 110	16 X R0.5	20	35	110	16
2RCR 160 005 160	16 X R0.5	20	35	160	16
2RCR 160 010 110	16 X R1	20	35	110	16
2RCR 160 010 160	16 X R1	20	35	160	16

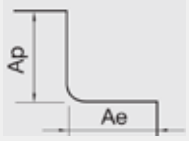
2RCR

• RPM : rev./min • Feed : mm/min

Material		Copper				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness						30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
0.2mm	1mm	47,000	170	0.230	0.017	47,000	170	0.005	0.017	30,000	130	0.003	0.017	13,000	21	0.001	0.013
	1.5	47,000	150	0.014	0.009	47,000	150	0.004	0.009	23,000	90	0.003	0.009	10,200	17	0.001	0.006
0.3mm	1	51,000	420	0.026	0.017	51,000	430	0.006	0.017	30,000	300	0.004	0.013	18,700	30	0.003	0.013
	3	44,000	180	0.026	0.013	44,200	190	0.005	0.013	21,000	70	0.003	0.009	12,700	17	0.002	0.009
0.4mm	1	41,000	520	0.041	0.054	43,200	430	0.011	0.061	34,500	320	0.009	0.061	20,500	34	0.003	0.061
	3	29,000	390	0.023	0.046	23,000	330	0.007	0.023	23,000	240	0.006	0.023	13,700	26	0.003	0.023
0.5mm	1	42,000	1,160	0.069	0.099	42,000	970	0.029	0.104	34,000	730	0.026	0.104	21,000	80	0.011	0.104
	3	27,000	650	0.048	0.077	27,000	540	0.020	0.096	22,100	400	0.017	0.096	13,700	44	0.007	0.096
	5	22,400	480	0.023	0.038	22,400	400	0.009	0.009	18,000	300	0.009	0.009	11,300	33	0.003	0.009
0.6mm	2	24,300	520	0.097	0.138	24,300	430	0.009	0.186	20,000	330	0.009	0.186	12,900	37	0.003	0.186
	6	14,300	250	0.031	0.038	14,300	210	0.003	0.009	11,800	160	0.003	0.009	7,600	18	0.001	0.009
0.8mm	4	15,000	460	0.112	0.168	14,800	380	0.012	0.099	12,800	300	0.013	0.099	8,600	35	0.006	0.099
	8	11,000	260	0.026	0.085	11,000	230	0.004	0.077	9,300	160	0.003	0.077	6,500	17	0.002	0.077
1mm	4	12,000	830	0.171	0.344	12,000	700	0.026	0.230	10,200	570	0.030	0.230	7,200	68	0.014	0.230
	10	7,500	330	0.041	0.268	7,500	270	0.009	0.107	6,500	230	0.011	0.107	4,600	27	0.005	0.107
	16	6,000	200	0.015	0.191	6,000	160	0.003	0.023	5,200	140	0.004	0.023	3,700	16	0.002	0.023
1.2mm	6	8,000	600	0.158	0.398	8,000	500	0.015	0.077	7,100	420	0.187	0.077	5,300	51	0.009	0.077
	12	5,800	380	0.046	0.344	5,800	320	0.006	0.061	5,200	260	0.007	0.061	3,800	32	0.003	0.061
1.5mm	4	11,200	1,100	0.255	0.574	11,200	930	0.038	0.383	10,200	800	0.051	0.383	7,800	105	0.028	0.383
	10	7,200	760	0.128	0.482	7,200	640	0.027	0.245	6,600	550	0.036	0.245	5,100	72	0.020	0.245
	20	5,100	410	0.036	0.306	5,100	350	0.004	0.092	4,700	300	0.005	0.092	3,600	39	0.003	0.092
2mm	6	10,900	1,030	0.273	0.727	10,900	870	0.037	0.689	10,200	790	0.051	0.689	8,200	113	0.031	0.689
	12	8,000	830	0.158	0.612	8,000	700	0.026	0.383	7,200	630	0.037	0.383	5,900	91	0.022	0.383
	20	6,000	650	0.079	0.566	6,000	550	0.014	0.168	5,600	490	0.020	0.168	4,500	71	0.012	0.168
	30	5,100	570	0.043	0.383	5,100	470	0.004	0.115	4,700	430	0.004	0.115	3,700	60	0.002	0.115
2.5mm	10	9,000	1,030	0.288	0.727	9,000	870	0.044	0.459	8,500	820	0.064	0.459	7,100	131	0.041	0.459
	30	5,400	460	0.059	0.536	5,400	380	0.009	0.153	5,100	360	0.014	0.153	4,200	57	0.009	0.153
3mm	12	9,000	1,360	0.332	0.723	9,000	980	0.089	0.536	8,500	760	0.089	0.570	7,600	170	0.064	0.570
	20	7,100	890	0.221	0.663	7,100	750	0.062	0.493	6,700	580	0.062	0.493	6,000	128	0.037	0.493
	30	6,000	740	0.119	0.587	6,000	610	0.043	0.323	5,500	470	0.043	0.323	5,100	100	0.025	0.306
4mm	12	7,600	1,100	0.349	1.326	7,600	920	0.071	0.978	6,400	800	0.102	0.978	5,400	183	0.072	0.978
	20	5,900	1,000	0.326	1.152	5,900	850	0.046	0.765	5,000	730	0.068	0.765	4,200	168	0.049	0.765
	30	5,000	780	0.170	1.052	5,000	650	0.024	0.583	4,100	570	0.036	0.583	3,500	130	0.026	0.616
	45	4,100	380	0.084	0.972	4,100	320	0.006	0.284	3,500	280	0.009	0.284	3,000	65	0.006	0.284
5mm	15	6,700	1,780	0.606	1.980	6,700	1,480	0.092	1.170	4,800	990	0.130	1.170	4,000	297	0.096	1.170
	30	4,600	850	0.297	1.530	4,600	710	0.046	0.900	3,300	470	0.065	0.900	2,800	143	0.048	0.900
6mm	20	5,200	1,200	0.522	1.908	5,200	1,060	0.414	1.179	3,100	900	0.162	1.179	2,700	342	0.126	1.179
	40	4,000	1,000	0.491	1.782	4,000	790	0.356	1.134	2,300	660	0.142	1.134	2,000	265	0.107	1.134
8mm	22	4,800	1,100	0.459	2.210	4,800	940	0.364	1.320	2,800	790	0.143	1.320	2,400	301	0.111	1.320
	40	3,600	840	0.432	1.980	3,600	700	0.314	1.150	2,100	580	0.125	1.150	1,700	233	0.094	1.150
10mm	24	4,000	900	0.390	2.510	3,900	800	0.310	1.430	2,400	670	0.121	1.430	2,000	256	0.094	1.430
	45	3,000	710	0.368	2.120	3,000	590	0.267	1.160	1,700	490	0.106	1.160	1,500	198	0.080	1.160
12mm	26	3,300	760	0.328	2.620	3,300	670	0.260	1.760	2,000	560	0.102	1.760	1,700	215	0.079	1.760
	50	2,500	600	0.309	2.100	2,500	500	0.224	1.220	1,500	420	0.089	1.220	1,200	166	0.067	1.220
16mm	35	2,600	610	0.262	2.540	2,600	530	0.208	1.880	1,500	450	0.081	1.880	1,400	172	0.063	1.880

Milling amount of side milling

• Ap : Axial Depth
• Ae : Radial Depth



K SPEED 4RCR

4 Flutes Rib Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.

4刃 リブ コーナー ラジウス エンドミル

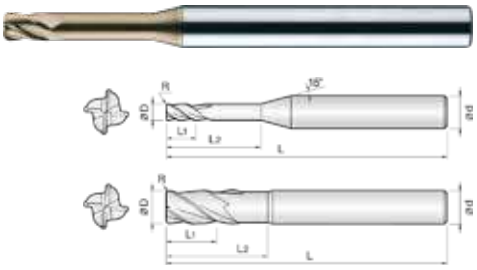
高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 高精密 公差適用で超精密 加工に適合します.
- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 多様な コーナーRと 有効长で合わせ加工が可能です.

4날 리브 코너 레디우스 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 유효장으로 맞춤 가공이 가능합니다.

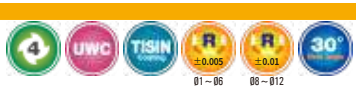


Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 008 0002 020	0.8 X R0.02	0.8	2	45	4
4RCR 008 0002 040	0.8 X R0.02	0.8	4	45	4
4RCR 008 0002 060	0.8 X R0.02	0.8	6	45	4
4RCR 008 0002 080	0.8 X R0.02	0.8	8	45	4
4RCR 008 0002 100	0.8 X R0.02	0.8	10	45	4
4RCR 008 0002 120	0.8 X R0.02	0.8	12	50	4
4RCR 008 0005 020	0.8 X R0.05	0.8	2	45	4
4RCR 008 0005 040	0.8 X R0.05	0.8	4	45	4
4RCR 008 0005 060	0.8 X R0.05	0.8	6	45	4
4RCR 008 0005 080	0.8 X R0.05	0.8	8	45	4
4RCR 008 0005 100	0.8 X R0.05	0.8	10	45	4
4RCR 008 0005 120	0.8 X R0.05	0.8	12	50	4
4RCR 008 001 020	0.8 X R0.1	0.8	2	45	4
4RCR 008 001 040	0.8 X R0.1	0.8	4	45	4
4RCR 008 001 060	0.8 X R0.1	0.8	6	45	4
4RCR 008 001 080	0.8 X R0.1	0.8	8	45	4
4RCR 008 001 100	0.8 X R0.1	0.8	10	45	4
4RCR 008 001 120	0.8 X R0.1	0.8	12	50	4
4RCR 010 0002 040	1 X R0.02	1	4	45	4
4RCR 010 0002 060	1 X R0.02	1	6	45	4
4RCR 010 0002 080	1 X R0.02	1	8	45	4
4RCR 010 0002 100	1 X R0.02	1	10	50	4
4RCR 010 0002 120	1 X R0.02	1	12	50	4
4RCR 010 0002 140	1 X R0.02	1	14	50	4
4RCR 010 0002 160	1 X R0.02	1	16	50	4
4RCR 010 0002 200	1 X R0.02	1	20	50	4
4RCR 010 0002 250	1 X R0.02	1	25	60	4
4RCR 010 0002 300	1 X R0.02	1	30	70	4
4RCR 010 0005 040	1 X R0.05	1	4	45	4
4RCR 010 0005 060	1 X R0.05	1	6	45	4
4RCR 010 0005 080	1 X R0.05	1	8	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 010 0005 100	1 X R0.05	1	10	50	4
4RCR 010 0005 120	1 X R0.05	1	12	50	4
4RCR 010 0005 140	1 X R0.05	1	14	50	4
4RCR 010 0005 160	1 X R0.05	1	16	50	4
4RCR 010 0005 200	1 X R0.05	1	20	50	4
4RCR 010 0005 250	1 X R0.05	1	25	60	4
4RCR 010 0005 300	1 X R0.05	1	30	70	4
4RCR 010 001 040	1 X R0.1	1	4	45	4
4RCR 010 001 060	1 X R0.1	1	6	45	4
4RCR 010 001 080	1 X R0.1	1	8	45	4
4RCR 010 001 100	1 X R0.1	1	10	50	4
4RCR 010 001 120	1 X R0.1	1	12	50	4
4RCR 010 001 140	1 X R0.1	1	14	50	4
4RCR 010 001 160	1 X R0.1	1	16	50	4
4RCR 010 001 200	1 X R0.1	1	20	50	4
4RCR 010 001 250	1 X R0.1	1	25	60	4
4RCR 010 001 300	1 X R0.1	1	30	70	4
4RCR 010 002 040	1 X R0.2	1	4	45	4
4RCR 010 002 060	1 X R0.2	1	6	45	4
4RCR 010 002 080	1 X R0.2	1	8	45	4
4RCR 010 002 100	1 X R0.2	1	10	50	4
4RCR 010 002 120	1 X R0.2	1	12	50	4
4RCR 010 002 140	1 X R0.2	1	14	50	4
4RCR 010 002 160	1 X R0.2	1	16	50	4
4RCR 010 002 200	1 X R0.2	1	20	50	4
4RCR 010 002 250	1 X R0.2	1	25	60	4
4RCR 010 002 300	1 X R0.2	1	30	70	4
4RCR 010 003 040	1 X R0.3	1	4	45	4
4RCR 010 003 060	1 X R0.3	1	6	45	4
4RCR 010 003 080	1 X R0.3	1	8	45	4
4RCR 010 003 100	1 X R0.3	1	10	50	4



单位/Unit : mm

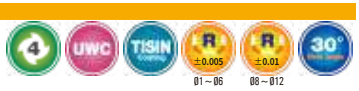
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 010 003 120	1 X R0.3	1	12	50	4
4RCR 010 003 140	1 X R0.3	1	14	50	4
4RCR 010 003 160	1 X R0.3	1	16	50	4
4RCR 010 003 200	1 X R0.3	1	20	50	4
4RCR 010 003 250	1 X R0.3	1	25	60	4
4RCR 010 003 300	1 X R0.3	1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

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 012 003 140	1.2 X R0.3	1.2	14	50	4
4RCR 012 003 160	1.2 X R0.3	1.2	16	50	4
4RCR 012 003 200	1.2 X R0.3	1.2	20	50	4
4RCR 015 0002 060	1.5 X R0.02	1.5	6	45	4
4RCR 015 0002 080	1.5 X R0.02	1.5	8	45	4
4RCR 015 0002 100	1.5 X R0.02	1.5	10	50	4
4RCR 015 0002 120	1.5 X R0.02	1.5	12	50	4
4RCR 015 0002 140	1.5 X R0.02	1.5	14	50	4
4RCR 015 0002 160	1.5 X R0.02	1.5	16	50	4
4RCR 015 0002 200	1.5 X R0.02	1.5	20	50	4
4RCR 015 0002 220	1.5 X R0.02	1.5	22	60	4
4RCR 015 0002 250	1.5 X R0.02	1.5	25	60	4
4RCR 015 0005 060	1.5 X R0.05	1.5	6	45	4
4RCR 015 0005 080	1.5 X R0.05	1.5	8	45	4
4RCR 015 0005 100	1.5 X R0.05	1.5	10	50	4
4RCR 015 0005 120	1.5 X R0.05	1.5	12	50	4
4RCR 015 0005 140	1.5 X R0.05	1.5	14	50	4
4RCR 015 0005 160	1.5 X R0.05	1.5	16	50	4
4RCR 015 0005 200	1.5 X R0.05	1.5	20	50	4
4RCR 015 0005 220	1.5 X R0.05	1.5	22	60	4
4RCR 015 0005 250	1.5 X R0.05	1.5	25	60	4
4RCR 015 001 060	1.5 X R0.1	1.5	6	45	4
4RCR 015 001 080	1.5 X R0.1	1.5	8	45	4
4RCR 015 001 100	1.5 X R0.1	1.5	10	50	4
4RCR 015 001 120	1.5 X R0.1	1.5	12	50	4
4RCR 015 001 140	1.5 X R0.1	1.5	14	50	4
4RCR 015 001 160	1.5 X R0.1	1.5	16	50	4
4RCR 015 001 200	1.5 X R0.1	1.5	20	50	4
4RCR 015 001 220	1.5 X R0.1	1.5	22	60	4
4RCR 015 001 250	1.5 X R0.1	1.5	25	60	4
4RCR 015 002 060	1.5 X R0.2	1.5	6	45	4
4RCR 015 002 080	1.5 X R0.2	1.5	8	45	4
4RCR 015 002 100	1.5 X R0.2	1.5	10	50	4
4RCR 015 002 120	1.5 X R0.2	1.5	12	50	4
4RCR 015 002 140	1.5 X R0.2	1.5	14	50	4
4RCR 015 002 160	1.5 X R0.2	1.5	16	50	4
4RCR 015 002 200	1.5 X R0.2	1.5	20	50	4
4RCR 015 002 220	1.5 X R0.2	1.5	22	60	4
4RCR 015 002 250	1.5 X R0.2	1.5	25	60	4
4RCR 015 003 060	1.5 X R0.3	1.5	6	45	4
4RCR 015 003 080	1.5 X R0.3	1.5	8	45	4
4RCR 015 003 100	1.5 X R0.3	1.5	10	50	4
4RCR 015 003 120	1.5 X R0.3	1.5	12	50	4

單位/Unit : mm

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

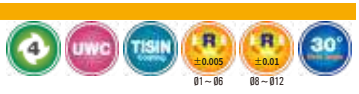
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 020 001 160	2 X R0.1	2	16	50	4
4RCR 020 001 180	2 X R0.1	2	18	50	4
4RCR 020 001 200	2 X R0.1	2	20	50	4
4RCR 020 001 220	2 X R0.1	2	22	60	4
4RCR 020 001 250	2 X R0.1	2	25	60	4
4RCR 020 001 300	2 X R0.1	2	30	70	4
4RCR 020 001 350	2 X R0.1	2	35	70	4
4RCR 020 002 060	2 X R0.2	2	6	45	4
4RCR 020 002 080	2 X R0.2	2	8	45	4
4RCR 020 002 100	2 X R0.2	2	10	50	4
4RCR 020 002 120	2 X R0.2	2	12	50	4
4RCR 020 002 140	2 X R0.2	2	14	50	4
4RCR 020 002 160	2 X R0.2	2	16	50	4
4RCR 020 002 180	2 X R0.2	2	18	50	4
4RCR 020 002 200	2 X R0.2	2	20	50	4
4RCR 020 002 220	2 X R0.2	2	22	60	4
4RCR 020 002 250	2 X R0.2	2	25	60	4
4RCR 020 002 300	2 X R0.2	2	30	70	4
4RCR 020 002 350	2 X R0.2	2	35	70	4
4RCR 020 003 060	2 X R0.3	2	6	45	4
4RCR 020 003 080	2 X R0.3	2	8	45	4
4RCR 020 003 100	2 X R0.3	2	10	50	4
4RCR 020 003 120	2 X R0.3	2	12	50	4
4RCR 020 003 140	2 X R0.3	2	14	50	4
4RCR 020 003 160	2 X R0.3	2	16	50	4
4RCR 020 003 180	2 X R0.3	2	18	50	4
4RCR 020 003 200	2 X R0.3	2	20	50	4
4RCR 020 003 220	2 X R0.3	2	22	60	4
4RCR 020 003 250	2 X R0.3	2	25	60	4
4RCR 020 003 300	2 X R0.3	2	30	70	4
4RCR 020 003 350	2 X R0.3	2	35	70	4
4RCR 020 005 060	2 X R0.5	2	6	45	4
4RCR 020 005 080	2 X R0.5	2	8	45	4
4RCR 020 005 100	2 X R0.5	2	10	50	4
4RCR 020 005 120	2 X R0.5	2	12	50	4
4RCR 020 005 140	2 X R0.5	2	14	50	4
4RCR 020 005 160	2 X R0.5	2	16	50	4
4RCR 020 005 180	2 X R0.5	2	18	50	4
4RCR 020 005 200	2 X R0.5	2	20	50	4
4RCR 020 005 220	2 X R0.5	2	22	60	4
4RCR 020 005 250	2 X R0.5	2	25	60	4
4RCR 020 005 300	2 X R0.5	2	30	70	4
4RCR 020 005 350	2 X R0.5	2	35	70	4



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 025 001 100	2.5 X R0.1	2.5	10	50	4
4RCR 025 001 120	2.5 X R0.1	2.5	12	50	4
4RCR 025 001 160	2.5 X R0.1	2.5	16	50	4
4RCR 025 001 200	2.5 X R0.1	2.5	20	50	4
4RCR 025 001 250	2.5 X R0.1	2.5	25	60	4
4RCR 025 001 300	2.5 X R0.1	2.5	30	70	4
4RCR 025 002 100	2.5 X R0.2	2.5	10	50	4
4RCR 025 002 120	2.5 X R0.2	2.5	12	50	4
4RCR 025 002 160	2.5 X R0.2	2.5	16	50	4
4RCR 025 002 200	2.5 X R0.2	2.5	20	50	4
4RCR 025 002 250	2.5 X R0.2	2.5	25	60	4
4RCR 025 002 300	2.5 X R0.2	2.5	30	70	4
4RCR 025 003 100	2.5 X R0.3	2.5	10	50	4
4RCR 025 003 120	2.5 X R0.3	2.5	12	50	4
4RCR 025 003 160	2.5 X R0.3	2.5	16	50	4
4RCR 025 003 200	2.5 X R0.3	2.5	20	50	4
4RCR 025 003 250	2.5 X R0.3	2.5	25	60	4
4RCR 025 003 300	2.5 X R0.3	2.5	30	70	4
4RCR 025 005 100	2.5 X R0.5	2.5	10	50	4
4RCR 025 005 120	2.5 X R0.5	2.5	12	50	4
4RCR 025 005 160	2.5 X R0.5	2.5	16	50	4
4RCR 025 005 200	2.5 X R0.5	2.5	20	50	4
4RCR 025 005 250	2.5 X R0.5	2.5	25	60	4
4RCR 025 005 300	2.5 X R0.5	2.5	30	70	4
4RCR 030 001 100	3 X R0.1	3	10	50	6
4RCR 030 001 120	3 X R0.1	3	12	50	6
4RCR 030 001 160	3 X R0.1	3	16	55	6
4RCR 030 001 200	3 X R0.1	3	20	60	6
4RCR 030 001 250	3 X R0.1	3	25	65	6
4RCR 030 001 300	3 X R0.1	3	30	70	6
4RCR 030 001 350	3 X R0.1	3	35	75	6
4RCR 030 001 400	3 X R0.1	3	40	80	6
4RCR 030 001 500	3 X R0.1	3	50	100	6
4RCR 030 002 100	3 X R0.2	3	10	50	6
4RCR 030 002 120	3 X R0.2	3	12	50	6
4RCR 030 002 160	3 X R0.2	3	16	55	6
4RCR 030 002 200	3 X R0.2	3	20	60	6
4RCR 030 002 250	3 X R0.2	3	25	65	6
4RCR 030 002 300	3 X R0.2	3	30	70	6
4RCR 030 002 350	3 X R0.2	3	35	75	6
4RCR 030 002 400	3 X R0.2	3	40	80	6
4RCR 030 002 500	3 X R0.2	3	50	100	6
4RCR 030 003 100	3 X R0.3	3	10	50	6

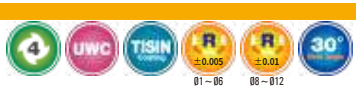
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 030 003 120	3 X R0.3	3	12	50	6
4RCR 030 003 160	3 X R0.3	3	16	55	6
4RCR 030 003 200	3 X R0.3	3	20	60	6
4RCR 030 003 250	3 X R0.3	3	25	65	6
4RCR 030 003 300	3 X R0.3	3	30	70	6
4RCR 030 003 350	3 X R0.3	3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



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 040 002 160	4 X R0.2	4	16	55	6
4RCR 040 002 200	4 X R0.2	4	20	60	6
4RCR 040 002 250	4 X R0.2	4	25	65	6
4RCR 040 002 300	4 X R0.2	4	30	70	6
4RCR 040 002 350	4 X R0.2	4	35	75	6
4RCR 040 002 400	4 X R0.2	4	40	80	6
4RCR 040 002 450	4 X R0.2	4	45	90	6
4RCR 040 002 500	4 X R0.2	4	50	100	6
4RCR 040 002 600	4 X R0.2	4	60	110	6
4RCR 040 003 050	4 X R0.3	4	12	50	4
4RCR 040 003 070	4 X R0.3	4	20	70	4
4RCR 040 003 130	4 X R0.3	4	13	55	6
4RCR 040 003 160	4 X R0.3	4	16	55	6
4RCR 040 003 200	4 X R0.3	4	20	60	6
4RCR 040 003 250	4 X R0.3	4	25	65	6
4RCR 040 003 300	4 X R0.3	4	30	70	6
4RCR 040 003 350	4 X R0.3	4	35	75	6
4RCR 040 003 400	4 X R0.3	4	40	80	6
4RCR 040 003 450	4 X R0.3	4	45	90	6
4RCR 040 003 500	4 X R0.3	4	50	100	6
4RCR 040 003 600	4 X R0.3	4	60	110	6
4RCR 040 005 050	4 X R0.5	4	12	50	4
4RCR 040 005 070	4 X R0.5	4	20	70	4
4RCR 040 005 130	4 X R0.5	4	13	55	6
4RCR 040 005 160	4 X R0.5	4	16	55	6
4RCR 040 005 200	4 X R0.5	4	20	60	6
4RCR 040 005 250	4 X R0.5	4	25	65	6
4RCR 040 005 300	4 X R0.5	4	30	70	6
4RCR 040 005 350	4 X R0.5	4	35	75	6
4RCR 040 005 400	4 X R0.5	4	40	80	6
4RCR 040 005 450	4 X R0.5	4	45	90	6
4RCR 040 005 500	4 X R0.5	4	50	100	6
4RCR 040 005 600	4 X R0.5	4	60	110	6
4RCR 040 010 050	4 X R1	4	12	50	4
4RCR 040 010 070	4 X R1	4	20	70	4
4RCR 040 010 130	4 X R1	4	13	55	6
4RCR 040 010 160	4 X R1	4	16	55	6
4RCR 040 010 200	4 X R1	4	20	60	6
4RCR 040 010 250	4 X R1	4	25	65	6
4RCR 040 010 300	4 X R1	4	30	70	6
4RCR 040 010 350	4 X R1	4	35	75	6
4RCR 040 010 400	4 X R1	4	40	80	6
4RCR 040 010 450	4 X R1	4	45	90	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 040 010 500	4 X R1	4	50	100	6
4RCR 040 010 600	4 X R1	4	60	110	6
4RCR 050 001 160	5 X R0.1	5	16	60	6
4RCR 050 001 300	5 X R0.1	5	30	70	6
4RCR 050 001 400	5 X R0.1	5	40	80	6
4RCR 050 001 500	5 X R0.1	5	50	100	6
4RCR 050 002 160	5 X R0.2	5	16	60	6
4RCR 050 002 300	5 X R0.2	5	30	70	6
4RCR 050 002 400	5 X R0.2	5	40	80	6
4RCR 050 002 500	5 X R0.2	5	50	100	6
4RCR 050 003 160	5 X R0.3	5	16	60	6
4RCR 050 003 300	5 X R0.3	5	30	70	6
4RCR 050 003 400	5 X R0.3	5	40	80	6
4RCR 050 003 500	5 X R0.3	5	50	100	6
4RCR 050 005 160	5 X R0.5	5	16	60	6
4RCR 050 005 300	5 X R0.5	5	30	70	6
4RCR 050 005 400	5 X R0.5	5	40	80	6
4RCR 050 005 500	5 X R0.5	5	50	100	6
4RCR 050 005 600	5 X R0.5	5	60	110	6
4RCR 050 010 160	5 X R1	5	16	60	6
4RCR 050 010 300	5 X R1	5	30	70	6
4RCR 050 010 400	5 X R1	5	40	80	6
4RCR 050 010 500	5 X R1	5	50	100	6
4RCR 050 010 600	5 X R1	5	60	110	6
4RCR 060 001 200	6 X R0.1	7	20	60	6
4RCR 060 001 400	6 X R0.1	7	40	80	6
4RCR 060 001 500	6 X R0.1	7	50	100	6
4RCR 060 002 200	6 X R0.2	7	20	60	6
4RCR 060 002 400	6 X R0.2	7	40	80	6
4RCR 060 002 500	6 X R0.2	7	50	100	6
4RCR 060 002 600	6 X R0.2	7	60	110	6
4RCR 060 003 200	6 X R0.3	7	20	60	6
4RCR 060 003 400	6 X R0.3	7	40	80	6
4RCR 060 003 500	6 X R0.3	7	50	100	6
4RCR 060 005 200	6 X R0.5	7	20	60	6
4RCR 060 005 400	6 X R0.5	7	40	80	6
4RCR 060 005 500	6 X R0.5	7	50	100	6
4RCR 060 005 600	6 X R1	7	60	110	6
4RCR 060 010 200	6 X R1	7	20	60	6
4RCR 060 010 400	6 X R1	7	40	80	6
4RCR 060 010 500	6 X R1	7	50	100	6
4RCR 060 010 600	6 X R1	7	60	110	6
4RCR 060 015 200	6 X R1.5	7	20	60	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 060 015 400	6 X R1.5	7	40	80	6
4RCR 060 015 500	6 X R1.5	7	50	100	6
4RCR 080 002 220	8 X R0.2	9	22	65	8
4RCR 080 002 400	8 X R0.2	9	40	100	8
4RCR 080 003 220	8 X R0.3	9	22	65	8
4RCR 080 003 400	8 X R0.3	9	40	100	8
4RCR 080 005 220	8 X R0.5	9	22	65	8
4RCR 080 005 400	8 X R0.5	9	40	100	8
4RCR 080 005 600	8 X R0.5	9	60	120	8
4RCR 080 010 220	8 X R1	9	22	65	8
4RCR 080 010 400	8 X R1	9	40	100	8
4RCR 080 010 600	8 X R1	9	60	120	8
4RCR 080 015 220	8 X R1.5	9	22	65	8
4RCR 080 015 400	8 X R1.5	9	40	100	8
4RCR 080 020 220	8 X R2	9	22	65	8
4RCR 080 020 400	8 X R2	9	40	100	8
4RCR 100 002 240	10 X R0.2	11	24	70	10
4RCR 100 002 400	10 X R0.2	11	40	100	10
4RCR 100 003 240	10 X R0.3	11	24	70	10
4RCR 100 003 400	10 X R0.3	11	40	100	10
4RCR 100 005 240	10 X R0.5	11	24	70	10
4RCR 100 005 400	10 X R0.5	11	40	100	10

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4RCR 100 005 600	10 X R0.5	11	60	120	10
4RCR 100 010 240	10 X R1	11	24	70	10
4RCR 100 010 400	10 X R1	11	40	100	10
4RCR 100 010 600	10 X R1	11	60	120	10
4RCR 100 015 240	10 X R1.5	11	24	70	10
4RCR 100 015 400	10 X R1.5	11	40	100	10
4RCR 100 020 240	10 X R2	11	24	70	10
4RCR 100 020 400	10 X R2	11	40	100	10
4RCR 100 025 240	10 X R2.5	11	24	70	10
4RCR 120 003 260	12 X R0.3	13	26	80	12
4RCR 120 005 260	12 X R0.5	13	26	80	12
4RCR 120 005 400	12 X R0.5	13	40	110	12
4RCR 120 005 600	12 X R0.5	13	60	130	12
4RCR 120 010 260	12 X R1	13	26	80	12
4RCR 120 010 400	12 X R1	13	40	110	12
4RCR 120 010 600	12 X R1	13	60	130	12
4RCR 120 015 260	12 X R1.5	13	26	80	12
4RCR 120 015 400	12 X R1.5	13	40	110	12
4RCR 120 020 260	12 X R2	13	26	80	12
4RCR 120 020 400	12 X R2	13	40	110	12
4RCR 120 030 260	12 X R3	13	26	80	12

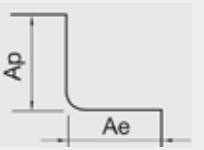
4RCR

• RPM : rev./min • Feed : mm/min

Material		Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness		30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
1mm	4	11,700	1,100	0.033	0.230	10,200	910	0.026	0.207	7,200	540	0.013	0.207
	10	7,500	430	0.009	0.107	6,500	430	0.008	0.085	4,600	300	0.005	0.043
1.2mm	4	11,200	1,200	0.027	0.383	10,200	930	0.020	0.255	7,800	700	0.017	0.170
	10	7,700	680	0.014	0.153	6,200	510	0.008	0.128	5,400	680	0.005	0.043
1.5mm	6	9,900	1,100	0.035	0.413	9,000	1,000	0.032	0.378	6,900	400	0.021	0.172
	12	7,200	710	0.025	0.275	6,600	660	0.022	0.252	5,000	250	0.009	0.138
2mm	6	11,000	1,100	0.054	0.551	10,200	1,020	0.051	0.620	8,200	590	0.024	0.275
	12	7,800	880	0.039	0.344	7,200	820	0.037	0.344	5,900	360	0.015	0.153
2.5mm	10	9,200	1,200	0.057	0.459	8,500	1,000	0.057	0.459	7,100	430	0.041	0.275
	20	6,600	1,000	0.041	0.230	6,400	570	0.026	0.191	5,400	250	0.019	0.077
3mm	10	9,600	1,800	0.082	0.595	8,900	1,800	0.051	0.595	7,600	620	0.038	0.476
	20	7,100	1,300	0.049	0.493	6,700	1,300	0.031	0.493	5,400	470	0.019	0.271
4mm	13	7,900	1,370	0.091	1.000	6,600	1,330	0.071	1.000	5,600	740	0.043	0.700
	20	6,200	1,200	0.060	0.800	5,200	1,120	0.047	0.800	4,500	630	0.022	0.560
	30	5,500	960	0.037	0.648	4,600	920	0.029	0.648	3,900	600	0.011	0.388
6mm	20	4,900	1,470	0.153	2.004	2,900	850	0.153	1.114	2,550	650	0.060	1.114
	40	2,500	680	0.085	1.148	1,400	400	0.085	0.638	1,200	300	0.034	0.468
8mm	22	4,000	1,600	0.184	2.540	2,400	680	0.184	1.320	2,000	650	0.087	1.320
10mm	24	3,200	1,750	0.210	2.730	1,900	540	0.220	1.430	1,600	460	0.094	1.450
12mm	26	2,500	1,800	0.230	2.700	1,500	430	0.240	1.490	1,300	450	0.110	1.500

Milling amount of side milling

• Ap : Axial Depth
• Ae : Radial Depth



K SPEED 2CNR

2 Flutes Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.



2刃 コーナー ラジウス エンドミル

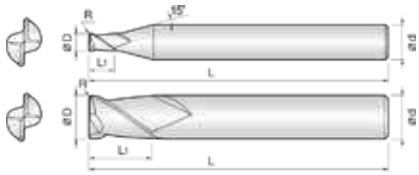
高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 高精密 公差適用で超精密 加工に適合します.
- コーナーR 形状を刃部チッピングが少ないよ うに設計しました.
- 多様な コーナーRと 有効長で合わせ加工が可能です.

2날 코너 레디우스 엔드밀

• 고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
2CNR 002 0002 S04	0.2XR0.02	0.6	45	4
2CNR 002 0005 S04	0.2XR0.05	0.6	45	4
2CNR 003 0002 S04	0.3XR0.02	0.6	45	4
2CNR 003 0005 S04	0.3XR0.05	0.6	45	4
2CNR 003 001 S04	0.3XR0.1	0.6	45	4
2CNR 004 0002 S04	0.4XR0.02	0.8	45	4
2CNR 004 0005 S04	0.4XR0.05	0.8	45	4
2CNR 004 001 S04	0.4XR0.1	0.8	45	4
2CNR 005 0002 S04	0.5XR0.02	1	45	4
2CNR 005 0005 S04	0.5XR0.05	1	45	4
2CNR 005 001 S04	0.5XR0.1	1	45	4
2CNR 006 0002 S04	0.6XR0.02	1.2	45	4
2CNR 006 0005 S04	0.6XR0.05	1.2	45	4
2CNR 006 001 S04	0.6XR0.1	1.2	45	4
2CNR 006 002 S04	0.6XR0.2	1.2	45	4
2CNR 007 0005 S04	0.7XR0.05	1.4	45	4
2CNR 007 001 S04	0.7XR0.1	1.4	45	4
2CNR 007 002 S04	0.7XR0.2	1.4	45	4
2CNR 008 0002 S04	0.8XR0.02	1.6	45	4
2CNR 008 0005 S04	0.8XR0.05	1.6	45	4
2CNR 008 001 S04	0.8XR0.1	1.6	45	4
2CNR 008 002 S04	0.8XR0.2	1.6	45	4
2CNR 009 0005 S04	0.9XR0.05	1.8	45	4
2CNR 009 001 S04	0.9XR0.1	1.8	45	4
2CNR 010 0002 S04	1XR0.02	2.5	45	4
2CNR 010 0005 S04	1XR0.05	2.5	45	4
2CNR 010 001 S04	1XR0.1	2.5	45	4
2CNR 010 002 S04	1XR0.2	2.5	45	4
2CNR 010 003 S04	1XR0.3	2.5	45	4
2CNR 010 004 S04	1XR0.4	2.5	45	4
2CNR 012 0005 S04	1.2XR0.05	3.2	45	4
2CNR 012 001 S04	1.2XR0.1	3.2	45	4
2CNR 012 002 S04	1.2XR0.2	3.2	45	4
2CNR 012 003 S04	1.2XR0.3	3.2	45	4
2CNR 015 0002 S04	1.5XR0.02	4	45	4
2CNR 015 0005 S04	1.5XR0.05	4	45	4
2CNR 015 001 S04	1.5XR0.1	4	45	4
2CNR 015 002 S04	1.5XR0.2	4	45	4
2CNR 015 003 S04	1.5XR0.3	4	45	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
2CNR 015 004 S04	1.5XR0.4	4	45	4
2CNR 015 005 S04	1.5XR0.5	4	45	4
2CNR 020 0002 S04	2XR0.02	6	45	4
2CNR 020 0005 S04	2XR0.05	6	45	4
2CNR 020 001 S04	2XR0.1	6	45	4
2CNR 020 002 S04	2XR0.2	6	45	4
2CNR 020 003 S04	2XR0.3	6	45	4
2CNR 020 004 S04	2XR0.4	6	45	4
2CNR 020 005 S04	2XR0.5	6	45	4
2CNR 025 0005 S04	2.5XR0.05	6	50	4
2CNR 025 001 S04	2.5XR0.1	6	50	4
2CNR 025 002 S04	2.5XR0.2	6	50	4
2CNR 025 003 S04	2.5XR0.3	6	50	4
2CNR 025 004 S04	2.5XR0.4	6	50	4
2CNR 025 005 S04	2.5XR0.5	6	50	4
2CNR 030 0005 S06	3XR0.05	8	60	6
2CNR 030 001 S06	3XR0.1	8	60	6
2CNR 030 002 S06	3XR0.2	8	60	6
2CNR 030 003 S06	3XR0.3	8	60	6
2CNR 030 004 S06	3XR0.4	8	60	6
2CNR 030 005 S06	3XR0.5	8	60	6
2CNR 030 010 S06	3XR1	8	60	6
2CNR 035 001 S06	3.5XR0.1	9	70	6
2CNR 035 002 S06	3.5XR0.2	9	70	6
2CNR 035 003 S06	3.5XR0.3	9	70	6
2CNR 035 005 S06	3.5XR0.5	9	70	6
2CNR 035 010 S06	3.5XR1	9	70	6
2CNR 040 0005 060	4XR0.05	9	60	4
2CNR 040 0005 080	4XR0.05	9	80	4
2CNR 040 0005 S06	4XR0.1	9	70	6
2CNR 040 001 060	4XR0.1	9	60	4
2CNR 040 001 080	4XR0.1	9	80	4
2CNR 040 001 S06	4XR0.1	10	70	6
2CNR 040 002 060	4XR0.2	9	60	4
2CNR 040 002 080	4XR0.2	9	80	4
2CNR 040 002 S06	4XR0.2	10	70	6
2CNR 040 003 060	4XR0.3	9	60	4
2CNR 040 003 080	4XR0.3	9	80	4
2CNR 040 003 S06	4XR0.3	10	70	6

K SPEED 2CNR



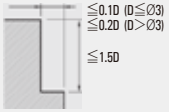
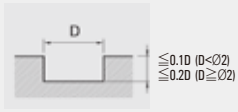
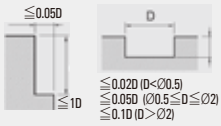
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
2CNR 040 004 060	4XR0.4	9	60	4
2CNR 040 004 080	4XR0.4	9	80	4
2CNR 040 004 S06	4XR0.4	10	70	6
2CNR 040 005 060	4XR0.5	9	60	4
2CNR 040 005 080	4XR0.5	9	80	4
2CNR 040 005 S06	4XR0.5	10	70	6
2CNR 040 010 060	4XR1	9	60	4
2CNR 040 010 080	4XR1	9	80	4
2CNR 040 010 S06	4XR1	10	70	6
2CNR 045 001 S06	4.5XR0.1	11	75	6
2CNR 045 002 S06	4.5XR0.2	11	75	6
2CNR 045 003 S06	4.5XR0.3	11	75	6
2CNR 045 005 S06	4.5XR0.5	11	75	6
2CNR 045 010 S06	4.5XR1	11	75	6
2CNR 050 001 S06	5XR0.1	13	75	6
2CNR 050 002 S06	5XR0.2	13	75	6
2CNR 050 003 S06	5XR0.3	13	75	6
2CNR 050 004 S06	5XR0.4	13	75	6
2CNR 050 005 S06	5XR0.5	13	75	6
2CNR 050 010 S06	5XR1	13	75	6
2CNR 055 002 S06	5.5XR0.2	13	75	6
2CNR 055 003 S06	5.5XR0.3	13	75	6
2CNR 055 005 S06	5.5XR0.5	13	75	6
2CNR 055 010 S06	5.5XR1	13	75	6
2CNR 060 0005 060	6XR0.05	11	60	6
2CNR 060 0005 090	6XR0.05	13	90	6
2CNR 060 001 060	6XR0.1	11	60	6
2CNR 060 001 090	6XR0.1	13	90	6
2CNR 060 002 060	6XR0.2	11	60	6
2CNR 060 002 090	6XR0.2	13	90	6
2CNR 060 003 060	6XR0.3	11	60	6
2CNR 060 003 090	6XR0.3	13	90	6
2CNR 060 004 060	6XR0.4	11	60	6
2CNR 060 004 090	6XR0.4	13	90	6
2CNR 060 005 060	6XR0.5	11	60	6
2CNR 060 005 090	6XR0.5	13	90	6
2CNR 060 010 060	6XR1	11	60	6
2CNR 060 010 090	6XR1	13	90	6
2CNR 060 015 060	6XR1.5	11	60	6
2CNR 060 015 090	6XR1.5	13	90	6
2CNR 060 020 060	6XR2	11	60	6
2CNR 060 020 090	6XR2	13	90	6
2CNR 060 025 090	6XR2.5	13	90	6
2CNR 080 001 070	8XR0.1	16	70	8
2CNR 080 001 100	8XR0.1	19	100	8
2CNR 080 002 070	8XR0.2	16	70	8
2CNR 080 002 100	8XR0.2	19	100	8
2CNR 080 003 070	8XR0.3	16	70	8
2CNR 080 003 100	8XR0.3	19	100	8
2CNR 080 005 070	8XR0.5	16	70	8
2CNR 080 005 100	8XR0.5	19	100	8
2CNR 080 005 120	8XR0.5	19	120	8
2CNR 080 010 070	8XR1	16	70	8
2CNR 080 010 100	8XR1	19	100	8
2CNR 080 010 120	8XR1	19	120	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
2CNR 080 015 070	8XR1.5	16	70	8
2CNR 080 015 100	8XR1.5	19	100	8
2CNR 080 020 070	8XR2	16	70	8
2CNR 080 020 100	8XR2	19	100	8
2CNR 080 025 100	8XR2.5	19	100	8
2CNR 080 030 100	8XR3	19	100	8
2CNR 080 035 100	8XR3.5	19	100	8
2CNR 100 001 075	10XR0.1	19	75	10
2CNR 100 001 100	10XR0.1	22	100	10
2CNR 100 002 075	10XR0.2	19	75	10
2CNR 100 002 100	10XR0.2	22	100	10
2CNR 100 003 075	10XR0.3	19	75	10
2CNR 100 003 100	10XR0.3	22	100	10
2CNR 100 005 075	10XR0.5	19	75	10
2CNR 100 005 100	10XR0.5	22	100	10
2CNR 100 005 130	10XR0.5	22	130	10
2CNR 100 010 075	10XR1	19	75	10
2CNR 100 010 100	10XR1	22	100	10
2CNR 100 010 130	10XR1	22	130	10
2CNR 100 015 075	10XR1.5	19	75	10
2CNR 100 015 100	10XR1.5	22	100	10
2CNR 100 015 130	10XR1.5	22	130	10
2CNR 100 020 075	10XR2	19	75	10
2CNR 100 020 100	10XR2	22	100	10
2CNR 100 025 100	10XR2.5	22	100	10
2CNR 100 030 100	10XR3	22	100	10
2CNR 100 040 100	10XR4	22	100	10
2CNR 120 001 080	12XR0.1	22	80	12
2CNR 120 001 110	12XR0.1	26	110	12
2CNR 120 002 080	12XR0.2	22	80	12
2CNR 120 002 110	12XR0.2	26	110	12
2CNR 120 003 080	12XR0.3	22	80	12
2CNR 120 003 110	12XR0.3	26	110	12
2CNR 120 005 080	12XR0.5	22	80	12
2CNR 120 005 110	12XR0.5	26	110	12
2CNR 120 005 130	12XR0.5	26	130	12
2CNR 120 010 080	12XR1	22	80	12
2CNR 120 010 110	12XR1	26	110	12
2CNR 120 010 130	12XR1	26	130	12
2CNR 120 015 080	12XR1.5	22	80	12
2CNR 120 015 110	12XR1.5	26	110	12
2CNR 120 015 130	12XR1.5	26	130	12
2CNR 120 020 080	12XR2	22	80	12
2CNR 120 020 110	12XR2	26	110	12
2CNR 120 020 130	12XR2	26	130	12
2CNR 120 025 110	12XR2.5	26	110	12
2CNR 120 030 110	12XR3	26	110	12
2CNR 120 040 110	12XR4	26	110	12
2CNR 120 050 110	12XR5	26	110	12
2CNR 140 005 110	14XR0.5	30	110	14
2CNR 140 010 110	14XR1	30	110	14
2CNR 140 020 110	14XR2	30	110	14
2CNR 160 005 160	16XR0.5	32	160	16
2CNR 160 010 160	16XR1	32	160	16

2CNR

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.4mm	36,000	230	36,000	180	36,000	140	31,500	110
0.5mm	36,000	180	36,000	180	36,000	140	31,500	110
0.6mm	34,200	340	29,700	240	27,000	200	22,500	110
0.7mm	32,400	380	25,200	270	23,400	220	19,800	110
0.8mm	30,600	430	22,500	310	20,700	230	17,100	110
0.9mm	28,800	490	19,800	330	18,000	250	15,300	110
1mm	27,000	540	18,000	360	16,200	270	13,500	110
1.5mm	18,000	540	12,600	360	10,800	270	9,000	110
2mm	13,500	540	9,000	360	8,200	270	7,200	110
2.5mm	10,800	540	7,400	360	6,600	270	5,500	110
3mm	9,000	540	6,300	360	5,400	270	4,500	110
4mm	6,800	540	4,700	360	4,100	270	3,600	110
5mm	5,400	540	3,800	360	3,200	270	2,900	110
6mm	4,500	540	3,200	360	2,700	270	2,400	110
8mm	3,600	470	2,500	320	2,200	230	1,800	100
10mm	2,900	410	2,000	270	1,700	210	1,400	90
12mm	2,400	370	1,700	240	1,400	190	1,200	90
Depth of Cut								

■ In case of slotting, decrease feed rate more than 80% the table. 70% of speed and 60% of feed on the table, when to slottting SUS.

■ 溝加工の場合, 上記表 Feedを 80%以上 減少してください. また、SUS 溝加工時には回転速度は 上記表の 70%, 移送速度は 60%を基準としてください.

■ 홈가공의 경우, 상기표 Feed를 80%이상 감소하십시오. 또한 SUS 홈가공시에 회전속도는 상기표의 70%, 이송속도는 60%를 기준으로 하여주십시오.

K SPEED 4CNR

4 Flutes Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.

4刃 コーナー ラジウス エンドミル

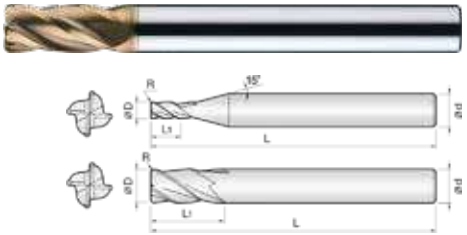
高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 高精密 公差適用で超精密 加工に適合します.
- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 多様な コーナーRと 有效长で合わせ加工が可能です.

4날 코너 레디우스 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 다양한 코너R과 전장으로 맞춤 가공이 가능합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4CNR 005 0005 S04	0.5XR0.05	1	45	4
4CNR 005 001 S04	0.5XR0.1	1	45	4
4CNR 006 001 S04	0.6XR0.1	1.2	45	4
4CNR 006 002 S04	0.6XR0.2	1.2	45	4
4CNR 008 001 S04	0.8XR0.1	1.6	45	4
4CNR 008 002 S04	0.8XR0.2	1.6	45	4
4CNR 010 0002 S04	1XR0.02	2.5	45	4
4CNR 010 0005 S04	1XR0.05	2.5	45	4
4CNR 010 001 S04	1XR0.1	2.5	45	4
4CNR 010 002 S04	1XR0.2	2.5	45	4
4CNR 010 003 S04	1XR0.3	2.5	45	4
4CNR 012 0002 S04	1.2XR0.02	4	45	4
4CNR 012 0005 S04	1.2XR0.05	4	45	4
4CNR 012 001 S04	1.2XR0.1	4	45	4
4CNR 012 002 S04	1.2XR0.2	4	45	4
4CNR 012 003 S04	1.2XR0.3	4	45	4
4CNR 015 0002 S04	1.5XR0.02	4	45	4
4CNR 015 0005 S04	1.5XR0.05	4	45	4
4CNR 015 001 S04	1.5XR0.1	4	45	4
4CNR 015 002 S04	1.5XR0.2	4	45	4
4CNR 015 003 S04	1.5XR0.3	4	45	4
4CNR 015 004 S04	1.5XR0.4	4	45	4
4CNR 015 005 S04	1.5XR0.5	4	45	4
4CNR 020 0002 S04	2XR0.02	6	45	4
4CNR 020 0005 S04	2XR0.05	6	45	4
4CNR 020 001 S04	2XR0.1	6	45	4
4CNR 020 002 S04	2XR0.2	6	45	4
4CNR 020 003 S04	2XR0.3	6	45	4
4CNR 020 004 S04	2XR0.4	6	45	4
4CNR 020 005 S04	2XR0.5	6	45	4
4CNR 025 0005 S04	2.5XR0.05	6	50	4
4CNR 025 001 S04	2.5XR0.1	6	50	4
4CNR 025 002 S04	2.5XR0.2	6	50	4
4CNR 025 003 S04	2.5XR0.3	6	50	4
4CNR 025 005 S04	2.5XR0.5	6	50	4
4CNR 030 0005 S06	3XR0.05	8	60	6
4CNR 030 001 S06	3XR0.1	8	60	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4CNR 030 002 S06	3XR0.2	8	60	6
4CNR 030 003 S06	3XR0.3	8	60	6
4CNR 030 004 S06	3XR0.4	8	60	6
4CNR 030 005 S06	3XR0.5	8	60	6
4CNR 030 010 S06	3XR1	8	60	6
4CNR 040 0005 060	4XR0.05	9	60	4
4CNR 040 0005 080	4XR0.05	9	80	4
4CNR 040 0005 S06	4XR0.05	9	70	6
4CNR 040 001 060	4XR0.1	9	60	4
4CNR 040 001 080	4XR0.1	9	80	4
4CNR 040 001 S06	4XR0.1	10	70	6
4CNR 040 002 060	4XR0.2	9	60	4
4CNR 040 002 080	4XR0.2	9	80	4
4CNR 040 002 S06	4XR0.2	10	70	6
4CNR 040 003 060	4XR0.3	9	60	4
4CNR 040 003 080	4XR0.3	9	80	4
4CNR 040 003 S06	4XR0.3	10	70	6
4CNR 040 004 060	4XR0.4	9	60	4
4CNR 040 004 080	4XR0.4	9	80	4
4CNR 040 004 S06	4XR0.4	10	70	6
4CNR 040 005 060	4XR0.5	9	60	4
4CNR 040 005 080	4XR0.5	9	80	4
4CNR 040 005 S06	4XR0.5	10	70	6
4CNR 040 010 060	4XR1	9	60	4
4CNR 040 010 080	4XR1	9	80	4
4CNR 040 010 S06	4XR1	10	70	6
4CNR 050 0005 S06	5XR0.05	13	75	6
4CNR 050 001 S06	5XR0.1	13	75	6
4CNR 050 002 S06	5XR0.2	13	75	6
4CNR 050 003 S06	5XR0.3	13	75	6
4CNR 050 004 S06	5XR0.4	13	75	6
4CNR 050 005 S06	5XR0.5	13	75	6
4CNR 050 010 S06	5XR1	13	75	6
4CNR 055 002 S06	5.5XR0.2	13	75	6
4CNR 055 003 S06	5.5XR0.3	13	75	6
4CNR 055 005 S06	5.5XR0.5	13	75	6
4CNR 055 010 S06	5.5XR1	13	75	6

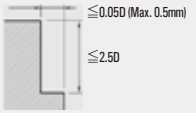
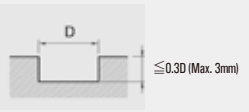
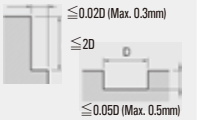
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4CNR 060 0005 080	6 X R0.05	11	80	6
4CNR 060 001 060	6 X R0.1	11	60	6
4CNR 060 001 080	6 X R0.1	13	80	6
4CNR 060 002 060	6 X R0.2	11	60	6
4CNR 060 002 080	6 X R0.2	13	80	6
4CNR 060 003 060	6 X R0.3	11	60	6
4CNR 060 003 080	6 X R0.3	13	80	6
4CNR 060 004 080	6 X R0.4	13	80	6
4CNR 060 005 060	6 X R0.5	11	60	6
4CNR 060 005 080	6 X R0.5	13	80	6
4CNR 060 010 060	6 X R1	11	60	6
4CNR 060 010 080	6 X R1	13	80	6
4CNR 060 015 060	6 X R1.5	11	60	6
4CNR 060 015 080	6 X R1.5	13	80	6
4CNR 060 020 060	6 X R2	11	60	6
4CNR 060 020 080	6 X R2	13	80	6
4CNR 080 001 070	8 X R0.1	16	70	8
4CNR 080 001 090	8 X R0.1	19	90	8
4CNR 080 002 070	8 X R0.2	16	70	8
4CNR 080 002 090	8 X R0.2	19	90	8
4CNR 080 003 070	8 X R0.3	16	70	8
4CNR 080 003 090	8 X R0.3	19	90	8
4CNR 080 005 070	8 X R0.5	16	70	8
4CNR 080 005 090	8 X R0.5	19	90	8
4CNR 080 005 110	8 X R0.5	19	110	8
4CNR 080 010 070	8 X R1	16	70	8
4CNR 080 010 090	8 X R1	19	90	8
4CNR 080 010 110	8 X R1	19	110	8
4CNR 080 015 070	8 X R1.5	16	70	8
4CNR 080 015 090	8 X R1.5	19	90	8
4CNR 080 015 110	8 X R1.5	19	110	8
4CNR 080 020 070	8 X R2	16	70	8
4CNR 080 020 090	8 X R2	19	90	8
4CNR 080 020 110	8 X R2	19	110	8
4CNR 080 025 090	8 X R2.5	19	90	8
4CNR 100 001 075	10 X R0.1	19	75	10
4CNR 100 001 100	10 X R0.1	22	100	10
4CNR 100 002 075	10 X R0.2	19	75	10
4CNR 100 002 100	10 X R0.2	22	100	10
4CNR 100 002 120	10 X R0.2	22	120	10
4CNR 100 003 075	10 X R0.3	19	75	10
4CNR 100 003 100	10 X R0.3	22	100	10
4CNR 100 005 075	10 X R0.5	19	75	10
4CNR 100 005 100	10 X R0.5	22	100	10
4CNR 100 005 120	10 X R0.5	22	120	10
4CNR 100 010 075	10 X R1	19	75	10
4CNR 100 010 100	10 X R1	22	100	10
4CNR 100 010 120	10 X R1	22	120	10
4CNR 100 015 075	10 X R1.5	19	75	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4CNR 100 015 100	10 X R1.5	22	100	10
4CNR 100 015 120	10 X R1.5	22	120	10
4CNR 100 020 075	10 X R2	19	75	10
4CNR 100 020 100	10 X R2	22	100	10
4CNR 100 020 120	10 X R2	22	120	10
4CNR 100 025 075	10 X R2.5	19	75	10
4CNR 100 025 100	10 X R2.5	22	100	10
4CNR 100 025 120	10 X R2.5	22	120	10
4CNR 100 030 100	10 X R3	22	100	10
4CNR 120 002 080	12 X R0.2	22	80	12
4CNR 120 002 110	12 X R0.2	26	110	12
4CNR 120 002 130	12 X R0.2	26	130	12
4CNR 120 003 080	12 X R0.3	22	80	12
4CNR 120 003 110	12 X R0.3	26	110	12
4CNR 120 005 080	12 X R0.5	22	80	12
4CNR 120 005 110	12 X R0.5	26	110	12
4CNR 120 005 130	12 X R0.5	26	130	12
4CNR 120 010 080	12 X R1	22	80	12
4CNR 120 010 110	12 X R1	26	110	12
4CNR 120 010 130	12 X R1	26	130	12
4CNR 120 015 080	12 X R1.5	22	80	12
4CNR 120 015 110	12 X R1.5	26	110	12
4CNR 120 015 130	12 X R1.5	26	130	12
4CNR 120 020 080	12 X R2	22	80	12
4CNR 120 020 110	12 X R2	26	110	12
4CNR 120 020 130	12 X R2	26	130	12
4CNR 120 025 080	12 X R2.5	22	80	12
4CNR 120 025 110	12 X R2.5	26	110	12
4CNR 120 025 130	12 X R2.5	26	130	12
4CNR 120 030 080	12 X R3	22	80	12
4CNR 120 030 110	12 X R3	26	110	12
4CNR 120 030 130	12 X R3	26	130	12
4CNR 120 035 110	12 X R3.5	26	110	12
4CNR 120 040 110	12 X R4	26	110	12
4CNR 140 005 110	14 X R0.5	30	110	14
4CNR 140 010 110	14 X R1	30	110	14
4CNR 140 020 110	14 X R2	30	110	14
4CNR 160 005 110	16 X R0.5	32	110	16
4CNR 160 005 160	16 X R0.5	32	160	16
4CNR 160 010 110	16 X R1	32	110	16
4CNR 160 010 160	16 X R1	32	160	16
4CNR 160 015 110	16 X R1.5	32	110	16
4CNR 160 020 110	16 X R2	32	110	16
4CNR 160 030 110	16 X R3	32	110	16
4CNR 200 005 160	20 X R0.5	38	160	20
4CNR 200 010 160	20 X R1	38	160	20
4CNR 200 015 160	20 X R1.5	38	160	20
4CNR 200 020 160	20 X R2	38	160	20

4CNR

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels / Tools Steels Prehardened Steels SKD61/NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61		Hardened Steels SKD11	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	5,100	70	4,500	60	3,600	40	3,000	25	2,200	10
2mm	4,200	80	3,600	70	2,900	50	2,200	35	1,800	15
3mm	3,600	90	2,900	80	2,200	60	1,800	40	1,500	25
4mm	2,900	120	2,300	90	1,800	70	1,400	50	1,200	30
5mm	2,500	150	2,000	120	1,500	90	1,300	60	1,000	30
6mm	2,100	170	1,700	150	1,300	110	1,100	70	900	40
8mm	1,600	190	1,300	150	1,000	130	900	70	680	40
10mm	1,400	190	1,100	150	800	110	700	70	550	40
12mm	1,100	150	900	120	700	90	570	60	450	30
16mm	900	120	700	90	500	70	420	43	340	26
Depth of Cut	 									

■ In case of slotting, decrease feed rate more than 50% the table. 60% of speed and 40% of feed on the table , when to slottting SUS.

■ 溝加工の場合, 上記表 Feedを 50%以上 減少してください. また、SUS 溝加工時には回転速度は 上記表の 60%, 移送速度は40%を基準としてください.

■ 홈가공의 경우, 상기표 Feed를 50%이상 감소하십시요. 또한 SUS 홈가공시에 회전속도는 상기표의 60%, 이송속도는 40%를 기준으로 하여 주십시오.

K SPEED 4HCR

4 Flutes 45° Helix Corner Radius Long Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- Designed for minimizing edge chipping by corner R shape.
- 45°degree helix design for high speed, feed condition.

4刃 45°ヘリックス コーナー ラジウス ロング エンドミル

高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

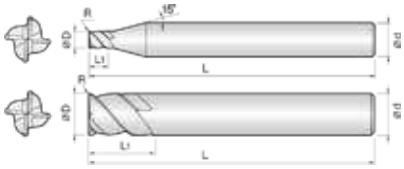
- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 45°ヘリックス 形状で 設計して 高速,高移送 加工に 適合します.

4날 45° 헬릭스 코너 레디우스 롱 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 45°헬릭스 형상으로 설계하여 고속,고이송 가공에 적합합니다.





Size	D Tolerance
D ≦ 6	+0~ -0.01mm
D > 6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4HCR 010 0005 S06	1 X R0.05	2	50	6
4HCR 010 001 S06	1 X R0.1	2	50	6
4HCR 010 002 S06	1 X R0.2	2	50	6
4HCR 010 003 S06	1 X R0.3	2	50	6
4HCR 012 0005 S06	1.2 X R0.05	2.5	50	6
4HCR 012 001 S06	1.2 X R0.1	2.5	50	6
4HCR 012 002 S06	1.2 X R0.2	2.5	50	6
4HCR 012 003 S06	1.2 X R0.3	2.5	50	6
4HCR 015 0005 S06	1.5 X R0.05	3	50	6
4HCR 015 001 S06	1.5 X R0.1	3	50	6
4HCR 015 002 S06	1.5 X R0.2	3	50	6
4HCR 015 003 S06	1.5 X R0.3	3	50	6
4HCR 015 005 S06	1.5 X R0.5	3	50	6
4HCR 020 001 S06	2 X R0.1	5	50	6
4HCR 020 002 S06	2 X R0.2	5	50	6
4HCR 020 003 S06	2 X R0.3	5	50	6
4HCR 020 005 S06	2 X R0.5	5	50	6
4HCR 025 001 S06	2.5 X R0.1	6	60	6
4HCR 025 002 S06	2.5 X R0.2	6	60	6
4HCR 025 003 S06	2.5 X R0.3	6	60	6
4HCR 025 005 S06	2.5 X R0.5	6	60	6
4HCR 030 001 S06	3 X R0.1	6	70	6
4HCR 030 002 S06	3 X R0.2	6	70	6
4HCR 030 003 S06	3 X R0.3	6	70	6
4HCR 030 005 S06	3 X R0.5	6	70	6
4HCR 030 010 S06	3 X R1	6	70	6
4HCR 040 001 S06	4 X R0.1	8	70	6
4HCR 040 002 S06	4 X R0.2	8	70	6
4HCR 040 003 S06	4 X R0.3	8	70	6
4HCR 040 005 S06	4 X R0.5	8	70	6
4HCR 040 010 S06	4 X R1	8	70	6
4HCR 050 001 S06	5 X R0.1	10	80	6
4HCR 050 002 S06	5 X R0.2	10	80	6

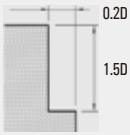
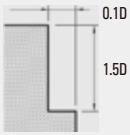
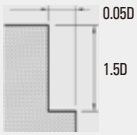


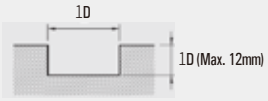
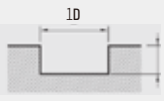
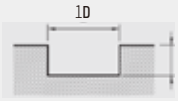
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4HCR 050 003 S06	5 X R0.3	10	80	6
4HCR 050 005 S06	5 X R0.5	10	80	6
4HCR 050 010 S06	5 X R1	10	80	6
4HCR 060 001 S06	6 X R0.1	12	90	6
4HCR 060 002 S06	6 X R0.2	12	90	6
4HCR 060 003 S06	6 X R0.3	12	90	6
4HCR 060 005 S06	6 X R0.5	12	90	6
4HCR 060 010 S06	6 X R1	12	90	6
4HCR 060 015 S06	6 X R1.5	12	90	6
4HCR 060 020 S06	6 X R2	12	90	6
4HCR 080 002 S08	8 X R0.2	16	90	8
4HCR 080 003 S08	8 X R0.3	16	90	8
4HCR 080 005 S08	8 X R0.5	16	90	8
4HCR 080 010 S08	8 X R1	16	90	8
4HCR 080 015 S08	8 X R1.5	16	90	8
4HCR 080 020 S08	8 X R2	16	90	8
4HCR 100 002 S10	10 X R0.2	20	100	8
4HCR 100 003 S10	10 X R0.3	20	100	10
4HCR 100 005 S10	10 X R0.5	20	100	10
4HCR 100 010 S10	10 X R1	20	100	10
4HCR 100 015 S10	10 X R1.5	20	100	10
4HCR 100 020 S10	10 X R2	20	100	10
4HCR 120 003 S12	12 X R0.3	24	110	12
4HCR 120 005 S12	12 X R0.5	24	110	12
4HCR 120 010 S12	12 X R1	24	110	12
4HCR 120 015 S12	12 X R1.5	24	110	12
4HCR 120 020 S12	12 X R2	24	110	12
4HCR 120 030 S12	12 X R3	24	110	12
4HCR 160 005 S16	16 X R0.5	32	120	16
4HCR 160 010 S16	16 X R1	32	120	16
4HCR 160 020 S16	16 X R2	32	120	16
4HCR 160 030 S16	16 X R3	32	120	16
4HCR 200 005 S20	20 X R0.5	38	130	20
4HCR 200 010 S20	20 X R1	38	130	20
4HCR 200 020 S20	20 X R2	38	130	20
4HCR 200 030 S20	20 X R3	38	130	20
4HCR 200 040 S20	20 X R4	38	130	20
4HCR 200 050 S20	20 X R5	38	130	20

4HCR

• RPM : rev./min • Feed : mm/min

Side Milling										
Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3mm	9,400	700	6,300	430	6,300	400	4,000	210	3,400	150
4mm	6,800	770	7,800	460	4,800	440	3,000	230	2,700	200
6mm	5,400	850	3,800	510	3,800	500	2,500	250	2,200	200
8mm	3,700	930	2,400	560	2,400	510	1,500	280	1,400	190
10mm	3,000	850	2,000	540	2,000	480	1,200	270	1,100	170
12mm	2,500	850	1,600	540	1,600	450	1,000	270	930	150
Depth of Cut										

Slotting										
Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3mm	7,700	510	4,500	250	4,500	130	2,700	110	1,600	60
4mm	6,100	610	3,400	300	3,400	150	2,000	120	1,200	80
6mm	4,300	680	2,300	340	2,300	170	1,400	140	800	80
8mm	3,100	680	1,700	340	1,700	170	1,000	150	610	80
10mm	2,600	610	1,400	300	1,400	150	810	140	490	70
12mm	2,100	610	1,100	300	1,100	150	680	140	410	60
Depth of Cut										

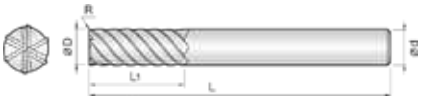
K SPEED 6HCR

6 Flutes 45°Helix Corner Radius Long Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- 45° helix design for high speed, feed condition.
- Improved wear resistance with longer edge and excellent work surface finish in various machining applications.





6刃 45°ヘリックス コーナー ラジウス ロング エンドミル

高硬度鋼(HRC50以上),プレハードン鋼系列の高精密加工 エンドミル

- 45°ヘリックス 形状で 設計して 高速,高移送加工に 適合します.
- 側面加工, コーナー部, 無球背面 加工時加工物の表面粗さが優れます.

6날 45° 헬릭스 코너 레디우스 롱 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 45°헬릭스 형상으로 설계하여 고속,고이송 가공에 적합합니다.
- 측벽가공, 코너부, 무구배면 가공시 가공물의 표면조도가 뛰어납니다.

Size	D Tolerance
D ≧ Ø6	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
6HCR 030 001 060	3XR0.1	7.5	60	6
6HCR 030 002 060	3XR0.2	7.5	60	6
6HCR 030 003 060	3XR0.3	7.5	60	6
6HCR 030 005 060	3XR0.5	7.5	60	6
6HCR 030 010 060	3XR1	7.5	60	6
6HCR 040 001 060	4XR0.1	10	60	6
6HCR 040 002 060	4XR0.2	10	60	6
6HCR 040 003 060	4XR0.3	10	60	6
6HCR 040 005 060	4XR0.5	10	60	6
6HCR 040 010 060	4XR1	10	60	6
6HCR 050 002 060	5XR0.2	13	60	6
6HCR 050 003 060	5XR0.3	13	60	6
6HCR 050 005 060	5XR0.5	13	60	6
6HCR 050 010 060	5XR1	13	60	6
6HCR 060 001 060	6XR0.1	15	60	6
6HCR 060 002 060	6XR0.2	15	60	6
6HCR 060 002 080	6XR0.3	15	80	6
6HCR 060 003 060	6XR0.3	15	60	6
6HCR 060 003 080	6XR0.3	15	80	6
6HCR 060 005 060	6XR0.5	15	60	6
6HCR 060 005 080	6XR0.5	15	80	6
6HCR 060 010 060	6XR1	15	60	6
6HCR 060 010 080	6XR1	15	80	6
6HCR 080 002 070	8XR0.2	20	70	8
6HCR 080 003 070	8XR0.3	20	70	8
6HCR 080 003 090	8XR0.3	20	90	8
6HCR 080 005 070	8XR0.5	20	70	8
6HCR 080 005 090	8XR0.5	20	90	8
6HCR 080 010 070	8XR1	20	70	8
6HCR 080 010 090	8XR1	20	90	8
6HCR 080 015 070	8XR1.5	20	70	8
6HCR 100 002 075	10XR0.2	20	75	10
6HCR 100 003 075	10XR0.3	25	75	10

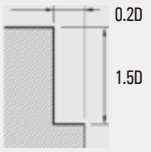
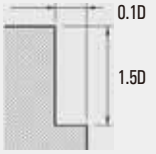
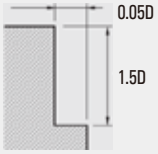


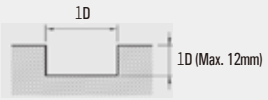
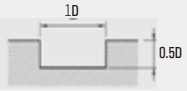
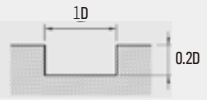
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
6HCR 100 003 100	10XR0.3	25	100	10
6HCR 100 005 075	10XR0.5	25	75	10
6HCR 100 005 100	10XR0.5	25	100	10
6HCR 100 010 075	10XR1	25	75	10
6HCR 100 010 100	10XR1	25	100	10
6HCR 100 020 075	10XR2	25	75	10
6HCR 120 002 080	12XR0.2	25	80	12
6HCR 120 003 080	12XR0.3	30	80	12
6HCR 120 003 110	12XR0.3	30	110	12
6HCR 120 005 080	12XR0.5	30	80	12
6HCR 120 005 110	12XR0.5	30	110	12
6HCR 120 010 080	12XR1	30	80	12
6HCR 120 010 110	12XR1	30	110	12
6HCR 120 020 080	12XR2	30	80	12
6HCR 160 005 110	16XR0.5	50	110	16
6HCR 160 010 110	16XR1	50	110	16
6HCR 160 020 110	16XR2	50	110	16

6HCR

• RPM : rev./min • Feed : mm/min

Side Milling										
Material	Carbon Steels / Alloy Steels / SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	4,700	880	3,000	510	3,000	480	1,900	265	1,700	185
8mm	3,500	880	2,200	530	2,200	480	1,400	265	1,300	180
10mm	2,800	800	1,800	450	1,100	260	1,100	260	1,000	160
12mm	2,300	800	1,500	510	1,500	420	1,000	260	900	140
16mm	1,800	640	1,100	400	1,100	360	700	200	650	100
Depth of Cut										

Slotting										
Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	4,000	640	2,200	320	2,200	160	1,300	130	800	75
8mm	3,000	640	1,600	320	1,600	160	1,000	140	600	70
10mm	2,400	580	1,300	290	1,300	140	800	130	500	65
12mm	2,000	580	1,000	290	1,000	140	650	130	400	60
16mm	1,600	480	800	220	800	120	500	100	300	40
Depth of Cut										

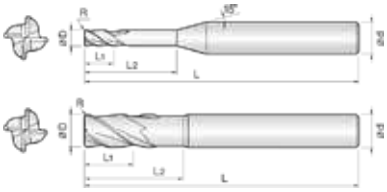
K SPEED 4SCU

4 Flutes High Speed Corner Radius Cutter

Cutter for pre-hardened and hardened steel (HRC50~)

- Designed for low speed with high feed condition
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.





4刃 高移送 コーナー ラジウス カッター

高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密加工 エンドミル

- 低速 RPMで 高移送 作業が可能するように設計しました.
- 中削り 及び 粗削り 加工時 作業効率が極大化されます.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

4날 고이송 코너 레디우스 커터

고경도강(HRC50이상), 프리하든강 계열의 고이송 엔드밀

- 저속 RPM에서 고이송 작업이 가능 하도록 설계하였습니다.
- 중삭 및 황삭 가공시 작업 효율이 극대화 됩니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4SCU 010 002 025	1XR0.2	1	2.5	50	4
4SCU 015 005 040	1.5XR0.5	1.5	4	50	4
4SCU 020 005 060	2XR0.5	2	6	50	6
4SCU 030 005 080	3XR0.5	3	8	50	6
4SCU 040 005 120	4XR0.5	4	12	60	6
4SCU 040 005 160	4XR0.5	4	16	60	6
4SCU 040 010 120	4XR1	4	12	60	6
4SCU 040 010 160	4XR1	4	16	60	6
4SCU 050 005 150	5XR0.5	5	15	60	6
4SCU 050 010 150	5XR1	5	15	60	6
4SCU 060 003 150	6XR0.3	6	15	60	6
4SCU 060 005 150	6XR0.5	6	15	60	6
4SCU 060 010 150	6XR1	6	15	60	6
4SCU 060 015 150	6XR1.5	6	15	60	6
4SCU 080 003 160	8XR0.3	8	16	60	8
4SCU 080 005 160	8XR0.5	8	16	60	8
4SCU 080 005 200	8XR0.5	8	20	80	8
4SCU 080 005 300	8XR0.5	8	30	110	8
4SCU 080 010 160	8XR1	8	16	60	8
4SCU 080 010 200	8XR1	8	20	80	8
4SCU 080 010 300	8XR1	8	30	110	8
4SCU 080 020 160	8XR2	8	16	60	8
4SCU 080 020 200	8XR2	8	20	80	8
4SCU 080 020 300	8XR2	8	30	110	8

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4SCU 100 003 200	10XR0.3	10	20	70	10
4SCU 100 005 200	10XR0.5	10	20	70	10
4SCU 100 005 250	10XR0.5	10	25	90	10
4SCU 100 005 300	10XR0.5	10	30	120	10
4SCU 100 010 200	10XR1	10	20	70	10
4SCU 100 010 250	10XR1	10	25	90	10
4SCU 100 010 300	10XR1	10	30	120	10
4SCU 100 020 200	10XR2	10	20	70	10
4SCU 100 020 250	10XR2	10	25	90	10
4SCU 100 020 300	10XR2	10	30	120	10
4SCU 120 005 250	12XR0.5	12	25	80	12
4SCU 120 005 300	12XR0.5	12	30	100	12
4SCU 120 005 350	12XR0.5	12	35	130	12
4SCU 120 010 250	12XR1	12	25	80	12
4SCU 120 010 300	12XR1	12	30	100	12
4SCU 120 010 350	12XR1	12	35	130	12
4SCU 120 020 250	12XR2	12	25	80	12
4SCU 120 020 300	12XR2	12	30	100	12
4SCU 120 020 350	12XR2	12	35	130	12
4SCU 120 030 250	12XR3	12	25	80	12
4SCU 160 010 300	16XR1	16	30	110	16
4SCU 160 010 400	16XR1	16	40	160	16
4SCU 160 020 300	16XR2	16	30	110	16
4SCU 160 020 400	16XR2	16	40	160	16

K SPEED 6SCU

6 Flutes High Speed Corner Radius Cutter

Cutter for pre-hardened and hardened steel (HRC50~)

- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



6刃 高移送 コーナー ラジウス カッター

高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密加工 エンドミル

- 低速 RPMで 高移送 作業が 可能するように設計しました.
- 中削り 及び 粗削り 加工時 作業効率が極大化されます.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.



6날 고이송 코너 레디우스 커터

고경도강(HRC50이상), 프리하든강 계열의 고이송 엔드밀

- 저속 RPM에서 고이송 작업이 가능 하도록 설계하였습니다.
- 중삭 및 황삭 가공시 작업 효율이 극대화 됩니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
6SCU 060 005 060	6XR0.5	12	60	6
6SCU 060 005 080	6XR0.5	12	80	6
6SCU 060 010 060	6XR1	12	60	6
6SCU 060 010 080	6XR1	12	80	6
6SCU 080 005 060	8XR0.5	16	60	8
6SCU 080 005 090	8XR0.5	16	90	8
6SCU 080 010 060	8XR1	16	60	8
6SCU 080 010 090	8XR1	16	90	8
6SCU 080 020 060	8XR2	16	60	8
6SCU 080 020 090	8XR2	16	90	8
6SCU 100 005 070	10XR0.5	20	70	10
6SCU 100 005 100	10XR0.5	20	100	10
6SCU 100 010 070	10XR1	20	70	10
6SCU 100 010 100	10XR1	20	100	10
6SCU 100 020 070	10XR2	20	70	10
6SCU 100 020 100	10XR2	20	100	10
6SCU 120 005 080	12XR0.5	25	80	12
6SCU 120 005 110	12XR0.5	25	110	12
6SCU 120 010 080	12XR1	25	80	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
6SCU 120 010 110	12XR1	25	110	12
6SCU 120 020 080	12XR2	25	80	12
6SCU 120 020 110	12XR2	25	110	12
6SCU 160 005 160	16XR0.5	35	160	16
6SCU 160 005 200	16XR0.5	35	200	16
6SCU 160 010 160	16XR1	35	160	16
6SCU 160 010 200	16XR1	35	200	16
6SCU 160 015 160	16XR1.5	35	160	16
6SCU 160 015 200	16XR1.5	35	200	16
6SCU 160 020 160	16XR2	35	160	16
6SCU 160 020 200	16XR2	35	200	16
6SCU 200 005 150	20XR0.5	40	150	20
6SCU 200 005 200	20XR0.5	40	200	20
6SCU 200 010 150	20XR1	40	150	20
6SCU 200 010 200	20XR1	40	200	20
6SCU 200 015 150	20XR1.5	40	150	20
6SCU 200 015 200	20XR1.5	40	200	20
6SCU 200 020 150	20XR2	40	150	20
6SCU 200 020 200	20XR2	40	200	20

4SCU/6SCU

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels/ Alloy Steels S50C / SCM				Alloy Steels / Tools Steels / Prehardened Steels SKD61 / SKD11 / NAK				Hardened Steels SKD61 / STAVAX				Hardened Steels SKD11 / SKH			
Hardness	~ 30HRC				30 ~ 45HRC				45 ~ 55HRC				55 ~ 60HRC			
Outside Diameter	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)
1mm	37,000	9,000	0.400	0.040	33,000	7,200	0.400	0.025	27,000	6,500	0.400	0.020	22,000	2,600	0.400	0.015
2mm	33,000	10,000	0.800	0.080	27,000	8,400	0.800	0.050	24,000	7,500	0.800	0.040	16,000	3,000	0.800	0.030
3mm	22,000	11,000	1.200	0.120	18,000	9,000	1.200	0.080	16,000	8,500	1.200	0.060	11,000	3,300	1.200	0.050
4mm	17,000	12,000	1.500	0.150	14,000	9,500	1.500	0.120	12,000	8,800	1.500	0.080	8,000	3,500	1.500	0.070
5mm	13,000	13,000	2.000	0.200	11,000	10,000	2.000	0.150	9,600	9,500	2.000	0.100	6,400	3,800	2.000	0.080
6mm	11,000	13,000	2.500	0.250	9,000	11,000	2.000	0.150	8,000	9,600	2.500	0.100	5,300	3,800	2.500	0.100
8mm	8,200	13,000	3.000	0.300	7,000	11,000	3.000	0.200	6,000	9,600	3.000	0.150	4,000	3,800	3.000	0.130
10mm	6,500	13,000	4.500	0.300	5,500	11,000	4.500	0.200	4,800	9,500	4.500	0.150	3,200	3,800	4.500	0.130
12mm	5,500	12,000	5.500	0.300	5,000	10,000	5.500	0.200	4,100	9,000	4.500	0.250	2,700	3,500	4.500	0.200
16mm	4,100	10,000	7.500	0.450	3,400	8,800	7.500	0.300	3,000	7,800	7.500	0.250	2,000	3,200	7.500	0.200
Depth of Cut																

K SPEED 2TBE

2 Flutes High Speed Taper Neck Ball Endmills

Endmills for pre-hardened and hardened steel(HRC50~62)

- Minimize chattering and fracturing by taper designed flute.
- High precise edge tolerance.

2刃 高速加工用 テーパ ネック ボール エンドミル

高硬度鋼(HRC50~62),プレハードン鋼系列の高精密加工 エンドミル

- 有效长をテーパ 設計して深い 溝の作業時 くび部破損及び 振りを最小化しました.
- 高精密 公差 適用で 超精密 加工に適合します.

2날 고속가공용 테이퍼 넥 볼 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀가공 엔드밀

- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부파손 및 떨림을 최소화 하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 002 003 015	0.1RX0.2	0°30	0.2	1.5	40	4
2TBE 002 003 020	0.1RX0.2	0°30	0.2	2	40	4
2TBE 002 010 015	0.1RX0.2	1°	0.2	1.5	40	4
2TBE 002 010 020	0.1RX0.2	1°	0.2	2	40	4
2TBE 002 010 025	0.1RX0.2	1°	0.2	2.5	40	4
2TBE 002 013 015	0.1RX0.2	1°30	0.2	1.5	40	4
2TBE 002 013 020	0.1RX0.2	1°30	0.2	2	40	4
2TBE 002 013 025	0.1RX0.2	1°30	0.2	2.5	40	4
2TBE 002 020 015	0.1RX0.2	2°	0.2	1.5	40	4
2TBE 002 020 020	0.1RX0.2	2°	0.2	2	40	4
2TBE 002 020 025	0.1RX0.2	2°	0.2	2.5	40	4
2TBE 002 030 015	0.1RX0.2	3°	0.2	1.5	40	4
2TBE 002 030 020	0.1RX0.2	3°	0.2	2	40	4
2TBE 002 030 025	0.1RX0.2	3°	0.2	2.5	40	4
2TBE 002 050 020	0.1RX0.2	5°	0.2	2	40	4
2TBE 003 003 030	0.15RX0.3	0°30	0.3	3	40	4
2TBE 003 010 020	0.15RX0.3	1°	0.3	2	40	4
2TBE 003 010 030	0.15RX0.3	1°	0.3	3	40	4
2TBE 003 010 040	0.15RX0.3	1°	0.3	4	40	4
2TBE 003 010 050	0.15RX0.3	1°	0.3	5	40	4
2TBE 003 013 020	0.15RX0.3	1°30	0.3	2	40	4
2TBE 003 013 030	0.15RX0.3	1°30	0.3	3	40	4
2TBE 003 013 040	0.15RX0.3	1°30	0.3	4	40	4
2TBE 003 013 050	0.15RX0.3	1°30	0.3	5	40	4
2TBE 003 020 020	0.15RX0.3	2°	0.3	2	40	4
2TBE 003 020 030	0.15RX0.3	2°	0.3	3	40	4
2TBE 003 020 040	0.15RX0.3	2°	0.3	4	40	4
2TBE 003 020 050	0.15RX0.3	2°	0.3	5	40	4
2TBE 003 030 020	0.15RX0.3	3°	0.3	2	40	4
2TBE 003 030 030	0.15RX0.3	3°	0.3	3	40	4
2TBE 003 030 040	0.15RX0.3	3°	0.3	4	40	4
2TBE 003 030 050	0.15RX0.3	3°	0.3	5	40	4
2TBE 003 050 050	0.15RX0.3	5°	0.3	5	40	4
2TBE 004 003 020	0.2RX0.4	0°30	0.4	2	40	4
2TBE 004 003 030	0.2RX0.4	0°30	0.4	3	40	4
2TBE 004 003 040	0.2RX0.4	0°30	0.4	4	40	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 004 003 050	0.2RX0.4	0°30	0.4	5	40	4
2TBE 004 003 060	0.2RX0.4	0°30	0.4	6	40	4
2TBE 004 010 020	0.2RX0.4	1°	0.4	2	40	4
2TBE 004 010 030	0.2RX0.4	1°	0.4	3	40	4
2TBE 004 010 040	0.2RX0.4	1°	0.4	4	40	4
2TBE 004 010 050	0.2RX0.4	1°	0.4	5	40	4
2TBE 004 010 060	0.2RX0.4	1°	0.4	6	40	4
2TBE 004 013 020	0.2RX0.4	1°30	0.4	2	40	4
2TBE 004 013 030	0.2RX0.4	1°30	0.4	3	40	4
2TBE 004 013 040	0.2RX0.4	1°30	0.4	4	40	4
2TBE 004 013 050	0.2RX0.4	1°30	0.4	5	40	4
2TBE 004 013 060	0.2RX0.4	1°30	0.4	6	40	4
2TBE 004 020 020	0.2RX0.4	2°	0.4	2	40	4
2TBE 004 020 030	0.2RX0.4	2°	0.4	3	40	4
2TBE 004 020 040	0.2RX0.4	2°	0.4	4	40	4
2TBE 004 020 050	0.2RX0.4	2°	0.4	5	40	4
2TBE 004 020 060	0.2RX0.4	2°	0.4	6	40	4
2TBE 005 003 040	0.25RX0.5	0°30	0.5	4	45	4
2TBE 005 003 060	0.25RX0.5	0°30	0.5	6	45	4
2TBE 005 010 040	0.25RX0.5	1°	0.5	4	45	4
2TBE 005 010 060	0.25RX0.5	1°	0.5	6	45	4
2TBE 005 010 080	0.25RX0.5	1°	0.5	8	45	4
2TBE 005 010 100	0.25RX0.5	1°	0.5	10	45	4
2TBE 005 013 040	0.25RX0.5	1°30	0.5	4	45	4
2TBE 005 013 060	0.25RX0.5	1°30	0.5	6	45	4
2TBE 005 013 080	0.25RX0.5	1°30	0.5	8	45	4
2TBE 005 013 100	0.25RX0.5	1°30	0.5	10	45	4
2TBE 005 020 040	0.25RX0.5	2°	0.5	4	45	4
2TBE 005 020 060	0.25RX0.5	2°	0.5	6	45	4
2TBE 005 020 080	0.25RX0.5	2°	0.5	8	45	4
2TBE 005 020 100	0.25RX0.5	2°	0.5	10	45	4
2TBE 005 030 080	0.25RX0.5	3°	0.5	8	45	4
2TBE 005 030 120	0.25RX0.5	3°	0.5	12	50	4
2TBE 006 003 040	0.3RX0.6	0°30	0.6	4	45	4
2TBE 006 003 060	0.3RX0.6	0°30	0.6	6	45	4
2TBE 006 003 080	0.3RX0.6	0°30	0.6	8	45	4



單位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 006 010 040	0.3RX0.6	1°	0.6	4	45	4
2TBE 006 010 060	0.3RX0.6	1°	0.6	6	45	4
2TBE 006 010 080	0.3RX0.6	1°	0.6	8	45	4
2TBE 006 010 100	0.3RX0.6	1°	0.6	10	45	4
2TBE 006 010 120	0.3RX0.6	1°	0.6	12	50	4
2TBE 006 010 150	0.3RX0.6	1°	0.6	15	50	4
2TBE 006 013 040	0.3RX0.6	1°30	0.6	4	45	4
2TBE 006 013 060	0.3RX0.6	1°30	0.6	6	45	4
2TBE 006 013 080	0.3RX0.6	1°30	0.6	8	45	4
2TBE 006 013 100	0.3RX0.6	1°30	0.6	10	45	4
2TBE 006 013 120	0.3RX0.6	1°30	0.6	12	50	4
2TBE 006 020 060	0.3RX0.6	2°	0.6	6	45	4
2TBE 006 020 080	0.3RX0.6	2°	0.6	8	45	4
2TBE 006 020 100	0.3RX0.6	2°	0.6	10	45	4
2TBE 006 030 130	0.3RX0.6	3°	0.6	13	50	4
2TBE 008 003 040	0.4RX0.8	0°30	0.8	4	45	4
2TBE 008 003 060	0.4RX0.8	0°30	0.8	6	45	4
2TBE 008 003 080	0.4RX0.8	0°30	0.8	8	45	4
2TBE 008 003 100	0.4RX0.8	0°30	0.8	10	45	4
2TBE 008 003 120	0.4RX0.8	0°30	0.8	12	50	4
2TBE 008 010 040	0.4RX0.8	1°	0.8	4	45	4
2TBE 008 010 060	0.4RX0.8	1°	0.8	6	45	4
2TBE 008 010 080	0.4RX0.8	1°	0.8	8	45	4
2TBE 008 010 100	0.4RX0.8	1°	0.8	10	45	4
2TBE 008 010 120	0.4RX0.8	1°	0.8	12	50	4
2TBE 008 010 160	0.4RX0.8	1°	0.8	16	50	4
2TBE 008 013 040	0.4RX0.8	1°30	0.8	4	45	4
2TBE 008 013 060	0.4RX0.8	1°30	0.8	6	45	4
2TBE 008 013 080	0.4RX0.8	1°30	0.8	8	45	4
2TBE 008 013 100	0.4RX0.8	1°30	0.8	10	45	4
2TBE 008 013 120	0.4RX0.8	1°30	0.8	12	50	4
2TBE 008 013 160	0.4RX0.8	1°30	0.8	16	50	4
2TBE 008 020 080	0.4RX0.8	2°	0.8	8	50	4
2TBE 008 020 100	0.4RX0.8	2°	0.8	10	50	4
2TBE 008 020 120	0.4RX0.8	2°	0.8	12	50	4
2TBE 008 020 160	0.4RX0.8	2°	0.8	16	50	4
2TBE 008 030 080	0.4RX0.8	3°	0.8	8	50	4
2TBE 008 030 120	0.4RX0.8	3°	0.8	12	50	4
2TBE 008 030 160	0.4RX0.8	3°	0.8	16	50	4
2TBE 010 003 060	0.5RX1	0°30	1	6	50	4
2TBE 010 003 080	0.5RX1	0°30	1	8	50	4
2TBE 010 003 100	0.5RX1	0°30	1	10	50	4
2TBE 010 003 150	0.5RX1	0°30	1	15	50	4
2TBE 010 003 200	0.5RX1	0°30	1	20	60	4
2TBE 010 003 250	0.5RX1	0°30	1	25	60	4
2TBE 010 003 300	0.5RX1	0°30	1	30	70	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 010 010 060	0.5RX1	1°	1	6	50	4
2TBE 010 010 080	0.5RX1	1°	1	8	50	4
2TBE 010 010 100	0.5RX1	1°	1	10	50	4
2TBE 010 010 150	0.5RX1	1°	1	15	50	4
2TBE 010 010 200	0.5RX1	1°	1	20	50	4
2TBE 010 010 250	0.5RX1	1°	1	25	60	4
2TBE 010 010 300	0.5RX1	1°	1	30	70	4
2TBE 010 010 350	0.5RX1	1°	1	35	75	4
2TBE 010 013 060	0.5RX1	1°30	1	6	50	4
2TBE 010 013 080	0.5RX1	1°30	1	8	50	4
2TBE 010 013 100	0.5RX1	1°30	1	10	50	4
2TBE 010 013 150	0.5RX1	1°30	1	15	50	4
2TBE 010 013 200	0.5RX1	1°30	1	20	50	4
2TBE 010 013 250	0.5RX1	1°30	1	25	60	4
2TBE 010 013 300	0.5RX1	1°30	1	30	70	4
2TBE 010 020 150	0.5RX1	2°	1	15	50	4
2TBE 010 020 200	0.5RX1	2°	1	20	50	4
2TBE 010 020 250	0.5RX1	2°	1	25	60	4
2TBE 010 020 300	0.5RX1	2°	1	30	70	4
2TBE 010 030 200	0.5RX1	3°	1	20	50	4
2TBE 010 030 300	0.5RX1	3°	1	30	70	6
2TBE 010 030 400	0.5RX1	3°	1	40	80	6
2TBE 010 050 230	0.5RX1	5°	1	23	60	6
2TBE 012 003 080	0.6RX1.2	0°30	1.2	8	50	4
2TBE 012 003 120	0.6RX1.2	0°30	1.2	12	50	4
2TBE 012 003 180	0.6RX1.2	0°30	1.2	18	50	4
2TBE 012 003 240	0.6RX1.2	0°30	1.2	24	60	4
2TBE 012 010 080	0.6RX1.2	1°	1.2	8	50	4
2TBE 012 010 120	0.6RX1.2	1°	1.2	12	50	4
2TBE 012 010 180	0.6RX1.2	1°	1.2	18	50	4
2TBE 012 010 240	0.6RX1.2	1°	1.2	24	60	4
2TBE 012 013 080	0.6RX1.2	1°30	1.2	8	50	4
2TBE 012 013 120	0.6RX1.2	1°30	1.2	12	50	4
2TBE 012 013 180	0.6RX1.2	1°30	1.2	18	50	4
2TBE 012 013 240	0.6RX1.2	1°30	1.2	24	60	4
2TBE 012 020 080	0.6RX1.2	2°	1.2	8	50	4
2TBE 012 020 120	0.6RX1.2	2°	1.2	12	50	4
2TBE 012 020 180	0.6RX1.2	2°	1.2	18	50	4
2TBE 012 020 240	0.6RX1.2	2°	1.2	24	60	4
2TBE 015 003 080	0.75RX1.5	0°30	1.5	8	50	4
2TBE 015 003 100	0.75RX1.5	0°30	1.5	10	50	4
2TBE 015 003 120	0.75RX1.5	0°30	1.5	12	50	4
2TBE 015 003 150	0.75RX1.5	0°30	1.5	15	50	4
2TBE 015 003 200	0.75RX1.5	0°30	1.5	20	60	4
2TBE 015 003 300	0.75RX1.5	0°30	1.5	30	70	4
2TBE 015 010 080	0.75RX1.5	1°	1.5	8	50	4



단위/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 015 010 100	0.75RX1.5	1°	1.5	10	50	4
2TBE 015 010 120	0.75RX1.5	1°	1.5	12	50	4
2TBE 015 010 150	0.75RX1.5	1°	1.5	15	50	4
2TBE 015 010 200	0.75RX1.5	1°	1.5	20	60	4
2TBE 015 010 250	0.75RX1.5	1°	1.5	25	60	4
2TBE 015 010 300	0.75RX1.5	1°	1.5	30	70	4
2TBE 015 013 080	0.75RX1.5	1°30	1.5	8	50	4
2TBE 015 013 100	0.75RX1.5	1°30	1.5	10	50	4
2TBE 015 013 120	0.75RX1.5	1°30	1.5	12	50	4
2TBE 015 013 150	0.75RX1.5	1°30	1.5	15	50	4
2TBE 015 013 200	0.75RX1.5	1°30	1.5	20	60	4
2TBE 015 013 250	0.75RX1.5	1°30	1.5	25	60	4
2TBE 015 013 300	0.75RX1.5	1°30	1.5	30	70	4
2TBE 015 020 100	0.75RX1.5	2°	1.5	10	50	4
2TBE 015 020 150	0.75RX1.5	2°	1.5	15	50	4
2TBE 015 020 200	0.75RX1.5	2°	1.5	20	60	4
2TBE 015 020 300	0.75RX1.5	2°	1.5	30	70	4
2TBE 015 030 420	0.75RX1.5	3°	1.5	42	80	6
2TBE 015 050 250	0.75RX1.5	5°	1.5	25	70	6
2TBE 020 003 080	1RX2	0°30	2	8	50	4
2TBE 020 003 120	1RX2	0°30	2	12	50	4
2TBE 020 003 160	1RX2	0°30	2	16	50	4
2TBE 020 003 200	1RX2	0°30	2	20	60	4
2TBE 020 003 300	1RX2	0°30	2	30	70	4
2TBE 020 003 400	1RX2	0°30	2	40	80	4
2TBE 020 010 080	1RX2	1°	2	8	50	4
2TBE 020 010 120	1RX2	1°	2	12	50	4
2TBE 020 010 160	1RX2	1°	2	16	50	4
2TBE 020 010 200	1RX2	1°	2	20	60	4
2TBE 020 010 250	1RX2	1°	2	25	60	4
2TBE 020 010 300	1RX2	1°	2	30	70	4
2TBE 020 010 350	1RX2	1°	2	35	75	4
2TBE 020 010 400	1RX2	1°	2	40	80	4
2TBE 020 010 500	1RX2	1°	2	50	90	4
2TBE 020 013 080	1RX2	1°30	2	8	50	4
2TBE 020 013 120	1RX2	1°30	2	12	50	4
2TBE 020 013 160	1RX2	1°30	2	16	50	4
2TBE 020 013 200	1RX2	1°30	2	20	60	4
2TBE 020 013 250	1RX2	1°30	2	25	60	4
2TBE 020 013 300	1RX2	1°30	2	30	70	4
2TBE 020 013 350	1RX2	1°30	2	35	75	6
2TBE 020 013 400	1RX2	1°30	2	40	80	6
2TBE 020 013 500	1RX2	1°30	2	50	90	6
2TBE 020 020 300	1RX2	2°	2	30	70	6
2TBE 020 020 400	1RX2	2°	2	40	80	6
2TBE 020 020 500	1RX2	2°	2	50	90	6

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2TBE 020 030 300	1RX2	3°	2	30	70	6
2TBE 020 030 400	1RX2	3°	2	40	80	6
2TBE 020 050 250	1RX2	5°	2	25	60	6
2TBE 020 050 380	1RX2	5°	2	38	80	8
2TBE 030 003 160	1.5RX3	0°30	3	16	60	6
2TBE 030 003 200	1.5RX3	0°30	3	20	65	6
2TBE 030 003 300	1.5RX3	0°30	3	30	70	6
2TBE 030 003 400	1.5RX3	0°30	3	40	80	6
2TBE 030 003 500	1.5RX3	0°30	3	50	90	6
2TBE 030 010 160	1.5RX3	1°	3	16	60	6
2TBE 030 010 200	1.5RX3	1°	3	20	65	6
2TBE 030 010 300	1.5RX3	1°	3	30	70	6
2TBE 030 010 400	1.5RX3	1°	3	40	80	6
2TBE 030 010 500	1.5RX3	1°	3	50	90	6
2TBE 030 013 160	1.5RX3	1°30	3	16	60	6
2TBE 030 013 200	1.5RX3	1°30	3	20	65	6
2TBE 030 013 300	1.5RX3	1°30	3	30	70	6
2TBE 030 013 400	1.5RX3	1°30	3	40	80	6
2TBE 030 013 500	1.5RX3	1°30	3	50	90	6
2TBE 030 020 160	1.5RX3	2°	3	16	60	6
2TBE 030 020 200	1.5RX3	2°	3	20	65	6
2TBE 030 020 300	1.5RX3	2°	3	30	70	6
2TBE 030 020 480	1.5RX3	2°	3	48	90	6
2TBE 030 030 300	1.5RX3	3°	3	30	70	6
2TBE 030 030 500	1.5RX3	3°	3	50	90	8
2TBE 030 050 330	1.5RX3	5°	3	33	90	8
2TBE 040 003 600	2RX4	0°30	4	60	100	6
2TBE 040 010 500	2RX4	1°	4	50	90	6
2TBE 040 010 600	2RX4	1°	4	60	100	6
2TBE 040 013 450	2RX4	1°30	4	45	90	6
2TBE 040 013 600	2RX4	1°30	4	60	110	8
2TBE 040 030 250	2RX4	3°	4	25	70	6
2TBE 040 050 290	2RX4	5°	4	29	90	8
2TBE 050 013 400	2.5RX5	1°30	5	40	90	8
2TBE 050 013 600	2.5RX5	1°30	5	60	110	8
2TBE 050 030 400	2.5RX5	3°	5	40	90	8
2TBE 060 013 490	3RX6	1°30	9	49	110	8
2TBE 060 020 600	3RX6	2°	9	60	110	10
2TBE 060 030 290	3RX6	3°	9	29	90	8
2TBE 060 050 320	3RX6	5°	9	32	110	10
2TBE 080 013 520	4RX8	1°30	12	52	110	10
2TBE 080 030 330	4RX8	3°	12	33	100	10
2TBE 100 013 540	5RX10	1°30	18	54	130	12
2TBE 100 030 370	5RX10	3°	18	37	110	12
2TBE 120 013 850	6RX12	1°30	22	85	160	16
2TBE 120 030 630	6RX12	3°	22	63	130	16

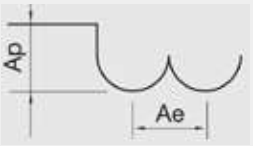
2TBE

• RPM : rev./min • Feed : mm/min

Material		Copper / Carbon Steels Cu / S45C / S50C			Prehardened Steels / Hardened Steels NAK / SKD			Hardened Steels SKD / SKT			Hardened Steels SKD / SKT		
Hardness		30HRC~45HRC			30HRC~45HRC			45HRC~55HRC			55HRC ~ 65HRC		
Radius	Effective Length	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R0.1	1.5	40,000	600	0.007	27,000	410	0.005	26,000	310	0.005	26,000	240	0.004
	2	31,000	350	0.005	21,500	240	0.004	20,000	190	0.003	20,000	170	0.003
R0.15	2	33,000	610	0.008	22,200	380	0.006	20,500	320	0.005	20,500	280	0.004
	3	31,000	470	0.003	21,000	310	0.002	19,000	230	0.002	19,000	180	0.001
R0.2	3	40,000	1,100	0.015	27,000	750	0.012	25,000	640	0.010	25,000	450	0.008
	6	24,000	500	0.004	17,000	310	0.003	16,000	280	0.003	16,000	240	0.002
R0.25	4	33,000	1,130	0.018	27,000	820	0.014	23,500	600	0.012	23,500	580	0.010
	8	20,500	580	0.006	17,000	410	0.005	15,000	350	0.004	15,000	310	0.003
R0.3	4	41,000	2,040	0.030	30,000	1,350	0.021	22,500	750	0.020	22,500	670	0.015
	8	25,500	950	0.015	21,000	700	0.012	16,000	490	0.010	16,000	390	0.008
	12	2,500	850	0.008	21,500	680	0.006	14,000	380	0.005	13,000	320	0.004
R0.4	4	41,000	2,200	0.035	28,000	1,400	0.027	23,000	820	0.025	23,000	680	0.015
	8	25,500	1,300	0.020	18,000	900	0.015	15,000	600	0.015	15,000	550	0.010
	12	25,500	1,000	0.015	15,500	500	0.012	12,000	440	0.010	12,000	400	0.007
R0.5	8	25,000	2,000	0.045	17,000	1,300	0.035	17,000	1,000	0.030	16,000	820	0.025
	15	17,000	1,050	0.022	12,000	730	0.018	11,000	650	0.016	11,000	500	0.012
	25	15,000	900	0.013	10,000	650	0.010	9,000	540	0.008	9,000	440	0.008
	35	9,000	580	0.008	6,000	380	0.006	6,000	360	0.005	6,000	260	0.004
R0.75	10	18,000	2,100	0.060	12,000	1,400	0.040	12,000	1,100	0.035	12,000	850	0.030
	20	13,000	1,200	0.030	9,000	900	0.020	9,000	700	0.015	9,000	600	0.013
	30	9,000	850	0.015	7,000	620	0.012	7,000	520	0.010	7,000	480	0.010
R1	12	15,000	2,350	0.080	11,000	1,700	0.065	10,500	1,360	0.056	10,500	1,070	0.046
	20	10,000	1,400	0.060	8,000	1,000	0.050	9,000	1,000	0.045	9,000	880	0.035
	30	9,000	1,200	0.045	7,000	800	0.035	7,000	780	0.030	7,000	640	0.025
	40	9,000	1,200	0.035	6,700	780	0.030	6,000	700	0.025	6,000	580	0.020
R1.5	20	10,000	2,200	0.090	8,000	1,300	0.070	7,000	1,200	0.060	7,000	1,100	0.050
	30	9,000	1,800	0.075	7,000	1,050	0.060	6,000	1,000	0.050	6,000	880	0.042
	40	7,500	1,400	0.060	5,000	880	0.050	5,100	800	0.040	5,100	700	0.035
	50	7,500	1,300	0.040	5,000	800	0.030	5,100	750	0.025	5,100	650	0.023
R2	40	6,000	1,200	0.081	3,500	600	0.065	3,200	530	0.050	3,200	500	0.043
	60	4,000	730	0.060	3,000	450	0.045	2,800	400	0.040	2,800	350	0.031
R3	29	9,000	2,100	0.140	7,000	1,050	0.100	6,000	950	0.080	6,000	850	0.058
	49	4,500	1,400	0.070	3,900	700	0.060	3,400	650	0.050	3,400	550	0.040
R4	33	8,900	2,200	0.180	7,000	1,100	0.140	6,000	1,000	0.100	6,000	800	0.082
	52	4,300	1,300	0.090	3,200	650	0.080	2,900	550	0.065	2,900	450	0.040
R5	37	5,500	1,700	0.185	3,500	850	0.160	3,400	700	0.120	3,400	600	0.080
	54	4,000	950	0.089	3,000	480	0.065	2,800	400	0.050	2,800	320	0.032
R6	63	3,800	700	0.120	2,800	350	0.082	2,500	310	0.060	2,500	220	0.045
	85	2,800	320	0.060	1,900	160	0.030	1,500	150	0.015	1,500	100	0.010
Milling Amount	Roughing	Ae≦0.1D			Ae≦0.1D			Ae≦0.08D			Ae≦ 0.06D		
	Finishing	Ae = Vf/n											

Depth of Cut

- Ap : Axial Depth
- Ae : Radial Depth
- D : Outside Diameter
- n : Speed
- Vf : Feed



K SPEED 2TCR

2 Flutes High Speed Taper Neck Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~62)

- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.

2刃 高速加工用 テーパ ネック コーナー ラジウス エンドミル

高硬度鋼(HRC50~62),プレハードン鋼 系列の高精密加工 エンドミル

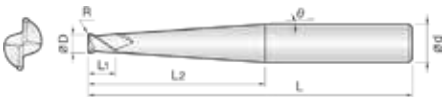
- 有效长をテーパ 設計して深い 溝の作業時 くび部破損 及び振りを最小化しました.
- コーナーR 形状を刃部チッピングが小さくように設計しました.
- 高精密 公差 適用で 超精密 加工に適合します.

2날 고속가공용 테이퍼 넥 코너 레디우스 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀가공 엔드밀

- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부파손 및 떨림을 최소화 하였습니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
2TCR 010 001 0601	1 X R0.1	1°	1	6	50	4
2TCR 010 001 1001	1 X R0.1	1°	1	10	50	4
2TCR 010 001 1501	1 X R0.1	1°	1	15	50	4
2TCR 010 001 2001	1 X R0.1	1°	1	20	60	4
2TCR 010 001 2501	1 X R0.1	1°	1	25	60	4
2TCR 010 001 3001	1 X R0.1	1°	1	30	70	4
2TCR 010 001 3501	1 X R0.1	1°	1	35	75	4
2TCR 010 002 0601	1 X R0.2	1°	1	6	50	4
2TCR 010 002 1001	1 X R0.2	1°	1	10	50	4
2TCR 010 002 1501	1 X R0.2	1°	1	15	50	4
2TCR 010 002 2001	1 X R0.2	1°	1	20	60	4
2TCR 010 002 2501	1 X R0.2	1°	1	25	60	4
2TCR 010 002 3001	1 X R0.2	1°	1	30	70	4
2TCR 010 002 3501	1 X R0.2	1°	1	35	75	4
2TCR 010 003 0601	1 X R0.3	1°	1	6	50	4
2TCR 010 003 1001	1 X R0.3	1°	1	10	50	4
2TCR 010 003 1501	1 X R0.3	1°	1	15	50	4
2TCR 010 003 2001	1 X R0.3	1°	1	20	60	4
2TCR 010 003 2501	1 X R0.3	1°	1	25	60	4
2TCR 010 003 3001	1 X R0.3	1°	1	30	70	4
2TCR 010 003 3501	1 X R0.3	1°	1	35	75	4
2TCR 015 002 1001	1.5 X R0.2	1°	1.5	10	50	4
2TCR 015 002 1501	1.5 X R0.2	1°	1.5	15	50	4
2TCR 015 002 2001	1.5 X R0.2	1°	1.5	20	60	4
2TCR 015 002 2501	1.5 X R0.2	1°	1.5	25	60	4
2TCR 015 002 3001	1.5 X R0.2	1°	1.5	30	70	4
2TCR 015 002 3501	1.5 X R0.2	1°	1.5	35	75	4
2TCR 015 003 1001	1.5 X R0.3	1°	1.5	10	50	4
2TCR 015 003 1501	1.5 X R0.3	1°	1.5	15	50	4
2TCR 015 003 2001	1.5 X R0.3	1°	1.5	20	60	4
2TCR 015 003 2501	1.5 X R0.3	1°	1.5	25	60	4
2TCR 015 003 3001	1.5 X R0.3	1°	1.5	30	70	4
2TCR 015 003 3501	1.5 X R0.3	1°	1.5	35	75	4
2TCR 015 005 1001	1.5 X R0.5	1°	1.5	10	50	4
2TCR 015 005 1501	1.5 X R0.5	1°	1.5	15	50	4
2TCR 015 005 2001	1.5 X R0.5	1°	1.5	20	60	4
2TCR 015 005 2501	1.5 X R0.5	1°	1.5	25	60	4
2TCR 015 005 3001	1.5 X R0.5	1°	1.5	30	70	4
2TCR 015 005 3501	1.5 X R0.5	1°	1.5	35	75	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
2TCR 020 002 1201	2 X R0.2	1°	2	12	50	4
2TCR 020 002 1601	2 X R0.2	1°	2	16	50	4
2TCR 020 002 2001	2 X R0.2	1°	2	20	60	4
2TCR 020 002 2501	2 X R0.2	1°	2	25	60	4
2TCR 020 002 3001	2 X R0.2	1°	2	30	70	4
2TCR 020 002 3501	2 X R0.2	1°	2	35	75	4
2TCR 020 002 4001	2 X R0.2	1°	2	40	80	4
2TCR 020 002 5001	2 X R0.2	1°	2	50	90	4
2TCR 020 003 1201	2 X R0.3	1°	2	12	50	4
2TCR 020 003 1601	2 X R0.3	1°	2	16	50	4
2TCR 020 003 2001	2 X R0.3	1°	2	20	60	4
2TCR 020 003 2501	2 X R0.3	1°	2	25	60	4
2TCR 020 003 3001	2 X R0.3	1°	2	30	70	4
2TCR 020 003 3501	2 X R0.3	1°	2	35	75	4
2TCR 020 003 4001	2 X R0.3	1°	2	40	80	4
2TCR 020 003 5001	2 X R0.3	1°	2	50	90	4
2TCR 020 005 1201	2 X R0.5	1°	2	12	50	4
2TCR 020 005 1601	2 X R0.5	1°	2	16	50	4
2TCR 020 005 2001	2 X R0.5	1°	2	20	60	4
2TCR 020 005 2501	2 X R0.5	1°	2	25	60	4
2TCR 020 005 3001	2 X R0.5	1°	2	30	70	4
2TCR 020 005 3501	2 X R0.5	1°	2	35	75	4
2TCR 020 005 4001	2 X R0.5	1°	2	40	80	4
2TCR 020 005 5001	2 X R0.5	1°	2	50	90	4
2TCR 030 002 2001	3 X R0.2	1°	3	20	60	6
2TCR 030 002 3001	3 X R0.2	1°	3	30	70	6
2TCR 030 002 4001	3 X R0.2	1°	3	40	80	6
2TCR 030 002 5001	3 X R0.2	1°	3	50	90	6
2TCR 030 002 6001	3 X R0.2	1°	3	60	100	6
2TCR 030 003 2001	3 X R0.3	1°	3	20	60	6
2TCR 030 003 3001	3 X R0.3	1°	3	30	70	6
2TCR 030 003 4001	3 X R0.3	1°	3	40	80	6
2TCR 030 003 5001	3 X R0.3	1°	3	50	90	6
2TCR 030 003 6001	3 X R0.3	1°	3	60	100	6
2TCR 030 005 2001	3 X R0.5	1°	3	20	60	6
2TCR 030 005 3001	3 X R0.5	1°	3	30	70	6
2TCR 030 005 4001	3 X R0.5	1°	3	40	80	6
2TCR 030 005 5001	3 X R0.5	1°	3	50	90	6
2TCR 030 005 6001	3 X R0.5	1°	3	60	100	6

K SPEED 2TCR

單位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
2TCR 030 010 2001	3 X R1	1°	3	20	60	6
2TCR 030 010 3001	3 X R1	1°	3	30	70	6
2TCR 030 010 4001	3 X R1	1°	3	40	80	6
2TCR 030 010 5001	3 X R1	1°	3	50	90	6
2TCR 030 010 6001	3 X R1	1°	3	60	100	6
2TCR 040 002 2001	4 X R0.2	1°	4	20	60	6
2TCR 040 002 3001	4 X R0.2	1°	4	30	70	6
2TCR 040 002 4001	4 X R0.2	1°	4	40	80	6
2TCR 040 002 5001	4 X R0.2	1°	4	50	90	6
2TCR 040 002 6001	4 X R0.2	1°	4	60	100	6
2TCR 040 003 2001	4 X R0.3	1°	4	20	60	6
2TCR 040 003 3001	4 X R0.3	1°	4	30	70	6
2TCR 040 003 4001	4 X R0.3	1°	4	40	80	6

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
2TCR 040 003 5001	4 X R0.3	1°	4	50	90	6
2TCR 040 003 6001	4 X R0.3	1°	4	60	100	6
2TCR 040 005 2001	4 X R0.5	1°	4	20	60	6
2TCR 040 005 3001	4 X R0.5	1°	4	30	70	6
2TCR 040 005 4001	4 X R0.5	1°	4	40	80	6
2TCR 040 005 5001	4 X R0.5	1°	4	50	90	6
2TCR 040 005 6001	4 X R0.5	1°	4	60	100	6
2TCR 040 010 2001	4 X R1	1°	4	20	60	6
2TCR 040 010 3001	4 X R1	1°	4	30	70	6
2TCR 040 010 4001	4 X R1	1°	4	40	80	6
2TCR 040 010 5001	4 X R1	1°	4	50	90	6
2TCR 040 010 6001	4 X R1	1°	4	60	100	6

2TCR/4TCR

■ Apply 20% up values of below condition for 4TCR
■ 4TCRは下記数値の 20% Up 適用
■ 4TCR的值适用于下面的20%升高

• RPM : rev./min • Feed : mm/min

Material				Carbon Steels / Prehardened Steels S50C / NAK55 / NAK80 / HPM-1				Hardened Steels SKD11 / SKD61 / STAVAX / HPM-38				Copper / Aluminum			
Hardness				~ 43HRC				~ 55HRC							
Outside Diameter	Radius	Taper Angle	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
1mm	R0.1 R0.2 R0.3	1°	6	22,000	1,300	0.08	0.35	17,000	900	0.06	0.35	22,000	1,500	0.24	0.50
			10	18,000	1,000	0.05	0.35	14,000	700	0.05	0.35	18,000	1,200	0.15	0.50
			15	18,000	850	0.03	0.20	14,000	600	0.03	0.13	18,000	1,000	0.09	0.50
			20	14,000	700	0.03	0.10	11,000	500	0.03	0.06	14,000	850	0.08	0.30
			25	14,000	600	0.02	0.05	11,000	400	0.02	0.03	14,000	700	0.06	0.15
			30	10,000	480	0.02	0.03	8,000	300	0.02	0.02	10,000	600	0.05	0.09
			35	10,000	350	0.01	0.02	8,000	250	0.01	0.01	10,000	400	0.03	0.06
1.5mm	R0.2 R0.3 R0.5	1°	10	16,000	1,300	0.10	0.55	12,800	900	0.10	0.55	16,000	1,500	0.30	0.60
			15	14,000	1,000	0.07	0.55	12,800	700	0.07	0.55	14,000	1,200	0.20	0.60
			20	14,000	800	0.05	0.30	11,200	550	0.05	0.20	14,000	900	0.16	0.50
			25	14,000	600	0.03	0.10	11,200	400	0.03	0.06	14,000	700	0.10	0.30
			30	12,000	450	0.03	0.05	9,600	300	0.03	0.03	12,000	550	0.09	0.15
2mm	R0.2 R0.3 R0.5	1°	15	14,000	1,200	0.10	0.70	11,200	850	0.07	0.70	14,000	1,400	0.30	0.70
			20	12,000	1,200	0.07	0.70	9,600	850	0.07	0.70	12,000	1,400	0.20	0.70
			25	12,000	1,000	0.05	0.50	9,600	700	0.04	0.50	12,000	1,200	0.15	0.70
			30	10,000	750	0.04	0.30	8,000	500	0.03	0.30	10,000	900	0.13	0.70
			40	8,000	400	0.03	0.20	6,400	300	0.02	0.20	8,000	500	0.10	0.50
			50	6,000	350	0.02	0.10	4,800	250	0.01	0.10	6,000	400	0.05	0.30
3mm	R0.2 R0.3 R0.5 R1	1°	15	11,000	1,600	0.15	1.05	8,800	1100	0.10	1.05	11,000	1,900	0.60	1.10
			20	11,000	1,600	0.13	1.05	8,800	1100	0.10	1.05	11,000	1,900	0.45	1.10
			30	9,000	1,200	0.10	1.05	7,200	850	0.07	1.05	9,000	1,400	0.30	1.10
			40	9,000	1,000	0.07	0.60	7,200	700	0.05	0.60	9,000	1,200	0.21	0.90
			50	8,000	640	0.05	0.35	6,400	450	0.04	0.35	8,000	750	0.15	0.80
			60	8,000	480	0.03	0.20	6,400	300	0.02	0.20	8,000	550	0.10	0.70
4mm	R0.2 R0.3 R0.5 R1	1°	20	10,000	1,800	0.18	2.00	7,500	1200	0.20	2.00	10,000	2,000	0.90	2.00
			30	8,000	1,400	0.15	2.00	6,500	1000	0.14	2.00	8,000	1,600	0.60	2.00
			40	8,000	1,200	0.12	1.20	5,800	850	0.10	1.20	8,000	1,400	0.40	1.60
			50	7,000	800	0.10	0.70	4,800	600	0.08	0.70	7,000	1,000	0.30	1.20
			60	7,000	600	0.80	0.40	4,800	400	0.04	0.40	7,000	800	0.20	0.80

K SPEED 4TCR

4 Flutes High Speed Taper Neck Corner Radius Endmills

Endmills for pre-hardened and hardened steel (HRC50~65)

- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.

4刃 高速加工用 テーパ ネック コーナー ラジウス エンドミル

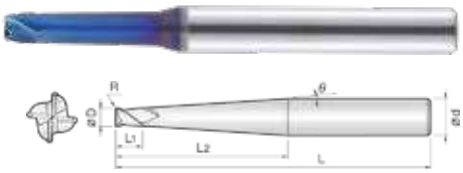
高硬度鋼(HRC50~65),プレハードン鋼 系列の高精密加工 エンドミル

- 有效长をテーパ 設計して深い 溝の作業時 くび部破損 及び振りを最小化しました.
- コーナーR 形状を刃部チッピングが小さくように設計しました.
- 高精密 公差 適用で 超精密 加工に適合します.

4날 고속가공용 테이퍼 넥 코너 레디우스 엔드밀

고경도강(HRC50~65), 프리하든강 계열의 고정밀가공 엔드밀

- 유효장을 테이퍼 설계하여 깊은 홈 작업시 목부파손 및 떨림을 최소화 하였습니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.



Size	D Tolerance
D≦ Ø6	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
4TCR 010 001 0601	1XR0.1	1°	1	6	50	4
4TCR 010 001 1001	1XR0.1	1°	1	10	50	4
4TCR 010 001 1501	1XR0.1	1°	1	15	50	4
4TCR 010 001 2001	1XR0.1	1°	1	20	60	4
4TCR 010 001 2501	1XR0.1	1°	1	25	60	4
4TCR 010 001 3001	1XR0.1	1°	1	30	70	4
4TCR 010 001 3501	1XR0.1	1°	1	35	75	4
4TCR 010 002 0601	1XR0.2	1°	1	6	50	4
4TCR 010 002 1001	1XR0.2	1°	1	10	50	4
4TCR 010 002 1501	1XR0.2	1°	1	15	50	4
4TCR 010 002 2001	1XR0.2	1°	1	20	60	4
4TCR 010 002 2501	1XR0.2	1°	1	25	60	4
4TCR 010 002 3001	1XR0.2	1°	1	30	70	4
4TCR 010 002 3501	1XR0.2	1°	1	35	75	4
4TCR 015 002 1001	1.5XR0.2	1°	1.5	10	50	4
4TCR 015 002 1501	1.5XR0.2	1°	1.5	15	50	4
4TCR 015 002 2001	1.5XR0.2	1°	1.5	20	60	4
4TCR 015 002 2501	1.5XR0.2	1°	1.5	25	60	4
4TCR 015 002 3001	1.5XR0.2	1°	1.5	30	70	4
4TCR 015 002 3501	1.5XR0.2	1°	1.5	35	75	4
4TCR 015 005 1001	1.5XR0.5	1°	1.5	10	50	4
4TCR 015 005 1501	1.5XR0.5	1°	1.5	15	50	4
4TCR 015 005 2001	1.5XR0.5	1°	1.5	20	60	4
4TCR 015 005 2501	1.5XR0.5	1°	1.5	25	60	4
4TCR 015 005 3001	1.5XR0.5	1°	1.5	30	70	4
4TCR 015 005 3501	1.5XR0.5	1°	1.5	35	75	4
4TCR 020 002 1201	2XR0.2	1°	2	12	50	4
4TCR 020 002 1601	2XR0.2	1°	2	16	50	4
4TCR 020 002 2001	2XR0.2	1°	2	20	60	4
4TCR 020 002 2501	2XR0.2	1°	2	25	60	4
4TCR 020 002 3001	2XR0.2	1°	2	30	70	4
4TCR 020 002 3501	2XR0.2	1°	2	35	75	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	θ	L1	L2	L	d
4TCR 020 002 4001	2XR0.2	1°	2	40	80	4
4TCR 020 002 5001	2XR0.2	1°	2	50	90	4
4TCR 020 005 1201	2XR0.5	1°	2	12	50	4
4TCR 020 005 1601	2XR0.5	1°	2	16	50	4
4TCR 020 005 2001	2XR0.5	1°	2	20	60	4
4TCR 020 005 2501	2XR0.5	1°	2	25	60	4
4TCR 020 005 3001	2XR0.5	1°	2	30	70	4
4TCR 020 005 3501	2XR0.5	1°	2	35	75	4
4TCR 020 005 4001	2XR0.5	1°	2	40	80	4
4TCR 020 005 5001	2XR0.5	1°	2	50	90	4
4TCR 030 002 2001	3XR0.2	1°	3	20	60	6
4TCR 030 002 3001	3XR0.2	1°	3	30	70	6
4TCR 030 002 4001	3XR0.2	1°	3	40	80	6
4TCR 030 002 5001	3XR0.2	1°	3	50	90	6
4TCR 030 002 6001	3XR0.2	1°	3	60	100	6
4TCR 030 005 2001	3XR0.5	1°	3	20	60	6
4TCR 030 005 3001	3XR0.5	1°	3	30	70	6
4TCR 030 005 4001	3XR0.5	1°	3	40	80	6
4TCR 030 005 5001	3XR0.5	1°	3	50	90	6
4TCR 030 005 6001	3XR0.5	1°	3	60	100	6
4TCR 040 002 2001	4XR0.2	1°	4	20	60	6
4TCR 040 002 3001	4XR0.2	1°	4	30	70	6
4TCR 040 002 4001	4XR0.2	1°	4	40	80	6
4TCR 040 002 5001	4XR0.2	1°	4	50	90	6
4TCR 040 002 6001	4XR0.2	1°	4	60	100	6
4TCR 040 005 2001	4XR0.5	1°	4	20	60	6
4TCR 040 005 3001	4XR0.5	1°	4	30	70	6
4TCR 040 005 4001	4XR0.5	1°	4	40	80	6
4TCR 040 005 5001	4XR0.5	1°	4	50	90	6
4TCR 040 005 6001	4XR0.5	1°	4	60	100	6

K SPEED 2DPH

2 Flutes Spherical Endmills for 3D Cut 230°

Endmills for pre-hardened and hardened steel (HRC50~62)

- 230°degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.

2刃 5軸 3D 230度 加工用 球形 エンドミル

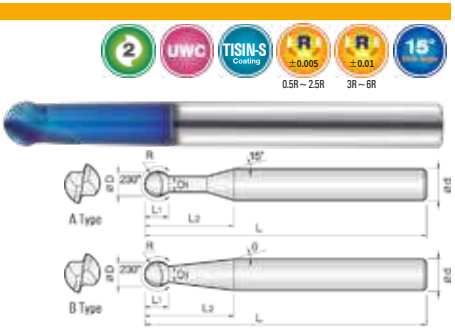
高硬度鋼(HRC50~62),プレハードン鋼系列の高精密加工 エンドミル

- 230度 球形の刃先で 広範囲な 3D 加工が可能です.
- 有效长を直線 及び テーパ 設計して多様な状況に合わせましてくび部破損 及び 振りを最小化しました.

2날 5축 3D 230도 가공용 구형 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀가공 엔드밀

- 230도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유효장을 직선 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파손 및 떨림을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R×D	D1	L1	L2	θ	L		d
2DPH 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
2DPH 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
2DPH 010 013 200	0.5R X 1	0.91	0.7	20	1°30	80	B	6
2DPH 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
2DPH 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
2DPH 015 013 200	0.75R X 1.5	1.36	1	20	1°30	80	B	6
2DPH 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
2DPH 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
2DPH 020 013 200	1R X 2	1.8	1.4	20	1°30	80	B	6
2DPH 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
2DPH 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
2DPH 030 013 300	1.5R X 3	2.7	2.1	30	1°30	80	B	6
2DPH 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
2DPH 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
2DPH 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
2DPH 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
2DPH 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
2DPH 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
2DPH 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
2DPH 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
2DPH 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
2DPH 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

2DPH/4DPH/4DPM

■ Apply 20% up values of below condition for 4DPH/4DPM
■ 4DPH/4DPMは下記数値の 20% Up 適用
■ 4DPH/4DPMは 아래 수치의 20% Up 적용

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels / Tool Steels SCM / SKT / SKS / SKD		Hardened Steels /Prehardened Steels SKT / SKD / NAK55 / HPM11		Stainless Steels /Hardened Steels SUS304 / SKD		Hardened Steels		Hardened Steels	
Hardness	~ 30HRC		30 ~ 38HRC		38 ~ 45HRC		45 ~ 55HRC		55 ~ 60HRC	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.5	25,600	680	25,600	680	25,600	680	25,600	680	25,600	610
R0.75	22,000	850	22,000	850	22,000	850	22,000	850	22,000	750
R1	19,200	1,080	19,200	1,080	19,200	1,080	19,200	1,080	17,600	960
R2	12,400	1,440	11,200	1,240	10,800	1,160	10,000	1,080	8,800	920
R3	8,400	1,480	7,600	1,360	7,200	1,280	6,800	1,200	5,900	1,040
R4	6,400	1,120	5,700	1,000	5,500	960	5,100	880	4,400	790
R5	5,100	880	4,600	800	4,400	784	4,000	720	3,600	640
R6	4,800	840	3,800	670	3,640	640	3,400	600	3,000	540

Depth of Cut

Ap	Pf
0.05D	0.1D



Ap	Pf
0.02D	0.1D

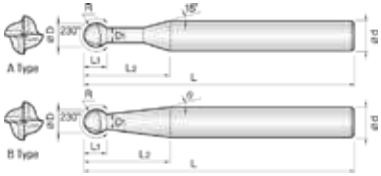
K SPEED 4DPH

4 Flutes Spherical Endmills for 3D Cut 230°

Endmills for pre-hardened and hardened steel (HRC50~65)

- 230°degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.





4刃 5軸 3D 230度 加工用 球形 エンドミル

高硬度鋼(HRC50~65),プレハードン鋼系列の高精密加工 エンドミル

- 230度 球形の刃先で 広範囲な 3D 加工が可能です.
- 有效长を直線 及び テーパ 設計して多様な状況に合わせましてくび部破損 及び 振りを最小化しました.

4날 5축 3D 230도 가공용 구형 엔드밀

고경도강(HRC50~65), 프리하든강 계열의 고정밀가공 엔드밀

- 230도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유효장을 직선 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파손 및 떨림을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R×D	D1	L1	L2	θ	L		d
4DPH 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
4DPH 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
4DPH 010 013 200	0.5R X 1	0.91	0.7	20	1°30	80	B	6
4DPH 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
4DPH 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
4DPH 015 013 200	0.75R X 1.5	1.36	1	20	1°30	80	B	6
4DPH 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
4DPH 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
4DPH 020 013 200	1R X 2	1.8	1.4	20	1°30	80	B	6
4DPH 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
4DPH 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
4DPH 030 013 300	1.5R X 3	2.7	2.1	30	1°30	80	B	6
4DPH 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
4DPH 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
4DPH 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
4DPH 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
4DPH 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
4DPH 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
4DPH 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
4DPH 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
4DPH 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
4DPH 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

K SPEED 4DPM

4 Flutes Spherical Endmills for 3D Cut 270°

Endmills for pre-hardened and hardened steel (HRC50~62)

- 270° ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.

4刃 5軸 3D 270度 加工用 球形 エンドミル

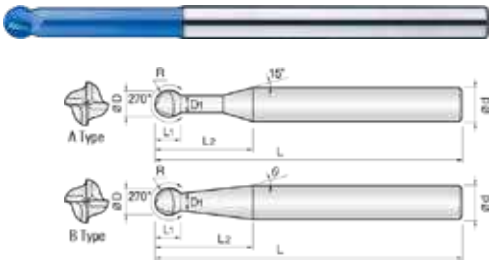
高硬度鋼(HRC50~62),プレハードン鋼系列の高精密加工 エンドミル

- 270度 球形の刃先で 広範囲な 3D 加工が可能です.
- 有効長を直線 及び テーパ 設計して多様な状況に合わせましてくび部破損 及び 振りを最小化しました.

4날 5축 3D 270도 가공용 구형 엔드밀

고경도강(HRC50~62), 프리하든강 계열의 고정밀가공 엔드밀

- 270도 구형의 인선으로 광범위한 3D 가공이 가능합니다.
- 유효장을 직선 및 테이퍼 설계하여 다양한 상황에 맞춰 목부파손 및 떨림을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R×D	D1	L1	L2	θ	L		d
4DPM 010 040 S06	0.5R X 1	0.7	0.8	4	0°	60	A	6
4DPM 010 060 S06	0.5R X 1	0.7	0.8	6	0°	60	A	6
4DPM 010 013 200	0.5R X 1	0.7	0.8	20	1°30	80	B	6
4DPM 015 060 S06	0.75R X 1.5	1	1.2	6	0°	60	A	6
4DPM 015 080 S06	0.75R X 1.5	1	1.2	8	0°	60	A	6
4DPM 015 013 200	0.75R X 1.5	1	1.2	20	1°30	80	B	6
4DPM 020 060 S06	1R X 2	1.4	1.7	6	0°	60	A	6
4DPM 020 100 S06	1R X 2	1.4	1.7	10	0°	60	A	6
4DPM 020 013 200	1R X 2	1.4	1.7	20	1°30	80	B	6
4DPM 030 100 S06	1.5R X 3	2.1	2.5	10	0°	70	A	6
4DPM 030 150 S06	1.5R X 3	2.1	2.5	15	0°	70	A	6
4DPM 030 013 300	1.5R X 3	2.1	2.5	30	1°30	80	B	6
4DPM 040 120 S06	2R X 4	2.8	3.4	12	0°	70	A	6
4DPM 040 200 S06	2R X 4	2.8	3.4	20	0°	70	A	6
4DPM 040 030 250	2R X 4	2.8	3.4	25	3°	80	B	6
4DPM 050 010 400	2.5R X 5	3.5	4.2	40	1°	90	B	6
4DPM 060 150 S06	3R X 6	4.2	5.1	15	0°	90	A	6
4DPM 060 300 S06	3R X 6	4.2	5.1	30	0°	90	A	6
4DPM 060 010 210	3R X 6	4.2	5.1	21	1°	100	B	6
4DPM 080 010 280	4R X 8	5.6	6.8	28	1°	100	B	8
4DPM 100 010 350	5R X 10	7	8.5	35	1°	110	B	10
4DPM 120 010 420	6R X 12	8.5	10	42	1°	120	B	12

K SPEED 3&4SRM



3&4 Flutes Roughing Endmills

Roughing Endmills for tool steel, alloy steel

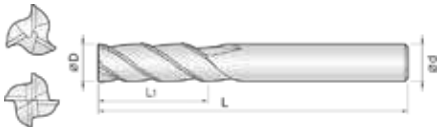
- Reduce machining time by excellent chip control.
- Maximize work efficiency by high speed machining.



3&4刃 ラッピング エンドミル

工具鋼, 合金鋼 及び 高硬度 一般鋼 粗削り加工 エンドミル

- 優れた チップ排出力で 加工時間を 短縮します.
- 高速加工で作業の効率性を極大化します.



3&4날 라핑 엔드밀

공구강, 합금강 및 고경도 일반강 황삭가공 엔드밀

- 뛰어난 칩배출력으로 가공시간을 단축하였습니다.
- 고속가공으로 작업의 효율성을 극대화합니다.

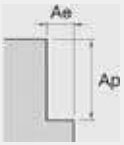
Size	D Tolerance
D ≦ Ø9	-0.01~ -0.03mm
D > Ø9	-0.01~ -0.04mm

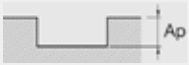
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3SRM 040 100 S06	4	10	50	6
3SRM 050 130 S06	5	13	50	6
3SRM 060 100 050	6	10	50	6
3SRM 060 150 055	6	15	55	6
3SRM 060 200 060	6	20	60	6
3SRM 070 180 S08	7	18	65	8
3SRM 080 120 060	8	12	60	8
3SRM 080 190 065	8	19	65	8
3SRM 080 250 070	8	25	70	8
4SRM 090 220 S10	9	22	70	10
4SRM 100 150 070	10	15	70	10
4SRM 100 220 070	10	22	70	10
4SRM 100 300 080	10	30	80	10
4SRM 110 270 S12	11	27	80	12
4SRM 120 200 075	12	20	75	12
4SRM 120 260 080	12	26	80	12
4SRM 120 350 090	12	35	90	12
4SRM 160 320 090	16	32	90	16
4SRM 160 400 100	16	40	100	16
4SRM 200 380 110	20	38	110	20
4SRM 200 500 110	20	50	110	20

3&4SRM

• RPM : rev./min • Feed : mm/min

Side Cutting								
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD	
Hardness	~750N/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	4,200	510	3,600	290	2,800	220	2,100	170
8mm	3,200	510	2,700	330	2,100	250	1,600	190
10mm	2,600	510	2,200	345	1,600	260	1,300	210
12mm	2,100	510	1,800	360	1,400	270	1,100	215
16mm	1,600	510	1,400	385	1,000	290	800	220
20mm	1,300	480	1,100	375	800	280	640	210
Depth of Cut	Ap: 1.5D, Ae: 0.4D 				Ap: 1.5D, Ae: 0.3D			

Slotting								
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD	
Hardness	~750N/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	3,600	430	3,000	240	2,300	185	1,920	150
8mm	2,700	430	2,200	270	1,800	210	1,440	180
10mm	2,200	430	1,800	290	1,400	220	1,160	185
12mm	1,800	430	1,500	300	1,200	230	960	190
16mm	1,400	430	1,100	310	900	250	720	200
20mm	1,100	410	900	310	700	240	560	185
Depth of Cut	Ap: 0.75D ApMax = 12mm 				Ap: 0.5D			

K SPEED 3&4HRM



3&4 Flutes 45° Helix Fine Pitch Roughing Endmills

Roughing Endmills for hard to cut materials, alloy steel, SUS, Inconel and structural steel

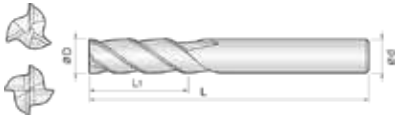
- Long tool life with low cutting force by 45° helix design.
- Fine pitch shape design for high speed roughing application.



3&4刃 45° ヘリックス パインピッチ型 ラッピング エンドミル

合金鋼, SUS系列, インコネル,一般構造鋼など 多様な 難削材の粗削り加工

- 45° ヘリックス 適用で 切削 抵抗が減少され長時間加工に適合します.
- パインピッチ 形状 採択で 高速, 粗削り加工作業に適合します.



3&4날 45° 헬릭스 파인피치형 라핑 엔드밀

합금강, SUS계열, 인코넬, 일반구조강 등 다양한 난삭재의 황삭가공

- 45° 헬릭스 적용으로 절삭 저항이 감소되어 장시간 가공에 적합합니다.
- 파인피치 형상 채택으로 고속, 황삭가공 작업에 적합합니다.

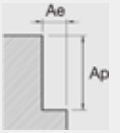
Size	D Tolerance
D ≦ Ø9	-0.01~ -0.03mm
D > Ø9	-0.01~ -0.04mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3HRM 040 100 S06	4	10	50	6
3HRM 050 130 S06	5	13	50	6
3HRM 060 100 050	6	10	50	6
3HRM 060 160 055	6	16	55	6
3HRM 060 200 060	6	20	60	6
3HRM 070 180 S08	7	18	65	8
3HRM 080 120 060	8	12	60	8
3HRM 080 190 065	8	19	65	8
3HRM 080 250 070	8	25	70	8
3HRM 080 300 075	8	30	75	8
4HRM 090 220 S10	9	22	70	10
4HRM 100 150 070	10	15	70	10
4HRM 100 220 070	10	22	70	10
4HRM 100 300 080	10	30	80	10
4HRM 100 400 090	10	40	90	10
4HRM 110 270 S12	11	27	80	12
4HRM 120 200 075	12	20	75	12
4HRM 120 250 080	12	25	80	12
4HRM 120 350 090	12	35	90	12
4HRM 120 500 100	12	50	100	12
4HRM 160 320 090	16	32	90	16
4HRM 160 400 110	16	40	110	16
4HRM 200 380 110	20	38	110	20
4HRM 200 500 120	20	50	120	20

3&4HRM

• RPM : rev./min • Feed : mm/min

Side Cutting								
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD	
Hardness	~750N/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
4mm	5,800	600	4,800	300	4,100	200	3,200	150
5mm	5,800	600	4,800	310	3,700	230	2,800	170
6mm	4,800	600	4,200	330	3,200	250	2,400	200
8mm	3,700	600	3,100	380	2,400	290	1,800	220
10mm	3,000	600	2,500	400	1,800	300	1,500	250
12mm	2,400	600	2,100	410	1,600	310	1,300	250
16mm	1,850	600	1,600	440	1,200	330	1,000	250
20mm	1,500	550	1,300	430	900	320	750	240
Depth of Cut	Ap: 1.5D, Ae: 0.4D 						Ap: 1.5D, Ae: 0.3D	

Slotting								
Material	Mild Steels/Carbon Steels SS400/S55C		Alloy Steels/Tool Steels SCM/SKT/SKD		Tool Steels/Prehardened Steels SKD/SKT/NAK55/HPM1		Tool Steels/Stainless Steels SUS304/SKD	
Hardness	~750N/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
4mm	4,600	500	4,400	230	3,200	160	2,800	130
5mm	4,600	500	4,000	250	2,900	180	2,500	150
6mm	4,100	500	3,500	280	2,700	210	2,200	170
8mm	3,100	500	2,500	310	2,100	240	1,700	210
10mm	2,500	500	2,100	330	1,600	250	1,300	210
12mm	2,100	500	1,700	350	1,400	270	1,100	220
16mm	1,600	500	1,300	360	1,000	290	800	230
20mm	1,300	480	1,000	360	800	270	650	210
Depth of Cut	Ap: 0.75D ApMax = 12mm 						Ap: 0.5D	

K COPPER — 2HOB

2 Flutes 45° Helix Rib Ball Endmills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials

- Improve wear resistance as well as avoid edge stress in various applications.
- High speed, feed applicable by 45° helix and deep chip pocket design.

2刃45°ヘリックス 銅加工専用 リブ ボール エンドミル

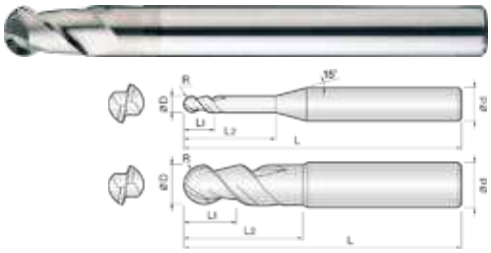
銅 及び 銅合金,アルミニウム 合金, 非鉄合金 加工用 エンドミル

- 多様な 被削材 加工時 刃先にストレスが小さくて, 被削材の面粗さが向上されます.
- 45°ヘリックス 形状と深いポケットに設計して チップ排出が優れて, 高速,高移送 加工に適合します.

2날 45° 헬릭스 동가공 전용 리브 볼 엔드밀

동 및 동합금, 알루미늄 합금, 비철합금 가공용 엔드밀

- 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 피삭재의 면조도가 향상됩니다.
- 45°헬릭스 형상과 깊은 포켓으로 설계하여 칩배출이 우수하며, 고속,고이송 가공에 적합합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2HOB 005 010 S04	0.25RX0.5	0.7	1	45	4
2HOB 005 020 S04	0.25RX0.5	0.7	2	45	4
2HOB 005 030 S04	0.25RX0.5	0.7	3	45	4
2HOB 005 040 S04	0.25RX0.5	0.7	4	45	4
2HOB 005 050 S04	0.25RX0.5	0.7	5	45	4
2HOB 005 060 S04	0.25RX0.5	0.7	6	45	4
2HOB 006 020 S04	0.3RX0.6	0.9	2	45	4
2HOB 006 030 S04	0.3RX0.6	0.9	3	45	4
2HOB 006 040 S04	0.3RX0.6	0.9	4	45	4
2HOB 006 050 S04	0.3RX0.6	0.9	5	45	4
2HOB 006 060 S04	0.3RX0.6	0.9	6	45	4
2HOB 006 080 S04	0.3RX0.6	0.9	8	45	4
2HOB 006 100 S04	0.3RX0.6	0.9	10	45	4
2HOB 008 020 S04	0.4RX0.8	1.2	2	45	4
2HOB 008 030 S04	0.4RX0.8	1.2	3	45	4
2HOB 008 040 S04	0.4RX0.8	1.2	4	45	4
2HOB 008 060 S04	0.4RX0.8	1.2	6	45	4
2HOB 008 080 S04	0.4RX0.8	1.2	8	45	4
2HOB 008 100 S04	0.4RX0.8	1.2	10	45	4
2HOB 008 120 S04	0.4RX0.8	1.2	12	45	4
2HOB 010 030 S04	0.5RX1	1.5	3	50	4
2HOB 010 050 S04	0.5RX1	1.5	5	50	4
2HOB 010 080 S04	0.5RX1	1.5	8	50	4
2HOB 010 100 S04	0.5RX1	1.5	10	50	4
2HOB 010 120 S04	0.5RX1	1.5	12	50	4
2HOB 010 160 S04	0.5RX1	1.5	16	50	4
2HOB 010 200 S04	0.5RX1	1.5	20	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2HOB 012 030 S04	0.6RX1.2	1.8	3	50	4
2HOB 012 040 S04	0.6RX1.2	1.8	4	50	4
2HOB 012 060 S04	0.6RX1.2	1.8	6	50	4
2HOB 012 080 S04	0.6RX1.2	1.8	8	50	4
2HOB 012 100 S04	0.6RX1.2	1.8	10	50	4
2HOB 012 120 S04	0.6RX1.2	1.8	12	50	4
2HOB 015 050 S04	0.75RX1.5	2	5	50	4
2HOB 015 080 S04	0.75RX1.5	2	8	50	4
2HOB 015 100 S04	0.75RX1.5	2	10	50	4
2HOB 015 120 S04	0.75RX1.5	2	12	50	4
2HOB 015 160 S04	0.75RX1.5	2	16	50	4
2HOB 015 200 S04	0.75RX1.5	2	20	50	4
2HOB 020 050 S06	1RX2	3	5	50	6
2HOB 020 080 S06	1RX2	3	8	50	6
2HOB 020 100 S06	1RX2	3	10	50	6
2HOB 020 120 S06	1RX2	3	12	60	6
2HOB 020 160 S06	1RX2	3	16	60	6
2HOB 020 200 S06	1RX2	3	20	60	6
2HOB 020 250 S06	1RX2	3	25	65	6
2HOB 025 060 S06	1.25RX2.5	4	6	50	6
2HOB 025 100 S06	1.25RX2.5	4	10	50	6
2HOB 025 120 S06	1.25RX2.5	4	12	60	6
2HOB 025 160 S06	1.25R X 2.5	4	16	60	6
2HOB 025 200 S06	1.25R X 2.5	4	20	60	6
2HOB 030 080 S06	1.5R X 3	4.5	8	60	6
2HOB 030 120 S06	1.5R X 3	4.5	12	60	6
2HOB 030 160 S06	1.5R X 3	4.5	16	60	6

K COPPER 2HOB



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2HOB 030 200 S06	1.5R X 3	4.5	20	60	6
2HOB 030 250 S06	1.5R X 3	4.5	25	70	6
2HOB 030 300 S06	1.5R X 3	4.5	30	70	6
2HOB 030 400 S06	1.5R X 3	4.5	40	80	6
2HOB 040 100 S06	2R X 4	6	10	60	6
2HOB 040 160 S06	2R X 4	6	16	60	6
2HOB 040 200 S06	2R X 4	6	20	60	6
2HOB 040 250 S06	2R X 4	6	25	70	6
2HOB 040 300 S06	2R X 4	6	30	70	6
2HOB 040 400 S06	2R X 4	6	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2HOB 050 160 S06	2.5R X 5	8	16	80	6
2HOB 050 200 S06	2.5R X 5	8	20	80	6
2HOB 050 250 S06	2.5R X 5	8	25	80	6
2HOB 060 150 S06	3R X 6	9	15	90	6
2HOB 060 300 S06	3R X 6	9	30	90	6
2HOB 060 400 S06	3R X 6	9	40	90	6
2HOB 080 200 S08	4R X 8	12	20	100	8
2HOB 100 250 S10	5R X 10	15	25	100	10
2HOB 120 300 S12	6R X 12	18	30	110	12
2HOB 160 600 S16	8R X 16	30	60	160	16

K COPPER

20CR

2 Flutes Rib Corner Radius Endmills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials

- Improve wear resistance as well as avoid edge stress in various applications.
- Smooth chip outflow by deep chip pocket.

2刃 銅加工用 リブ コーナー ラジウス エンドミル

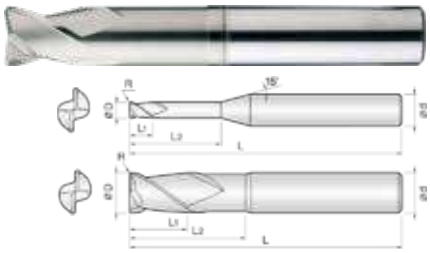
銅 及び 銅合金,アルミニウム 合金,非鉄合金 加工用エンドミル

- 多様な 被削材 加工時 刃先部に ストレスが小さくて, 被削材の面粗さが向上されます.
- 深い ポケットに設計してチップ排出が円滑します.

2날 동가공용 리브 코너 레디우스 엔드밀

동 및 동합금, 알루미늄 합금, 비철합금 가공용 엔드밀

- 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 피삭재의 면조도가 향상됩니다.
- 깊은 포켓으로 설계하여 칩배출이 원활합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
20CR 010 001 040	1 X R0.1	1.5	4	50	4
20CR 010 001 060	1 X R0.1	1.5	6	50	4
20CR 010 001 080	1 X R0.1	1.5	8	50	4
20CR 010 001 100	1 X R0.1	1.5	10	50	4
20CR 010 001 120	1 X R0.1	1.5	12	50	4
20CR 010 001 160	1 X R0.1	1.5	16	50	4
20CR 010 001 200	1 X R0.1	1.5	20	50	4
20CR 010 002 040	1 X R0.2	1.5	4	50	4
20CR 010 002 060	1 X R0.2	1.5	6	50	4
20CR 010 002 080	1 X R0.2	1.5	8	50	4
20CR 010 002 100	1 X R0.2	1.5	10	50	4
20CR 010 002 120	1 X R0.2	1.5	12	50	4
20CR 010 002 160	1 X R0.2	1.5	16	50	4
20CR 010 002 200	1 X R0.2	1.5	20	50	4
20CR 010 003 040	1 X R0.3	1.5	4	50	4
20CR 010 003 060	1 X R0.3	1.5	6	50	4
20CR 010 003 080	1 X R0.3	1.5	8	50	4
20CR 010 003 100	1 X R0.3	1.5	10	50	4
20CR 010 003 120	1 X R0.3	1.5	12	50	4
20CR 010 003 160	1 X R0.3	1.5	16	50	4
20CR 010 003 200	1 X R0.3	1.5	20	50	4
20CR 015 001 060	1.5 X R0.1	2	6	50	4
20CR 015 001 100	1.5 X R0.1	2	10	50	4
20CR 015 001 120	1.5 X R0.1	2	12	50	4
20CR 015 001 160	1.5 X R0.1	2	16	50	4
20CR 015 001 200	1.5 X R0.1	2	20	50	4
20CR 015 001 250	1.5 X R0.1	2	25	60	4
20CR 015 002 060	1.5 X R0.2	2	6	50	4
20CR 015 002 100	1.5 X R0.2	2	10	50	4
20CR 015 002 120	1.5 X R0.2	2	12	50	4
20CR 015 002 160	1.5 X R0.2	2	16	50	4
20CR 015 002 200	1.5 X R0.2	2	20	50	4
20CR 015 002 250	1.5 X R0.2	2	25	60	4
20CR 015 003 060	1.5 X R0.3	2	6	50	4
20CR 015 003 100	1.5 X R0.3	2	10	50	4
20CR 015 003 120	1.5 X R0.3	2	12	50	4
20CR 015 003 160	1.5 X R0.3	2	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
20CR 015 003 200	1.5 X R0.3	2	20	50	4
20CR 015 003 250	1.5 X R0.3	2	25	60	4
20CR 015 005 060	1.5 X R0.5	2	6	50	4
20CR 015 005 100	1.5 X R0.5	2	10	50	4
20CR 015 005 120	1.5 X R0.5	2	12	50	4
20CR 015 005 160	1.5 X R0.5	2	16	50	4
20CR 015 005 200	1.5 X R0.5	2	20	50	4
20CR 015 005 250	1.5 X R0.5	2	25	60	4
20CR 020 001 060	2 X R0.1	3	6	50	4
20CR 020 001 100	2 X R0.1	3	10	50	4
20CR 020 001 120	2 X R0.1	3	12	50	4
20CR 020 001 160	2 X R0.1	3	16	50	4
20CR 020 001 200	2 X R0.1	3	20	50	4
20CR 020 001 250	2 X R0.1	3	25	60	4
20CR 020 002 060	2 X R0.2	3	6	50	4
20CR 020 002 100	2 X R0.2	3	10	50	4
20CR 020 002 120	2 X R0.2	3	12	50	4
20CR 020 002 160	2 X R0.2	3	16	50	4
20CR 020 002 200	2 X R0.2	3	20	50	4
20CR 020 002 250	2 X R0.2	3	25	60	4
20CR 020 003 060	2 X R0.3	3	6	50	4
20CR 020 003 100	2 X R0.3	3	10	50	4
20CR 020 003 120	2 X R0.3	3	12	50	4
20CR 020 003 160	2 X R0.3	3	16	50	4
20CR 020 003 200	2 X R0.3	3	20	50	4
20CR 020 003 250	2 X R0.3	3	25	60	4
20CR 020 005 060	2 X R0.5	3	6	50	4
20CR 020 005 100	2 X R0.5	3	10	50	4
20CR 020 005 120	2 X R0.5	3	12	50	4
20CR 020 005 140	2 X R0.5	3	14	50	4
20CR 020 005 160	2 X R0.5	3	16	50	4
20CR 020 005 200	2 X R0.5	3	20	50	4
20CR 020 005 250	2 X R0.5	3	25	60	4
20CR 025 001 060	2.5 X R0.1	3.5	6	50	4
20CR 025 001 100	2.5 X R0.1	3.5	10	50	4
20CR 025 001 120	2.5 X R0.1	3.5	12	50	4
20CR 025 001 160	2.5 X R0.1	3.5	16	50	4

K COPPER 20CR



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
20CR 025 001 200	2.5XR0.1	3.5	20	50	4
20CR 025 001 250	2.5XR0.1	3.5	25	60	4
20CR 025 002 060	2.5XR0.2	3.5	6	50	4
20CR 025 002 100	2.5XR0.2	3.5	10	50	4
20CR 025 002 120	2.5XR0.2	3.5	12	50	4
20CR 025 002 160	2.5XR0.2	3.5	16	50	4
20CR 025 002 200	2.5XR0.2	3.5	20	50	4
20CR 025 002 250	2.5XR0.2	3.5	25	60	4
20CR 025 003 060	2.5XR0.3	3.5	6	50	4
20CR 025 003 100	2.5XR0.3	3.5	10	50	4
20CR 025 003 120	2.5XR0.3	3.5	12	50	4
20CR 025 003 160	2.5XR0.3	3.5	16	50	4
20CR 025 003 200	2.5XR0.3	3.5	20	50	4
20CR 025 003 250	2.5XR0.3	3.5	25	60	4
20CR 025 005 060	2.5XR0.5	3.5	6	50	4
20CR 025 005 100	2.5XR0.5	3.5	10	50	4
20CR 025 005 120	2.5XR0.5	3.5	12	50	4
20CR 025 005 160	2.5XR0.5	3.5	16	50	4
20CR 025 005 200	2.5XR0.5	3.5	20	50	4
20CR 025 005 250	2.5XR0.5	3.5	25	60	4
20CR 030 001 100	3XR0.1	4	10	55	6
20CR 030 001 120	3XR0.1	4	12	55	6
20CR 030 001 160	3XR0.1	4	16	55	6
20CR 030 001 200	3XR0.1	4	20	60	6
20CR 030 001 250	3XR0.1	4	25	65	6
20CR 030 001 300	3XR0.1	4	30	70	6
20CR 030 001 350	3XR0.1	4	35	75	6
20CR 030 001 400	3XR0.1	4	40	80	6
20CR 030 002 100	3XR0.2	4	10	55	6
20CR 030 002 120	3XR0.2	4	12	55	6
20CR 030 002 160	3XR0.2	4	16	55	6
20CR 030 002 200	3XR0.2	4	20	55	6
20CR 030 002 250	3XR0.2	4	25	65	6
20CR 030 002 300	3XR0.2	4	30	70	6
20CR 030 002 350	3XR0.2	4	35	75	6
20CR 030 002 400	3XR0.2	4	40	80	6
20CR 030 003 100	3XR0.3	4	10	55	6
20CR 030 003 120	3XR0.3	4	12	55	6
20CR 030 003 160	3XR0.3	4	16	55	6
20CR 030 003 200	3XR0.3	4	20	60	6
20CR 030 003 250	3XR0.3	4	25	65	6
20CR 030 003 300	3XR0.3	4	30	70	6
20CR 030 003 350	3XR0.3	4	35	75	6
20CR 030 003 400	3XR0.3	4	40	80	6
20CR 030 005 100	3XR0.5	4	10	55	6
20CR 030 005 120	3XR0.5	4	12	55	6
20CR 030 005 160	3XR0.5	4	16	55	6
20CR 030 005 200	3XR0.5	4	20	55	6
20CR 030 005 250	3XR0.5	4	25	65	6
20CR 030 005 300	3XR0.5	4	30	70	6
20CR 030 005 350	3XR0.5	4	35	75	6
20CR 030 005 400	3XR0.5	4	40	80	6
20CR 030 010 100	3XR1	4	10	55	6
20CR 030 010 120	3XR1	4	12	55	6
20CR 030 010 160	3XR1	4	16	55	6
20CR 030 010 200	3XR1	4	20	60	6
20CR 030 010 250	3XR1	4	25	65	6
20CR 030 010 300	3XR1	4	30	70	6
20CR 030 010 350	3XR1	4	35	75	6
20CR 030 010 400	3XR1	4	40	80	6
20CR 040 001 120	4XR0.1	5	12	55	6
20CR 040 001 160	4XR0.1	5	16	55	6
20CR 040 001 200	4XR0.1	5	20	60	6
20CR 040 001 300	4XR0.1	5	30	70	6
20CR 040 001 400	4XR0.1	5	40	80	6
20CR 040 002 120	4XR0.2	5	12	55	6
20CR 040 002 160	4XR0.2	5	16	55	6
20CR 040 002 200	4XR0.2	5	20	55	6
20CR 040 002 300	4XR0.2	5	30	70	6
20CR 040 002 400	4XR0.2	5	40	80	6
20CR 040 003 120	4XR0.3	5	12	55	6
20CR 040 003 160	4XR0.3	5	16	55	6
20CR 040 003 200	4XR0.3	5	20	60	6
20CR 040 003 300	4XR0.3	5	30	70	6
20CR 040 003 400	4XR0.3	5	40	80	6
20CR 040 005 120	4XR0.5	5	12	55	6
20CR 040 005 160	4XR0.5	5	16	55	6
20CR 040 005 200	4XR0.5	5	20	55	6
20CR 040 005 300	4XR0.5	5	30	70	6
20CR 040 005 400	4XR0.5	5	40	80	6
20CR 040 010 120	4XR1	5	12	55	6
20CR 040 010 160	4XR1	5	16	55	6
20CR 040 010 200	4XR1	5	20	60	6
20CR 040 010 300	4XR1	5	30	70	6
20CR 040 010 400	4XR1	5	40	80	6
20CR 060 001 200	6XR0.1	7	20	60	6
20CR 060 002 200	6XR0.2	7	20	60	6
20CR 060 003 200	6XR0.3	7	20	60	6
20CR 060 005 200	6XR0.5	7	20	60	6
20CR 060 010 200	6XR1	7	20	60	6
20CR 060 015 200	6XR1.5	7	20	60	6
20CR 080 005 250	8XR0.5	9	25	65	8
20CR 080 010 250	8XR1	9	25	65	8
20CR 080 015 250	8XR1.5	9	25	65	8
20CR 100 005 320	10XR0.5	11	32	70	10
20CR 100 010 320	10XR1	11	32	70	10
20CR 100 015 320	10XR1.5	11	32	70	10
20CR 120 005 380	12XR0.5	12	38	80	12
20CR 120 010 380	12XR1	12	38	80	12
20CR 120 015 380	12XR1.5	12	38	80	12

K COPPER 3HOR

3 Flutes 45° Helix Rib Corner Radius Endmills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials

- Improve wear resistance as well as avoid edge stress in various applications.
- High speed, feed applicable by 3 flute 45° helix and deep chip pocket design.

3刃45°ヘリックス 銅加工用 リブ コーナー ラジウス エンドミル

銅 及び 銅合金,アルミニウム 合金,非鉄合金 加工用エンドミル

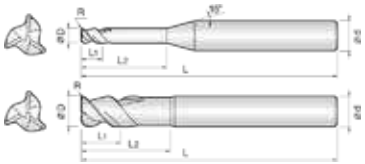
- 多様な 被削材 加工時 刃先部に ストレスが小さくて, 被削材の面粗さが向上されます.
- 45° ヘリックス 形状と深いポケットに設計して チップ排出が優れて, 高速,高移送 加工に適合します.

3날 45° 헬릭스 동가공용 리브 코너 레디우스 엔드밀

동 및 동합금, 알루미늄 합금, 비철합금 가공용 엔드밀

- 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 피삭재의 면조도가 향상됩니다.
- 3날 45°헬릭스 형상과 깊은 포켓으로 설계하여 칩배출이 원활하며, 고속,고이송 작업에 적합합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
3HOR 010 001 030	1XR0.1	1.5	3	45	4
3HOR 010 001 060	1XR0.1	1.5	6	45	4
3HOR 010 001 100	1XR0.1	1.5	10	45	4
3HOR 010 002 030	1XR0.2	1.5	3	45	4
3HOR 010 002 060	1XR0.2	1.5	6	45	4
3HOR 010 002 100	1XR0.2	1.5	10	45	4
3HOR 015 001 050	1.5XR0.1	2	5	45	4
3HOR 015 001 080	1.5XR0.1	2	8	45	4
3HOR 015 001 120	1.5XR0.1	2	12	45	4
3HOR 015 002 050	1.5XR0.2	2	5	45	4
3HOR 015 002 080	1.5XR0.2	2	8	45	4
3HOR 015 002 120	1.5XR0.2	2	12	45	4
3HOR 020 001 060	2XR0.1	3	6	45	4
3HOR 020 001 100	2XR0.1	3	10	45	4
3HOR 020 001 140	2XR0.1	3	14	45	4
3HOR 020 002 060	2XR0.2	3	6	45	4
3HOR 020 002 100	2XR0.2	3	10	45	4
3HOR 020 002 140	2XR0.2	3	14	45	4
3HOR 025 001 080	2.5XR0.1	3.5	8	45	4
3HOR 025 001 120	2.5XR0.1	3.5	12	45	4
3HOR 025 001 160	2.5XR0.1	3.5	16	45	4
3HOR 025 002 080	2.5XR0.2	3.5	8	45	4
3HOR 025 002 120	2.5XR0.2	3.5	12	45	4
3HOR 025 002 160	2.5XR0.2	3.5	16	45	4
3HOR 025 005 080	2.5XR0.5	3.5	8	45	4
3HOR 025 005 120	2.5XR0.5	3.5	12	45	4
3HOR 025 005 160	2.5XR0.5	3.5	16	45	4
3HOR 030 002 100	3XR0.2	4	10	50	4
3HOR 030 002 160	3XR0.2	4	16	50	4
3HOR 030 002 200	3XR0.2	4	20	50	4
3HOR 030 003 100	3XR0.3	4	10	50	4
3HOR 030 003 160	3XR0.3	4	16	50	4
3HOR 030 003 200	3XR0.3	4	20	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
3HOR 030 005 100	3XR0.5	4	10	50	4
3HOR 030 005 160	3XR0.5	4	16	50	4
3HOR 030 005 200	3XR0.5	4	20	50	4
3HOR 040 002 120	4XR0.2	6	12	50	4
3HOR 040 002 160	4XR0.2	6	16	50	4
3HOR 040 002 200	4XR0.2	6	20	50	4
3HOR 040 003 120	4XR0.3	6	12	50	4
3HOR 040 003 160	4XR0.3	6	16	50	4
3HOR 040 003 200	4XR0.3	6	20	50	4
3HOR 040 005 120	4XR0.5	6	12	50	4
3HOR 040 005 160	4XR0.5	6	16	50	4
3HOR 040 005 200	4XR0.5	6	20	50	4
3HOR 060 003 200	6XR0.3	9	20	55	6
3HOR 060 003 300	6XR0.3	9	30	70	6
3HOR 060 005 200	6XR0.5	9	20	55	6
3HOR 060 005 300	6XR0.5	9	30	70	6
3HOR 060 010 200	6XR1	9	20	55	6
3HOR 060 010 300	6XR1	9	30	70	6
3HOR 080 003 S08	8XR0.3	12	25	65	8
3HOR 080 005 S08	8XR0.5	12	25	65	8
3HOR 080 010 S08	8XR1	12	25	65	8
3HOR 100 005 S10	10XR0.5	15	30	70	10
3HOR 100 010 S10	10XR1	15	30	70	10
3HOR 120 005 S12	12XR0.5	20	35	80	12
3HOR 120 010 S12	12XR1	20	35	80	12

2HOB

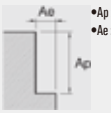
• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloys		Copper Alloys	
Radius	RPM	FEED	RPM	FEED
R0.5	43,200	1,300	43,200	900
R0.75	31,500	1,200	31,500	1,000
R1	21,600	1,000	21,600	1,100
R1.5	14,400	840	14,400	1,100
R2	11,000	840	10,800	1,100
R2.5	8,700	840	8,700	1,100
R3	7,200	840	7,200	1,100
R4	5,400	810	5,400	1,100
R5	4,300	810	4,300	1,000
R6	3,600	810	3,600	950
R8	2,700	810	2,700	900
Depth of Cut	 0.1×R (~45HRc) ~0.08×R (~55HRc)		 ~0.15×R R<0.1 ~0.2×R 0.1≦R≦0.5 ~0.3×R R>0.5 ~0.16×R R≦0.3 (~45HRc) ~0.25×R R≦3 (~45HRc) ~0.17×R R≧4 (~45HRc) ~0.05×R (~55HRc)	

2OCR/3HOR

■ Apply 10% down values of below condition for 2OCR
■ 2OCRは下記数値の10% Down 適用
■ 2OCR은 아래 수치의 10% Down 적용

• RPM : rev./min • Feed : mm/min

Side Milling												
Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloy Casting < Si1 3%				Aluminum Alloy Steels / Copper AZ91 / AZ80A / C1100			
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	24,000	680	40,000	1,100	24,000	690	27,000	580	12,700	200	19,200	220
2mm	20,600	800	37,000	1,400	20,600	800	24,000	800	9,600	230	15,200	340
3mm	16,800	900	32,000	1,700	16,800	900	19,200	1,000	6,400	260	13,600	500
4mm	12,400	1,000	25,600	2,000	12,400	1,000	15,400	1,200	4,800	290	11,400	640
6mm	8,400	1,100	21,200	2,800	8,300	1,120	12,700	1,700	3,200	320	8,500	770
8mm	6,400	1,200	16,000	3,000	6,400	1,200	9,600	1,800	2,400	370	6,400	900
10mm	5,100	1,360	12,800	3,400	5,100	1,360	7,700	2,000	1,900	380	5,100	920
12mm	4,200	1,400	10,600	3,500	4,200	1,400	6,400	2,100	1,600	400	4,200	1,000
Depth of Cut	 •Ap : 1D •Ae : 0.2D		•Ap : 1D •Ae : 0.1D		•Ap : 1D •Ae : 0.2D		•Ap : 1D •Ae : 0.1D		•Ap : 1D •Ae : 0.2D		•Ap : 1D •Ae : 0.1D	

■ Apply 10% down values of below condition for 2OCR ■ 2OCRは下記数値の 10% Down 適用 ■ 2OCR은 아래 수치의 10% Down 적용

• RPM : rev./min • Feed : mm/min

Slotting										
Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloy Casting < Si1 3%				Aluminum Alloy Steels / Copper AZ91 / AZ80A / C1100	
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	24,000	520	40,000	660	24,000	520	27,000	480	12,700	130
2mm	20,600	590	37,000	940	20,600	590	24,000	600	9,600	200
3mm	16,800	620	32,000	1,200	16,800	620	19,200	700	6,400	260
4mm	12,400	650	25,600	1,400	12,400	650	15,400	800	4,800	300
6mm	8,400	760	21,200	1,900	8,300	760	12,700	1,160	3,200	320
8mm	6,400	800	16,000	2,000	6,400	800	9,600	1,200	2,400	370
10mm	5,100	920	12,800	2,200	5,100	920	7,700	1,360	1,900	380
12mm	4,200	960	10,600	2,400	4,200	960	6,400	1,440	1,600	410
Depth of Cut	 •Ap : 0.5D		•Ap : 0.25D		•Ap : 0.5D		•Ap : 0.25D		•Ap : 0.5D	

K GRAPHITE 2DBL

2 Flutes Diamond Coated Ball Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

• Wide range products prepared for various work shape and excellent performance.

2刃 黒鉛加工用 ダイヤモンド コーティング ボール エンドミル

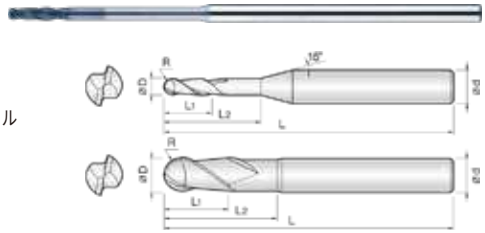
グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

• 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

2날 흑연가공용 다이아몬드 코팅 볼 엔드밀

그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀

• 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.



D Size	D Tolerance
Ø0.2~Ø12	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2DBL 002 010 S04	0.1RX0.2	1		45	4
2DBL 003 012 S04	0.15RX0.3	1.2		45	4
2DBL 003 020 S04	0.15RX0.3	1.2	2	45	4
2DBL 004 015 S04	0.2RX0.4	1.5		45	4
2DBL 004 020 S04	0.2RX0.4	1.5	2	45	4
2DBL 004 030 S04	0.2RX0.4	1.5	3	45	4
2DBL 004 040 S04	0.2RX0.4	1.5	4	45	4
2DBL 004 050 S04	0.2RX0.4	1.5	5	45	4
2DBL 004 080 S04	0.2RX0.4	1.5	8	45	4
2DBL 004 100 S04	0.2RX0.4	1.5	10	45	4
2DBL 005 020 S04	0.25RX0.5	2		45	4
2DBL 005 030 S04	0.25RX0.5	2	3	45	4
2DBL 005 040 S04	0.25RX0.5	2	4	45	4
2DBL 005 050 S04	0.25RX0.5	2	5	45	4
2DBL 005 060 S04	0.25RX0.5	2	6	45	4
2DBL 005 080 S04	0.25RX0.5	2	8	45	4
2DBL 005 100 S04	0.25RX0.5	2	10	45	4
2DBL 005 120 S04	0.25RX0.5	2	12	45	4
2DBL 006 020 S04	0.3RX0.6	2		45	4
2DBL 006 030 S04	0.3RX0.6	2	3	45	4
2DBL 006 040 S04	0.3RX0.6	2	4	45	4
2DBL 006 050 S04	0.3RX0.6	2	5	45	4
2DBL 006 060 S04	0.3RX0.6	2	6	45	4
2DBL 006 080 S04	0.3RX0.6	2	8	45	4
2DBL 006 100 S04	0.3RX0.6	2	10	45	4
2DBL 006 120 S04	0.3RX0.6	2	12	45	4
2DBL 006 150 S04	0.3RX0.6	2	15	45	4
2DBL 006 200 S04	0.3RX0.6	2	20	45	4
2DBL 008 030 S04	0.4RX0.8	3		45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2DBL 008 040 S04	0.4RX0.8	3	4	45	4
2DBL 008 050 S04	0.4RX0.8	3	5	45	4
2DBL 008 060 S04	0.4RX0.8	3	6	45	4
2DBL 008 080 S04	0.4RX0.8	3	8	45	4
2DBL 008 100 S04	0.4RX0.8	3	10	45	4
2DBL 008 150 S04	0.4RX0.8	3	15	45	4
2DBL 008 200 S04	0.4RX0.8	3	20	45	4
2DBL 010 030 S04	0.5RX1	3		60	4
2DBL 010 040 S04	0.5RX1	3	4	60	4
2DBL 010 050 S04	0.5RX1	3	5	60	4
2DBL 010 060 S04	0.5RX1	3	6	60	4
2DBL 010 080 S04	0.5RX1	3	8	60	4
2DBL 010 100 S04	0.5RX1	3	10	60	4
2DBL 010 120 S04	0.5RX1	3	12	60	4
2DBL 010 150 S04	0.5RX1	3	15	60	4
2DBL 010 200 S04	0.5RX1	3	20	60	4
2DBL 010 250 S04	0.5RX1	3	25	80	4
2DBL 010 300 S04	0.5RX1	3	30	80	4
2DBL 010 350 S04	0.5RX1	3	35	80	4
2DBL 010 400 S04	0.5RX1	3	40	80	4
2DBL 010 450 S04	0.5RX1	3	45	80	4
2DBL 010 500 S04	0.5RX1	3	50	80	4
2DBL 015 045 S04	0.75RX1.5	4.5		60	4
2DBL 015 050 S04	0.75RX1.5	4.5	5	60	4
2DBL 015 080 S04	0.75RX1.5	4.5	8	80	4
2DBL 015 100 S04	0.75RX1.5	4.5	10	80	4
2DBL 015 120 S04	0.75RX1.5	4.5	12	80	4
2DBL 015 150 S04	0.75RX1.5	4.5	15	80	4
2DBL 015 180 S04	0.75RX1.5	4.5	18	80	4

K GRAPHITE 2DBL



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2DBL 015 200 S04	0.75RX1.5	4.5	20	80	4
2DBL 015 250 S04	0.75RX1.5	4.5	25	80	4
2DBL 015 300 S04	0.75RX1.5	4.5	30	80	4
2DBL 015 350 S04	0.75RX1.5	4.5	35	80	4
2DBL 015 400 S04	0.75RX1.5	4.5	40	80	4
2DBL 020 060 S04	1RX2	6		60	4
2DBL 020 100 S04	1RX2	6	10	80	4
2DBL 020 150 S04	1RX2	6	15	80	4
2DBL 020 200 S04	1RX2	6	20	80	4
2DBL 020 250 S04	1RX2	6	25	80	4
2DBL 020 300 S04	1RX2	6	30	80	4
2DBL 020 350 S04	1RX2	6	35	80	4
2DBL 020 400 S04	1RX2	6	40	100	4
2DBL 020 450 S04	1RX2	6	45	100	4
2DBL 020 500 S04	1RX2	6	50	100	4
2DBL 020 600 S04	1RX2	6	60	100	4
2DBL 020 700 S04	1RX2	6	70	100	4
2DBL 030 080 S04	1.5RX3	8		60	4
2DBL 030 080 S06	1.5RX3	3	8	60	6
2DBL 030 150 100	1.5RX3	8	15	100	3
2DBL 030 150 S04	1.5RX3	8	15	100	4
2DBL 030 200 S04	1.5RX3	8	20	100	4
2DBL 030 250 S04	1.5RX3	8	25	100	4
2DBL 030 300 S04	1.5RX3	8	30	100	4
2DBL 030 350 S04	1.5RX3	8	35	100	4
2DBL 030 400 S04	1.5RX3	8	40	100	4
2DBL 030 500 S04	1.5RX3	8	50	100	4
2DBL 030 600 S04	1.5RX3	8	60	100	4
2DBL 030 700 S04	1.5RX3	8	70	100	4
2DBL 040 040 060	2RX4	4		60	4
2DBL 040 160 060	2RX4	16		60	4
2DBL 040 160 080	2RX4	16		80	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2DBL 040 160 100	2RX4	16		100	4
2DBL 040 160 130	2RX4	16		130	4
2DBL 040 160 150	2RX4	16		150	4
2DBL 040 300 080	2RX4	16	30	80	4
2DBL 040 400 100	2RX4	16	40	100	4
2DBL 040 400 130	2RX4	16	40	130	4
2DBL 040 500 150	2RX4	16	50	150	4
2DBL 050 160 110	2.5RX5	16		110	5
2DBL 050 200 S06	2.5RX5	16	20	110	6
2DBL 050 400 110	2.5RX5	16	40	110	5
2DBL 050 400 S06	2.5RX5	16	40	110	6
2DBL 050 600 S06	2.5RX5	16	60	110	6
2DBL 060 250 080	3RX6	16	25	80	6
2DBL 060 250 110	3RX6	16	25	110	6
2DBL 060 300 150	3RX6	16	30	150	6
2DBL 060 400 110	3RX6	16	40	110	6
2DBL 060 500 150	3RX6	16	50	150	6
2DBL 080 300 080	4RX8	20	30	80	8
2DBL 080 300 110	4RX8	20	30	110	8
2DBL 080 400 110	4RX8	20	40	110	8
2DBL 080 400 200	4RX8	20	40	200	8
2DBL 080 500 150	4RX8	20	50	150	8
2DBL 100 400 080	5RX10	22	40	80	10
2DBL 100 400 110	5RX10	22	40	110	10
2DBL 100 500 110	5RX10	22	50	110	10
2DBL 100 500 200	5RX10	22	50	200	10
2DBL 100 600 160	5RX10	22	60	160	10
2DBL 120 500 110	6RX12	25	50	110	12
2DBL 120 500 160	6RX12	25	50	160	12
2DBL 120 600 200	6RX12	25	60	200	12

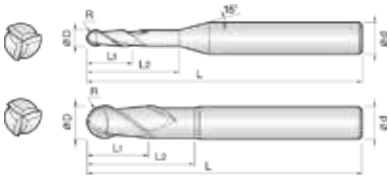
K GRAPHITE 3DBL

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D Size	D Tolerance
Ø0.2~Ø12	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
3DBL 010 030 S04	0.5RX1	3	0	60	4
3DBL 010 050 S04	0.5RX1	3	5	60	4
3DBL 010 100 S04	0.5RX1	3	10	60	4
3DBL 010 150 S04	0.5RX1	3	15	60	4
3DBL 010 200 S04	0.5RX1	3	20	60	4
3DBL 010 250 S04	0.5RX1	3	25	80	4
3DBL 010 300 S04	0.5RX1	3	30	80	4
3DBL 010 350 S04	0.5RX1	3	35	80	4
3DBL 010 400 S04	0.5RX1	3	40	80	4
3DBL 010 450 S04	0.5RX1	3	45	80	4
3DBL 010 500 S04	0.5RX1	3	50	80	4
3DBL 015 045 S04	0.75RX1.5	4.5		60	4
3DBL 015 050 S04	0.75RX1.5	4.5	5	60	4
3DBL 015 100 S04	0.75RX1.5	4.5	10	80	4
3DBL 015 150 S04	0.75RX1.5	4.5	15	80	4
3DBL 015 200 S04	0.75RX1.5	4.5	20	80	4
3DBL 015 250 S04	0.75RX1.5	4.5	25	80	4
3DBL 015 300 S04	0.75RX1.5	4.5	30	80	4
3DBL 015 350 S04	0.75RX1.5	4.5	35	80	4
3DBL 015 400 S04	0.75RX1.5	4.5	40	80	4
3DBL 015 450 S04	0.75RX1.5	4.5	45	80	4
3DBL 015 500 S04	0.75RX1.5	4.5	50	80	4
3DBL 020 060 S04	1RX2	6		60	4
3DBL 020 100 S04	1RX2	6	10	80	4
3DBL 020 150 S04	1RX2	6	15	80	4
3DBL 020 200 S04	1RX2	6	20	80	4
3DBL 020 250 S04	1RX2	6	25	80	4
3DBL 020 300 S04	1RX2	6	30	80	4
3DBL 020 350 S04	1RX2	6	35	80	4
3DBL 020 400 S04	1RX2	6	40	100	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
3DBL 020 500 S04	1RX2	6	50	100	4
3DBL 020 600 S04	1RX2	6	60	100	4
3DBL 020 700 S04	1RX2	6	70	100	4
3DBL 030 080 S04	1.5RX3	8		60	4
3DBL 030 150 100	1.5RX3	8	15	100	3
3DBL 030 150 S04	1.5RX3	8	15	100	4
3DBL 030 200 S04	1.5RX3	8	20	100	4
3DBL 030 300 S04	1.5RX3	8	30	100	4
3DBL 030 400 S04	1.5RX3	8	40	100	4
3DBL 030 500 S04	1.5RX3	8	50	100	4
3DBL 040 160 080	2RX4	16		80	4
3DBL 040 160 100	2RX4	16		100	4
3DBL 040 160 130	2RX4	16		130	4
3DBL 040 300 080	2RX4	16	30	80	4
3DBL 040 400 100	2RX4	16	40	100	4
3DBL 040 400 130	2RX4	16	40	130	4
3DBL 050 160 110	2.5RX5	16		110	5
3DBL 050 400 110	2.5RX5	16	40	110	5
3DBL 060 250 110	3RX6	16	25	110	6
3DBL 060 300 150	3RX6	16	30	150	6
3DBL 060 400 110	3RX6	16	40	110	6
3DBL 060 500 150	3RX6	16	50	150	6
3DBL 060 500 180	3RX6	16	50	180	6
3DBL 080 400 110	4RX8	20	40	110	8
3DBL 080 500 150	4RX8	20	50	150	8
3DBL 100 400 110	5RX10	22	40	110	10
3DBL 100 600 160	5RX10	22	60	160	10
3DBL 120 500 110	6RX12	25	50	110	12
3DBL 120 500 160	6RX12	25	50	160	12
3DBL 120 600 200	6RX12	25	60	200	12

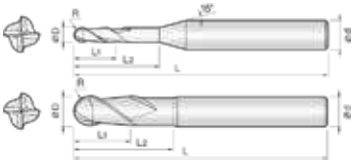
K GRAPHITE 4DBL

4 Flutes Diamond Coated Ball Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

• Wide range products prepared for various work shape and excellent performance.





4刃 黒鉛加工用 ダイヤモンド コーティング ボール エンドミル

グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

• 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

4날 흑연가공용 다이아몬드 코팅 볼 엔드밀

그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀

• 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.

D Size	D Tolerance
Ø1~Ø12	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4DBL 010 030 S04	0.5R X 1	3		60	4
4DBL 010 050 S04	0.5R X 1	3	5	60	4
4DBL 010 100 S04	0.5R X 1	3	10	60	4
4DBL 010 150 S04	0.5R X 1	3	15	60	4
4DBL 010 200 S04	0.5R X 1	3	20	60	4
4DBL 010 250 S04	0.5R X 1	3	25	60	4
4DBL 010 300 S04	0.5R X 1	3	30	80	4
4DBL 010 350 S04	0.5R X 1	3	35	80	4
4DBL 010 400 S04	0.5R X 1	3	40	80	4
4DBL 010 450 S04	0.5R X 1	3	45	80	4
4DBL 010 500 S04	0.5R X 1	3	50	80	4
4DBL 015 045 S04	0.75R X 1.5	4.5		60	4
4DBL 015 100 S04	0.75R X 1.5	4.5	10	60	4
4DBL 015 150 S04	0.75R X 1.5	4.5	15	60	4
4DBL 015 200 S04	0.75R X 1.5	4.5	20	60	4
4DBL 015 250 S04	0.75R X 1.5	4.5	25	60	4
4DBL 015 300 S04	0.75R X 1.5	4.5	30	80	4
4DBL 015 350 S04	0.75R X 1.5	4.5	35	80	4
4DBL 015 400 S04	0.75R X 1.5	4.5	40	80	4
4DBL 015 450 S04	0.75R X 1.5	4.5	45	80	4
4DBL 015 500 S04	0.75R X 1.5	4.5	50	80	4
4DBL 020 060 S04	1R X 2	6	-	60	4
4DBL 020 100 S04	1R X 2	6	10	80	4
4DBL 020 200 S04	1R X 2	6	20	80	4
4DBL 020 300 S04	1R X 2	6	30	80	4
4DBL 020 400 S04	1R X 2	6	40	80	4
4DBL 020 500 S04	1R X 2	6	50	100	4
4DBL 020 600 S04	1R X 2	6	60	100	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4DBL 020 700 S04	1R X 2	6	70	100	4
4DBL 030 080 S04	1.5R X 3	8	-	60	4
4DBL 030 150 S04	1.5R X 3	8	15	100	4
4DBL 030 200 S04	1.5R X 3	8	20	100	4
4DBL 030 300 S04	1.5R X 3	8	30	100	4
4DBL 030 400 S04	1.5R X 3	8	40	100	4
4DBL 030 500 S04	1.5R X 3	8	50	100	4
4DBL 030 600 S04	1.5R X 3	8	60	100	4
4DBL 030 700 S04	1.5R X 3	8	70	100	4
4DBL 040 160 060	2R X 4	16	-	60	4
4DBL 040 160 080	2R X 4	16	-	80	4
4DBL 040 160 100	2R X 4	16	-	100	4
4DBL 040 160 130	2R X 4	16	-	130	4
4DBL 060 250 080	3R X 6	16	25	80	6
4DBL 060 250 110	3R X 6	16	25	110	6
4DBL 060 300 150	3R X 6	16	30	150	6
4DBL 080 300 080	4R X 8	20	30	80	8
4DBL 080 300 110	4R X 8	20	30	110	8
4DBL 080 350 150	4R X 8	20	35	150	8
4DBL 080 400 200	4R X 8	20	40	200	8
4DBL 100 350 080	5R X 10	22	35	80	10
4DBL 100 350 110	5R X 10	22	35	110	10
4DBL 100 400 160	5R X 10	22	40	160	10
4DBL 100 500 200	5R X 10	22	50	200	10
4DBL 120 500 110	6R X 12	25	50	110	12
4DBL 120 500 160	6R X 12	25	50	160	12
4DBL 120 600 200	6R X 12	25	60	200	12

K GRAPHITE 2&3DLM



2&3 Flutes Diamond Coated Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

• Wide range products prepared for various work shape and excellent performance.



2&3刃 黒鉛加工用 ダイヤモンド コーティング エンドミル

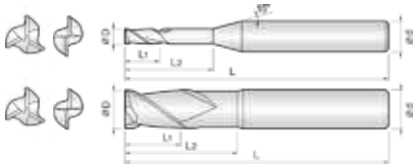
グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

• 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

2&3날 흑연가공용 다이아몬드 코팅 엔드밀

그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀

• 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.



D Size	D Tolerance
Ø0.2~Ø12	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2DLM 002 004 S04	0.2	0.4		45	4
2DLM 003 006 S04	0.3	0.6		45	4
2DLM 003 020 S04	0.3	0.6	2	45	4
2DLM 003 040 S04	0.3	0.6	4	45	4
2DLM 004 008 S04	0.4	0.8		45	4
2DLM 004 020 S04	0.4	0.8	2	45	4
2DLM 004 040 S04	0.4	0.8	4	45	4
2DLM 005 010 S04	0.5	1		45	4
2DLM 005 030 S04	0.5	1	3	45	4
2DLM 005 050 S04	0.5	1	5	45	4
2DLM 006 012 S04	0.6	1.2		45	4
2DLM 006 030 S04	0.6	1.2	3	45	4
2DLM 006 050 S04	0.6	1.2	5	45	4
2DLM 007 015 S04	0.7	1.5		45	4
2DLM 007 040 S04	0.7	1.5	4	45	4
2DLM 007 060 S04	0.7	1.5	6	45	4
2DLM 007 080 S04	0.7	1.5	8	45	4
2DLM 008 020 S04	0.8	2		45	4
2DLM 009 025 S04	0.9	2.5		45	4
2DLM 010 030 045	1	3		45	4
2DLM 010 030 S04	1	3		60	4
2DLM 010 050 S04	1	3	5	60	4
2DLM 010 100 S04	1	3	10	60	4
2DLM 010 150 S04	1	3	15	60	4
2DLM 010 200 S04	1	3	20	60	4
2DLM 010 250 S04	1	3	25	60	4
2DLM 010 300 S04	1	3	30	60	4
2DLM 015 060 S04	1.5	6		60	4
2DLM 015 100 S04	1.5	6	10	60	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2DLM 015 150 S04	1.5	6	15	60	4
2DLM 015 200 S04	1.5	6	20	60	4
2DLM 015 250 S04	1.5	6	25	60	4
2DLM 015 300 S04	1.5	6	30	60	4
2DLM 020 060 S04	2	6		45	4
2DLM 020 080 S04	2	8		80	4
2DLM 020 120 S04	2	8	12	80	4
2DLM 020 150 S04	2	8	15	80	4
2DLM 020 200 S04	2	8	20	80	4
2DLM 020 250 S04	2	8	25	80	4
2DLM 020 300 S04	2	8	30	80	4
2DLM 020 400 S04	2	8	40	80	4
2DLM 020 450 S04	2	8	45	80	4
2DLM 020 500 S04	2	8	50	80	4
2DLM 030 090 S06	3	9		50	6
2DLM 030 120 S04	3	12		80	4
2DLM 030 200 S04	3	12	20	80	4
2DLM 030 250 S04	3	12	25	80	4
2DLM 030 300 S04	3	12	30	80	4
2DLM 030 400 S04	3	12	40	80	4
2DLM 030 500 S04	3	12	50	80	4
2DLM 040 120 S06	4	12		50	6
2DLM 040 160 080	4	16		80	4
2DLM 050 150 S06	5	15		60	6
2DLM 050 200 S06	5	20		110	6
2DLM 060 180 S06	6	18		60	6
2DLM 060 250 110	6	25		110	6
2DLM 060 250 150	6	25		150	6
2DLM 080 240 S08	8	24		70	8

K GRAPHITE 2&3DLM



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2DLM 080 400 150	8	25	40	150	8
2DLM 100 250 S10	10	25		80	10
2DLM 100 500 160	10	25	50	160	10

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2DLM 120 250 S12	12	25		80	12
2DLM 120 600 160	12	25	60	160	12

单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3DLM 010 030 S04	1	3		45	4
3DLM 010 050 S04	1	3	5	45	4
3DLM 010 100 S04	1	3	10	45	4
3DLM 010 150 S04	1	3	15	45	4
3DLM 015 060 S04	1.5	6		60	4
3DLM 015 100 S04	1.5	6	10	60	4
3DLM 015 150 S04	1.5	6	15	60	4
3DLM 015 200 S04	1.5	6	20	60	4
3DLM 020 060 S04	2	6		45	4
3DLM 020 100 S04	2	10		60	4
3DLM 020 150 S04	2	10	15	60	4
3DLM 020 200 S04	2	10	20	60	4
3DLM 020 250 S04	2	10	25	60	4
3DLM 030 090 S06	3	9		50	6
3DLM 030 150 S03	3	15		60	3
3DLM 030 150 S04	3	15		60	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3DLM 030 200 S04	3	20	20	60	4
3DLM 030 250 S04	3	25	25	60	4
3DLM 040 120 S06	4	12		50	6
3DLM 040 200 080	4	20		80	4
3DLM 060 180 060	6	18		60	6
3DLM 060 250 110	6	25		110	6
3DLM 060 250 150	6	25		150	6
3DLM 080 240 070	8	24		70	8
3DLM 080 350 110	8	35		110	8
3DLM 080 350 150	8	35		150	8
3DLM 100 250 080	10	25		80	10
3DLM 100 400 110	10	40		110	10
3DLM 100 500 160	10	50		160	10
3DLM 120 250 080	12	25		80	12
3DLM 120 450 110	12	45		110	12
3DLM 120 550 160	12	55		160	12

K GRAPHITE 4&6DLM



4&6 Flutes Diamond Coated Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

• Wide range products prepared for various work shape and excellent performance.



4&6刃 黒鉛加工用 ダイヤモンド コーティング エンドミル

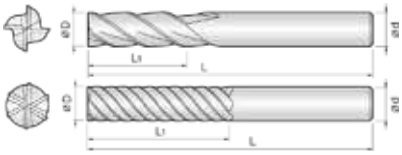
グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

• 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

4&6날 흑연가공용 다이아몬드 코팅 엔드밀

그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀

• 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.



D Size	D Tolerance
Ø2~Ø16	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4DLM 020 060 S04	2	6	45	4
4DLM 020 100 S04	2	10	60	4
4DLM 030 090 S06	3	9	50	6
4DLM 030 150 S03	3	15	60	3
4DLM 030 150 S04	3	15	60	4
4DLM 040 120 S06	4	12	50	6
4DLM 040 200 080	4	20	80	4
4DLM 040 200 100	4	20	100	4
4DLM 060 180 060	6	18	60	6
4DLM 060 250 110	6	25	110	6
4DLM 060 250 150	6	25	150	6
4DLM 080 240 070	8	24	70	8
4DLM 080 350 110	8	35	110	8
4DLM 080 350 150	8	35	150	8
4DLM 100 250 080	10	25	80	10
4DLM 100 400 110	10	40	110	10
4DLM 100 500 160	10	50	160	10
4DLM 120 250 080	12	25	80	12
4DLM 120 450 110	12	45	110	12
4DLM 120 550 160	12	55	160	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
6DLM 100 400 110	10	40	110	10
6DLM 100 400 160	10	40	160	10
6DLM 120 450 110	12	45	110	12
6DLM 120 450 160	12	45	160	12
6DLM 160 500 110	16	50	110	16
6DLM 160 500 160	16	50	160	16
6DLM 160 500 200	16	50	200	16

K GRAPHITE 2DLR



2 Flutes Diamond Coated Corner Radius Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

- Wide range products prepared for various work shape and excellent performance.

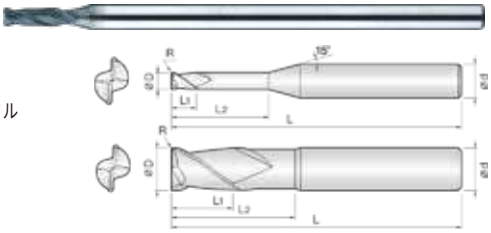
2刃 黒鉛加工用 ダイヤモンド コーティング コーナー ラジウス エンドミル

グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

- 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

2날 흑연가공용 다이아몬드 코팅 코너 레디우스 엔드밀

- 그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀
- 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.



D Size	D Tolerance
Ø0.2~Ø6	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2DLR 002 0002 015	0.2XR0.02	0.5	1.5	60	4
2DLR 003 0002 015	0.3XR0.02	0.6	1.5	60	4
2DLR 003 0002 030	0.3XR0.02	0.6	3	60	4
2DLR 003 0002 045	0.3XR0.02	0.6	4.5	60	4
2DLR 003 0002 060	0.3XR0.02	0.6	6	60	4
2DLR 004 0002 020	0.4XR0.02	0.8	2	60	4
2DLR 004 0002 040	0.4XR0.02	0.8	4	60	4
2DLR 004 0002 060	0.4XR0.02	0.8	6	60	4
2DLR 004 0002 080	0.4XR0.02	0.8	8	60	4
2DLR 005 0005 010	0.5XR0.05	1	-	60	4
2DLR 005 0005 025	0.5XR0.05	1	2.5	60	4
2DLR 005 0005 035	0.5XR0.05	1	3.5	60	4
2DLR 005 0005 050	0.5XR0.05	1	5	60	4
2DLR 005 0005 075	0.5XR0.05	1	7.5	60	4
2DLR 005 0005 100	0.5XR0.05	1	10	60	4
2DLR 006 0005 012	0.6XR0.05	1.2	-	60	4
2DLR 006 0005 030	0.6XR0.05	1.2	3	60	4
2DLR 006 0005 060	0.6XR0.05	1.2	6	60	4
2DLR 006 0005 090	0.6XR0.05	1.2	9	60	4
2DLR 006 0005 120	0.6XR0.05	1.2	12	60	4
2DLR 008 0005 016	0.8XR0.05	1.6	-	60	4
2DLR 008 0005 040	0.8XR0.05	1.6	4	60	4
2DLR 008 0005 080	0.8XR0.05	1.6	8	60	4
2DLR 008 0005 100	0.8XR0.05	1.6	10	60	4
2DLR 008 0005 160	0.8XR0.05	1.6	16	60	4
2DLR 010 0005 020	1XR0.05	2	-	60	4
2DLR 010 0005 050	1XR0.05	2	5	60	4
2DLR 010 0005 100	1XR0.05	2	10	60	4
2DLR 010 0005 150	1XR0.05	2	15	60	4
2DLR 010 0005 200	1XR0.05	2	20	60	4
2DLR 010 001 020	1XR0.1	2	-	60	4
2DLR 010 001 050	1XR0.1	2	5	60	4
2DLR 010 001 100	1XR0.1	2	10	60	4
2DLR 010 001 150	1XR0.1	2	15	60	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2DLR 010 001 200	1XR0.1	2	20	60	4
2DLR 010 002 020	1XR0.2	2	-	60	4
2DLR 010 002 050	1XR0.2	2	5	60	4
2DLR 010 002 100	1XR0.2	2	10	60	4
2DLR 010 002 150	1XR0.2	2	15	60	4
2DLR 010 002 200	1XR0.2	2	20	60	4
2DLR 015 0005 030	1.5XR0.05	3	-	60	4
2DLR 015 0005 050	1.5XR0.05	3	5	60	4
2DLR 015 0005 100	1.5XR0.05	3	10	60	4
2DLR 015 0005 150	1.5XR0.05	3	15	60	4
2DLR 015 0005 200	1.5XR0.05	3	20	60	4
2DLR 015 001 030	1.5XR0.1	3	-	60	4
2DLR 015 001 050	1.5XR0.1	3	5	60	4
2DLR 015 001 100	1.5XR0.1	3	10	60	4
2DLR 015 001 150	1.5XR0.1	3	15	60	4
2DLR 015 001 200	1.5XR0.1	3	20	60	4
2DLR 015 0015 030	1.5XR0.15	3	-	60	4
2DLR 015 0015 050	1.5XR0.15	3	5	60	4
2DLR 015 0015 100	1.5XR0.15	3	10	60	4
2DLR 015 0015 150	1.5XR0.15	3	15	60	4
2DLR 015 0015 200	1.5XR0.15	3	20	60	4
2DLR 015 002 030	1.5XR0.2	3	-	60	4
2DLR 015 002 050	1.5XR0.2	3	5	60	4
2DLR 015 002 100	1.5XR0.2	3	10	60	4
2DLR 015 002 150	1.5XR0.2	3	15	60	4
2DLR 015 002 200	1.5XR0.2	3	20	60	4
2DLR 015 003 030	1.5XR0.3	3	-	60	4
2DLR 015 003 050	1.5XR0.3	3	5	60	4
2DLR 015 003 100	1.5XR0.3	3	10	60	4
2DLR 015 003 150	1.5XR0.3	3	15	60	4
2DLR 015 003 200	1.5XR0.3	3	20	60	4
2DLR 020 0005 035	2XR0.05	3.5	-	60	4
2DLR 020 0005 060	2XR0.05	3.5	6	60	4
2DLR 020 0005 120	2XR0.05	3.5	12	60	4

K GRAPHITE 2DLR



单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2DLR 020 0005 180	2XR0.05	3.5	18	60	4
2DLR 020 0005 250	2XR0.05	3.5	25	60	4
2DLR 020 0005 300	2XR0.05	3.5	30	60	4
2DLR 020 002 035	2XR0.2	3.5	-	60	4
2DLR 020 002 060	2XR0.2	3.5	6	60	4
2DLR 020 002 120	2XR0.2	3.5	12	60	4
2DLR 020 002 180	2XR0.2	3.5	18	60	4
2DLR 020 002 250	2XR0.2	3.5	25	60	4
2DLR 020 002 300	2XR0.2	3.5	30	60	4
2DLR 020 003 035	2XR0.3	3.5	-	60	4
2DLR 020 003 060	2XR0.3	3.5	6	60	4
2DLR 020 003 120	2XR0.3	3.5	12	60	4
2DLR 020 003 180	2XR0.3	3.5	18	60	4
2DLR 020 003 250	2XR0.3	3.5	25	60	4
2DLR 020 003 300	2XR0.3	3.5	30	60	4
2DLR 020 005 035	2XR0.5	3.5	-	60	4
2DLR 020 005 060	2XR0.5	3.5	6	60	4
2DLR 020 005 120	2XR0.5	3.5	12	60	4
2DLR 020 005 180	2XR0.5	3.5	18	60	4
2DLR 020 005 250	2XR0.5	3.5	25	60	4
2DLR 020 005 300	2XR0.5	3.5	30	60	4
2DLR 030 0005 040	3XR0.05	4	-	80	4
2DLR 030 0005 100	3XR0.05	4	10	80	4
2DLR 030 0005 200	3XR0.05	4	20	80	4
2DLR 030 0005 300	3XR0.05	4	30	80	4
2DLR 030 0005 400	3XR0.05	4	40	80	4
2DLR 030 002 040	3XR0.2	4	-	80	4
2DLR 030 002 100	3XR0.2	4	10	80	4
2DLR 030 002 200	3XR0.2	4	20	80	4
2DLR 030 002 300	3XR0.2	4	30	80	4
2DLR 030 002 400	3XR0.2	4	40	80	4
2DLR 030 003 040	3XR0.3	4	-	80	4
2DLR 030 003 100	3XR0.3	4	10	80	4
2DLR 030 003 200	3XR0.3	4	20	80	4
2DLR 030 003 300	3XR0.3	4	30	80	4
2DLR 030 003 400	3XR0.3	4	40	80	4
2DLR 030 005 040	3XR0.5	4	-	80	4
2DLR 030 005 100	3XR0.5	4	10	80	4
2DLR 030 005 200	3XR0.5	4	20	80	4
2DLR 030 005 300	3XR0.5	4	30	80	4
2DLR 030 005 400	3XR0.5	4	40	80	4
2DLR 030 010 040	3XR1	4	-	80	4
2DLR 030 010 100	3XR1	4	10	80	4
2DLR 030 010 200	3XR1	4	20	80	4
2DLR 030 010 300	3XR1	4	30	80	4
2DLR 030 010 400	3XR1	4	40	80	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
2DLR 040 0005 050	4XR0.05	5	-	80	4
2DLR 040 0005 150	4XR0.05	5	15	80	4
2DLR 040 0005 250	4XR0.05	5	25	80	4
2DLR 040 0005 400	4XR0.05	5	40	80	4
2DLR 040 002 050	4XR0.2	5	-	80	4
2DLR 040 002 150	4XR0.2	5	15	80	4
2DLR 040 002 250	4XR0.2	5	25	80	4
2DLR 040 002 400	4XR0.2	5	40	80	4
2DLR 040 005 050	4XR0.5	5	-	80	4
2DLR 040 005 150	4XR0.5	5	15	80	4
2DLR 040 005 250	4XR0.5	5	25	80	4
2DLR 040 005 400	4XR0.5	5	40	80	4
2DLR 040 010 050	4XR1	5	-	80	4
2DLR 040 010 150	4XR1	5	15	80	4
2DLR 040 010 250	4XR1	5	25	80	4
2DLR 040 010 400	4XR1	5	40	80	4
2DLR 050 0005 060	5XR0.05	6	-	110	6
2DLR 050 0005 150	5XR0.05	6	15	110	6
2DLR 050 0005 300	5XR0.05	6	30	110	6
2DLR 050 0005 500	5XR0.05	6	50	110	6
2DLR 050 002 060	5XR0.2	6	-	110	6
2DLR 050 002 150	5XR0.2	6	15	110	6
2DLR 050 002 300	5XR0.2	6	30	110	6
2DLR 050 002 500	5XR0.2	6	50	110	6
2DLR 050 005 060	5XR0.5	6	-	110	6
2DLR 050 005 150	5XR0.5	6	15	110	6
2DLR 050 005 300	5XR0.5	6	30	110	6
2DLR 050 005 500	5XR0.5	6	50	110	6
2DLR 060 0005 070	6XR0.05	7	-	110	6
2DLR 060 0005 200	6XR0.05	7	20	110	6
2DLR 060 0005 300	6XR0.05	7	30	110	6
2DLR 060 0005 500	6XR0.05	7	50	110	6
2DLR 060 002 070	6XR0.2	7	-	110	6
2DLR 060 002 200	6XR0.2	7	20	110	6
2DLR 060 002 300	6XR0.2	7	30	110	6
2DLR 060 002 500	6XR0.2	7	50	110	6
2DLR 060 005 070	6XR0.5	7	-	110	6
2DLR 060 005 200	6XR0.5	7	20	110	6
2DLR 060 005 300	6XR0.5	7	30	110	6
2DLR 060 005 500	6XR0.5	7	50	110	6
2DLR 060 010 070	6XR1	7	-	110	6
2DLR 060 010 200	6XR1	7	20	110	6
2DLR 060 010 300	6XR1	7	30	110	6
2DLR 060 010 500	6XR1	7	50	110	6

K GRAPHITE 4DLR



4 Flutes Diamond Coated Corner Radius Endmills for Graphite

Endmills for Graphite, reinforced plastic, carbon fiber, Non-ferrous and non-metallic materials

- Wide range products prepared for various work shape and excellent performance.



4刃 黒鉛加工用 ダイヤモンド コーティング コーナー ラジウス エンドミル

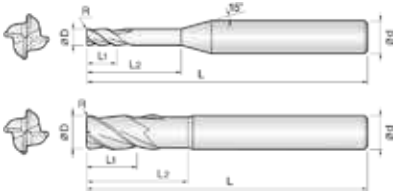
グラファイト(黒鉛), 強化プラスチック, 炭素繊維など 非鉄,非金属 系列の 多様な 被削材 専用 エンドミル

- 多様な 被削材の形状に適用されるような規格を多様化して, 広い 加工領域で優れた寿命と性能を発揮します.

4날 흑연가공용 다이아몬드 코팅 코너 레디우스 엔드밀

그라파이트(흑연), 강화플라스틱, 탄소섬유 등 비철,비금속 계열의 다양한 피삭재 전용 엔드밀

- 다양한 피삭재의 형상에 적용하도록 규격을 다양화하여, 넓은 가공 영역에 뛰어난 수명과 성능을 발휘합니다.



D Size	D Tolerance
Ø2~Ø12	+0~-0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4DLR 020 0005 035	2XR0.05	3.5	-	60	4
4DLR 020 0005 060	2XR0.05	3.5	6	60	4
4DLR 020 0005 120	2XR0.05	3.5	12	60	4
4DLR 020 0005 180	2XR0.05	3.5	18	60	4
4DLR 020 0005 250	2XR0.05	3.5	25	60	4
4DLR 020 0005 300	2XR0.05	3.5	30	60	4
4DLR 020 002 035	2XR0.2	3.5	-	60	4
4DLR 020 002 060	2XR0.2	3.5	6	60	4
4DLR 020 002 120	2XR0.2	3.5	12	60	4
4DLR 020 002 180	2XR0.2	3.5	18	60	4
4DLR 020 002 250	2XR0.2	3.5	25	60	4
4DLR 020 002 300	2XR0.2	3.5	30	60	4
4DLR 020 003 035	2XR0.3	3.5	-	60	4
4DLR 020 003 060	2XR0.3	3.5	6	60	4
4DLR 020 003 120	2XR0.3	3.5	12	60	4
4DLR 020 003 180	2XR0.3	3.5	18	60	4
4DLR 020 003 250	2XR0.3	3.5	25	60	4
4DLR 020 003 300	2XR0.3	3.5	30	60	4
4DLR 020 005 035	2XR0.5	3.5	-	60	4
4DLR 020 005 060	2XR0.5	3.5	6	60	4
4DLR 020 005 120	2XR0.5	3.5	12	60	4
4DLR 020 005 180	2XR0.5	3.5	18	60	4
4DLR 020 005 250	2XR0.5	3.5	25	60	4
4DLR 020 005 300	2XR0.5	3.5	30	60	4
4DLR 030 0005 040	3XR0.05	4	-	80	4
4DLR 030 0005 100	3XR0.05	4	10	80	4
4DLR 030 0005 200	3XR0.05	4	20	80	4
4DLR 030 0005 300	3XR0.05	4	30	80	4
4DLR 030 0005 400	3XR0.05	4	40	80	4
4DLR 030 002 040	3XR0.2	4	-	80	4
4DLR 030 002 100	3XR0.2	4	10	80	4
4DLR 030 002 200	3XR0.2	4	20	80	4
4DLR 030 002 300	3XR0.2	4	30	80	4
4DLR 030 002 400	3XR0.2	4	40	80	4
4DLR 030 003 040	3XR0.3	4	-	80	4

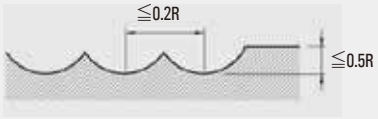
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
4DLR 030 003 100	3XR0.3	4	10	80	4
4DLR 030 003 200	3XR0.3	4	20	80	4
4DLR 030 003 300	3XR0.3	4	30	80	4
4DLR 030 003 400	3XR0.3	4	40	80	4
4DLR 030 005 040	3XR0.5	4	-	80	4
4DLR 030 005 100	3XR0.5	4	10	80	4
4DLR 030 005 200	3XR0.5	4	20	80	4
4DLR 030 005 300	3XR0.5	4	30	80	4
4DLR 030 005 400	3XR0.5	4	40	80	4
4DLR 030 010 040	3XR1	4	-	80	4
4DLR 030 010 100	3XR1	4	10	80	4
4DLR 030 010 200	3XR1	4	20	80	4
4DLR 030 010 300	3XR1	4	30	80	4
4DLR 030 010 400	3XR1	4	40	80	4
4DLR 040 003 100	4XR0.3	6	20	100	4
4DLR 040 005 100	4XR0.5	6	20	100	4
4DLR 040 010 100	4XR1	6	20	100	4
4DLR 060 003 110	6XR0.3	9	25	110	6
4DLR 060 005 110	6XR0.5	9	25	110	6
4DLR 060 005 150	6XR0.5	9	30	150	6
4DLR 060 010 110	6XR1	9	25	110	6
4DLR 060 010 150	6XR1	9	30	150	6
4DLR 080 003 110	8XR0.3	12	30	110	8
4DLR 080 005 110	8XR0.5	12	30	110	8
4DLR 080 005 150	8XR0.5	12	40	150	8
4DLR 080 010 110	8XR1	12	30	110	8
4DLR 080 010 150	8XR1	12	40	150	8
4DLR 100 005 110	10XR0.5	15	35	110	10
4DLR 100 005 160	10XR0.5	15	45	160	10
4DLR 100 010 110	10XR1	15	35	110	10
4DLR 100 010 160	10XR1	15	45	160	10
4DLR 120 005 110	12XR0.5	18	40	110	12
4DLR 120 005 160	12XR0.5	18	45	160	12
4DLR 120 010 110	12XR1	18	40	110	12
4DLR 120 010 160	12XR1	18	45	160	12

2DBL/3DBL/4DBL

• RPM : rev./min • Feed : mm/min

	2DBL/3DBL		4DBL	
Material	Graphite		Graphite	
Radius	RPM	FEED	RPM	FEED
R0.2	40,000	1,200	-	-
R0.3	40,000	1,600	-	-
R0.4	40,000	1,800	-	-
R0.5	40,000	2,000	-	-
R1	40,000	2,200	-	-
R1.5	30,000	2,400	-	-
R2	24,000	2,600	24,000	3,600
R2.5	19,000	2,600	19,000	3,600
R3	16,000	2,600	16,000	3,600
R4	12,000	2,800	12,000	3,800
R5	10,000	3,000	10,000	4,000
R6	8,000	3,000	8,000	4,000

Depth of Cut



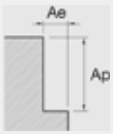
2DLM/3DLM/4DLM/6DLM/2DLR/4DLR

• RPM : rev./min • Feed : mm/min

	2DLM/3DLM		4DLM		6DLM		2DLR		4DLR	
Material	Graphite		Graphite		Graphite		Graphite		Graphite	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.2mm	40,000	50	-	-	-	-	40,000	100	-	-
0.4mm	40,000	100	-	-	-	-	40,000	200	-	-
0.5mm	40,000	200	-	-	-	-	40,000	300	-	-
0.6mm	40,000	250	-	-	-	-	40,000	400	-	-
0.8mm	40,000	300	-	-	-	-	40,000	500	-	-
1mm	40,000	400	-	-	-	-	40,000	900	-	-
2mm	30,000	470	30,000	800	-	-	36,000	900	-	-
3mm	21,000	640	21,000	1,200	-	-	32,000	1,300	-	-
4mm	16,000	540	16,000	1,200	-	-	26,000	1,500	40,000	3,500
5mm	12,500	560	-	-	-	-	24,000	1,100	-	-
6mm	10,500	590	10,500	1,200	-	-	21,000	1,100	40,000	5,600
8mm	8,000	610	8,000	1,250	-	-	-	-	32,000	5,600
10mm	6,400	640	-	-	13,000	6,000	-	-	26,000	5,700
12mm	5,300	630	-	-	11,200	5,600	-	-	21,000	5,500
16mm	-	-	-	-	7,000	4,000	-	-	15,800	5,500

Depth of Cut

D	Ap	Ae
Dc≦Ø0.2R	1.5D	0.05D
Ø2.5<Dc	1.5D	0.1D





K COMPOSITE 2BCP

2 Flutes Ball End Mills for Composite

Endmills for CFRP, GFRP, glass/carbon fiber, nonferrous and non-metallic materials.

- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.

2刃複合素材加工用のボールエンドミル

強化プラスチック(CFRP,GFRP),ガラス/炭素繊維などの非鉄・非金属系の多様な複合素材専用のエンドミル

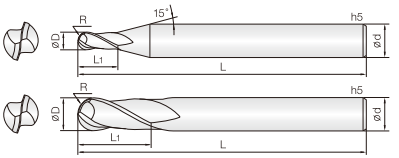
- 様々な複合素材加工領域に優れた性能を発揮します。
- コーティング皮膜の硬度が高く,耐摩耗性に優れています。

2날 복합소재 가공용 볼 엔드밀

강화플라스틱(CFRP,GFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 복합소재 전용 엔드밀

- 다양한 복합소재 가공영역에 뛰어난 성능을 발휘합니다.
- 코팅피막에 경도가 높아 내마모성이 우수합니다.





Size	D Tolerance
Ø0.5~1	+0~ -0.01mm
Ø1.5~12	-0.005~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RXD	L1	L	d
2BCP 005 010 S04	0.25RX0.5	1	50	4
2BCP 006 012 S04	0.3RX0.6	1.2	50	4
2BCP 008 020 S04	0.4RX0.8	2	50	4
2BCP 010 025 S04	0.5RX1	2.5	50	4
2BCP 015 040 S04	0.75RX1.5	4	50	4
2BCP 020 050 S04	1RX2	5	50	4
2BCP 025 060 S04	1.25RX2.5	6	50	4
2BCP 030 080 S06	1.5RX3	8	60	6
2BCP 040 080 S06	2RX4	8	70	6

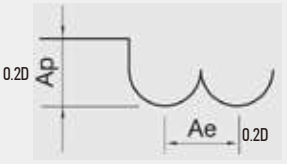
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RXD	L1	L	d
2BCP 050 100 S06	2.5RX5	10	80	6
2BCP 060 120 080	3RX6	12	80	6
2BCP 060 120 110	3RX6	12	110	6
2BCP 080 140 080	4RX8	14	80	8
2BCP 080 140 110	4RX8	14	110	8
2BCP 100 180 080	5RX10	18	80	10
2BCP 100 180 110	5RX10	18	110	10
2BCP 120 220 080	6RX12	22	80	12
2BCP 120 220 110	6RX12	22	110	12

2BCP

• RPM : rev./min • Feed : mm/min

Material	CFRP				GFRP			
Radius	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R 0.25	28,000	273	0.05	0.05	13,720	112	0.05	0.05
R 0.3	25,760	315	0.06	0.06	12,622	129	0.06	0.06
R 0.4	18,816	399	0.08	0.08	9,220	164	0.08	0.08
R 0.5	17,920	420	0.1	0.1	8,781	172	0.10	0.10
R 1	17,920	840	0.2	0.2	8,781	344	0.20	0.20
R 2	17,920	2,205	0.4	0.4	8,781	904	0.40	0.40
R 3	16,800	3,098	0.6	0.6	8,232	1,270	0.60	0.60
R 4	14,560	3,150	0.8	0.8	7,134	1,292	0.80	0.80
R 5	12,880	3,360	1	1	6,311	1,378	1.00	1.00
R 6	11,200	3,308	1.2	1.2	5,488	1,356	1.20	1.20

Depth of Cut



- If the effective length is long, reduce the RPM and feed in the same proportion.
- If the effective length of your tool does not show above the table, use the shorten effective length of parameter and reduce the parameters in the same proportion.

K COMPOSITE 8~12ECP

8~12 Flutes Finishing End Mills for Composite

Endmills for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.

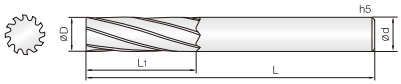
- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.



8~12刃複合素材加工用のせい精密仕上げエンドミル

強化プラスチック(CFRP,GFRP),ガラス/炭素繊維,黒鉛などの非鉄・非金属系の多様な複合素材専用のエンドミル

- 様々な複合素材加工領域に優れた性能を発揮します。
- コーティング皮膜の硬度が高く,耐摩耗性に優れています。



8~12날 복합소재 가공용 정삭 엔드밀

강화플라스틱(CFRP,GFRP), 유리/탄소섬유, 흑연 등 비철 비금속 계열의 다양한 복합소재 전용 엔드밀

- 다양한 복합소재 가공영역에 뛰어난 성능을 발휘합니다.
- 코팅피막에 경도가 높아 내마모성이 우수합니다.

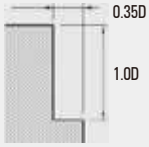
Size	D Tolerance
Ø6~12	+0.01~ -0.025mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
8ECP 060 180 080	6	18	80	6
10ECP 080 240 080	8	24	80	8
12ECP 100 300 100	10	30	100	12
12ECP 120 360 100	12	36	100	12

8~12ECP

• RPM : rev./min • Feed : mm/min

Material	CFRP				GFRP			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø6	8,400	840	6	2.1	4,116	378	6	2.1
Ø8	6,200	860	8	2.8	3,038	387	8	2.8
Ø10	5,100	780	10	3.5	2,499	351	10	3.5
Ø12	4,150	750	12	4.2	2,034	338	12	4.2
Depth of Cut								

- If the effective length is long, reduce the RPM and feed in the same proportion.
- Above the value of the table is based on 8 flutes. If you use more than 8 flutes of endmill, raise up the RPM and Feed in a same proportion compared to the same diameter.

K COMPOSITE 3&4&6RCP

3 4 6 UWC G-TAC Coating 3F DIA Coating 4F, 6F D -0.01~-0.025 Ø6~Ø12 30° Shield Edge

3&4&6 Flutes Compresion Router for Composite

Router for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.

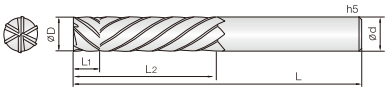
- No up-moving work material at wall cutting.
- No burr in work materials.



3&4&6刃複合素材加工用のルーター

強化プラスチック(CFRP,GFRP),ガラス/炭素繊維,黒鉛などの非鉄・非金属系の多様な複合素材専用のルーター

- 側壁を加工する時,工作物の浮き上がりがありません。
- 被削材にバリは発生しません。



3&4&6날 복합소재 가공용 라우터

강화플라스틱(CFRP,GFRP), 유리/탄소섬유, 흑연 등 비철 비금속 계열의 다양한 복합소재 전용 라우터

- 측벽가공시 공작물의 떠올림 현상이 없습니다.
- 피삭재에 버가 발생하지 않습니다.

Size	D Tolerance
Ø6~12	+0.01~ -0.025mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Length of cut	Overall Length	Shank Dia
	D	L1	L2	L	d
3RCP 060 200 S06	6	5	20	70	6
3RCP 080 250 S08	8	5	25	80	8
3RCP 100 270 S10	10	6	27	80	10
3RCP 120 300 S12	12	6	30	80	12
4RCP 060 200 S06	6	5	20	70	6
6RCP 080 250 S08	8	5	25	80	8
6RCP 100 270 S10	10	6	27	80	10
6RCP 120 300 S12	12	6	30	80	12

3RCP

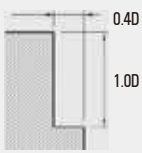
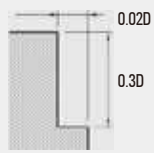
• RPM : rev./min • Feed : mm/min

Material	CFRP			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø6	8,000	600	6	2.40
Ø8	6,000	600	8	3.20
Ø10	4,800	540	10	4.00
Ø12	4,000	540	12	4.80

4&6RCP

- In case of long effective length, reduce the RPM and feed by 20% or less.
- The edge of the flute precisely grinded. If you want to measure the tool, and to avoid damaging on the flutes, use non contact measuring method.

• RPM : rev./min • Feed : mm/min

	4RCP								6RCP							
Material	CFRP				GFRP				CFRP				GFRP			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø6	7,900	1,100	6	2.40	4,200	430	6	2.40	10,500	1,950	1.8	0.12	5,300	7,400	1.8	0.12
Ø8	5,960	1,600	8	3.20	3,200	590	8	3.20	7,970	2,950	2.4	0.16	3,900	950	2.4	0.16
Ø10	4,750	1,500	10	4.00	2,550	560	10	4.00	6,350	2,930	3.0	0.20	3,120	850	3.0	0.20
Ø12	3,950	2,060	12	4.80	2,120	725	12	4.80	5,300	3,900	3.6	0.24	2,600	1,050	3.6	0.24
Depth of Cut																

K COMPOSITE 6~16RCP

6 ~ 16 | UWC | NANO DIA Coating | D -0~0.01 Ø2~Ø5 | D -0.01~0.025 Ø6~Ø12 | 30° | Shield Edge

6~16 Flutes Router for Composite

Router for CFRP, GFRP, glass/carbon fiber, graphite, nonferrous and non-metallic materials.

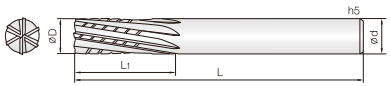
- Outstanding performance in roughing of various composite materials.
- A type has many bottom edges and optimized for slotting.
- B type has two bottom edges and excellent performance in vertical, horizontal machining.



6~16刃複合素材加工用のルーター

強化プラスチック(CFRP,GFRP),ガラス/炭素繊維,黒鉛などの非鉄・非金属系の多様な複合素材専用のルーター

- 様々な複合素材の荒削加工時に優れた性能を発揮します。
- A typeは,下刃の数が多く,スローティング作業に最適です。
- B typeは下刃が2刃で,垂直及び水平加工時に優れた性能を発揮します。



6~16날 복합소재 가공용 라우터

강화플라스틱(CFRP,GFRP), 유리/탄소섬유, 흑연 등 비철 비금속 계열의 다양한 복합소재 전용 라우터

- 다양한 복합소재의 황삭가공시 뛰어난 성능을 발휘합니다.
- A type은 밑날의 수가 많아 슬로팅 작업에 최적입니다.
- B type은 밑날이 2날로서 수직 및 수평 가공시 탁월한 성능을 발휘합니다.

Size	D Tolerance
Ø2~5	+0~ -0.01mm
Ø6~12	+0.005~ -0.02mm

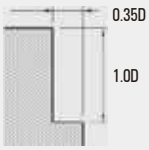
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Type	Shank Dia
	D	L1	L		d
6RCPA 020 070 S04	2	7	40	A	4
6RCPB 020 070 S04	2	7	40	B	4
6RCPA 030 120 S04	3	12	50	A	4
6RCPB 030 120 S04	3	12	50	B	4
8RCPA 040 160 S04	4	16	60	A	4
8RCPB 040 160 S04	4	16	60	B	4
10RCPA 050 200 S06	5	20	60	A	6
10RCPB 050 200 S06	5	20	60	B	6
10RCPA 060 200 S06	6	20	70	A	6
10RCPB 060 200 S06	6	20	70	B	6
12RCPA 080 250 S08	8	25	80	A	8
12BCPB 080 250 S08	8	25	80	B	8
14RCPA 100 270 S10	10	27	80	A	10
14RCPB 100 270 S10	10	27	80	B	10
16RCPA 120 300 S12	12	30	80	A	12
16RCPB 120 300 S12	12	30	80	B	12

6~16RCP

- In case of long effective length, reduce the RPM and feed by 20% or less.
- Above the value of the table is based on 8 flutes. If you use more than 8 flutes of endmill, raise up the RPM and Feed in a same proportion compared to the same diameter.

• RPM : rev./min • Feed : mm/min

Material	CFRP				GFRP			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø4	15,900	1,400	8	1.4	15,900	1,400	8	1.4
Ø5	13,000	1,900	10	1.8	13,000	1,900	10	1.8
Ø6	10,600	2,200	12	2.1	10,600	2,200	12	2.1
Ø8	7,950	2,600	16	2.8	7,950	2,600	16	2.8
Ø10	6,300	3,050	20	3.5	6,300	3,050	20	3.5
Ø12	5,300	3,300	24	4.2	5,300	3,300	24	4.2
Depth of Cut								

K COMPOSITE 2DCA

2 Flutes Diamond Coated Drills for Composite

Drill for CFRP, GFRP, glass/carbon fiber, graphite, copper, copper alloy, nonferrous and non-metallic materials.

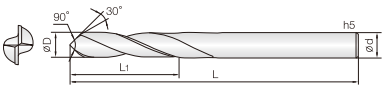
- Outstanding performance in machining of various composite materials.
- Excellent wear resistance by applying high hardness coating layer.



2刃複合素材加工用のダイヤモンドコーティングドリル

強化プラスチック(CFRP,GFRP),ガラス/炭素繊維,銅及び銅合金,黒鉛などの非鉄・非金属系の多様な複合素材専用のドリル

- 様々な複合素材加工領域に優れた性能を発揮します。
- コーティング皮膜の硬度が高く,耐摩耗性に優れています。



2날 복합소재 가공용 다이아몬드 코팅 드릴

강화플라스틱(CFRP,GFRP), 유리/탄소섬유, 동 및 동합금, 흑연 등 비철 비금속 계열의 다양한 복합소재 전용 드릴

- 다양한 복합소재 가공영역에 뛰어난 성능을 발휘합니다.
- 코팅피막에 경도가 높아 내모모성이 우수합니다.

Size	D Tolerance
Ø2~5.5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2DCA 020 160 S04	2	16	60	4
2DCA 023 180 S04	2.3	18	60	4
2DCA 025 200 S04	2.5XM3	20	60	4
2DCA 030 220 S04	3	22	60	4
2DCA 033 230 S04	3.3XM4	23	60	4
2DCA 035 270 S04	3.5	27	60	4
2DCA 040 300 S04	4	30	60	4
2DCA 042 300 S06	4.2XM5	30	80	6
2DCA 045 330 S06	4.5	33	80	6
2DCA 050 360 S06	5XM6	36	80	6
2DCA 055 380 S06	5.5	38	80	6
2DCA 060 380 S06	6	38	80	6
2DCA 065 450 S08	6.5	45	90	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2DCA 068 450 S08	6.8XM8	45	90	8
2DCA 070 450 S08	7	45	90	8
2DCA 075 480 S08	7.5	48	90	8
2DCA 080 480 S08	8	48	90	8
2DCA 085 510 S10	8.5XM10	51	110	10
2DCA 090 540 S10	9	54	110	10
2DCA 095 540 S10	9.5	54	110	10
2DCA 100 600 S10	10	60	110	10
2DCA 103 600 S12	10.3XM12	60	110	12
2DCA 105 600 S12	10.5	60	110	12
2DCA 110 650 S12	11	65	110	12
2DCA 115 650 S12	11.5	65	110	12
2DCA 120 700 S12	12	70	120	12

2DCA

• RPM : rev./min • Feed : mm/min

Material	CFRP			
Outside Diameter	RPM	FEED	V/C	Fz
Ø2	15,900	960	100 ~ 150	0.03 ~ 0.07
Ø2.5	12,700	760	100 ~ 150	0.03 ~ 0.07
Ø3	10,600	630	100 ~ 150	0.03 ~ 0.07
Ø4	7,960	480	100 ~ 150	0.03 ~ 0.07
Ø5	6,370	380	100 ~ 150	0.03 ~ 0.07
Ø6	5,300	320	100 ~ 150	0.03 ~ 0.07
Ø8	3,980	240	100 ~ 150	0.03 ~ 0.07
Ø9	3,540	210	100 ~ 150	0.03 ~ 0.07
Ø10	3,180	190	100 ~ 150	0.03 ~ 0.07
Ø11	2,890	175	100 ~ 150	0.03 ~ 0.07
Ø12	2,650	160	100 ~ 150	0.03 ~ 0.07

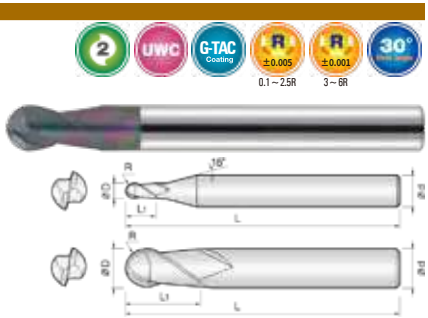
- Above the parameters are based on V/C 100 with Fz 0.03. Actual machining can be changed depending on your machining purpose and condition of your machine.

G-TAC 2LCB

2 Flutes G-TAC Coated Ball Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

• High precise edge tolerance.



2刃 非鉄 加工用 G-TACコーティング ボール エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP), グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

• 高精密 公差 適用で超精密加工に適合します.

2날 비철 가공용 G-TAC코팅 볼 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀

• 고정밀 공차 적용으로 초정밀가공에 적합합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2LCB 002 004 S04	0.1R X 0.2	0.4	45	4
2LCB 003 006 S04	0.15R X 0.3	0.6	45	4
2LCB 004 008 S04	0.2R X 0.4	0.8	45	4
2LCB 005 010 S04	0.25R X 0.5	1	45	4
2LCB 006 012 S04	0.3R X 0.6	1.2	45	4
2LCB 008 020 S04	0.4R X 0.8	2	50	4
2LCB 010 025 S04	0.5R X 1	2.5	50	4
2LCB 012 030 S04	0.6R X 1.2	3	50	4
2LCB 015 040 S04	0.75R X 1.5	4	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2LCB 020 050 S04	1R X 2	5	50	4
2LCB 025 060 S04	1.25R X 2.5	6	50	4
2LCB 030 080 S06	1.5R X 3	8	60	6
2LCB 040 080 S06	2R X 4	8	70	6
2LCB 050 100 S06	2.5R X 5	10	80	6
2LCB 060 120 090	3R X 6	12	90	6
2LCB 080 140 100	4R X 8	14	100	8
2LCB 100 180 100	5R X 10	18	100	10
2LCB 120 220 110	6R X 12	22	110	12

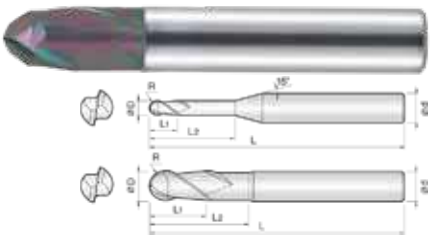
2LCB

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloys Casting / Die Casting Si1 3%				Magnesium Alloy / Copper Allloy / CFRP AZ91 / AZ80A / C1100		Copper Allloy C1100	
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.1	28,800	180	40,000	240	28,800	180	36,100	230	28,800	180	31,600	200
R0.3	28,800	350	40,000	490	28,800	350	36,100	480	28,800	350	31,600	420
R0.5	23,400	720	31,500	950	23,400	720	25,200	900	23,400	720	20,700	800
R0.8	23,400	760	35,900	1,120	23,400	760	25,200	1,000	22,500	720	20,700	800
R1	22,500	950	31,500	1,260	22,500	950	25,200	1,100	17,100	720	20,700	800
R1.5	15,300	950	20,700	1,260	15,300	950	16,700	1,100	11,300	720	13,500	800
R2	11,300	950	15,800	1,260	11,300	950	12,600	1,100	8,600	720	10,400	800
R3	9,000	950	13,200	1,260	9,000	950	12,600	1,100	5,900	720	8,900	800
R4	6,400	1,150	11,600	1,260	6,400	1,150	9,800	1,000	4,800	880	6,400	950
R5	5,200	1,050	9,400	1,120	5,200	1,050	7,800	860	3,900	760	5,300	880
R6	4,100	1,000	6,700	950	4,100	1,000	5,400	520	3,000	740	4,600	840
	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf
	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.02D	0.05D
Depth of Cut												

K G-TAC 2LRB





2 Flutes G-TAC Coated Rib Ball Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

- High precise edge tolerance.

2刃 非鉄 加工用 G-TACコーティング ボール エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP), グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

- 高精密 公差 適用で超精密加工に適合します.

2날 비철 가공용 G-TAC코팅 리브 볼 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀

- 고정밀 공차 적용으로 초정밀가공에 적합합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

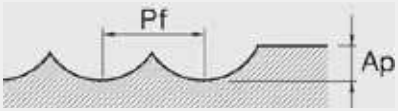
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2LRB 001 003 S04	0.05RX0.1	0.3	-	45	4
2LRB 002 005 S04	0.1RX0.2	0.5	-	45	4
2LRB 002 010 S04	0.1RX0.2	0.2	1	45	4
2LRB 002 015 S04	0.1RX0.2	0.2	1.5	45	4
2LRB 002 020 S04	0.1RX0.2	0.2	2	45	4
2LRB 003 010 S04	0.15RX0.3	0.3	1	45	4
2LRB 003 015 S04	0.15RX0.3	0.3	1.5	45	4
2LRB 003 020 S04	0.15RX0.3	0.3	2	45	4
2LRB 004 010 S04	0.2RX0.4	0.4	1	45	4
2LRB 004 020 S04	0.2RX0.4	0.4	2	45	4
2LRB 004 030 S04	0.2RX0.4	0.4	3	45	4
2LRB 004 040 S04	0.2RX0.4	0.4	4	45	4
2LRB 004 050 S04	0.2RX0.4	0.4	5	45	4
2LRB 005 020 S04	0.25RX0.5	0.5	2	45	4
2LRB 005 040 S04	0.25RX0.5	0.5	4	45	4
2LRB 005 060 S04	0.25RX0.5	0.5	6	45	4
2LRB 005 080 S04	0.25RX0.5	0.5	8	45	4
2LRB 005 100 S04	0.25RX0.5	0.5	10	45	4
2LRB 006 020 S04	0.3RX0.6	0.6	2	45	4
2LRB 006 040 S04	0.3RX0.6	0.6	4	45	4
2LRB 006 060 S04	0.3RX0.6	0.6	6	45	4
2LRB 006 080 S04	0.3RX0.6	0.6	8	45	4
2LRB 006 100 S04	0.3RX0.6	0.6	10	45	4
2LRB 008 020 S04	0.4RX0.8	0.8	2	45	4
2LRB 008 040 S04	0.4RX0.8	0.8	4	45	4
2LRB 008 060 S04	0.4RX0.8	0.8	6	45	4
2LRB 008 080 S04	0.4RX0.8	0.8	8	45	4
2LRB 008 100 S04	0.4RX0.8	0.8	10	45	4
2LRB 008 120 S04	0.4RX0.8	0.8	12	45	4
2LRB 010 040 S04	0.5RX1	1	4	45	4
2LRB 010 060 S04	0.5RX1	1	6	45	4
2LRB 010 080 S04	0.5RX1	1	8	45	4
2LRB 010 100 S04	0.5RX1	1	10	45	4
2LRB 010 120 S04	0.5RX1	1	12	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2LRB 010 160 S04	0.5RX1	1	16	50	4
2LRB 015 060 S04	0.75RX1.5	1.5	6	45	4
2LRB 015 080 S04	0.75RX1.5	1.5	8	45	4
2LRB 015 100 S04	0.75RX1.5	1.5	10	45	4
2LRB 015 120 S04	0.75RX1.5	1.5	12	45	4
2LRB 015 160 S04	0.75RX1.5	1.5	16	50	4
2LRB 015 200 S04	0.75RX1.5	1.5	20	50	4
2LRB 020 060 S04	1RX2	3	6	45	4
2LRB 020 080 S04	1RX2	3	8	45	4
2LRB 020 100 S04	1RX2	3	10	45	4
2LRB 020 120 S04	1RX2	3	12	45	4
2LRB 020 160 S04	1RX2	3	16	50	4
2LRB 020 200 S04	1RX2	3	20	50	4
2LRB 020 250 S04	1RX2	3	25	60	4
2LRB 020 300 S04	1RX2	3	30	70	4
2LRB 030 120 S06	1.5RX3	4	12	50	6
2LRB 030 160 S06	1.5RX3	4	16	60	6
2LRB 030 200 S06	1.5RX3	4	20	60	6
2LRB 030 250 S06	1.5RX3	4	25	65	6
2LRB 030 300 S06	1.5RX3	4	30	70	6
2LRB 030 400 S06	1.5RX3	4	40	80	6
2LRB 040 120 S06	2RX4	5	12	50	6
2LRB 040 160 S06	2RX4	5	16	60	6
2LRB 040 200 S06	2RX4	5	20	60	6
2LRB 040 250 S06	2RX4	5	25	65	6
2LRB 040 300 S06	2RX4	5	30	70	6
2LRB 050 200 S06	2.5RX5	6	20	60	6
2LRB 050 400 S06	2.5RX5	6	40	80	6
2LRB 060 200 S06	3RX6	8	20	60	6
2LRB 060 300 S06	3RX6	8	30	90	6
2LRB 080 200 S08	4RX8	10	20	70	8
2LRB 100 250 S10	5RX10	12	25	80	10
2LRB 120 250 S12	6RX12	14	25	80	12

2LRB

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloys Casting / Die Casting Si1 3%				Magnesium Alloy / Copper Allloy / CFRPAZ91 / AZ80A / C1100		Copper Allloy C1100	
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.1	32,000	220	45,000	290	32,000	220	45,000	290	32,000	220	45,000	290
R0.3	32,000	480	45,000	660	32,000	480	45,000	660	32,000	480	45,000	660
R0.5	28,800	760	45,000	1,100	28,800	760	45,000	1,100	28,800	760	45,000	1,100
R0.8	28,800	850	45,000	1,400	28,800	850	45,000	1,400	25,200	850	35,900	1,300
R1	28,600	1,400	45,000	2,000	28,600	1,400	43,000	1,900	21,500	1,000	35,900	1,600
R1.5	19,100	1,400	45,000	3,000	19,100	1,400	28,600	1,900	14,300	1,000	23,900	1,600
R2	14,300	1,400	35,900	3,200	14,300	1,400	21,400	1,900	10,700	1,000	17,900	1,600
R3	9,500	1,400	23,900	3,200	9,500	1,400	14,300	1,900	7,200	1,000	12,000	1,600
R4	7,200	1,800	17,600	4,100	7,200	1,800	10,700	2,400	5,400	1,300	8,900	2,000
R5	5,700	1,600	14,000	3,600	5,700	1,600	8,600	2,200	4,300	1,200	7,200	1,800
R6	4,800	1,500	11,700	3,400	4,800	1,500	7,200	2,000	3,600	1,100	5,900	1,700
	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf
	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.02D	0.05D
Depth of Cut												

K G-TAC 2LRE

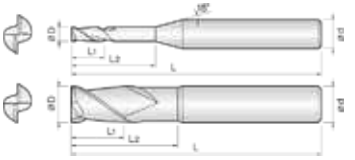


2 Flutes G-TAC Coated Rib Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

- Reinforced edge design for preventing edge chipping.
- High precise edge tolerance.





2刃 非鉄 加工用 G-TACコーティング ボール エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP),
グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

• 刃先部 剛性を 補強して 刃部チッピングを 最小化しました. • 高精密 公差 適用で超精密加工に適合します.

2날 비철 가공용 G-TAC코팅 리브 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀

• 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다. • 고정밀 공차 적용으로 초정밀가공에 적합합니다.

Size	D Tolerance
D≦Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2LRE 001 003 S04	0.1	0.3	-	45	4
2LRE 001 005 S04	0.1	0.5	-	45	4
2LRE 002 005 S04	0.2	0.5	-	45	4
2LRE 002 010 S04	0.2	0.3	1	45	4
2LRE 002 015 S04	0.2	0.3	1.5	45	4
2LRE 002 020 S04	0.2	0.3	2	45	4
2LRE 003 010 S04	0.3	0.5	1	45	4
2LRE 003 015 S04	0.3	0.5	1.5	45	4
2LRE 003 020 S04	0.3	0.5	2	45	4
2LRE 004 010 S04	0.4	0.6	1	45	4
2LRE 004 020 S04	0.4	0.6	2	45	4
2LRE 004 030 S04	0.4	0.6	3	45	4
2LRE 004 040 S04	0.4	0.6	4	45	4
2LRE 004 050 S04	0.4	0.6	5	45	4
2LRE 005 020 S04	0.5	0.7	2	45	4
2LRE 005 040 S04	0.5	0.7	4	45	4
2LRE 005 060 S04	0.5	0.7	6	45	4
2LRE 005 080 S04	0.5	0.7	8	45	4
2LRE 005 100 S04	0.5	0.7	10	45	4
2LRE 006 020 S04	0.6	0.9	2	45	4
2LRE 006 040 S04	0.6	0.9	4	45	4
2LRE 006 060 S04	0.6	0.9	6	45	4
2LRE 006 080 S04	0.6	0.9	8	45	4
2LRE 006 100 S04	0.6	0.9	10	45	4
2LRE 008 020 S04	0.8	1.2	2	45	4
2LRE 008 040 S04	0.8	1.2	4	45	4
2LRE 008 060 S04	0.8	1.2	6	45	4
2LRE 008 080 S04	0.8	1.2	8	45	4
2LRE 008 100 S04	0.8	1.2	10	45	4
2LRE 008 120 S04	0.8	1.2	12	45	4
2LRE 010 040 S04	1	1.5	4	45	4
2LRE 010 060 S04	1	1.5	6	45	4
2LRE 010 080 S04	1	1.5	8	45	4
2LRE 010 100 S04	1	1.5	10	45	4
2LRE 010 120 S04	1	1.5	12	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2LRE 010 160 S04	1	1.5	16	50	4
2LRE 015 060 S04	1.5	2.3	6	45	4
2LRE 015 080 S04	1.5	2.3	8	45	4
2LRE 015 100 S04	1.5	2.3	10	45	4
2LRE 015 120 S04	1.5	2.3	12	45	4
2LRE 015 160 S04	1.5	2.3	16	50	4
2LRE 015 200 S04	1.5	2.3	20	50	4
2LRE 020 060 S04	2	3	6	45	4
2LRE 020 080 S04	2	3	8	45	4
2LRE 020 100 S04	2	3	10	45	4
2LRE 020 120 S04	2	3	12	45	4
2LRE 020 160 S04	2	3	16	50	4
2LRE 020 200 S04	2	3	20	50	4
2LRE 030 120 S06	3	4.5	12	50	6
2LRE 030 160 S06	3	4.5	16	60	6
2LRE 030 200 S06	3	4.5	20	60	6
2LRE 030 250 S06	3	4.5	25	65	6
2LRE 030 300 S06	3	4.5	30	70	6
2LRE 030 400 S06	3	4.5	40	80	6
2LRE 040 120 S06	4	6	12	50	6
2LRE 040 160 S06	4	6	16	60	6
2LRE 040 200 S06	4	6	20	60	6
2LRE 040 250 S06	4	6	25	65	6
2LRE 040 300 S06	4	6	30	70	6
2LRE 040 400 S06	4	6	40	80	6
2LRE 050 200 S06	5	6	20	60	6
2LRE 050 400 S06	5	6	40	80	6
2LRE 060 200 S06	6	8	20	60	6
2LRE 060 300 S06	6	8	30	90	6
2LRE 080 200 S08	8	12	20	70	8
2LRE 100 250 S10	10	15	25	80	10
2LRE 120 300 S12	12	18	30	80	12

K G-TAC 3LHE

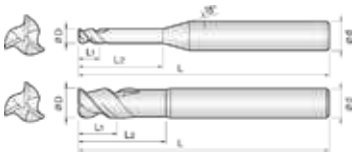


3 Flutes 45° Helix G-TAC Coated Rib Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

- High speed, feed applicable by 3 flute 45° helix and deep chip pocket design.





3刃 45° ヘリックス 非鉄 加工用 G-TACコーティング リブ エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP),
グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

- 3刃 45°ヘリックス 形状と深い ポケットで設計して チップ排出が円滑で, 高速,高移送 作業に適合します.

3날 45° 헬릭스 비철 가공용 G-TAC코팅 리브 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한
피삭재 전용 엔드밀

- 3날 45°헬릭스 형상과 깊은 포켓으로 설계하여 칩배출이 원활하며, 고속,고이송 작업에 적합합니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

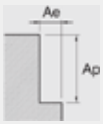
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3LHE 010 030 S04	1	2	3	50	4
3LHE 015 045 S04	1.5	3	4.5	50	4
3LHE 020 060 S04	2	4	6	50	4
3LHE 025 075 S04	2.5	5	7.5	50	4
3LHE 030 090 S06	3	6	9	60	6
3LHE 040 120 S06	4	9	12	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3LHE 050 150 S06	5	10	15	70	6
3LHE 060 180 S06	6	12	18	70	6
3LHE 080 240 S08	8	16	24	80	8
3LHE 100 300 S10	10	20	30	90	10
3LHE 120 360 S12	12	24	36	100	12

2LRE/3LHE

■ Apply 20% up values of below condition for 3LHE
■ 3LHEは下記数値の 20% Up 適用
■ 3LHE는 아래 수치의 20% Up 적용

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloys Casting / Die Casting Si1 3%				Magnesium Alloy / Copper Allloy / CFRP AZ91 / AZ80A / C1100		Copper Allloy C1100	
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.5mm	28,800	160	45,000	500	28,800	160	45,000	450	28,800	140	45,000	410
0.6mm	28,800	180	45,000	590	28,800	180	45,000	540	28,800	160	45,000	500
0.8mm	28,800	200	45,000	770	28,800	200	45,000	720	26,100	180	45,000	590
1mm	28,800	200	45,000	900	28,800	200	45,000	960	20,700	200	37,800	630
1.2mm	28,800	210	45,000	1,100	28,800	210	45,000	1,000	17,100	200	32,400	630
1.5mm	28,800	250	45,000	1,400	28,800	250	45,000	1,100	14,000	200	26,600	630
2mm	28,800	400	45,000	1,800	28,800	380	45,000	1,100	13,000	200	25,200	680
2.5mm	22,500	540	43,200	1,900	22,500	540	27,900	1,100	8,600	230	18,000	680
3mm	18,900	630	36,000	1,900	18,900	630	23,400	1,100	7,200	230	15,300	680
4mm	14,000	650	29,700	2,000	14,000	650	18,000	1,200	5,400	250	12,600	720
5mm	11,300	680	27,900	2,500	11,300	680	17,280	1,500	4,300	270	11,300	860
6mm	9,500	750	23,400	2,500	9,500	750	14,310	1,500	3,600	280	9,500	900
8mm	7,200	800	17,550	2,600	7,200	800	10,800	1,600	2,600	270	7,100	900
10mm	5,700	900	13,950	2,900	5,700	900	8,640	1,700	2,100	330	5,700	1,000
12mm	4,800	950	11,700	2,900	4,800	950	7,200	1,700	1,800	350	4,800	1,000
	Ap / Ae	Ap	Ap / Ae	Ap	Ap / Ae	Ap	Ap / Ae	Ap	Ap / Ae	Ap	Ap / Ae	Ap
	1.5D / 0.1D	0.3D Ø0.5≦Dc≦Ø0.8 0.5D Ø1≦Dc	1D / 0.1D	0.15D	1.5D / 0.1D	0.3D Ø0.5≦Dc≦Ø0.8 0.5D Ø1≦Dc	1D / 0.1D	0.15D	1.5D / 0.1D	0.3D Ø0.5≦Dc≦Ø0.8 0.5D Ø1≦Dc	1D / 0.05D	0.1D
Depth of Cut												

K G-TAC 2LCE

2 Flutes G-TAC Coated Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

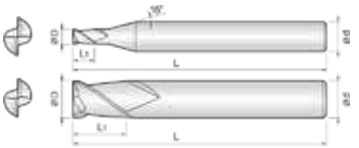
• Reinforced edge design for preventing edge chipping. • High precise edge tolerance.



2刃 非鉄 加工用 G-TACコーティング エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP),
グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

• 刃先部 剛性を 補強して 刃部チッピングを 最小化しました. • 高精密 公差 適用で超精密加工に適合します.



2날 비철 가공용 G-TAC코팅 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀

• 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
• 고정밀 공차 적용으로 초정밀가공에 적합합니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

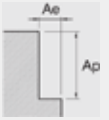
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LCE 004 008 S04	0.4	0.8	45	4
2LCE 005 010 S04	0.5	1	45	4
2LCE 006 012 S04	0.6	1.2	45	4
2LCE 007 014 S04	0.7	1.4	45	4
2LCE 008 016 S04	0.8	1.6	45	4
2LCE 010 025 S04	1	2.5	45	4
2LCE 010 040 S04	1	4	45	4
2LCE 012 040 S04	1.2	4	45	4
2LCE 015 040 S04	1.5	4	45	4
2LCE 020 060 S04	2	6	45	4
2LCE 020 080 S04	2	8	45	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LCE 025 080 S04	2.5	8	50	4
2LCE 030 100 S06	3	10	50	6
2LCE 030 120 S06	3	12	50	6
2LCE 035 100 S06	3.5	10	50	6
2LCE 040 120 S06	4	12	60	6
2LCE 050 150 S06	5	15	60	6
2LCE 060 150 S06	6	15	60	6
2LCE 060 240 S06	6	24	60	6
2LCE 080 200 S08	8	20	65	8
2LCE 100 250 S10	10	25	70	10
2LCE 120 300 S12	12	30	80	12

2LCE

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloy Expanding Material A7075				Aluminum Alloys Casting / Die Casting Si1 3%				Magnesium Alloy / Copper Allloy / CFRP AZ91 / AZ80A / C1100			
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.1mm	32,000	35	45,000	120	32,000	35	45,000	120	32,000	35	45,000	100
0.3mm	32,000	60	45,000	300	32,000	60	45,000	300	32,000	60	45,000	210
0.5mm	28,800	90	45,000	500	28,800	90	45,000	500	28,800	90	45,000	390
0.8mm	28,800	120	45,000	700	28,800	130	45,000	700	23,000	110	45,000	500
1mm	28,800	170	45,000	900	28,800	170	45,000	900	20,700	125	37,800	630
1.5mm	28,800	230	40,500	1,100	28,800	230	40,500	1,100	14,000	130	26,700	630
2mm	23,000	270	30,600	1,100	23,000	270	30,600	1,100	10,400	135	21,600	675
3mm	15,300	460	20,700	1,100	15,300	460	20,700	1,100	7,200	200	15,300	675
4mm	11,300	470	15,300	1,100	11,300	470	15,300	1,100	5,400	210	11,700	675
5mm	9,000	490	12,200	1,100	9,000	490	12,200	1,100	4,300	225	9,000	675
6mm	7,700	540	10,000	1,100	7,700	540	10,000	1,100	3,600	225	7,200	675
8mm	6,000	600	8,200	1,200	6,000	600	8,200	1,200	2,600	300	5,900	720
10mm	4,500	650	6,000	1,400	4,500	650	6,000	1,400	2,100	300	4,300	800
12mm	3,100	690	4,500	1,500	3,100	690	4,500	1,500	1,600	320	3,200	850
	Ap / Ae		Ap	Ap / Ae		Ap	Ap / Ae		Ap	Ap / Ae		Ap	Ap / Ae		Ap	Ap / Ae		Ap
	1.2D	0.1D	0.3D	1D	0.1D	0.15D	1.2D	0.1D	0.3D	1D	0.1D	0.15D	1D	0.1D	0.3D	1D	0.05D	0.1D
Depth of Cut	 																	

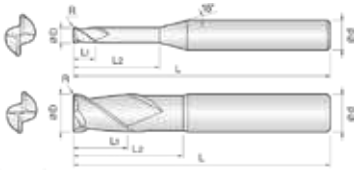
K G-TAC 2LCR

2 Flutes G-TAC Coated Coner Radius Endmills for Non-Ferrous Metal

Endmills for Aluminum, Aluminum alloy, copper, copper alloy, CFRP, glass/carbon fiber, nonferrous and non-metallic materials

• Reinforced edge design for preventing edge chipping. • High precise edge tolerance.





2刃 非鉄 加工用 G-TACコーティング コーナー ラジウス エンドミル

アルミニウム 及び アルミニウム 合金, 銅 及び 銅合金, 強化プラスチック(CFRP), グラス/炭素繊維など 非鉄 非金属 系列の多様な 被削材専用 エンドミル

• 刃先部 剛性を 補強して 刃部チッピングを 最小化しました.
• 高精密 公差 適用で超精密加工に適合します.

2날 비철 가공용 G-TAC코팅 코너 레디우스 엔드밀

알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱(CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀

• 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
• 고정밀 공차 적용으로 초정밀가공에 적합합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

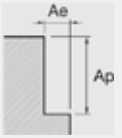
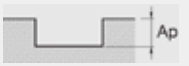
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
2LCR 010 001 040	1XR0.1	1.5	4	45	4
2LCR 010 001 060	1XR0.1	1.5	6	45	4
2LCR 010 001 080	1XR0.1	1.5	8	45	4
2LCR 010 001 100	1XR0.1	1.5	10	45	4
2LCR 010 002 040	1XR0.2	1.5	4	45	4
2LCR 010 002 060	1XR0.2	1.5	6	45	4
2LCR 010 002 080	1XR0.2	1.5	8	45	4
2LCR 010 002 100	1XR0.2	1.5	10	45	4
2LCR 015 001 060	1.5XR0.1	2.3	6	45	4
2LCR 015 001 080	1.5XR0.1	2.3	8	45	4
2LCR 015 001 100	1.5XR0.1	2.3	10	45	4
2LCR 015 001 120	1.5XR0.1	2.3	12	50	4
2LCR 015 002 060	1.5XR0.2	2.3	6	45	4
2LCR 015 002 080	1.5XR0.2	2.3	8	45	4
2LCR 015 002 100	1.5XR0.2	2.3	10	45	4
2LCR 015 002 120	1.5XR0.2	2.3	12	50	4
2LCR 020 002 080	2XR0.2	3	8	45	4
2LCR 020 002 100	2XR0.2	3	10	45	4
2LCR 020 002 120	2XR0.2	3	12	50	4
2LCR 020 002 160	2XR0.2	3	16	50	4
2LCR 020 005 080	2XR0.5	3	8	45	4
2LCR 020 005 100	2XR0.5	3	10	45	4
2LCR 020 005 120	2XR0.5	3	12	50	4
2LCR 020 005 160	2XR0.5	3	16	50	4
2LCR 030 002 100	3XR0.2	4.5	10	50	6
2LCR 030 002 120	3XR0.2	4.5	12	50	6
2LCR 030 002 160	3XR0.2	4.5	16	60	6
2LCR 030 002 200	3XR0.2	4.5	20	60	6
2LCR 030 002 250	3XR0.2	4.5	25	65	6
2LCR 030 002 300	3XR0.2	4.5	30	70	6
2LCR 030 003 100	3XR0.3	4.5	10	50	6
2LCR 030 003 120	3XR0.3	4.5	12	50	6
2LCR 030 003 160	3XR0.3	4.5	16	60	6
2LCR 030 003 200	3XR0.3	4.5	20	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
2LCR 030 003 250	3XR0.3	4.5	25	65	6
2LCR 030 003 300	3XR0.3	4.5	30	70	6
2LCR 030 005 100	3XR0.5	4.5	10	50	6
2LCR 030 005 120	3XR0.5	4.5	12	50	6
2LCR 030 005 160	3XR0.5	4.5	16	60	6
2LCR 030 005 200	3XR0.5	4.5	20	60	6
2LCR 030 005 250	3XR0.5	4.5	25	65	6
2LCR 030 005 300	3XR0.5	4.5	30	70	6
2LCR 040 002 120	4XR0.2	6	12	50	6
2LCR 040 002 160	4XR0.2	6	16	60	6
2LCR 040 002 200	4XR0.2	6	20	60	6
2LCR 040 005 120	4XR0.5	6	12	50	6
2LCR 040 005 160	4XR0.5	6	16	60	6
2LCR 040 005 200	4XR0.5	6	20	60	6
2LCR 040 005 250	4XR0.5	6	25	65	6
2LCR 040 005 300	4XR0.5	6	30	70	6
2LCR 040 010 120	4XR1	6	12	50	6
2LCR 040 010 160	4XR1	6	16	60	6
2LCR 040 010 200	4XR1	6	20	60	6
2LCR 040 010 250	4XR1	6	25	65	6
2LCR 040 010 300	4XR1	6	30	70	6
2LCR 060 003 200	6XR0.3	9	20	60	6
2LCR 060 005 200	6XR0.5	9	20	60	6
2LCR 060 010 200	6XR1	9	20	60	6
2LCR 080 003 250	8XR0.3	12	25	65	8
2LCR 080 005 250	8XR0.5	12	25	65	8
2LCR 080 010 250	8XR1	12	25	65	8
2LCR 100 005 300	10XR0.5	15	30	70	10
2LCR 100 010 300	10XR1	15	30	70	10
2LCR 120 005 320	12XR0.5	18	32	80	12
2LCR 120 010 320	12XR1	18	32	80	12

2LCR

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloy Expanding Material A7075						Aluminum Alloys Casting / Die Casting Si1 3%						Magnesium Alloy / Copper Allloy / CFRP AZ91 / AZ80A / C1100			Copper Allloy C1100		
	Regular Milling			High Speed Milling			Regular Milling			High Speed Milling			Regular Milling			High Speed Milling		
Outside Diameter	RPM		FEED	RPM		FEED	RPM		FEED	RPM		FEED	RPM		FEED	RPM		FEED
1mm	37,500		220	50,000		1,170	37,400		220	50,000		1,170	27,000		160	49,000		820
1.5mm	37,500		300	50,000		1,430	37,400		300	50,000		1,430	18,000		170	34,700		820
2mm	30,000		350	40,000		1,430	30,000		350	40,000		1,430	13,500		180	28,000		880
3mm	20,000		600	27,000		1,430	20,000		600	27,000		1,430	9,400		260	20,000		880
4mm	15,000		610	20,000		1,430	14,700		610	20,000		1,430	7,000		270	15,200		880
6mm	10,000		700	13,000		1,430	10,000		700	13,000		1,430	4,700		290	9,400		880
8mm	7,800		780	11,000		1,560	7,800		780	10,700		1,560	3,400		390	7,700		940
10mm	5,900		850	7,800		1,820	5,900		850	7,800		1,820	2,700		390	5,600		1,000
12mm	4,000		900	5,900		1,950	4,000		900	5,900		1,950	2,100		410	4,200		1,100
	Ap	Ae	Ap	Ap	Ae	Ap	Ap	Ae	Ap	Ap	Ae	Ap	Ap	Ae	Ap	Ap	Ae	Ap
	1.2D	0.1D	0.3D	1D	0.1D	0.15D	1.2D	0.1D	0.3D	1D	0.1D	0.15D	1D	0.1D	0.3D	1D	0. 05D	0.1D
Depth of Cut	 																	

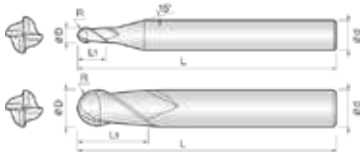
K SUS — 4HSB

4 Flutes 45° Helix Ball Endmills for SUS

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

- Excellent work surface finish by 4 flute and deep chip pocket.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.





4刃45°ヘリックス SUS加工用 ボール エンドミル

合金鋼,SUS系列,Ti/Ni 合金, インコネルなど 難削材 加工 エンドミル

- 4刃 適用と深いポケットで チップ排出が円滑で, 被削材 面粗さが優れます.
- 抗折力が高い 超微粒子 超硬合金を採択して高移送作業時 エンドミルの破損を 最小化しました.

4날 45° 헬릭스 SUS가공용 볼 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- 4날 적용과 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
4HSB 010 025 S06	0.5R X 1	2.5	50	6
4HSB 015 040 S06	0.75R X 1.5	4	50	6
4HSB 020 060 S06	1R X 2	6	50	6
4HSB 030 080 S06	1.5R X 3	8	60	6
4HSB 040 080 S06	2R X 4	8	70	6
4HSB 050 100 S06	2.5R X 5	10	80	6
4HSB 060 120 S06	3R X 6	12	90	6
4HSB 080 140 S08	4R X 8	14	100	8
4HSB 100 180 S10	5R X 10	18	100	10
4HSB 120 220 S12	6R X 12	22	110	12
4HSB 160 300 S16	8R X 16	30	130	16

4HSB

• RPM : rev./min • Feed : mm/min

Material	Alloy steels / Tool Steels / Prehardened Steels SKD11 / SKD61 / NAK					Prehardened Steels SUS304 / SUS316 / Ti-6Al-4V					Inconel718				
Radius	α≦15°		α>15°		Ap Axial Depth	α≦15°		α>15°		Ap Axial Depth	α≦15°		α>15°		Ap Axial Depth
	RPM	FEED	RPM	FEED		RPM	FEED	RPM	FEED		RPM	FEED	RPM	FEED	
R3	16,000	4,800	10,600	2,100	0.50	12,000	3,200	8,000	1,400	0.50	3,200	500	2,100	210	0.25
R4	12,000	4,300	8,000	1,900	0.80	9,000	3,200	6,000	1,400	0.80	2,400	430	1,600	190	0.40
R5	9,600	4,100	6,400	1,800	1.00	7,200	3,000	4,800	1,300	1.00	2,000	420	1,300	180	0.50
R6	8,000	4,000	5,300	1,800	1.20	6,000	3,000	4,000	1,300	1.20	700	350	1,100	150	0.60
R8	6,000	3,200	4,000	1,400	1.60	4,500	2,500	3,000	1,100	1.60	1,200	300	800	130	0.80
Depth of Cut															

K SUS

3HSM



3 Flutes 45° Helix Endmills for SUS

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

- Excellent work surface finish by 3 flute and deep chip pocket.
- 45° helix design for high speed, feed condition.

3刃 45° ヘリックス SUS加工用 エンドミル

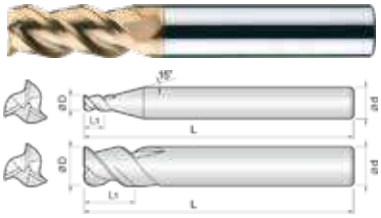
合金鋼,SUS系列,Ti/Ni 合金, インコネルなど 難削材 加工 エンドミル

- 3刃 適用と深いポケットで チップ排出が円滑で, 被削材 面粗さが優れます.
- 45°ヘリックス 形状に設計して 高速,高移送 加工に適合します.

3날 45° 헬릭스 SUS가공용 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- 3날 적용 및 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.
- 45°헬릭스 형상으로 설계하여 고속,고이송 가공에 적합합니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

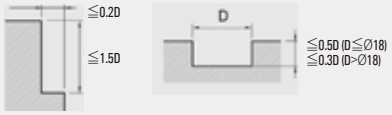
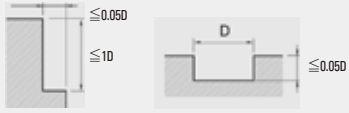
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3HSM 005 010 S04	0.5	1		45	4
3HSM 005 020 S04	0.5	1	2	45	4
3HSM 005 030 S04	0.5	1	3	45	4
3HSM 005 040 S04	0.5	1	4	45	4
3HSM 006 012 S04	0.6	1.2		45	4
3HSM 006 030 S04	0.6	1.2	3	45	4
3HSM 006 050 S04	0.6	1.2	5	45	4
3HSM 007 014 S04	0.7	1.4		45	4
3HSM 007 030 S04	0.7	1.4	3	45	4
3HSM 008 020 S04	0.8	2		45	4
3HSM 008 040 S04	0.8	2	4	45	4
3HSM 008 060 S04	0.8	2	6	45	4
3HSM 008 060 S06	0.8	2	6	45	4
3HSM 010 025 S04	1	2.5		45	4
3HSM 010 025 S06	1	2.5		45	6
3HSM 010 040 S06	1	2.5	4	45	6
3HSM 010 060 S06	1	2.5	6	45	6
3HSM 010 080 S06	1	2.5	8	45	6
3HSM 012 030 S04	1.2	3		45	4
3HSM 012 030 S06	1.2	3		45	6
3HSM 012 060 S06	1.2	3	6	45	6
3HSM 012 080 S06	1.2	3	8	45	6
3HSM 015 040 S04	1.5	4		45	4
3HSM 015 040 S06	1.5	4		45	6
3HSM 015 060 S06	1.5	4	6	45	6
3HSM 015 080 S06	1.5	4	8	45	6
3HSM 015 100 S06	1.5	4	10	45	6
3HSM 020 050 S04	2	5		45	4
3HSM 020 050 S06	2	5		45	6
3HSM 020 080 S06	2	5	8	45	6
3HSM 020 100 S06	2	5	10	50	6
3HSM 020 120 S06	2	5	12	50	6
3HSM 025 080 S06	2.5	8		45	6
3HSM 030 080 S04	3	8		45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3HSM 030 080 S06	3	8		45	6
3HSM 030 150 S06	3	8	15	45	6
3HSM 030 200 S06	3	8	20	60	6
3HSM 035 100 S06	3.5	10		50	6
3HSM 040 100 S04	4	10		50	4
3HSM 040 100 S06	4	10		50	6
3HSM 040 150 S06	4	10	15	50	6
3HSM 040 200 S06	4	10	20	60	6
3HSM 045 120 S06	4.5	12		50	6
3HSM 050 120 S06	5	12		50	6
3HSM 060 120 S06	6	12		50	6
3HSM 060 200 S06	6	12	20	60	6
3HSM 080 190 S08	8	19		60	8
3HSM 080 260 S08	8	19	26	60	8
3HSM 100 220 S10	10	22		70	10
3HSM 100 320 S10	10	22	32	70	10
3HSM 120 260 S12	12	26		80	12
3HSM 120 380 S12	12	26	38	80	12
3HSM 160 360 S16	16	36		100	16
3HSM 160 450 S16	16	36	45	100	16
3HSM 200 550 S20	20	38	55	110	20

3HSM

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
Hardness	~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.8mm (3F)	7,200	80	6,400	60	3,900	30	2,000	10
1mm (3F)	6,400	100	5,600	70	3,500	30	1,700	15
2mm (3F)	5,600	110	4,800	80	2,900	34	1,400	20
3mm (3F)	4,800	200	4,000	90	2,200	45	1,400	25
4mm (3F)	4,000	200	3,300	140	1,800	70	1,200	35
5mm (3F)	3,200	230	2,700	170	1,500	90	1,000	45
6mm (3F)	2,900	250	2,400	180	1,400	90	900	45
8mm (3F)	2,200	270	1,800	190	1,000	100	720	40
10mm (3F)	1,700	260	1,400	190	900	110	600	40
12mm (3F)	1,400	230	1,200	150	700	90	500	35
16mm (3F)	1,000	160	900	120	550	60	360	30
20mm (4F)	900	170	700	130	400	70	300	25
Depth of Cut								

K SUS 4NSM

4 Flutes Non Symmetry Endmills for SUS

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

- Minimize chattering by unequal flute spacing design.
- Excellent work surface finish by 4 flute and deep chip pocket.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



4刃SUS 加工用 不等分割 エンドミル

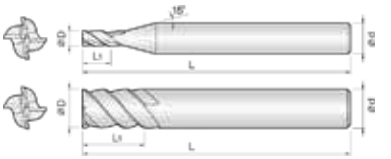
合金鋼, SUS系列, Ti/Ni合金, インコネルなど 難削材加工 エンドミル

- 不等分割 方式で設計して エンドミルの振動を最小化しました.
- 4刃 適用と深い ポケットで チップ排出が円滑して, 被削材 面粗さが優れます.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

4날 SUS가공용 부등분할 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- 부등분할 방식으로 설계하여 엔드밀의 진동을 최소화 하였습니다.
- 4날 적용과 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	-0.01~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4NSM 010 015 S04	1	1.5	50	4
4NSM 010 025 S04	1	2.5	50	4
4NSM 010 035 S04	1	3.5	50	4
4NSM 010 050 S04	1	5	50	4
4NSM 010 060 S04	1	6	50	4
4NSM 012 015 S04	1.2	1.5	50	4
4NSM 012 030 S04	1.2	3	50	4
4NSM 012 050 S04	1.2	5	50	4
4NSM 012 070 S04	1.2	7	50	4
4NSM 015 025 S04	1.5	2.5	50	4
4NSM 015 040 S04	1.5	4	50	4
4NSM 015 055 S04	1.5	5.5	50	4
4NSM 015 070 S04	1.5	7	50	4
4NSM 015 085 S04	1.5	8.5	50	4
4NSM 020 030 S04	2	3	50	4
4NSM 020 060 S04	2	6	50	4
4NSM 020 080 S04	2	8	50	4
4NSM 020 100 S04	2	10	50	4
4NSM 020 120 S04	2	12	50	4
4NSM 020 140 S04	2	14	50	4
4NSM 025 035 S04	2.5	3.5	50	4
4NSM 025 080 S04	2.5	8	50	4
4NSM 025 100 S04	2.5	10	50	4
4NSM 025 120 S04	2.5	12	50	4
4NSM 025 140 S04	2.5	14	50	4
4NSM 030 045 S06	3	4.5	60	6
4NSM 030 100 S06	3	10	60	6
4NSM 030 120 S06	3	12	60	6
4NSM 030 150 S06	3	15	60	6
4NSM 030 200 S06	3	20	70	6
4NSM 030 250 S06	3	25	70	6
4NSM 030 300 S06	3	30	75	6
4NSM 035 055 S06	3.5	5.5	60	6
4NSM 035 100 S06	3.5	10	60	6
4NSM 035 150 S06	3.5	15	60	6
4NSM 035 200 S06	3.5	20	60	6
4NSM 040 060 S06	4	6	60	6
4NSM 040 120 S06	4	12	60	6
4NSM 040 160 S06	4	16	60	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4NSM 040 200 S06	4	20	70	6
4NSM 040 250 S06	4	25	70	6
4NSM 040 300 S06	4	30	75	6
4NSM 045 070 S06	4.5	7	60	6
4NSM 045 130 S06	4.5	13	60	6
4NSM 045 180 S06	4.5	18	60	6
4NSM 050 075 S06	5	7.5	60	6
4NSM 050 150 S06	5	15	60	6
4NSM 050 200 S06	5	20	70	6
4NSM 050 250 S06	5	25	70	6
4NSM 050 300 S06	5	30	75	6
4NSM 060 090 S06	6	9	60	6
4NSM 060 150 S06	6	15	60	6
4NSM 060 180 S06	6	18	60	6
4NSM 060 250 S06	6	25	70	6
4NSM 060 300 S06	6	30	70	6
4NSM 060 400 S06	6	40	80	6
4NSM 070 110 S08	7	11	70	8
4NSM 070 180 S08	7	18	70	8
4NSM 070 210 S08	7	21	70	8
4NSM 080 120 S08	8	12	70	8
4NSM 080 200 S08	8	20	70	8
4NSM 080 240 S08	8	24	70	8
4NSM 080 300 S08	8	30	80	8
4NSM 080 400 S08	8	40	90	8
4NSM 080 500 S08	8	50	100	8
4NSM 090 140 S10	9	14	80	10
4NSM 090 220 S10	9	22	80	10
4NSM 090 270 S10	9	27	80	10
4NSM 100 150 S10	10	15	80	10
4NSM 100 250 S10	10	25	80	10
4NSM 100 300 S10	10	30	80	10
4NSM 100 400 S10	10	40	90	10
4NSM 100 500 S10	10	50	100	10
4NSM 100 600 S10	10	60	110	10
4NSM 110 170 S12	11	17	90	12
4NSM 110 220 S12	11	22	90	12
4NSM 110 330 S12	11	33	90	12
4NSM 120 180 S12	12	18	90	12
4NSM 120 300 S12	12	30	90	12
4NSM 120 360 S12	12	36	90	12
4NSM 120 500 S12	12	50	100	12
4NSM 120 600 S12	12	60	110	12
4NSM 120 700 S12	12	70	120	12
4NSM 160 240 S16	16	24	100	16
4NSM 160 350 S16	16	35	100	16
4NSM 160 500 S16	16	50	110	16
4NSM 160 700 S16	16	70	130	16
4NSM 160 900 S16	16	90	150	16
4NSM 200 300 S20	20	30	100	20
4NSM 200 400 S20	20	40	100	20
4NSM 200 600 S20	20	60	120	20
4NSM 200 800 S20	20	80	150	20
4NSM 200 1000 S20	20	100	160	20

K SUS 4NSR



R1~1.5

4 Flutes Non Symmetry Corner Radius Endmills for SUS

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

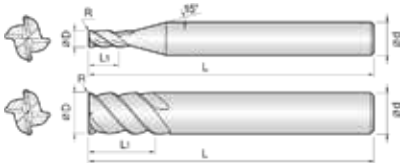
- Minimize chattering by unequal flute spacing design.
- Preventing bottom edge chipping by corner R.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



4刃SUS 加工用 不等分割 コーナー ラジウス エンドミル

合金鋼, SUS系列, Ti/Ni系 合金, インコネルなど 難削材 加工 エンドミル

- 不等分割 方式で設計して エンドミルの振動を最小化しました.
- コーナーR部 適用で下刃 チッピングを防止しました.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.



4날 SUS가공용 부등분할 코너 레디우스 엔드밀

- **합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀**
- 부등분할 방식으로 설계하여 엔드밀의 진동을 최소화 하였습니다.
- 코너R부 적용으로 밑날 치핑을 방지 하였습니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø5.5	+0~ -0.01mm
D > Ø5.5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
4NSR 010 001 S04	1XR0.1	2.5	50	4
4NSR 010 002 S04	1XR0.2	2.5	50	4
4NSR 012 001 S04	1.2XR0.1	3	50	4
4NSR 012 002 S04	1.2XR0.2	3	50	4
4NSR 015 001 S04	1.5XR0.1	4	50	4
4NSR 015 002 S04	1.5XR0.2	4	50	4
4NSR 015 003 S04	1.5XR0.3	4	50	4
4NSR 020 001 S04	2XR0.1	6	50	4
4NSR 020 002 S04	2XR0.2	6	50	4
4NSR 020 003 S04	2XR0.3	6	50	4
4NSR 020 005 S04	2XR0.5	6	50	4
4NSR 025 001 S04	2.5xR0.1	7	50	4
4NSR 025 002 S04	2.5XR0.2	7	50	4
4NSR 025 003 S04	2.5XR0.3	7	50	4
4NSR 030 001 S06	3XR0.1	10	60	6
4NSR 030 002 055	3XR0.2	6	55	6
4NSR 030 002 S06	3XR0.2	10	60	6
4NSR 030 003 S06	3XR0.3	10	60	6
4NSR 030 005 055	3XR0.5	6	55	6
4NSR 030 005 S06	3XR0.5	10	60	6
4NSR 035 002 S06	3.5XR0.2	10	60	6
4NSR 040 001 S06	4XR0.1	12	60	6
4NSR 040 002 055	4XR0.2	8	55	6
4NSR 040 002 S06	4XR0.2	12	60	6
4NSR 040 003 S06	4XR0.3	12	60	6
4NSR 040 005 055	4XR0.5	8	55	6
4NSR 040 005 S06	4XR0.5	12	60	6
4NSR 040 010 S06	4XR1	12	60	6
4NSR 045 002 S06	4.5XR0.2	14	60	6
4NSR 050 002 055	5XR0.2	10	55	6
4NSR 050 002 S06	5XR0.2	15	60	6
4NSR 050 003 S06	5XR0.3	15	60	6



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
4NSR 050 005 055	5XR0.5	10	55	6
4NSR 050 005 S06	5XR0.5	15	60	6
4NSR 050 010 S06	5XR1	15	60	6
4NSR 055 002 S06	5.5XR0.2	15	60	6
4NSR 060 003 055	6XR0.3	12	55	6
4NSR 060 003 S06	6XR0.3	15	60	6
4NSR 060 005 055	6XR0.5	12	55	6
4NSR 060 005 S06	6XR0.5	15	60	6
4NSR 060 010 055	6XR1	12	55	6
4NSR 060 010 S06	6XR1	15	60	6
4NSR 060 015 S06	6XR1.5	15	60	6
4NSR 065 003 S08	6.5XR0.3	18	60	8
4NSR 070 003 S08	7XR0.3	20	80	8
4NSR 070 005 S08	7XR0.5	20	80	8
4NSR 070 010 S08	7XR1	20	80	8
4NSR 080 003 070	8XR0.3	16	70	8
4NSR 080 003 S08	8XR0.3	20	80	8
4NSR 080 005 070	8XR0.5	16	70	8
4NSR 080 005 S08	8XR0.5	20	80	8
4NSR 080 010 070	8XR1	16	70	8
4NSR 080 010 S08	8XR1	20	80	8
4NSR 080 015 S08	8XR1.5	20	80	8
4NSR 080 020 S08	8XR2	20	80	8
4NSR 085 003 S10	8.5XR0.3	22	80	10
4NSR 090 003 S10	9XR0.3	25	80	10
4NSR 100 003 070	10XR0.3	20	70	10
4NSR 100 003 S10	10XR0.3	25	80	10
4NSR 100 005 070	10XR0.5	20	70	10
4NSR 100 005 S10	10XR0.5	25	80	10
4NSR 100 010 070	10XR1	20	70	10
4NSR 100 010 S10	10XR1	25	80	10
4NSR 100 015 070	10XR1.5	20	70	10
4NSR 100 015 S10	10XR1.5	25	80	10
4NSR 100 020 070	10XR2	20	70	10
4NSR 100 020 S10	10XR2	25	80	10
4NSR 100 025 070	10XR2.5	20	70	10
4NSR 100 025 S10	10XR2.5	25	80	10
4NSR 100 030 070	10XR3	20	70	10
4NSR 100 030 S10	10XR3	25	80	10
4NSR 110 005 S12	11XR0.5	27	90	12
4NSR 110 010 S12	11XR1	27	90	12
4NSR 120 003 080	12XR0.3	24	80	12
4NSR 120 003 S12	12XR0.3	30	100	12
4NSR 120 005 080	12XR0.5	24	80	12

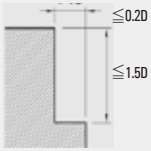
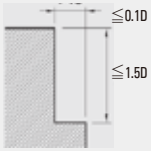
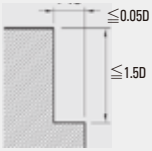


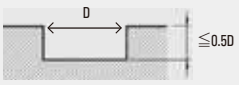
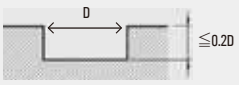
单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
4NSR 120 005 S12	12XR0.5	30	100	12
4NSR 120 010 080	12XR1	24	80	12
4NSR 120 010 S12	12XR1	30	100	12
4NSR 120 015 080	12XR1.5	24	80	12
4NSR 120 015 S12	12XR1.5	30	100	12
4NSR 120 020 080	12XR2	24	80	12
4NSR 120 020 S12	12XR2	30	100	12
4NSR 120 025 S12	12XR2.5	30	100	12
4NSR 120 030 080	12XR3	24	80	12
4NSR 120 030 S12	12XR3	30	100	12
4NSR 140 005 S14	14XR0.5	35	100	14
4NSR 140 010 S14	14XR1	35	100	14
4NSR 160 005 100	16XR0.5	32	100	16
4NSR 160 005 S16	16XR0.5	42	110	16
4NSR 160 010 100	16XR1	32	100	16
4NSR 160 010 S16	16XR1	42	110	16
4NSR 180 005 S18	18XR0.5	45	110	18
4NSR 180 010 S18	18XR1	45	110	18
4NSR 200 005 S20	20XR0.5	48	110	20
4NSR 200 010 S20	20XR1	48	110	20

4NSM/4NSR/4VSU

• RPM : rev./min • Feed : mm/min

Side Cutting						
Material	Alloy Steels / Tools steel SKD61 / SK /NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	21,000	1,100	14,000	560	4,800	130
3mm	15,000	1,250	10,600	850	4,200	200
4mm	11,000	1,400	8,000	960	3,200	220
5mm	9,600	1,900	6,400	1,000	2,500	250
6mm	8,000	2,200	5,300	1,000	2,100	250
7mm	6,800	1,900	4,500	1,000	1,800	260
8mm	6,000	1,600	4,000	960	1,600	260
9mm	5,300	1,480	3,500	840	1,400	220
10mm	4,800	1,440	3,200	770	1,300	210
11mm	4,400	1,350	2,900	760	1,200	190
12mm	4,000	1,250	2,700	760	1,100	180
16mm	3,000	1,140	2,000	560	800	130
20mm	2,400	860	1,600	510	600	100
Depth of Cut						

Slotting						
Material	Alloy Steels / Tools steel SKD61 / SK / NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	10,000	400	9,600	310	3,200	80
3mm	6,900	410	7,400	380	2,700	110
4mm	5,600	490	5,600	400	2,000	120
5mm	4,500	630	4,500	410	1,600	130
6mm	3,700	740	3,700	440	1,300	160
7mm	3,200	700	3,200	410	1,100	140
8mm	2,800	670	2,800	390	1,000	130
9mm	2,500	600	2,500	350	900	130
10mm	2,200	530	2,200	350	800	130
11mm	2,000	530	2,000	320	720	120
12mm	1,900	530	1,900	300	660	110
16mm	1,400	390	1,400	280	500	80
20mm	1,100	350	1,100	260	400	60
Depth of Cut						

K SUS 3RBS



3 Flutes 45° Helix Rib Ball End Mills for SUS

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

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- High speed, feed applicable by 45° helix and deep chip pocket design.



3刃 45°ヘリックスSUS加工用のリブボールエンドミル

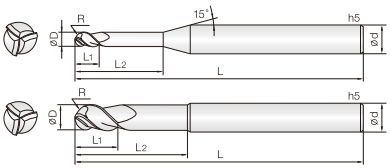
合金鋼,SUS系,Ti/Ni系合金,インコネルなどの難削材加工用のエンドミル

- JCROコーティング処理により,様々な被削材加工時の引っ張り部にストレスが少なく,被削材の面粗度が向上します。
- 45°ヘリックス形状と深ポケットで設計し,チップ排出に優れ,高速· 高移送加工に適しています。

3날 45° 헬릭스 SUS가공용 리브 볼 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 피삭재의 면조도가 향상됩니다.
- 45° 헬릭스 형상과 깊은 포켓으로 설계하여 칩배출이 우수하며, 고속·고이송 가공에 적합합니다.



Size	D Tolerance
Ø1~5	-0~ -0.01mm
Ø6-12	+0005~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	RXD	L1	L2	L	d
3RBS 010 040 S04	0.5RX1	1.5	4	50	4
3RBS 010 060 S04	0.5RX1	1.5	6	50	4
3RBS 010 080 S04	0.5RX1	1.5	8	50	4
3RBS 010 100 S04	0.5RX1	1.5	10	50	4
3RBS 010 120 S04	0.5RX1	1.5	12	50	4
3RBS 010 160 S04	0.5RX1	1.5	16	50	4
3RBS 010 200 S04	0.5RX1	1.5	20	50	4
3RBS 012 030 S04	0.6RX1.2	1.8	3	50	4
3RBS 012 040 S04	0.6RX1.2	1.8	4	50	4
3RBS 012 060 S04	0.6RX1.2	1.8	6	50	4
3RBS 012 080 S04	0.6RX1.2	1.8	8	50	4
3RBS 012 100 S04	0.6RX1.2	1.8	10	50	4
3RBS 012 120 S04	0.6RX1.2	1.8	12	50	4
3RBS 015 040 S04	0.75RX1.5	2	4	50	4
3RBS 015 060 S04	0.75RX1.5	2	6	50	4
3RBS 015 100 S04	0.75RX1.5	2	10	50	4
3RBS 015 120 S04	0.75RX1.5	2	12	50	4
3RBS 015 160 S04	0.75RX1.5	2	16	50	4
3RBS 015 200 S04	0.75RX1.5	2	20	50	4
3RBS 020 040 S06	1RX2	3	4	50	6
3RBS 020 060 S06	1RX2	3	6	50	6
3RBS 020 100 S06	1RX2	3	10	50	6
3RBS 020 120 S06	1RX2	3	12	60	6
3RBS 020 160 S06	1RX2	3	16	60	6
3RBS 020 200 S06	1RX2	3	20	60	6
3RBS 020 250 S06	1RX2	3	25	65	6
3RBS 025 060 S06	1.25RX2.5	4	6	50	6
3RBS 025 100 S06	1.25RX2.5	4	10	50	6
3RBS 025 120 S06	1.25RX2.5	4	12	60	6
3RBS 025 160 S06	1.25RX2.5	4	16	60	6
3RBS 025 200 S06	1.25RX2.5	4	20	60	6
3RBS 030 080 S06	1.5RX3	4.5	8	60	6



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	RXD	L1	L2	L	d
3RBS 030 120 S06	1.5RX3	4.5	12	60	6
3RBS 030 160 S06	1.5RX3	4.5	16	60	6
3RBS 030 200 S06	1.5RX3	4.5	20	60	6
3RBS 030 250 S06	1.5RX3	4.5	25	70	6
3RBS 030 300 S06	1.5RX3	4.5	30	70	6
3RBS 030 400 S06	1.5RX3	4.5	40	80	6
3RBS 040 100 S06	2RX4	6	10	60	6
3RBS 040 160 S06	2RX4	6	16	60	6
3RBS 040 200 S06	2RX4	6	20	60	6
3RBS 040 250 S06	2RX4	6	25	70	6
3RBS 040 300 S06	2RX4	6	30	70	6
3RBS 040 400 S06	2RX4	6	40	80	6
3RBS 050 160 S06	2.5RX5	8	16	80	6
3RBS 050 200 S06	2.5RX5	8	20	80	6
3RBS 050 300 S06	2.5RX5	8	30	80	6
3RBS 060 200 S06	3RX6	9	20	90	6
3RBS 060 400 S06	3RX6	9	40	90	6
3RBS 080 300 S08	4RX8	12	30	100	8
3RBS 100 400 S10	5RX10	15	40	100	10
3RBS 120 500 S12	6RX12	18	50	110	12

3RBS

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Cast iron				Stainless Steels				Hardened Steels			
Hardness	30~40HRC								45~55HRC			
Corner Radius	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R0.5	45,000	1,300	0.05	0.15	34,600	800	0.05	0.15	9,000	130	0.025	0.05
R0.75	38,000	1,850	0.075	0.225	29,200	1,135	0.075	0.225	7,600	185	0.0375	0.075
R1	32,000	2,250	0.1	0.3	24,600	1,380	0.1	0.3	6,400	225	0.05	0.1
R1.5	27,300	2,560	0.15	0.45	20,800	1,520	0.15	0.45	5,460	272	0.075	0.15
R2	20,800	2,240	0.2	0.6	15,600	1,360	0.2	0.6	4,160	208	0.1	0.2
R3	13,780	1,680	0.3	0.9	10,400	1,120	0.3	0.9	2,730	168	0.15	0.3
R4	10,400	1,520	0.4	1.2	7,800	1,120	0.4	1.2	2,080	152	0.2	0.4
R5	8,320	1,440	0.5	1.5	6,240	1,040	0.5	1.5	1,690	144	0.25	0.5
R6	6,890	1,400	0.6	1.8	5,200	1,000	0.6	1.8	1,430	100	0.3	0.6
Depth of Cut												

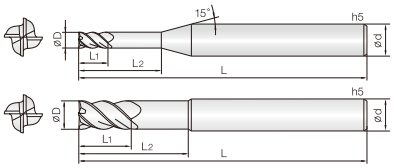
K SUS 4RES

4 Flutes Rib End Mills for SUS

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

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Strong design for protection against chattering.





4刃SUS加工用のリブエンドミル

合金鋼,SUS系,Ti/Ni系合金,インコネルなどの難削材加工用のエンドミル

- JCROコーティング処理により,様々な被削材加工時の引っ張り部にストレスが少なく,被削材の面粗度が向上します。
- 強力なチャタリング防止の設計でエンドミルの振動を最小限に抑えました。

4날 SUS 가공용 리브 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

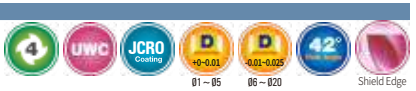
- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 피삭재의 면조도가 향상됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화하였습니다.

Size	D Tolerance
Ø1~5	-0~ -0.01mm
Ø6-20	+001~ -0.025mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4RES 010 030 S04	1	1.5	3	50	4
4RES 010 050 S04	1	1.5	5	50	4
4RES 010 060 S04	1	1.5	6	50	4
4RES 010 080 S04	1	1.5	8	50	4
4RES 010 100 S04	1	1.5	10	50	4
4RES 012 040 S04	1.2	2	4	50	4
4RES 012 060 S04	1.2	2	6	50	4
4RES 012 080 S04	1.2	2	8	50	4
4RES 012 100 S04	1.2	2	10	50	4
4RES 015 045 S04	1.5	2.5	4.5	50	4
4RES 015 060 S04	1.5	2.5	6	50	4
4RES 015 080 S04	1.5	2.5	8	50	4
4RES 015 100 S04	1.5	2.5	10	50	4
4RES 015 120 S04	1.5	2.5	12	50	4
4RES 015 150 S04	1.5	2.5	15	60	4
4RES 020 060 S04	2	3	6	50	4
4RES 020 080 S04	2	3	8	50	4
4RES 020 100 S04	2	3	10	50	4
4RES 020 120 S04	2	3	12	50	4
4RES 020 140 S04	2	3	14	60	4
4RES 020 160 S04	2	3	16	60	4
4RES 025 075 S04	2.5	4	7.5	50	4
4RES 025 100 S04	2.5	4	10	50	4
4RES 025 120 S04	2.5	4	12	50	4
4RES 025 140 S04	2.5	4	14	60	4
4RES 025 160 S04	2.5	4	16	60	4
4RES 030 090 S06	3	4.5	9	60	6
4RES 030 120 S06	3	4.5	12	60	6
4RES 030 160 S06	3	4.5	16	60	6
4RES 030 200 S06	3	4.5	20	60	6
4RES 030 250 S06	3	4.5	25	65	6
4RES 030 300 S06	3	4.5	30	75	6

K SUS 4RES



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4RES 040 120 S06	4	6	12	60	6
4RES 040 160 S06	4	6	16	60	6
4RES 040 200 S06	4	6	20	60	6
4RES 040 250 S06	4	6	25	65	6
4RES 040 300 S06	4	6	30	75	6
4RES 050 150 S06	5	7.5	15	60	6
4RES 050 180 100	5	7.5	18	100	6
4RES 050 200 S06	5	7.5	20	60	6
4RES 050 250 S06	5	7.5	25	65	6
4RES 050 300 S06	5	7.5	30	70	6
4RES 060 200 S06	6	9	20	60	6
4RES 060 250 100	6	9	25	100	6
4RES 060 300 S06	6	9	30	70	6
4RES 080 250 S08	8	12	25	70	8
4RES 080 350 110	8	12	35	110	8
4RES 080 400 S08	8	12	40	80	8
4RES 100 300 S10	10	15	30	80	10
4RES 100 400 120	10	15	40	120	10
4RES 100 500 S10	10	15	50	100	10
4RES 120 360 S12	12	18	36	90	12
4RES 120 500 130	12	18	50	130	12
4RES 120 600 S12	12	18	60	110	12
4RES 160 480 S16	16	24	48	110	16
4RES 160 700 150	16	24	70	150	16
4RES 160 800 S16	16	24	80	130	16
4RES 200 600 130	20	30	60	130	20
4RES 200 1000 160	20	30	100	160	20

4RES

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Tools Steel				Stainless Steels / Titanium Alloy Steels				Hardened Steels			
Hardness	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø1	13,760	496	1	1	12,600	464	0.5	1	6,000	80	0.2	1
Ø2	11,740	720	2	2	10,920	464	1	2	4,990	112	0.4	2
Ø3	8,390	816	3	3	8,270	704	1.5	3	4,370	160	0.6	3
Ø4	6,150	912	4	4	6,240	800	2	4	3,330	184	0.8	4
Ø5	5,370	1,232	5	5	4,990	832	2.5	5	2,600	208	1	5
Ø6	4,480	1,440	6	6	4,130	832	3	6	2,180	208	1.2	6
Ø8	3,350	1,040	8	8	3,120	784	4	8	1,660	208	1.6	8
Ø10	2,680	912	10	10	2,500	640	5	10	1,350	176	2	10
Ø12	2,240	800	12	12	2,100	640	6	12	1,140	144	2.4	12
Ø16	1,680	752	16	16	1,560	464	8	16	830	112	3.2	16
Ø20	1,340	561	20	20	1,250	416	10	20	620	80	4	20
Depth of Cut												

• If the effective length is long, reduce the RPM and feed in the same proportion.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K SUS 4VSU

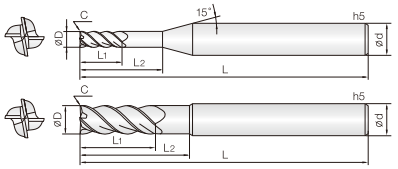
Ø1 ~ Ø5 | Ø6 ~ Ø12 | Ø16 ~ Ø20 | Shield Edge | Sharp Edge

4 Flutes Variable Helix End Mills for SUS

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

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Type A minimizes chipping, Type B maximizes chip emmissins.





4刃SUS強力切削用のエンドミル

合金鋼,SUS系,Ti/Ni系合金,インコネルなどの難削材加工用のエンドミル

- JCROコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- Aタイプは,エンドミルのチッピングを最小化,Bタイプは,チップ排出を最大化しました。

4날 SUS 강력절삭용 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상 됩니다.
- A타입은 엔드밀의 치핑을 최소화, B타입은 칩배출을 극대화 하였습니다.

Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6-12	-0.01~ -0.025mm
Ø16-20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Type	Overall Length	Shank Dia
	D	L1	L2		L	d
4VSUA 010 025 S04	1	2.5		A	50	4
4VSUA 010 060 S04	1	2.5	6	A	50	4
4VSUA 015 040 S04	1.5	4		A	50	4
4VSUA 015 100 S04	1.5	4	10	A	50	4
4VSUA 020 050 S04	2	5		A	50	4
4VSUA 020 120 S04	2	5	12	A	50	4
4VSUA 030 080 S06	3	8		A	60	6
4VSUA 030 180 S06	3	8	18	A	60	6
4VSUA 040 110 S06	4	11		A	60	6
4VSUA 040 210 S06	4	11	21	A	60	6
4VSUA 050 130 S06	5	13		A	60	6
4VSUA 050 210 S06	5	13	21	A	60	6
4VSUA 060 130 S06	6	13		A	60	6
4VSUA 060 210 S06	6	13	21	A	60	6
4VSUA 080 190 S08	8	19		A	60	8
4VSUA 080 270 S08	8	19	27	A	60	8
4VSUA 100 220 S10	10	22		A	70	10
4VSUA 100 320 S10	10	22	32	A	70	10
4VSUA 120 260 S12	12	26		A	80	12
4VSUA 120 380 S12	12	26	38	A	80	12
4VSUA 160 320 S16	16	32		A	90	16
4VSUA 160 450 S16	16	32	45	A	90	16
4VSUA 200 380 S20	20	38		A	100	20
4VSUA 200 550 S20	20	38	55	A	100	20
4VSUB 010 025 S04	1	2.5		B	50	4
4VSUB 015 040 S04	1.5	4		B	50	4
4VSUB 020 050 S04	2	5		B	50	4
4VSUB 030 080 S06	3	8		B	60	6
4VSUB 040 110 S06	4	11		B	60	6
4VSUB 050 130 S06	5	13		B	60	6



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Type	Overall Length	Shank Dia
	D	L1	L2		L	d
4VSUB 060 130 S06	6	13		B	60	6
4VSUB 080 190 S08	8	19		B	60	8
4VSUB 100 220 S10	10	22		B	70	10
4VSUB 120 260 S12	12	26		B	80	12
4VSUB 160 320 S16	16	32		B	90	16
4VSUB 200 380 S20	20	38		B	100	20

K SUS 4CRS

4 Flutes Rib Corner Radius End Mills for SUS

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

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Strong design for protection against chattering.



4刃SUS加工用のリブコーナーラディウスエンドミル

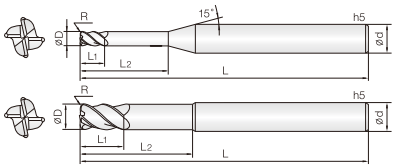
合金鋼,SUS系,Ti/Ni系合金,インコネルなどの難削材加工用のエンドミル

- JCROコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 強力なチャタリング防止の設計でエンドミルの振動を最小限に抑えました。

4날 SUS 가공용 리브 코너 레디우스 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상 됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6-12	-0.005~ -0.015mm
Ø16-20	-0.01~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
4CRS 010 001 050	1XR0.1	1.5	5	60	4
4CRS 010 001 060	1XR0.1	1.5	6	60	4
4CRS 010 001 080	1XR0.1	1.5	8	60	4
4CRS 020 001 100	2XR0.1	3	10	60	4
4CRS 020 001 120	2XR0.1	3	12	60	4
4CRS 020 001 160	2XR0.1	3	16	60	4
4CRS 020 002 100	2XR0.2	3	10	60	4
4CRS 020 002 120	2XR0.2	3	12	60	4
4CRS 020 002 160	2XR0.2	3	16	60	4
4CRS 030 002 150	3XR0.2	4.5	15	65	6
4CRS 030 002 200	3XR0.2	4.5	20	70	6
4CRS 030 005 150	3XR0.5	4.5	15	65	6
4CRS 030 005 200	3XR0.5	4.5	20	70	6
4CRS 040 002 200	4XR0.2	6	20	70	6
4CRS 040 002 300	4XR0.2	6	30	80	6
4CRS 040 005 200	4XR0.5	6	20	70	6
4CRS 040 005 300	4XR0.5	6	30	80	6
4CRS 040 010 200	4XR1	6	20	70	6
4CRS 050 002 250	5XR0.2	7.5	25	70	6
4CRS 050 002 360	5XR0.2	7.5	36	80	6
4CRS 050 005 250	5XR0.5	7.5	25	70	6
4CRS 050 005 360	5XR0.5	7.5	36	80	6
4CRS 050 010 250	5XR1	7.5	25	70	6
4CRS 060 003 300	6XR0.3	9	30	70	6
4CRS 060 003 400	6XR0.3	9	40	80	6
4CRS 060 005 300	6XR0.5	9	30	70	6
4CRS 060 005 400	6XR0.5	9	40	80	6
4CRS 060 010 300	6XR1	9	30	70	6
4CRS 060 010 400	6XR1	9	40	80	6
4CRS 060 015 300	6XR1.5	9	30	70	6



单位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
4CRS 070 003 350	7XR0.3	10	35	80	8
4CRS 070 005 350	7XR0.5	10	35	80	8
4CRS 070 010 350	7XR1	10	35	80	8
4CRS 080 003 400	8XR0.3	12	40	80	8
4CRS 080 005 400	8XR0.5	12	40	80	8
4CRS 080 010 400	8XR1	12	40	80	8
4CRS 080 015 400	8XR1.5	12	40	80	8
4CRS 080 020 400	8XR2	12	40	80	8
4CRS 090 003 450	9XR0.3	13	45	90	10
4CRS 090 005 450	9XR0.5	13	45	90	10
4CRS 090 010 450	9XR1	13	45	90	10
4CRS 100 003 500	10XR0.3	15	50	100	10
4CRS 100 005 500	10XR0.5	15	50	100	10
4CRS 100 010 500	10XR1	15	50	100	10
4CRS 100 015 500	10XR1.5	15	50	100	10
4CRS 100 020 500	10XR2	15	55	100	10
4CRS 110 003 550	11XR0.3	16	55	100	12
4CRS 110 005 550	11XR0.5	16	55	100	12
4CRS 110 010 550	11XR1	16	55	100	12
4CRS 120 003 600	12XR0.3	18	60	110	12
4CRS 120 005 600	12XR0.5	18	60	110	12
4CRS 120 010 600	12XR1	18	60	110	12
4CRS 120 015 600	12XR1.5	18	60	110	12
4CRS 120 020 600	12XR2	18	60	110	12
4CRS 120 025 600	12XR2.5	18	60	110	12
4CRS 120 030 600	12XR3	18	60	110	12
4CRS 160 005 800	16XR0.5	24	80	130	16
4CRS 160 010 800	16XR1	24	80	130	16
4CRS 160 015 800	16XR1.5	24	80	130	16
4CRS 160 020 800	16XR2	24	80	130	16
4CRS 160 030 800	16XR3	24	80	130	16
4CRS 200 005 1000	20XR0.5	30	100	150	20
4CRS 200 010 1000	20XR1	30	100	150	20
4CRS 200 015 1000	20XR1.5	30	100	150	20
4CRS 200 020 1000	20XR2	30	100	150	20
4CRS 200 030 1000	20XR3	30	100	150	20
4CRS 200 050 1000	20XR5	30	100	150	20

4CRS

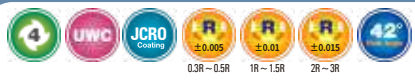
• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Tools Steel				Stainless Steels / Titanium Alloy Steels				Hardened Steels			
Hardness	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø1	13,210	476	0.5	0.8	10,836	399	0.3	0.5	5,820	78	0.1	0.3
Ø2	11,270	691	1.0	1.6	9,391	399	0.6	1.0	4,840	109	0.2	0.6
Ø3	8,054	783	1.5	2.4	7,112	605	0.9	1.5	4,239	155	0.3	0.9
Ø4	5,904	876	2.0	3.2	5,366	688	1.2	2.0	3,230	178	0.4	1.2
Ø5	5,155	1,183	2.5	4.0	4,291	716	1.5	2.5	2,522	202	0.5	1.5
Ø6	4,301	1,382	3.0	4.8	3,552	716	1.8	3.0	2,115	202	0.6	1.8
Ø8	3,216	998	4.0	6.4	2,683	674	2.4	4.0	1,610	202	0.8	2.4
Ø10	2,573	876	5.0	8.0	2,150	550	3.0	5.0	1,310	171	1.0	3.0
Ø12	2,150	768	6.0	9.6	1,806	550	3.6	6.0	1,106	140	1.2	3.6
Ø16	1,613	722	8.0	12.8	1,342	399	4.8	8.0	805	109	1.6	4.8
Ø20	1,286	538	10.0	16.0	1,075	358	6.0	10.0	601	78	2.0	6.0
Depth of Cut												

• If the effective length is long, reduce the RPM and feed in the same proportion.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K SUS

4CLS



4 Flutes Long Length Corner Radius End Mills for SUS

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

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- Strong design for protection against chattering.



4刃SUS加工用の長いコーナーラディウスエンドミル

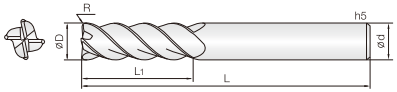
合金鋼,SUS系,Ti/Ni系合金,インコネルなどの難削材加工用のエンドミル

- JCROコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 強力なチャタリング防止の設計でエンドミルの振動を最小限に抑えました。

4날 SUS 가공용 긴길이 코너 레디우스 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상 됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화하였습니다.



Size	D Tolerance
Ø6~12	-0.005~ -0.015mm
Ø16~20	-0.01~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
4CLS 060 003 070	6XR0.3	30	70	6
4CLS 060 005 070	6XR0.5	30	70	6
4CLS 060 010 070	6XR1	30	70	6
4CLS 060 015 070	6XR1.5	30	70	6
4CLS 080 003 080	8XR0.3	40	80	8
4CLS 080 005 080	8XR0.5	40	80	8
4CLS 080 010 080	8XR1	40	80	8
4CLS 080 015 080	8XR1.5	40	80	8
4CLS 080 020 080	8XR2	40	80	8
4CLS 100 003 100	10XR0.3	50	100	10
4CLS 100 005 100	10XR0.5	50	100	10
4CLS 100 010 100	10XR1	50	100	10
4CLS 100 015 100	10XR1.5	50	100	10
4CLS 100 020 100	10XR2	50	100	10
4CLS 120 003 120	12XR0.3	60	120	12
4CLS 120 005 120	12XR0.5	60	120	12
4CLS 120 010 120	12XR1	60	120	12
4CLS 120 015 120	12XR1.5	60	120	12
4CLS 120 020 120	12XR2	60	120	12
4CLS 120 025 120	12XR2.5	60	120	12
4CLS 120 030 120	12XR3	60	120	12
4CLS 160 005 130	16XR0.5	80	130	16
4CLS 160 010 130	16XR1	80	130	16
4CLS 160 015 130	16XR1.5	80	130	16
4CLS 160 020 130	16XR2	80	130	16
4CLS 160 030 130	16XR3	80	130	16
4CLS 200 005 160	20XR0.5	100	160	20
4CLS 200 010 160	20XR1	100	160	20
4CLS 200 015 160	20XR1.5	100	160	20
4CLS 200 020 160	20XR2	100	160	20
4CLS 200 030 160	20XR3	100	160	20

4CLS

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Tools Steel				Stainless Steels / Titanium Alloy Steels				Hardened Steels			
Hardness	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø1	10,000	400	1	1	9,600	310	0.5	1	3,200	80	0.2	1
Ø2	10,000	400	2	2	9,600	310	1.0	2	3,200	80	0.4	2
Ø3	6,900	410	3	3	7,400	380	1.5	3	2,700	110	0.6	3
Ø4	5,600	490	4	4	5,600	400	2.0	4	2,000	120	0.8	4
Ø5	4,500	630	5	5	4,500	410	2.5	5	1,600	130	1.0	5
Ø6	3,700	740	6	6	3,700	440	3.0	6	1,300	160	1.2	6
Ø7	3,200	700	7	7	3,200	410	3.5	7	1,100	140	1.4	7
Ø8	2,800	670	8	8	2,800	390	4.0	8	1,000	130	1.6	8
Ø10	2,200	530	10	10	2,200	350	5.0	10	800	130	2.0	10
Ø11	2,000	530	11	11	2,000	320	5.5	11	720	120	2.2	11
Ø12	1,900	530	12	12	1,900	300	6.0	12	660	110	2.4	12
Ø16	1,400	390	16	16	1,400	280	8.0	16	500	80	3.2	16
Ø20	1,100	350	20	20	1,100	260	10.0	20	400	60	4.0	20
Depth of Cut												

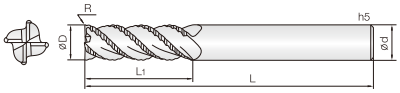
K SUS 3&4&5RRS

3&4&5 Flutes 45° Helix Roughing Core R End Mills for SUS

Roughing Endmills for alloy steel, SUS, Inconel, Mild steel and various hard to cut materials.

- JCRO coating provides wear resistance improvement as well as avoid edge stress in various applications.
- 45° helix design for minimizing cutting resistance and long time process.





3&4&5刃45°ヘリックスSUSラッピングコアRエンドミル

合金鋼,SUS系,インコーネル,一般構造鋼などの様々な難削材の抗削加工

- JCROコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 45°ヘリックスの適用で切削抵抗が減少し,長時間の加工に適しています。

3&4&5날 45° 헬릭스 SUS라핑 코어R엔드밀

합금강, SUS계열, 인코넬, 일반구조강 등 다양한 난삭재의 황삭가공

- JCRO 코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상 됩니다.
- 45° 헬릭스 적용으로 절삭 저항이 감소 되어 장시간 가공에 적합합니다.

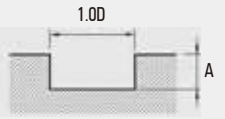
Size	D Tolerance
Ø3~9	-0.02~ -0.04mm
Ø10~20	-0.02~ -0.05mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
3RRS 030 002 S06	3XR0.2	8		50	6
3RRS 040 002 S06	4XR0.2	10		50	6
4RRS 050 002 S06	5XR0.2	13		50	6
4RRS 060 002 200	6XR0.2	10	20	60	6
4RRS 060 002 S06	6XR0.2	13		60	6
4RRS 060 005 S06	6XR0.5	13		60	6
4RRS 070 002 S08	7XR0.2	18		70	8
4RRS 080 002 250	8XR0.2	12	25	70	8
4RRS 080 002 S08	8XR0.2	19		70	8
4RRS 080 010 S08	8XR1	19		70	8
4RRS 090 003 S10	9XR0.3	20		70	10
4RRS 100 003 300	10XR0.3	15	30	75	10
4RRS 100 003 S10	10XR0.3	22		75	10
4RRS 100 010 S10	10XR1	22		75	10
4RRS 110 003 S12	11XR0.3	25		80	12
4RRS 120 003 350	12XR0.3	20	35	80	12
4RRS 120 003 S12	12XR0.3	26		80	12
4RRS 120 010 S12	12XR1	26		80	12
5RRS 140 005 S16	14XR0.5	28		90	16
5RRS 160 005 100	16XR0.5	32		100	16
5RRS 160 005 110	16XR0.5	42		110	16
5RRS 160 015 100	16XR1.5	32		100	16
5RRS 160 015 110	16XR1.5	42		110	16
5RRS 200 005 100	20XR0.5	38		100	20
5RRS 200 005 110	20XR0.5	45		110	20
5RRS 200 020 100	20XR2	38		100	20
5RRS 200 020 110	20XR2	45		110	20

3&4&5RRS

• RPM : rev./min • Feed : mm/min

Material	Stainless Steels / Titanium Alloy Steels			
	SUS304/ SUS316/ Ti6A			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø3	5,000	380	0.9	3
Ø4	4,800	350	1.2	4
Ø5	4,700	350	1.5	5
Ø6	4,400	340	1.5	6
Ø7	3,800	340	1.75	7
Ø8	3,300	340	2.0	8
Ø9	3,000	340	2.25	9
Ø10	2,700	330	2.5	10
Ø12	2,200	330	1.8	12
Ø14	2,000	310	2.1	14
Ø16	1,750	300	2.4	16
Ø20	1,300	210	2.0	20
Depth of Cut	A : Φ3~5 = 0.3 x D Φ6~10 = 0.25 x D Φ12~16 = 0.15 x D Φ18~20 = 0.1 x D			

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the effective length is long, reduce the RPM and feed maximum 30%

K MULTI 4MSB

4 Flutes Various Symmetry End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch Ball design and helix enable decrease of chattering.



4刃高能率の汎用ボールエンドミル

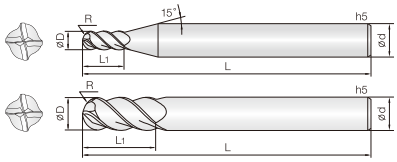
中低硬度鋼(HRC42以下),軟鋼,鋳鉄,SUS系加工用のエンドミル

- HRコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 不等分割ボール方式と可変ヘリックス引線設計により,チャタリングがさらに減少しました。

4날 고능률 범용 볼 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 부등분할 볼 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm
Ø16~25	-0.01~ -0.02mm

単位/Unit : mm

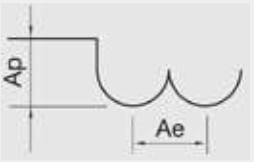
Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	DxR	L1	L	d
4MSB 010 025 S06	0.5RX1	2.5	50	6
4MSB 012 030 S06	0.6RX1.2	3	50	6
4MSB 015 040 S06	0.75X1.5	4	50	6
4MSB 020 050 S06	1RX2	5	50	6
4MSB 025 060 S06	1.25X2.5	6	50	6
4MSB 030 060 S03	1.5RX3	6	50	3
4MSB 030 080 S06	1.5RX3	8	50	6
4MSB 040 080 S04	2RX4	8	50	4
4MSB 040 100 S06	2RX4	10	50	6
4MSB 050 150 S06	2.5RX5	15	60	6
4MSB 060 150 S06	3RX6	15	60	6
4MSB 060 150 090	3RX6	15	90	6
4MSB 080 200 S08	4RX8	20	70	8
4MSB 080 200 100	4RX8	20	100	8
4MSB 100 250 S10	5RX10	25	75	10
4MSB 100 250 100	5RX10	25	100	10
4MSB 120 300 S12	6RX12	30	80	12
4MSB 120 300 120	6RX12	30	120	12
4MSB 160 400 S16	8RX16	40	100	16
4MSB 160 400 130	8RX16	40	130	16
4MSB 200 450 S20	10RX20	45	100	20
4MSB 200 450 150	10RX20	45	150	20
4MSB 250 500 S25	12.5RX25	50	125	25
4MSB 250 500 160	12.5RX25	50	160	25

4MSB

• RPM : rev./min • Feed : mm/min

Material	Carbon Steel				Alloy Steel / Tools Steel				Titanium Alloy Steels				Heat Resistance Alloy				Stainless Steel			
	S45C(~HRC30)				SKD61 / NAK (HRC30~40)				Ti6A								SUS304/ SUS316			
Radius	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
R0.5	44,500	1,780	1.0	0.5	20,700	1,200	1.0	0.5	16,000	1,000	0.30	0.5	9,550	110	0.2	0.1	25,500	1,000	1.0	0.5
R0.6	37,150	1,490	1.2	0.6	17,250	1,000	1.2	0.6	13,200	800	0.36	0.6	8,000	100	0.2	0.1	21,000	850	1.2	0.6
R0.75	29,720	1,200	1.5	0.8	13,800	800	1.5	0.8	10,600	600	0.45	0.8	6,300	80	0.3	0.2	17,000	700	1.5	0.8
R1	22,300	1,330	2.0	1.0	10,350	620	2.0	1.0	8,000	480	0.60	1.0	3,180	120	0.4	0.4	12,800	760	2.0	1.0
R1.25	17,800	1,400	2.5	1.3	8,280	500	2.5	1.3	6,400	380	0.75	1.3	2,500	100	0.5	0.2	10,000	600	2.5	1.3
R1.5	14,860	1,200	3.0	1.0	6,900	550	3.0	1.0	5,300	420	0.90	1.0	2,120	90	0.6	0.2	8,500	780	3.0	1.0
R2	11,150	1,120	4.0	2.0	5,170	350	4.0	2.0	4,000	300	1.20	2.0	1,590	100	0.8	0.2	6,370	640	4.0	2.0
R2.5	8,910	1,070	5.0	2.5	4,140	330	5.0	2.5	3,200	300	1.50	2.5	1,270	90	1.0	0.2	5,100	710	5.0	2.5
R3	7,430	1,000	6.0	3.0	3,450	340	6.0	3.0	2,650	300	1.80	3.0	1,000	85	1.2	0.2	4,250	680	6.0	3.0
R4	5,500	900	8.0	4.0	2,590	310	8.0	4.0	2,000	240	2.40	4.0	800	70	1.6	0.2	3,190	580	8.0	4.0
R5	4,460	800	10.0	5.0	2,070	290	10.0	5.0	1,600	230	3.00	5.0	630	60	2.0	0.2	2,550	500	10.0	5.0
R6	3,710	750	12.0	6.0	1,720	280	12.0	6.0	1,320	240	3.60	6.0	530	55	2.4	0.2	2,120	470	12.0	6.0
R8	2,790	610	16.0	8.0	1,300	230	16.0	8.0	1,000	200	4.80	8.0	400	45	3.2	0.2	1,600	390	16.0	8.0
R10	2,230	500	20.0	10.0	1,035	200	20.0	10.0	800	170	6.00	10.0	300	40	4.0	0.2	1,280	320	20.0	10.0
R12.5	1,780	430	25.0	12.5	800	200	25.0	12.5	630	150	7.50	12.5	255	35	5.0	0.5	1,000	260	25.0	12.5

Depth of Cut



Ap: Axial Depth
Ae: Radial Depth
D: Outside Diameter
N: Speed
Vf: Feed

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 4MSE

4 Flutes Various Symmetry End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch design and helix enable decrease of chattering.



4刃高能率の汎用 エンドミル

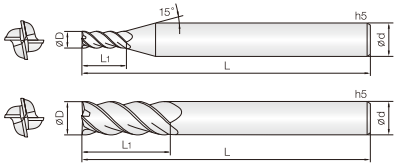
中低硬度鋼(HRC42以下),軟鋼,鋳鉄,SUS系加工用のエンドミル

- HRコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 不等分割ボール方式と可変ヘリックス引線設計により,チャタリングがさらに減少しました。

4날 고능률 범용 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 부등분할 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

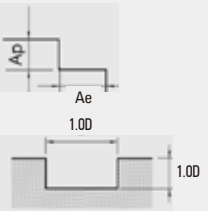
単位/Unit : mm

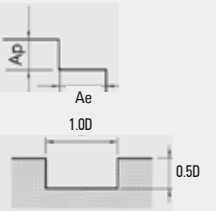
Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
4MSE 010 025 S06	1	2.5	50	6
4MSE 010 035 S06	1	3.5	50	6
4MSE 012 030 S06	1.2	3	50	6
4MSE 012 045 S06	1.2	4.5	50	6
4MSE 015 040 S06	1.5	4	50	6
4MSE 015 060 S06	1.5	6	50	6
4MSE 020 060 S06	2	6	50	6
4MSE 020 090 S06	2	9	50	6
4MSE 025 070 S06	2.5	7	50	6
4MSE 025 100 S06	2.5	10	50	6
4MSE 030 080 S06	3	8	50	6
4MSE 030 120 S06	3	12	50	6
4MSE 040 100 S06	4	10	50	6
4MSE 040 150 S06	4	15	60	6
4MSE 050 150 S06	5	15	60	6
4MSE 050 200 S06	5	20	70	6
4MSE 060 150 S06	6	15	60	6
4MSE 060 200 S06	6	20	70	6
4MSE 080 200 S08	8	20	70	8
4MSE 080 300 S08	8	30	80	8
4MSE 100 250 S10	10	25	75	10
4MSE 100 400 S10	10	40	90	10
4MSE 120 300 S12	12	30	80	12
4MSE 120 450 S12	12	45	100	12
4MSE 160 400 S16	16	40	100	16
4MSE 160 600 S16	16	60	120	16
4MSE 200 450 S20	20	45	100	20
4MSE 200 650 S20	20	65	120	20

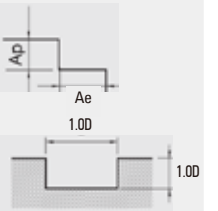
4MSE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steel				Alloy Steel / Tools Steel				Titanium Alloy Steels				Heat Resistance Alloy				Stainless Steel			
	S45C(~HRC30)				SKD61 / NAK (HRC30~40)				Ti6A								SUS304/ SUS316			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
1Ø	41,400	800	0.75	0.25	19,000	230	0.75	0.25	19,100	150	0.5	0.2	8,000	100	0.5	0.2	31,900	380	0.7	0.3
1.2Ø	34,500	700	0.90	0.30	16,000	200	0.90	0.30	15,920	120	0.6	0.2	6,630	80	0.6	0.2	26,500	300	0.8	0.4
1.5Ø	27,600	550	1.13	0.38	12,800	150	1.13	0.38	12,800	100	0.8	0.3	5,300	65	0.8	0.3	21,200	250	1.1	0.5
2Ø	20,700	400	1.50	0.50	9,550	110	1.50	0.50	9,550	80	1.0	0.4	4,000	65	1.0	0.4	15,600	200	1.4	0.6
2.5Ø	16,500	330	1.88	0.63	7,650	90	1.88	0.63	7,600	70	1.3	0.5	3,180	50	1.3	0.5	12,800	150	1.8	0.8
3Ø	13,800	330	4.5	1.5	6,370	80	4.5	1.5	6,370	100	3.0	1.2	2,650	50	3.0	0.75	10,600	210	4.5	1.5
4Ø	10,350	410	6.0	2.0	4,780	135	6.0	2.0	4,780	130	4.0	1.6	2,000	40	4.0	1.0	8,000	150	6.0	2.0
5Ø	8,280	430	7.5	2.5	3,800	150	7.5	2.5	3,820	150	5.0	2.0	1,600	60	5.0	1.25	6,380	250	7.5	2.5
6Ø	6,900	550	9.0	3.0	3,200	150	9.0	3.0	3,200	150	6.0	2.4	1,320	80	6.0	1.5	5,300	420	9.0	3.0
8Ø	5,180	520	12.0	4.0	2,390	140	12.0	4.0	2,390	140	8.0	3.2	1,000	80	8.0	2.0	4,000	180	12.0	4.0
10Ø	4,140	660	15.0	5.0	2,070	200	15.0	5.0	2,000	130	10.0	4.0	800	90	10.0	2.5	3,180	510	15.0	5.0
12Ø	3,450	620	18.0	6.0	1,720	200	18.0	6.0	1,600	140	12.0	4.8	660	100	12.0	3.0	2,650	530	18.0	6.0
16Ø	2,600	520	24.0	8.0	1,300	200	24.0	8.0	1,200	120	16.0	6.4	500	90	16.0	4.0	2,000	400	24.0	8.0
20Ø	2,000	450	30.0	10.0	1,000	180	30.0	10.0	1,000	100	20.0	8.0	400	80	20.0	5.0	1,600	320	30.0	10.0
Depth of Cut	Side Milling *Ap: Axial Depth *Ae: Radial Depth								Side Milling *Ap: Axial Depth *Ae: Radial Depth											







• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 6MSE



6 Flutes Various Symmetry End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Deep hole helix design enable chip evacuation and increase surface roughness.



6刃高能率の汎用エンドミル

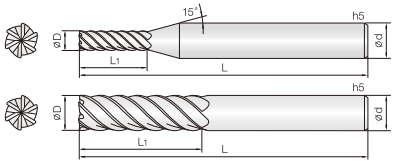
中低硬度鋼(HRC42以下),軟鋼,鋳鉄,SUS系加工用のエンドミル

- HRコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- ディープホールのヘリックス引線設計でチップ排出がスムーズで,被削材の面粗度に優れています。

6날 고능률 범용 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 깊은 홀 헬릭스 인선설계로 칩배출이 원활하여 피삭재 면조도가 우수합니다.



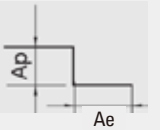
Size	D Tolerance
Ø3~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
6MSE 030 080 S06	3	8	50	6
6MSE 030 120 S06	3	12	60	6
6MSE 040 100 S06	4	10	50	6
6MSE 040 160 S06	4	16	60	6
6MSE 050 150 S06	5	15	60	6
6MSE 050 200 S06	5	20	70	6
6MSE 050 250 S06	5	25	75	6
6MSE 060 150 S06	6	15	60	6
6MSE 060 200 S06	6	20	70	6
6MSE 060 250 S06	6	25	75	6
6MSE 080 210 S08	8	21	70	8
6MSE 080 260 S08	8	26	70	8
6MSE 080 320 S08	8	32	75	8
6MSE 100 260 S10	10	26	75	10
6MSE 100 350 S10	10	35	90	10
6MSE 100 420 S10	10	42	100	10
6MSE 120 310 S12	12	31	80	12
6MSE 120 410 S12	12	41	100	12
6MSE 120 510 S12	12	51	120	12
6MSE 160 400 S16	16	40	100	16
6MSE 160 650 S16	16	65	130	16
6MSE 200 450 S20	20	45	100	20
6MSE 200 800 S20	20	80	160	20

6MSE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steel				Alloy Steel / Tools Steel				Titanium Alloy Steels				Heat Resistance Alloy				Stainless Steel			
	S45C(~HRC30)				SKD61 / NAK (HRC30~40)				Ti6A								SUS304/ SUS316			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
3Ø	30,000	5,000	6.0	0.15	10,600	1,100	6.0	0.15	11,500	700	6.0	0.15	3,190	200	6.0	0.15	15,900	1,400	6.0	0.15
4Ø	22,300	5,200	8.0	0.20	8,000	1,200	8.0	0.20	8,750	800	8.0	0.20	2,400	280	8.0	0.20	12,000	1,500	8.0	0.20
5Ø	17,800	7,000	10.0	0.25	6,400	1,200	10.0	0.25	7,000	920	10.0	0.25	2,000	280	10.0	0.25	9,500	1,500	10.0	0.25
6Ø	14,800	6,000	12.0	0.30	5,300	1,280	12.0	0.30	5,800	1,000	12.0	0.30	1,600	280	12.0	0.30	7,960	1,900	12.0	0.30
8Ø	11,000	6,600	16.0	0.40	4,000	1,200	16.0	0.40	4,380	1,300	16.0	0.40	1,200	320	16.0	0.40	6,000	2,500	16.0	0.40
10Ø	8,900	8,000	20.0	0.50	3,200	1,600	20.0	0.50	3,500	1,400	20.0	0.50	1,000	280	20.0	0.50	4,780	2,300	20.0	0.50
12Ø	7,400	8,500	24.0	0.60	2,650	1,600	24.0	0.60	3,000	1,400	24.0	0.60	800	300	24.0	0.60	3,900	2,100	24.0	0.60
16Ø	5,570	6,700	32.0	0.80	2,000	1,500	32.0	0.80	2,200	1,200	32.0	0.80	600	270	32.0	0.80	3,000	1,700	32.0	0.80
20Ø	4,500	5,300	40.0	1.00	1,600	1,500	40.0	1.00	1,750	1,150	40.0	1.00	480	230	40.0	1.00	2,400	1,500	40.0	1.00
Depth of Cut	Side Milling *Ap: Axial Depth *Ae: Radial Depth  																			

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 4MCC

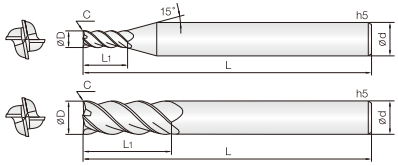
Ø1 ~ Ø5 | Ø6 ~ Ø12 | Ø16 ~ Ø20 | Ø1 ~ Ø3 | Ø6 ~ Ø20 | Shield Edge

4 Flutes Various Symmetry Corner C End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch design and helix enable decrease of chattering.





4刃高能率の汎用Cエンドミル

中低硬度鋼(HRC42以下),軟鋼,鋳鉄,SUS系加工用のエンドミル

- HRコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 不等分割ボール方式と可変ヘリックス引線設計により,チャタリングがさらに減少しました。

4날 고능률 범용 C 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

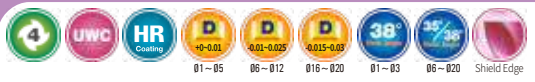
- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 부등분할 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.

Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4MCC 010 020 S04	1	2	0.03	45	4
4MCC 010 025 S06	1	2.5	0.03	50	6
4MCC 010 035 S06	1	3.5	0.03	50	6
4MCC 012 020 S04	1.2	2	0.04	45	4
4MCC 012 030 S06	1.2	3	0.04	50	6
4MCC 012 050 S06	1.2	5	0.04	50	6
4MCC 015 030 S04	1.5	3	0.05	45	4
4MCC 015 040 S06	1.5	4	0.05	50	6
4MCC 015 060 S06	1.5	6	0.05	50	6
4MCC 020 040 S04	2	4	0.075	45	4
4MCC 020 060 S06	2	6	0.075	50	6
4MCC 020 090 S06	2	9	0.075	50	6
4MCC 025 050 S04	2.5	5	0.08	50	4
4MCC 025 070 S06	2.5	7	0.08	50	6
4MCC 025 100 S06	2.5	10	0.08	50	6
4MCC 030 060 S04	3	6	0.1	50	4
4MCC 030 060 S06	3	6	0.1	50	6
4MCC 030 080 S06	3	8	0.1	50	6
4MCC 030 120 S06	3	12	0.1	50	6
4MCC 040 080 S04	4	8	0.15	50	4
4MCC 040 080 S06	4	8	0.15	50	6
4MCC 040 100 S06	4	10	0.15	50	6
4MCC 040 150 S06	4	15	0.15	60	6
4MCC 050 100 S06	5	10	0.15	50	6
4MCC 050 150 S06	5	15	0.15	60	6
4MCC 050 200 S06	5	20	0.15	70	6
4MCC 060 120 S06	6	12	0.2	50	6
4MCC 060 150 S06	6	15	0.2	60	6
4MCC 060 200 S06	6	20	0.2	70	6
4MCC 080 160 S08	8	16	0.2	60	8
4MCC 080 200 S08	8	20	0.2	70	8

K MULTI 4MCC



単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
4MCC 080 300 S08	8	30	0.2	80	8
4MCC 100 200 S10	10	20	0.3	75	10
4MCC 100 250 S10	10	25	0.3	75	10
4MCC 100 350 S10	10	35	0.3	90	10
4MCC 120 240 S12	12	24	0.35	75	12
4MCC 120 300 S12	12	30	0.35	80	12
4MCC 120 450 S12	12	45	0.35	100	12
4MCC 160 400 S16	16	40	0.4	100	16
4MCC 160 600 S16	16	60	0.4	120	16
4MCC 200 450 S20	20	45	0.5	100	20
4MCC 200 650 S20	20	65	0.5	120	20

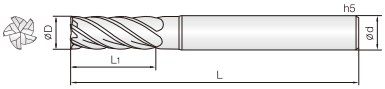
K MULTI 5MCC

5 Flutes Various Symmetry Corner C End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch design and helix enable decrease of chattering.





5刃高能率の汎用Cエンドミル

中低硬度鋼(HRC42以下),軟鋼,鋳鉄,SUS系加工用のエンドミル

- HRコーティング処理により,多様な被削材を加工する時の引っ張り部にストレスが少なく,耐摩耗性も向上します。
- 不等分割ボール方式と可変ヘリックス引線設計により,チャタリングがさらに減少しました。

5날 고능률 범용 C 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 부등분할 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.

Size	D Tolerance
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Chamfer	Overall Length	Shank Dia
	D	L1	C	L	d
5MCC 060 130 S06	6	13	0.1	55	6
5MCC 080 190 S08	8	19	0.1	60	8
5MCC 100 220 S10	10	22	0.1	70	10
5MCC 120 260 S12	12	26	0.1	80	12
5MCC 140 260 S14	14	26	0.2	80	14
5MCC 160 320 S16	16	32	0.2	90	16
5MCC 180 320 S18	18	32	0.2	90	18
5MCC 200 380 S20	20	38	0.2	100	20

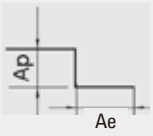
5MCC

- When entering the tool to the workpiece, enter the tool from outside to the workpiece.
- If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

• RPM : rev./min • Feed : mm/min

Material	Carbon Steel				Alloy Steel / Tools Steel				Titanium Alloy Steels				Heat Resistance Alloy				Stainless Steel			
	S45C(~HRC30)				SKD61 / NAK (HRC30~40)				Ti6A								SUS304/ SUS316			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
6Ø	6,900	1,000	7.2	1.2	7,590	950	7.2	1.2	4,250	630	6.0	1.2	1,050	80	6.0	1.2	5,800	850	7.2	1.2
8Ø	5,100	1,030	9.6	1.6	5,610	979	9.6	1.6	3,180	520	8.0	1.6	800	70	8.0	1.6	4,400	650	9.6	1.6
10Ø	4,140	1,140	12.0	2.0	4,554	1,083	12.0	2.0	2,550	460	10.0	2.0	630	100	10.0	2.0	3,500	700	12.0	2.0
12Ø	3,450	1,030	14.4	2.4	3,795	979	14.4	2.4	2,120	410	12.0	2.4	600	95	12.0	2.4	3,000	730	14.4	2.4
14Ø	3,000	1,000	16.8	2.8	3,300	950	16.8	2.8	1,600	420	14.0	2.8	540	95	14.0	2.8	2,500	750	16.8	2.8
16Ø	2,600	970	19.2	3.2	2,860	922	19.2	3.2	1,400	400	16.0	3.2	500	90	16.0	3.2	2,200	700	19.2	3.2
18Ø	2,300	920	21.6	3.6	2,530	874	21.6	3.6	1,400	380	18.0	3.6	440	90	18.0	3.6	2,000	630	21.6	3.6
20Ø	2,070	930	24.0	4.0	2,277	884	24.0	4.0	1,200	380	20.0	4.0	400	90	20.0	4.0	1,750	600	24.0	4.0

Depth of Cut



Side Milling
*Ap: Axial Depth
*Ae: Radial Depth

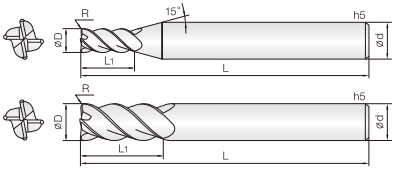
K MULTI 4MSC

4 Flutes Various Symmetry End Mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Unequal pitch design and helix enable decrease of chattering.





4刃高能率の汎用コーナーラディウスエンドミル

中低硬度鋼(HRC42以下)、軟鋼、鋳鉄、SUS系加工用のエンドミル

- HRコーティング処理により、多様な被削材を加工する時の引っ張り部にストレスが少なく、耐摩耗性も向上します。
- 不等分割ボール方式と可変ヘリックス引線設計により、チャタリングがさらに減少しました。

4날 고능률 범용 코너 레디우스 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 부등분할 방식과 가변 헬릭스 인선설계로 채터링이 더욱 감소 하였습니다.

Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm
Ø16~20	-0.01~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	DxR	L1	L	d
4MSC 010 001 S06	1XR0.1	2.5	50	6
4MSC 010 002 S06	1XR0.2	2.5	50	6
4MSC 012 001 S06	1.2XR0.1	3	50	6
4MSC 012 002 S06	1.2XR0.2	3	50	6
4MSC 015 001 S06	1.5XR0.1	4	50	6
4MSC 015 002 S06	1.5XR0.2	4	50	6
4MSC 020 001 S06	2XR0.1	6	50	6
4MSC 020 002 S06	2XR0.2	6	50	6
4MSC 025 001 S06	2.5XR0.1	7	50	6
4MSC 025 002 S06	2.5XR0.2	7	50	6
4MSC 030 002 S06	3XR0.2	8	50	6
4MSC 030 003 S06	3XR0.3	8	50	6
4MSC 030 005 S06	3XR0.5	8	50	6
4MSC 040 002 S06	4XR0.2	10	50	6
4MSC 040 003 S06	4XR0.3	10	50	6
4MSC 040 005 S06	4XR0.5	10	50	6
4MSC 050 002 S06	5XR0.2	15	60	6
4MSC 050 003 S06	5XR0.3	15	60	6
4MSC 050 005 S06	5XR0.5	15	60	6
4MSC 060 002 S06	6XR0.2	15	60	6
4MSC 060 003 S06	6XR0.3	15	60	6
4MSC 060 005 S06	6XR0.5	15	60	6
4MSC 060 010 S06	6XR1	15	60	6
4MSC 080 003 S08	8XR0.3	20	70	8
4MSC 080 005 S08	8XR0.5	20	70	8
4MSC 080 010 S08	8XR1	20	70	8
4MSC 100 003 S10	10XR0.3	25	75	10
4MSC 100 005 S10	10XR0.5	25	75	10
4MSC 100 010 S10	10XR1	25	75	10
4MSC 100 015 S10	10XR1.5	25	75	10
4MSC 100 020 S10	10XR2	25	75	10



단위/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	DxR	L1	L	d
4MSC 120 005 S12	12XR0.5	30	80	12
4MSC 120 010 S12	12XR1	30	80	12
4MSC 120 020 S12	12XR2	30	80	12
4MSC 160 005 S16	16XR0.5	40	100	16
4MSC 160 010 S16	16XR1	40	100	16
4MSC 160 020 S16	16XR2	40	100	16
4MSC 160 030 S16	16XR3	40	100	16
4MSC 200 005 S20	20XR0.5	45	100	20
4MSC 200 010 S20	20XR1	45	100	20
4MSC 200 020 S20	20XR2	45	100	20
4MSC 200 030 S20	20XR3	45	100	20

K MULTI 6MSC

6 Flutes Various Symmetry Corner Radius End mills for steels, Cast Iron & Stainless Steels

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- 45° helix design is suitable for high speed machining.



6刃高能率の汎用コーナーラディウスエンドミル

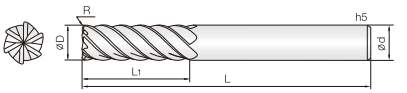
中低硬度鋼(HRC42以下)、軟鋼、鋳鉄、SUS系加工用のエンドミル

- HRコーティング処理により、多様な被削材を加工する時の引っ張り部にストレスが少なく、耐摩耗性も向上します。
- 45°ヘリックス形状に設計し、高速·高移送の加工に適しています。

6날 고능률 범용 코너 레디우스 엔드밀

중저경도강(HRC 42이하), 연강, 주철, SUS계열 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 45° 헬릭스 형상으로 설계하여 고속, 고이송 가공에 적합 합니다.



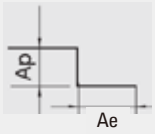
Size	D Tolerance
Ø3~5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm
Ø16	-0.01~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	DxR	L1	L	d
6MSC 060 005 S06	6XR0.5	15	60	6
6MSC 060 010 S06	6XR1	15	60	6
6MSC 080 005 S08	8XR0.5	20	70	8
6MSC 080 010 S08	8XR1	20	70	8
6MSC 100 005 S10	10XR0.5	25	75	10
6MSC 100 010 S10	10XR1	25	75	10
6MSC 100 015 S10	10XR1.5	25	75	10
6MSC 100 020 S10	10XR2	25	75	10
6MSC 120 005 S12	12XR0.5	30	80	12
6MSC 120 010 S12	12XR1	30	80	12
6MSC 120 015 S12	12XR1.5	30	80	12
6MSC 120 020 S12	12XR2	30	80	12
6MSC 120 030 S12	12XR3	30	80	12
6MSC 160 010 S16	16XR1	40	100	16
6MSC 160 015 S16	16XR1.5	40	100	16
6MSC 160 020 S16	16XR2	40	100	16
6MSC 160 030 S16	16XR3	40	100	16
6MSC 200 010 S20	20XR1	45	100	20
6MSC 200 015 S20	20XR1.5	45	100	20
6MSC 200 020 S20	20XR2	45	100	20
6MSC 200 030 S20	20XR3	45	100	20

6MSC

• RPM : rev./min • Feed : mm/min

Material	Carbon Steel				Alloy Steel / Tools Steel				Titanium Alloy Steels				Heat Resistance Alloy				Stainless Steel			
	S45C(~HRC30)				SKD61 / NAK (HRC30~40)				Ti6A								SUS304/ SUS316			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
6Ø	14,800	6,000	12.0	0.3	5,300	1,280	12.0	0.3	5,800	1,000	12.0	0.3	1,600	280	12.0	0.3	7,960	1,900	12.0	0.3
8Ø	11,000	6,600	16.0	0.4	4,000	1,200	16.0	0.4	4,380	1,300	16.0	0.4	1,200	320	16.0	0.4	6,000	2,500	16.0	0.4
10Ø	8,900	8,000	20.0	0.5	3,200	1,600	20.0	0.5	3,500	1,400	20.0	0.5	1,000	280	20.0	0.5	4,780	2,300	20.0	0.5
12Ø	7,400	8,500	24.0	0.6	2,650	1,600	24.0	0.6	3,000	1,400	24.0	0.6	800	300	24.0	0.6	3,900	2,100	24.0	0.6
16Ø	5,570	6,700	32.0	0.8	2,000	1,500	32.0	0.8	2,200	1,200	32.0	0.8	600	270	32.0	0.8	3,000	1,700	32.0	0.8
20Ø	4,500	5,300	40.0	1.0	1,600	1,500	40.0	1.0	1,750	1,150	40.0	1.0	480	230	40.0	1.0	2,400	1,500	40.0	1.0
Depth of Cut	 Side Milling *Ap: Axial Depth *Ae: Radial Depth																			

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 7MUC

7 Flutes Non Symmetry Coner Radius End Mills for SUS

Mid-low hardened steel(HRC~42), soft steel, steel, SUS

- HR coating reduces stress of flute and enhances wear resistance.
- Strong design for protection against chattering.



7刃SUS加工用のコーナーラディウスエンドミル

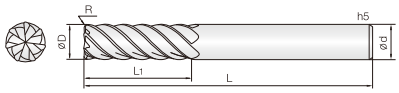
合金鋼、SUS系、Ti/Ni系合金、インコネルなどの難削材加工用のエンドミル

- HRコーティング処理により、多様な被削材を加工する時の引っ張り部にストレスが少なく、耐摩耗性も向上します。
- 強力なチャタリング防止の設計でエンドミルの振動を最小限に抑えました。

7날 SUS가공용 코너 레디우스 엔드밀

합금강, SUS계열, Ti/Ni계 합금, 인코넬 등 난삭재 가공 엔드밀

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 강력한 채터링방지 설계로 엔드밀의 진동을 최소화 하였습니다.



Size	D Tolerance
Ø6~12	-0.005~ -0.015mm
Ø16~20	-0.01~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	DxR	L1	L	d
7MUC 060 005 060	6XR0.5	15	60	6
7MUC 080 005 070	8XR0.5	25	70	8
7MUC 100 005 075	10XR0.5	25	75	10
7MUC 120 005 085	12XR0.5	30	85	12
7MUC 160 005 100	16XR0.5	42	100	16
7MUC 200 005 110	20XR0.5	48	110	20

7MUC

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Tools Steel				Stainless Steels / Titanium Alloy Steels				Hardened Steels			
	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
6Ø	4,070	925	6	6	4,070	550	3	6	1,430	200	1.2	6
8Ø	3,080	838	8	8	3,080	488	4	8	1,100	163	1.6	8
10Ø	2,420	663	10	10	2,420	438	5	10	880	163	2.0	10
12Ø	2,090	663	12	12	2,090	375	6	12	726	138	2.4	12
16Ø	1,540	488	16	16	1,540	350	8	16	550	100	3.2	16
20Ø	1,210	438	20	20	1,210	325	10	20	440	75	4.0	20
Depth of Cut												

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 4MLE



4 Flutes High Speed Sloting End Mills for SUS

Endmills for finishing and roughing of alloy steel,inconel, soft steel, SUS and various hard to cut materials.

- Chip emission is excellent for slotting, and thick double core designed enables continuous machining without chattering.
- HR coating reduces stress of flute and enhances wear resistance.



4刃高速スロッティング加工用のエンドミル

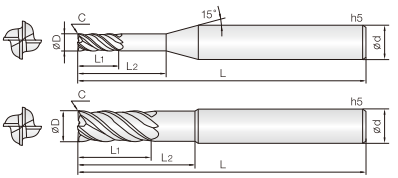
合金鋼、SUS系、インコーネル、一般構造鋼などの様々な難削材の精密仕上げ・抗削加工

- スロッティング(sloting)加工時に、2重の横刃の溝でチップ排出に優れ、厚い2重のコアは、揺れのない加工を実現します。
- HRコーティング処理により、多様な被削材を加工する時の引っ張り部にストレスが少なく、耐摩耗性も向上します。

4날 고속 슬로팅 SUS가공 엔드밀

합금강, SUS계열, 인코넬, 일반구조강 등 다양한 난삭재 정삭, 황삭 가공

- 슬롯팅 가공시 2중의 옆날 홈으로 칩 배출이 우수하며, 두터운 2중의 코어는 흔들림 없는 가공을 구현합니다.
- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며, 내마모성 또한 향상 됩니다.



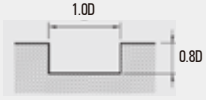
Size	D Tolerance
Ø3~4	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L1	L	d
4MLE 030 080 S06	3	8		50	6
4MLE 030 210 S06	3	8	21	60	6
4MLE 040 100 S06	4	10		50	6
4MLE 040 210 S06	4	10	21	60	6
4MLE 060 150 S06	6	15		60	6
4MLE 060 210 S06	6	15	21	60	6
4MLE 080 200 S08	8	20		70	8
4MLE 080 270 S08	8	20	27	70	8
4MLE 100 250 S10	10	25		80	10
4MLE 100 350 S10	10	25	35	80	10
4MLE 120 300 S12	12	30		90	12
4MLE 120 400 S12	12	30	40	90	12
4MLE 160 400 S16	16	40		100	16
4MLE 160 500 S16	16	40	50	100	16
4MLE 200 450 S20	20	45		110	20
4MLE 200 550 S20	20	45	55	110	20

4MLE

• RPM : rev./min • Feed : mm/min

Material	Alloy Steel / Tools Steel				Stainless Steel/ Titanium Alloy Steels				Hardened Steels			
	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
3Ø	13,270	740	2.4	3	5,840	260	2.4	3	3,185	115	2.4	3
4Ø	9,950	710	3.2	4	4,380	245	3.2	4	2,390	115	3.2	4
6Ø	6,630	720	4.8	6	2,920	245	4.8	6	1,590	115	4.8	6
8Ø	4,970	800	6.4	8	2,190	245	6.4	8	1,190	115	6.4	8
10Ø	3,980	800	8.0	10	1,750	245	8.0	10	955	115	8.0	10
12Ø	3,320	800	9.6	12	1,460	245	9.6	12	796	115	9.6	12
16Ø	2,490	800	12.8	16	1,095	245	12.8	16	597	115	12.8	16
20Ø	1,990	800	16.0	20	880	245	16.0	20	480	115	16.0	20
Depth of Cut												

• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• If the diameter or effective length of your tool are not on the table, adjust it compared similarity value on the table.

K MULTI 5&6MTR

5&6 Flutes Trochoidal Milling End Mills

Roughing Endmills for alloy steel,inconel, soft steel, SUS and various hard to cut materials.

- HR coating reduces stress of flute and enhances wear resistance.
- Variable helix design for minimizing cutting resistance and long time process.



5&6刃トロコイダル加工用のエンドミル

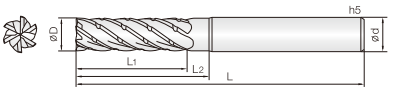
合金鋼、SUS系、インコーネル、一般構造鋼などの様々な難削材の精密仕上げ・抗削加工

- HRコーティング処理により、多様な被削材を加工する時の引っ張り部にストレスが少なく、耐摩耗性も向上します。
- 可変ヘリックスの適用で切削抵抗が減少し、長時間の加工に適しています。

5&6날 트로코이달 가공 엔드밀

합금강, SUS계열, 인코넬, 일반구조강 등 다양한 난삭재 정삭, 황삭 가공

- HR코팅 처리하여 다양한 피삭재 가공시 인선부에 스트레스가 적으며 내모마성 또한 향상 됩니다.
- 가변 헬릭스 적용으로 절삭 저항이 감소되어 장시간 가공에 적합 합니다.



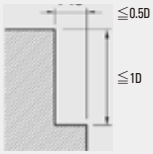
Size	D Tolerance
Ø6~12	-0.01~ -0.025mm
Ø16~20	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of Cut	Effective Length	Overall Length	Shank Dia
	D	L1	L1	L	d
5MTR 060 260 070	6	26		70	6
5MTR 080 340 080	8	34		80	8
5MTR 100 430 090	10	43		90	10
5MTR 120 510 110	12	51		110	12
5MTR 160 680 130	16	68		130	16
5MTR 200 850 150	20	85		150	20
6MTR 060 140 060	6	14		60	6
6MTR 060 200 065	6	20		65	6
6MTR 060 300 070	6	16	30	70	6
6MTR 080 180 065	8	18		65	8
6MTR 080 260 070	8	26		70	8
6MTR 080 400 080	8	21	40	80	8
6MTR 100 220 075	10	22		75	10
6MTR 100 330 080	10	33		80	10
6MTR 100 500 100	10	26	50	100	10
6MTR 120 270 080	12	27		80	12
6MTR 120 390 095	12	39		95	12
6MTR 120 600 110	12	31	60	110	12
6MTR 160 360 100	16	36		100	16
6MTR 160 520 120	16	52		120	16
6MTR 160 800 130	16	41	80	130	16
6MTR 200 450 110	20	45		110	20
6MTR 200 650 130	20	65		130	20
6MTR 200 900 150	20	51	90	150	20

5&6MTR

• RPM : rev./min • Feed : mm/min

Material	Alloy Steel / Tools Steel				Stainless Steel/ Titanium Alloy Steels				Hardened Steels			
	SKD61 / NAK				SUS304/ SUS316/ Ti6A				Inconel 718			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
6Ø	3,700	450	6	0.3	3,200	380	6	0.3	1,100	65	6	0.3
8Ø	2,800	400	8	0.4	2,350	420	8	0.4	950	60	8	0.4
10Ø	2,250	325	10	0.5	1,990	350	10	0.5	750	60	10	0.5
12Ø	1,990	300	12	0.6	1,550	270	12	0.6	600	55	12	0.6
16Ø	1,550	250	16	0.8	1,250	250	16	0.8	500	50	16	0.8
20Ø	1,200	180	20	1.0	900	150	20	1.0	350	50	20	1.0
Depth of Cut												

• If the effective length is long, reduce the RPM and feed in the same proportion.
• When entering the tool to the workpiece, enter the tool from outside to the workpiece.

K ALUMINUM

3AHM

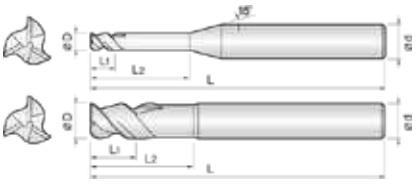
Ø1 ~ Ø12 | Shield Edge

3 Flutes 45° Helix Rib Endmills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Applied ultra fine WC grade(0.2㎛) for excellent surface finish.
- Applied short flute length for various applications.
- Minimize built up edge by double edge and deep pocket design.





3刃45°ヘリックス アルミニウム専用 リブ エンドミル

アルミニウム, アルミニウム合金など 非鉄 非金属 系列専用 エンドミル

- 超微粒子 超硬合金(0.2㎛)を使用,刃部 刃先に 稠密度を向上させて 被削材の表面粗さが優れます.
- 多様な 作業に合わせて短い 刃長に 有效长を 適用しました.
- 2重 刃先と 溝ポケットを深く設計して吸着現象を最小化しました.

3날 45° 헬릭스 알루미늄 전용 리브 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열 전용 엔드밀

- 초미립자 초경합금(0.2㎛)을 사용, 날부 인선에 조밀도를 향상시켜 피삭재의 표면조도가 우수합니다.
- 다양한 작업에 맞추어 짧은 날장에 유효장을 적용하였습니다.
- 2중 인선과 홈포켓을 깊게 설계하여 흡착현상을 최소화 하였습니다.

Size	D Tolerance
D≦Ø12	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3AHM 010 020 S06	1	2	-	60	6
3AHM 010 040 S06	1	2	4	60	6
3AHM 010 060 S06	1	2	6	60	6
3AHM 010 080 S06	1	2	8	60	6
3AHM 010 100 S06	1	2	10	60	6
3AHM 010 120 S06	1	2	12	60	6
3AHM 010 140 S06	1	2	14	60	6
3AHM 010 160 S06	1	2	16	60	6
3AHM 010 180 S06	1	2	18	60	6
3AHM 010 200 S06	1	2	20	60	6
3AHM 015 030 S06	1.5	3	-	60	6
3AHM 015 060 S06	1.5	3	6	60	6
3AHM 015 080 S06	1.5	3	8	60	6
3AHM 015 100 S06	1.5	3	10	60	6
3AHM 015 120 S06	1.5	3	12	60	6
3AHM 015 140 S06	1.5	3	14	60	6
3AHM 015 160 S06	1.5	3	16	60	6
3AHM 015 180 S06	1.5	3	18	60	6
3AHM 015 200 S06	1.5	3	20	60	6
3AHM 015 220 S06	1.5	3	22	65	6
3AHM 015 250 S06	1.5	3	25	65	6
3AHM 020 040 S06	2	4	-	60	6
3AHM 020 080 S06	2	4	8	60	6
3AHM 020 100 S06	2	4	10	60	6
3AHM 020 120 S06	2	4	12	60	6
3AHM 020 140 S06	2	4	14	60	6
3AHM 020 160 S06	2	4	16	60	6
3AHM 020 200 S06	2	4	20	60	6
3AHM 020 220 S06	2	4	22	60	6
3AHM 020 250 S06	2	4	25	65	6
3AHM 020 280 S06	2	4	28	70	6
3AHM 020 300 S06	2	4	30	70	6
3AHM 025 050 S06	2.5	5	-	60	6
3AHM 025 100 S06	2.5	5	10	60	6
3AHM 025 150 S06	2.5	5	15	60	6
3AHM 025 200 S06	2.5	5	20	60	6

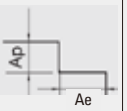
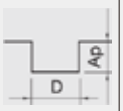
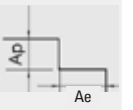


单位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3AHM 025 250 S06	2.5	5	25	65	6
3AHM 025 300 S06	2.5	5	30	70	6
3AHM 025 350 S06	2.5	5	35	80	6
3AHM 025 400 S06	2.5	5	40	90	6
3AHM 030 060 S06	3	6	-	60	6
3AHM 030 100 S06	3	6	10	60	6
3AHM 030 150 S06	3	6	15	60	6
3AHM 030 200 S06	3	6	20	70	6
3AHM 030 250 S06	3	6	25	70	6
3AHM 030 300 S06	3	6	30	80	6
3AHM 030 350 S06	3	6	35	80	6
3AHM 030 400 S06	3	6	40	90	6
3AHM 030 450 S06	3	6	45	90	6
3AHM 030 500 S06	3	6	50	100	6
3AHM 040 080 S06	4	8	-	70	6
3AHM 040 100 S06	4	8	10	70	6
3AHM 040 150 S06	4	8	15	70	6
3AHM 040 200 S06	4	8	20	70	6
3AHM 040 250 S06	4	8	25	70	6
3AHM 040 300 S06	4	8	30	80	6
3AHM 040 350 S06	4	8	35	80	6
3AHM 040 400 S06	4	8	40	90	6
3AHM 040 450 S06	4	8	45	90	6
3AHM 040 500 S06	4	8	50	100	6
3AHM 050 100 S06	5	10	-	80	6
3AHM 050 200 S06	5	10	20	80	6
3AHM 050 300 S06	5	10	30	80	6
3AHM 050 400 S06	5	10	40	90	6
3AHM 050 500 S06	5	10	50	100	6
3AHM 050 600 S06	5	10	60	110	6
3AHM 060 200 S06	6	12	20	80	6
3AHM 060 400 S06	6	12	40	80	6
3AHM 060 600 110	6	12	60	110	6
3AHM 060 800 120	6	12	80	120	6
3AHM 080 400 S08	8	16	40	100	8
3AHM 080 600 110	8	16	60	110	8
3AHM 080 800 120	8	16	80	120	8
3AHM 100 500 S10	10	20	50	110	10
3AHM 100 700 120	10	20	70	120	10
3AHM 100 900 150	10	20	90	150	10
3AHM 120 500 S12	12	24	50	110	12
3AHM 120 700 130	12	24	70	130	12
3AHM 120 900 150	12	24	90	150	12
3AHM 140 600 110	14	28	60	110	14
3AHM 140 800 120	14	28	80	120	14
3AHM 160 800 130	16	32	80	130	16
3AHM 160 1000 160	16	32	100	160	16
3AHM 200 800 130	20	40	80	130	20
3AHM 200 1200 160	20	40	120	160	20
3AHM 200 1500 200	20	40	150	200	20

3AHE/3AHM

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloys etc.							
	3AHE				3AHM			
Outside Diameter	RPM	FEED			RPM	FEED		
		Vertical	Soltting	Side Milling		Vertical	Soltting	Side Milling
1mm	25,500	130	770	930	30,000	150	900	1,100
2mm	25,500	190	1,530	1,800	30,000	225	1,800	2,150
3mm	18,400	190	1,700	2,000	21,600	225	2,000	2,400
4mm	14,000	255	1,700	2,000	16,200	300	2,000	2,400
5mm	11,000	255	1,700	2,000	13,000	300	2,000	2,400
6mm	9,200	255	1,700	2,000	10,800	300	2,000	2,400
8mm	7,000	255	1,700	2,000	8,100	300	2,000	2,400
10mm	5,500	210	1,700	2,000	6,480	250	2,000	2,400
12mm	4,400	170	1,700	2,000	5,400	200	2,000	2,400
16mm	3,200	130	1,530	1,900	-	-	-	-
20mm	2,000	85	1,360	1,700	-	-	-	-
Milling Amount (mm)		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D
Depth of Cut								

K ALUMINUM

2AHE

Ø1 ~ Ø20

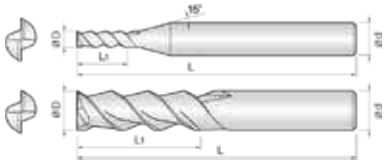
Shield Edge

2 Flutes 45° Helix Endmills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Applied ultra fine WC grade(0.2㎛) for excellent surface finish.
- Various flute length design for covering wide range application.
- Minimize built up edge by double edge and deep pocket design.





2刃45°ヘリックス アルミニウム専用 リブ エンドミル

アルミニウム, アルミニウム 合金など 非鉄 非金属系列専用 エンドミル

- 超微粒子 超硬合金(0.2㎛)を使用, 刃部 刃先に稠密度を向上させて 被削材の表面粗さが優れます.
- 多様な 作業に合わせて短い 刃長に 有效长を適用しました.
- 2重 刃先と 溝ポケットを深く設計して吸着現象を最小化しました.

2날 45° 헬릭스 알루미늄 전용 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열 전용 엔드밀

- 초미립자 초경합금(0.2㎛)을 사용, 날부 인선에 조밀도를 향상시켜 피삭재의 표면조도가 우수합니다.
- 다양한 날장 선택으로 맞춤 가공이 가능합니다.
- 2중 인선과 홈포켓을 깊게 설계하여 흡착현상을 최소화 하였습니다.

Size	D Tolerance
D≦Ø20	+0~ -0.01mm

単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
2AHE 005 005 S04	2AHEC 005 005 S04	0.5	0.5	40	4
2AHE 005 010 S04	2AHEC 005 010 S04	0.5	1	40	4
2AHE 005 015 S04	2AHEC 005 015 S04	0.5	1.5	40	4
2AHE 005 020 S04	2AHEC 005 020 S04	0.5	2	40	4
2AHE 005 025 S04		0.5	2.5	40	4
2AHE 005 030 S04		0.5	3	40	4
2AHE 006 006 S04	2AHEC 006 006 S04	0.6	0.6	40	4
2AHE 006 012 S04	2AHEC 006 012 S04	0.6	1.2	40	4
2AHE 006 020 S04	2AHEC 006 020 S04	0.6	2	40	4
2AHE 006 030 S04		0.6	3	40	4
2AHE 006 040 S04		0.6	4	40	4
2AHE 007 007 S04	2AHEC 007 007 S04	0.7	0.7	40	4
2AHE 007 014 S04	2AHEC 007 014 S04	0.7	1.4	40	4
2AHE 007 020 S04	2AHEC 007 020 S04	0.7	2	40	4
2AHE 007 030 S04		0.7	3	40	4
2AHE 007 040 S04		0.7	4	40	4
2AHE 008 008 S04	2AHEC 008 008 S04	0.8	0.8	40	4
2AHE 008 016 S04	2AHEC 008 016 S04	0.8	1.6	40	4
2AHE 008 020 S04	2AHEC 008 020 S04	0.8	2	40	4
2AHE 008 030 S04		0.8	3	40	4
2AHE 008 040 S04		0.8	4	40	4
2AHE 009 009 S04	2AHEC 009 009 S04	0.9	0.9	40	4
2AHE 009 018 S04	2AHEC 009 018 S04	0.9	1.8	40	4
2AHE 009 025 S04	2AHEC 009 025 S04	0.9	2.5	40	4
2AHE 009 040 S04		0.9	4	40	4
2AHE 010 015 S04	2AHEC 010 015 S04	1	1.5	40	4
2AHE 010 015 S06	2AHEC 010 015 S06	1	1.5	40	6
2AHE 010 025 S04	2AHEC 010 025 S04	1	2.5	40	4
2AHE 010 025 S06	2AHEC 010 025 S06	1	2.5	40	6
2AHE 010 035 S04	2AHEC 010 035 S04	1	3.5	40	4
2AHE 010 035 S06	2AHEC 010 035 S06	1	3.5	40	6

K ALUMINUM

2AHE



単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
2AHE 010 050 S06	2AHEC 010 050 S06	1	5	45	6
2AHE 010 060 S06	2AHEC 010 060 S06	1	6	45	6
2AHE 010 080 S06	2AHEC 010 080 S06	1	8	45	6
2AHE 010 100 S06	2AHEC 010 100 S06	1	10	45	6
2AHE 010 120 S06		1	12	45	6
2AHE 012 030 S06	2AHEC 012 030 S06	1.2	3	40	6
2AHE 012 040 S06	2AHEC 012 040 S06	1.2	4	40	6
2AHE 012 060 S06	2AHEC 012 060 S06	1.2	6	40	6
2AHE 012 080 S06		1.2	8	45	6
2AHE 012 100 S06		1.2	10	45	6
2AHE 015 040 S06	2AHEC 015 040 S06	1.5	4	40	6
2AHE 015 060 S06	2AHEC 015 060 S06	1.5	6	40	6
2AHE 015 080 S06	2AHEC 015 080 S06	1.5	8	45	6
2AHE 015 100 S06	2AHEC 015 100 S06	1.5	10	50	6
2AHE 015 120 S06	2AHEC 015 120 S06	1.5	12	50	6
2AHE 015 150 S06	2AHEC 015 150 S06	1.5	15	55	6
2AHE 015 180 S06		1.5	18	60	6
2AHE 020 050 S06	2AHEC 020 050 S06	2	5	45	6
2AHE 020 070 S06	2AHEC 020 070 S06	2	7	45	6
2AHE 020 100 S06	2AHEC 020 100 S06	2	10	50	6
2AHE 020 120 S06	2AHEC 020 120 S06	2	12	50	6
2AHE 020 140 S06	2AHEC 020 140 S06	2	14	50	6
2AHE 020 160 S06	2AHEC 020 160 S06	2	16	60	6
2AHE 020 180 S06		2	18	60	6
2AHE 020 200 S06		2	20	60	6
2AHE 025 080 S06	2AHEC 025 080 S06	2.5	8	45	6
2AHE 025 120 S06	2AHEC 025 120 S06	2.5	12	50	6
2AHE 025 150 S06	2AHEC 025 150 S06	2.5	15	60	6
2AHE 025 180 S06		2.5	18	60	6
2AHE 025 200 S06		2.5	20	60	6
2AHE 030 080 S06	2AHEC 030 080 S06	3	8	45	6
2AHE 030 100 S06	2AHEC 030 100 S06	3	10	45	6
2AHE 030 120 S06	2AHEC 030 120 S06	3	12	50	6
2AHE 030 150 S06	2AHEC 030 150 S06	3	15	50	6
2AHE 030 200 S06	2AHEC 030 200 S06	3	20	60	6
2AHE 030 250 S06	2AHEC 030 250 S06	3	25	65	6
2AHE 030 300 S06		3	30	70	6
2AHE 035 100 S06	2AHEC 035 100 S06	3.5	10	45	6
2AHE 035 150 S06	2AHEC 035 150 S06	3.5	15	50	6
2AHE 035 200 S06		3.5	20	60	6
2AHE 040 120 S06	2AHEC 040 120 S06	4	12	50	6
2AHE 040 150 S06	2AHEC 040 150 S06	4	15	55	6
2AHE 040 180 S06	2AHEC 040 180 S06	4	18	55	6

K ALUMINUM

2AHE



单位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
2AHE 040 250 S06	2AHEC 040 250 S06	4	25	65	6
2AHE 040 300 S06	2AHEC 040 300 S06	4	30	70	6
2AHE 040 350 S06		4	35	75	6
2AHE 040 400 S06		4	40	80	6
2AHE 045 120 S06	2AHEC 045 120 S06	4.5	12	50	6
2AHE 045 180 S06	2AHEC 045 180 S06	4.5	18	55	6
2AHE 045 220 S06		4.5	22	65	6
2AHE 045 250 S06		4.5	25	70	6
2AHE 050 150 S06	2AHEC 050 150 S06	5	15	50	6
2AHE 050 200 S06	2AHEC 050 200 S06	5	20	60	6
2AHE 050 250 S06	2AHEC 050 250 S06	5	25	65	6
2AHE 050 300 S06	2AHEC 050 300 S06	5	30	70	6
2AHE 050 400 S06		5	40	80	6
2AHE 055 150 S06	2AHEC 055 150 S06	5.5	15	50	6
2AHE 060 150 S06	2AHEC 060 150 S06	6	15	50	6
2AHE 060 200 S06	2AHEC 060 200 S06	6	20	60	6
2AHE 060 250 S06	2AHEC 060 250 S06	6	25	65	6
2AHE 060 300 S06	2AHEC 060 300 S06	6	30	70	6
2AHE 060 350 S06	2AHEC 060 350 S06	6	35	75	6
2AHE 060 400 S06	2AHEC 060 400 S06	6	40	80	6
2AHE 060 450 S06		6	45	90	6
2AHE 060 500 S06		6	50	100	6
2AHE 070 200 S08	2AHEC 070 200 S08	7	20	60	8
2AHE 070 300 S08	2AHEC 070 300 S08	7	30	70	8
2AHE 080 200 S08	2AHEC 080 200 S08	8	20	60	8
2AHE 080 250 S08	2AHEC 080 250 S08	8	25	65	8
2AHE 080 300 S08	2AHEC 080 300 S08	8	30	70	8
2AHE 080 400 S08	2AHEC 080 400 S08	8	40	80	8
2AHE 080 450 S08	2AHEC 080 450 S08	8	45	90	8
2AHE 080 500 S08		8	50	100	8
2AHE 100 250 S10	2AHEC 100 250 S10	10	25	70	10
2AHE 100 300 S10	2AHEC 100 300 S10	10	30	75	10
2AHE 100 350 S10	2AHEC 100 350 S10	10	35	80	10
2AHE 100 450 S10	2AHEC 100 450 S10	10	45	90	10
2AHE 100 500 S10	2AHEC 100 500 S10	10	50	100	10
2AHE 100 600 S10		10	60	110	10
2AHE 120 300 S12	2AHEC 120 300 S12	12	30	75	12
2AHE 120 350 S12	2AHEC 120 350 S12	12	35	80	12
2AHE 120 400 S12	2AHEC 120 400 S12	12	40	90	12
2AHE 120 450 S12	2AHEC 120 450 S12	12	45	100	12
2AHE 120 500 S12	2AHEC 120 500 S12	12	50	100	12
2AHE 120 600 S12	2AHEC 120 600 S12	12	60	110	12
2AHE 120 700 S12		12	70	120	12

K ALUMINUM

2AHE

単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
2AHE 140 300 S14	**2AHEC 140 300 S14**	14	30	80	14
2AHE 140 500 S14		14	50	90	14
2AHE 140 600 S14		14	60	110	14
2AHE 160 400 S16	**2AHEC 160 400 S16**	16	40	90	16
2AHE 160 550 S16	**2AHEC 160 550 S16**	16	55	110	16
2AHE 160 700 S16	**2AHEC 160 700 S16**	16	70	120	16
2AHE 160 900 S16		16	90	150	16
2AHE 200 450 S20	**2AHEC 200 450 S20**	20	45	100	20
2AHE 200 650 S20	**2AHEC 200 650 S20**	20	65	120	20
2AHE 200 800 S20	**2AHEC 200 800 S20**	20	80	135	20
2AHE 200 1000 S20		20	100	160	20

2AHE

• RPM : rev./min • Feed : mm/min

Material	Aluminum Alloys / A7075 etc.				Aluminum Alloys / AC4B etc.			
Speed	300m/min		240m/min		240m/min		200m/min	
	Side Milling		Soltting		Side Milling		Soltting	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	34,000	500	34,000	400	34,000	400	34,000	300
2mm	34,000	950	32,300	720	32,300	720	27,200	470
3mm	27,200	1,200	21,300	800	21,300	800	18,000	510
4mm	20,400	1,300	16,000	850	16,000	850	14,000	550
5mm	16,200	1,400	13,000	850	13,000	850	11,000	600
6mm	13,600	1,600	11,000	940	11,000	940	9,400	640
8mm	10,200	1,600	8,000	1,000	8,000	1,000	6,800	680
10mm	8,100	1,600	6,500	1,000	6,500	1,000	5,400	680
12mm	6,800	1,600	5,400	1,000	5,400	1,000	4,500	680
16mm	5,100	1,600	4,100	1,000	4,100	1,000	3,400	610
20mm	4,100	1,300	3,200	850	3,200	850	2,700	560
Depth of Cut	≦0.2D (D<Ø3) ≦0.3D (D≧Ø3) ≦1D		D ≦1D MAX. 12mm		≦0.2D (D<Ø3) ≦0.5D (D≧Ø3) ≦1D		D ≦1D MAX. 12mm	

K ALUMINUM

3AHE

3 Flutes 45° Helix Endmills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Applied ultra fine WC grade(0.2㎛) for excellent surface finish.
- Various flute length design for covering wide range application.
- Minimize built up edge by double edge and deep pocket design.

3刃45°ヘリックス アルミニウム専用 リブ エンドミル

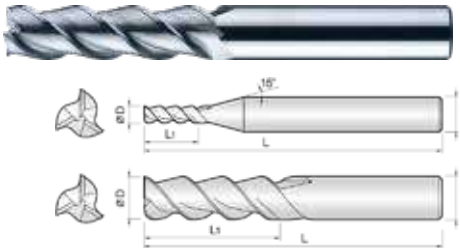
アルミニウム, アルミニウム 合金など 非鉄 非金属系列専用 エンドミル

- 超微粒子 超硬合金(0.2㎛)を使用, 刃部 刃先に稠密度を向上させて 被削材の表面粗さが優れます.
- 多様な 作業に合わせて短い 刃長に 有效长を適用しました.
- 2重 刃先と 溝ポケットを深く設計して吸着現象を最小化しました.

3날 45° 헬릭스 알루미늄 전용 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열 가공 엔드밀

- 초미립자 초경합금(0.2㎛)을 사용, 날부 인선에 조밀도를 향상시켜 피삭재의 표면조도가 우수합니다.
- 다양한 날장 선택으로 맞춤 가공이 가능합니다.
- 2중 인선과 홈포켓을 깊게 설계하여 흡착현상을 최소화 하였습니다.



Size	D Tolerance
D≦Ø20	+0~ -0.01mm

単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
3AHE 008 012 S04		0.8	1.2	40	4
3AHE 008 020 S04		0.8	2	40	4
3AHE 008 030 S04		0.8	3	40	4
3AHE 008 040 S04		0.8	4	40	4
3AHE 010 015 S06	3AHEC 010 015 S06	1	1.5	40	6
3AHE 010 030 S06	3AHEC 010 030 S06	1	3	40	6
3AHE 010 050 S06	3AHEC 010 050 S06	1	5	45	6
3AHE 010 060 S06	3AHEC 010 060 S06	1	6	45	6
3AHE 010 080 S06	3AHEC 010 080 S06	1	8	45	6
3AHE 010 100 S06	3AHEC 010 100 S06	1	10	45	6
3AHE 010 120 S06		1	12	50	6
3AHE 010 140 S06		1	14	50	6
3AHE 012 030 S06	3AHEC 012 030 S06	1.2	3	40	6
3AHE 012 040 S06	3AHEC 012 040 S06	1.2	4	40	6
3AHE 012 060 S06	3AHEC 012 060 S06	1.2	6	45	6
3AHE 012 080 S06		1.2	8	45	6
3AHE 012 100 S06		1.2	10	45	6
3AHE 012 120 S06		1.2	12	50	6
3AHE 015 025 S06	3AHEC 015 025 S06	1.5	2.5	40	6
3AHE 015 040 S06	3AHEC 015 040 S06	1.5	4	40	6
3AHE 015 060 S06	3AHEC 015 060 S06	1.5	6	45	6
3AHE 015 080 S06	3AHEC 015 080 S06	1.5	8	45	6
3AHE 015 100 S06	3AHEC 015 100 S06	1.5	10	50	6
3AHE 015 120 S06	3AHEC 015 120 S06	1.5	12	50	6
3AHE 015 150 S06	3AHEC 015 150 S06	1.5	15	50	6
3AHE 015 180 S06		1.5	18	60	6
3AHE 015 200 S06		1.5	20	60	6
3AHE 020 030 S06	3AHEC 020 030 S06	2	3	45	6
3AHE 020 050 S06	3AHEC 020 050 S06	2	5	45	6
3AHE 020 070 S06	3AHEC 020 070 S06	2	7	45	6
3AHE 020 100 S06	3AHEC 020 100 S06	2	10	50	6

K ALUMINUM

3AHE



単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
3AHE 020 120 S06	3AHEC 020 120 S06	2	12	50	6
3AHE 020 140 S06	3AHEC 020 140 S06	2	14	60	6
3AHE 020 160 S06	3AHEC 020 160 S06	2	16	60	6
3AHE 020 180 S06	3AHEC 020 180 S06	2	18	60	6
3AHE 020 200 S06	3AHEC 020 200 S06	2	20	60	6
3AHE 020 220 S06		2	22	60	6
3AHE 020 250 S06		2	25	65	6
3AHE 025 040 S06	3AHEC 025 040 S06	2.5	4	45	6
3AHE 025 080 S06	3AHEC 025 080 S06	2.5	8	45	6
3AHE 025 120 S06	3AHEC 025 120 S06	2.5	12	50	6
3AHE 025 150 S06	3AHEC 025 150 S06	2.5	15	60	6
3AHE 025 200 S06		2.5	20	60	6
3AHE 025 250 S06		2.5	25	65	6
3AHE 030 045 S06	3AHEC 030 045 S06	3	4.5	45	6
3AHE 030 080 S06	3AHEC 030 080 S06	3	8	45	6
3AHE 030 120 S06	3AHEC 030 120 S06	3	12	50	6
3AHE 030 150 S06	3AHEC 030 150 S06	3	15	50	6
3AHE 030 200 S06	3AHEC 030 200 S06	3	20	55	6
3AHE 030 250 S06	3AHEC 030 250 S06	3	25	60	6
3AHE 030 300 S06	3AHEC 030 300 S06	3	30	65	6
3AHE 030 350 S06		3	35	75	6
3AHE 030 400 S06		3	40	80	6
3AHE 035 055 S06	3AHEC 035 055 S06	3.5	5.5	45	6
3AHE 035 100 S06	3AHEC 035 100 S06	3.5	10	45	6
3AHE 035 150 S06	3AHEC 035 150 S06	3.5	15	50	6
3AHE 035 200 S06	3AHEC 035 200 S06	3.5	20	55	6
3AHE 035 250 S06	3AHEC 035 250 S06	3.5	25	60	6
3AHE 035 300 S06	3AHEC 035 300 S06	3.5	30	65	6
3AHE 035 350 S06		3.5	35	75	6
3AHE 040 060 S06	3AHEC 040 060 S06	4	6	45	6
3AHE 040 110 S06	3AHEC 040 110 S06	4	11	45	6
3AHE 040 160 S06	3AHEC 040 160 S06	4	16	50	6
3AHE 040 200 S06	3AHEC 040 200 S06	4	20	55	6
3AHE 040 250 S06	3AHEC 040 250 S06	4	25	60	6
3AHE 040 300 S06	3AHEC 040 300 S06	4	30	65	6
3AHE 040 350 S06		4	35	75	6
3AHE 040 400 S06		4	40	80	6
3AHE 045 120 S06	3AHEC 045 120 S06	4.5	12	50	6
3AHE 045 180 S06	3AHEC 045 180 S06	4.5	18	55	6
3AHE 045 250 S06	3AHEC 045 250 S06	4.5	25	60	6
3AHE 045 300 S06	3AHEC 045 300 S06	4.5	30	65	6
3AHE 050 075 S06	3AHEC 050 075 S06	5	7.5	50	6
3AHE 050 130 S06	3AHEC 050 130 S06	5	13	50	6

K ALUMINUM

3AHE



単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
3AHE 050 200 S06	3AHEC 050 200 S06	5	20	55	6
3AHE 050 250 S06	3AHEC 050 250 S06	5	25	60	6
3AHE 050 300 S06	3AHEC 050 300 S06	5	30	65	6
3AHE 050 350 S06	3AHEC 050 350 S06	5	35	70	6
3AHE 050 400 S06	3AHEC 050 400 S06	5	40	75	6
3AHE 050 450 S06		5	45	80	6
3AHE 055 150 S06	3AHEC 055 150 S06	5.5	15	50	6
3AHE 055 200 S06	3AHEC 055 200 S06	5.5	20	55	6
3AHE 055 250 S06	3AHEC 055 250 S06	5.5	25	60	6
3AHE 060 090 050	3AHEC 060 090 050	6	9	50	6
3AHE 060 150 050	3AHEC 060 150 050	6	15	50	6
3AHE 060 200 055	3AHEC 060 200 055	6	20	55	6
3AHE 060 250 060	3AHEC 060 250 060	6	25	60	6
3AHE 060 300 070	3AHEC 060 300 070	6	30	70	6
3AHE 060 350 070	3AHEC 060 350 070	6	35	70	6
3AHE 060 400 075	3AHEC 060 400 075	6	40	75	6
3AHE 060 450 080	3AHEC 060 450 080	6	45	80	6
3AHE 060 500 090	3AHEC 060 500 090	6	50	90	6
3AHE 070 200 060	3AHEC 070 200 060	7	20	60	8
3AHE 070 300 075	3AHEC 070 300 075	7	30	75	8
3AHE 070 400 090	3AHEC 070 400 090	7	40	90	8
3AHE 080 120 060	3AHEC 080 120 060	8	12	60	8
3AHE 080 200 060	3AHEC 080 200 060	8	20	60	8
3AHE 080 250 065	3AHEC 080 250 065	8	25	65	8
3AHE 080 300 070	3AHEC 080 300 070	8	30	70	8
3AHE 080 350 075	3AHEC 080 350 075	8	35	75	8
3AHE 080 400 080	3AHEC 080 400 080	8	40	80	8
3AHE 080 450 090	3AHEC 080 450 090	8	45	90	8
3AHE 080 500 090	3AHEC 080 500 090	8	50	90	8
3AHE 080 550 100	3AHEC 080 550 100	8	55	100	8
3AHE 080 600 110	3AHEC 080 600 110	8	60	110	8
3AHE 080 700 120	3AHEC 080 700 120	8	70	120	8
3AHE 100 150 070	3AHEC 100 150 070	10	15	70	10
3AHE 100 250 070	3AHEC 100 250 070	10	25	70	10
3AHE 100 300 075	3AHEC 100 300 075	10	30	75	10
3AHE 100 350 080	3AHEC 100 350 080	10	35	80	10
3AHE 100 400 090	3AHEC 100 400 090	10	40	90	10
3AHE 100 450 090	3AHEC 100 450 090	10	45	90	10
3AHE 100 500 100	3AHEC 100 500 100	10	50	100	10
3AHE 100 550 100	3AHEC 100 550 100	10	55	100	10
3AHE 100 600 110	3AHEC 100 600 110	10	60	110	10
3AHE 100 650 110	3AHEC 100 650 110	10	65	110	10
3AHE 100 700 120	3AHEC 100 700 120	10	70	120	10

K ALUMINUM

3AHE



単位/Unit : mm

Order Number		Diameter	Length of cut	Overall Length	Shank Dia
Uncoated	Coated	D	L1	L	d
3AHE 100 800 130	3AHEC 100 800 130	10	80	130	10
3AHE 120 180 075	3AHEC 120 180 075	12	18	75	12
3AHE 120 260 075	3AHEC 120 260 075	12	26	75	12
3AHE 120 350 080	3AHEC 120 350 080	12	35	80	12
3AHE 120 400 090	3AHEC 120 400 090	12	40	90	12
3AHE 120 450 090	3AHEC 120 450 090	12	45	90	12
3AHE 120 500 100	3AHEC 120 500 100	12	50	100	12
3AHE 120 550 100	3AHEC 120 550 100	12	55	100	12
3AHE 120 650 110	3AHEC 120 650 110	12	65	110	12
3AHE 120 700 120	3AHEC 120 700 120	12	70	120	12
3AHE 120 800 130	3AHEC 120 800 130	12	80	130	12
3AHE 140 300 080	3AHEC 140 300 080	14	30	80	14
3AHE 140 450 110	3AHEC 140 450 110	14	45	110	14
3AHE 140 600 120		14	60	120	14
3AHE 160 300 090	3AHEC 160 300 090	16	30	90	16
3AHE 160 500 110	3AHEC 160 500 110	16	50	110	16
3AHE 160 650 120	3AHEC 160 650 120	16	65	120	16
3AHE 160 800 130	3AHEC 160 800 130	16	80	130	16
3AHE 160 1000 160	3AHEC 160 1000 160	16	100	160	14
3AHE 200 500 100	3AHEC 200 500 100	20	50	100	20
3AHE 200 750 130	3AHEC 200 750 130	20	75	130	20
3AHE 200 1000 160	3AHEC 200 1000 160	20	100	160	20
3AHE 200 1300 200	3AHEC 200 1300 200	20	130	200	20
3AHE 200 1500 220	3AHEC 200 1500 220	20	150	220	20

K ALUMINUM

3AHF

Ø6 ~ Ø16 | Shield Edge

3 Flutes Mirror Finishing Cutting End Mills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- By 25° helix flute edge design with the after-treatment process, when milling workpiece, it enables superior mirror surface milling.



3刃アルミ専用高光沢精密仕上げ用のエンドミル

アルミ、アルミ合金などの非鉄・非金属系列専用のエンドミル

- 25°ヘリックスに設計した刃部引線を、高光面の設計と後工程処理し、フライス加工時に被削材の優れた鏡面写像を可能にします。

3날 알루미늄 전용 고광택 정삭 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열 전용 엔드밀

- 25° 헬릭스 설계된 날부 인선을 고광면 설계와 후공정 처리하여 밀링 가공시 피삭재의 윌등한 경면 사상을 가능하게 합니다.



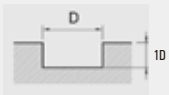
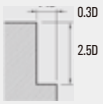
Size	D Tolerance
Ø6~Ø16	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3AHF 060 170 S06	6	17	60	6
3AHF 060 220 S06	6	22	65	6
3AHF 080 260 S08	8	26	70	8
3AHF 080 360 S08	8	36	80	8
3AHF 100 310 S10	10	31	80	10
3AHF 100 410 S10	10	41	90	10
3AHF 120 360 S12	12	36	90	12
3AHF 120 460 S12	12	46	100	12
3AHF 160 460 S16	16	46	100	16
3AHF 160 660 S16	16	66	120	16

3AHF

• RPM : rev./min • Feed : mm/min

Material	Slotting				Side Cutting			
	Aluminum Alloys				Aluminum Alloys			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
6Ø	8,000	1,000	6	6	8,000	1,200	15	1.8
8Ø	6,000	1,000	8	8	6,000	1,200	20	2.4
10Ø	4,800	1,000	10	10	4,800	1,200	25	3.0
12Ø	4,000	1,000	12	12	4,000	1,200	30	3.6
16Ø	3,000	1,000	16	16	3,000	1,200	40	4.8
Depth of Cut								

- When entering the tool to the workpiece, enter the tool from outside to the workpiece.
- In case of long effective length, reduce the RPM and feed by 20% or less.

K ALUMINUM

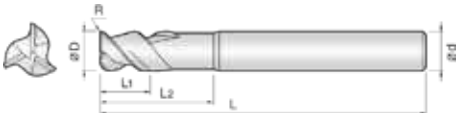
3AHR

3 Flutes 45° Helix Corner Radius Endmills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Applied ultra fine WC grade(0.2㎛) for excellent surface finish.
- Minimize built up edge by double edge and deep pocket design.
- High speed, feed applicable by 3 flute 45°degree helix and short flute design.





3刃45°ヘリックス アルミニウム専用 コーナー ラジウス エンドミル

アルミニウム, アルミニウム 合金など 非鉄 非金属系列 加工 エンドミル

- 超微粒子 超硬合金(0.2㎛)を使用, 刃部 刃先に 稠密度を向上させて 被削材の表面粗さが優れます.
- 2重 刃先と 溝ポケットを深く設計して吸着現象を最小化しました.
- 3刃 45° ヘリックス 形状と短い 刃長で設計, 高速 高移送 作業に適合します.

3날 45° 헬릭스 알루미늄 전용 코너 레디우스 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열 가공 엔드밀

- 초미립자 초경합금(0.2㎛)을 사용, 날부 인선에 조밀도를 향상시켜 피삭재의 표면조도가 우수합니다.
- 2중 인선과 홈포켓을 깊게 설계하여 흡착현상을 최소화 하였습니다.
- 3날 45°헬릭스 형상과 짧은 날장으로 설계, 고속 고이송 작업에 적합합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number		Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
Non coated	Coated	D×R	L1	L2	L	d
3AHR 030 005 050	3AHRD 030 005 050	3XR0.5	10		50	6
3AHR 030 005 060	3AHRD 030 005 060	3XR0.5	10	15	60	6
3AHR 030 010 050	3AHRD 030 010 050	3XR1	10		50	6
3AHR 030 010 060	3AHRD 030 010 060	3XR1	10	15	60	6
3AHR 040 005 050	3AHRD 040 005 050	4XR0.5	12		50	6
3AHR 040 005 060	3AHRD 040 005 060	4XR0.5	12	20	60	6
3AHR 040 010 050	3AHRD 040 010 050	4XR1	12		50	6
3AHR 040 010 060	3AHRD 040 010 060	4XR1	12	20	60	6
3AHR 050 005 050	3AHRD 050 005 050	5XR0.5	15		50	6
3AHR 050 005 060	3AHRD 050 005 060	5XR0.5	15	20	60	6
3AHR 050 010 050	3AHRD 050 010 050	5XR1	15		50	6
3AHR 050 010 060	3AHRD 050 010 060	5XR1	15	20	60	6
3AHR 060 005 050	3AHRD 060 005 050	6XR0.5	15	-	50	6
3AHR 060 005 070	3AHRD 060 005 070	6XR0.5	7	20	70	6
3AHR 060 010 050	3AHRD 060 010 050	6XR1	15	-	50	6
3AHR 060 010 070	3AHRD 060 010 070	6XR1	7	20	70	6
3AHR 080 005 060	3AHRD 080 005 060	8XR0.5	20	-	60	8
3AHR 080 005 080	3AHRD 080 005 080	8XR0.5	9	25	80	8
3AHR 080 010 060	3AHRD 080 010 060	8XR1	20	-	60	8
3AHR 080 010 080	3AHRD 080 010 080	8XR1	9	25	80	8
3AHR 080 020 060	3AHRD 080 020 060	8XR2	20	-	60	8
3AHR 080 020 080	3AHRD 080 020 080	8XR2	9	25	80	8
3AHR 080 025 080	3AHRD 080 025 080	8XR2.5	9	25	80	8
3AHR 100 005 070	3AHRD 100 005 070	10XR0.5	25		70	10
3AHR 100 005 100	3AHRD 100 005 100	10XR0.5	11	30	100	10
3AHR 100 010 070	3AHRD 100 010 070	10XR1	25	-	70	10
3AHR 100 010 100	3AHRD 100 010 100	10XR1	11	30	100	10
3AHR 100 015 070	3AHRD 100 015 070	10XR1.5	25	-	70	10
3AHR 100 015 100	3AHRD 100 015 100	10XR1.5	11	30	100	10
3AHR 100 020 070	3AHRD 100 020 070	10XR2	25	-	70	10
3AHR 100 020 100	3AHRD 100 020 100	10XR2	11	30	100	10
3AHR 100 025 100	3AHRD 100 025 100	10XR2.5	11	30	100	10
3AHR 120 005 075	3AHRD 120 005 075	12XR0.5	30		75	12
3AHR 120 005 110	3AHRD 120 005 110	12XR0.5	13	36	110	12

K ALUMINUM

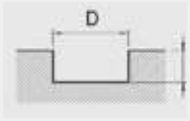
3AHR

單位/Unit : mm

Order Number		Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
Non coated	Coated	D×R	L1	L2	L	d
3AHR 120 010 075	3AHRD 120 010 075	12XR1	30	-	75	12
3AHR 120 010 110	3AHRD 120 010 110	12XR1	13	36	110	12
3AHR 120 015 075	3AHRD 120 015 075	12XR1.5	30		75	12
3AHR 120 015 110	3AHRD 120 015 110	12XR1.5	13	36	110	12
3AHR 120 020 075	3AHRD 120 020 075	12XR2	30	-	75	12
3AHR 120 020 110	3AHRD 120 020 110	12XR2	13	36	110	12
3AHR 120 025 110	3AHRD 120 025 110	12XR2.5	13	36	110	12
3AHR 120 030 075	3AHRD 120 030 075	12XR3	30	-	75	12
3AHR 120 030 110	3AHRD 120 030 110	12XR3	13	36	110	12
3AHR 120 040 075	3AHRD 120 040 075	12XR4	30	-	75	12
3AHR 120 040 110	3AHRD 120 040 110	12XR4	13	36	110	12
3AHR 160 005 130	3AHRD 160 005 130	16XR0.5	17	50	130	16
3AHR 160 010 090	3AHRD 160 010 090	16XR1	35	-	90	16
3AHR 160 010 130	3AHRD 160 010 130	16XR1	17	50	130	16
3AHR 160 020 090	3AHRD 160 020 090	16XR2	35	-	90	16
3AHR 160 020 130	3AHRD 160 020 130	16XR2	17	50	130	16
3AHR 160 025 130	3AHRD 160 025 130	16XR2.5	17	50	130	16
3AHR 160 030 090	3AHRD 160 030 090	16XR3	35	-	90	16
3AHR 160 030 130	3AHRD 160 030 130	16XR3	17	50	130	16
3AHR 160 040 090	3AHRD 160 040 090	16XR4	35	-	90	16
3AHR 160 040 130	3AHRD 160 040 130	16XR4	17	50	130	16
3AHR 160 050 090	3AHRD 160 050 090	16XR5	35	-	90	16
3AHR 200 010 150	3AHRD 200 010 150	20XR1	21	60	150	20
3AHR 200 020 150	3AHRD 200 020 150	20XR2	21	60	150	20
3AHR 200 025 150	3AHRD 200 025 150	20XR2.5	21	60	150	20
3AHR 200 030 150	3AHRD 200 030 150	20XR3	21	60	150	20
3AHR 200 040 150	3AHRD 200 040 150	20XR4	21	60	150	20

3AHR

• RPM : rev./min • Feed : mm/min

	Side Cutting		Slotting	
Material	Aluminum Alloys / A7075 etc.		Aluminum Alloys / A7075 etc.	
Outside Diameter	RPM	FEED	RPM	FEED
6mm	20,000	8,400	20,000	6,600
8mm	18,000	7,500	18,000	5,400
10mm	15,000	6,000	15,000	4,000
12mm	13,000	5,400	13,000	3,200
16mm	10,000	5,400	10,000	3,200
20mm	8,000	5,000	8,000	3,000
Depth of Cut	 D: Outside Diameter		 D: Outside Diameter	

K ALUMINUM

3ARR

3 Flutes Semi-Finishing & Roughing Corner Radius Endmills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Minimize built up edge by chip braker and deep pocket design.
- Good surface integrity differently from competitor's AL roughing endmills.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



3刃アルミニウム セミ フィニッシング & ラッピング コーナー ラジウス エンドミル

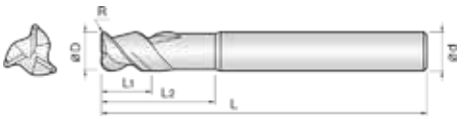
アルミニウム, アルミニウム 合金など 非鉄 非金属 系列の高速 中削り 及び 粗削り

- チップ ブレーカーと 溝ポケットを深く設計して吸着現象を最小 化して,
  中削り 及び 粗削りの 高速 作業時優れた性能を見せます.
- 一般 アルミニウム ラッピングと違って 被削材の加工面がきれいです.
- 抗折力が高くて超微粒子 超硬合金を 採択して 高移送 作業時 エンドミルの破損を最小化しました.

3날 알루미늄 세미 피니싱 & 라핑 코너 레디우스 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열의 고속 중삭 및 황삭

- 칩 브레이커와 홈포켓을 깊게 설계하여 흡착현상을 최소화하며, 중삭 및 황삭의 고속 작업시 우수한 성능을 보입니다.
- 일반 알루미늄 라핑과 다르게 피삭재의 가공면이 깨끗합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.



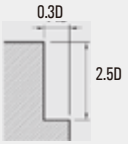
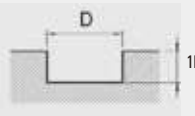
Size	D Tolerance
D ≦ Ø20	+0~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D×R	L1	L2	L	d
3ARR 060 005 S06	6XR0.5	9	15	65	6
3ARR 060 010 S06	6XR1	9	15	65	6
3ARR 080 005 S08	8XR0.5	12	20	70	8
3ARR 080 010 S08	8XR1	12	20	70	8
3ARR 100 010 S10	10XR1	15	25	75	10
3ARR 100 020 S10	10XR2	15	25	75	10
3ARR 120 010 S12	12XR1	20	30	80	12
3ARR 120 020 S12	12XR2	20	30	80	12
3ARR 120 030 S12	12XR3	20	30	80	12
3ARR 160 010 S16	16XR1	25	35	110	16
3ARR 160 020 S16	16XR2	25	35	110	16
3ARR 160 030 S16	16XR3	25	35	110	16
3ARR 200 020 S20	20XR2	30	50	110	20
3ARR 200 030 S20	20XR3	30	50	110	20

3ARM/3ARR

• RPM : rev./min • Feed : mm/min

Material	Copper		Aluminum	
Speed	80m/min		80 ~ 150m/min	
Outside Diameter	RPM	FEED	RPM	FEED
6mm	4,200	320	8,000	1,200
8mm	3,200	320	6,000	1,200
10mm	2,600	320	4,800	1,200
12mm	2,100	320	4,000	1,200
16mm	1,600	320	3,000	1,200
20mm	1,300	320	2,400	1,200
Depth of Cut				

K ALUMINUM 3ARM

Ø6 ~ Ø20

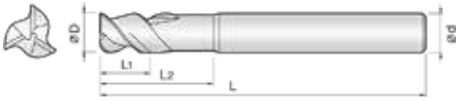
Shield Edge

3 Flutes Semi-Finishing & Roughing Endmills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Minimize built up edge by chip braker and deep pocket design.
- Good surface integrity differently from competitor's AL roughing endmills.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.





3刃 アルミニウム セミ フィニッシング & ラッピング エンドミル

アルミニウム, アルミニウム 合金など 非鉄 非金属 系列の高速 中削り 及び 粗削り

- チップ ブレーカーと 溝ポケットを深く設計して吸着現象を最小 化して,
  中削り 及び 粗削りの 高速 作業時優れた性能を見せます.
- 一般 アルミニウム ラッピングと違って 被削材の加工面がきれいです.
- 抗折力が高くて超微粒子 超硬合金を 採択して 高移送 作業時 エンドミルの破損を最小化しました.

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- 칩 브레이커와 홈포켓을 깊게 설계하여 흡착현상을 최소화하며, 중삭 및 황삭의 고속 작업시 우수한 성능을 보입니다.
- 일반 알루미늄 라핑과 다르게 피삭재의 가공면이 깨끗합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D≦Ø20	+0~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3ARM 060 150 S06	6	10	15	50	6
3ARM 060 200 S06	6	15	20	70	6
3ARM 080 200 S08	8	15	20	60	8
3ARM 080 250 S08	8	20	25	80	8
3ARM 100 250 S10	10	18	25	70	10
3ARM 100 300 S10	10	23	30	90	10
3ARM 120 300 S12	12	20	30	80	12
3ARM 120 400 S12	12	30	40	100	12
3ARM 160 350 S16	16	25	35	110	16
3ARM 160 500 S16	16	35	50	120	16
3ARM 200 500 S20	20	35	50	110	20
3ARM 200 600 S20	20	45	60	120	20

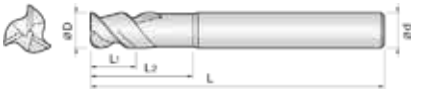
K ALUMINUM 3ARH

3 Flutes 45° Helix Roughing Endmills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials

- Minimize built up edge by chip braker and deep pocket design.
- High speed roughing applicable by 45°helix fine pitch flute.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.





3刃45°ヘリックス アルミニウム専用 ラッピング エンドミル

アルミニウム, アルミニウム 合金など 非鉄 非金属 系列の高速 中削り 及び 粗削り

- チップ ブレーカーと 溝ポケットを深く設計して吸着現象を最小化して,
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- 一般 アルミニウム ラッピングと違って 被削材の加工面がきれいです.
- 抗折力が高くて超微粒子 超硬合金を 採択して 高移送 作業時 エンドミルの破損を最小化しました.

3날 45° 헬릭스 알루미늄 전용 라핑 엔드밀

알루미늄, 알루미늄 합금 등 비철 비금속 계열의 고속 중삭 및 황삭

- 칩 브레이커와 홈포켓을 깊게 설계하여 흡착현상을 최소화하며, 중삭 및 황삭의 고속 작업시 우수한 성능을 보입니다.
- 45°헬릭스 파인피치 적용으로 고속, 황삭 가공이 가능합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.02mm
D > Ø6	-0.02~ -0.05mm

単位/Unit : mm

Order Number		Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
Non coated	Coated	D	L1	L2	L	d
3ARH 040 080 S06	3AHRD 040 080 S06	4	8		50	6
3ARH 040 150 S06	3AHRD 040 150 S06	4	10	15	60	6
3ARH 050 100 S06	3AHRD 050 100 S06	5	10		60	6
3ARH 050 200 S06	3AHRD 050 200 S06	5	15	20	60	6
3ARH 060 120 S06	3AHRD 060 120 S06	6	12		60	6
3ARH 060 210 S06	3AHRD 060 210 S06	6	16	21	65	6
3ARH 080 160 S08	3AHRD 080 160 S08	8	16		70	8
3ARH 080 270 S08	3AHRD 080 270 S08	8	21	27	70	8
3ARH 100 200 S10	3AHRD 100 200 S10	10	20		70	10
3ARH 100 310 S10	3AHRD 100 310 S10	10	26	31	75	10
3ARH 120 240 S12	3AHRD 120 240 S12	12	24		75	12
3ARH 120 380 S12	3AHRD 120 380 S12	12	30	38	80	12
3ARH 160 320 S16	3AHRD 160 320 S16	16	32		100	16
3ARH 160 450 S16	3AHRD 160 450 S16	16	36	45	100	12
3ARH 200 550 S20	3AHRD 200 550 S20	20	41	55	110	20

3ARH

• RPM : rev./min • Feed : mm/min

	Side Cutting			
Material	Aluminum Alloys / A7075 etc.		Aluminum Alloys / AC4B etc.	
Outside Diameter	RPM	FEED	RPM	FEED
4mm	30,000	4,200	16,000	1,800
5mm	27,000	4,900	14,400	2,000
6mm	24,300	5,500	11,700	2,100
8mm	18,000	5,400	9,000	2,200
10mm	14,400	5,200	7,200	2,100
12mm	11,700	4,800	5,900	1,900
16mm	9,000	4,600	4,500	1,800
20mm	7,200	4,300	3,600	1,700
Depth of Cut	 ≦0.25D ≦1.5D			

K ABS 2NBE

2 Flutes Ball Endmills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Improve tool performance by even run-out and tolerance control.
- Very nice work surface finish.

2刃 汎用 ボール エンドミル

一般鋼, アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材 加工

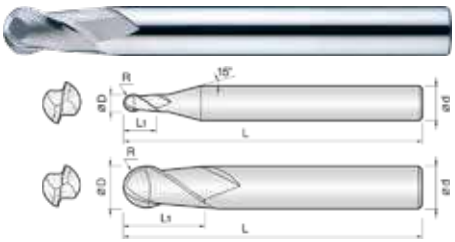
- 均一なランアウト 公差管理で工具の 性能を 向上させました.
- 刃部 刃先の粗さが優れて 被削材の 面粗さが優れます.

2날 범용 볼 엔드밀

일반강, 아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 가공

- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.
- 날부 인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2NBE 001 002 S03	0.05R X 0.1	0.2	38	3
2NBE 0015 003 S03	0.075R X 0.15	0.3	38	3
2NBE 002 004 S03	0.1R X 0.2	0.4	38	3
2NBE 003 006 S03	0.15R X 0.3	0.6	38	3
2NBE 004 008 S03	0.2R X 0.4	0.8	38	3
2NBE 005 010 S03	0.25R X 0.5	1	38	3
2NBE 006 012 S03	0.3R X 0.6	1.2	38	3
2NBE 007 014 S03	0.35R X 0.7	1.4	38	3
2NBE 008 016 S03	0.4R X 0.8	1.6	38	3
2NBE 009 018 S03	0.45R X 0.9	1.8	38	3
2NBE 010 025 S03	0.5R X 1	2.5	50	3
2NBE 010 025 S06	0.5R X 1	2.5	50	6
2NBE 010 025 100	0.5R X 1	2.5	100	6
2NBE 011 025 S03	0.55R X 1.1	2.5	50	3
2NBE 012 030 S03	0.6R X 1.2	3	50	3
2NBE 015 040 S03	0.75R X 1.5	4	50	3
2NBE 015 040 100	0.75R X 1.5	4	100	6
2NBE 020 050 S03	1R X 2	5	50	3
2NBE 020 050 S06	1R X 2	5	50	6
2NBE 020 050 100	1R X 2	5	100	6
2NBE 025 060 S03	1.25R X 2.5	6	50	3
2NBE 025 060 100	1.25R X 2.5	6	100	6
2NBE 030 080 S03	1.5R X 3	8	60	3
2NBE 030 080 S06	1.5R X 3	8	60	6
2NBE 030 080 100	1.5R X 3	8	100	6
2NBE 035 080 S06	1.75R X 3.5	8	65	6
2NBE 040 080 S06	2R X 4	8	70	6
2NBE 040 080 120	2R X 4	8	120	6
2NBE 050 120 S06	2.5R X 5	12	75	6
2NBE 060 120 080	3R X 6	12	80	6
2NBE 060 120 100	3RX 6	12	100	6
2NBE 080 140 090	4R X 8	14	90	8
2NBE 080 140 110	4RX 8	14	110	8
2NBE 100 180 100	5R X 10	18	100	10
2NBE 100 180 120	5RX 10	18	120	10
2NBE 120 220 110	6R X 12	22	110	12
2NBE 120 220 130	6RX 12	22	130	12

K ABS 3NBE

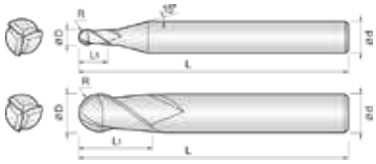


3 Flutes Ball Endmills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Minimize chattering by short flute design.
- Very nice work surface finish.





3刃 汎用 ボール エンドミル

一般鋼, アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材 加工

- 均一なランアウト 公差管理で工具の 性能を 向上させました.
- 刃部 刃先の粗さが優れて 被削材の 面粗さが優れます.

3날 범용 볼 엔드밀

일반강, 아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 가공

- 짧은 날장 채택으로 떨림을 최소화 하였습니다.
- 날부 인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

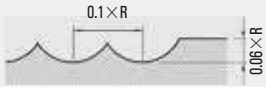
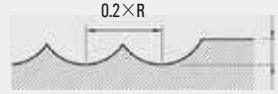
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
3NBE 003 008 S04	0.15R X 0.3	0.8	40	4
3NBE 003 012 S04	0.15R X 0.3	1.2	40	4
3NBE 004 010 S04	0.2R X 0.4	1	40	4
3NBE 004 015 S04	0.2R X 0.4	1.5	40	4
3NBE 005 013 S04	0.25R X 0.5	1.3	45	4
3NBE 005 020 S04	0.25R X 0.5	2	45	4
3NBE 006 015 S04	0.3R X 0.6	1.5	45	4
3NBE 006 024 S04	0.3R X 0.6	2.4	45	4
3NBE 007 018 S04	0.35R X 0.7	1.8	45	4
3NBE 007 028 S04	0.35R X 0.7	2.8	45	4
3NBE 008 020 S04	0.4R X 0.8	2	45	4
3NBE 008 032 S04	0.4R X 0.8	3.2	45	4
3NBE 009 025 S04	0.45R X 0.9	2.5	50	4
3NBE 009 036 S04	0.45R X 0.9	3.6	50	4
3NBE 010 025 S04	0.5R X 1	2.5	50	4
3NBE 010 040 S04	0.5R X 1	4	50	4
3NBE 010 060 S04	0.5R X 1	6	60	4
3NBE 012 030 S04	0.6R X 1.2	3	50	4
3NBE 012 050 S04	0.6R X 1.2	5	50	4
3NBE 012 070 S04	0.6R X 1.2	7	60	4
3NBE 015 040 S04	0.75R X 1.5	4	50	4
3NBE 015 060 S04	0.75R X 1.5	6	50	4
3NBE 015 090 S04	0.75R X 1.5	9	60	4
3NBE 020 050 S04	1R X 2	5	50	4
3NBE 020 080 S04	1R X 2	8	50	4
3NBE 020 100 S04	1R X 2	10	60	4
3NBE 025 060 S04	1.25R X 2.5	6	50	4
3NBE 025 100 S04	1.25R X 2.5	10	60	4
3NBE 025 150 S04	1.25R X 2.5	15	70	4
3NBE 030 080 S04	1.5R X 3	8	50	4
3NBE 030 120 S04	1.5R X 3	12	60	4
3NBE 030 150 S04	1.5R X 3	15	80	4
3NBE 040 100 S04	2R X 4	10	60	4
3NBE 040 150 S04	2R X 4	15	80	4
3NBE 060 200 S06	3R X 6	20	80	6
3NBE 060 300 S06	3R X 6	30	110	6

2NBE/3NBE

■ Apply 10% up values of below condition for 3NBE
■ 3NBEは下記数値の 10% Up 適用
■ 3NBE는 아래 수치의 10% Up 적용

• RPM : rev./min • Feed : mm/min

Material	Carbon/ Alloy steels/ Prehardened Steels S50C / SCM / SKD / SUS / HPM / NAK		Carbon Steels S50C		Alloy steels SCM / SKD / SUS		Prehardened Steels HPM / NAK	
	R‹1				R›1			
Speed	50m/min		80m/min		70m/min		60m/min	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.2	36,000	630	-	-	-	-	-	-
R0.3	24,300	675	-	-	-	-	-	-
R0.4	11,800	780	-	-	-	-	-	-
R0.5	12,000	780	-	-	-	-	-	-
R0.6	10,200	780	-	-	-	-	-	-
R0.75	9,000	780	-	-	-	-	-	-
R1	-	-	11,400	630	10,000	520	8,700	400
R1.5	-	-	7,700	630	6,700	520	5,800	400
R2	-	-	5,800	630	5,000	520	4,300	400
R3	-	-	3,800	630	3,300	520	2,900	400
R4	-	-	2,900	630	2,500	520	2,200	400
R5	-	-	2,300	630	2,000	520	1,700	400
R6	-	-	1,900	630	1,700	520	1,400	400
Depth of Cut								

K ABS

2NLB



2 Flutes Micro Long Ball Endmills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Improve tool performance by even run-out and tolerance control.
- Long flute helps chip control in deep groove machining.

2刃 ABS樹脂 加工用 マイクロ ロング ボール エンドミル

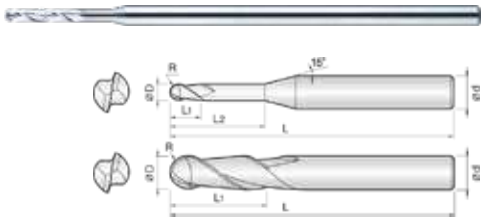
アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材専用 エンドミル

- 均一なランアウット 公差管理で工具の 性能を向上させました.
- 深い 被削材 加工時 長い 刃长を採択して 加工が容易して, チップ排出がいいです.

2날 ABS수지 가공용 마이크로 롱 볼 엔드밀

아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 전용 엔드밀

- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.
- 깊은 피삭재 가공시 긴 날장을 채택하여 가공이 용이하며, 칩배출이 좋습니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2NLB 002 010 S03	0.1R×0.2	0.4	1	40	3
2NLB 002 015 S03	0.1R×0.2	0.4	1.5	40	3
2NLB 002 020 S03	0.1R×0.2	0.4	2	40	3
2NLB 003 010 S03	0.15R×0.3	1	-	45	3
2NLB 003 015 S03	0.15R×0.3	1	1.5	45	3
2NLB 003 018 S03	0.15R×0.3	1.8	-	45	3
2NLB 003 020 S03	0.15R×0.3	1	2	45	3
2NLB 003 025 S03	0.15R×0.3	1	2.5	45	3
2NLB 003 030 S03	0.15R×0.3	1	3	45	3
2NLB 003 040 S03	0.15R×0.3	1	4	45	3
2NLB 004 012 S03	0.2R×0.4	1.2	-	45	3
2NLB 004 020 S03	0.2R×0.4	2	-	45	3
2NLB 004 030 S03	0.2R×0.4	1.2	3	45	3
2NLB 004 040 S03	0.2R×0.4	1.2	4	45	3
2NLB 004 050 S03	0.2R×0.4	1.2	5	45	3
2NLB 005 015 S03	0.25R×0.5	1.5	-	50	3
2NLB 005 020 S03	0.25R×0.5	2	-	50	3
2NLB 005 030 S03	0.25R×0.5	1.5	3	50	3
2NLB 005 040 S03	0.25R×0.5	1.5	4	50	3
2NLB 005 050 S03	0.25R×0.5	1.5	5	50	3
2NLB 005 060 S03	0.25R×0.5	1.5	6	50	3
2NLB 005 080 S03	0.25R×0.5	1.5	8	50	3
2NLB 005 100 S03	0.25R×0.5	1.5	10	50	3
2NLB 006 030 S03	0.3R×0.6	3	-	50	3
2NLB 006 060 S03	0.3R×0.6	3	6	50	3
2NLB 006 080 S03	0.3R×0.6	3	8	50	3
2NLB 006 100 S03	0.3R×0.6	3	10	50	3
2NLB 007 030 S03	0.35R×0.7	3	-	50	3
2NLB 007 070 S03	0.35R×0.7	3	7	50	3
2NLB 007 100 S03	0.35R×0.7	3	10	50	3
2NLB 007 120 S03	0.35R×0.7	3	12	50	3
2NLB 008 040 S03	0.4R×0.8	4	-	50	3
2NLB 008 080 S03	0.4R×0.8	4	8	50	3
2NLB 008 100 S03	0.4R×0.8	4	10	50	3
2NLB 008 120 S03	0.4R×0.8	4	12	50	3
2NLB 009 040 S03	0.45R×0.9	4	-	50	3

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2NLB 009 060 S03	0.45R×0.9	4	6	50	3
2NLB 009 080 S03	0.45R×0.9	4	8	50	3
2NLB 009 100 S03	0.45R×0.9	4	10	50	3
2NLB 010 050 S03	0.5R×1	5	-	80	3
2NLB 010 050 S04	0.5R×1	5	-	80	4
2NLB 010 100 S03	0.5R×1	5	10	80	3
2NLB 010 100 S04	0.5R×1	5	10	80	4
2NLB 010 150 S03	0.5R×1	5	15	80	3
2NLB 010 150 S04	0.5R×1	5	15	80	4
2NLB 010 200 S03	0.5R×1	5	20	80	3
2NLB 010 200 S04	0.5R×1	5	20	80	4
2NLB 010 250 S03	0.5R×1	5	25	80	3
2NLB 010 250 S04	0.5R×1	5	25	80	4
2NLB 010 300 S03	0.5R×1	5	30	80	3
2NLB 010 300 S04	0.5R×1	5	30	80	4
2NLB 010 350 S04	0.5R×1	5	35	100	4
2NLB 010 400 S04	0.5R×1	5	40	100	4
2NLB 015 100 S03	0.75R×1.5	10	-	80	3
2NLB 015 100 S04	0.75R×1.5	10	-	80	4
2NLB 015 150 S03	0.75R×1.5	10	15	80	3
2NLB 015 150 S04	0.75R×1.5	10	15	80	4
2NLB 015 200 S03	0.75R×1.5	10	20	80	3
2NLB 015 200 S04	0.75R×1.5	10	20	80	4
2NLB 015 250 S03	0.75R×1.5	10	25	80	3
2NLB 015 250 S04	0.75R×1.5	10	25	80	4
2NLB 015 300 S03	0.75R×1.5	10	30	80	3
2NLB 015 300 S04	0.75R×1.5	10	30	80	4
2NLB 015 350 S04	0.75R×1.5	10	35	100	4
2NLB 015 400 S04	0.75R×1.5	10	40	100	4
2NLB 020 100 S03	1R×2	10	-	80	3
2NLB 020 100 S04	1R×2	10	-	80	4
2NLB 020 150 S03	1R×2	10	15	80	3
2NLB 020 150 S04	1R×2	10	15	80	4
2NLB 020 200 S03	1R×2	10	20	80	3
2NLB 020 200 S04	1R×2	10	20	80	4
2NLB 020 250 S03	1R×2	10	25	80	3

K ABS

2NLB



単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2NLB 020 250 S04	1R X 2	10	25	80	4
2NLB 020 300 S03	1R X 2	10	30	80	3
2NLB 020 300 S04	1R X 2	10	30	80	4
2NLB 020 350 S03	1R X 2	10	35	80	3
2NLB 020 350 S04	1R X 2	10	35	100	4
2NLB 020 400 S03	1R X 2	10	40	80	3
2NLB 020 400 S04	1R X 2	10	40	100	4
2NLB 025 100 S03	1.25R X 2.5	10	-	80	3
2NLB 025 150 S03	1.25R X 2.5	15	-	80	3
2NLB 025 200 S03	1.25R X 2.5	15	20	80	3
2NLB 030 100 060	1.5R X 3	10	-	60	3
2NLB 030 200 080	1.5R X 3	20	-	80	3
2NLB 030 200 100	1.5R X 3	20	-	100	3
2NLB 030 200 120	1.5R X 3	20	-	120	3
2NLB 030 150 S06	1.5R X 3	15	-	100	6
2NLB 030 200 S06	1.5R X 3	15	20	100	6
2NLB 030 250 S06	1.5R X 3	15	25	100	6
2NLB 030 300 S06	1.5R X 3	15	30	100	6
2NLB 030 400 S06	1.5R X 3	15	40	100	6
2NLB 040 200 080	2R X 4	20	-	80	4
2NLB 040 200 100	2R X 4	20	-	100	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2NLB 040 200 130	2R X 4	20	-	130	4
2NLB 040 200 S06	2R X 4	20	-	100	6
2NLB 040 250 S06	2R X 4	20	25	100	6
2NLB 040 300 S06	2R X 4	20	30	100	6
2NLB 040 400 S06	2R X 4	20	40	120	6
2NLB 040 500 S06	2R X 4	20	50	120	6
2NLB 050 300 100	2.5R X 5	30	-	100	5
2NLB 050 300 120	2.5R X 5	30	-	120	5
2NLB 060 300 080	3R X 6	30	-	80	6
2NLB 060 400 100	3R X 6	40	-	100	6
2NLB 060 400 120	3R X 6	40	-	120	6
2NLB 060 400 150	3R X 6	40	-	150	6
2NLB 080 450 120	4R X 8	45	-	120	8
2NLB 080 450 150	4R X 8	45	-	150	8
2NLB 100 500 120	5R X 10	50	-	120	10
2NLB 100 500 150	5R X 10	50	-	150	10
2NLB 120 550 130	6R X 12	55	-	130	12
2NLB 120 550 150	6R X 12	55	-	150	12
2NLB 160 700 160	8R X 16	70	-	160	16

2NLB

• RPM : rev./min • Feed : mm/min

Material	ABS / Acrylic	
Outside Diameter	RPM	FEED
R0.1	37,000	50
R0.2	37,000	100
R0.3	37,000	140
R0.4	37,000	190
R0.5	32,000	210
R1	16,000	210
R1.5	11,000	210
R2	8,200	210
R2.5	6,000	250
R3	5,500	250
R4	4,100	280
R5	3,200	280
R6	2,700	330
R8	2,200	330
Depth of Cut		

K ABS

2NLE

Ø0.2 ~ Ø5 Ø6 ~ Ø16 Sharp Edge

2 Flutes Micro Long Endmills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Improve tool performance by even run-out and tolerance control.
- Long flute helps chip control in deep groove machining.
- Reinforced edge design for preventing edge chipping.

2刃 ABS樹脂 加工用 マイクロ ロング ボール エンドミル

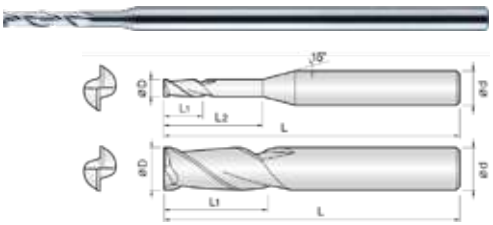
アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材専用 エンドミル

- 均一なランアウト 公差管理で工具の 性能を 向上させました.
- 深い 被削材 加工時 長い 刃長を採択して 加工が容易して, チップ排出がいいです.
- 刃先部 剛性を補強して刃部 チッピングを 最小化しました.

2날 ABS수지 가공용 마이크로 롱 엔드밀

아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 전용 엔드밀

- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.
- 깊은 피삭재 가공시 긴 날장을 채택하여 가공이 용이하며, 칩배출이 좋습니다.
- 인선부 강성을 보강하여 날부 치핑을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2NLE 002 010 S03	0.2	0.4	1	40	3
2NLE 002 015 S03	0.2	0.4	1.5	40	3
2NLE 002 020 S03	0.2	0.4	2	40	3
2NLE 003 010 S03	0.3	1	-	45	3
2NLE 003 015 S03	0.3	1	1.5	45	3
2NLE 003 018 S03	0.3	1.8	-	45	3
2NLE 003 020 S03	0.3	1	2	45	3
2NLE 003 025 S03	0.3	1	2.5	45	3
2NLE 003 030 S03	0.3	1	3	45	3
2NLE 003 040 S03	0.3	1	4	45	3
2NLE 004 012 S03	0.4	1.2	-	45	3
2NLE 004 020 S03	0.4	2	-	45	3
2NLE 004 030 S03	0.4	1.2	3	45	3
2NLE 004 040 S03	0.4	1.2	4	45	3
2NLE 004 050 S03	0.4	1.2	5	45	3
2NLE 005 015 S03	0.5	1.5	-	50	3
2NLE 005 020 S03	0.5	2	-	50	3
2NLE 005 030 S03	0.5	1.5	3	50	3
2NLE 005 040 S03	0.5	1.5	4	50	3
2NLE 005 050 S03	0.5	1.5	5	50	3
2NLE 005 060 S03	0.5	1.5	6	50	3
2NLE 005 080 S03	0.5	1.5	8	50	3
2NLE 005 100 S03	0.5	1.5	10	50	3
2NLE 006 030 S03	0.6	3	-	50	3
2NLE 006 060 S03	0.6	3	6	50	3
2NLE 006 080 S03	0.6	3	8	50	3
2NLE 006 100 S03	0.6	3	10	50	3
2NLE 007 030 S03	0.7	3	-	50	3
2NLE 007 070 S03	0.7	3	7	50	3
2NLE 007 100 S03	0.7	3	10	50	3
2NLE 007 120 S03	0.7	3	12	50	3
2NLE 008 040 S03	0.8	4	-	50	3
2NLE 008 080 S03	0.8	4	8	50	3
2NLE 008 100 S03	0.8	4	10	50	3
2NLE 008 120 S03	0.8	4	12	50	3
2NLE 009 040 S03	0.9	4	-	50	3
2NLE 009 060 S03	0.9	4	6	50	3
2NLE 009 080 S03	0.9	4	8	50	3
2NLE 009 100 S03	0.9	4	10	50	3

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2NLE 010 050 S03	1	5	-	80	3
2NLE 010 050 S04	1	5	-	80	4
2NLE 010 100 S03	1	5	10	80	3
2NLE 010 100 S04	1	5	10	80	4
2NLE 010 150 S03	1	5	15	80	3
2NLE 010 150 S04	1	5	15	80	4
2NLE 010 200 S03	1	5	20	80	3
2NLE 010 200 S04	1	5	20	80	4
2NLE 010 250 S03	1	5	25	80	3
2NLE 010 250 S04	1	5	25	80	4
2NLE 010 300 S03	1	5	30	80	3
2NLE 010 300 S04	1	5	30	80	4
2NLE 010 350 S04	1	5	35	100	4
2NLE 010 400 S04	1	5	40	100	4
2NLE 015 100 S03	1.5	10	-	80	3
2NLE 015 100 S04	1.5	10	-	80	4
2NLE 015 150 S03	1.5	10	15	80	3
2NLE 015 150 S04	1.5	10	15	80	4
2NLE 015 200 S03	1.5	10	20	80	3
2NLE 015 200 S04	1.5	10	20	80	4
2NLE 015 250 S03	1.5	10	25	80	3
2NLE 015 250 S04	1.5	10	25	80	4
2NLE 015 300 S03	1.5	10	30	80	3
2NLE 015 300 S04	1.5	10	30	80	4
2NLE 015 350 S04	1.5	10	35	100	4
2NLE 015 400 S04	1.5	10	40	100	4
2NLE 020 100 S03	2	10	-	80	3
2NLE 020 100 S04	2	10	-	80	4
2NLE 020 150 S03	2	10	15	80	3
2NLE 020 150 S04	2	10	15	80	4
2NLE 020 200 S03	2	10	20	80	3
2NLE 020 200 S04	2	10	20	80	4
2NLE 020 250 S03	2	10	25	80	3
2NLE 020 250 S04	2	10	25	80	4
2NLE 020 300 S03	2	10	30	80	3
2NLE 020 300 S04	2	10	30	80	4
2NLE 020 350 S03	2	10	35	80	3
2NLE 020 350 S04	2	10	35	100	4
2NLE 020 400 S03	2	10	40	80	3

K ABS

2NLE

Ø0.2～Ø5 Ø6～Ø16 Sharp Edge

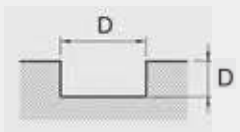
単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2NLE 020 400 S04	2	10	40	100	4
2NLE 025 100 S03	2.5	10	-	80	3
2NLE 025 150 S03	2.5	15	-	80	3
2NLE 025 200 S03	2.5	15	20	80	3
2NLE 030 100 060	3	10	-	60	3
2NLE 030 200 080	3	20	-	80	3
2NLE 030 200 100	3	20	-	100	3
2NLE 030 200 120	3	20	-	120	3
2NLE 030 150 S06	3	15	-	100	6
2NLE 030 200 S06	3	15	20	100	6
2NLE 030 250 S06	3	15	25	100	6
2NLE 030 300 S06	3	15	30	100	6
2NLE 040 200 080	4	20	-	80	4
2NLE 040 200 100	4	20	-	100	4
2NLE 040 200 130	4	20	-	130	4
2NLE 040 200 S06	4	20	-	100	6
2NLE 040 250 S06	4	20	25	100	6
2NLE 040 300 S06	4	20	30	100	6
2NLE 040 400 S06	4	20	40	120	6
2NLE 050 200 S06	5	20	-	100	6
2NLE 050 300 100	5	30	-	100	5
2NLE 050 300 120	5	30	-	120	5

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2NLE 060 250 080	6	25	-	80	6
2NLE 060 300 080	6	30	-	80	6
2NLE 060 400 100	6	40	-	100	6
2NLE 060 400 120	6	40	-	120	6
2NLE 060 400 150	6	40	-	150	6
2NLE 080 300 080	8	30	-	80	8
2NLE 080 350 090	8	35	-	90	8
2NLE 080 400 100	8	40	-	100	8
2NLE 080 450 120	8	45	-	120	8
2NLE 080 450 150	8	45	-	150	8
2NLE 100 300 080	10	30	-	80	10
2NLE 100 350 090	10	35	-	90	10
2NLE 100 400 100	10	40	-	100	10
2NLE 100 500 120	10	50	-	120	10
2NLE 100 500 150	10	50	-	150	10
2NLE 120 300 090	12	30	-	90	12
2NLE 120 400 100	12	40	-	100	12
2NLE 120 500 110	12	50	-	110	12
2NLE 120 550 130	12	55	-	130	12
2NLE 120 550 150	12	55	-	150	12
2NLE 160 700 160	16	70	-	160	16

2NLE

• RPM : rev./min • Feed : mm/min

Material	ABS/ Acrylic	
Outside Diameter	RPM	FEED
0.2mm	50,000	100
0.4mm	50,000	200
0.5mm	50,000	240
0.6mm	40,000	240
0.8mm	30,000	240
1mm	24,000	240
2mm	12,000	240
3mm	8,000	240
4mm	6,000	240
5mm	4,800	240
6mm	4,000	260
8mm	3,000	260
10mm	3,000	260
12mm	2,000	260
16mm	1,400	260
Depth of Cut		

K ABS

1NEM

Ø0.2 ~ Ø5 Ø6 ~ Ø12 Sharp Edge

1 Flute Endmills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Excellent chip removing by a helix flute design.
- Optimum for cut-off and wall machining.

1刃 エンドミル

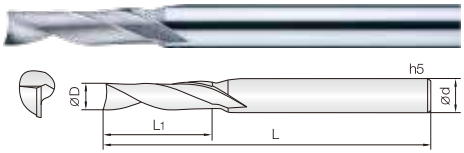
アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材専用 エンドミル

- ヘリックス 1刃 类型でチップ排出が優れて非鉄,非金属 被削材の切断作業 及び 側壁 作業に適合します.

1날 엔드밀

아크릴, ABS, 목업, 알루미늄 등 비철, 비금속 피삭재 가공용 엔드밀

- 헬릭스 1날 타입으로 칩 배출이 우수하여 비철,비금속 피삭재의 절단작업 및 측벽 작업에 적합합니다.



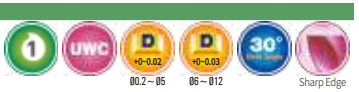
Size	D Tolerance
D ≦ Ø5	+0~ -0.02mm
D > Ø5	+0~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1NEM 002 004 S04	0.2	0.4	40	4
1NEM 002 005 S04	0.2	0.5	40	4
1NEM 003 006 S04	0.3	0.6	40	4
1NEM 003 009 S04	0.3	0.9	40	4
1NEM 004 008 S04	0.4	0.8	40	4
1NEM 004 012 S04	0.4	1.2	40	4
1NEM 005 010 S04	0.5	1	40	4
1NEM 005 015 S04	0.5	1.5	40	4
1NEM 006 012 S04	0.6	1.2	40	4
1NEM 006 018 S04	0.6	1.8	40	4
1NEM 007 014 S04	0.7	1.4	40	4
1NEM 007 021 S04	0.7	2.1	40	4
1NEM 008 016 S04	0.8	1.6	40	4
1NEM 008 024 S04	0.8	2.4	40	4
1NEM 009 018 S04	0.9	1.8	40	4
1NEM 009 027 S04	0.9	2.7	40	4
1NEM 010 025 S06	1	2.5	45	6
1NEM 010 030 S06	1	3	45	6
1NEM 010 035 S06	1	3.5	45	6
1NEM 010 045 S06	1	4.5	45	6
1NEM 010 060 S06	1	6	50	6
1NEM 010 070 S06	1	7	50	6
1NEM 012 030 S06	1.2	3	45	6
1NEM 012 050 S06	1.2	5	45	6
1NEM 012 060 S06	1.2	6	50	6
1NEM 015 040 S06	1.5	4	45	6
1NEM 015 060 S06	1.5	6	50	6
1NEM 015 080 S06	1.5	8	50	6
1NEM 015 100 S06	1.5	10	50	6
1NEM 015 120 S06	1.5	12	50	6
1NEM 020 060 S06	2	6	50	6
1NEM 020 080 S06	2	8	50	6
1NEM 020 100 S06	2	10	50	6
1NEM 020 120 S06	2	12	50	6

K ABS

1NEM



单位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1NEM 020 140 S06	2	14	55	6
1NEM 020 160 S06	2	16	60	6
1NEM 025 080 S06	2.5	8	50	6
1NEM 025 100 S06	2.5	10	50	6
1NEM 025 120 S06	2.5	12	50	6
1NEM 025 160 S06	2.5	16	60	6
1NEM 030 080 S06	3	8	50	6
1NEM 030 120 S06	3	12	50	6
1NEM 030 150 S06	3	15	50	6
1NEM 030 200 S06	3	20	60	6
1NEM 030 250 S06	3	25	70	6
1NEM 040 100 S06	4	10	50	6
1NEM 040 150 S06	4	15	50	6
1NEM 040 200 S06	4	20	60	6
1NEM 040 250 S06	4	25	70	6
1NEM 040 300 S06	4	30	75	6
1NEM 050 130 S06	5	13	60	6
1NEM 050 200 S06	5	20	60	6
1NEM 050 250 S06	5	25	60	6
1NEM 050 300 S06	5	30	75	6
1NEM 060 150 S06	6	15	60	6
1NEM 060 200 S06	6	20	60	6
1NEM 060 250 S06	6	25	60	6
1NEM 060 300 S06	6	30	70	6
1NEM 060 410 S06	6	41	90	6
1NEM 080 190 S08	8	19	70	8
1NEM 080 250 S08	8	25	75	8
1NEM 080 300 S08	8	30	80	8
1NEM 080 410 S08	8	41	90	8
1NEM 100 220 S10	10	22	75	10
1NEM 100 300 S10	10	30	80	10
1NEM 100 410 S10	10	41	100	10
1NEM 120 260 S12	12	26	75	12
1NEM 120 350 S12	12	35	90	12
1NEM 120 510 S12	12	51	110	12

K ABS

1NRM

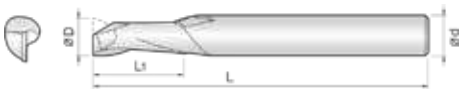
Ø1 ~ Ø5 Ø6 ~ Ø8 Sharp Edge

1 Flute Reverse Edge Endmills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Downward chip direction by reverse helix design helps chip control.
- No burr in work materials.
- Optimum for unstable work clamping.





1刃 逆刃 エンドミル

アクリル, ABS, モックアップ, アルミニウムなど非鉄,非金属 被削材専用 エンドミル

- 逆 ヘリックス 类型でチップ排出が下の方向に排出されて, 作業時 被削材が浮かぶ現象がありません.
- 被削材に barrが発生しません.
- 被削材の定着が不安定な 場合に 適合します.

1날 역날 엔드밀

아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 가공용 엔드밀

- 역 헬릭스 타입으로 칩 배출이 아래 방향으로 배출되어, 작업시 피삭재가 떠오르는 현상이 없습니다.
- 피삭재에 버가 발생하지 않습니다.
- 피삭재의 정착이 불안정한 경우 적합합니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.02mm
D > Ø5	+0~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1NRM 005 010 S04	0.5	1	45	4
1NRM 005 015 S04	0.5	1.5	45	4
1NRM 005 020 S04	0.5	2	45	4
1NRM 006 012 S04	0.6	1.2	45	4
1NRM 006 018 S04	0.6	1.8	45	4
1NRM 006 025 S04	0.6	2.5	45	4
1NRM 007 014 S04	0.7	1.4	45	4
1NRM 007 021 S04	0.7	2.1	45	4
1NRM 008 016 S04	0.8	1.6	45	4
1NRM 008 024 S04	0.8	2.4	45	4
1NRM 008 030 S04	0.8	3	45	4
1NRM 009 018 S04	0.9	1.8	45	4
1NRM 010 030 S06	1	3	50	6
1NRM 010 040 S06	1	4	50	6
1NRM 010 050 S06	1	5	50	6
1NRM 010 060 S06	1	6	60	6
1NRM 012 040 S06	1.2	4	50	6
1NRM 012 060 S06	1.2	6	50	6
1NRM 015 040 S06	1.5	4	50	6
1NRM 015 060 S06	1.5	6	50	6
1NRM 015 080 S06	1.5	8	50	6
1NRM 020 060 S06	2	6	60	6
1NRM 020 080 S06	2	8	60	6
1NRM 020 100 S06	2	10	60	6
1NRM 020 120 S06	2	12	60	6
1NRM 025 060 S06	2.5	6	60	6
1NRM 025 080 S06	2.5	8	60	6
1NRM 025 100 S06	2.5	10	60	6
1NRM 030 080 S06	3	8	60	6
1NRM 030 120 S06	3	12	65	6
1NRM 030 160 S06	3	16	70	6

K ABS

1NRM

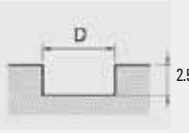
Ø1 ~ Ø5 Ø6 ~ Ø8 Sharp Edge

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1NRM 040 120 S06	4	12	65	6
1NRM 040 160 S06	4	16	70	6
1NRM 040 200 S06	4	20	70	6
1NRM 050 150 S06	5	15	70	6
1NRM 050 220 S06	5	22	75	6
1NRM 060 270 S06	6	27	75	6
1NRM 080 260 S08	8	26	80	8
1NRM 080 320 S08	8	32	90	8
1NRM 100 300 S10	10	30	90	10
1NRM 120 350 S12	12	35	100	12

1NEM/1NRM

• RPM : rev./min • Feed : mm/min

Material	Acrylic		Alloy Steels	
Outside Diameter	RPM	FEED	RPM	FEED
1mm	32,000	2,000	23,000	1,300
2mm	32,000	2,200	23,000	1,500
3mm	25,000	2,400	18,000	1,700
4mm	20,000	2,400	15,000	1,800
5mm	15,000	2,200	12,000	1,800
6mm	13,500	2,300	10,000	1,800
8mm	10,000	2,400	7,800	1,900
10mm	8,000	2,400	6,000	2,000
12mm	7,000	2,200	5,000	1,900
Depth of Cut				

K ABS

2NEM



2 Flutes Endmills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Reinforced edge design for preventing edge chipping.
- Improve tool performance by even run-out and tolerance control.

2刃 汎用 エンドミル

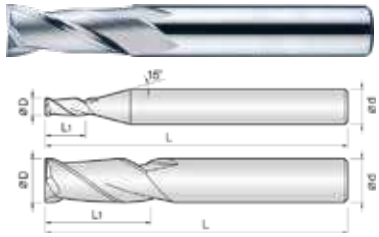
一般鋼, アクリル, ABS, モックアップ, アルミニウムなど 非鉄,非金属 被削材 加工

- 刃先部 剛性を補強して刃部 チッピングを 最小化しました.
- 均一なランアウット 公差管理で工具の 性能を 向上させました.

2날 범용 엔드밀

일반강, 아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 가공

- 인선부 강성을 보강하여 날부 치핑을 최소화 하였습니다.
- 균일한 런아웃 공차관리로 공구의 성능을 향상시켰습니다.



Size	D Tolerance
D < Ø1	+0~ -0.01mm
D ≦ Ø5	+0~ -0.015mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2NEM 001 002 S03	0.1	0.2	40	3
2NEM 0015 003 S03	0.15	0.3	40	3
2NEM 002 004 S03	0.2	0.4	40	3
2NEM 003 006 S03	0.3	0.6	40	3
2NEM 004 008 S03	0.4	0.8	40	3
2NEM 005 010 S03	0.5	1	40	3
2NEM 006 012 S03	0.6	1.2	40	3
2NEM 007 014 S03	0.7	1.4	40	3
2NEM 008 016 S03	0.8	1.6	40	3
2NEM 009 018 S03	0.9	1.8	40	3
2NEM 010 025 S03	1	2.5	40	3
2NEM 010 025 S06	1	2.5	40	6
2NEM 011 025 S03	1.1	2.5	40	3
2NEM 012 035 S03	1.2	3.5	40	3
2NEM 013 040 S03	1.3	4	40	3
2NEM 014 040 S03	1.4	4	40	3
2NEM 015 040 S03	1.5	4	40	3
2NEM 015 040 S06	1.5	4	40	6
2NEM 016 040 S03	1.6	4	40	3
2NEM 017 050 S03	1.7	5	40	3
2NEM 018 055 S03	1.8	5.5	40	3
2NEM 019 060 S03	1.9	6	40	3
2NEM 020 060 S03	2	6	40	3
2NEM 020 060 S06	2	6	40	6
2NEM 025 080 S03	2.5	8	40	3
2NEM 025 080 S06	2.5	8	40	6
2NEM 030 080 S03	3	8	45	3
2NEM 030 080 S06	3	8	45	6
2NEM 035 100 S06	3.5	10	45	6
2NEM 040 110 S06	4	11	45	6
2NEM 045 110 S06	4.5	11	45	6
2NEM 050 130 S06	5	13	50	6
2NEM 060 130 S06	6	13	50	6
2NEM 070 160 S08	7	16	60	8
2NEM 080 190 S08	8	19	60	8
2NEM 090 190 S10	9	19	70	10
2NEM 100 220 S10	10	22	70	10
2NEM 120 260 S12	12	26	75	12

K ABS

3NEM



3 Flutes Endmills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials

- Reinforced edge design for preventing edge chipping.
- Minimize chattering by short flute design.

3刃 汎用 エンドミル

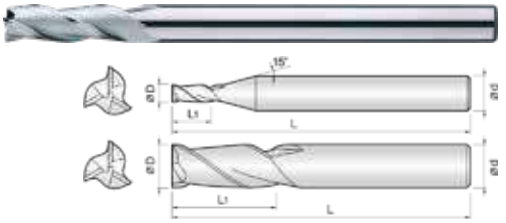
一般鋼, アクリル, ABS, モックアップ, アルミニウムなど 非鉄,非金属 被削材 加工

- 刃先部 剛性を補強して刃部 チッピングを最小化しました.
- 短い 刃長 採択で振りを最小化しました.

3날 범용 엔드밀

일반강, 아크릴, ABS, 목업, 알루미늄 등 비철,비금속 피삭재 가공

- 인선부 강성을 보강하여 날부 치핑을 최소화 하였습니다.
- 짧은 날장 채택으로 떨림을 최소화 하였습니다.



Size	D Tolerance
D ≦ Ø0.9	+0~ -0.01mm
D > Ø0.9	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3NEM 003 008 S04	0.3	0.8	40	4
3NEM 003 012 S04	0.3	1.2	40	4
3NEM 004 010 S04	0.4	1	40	4
3NEM 004 015 S04	0.4	1.5	40	4
3NEM 005 013 S04	0.5	1.3	40	4
3NEM 005 020 S04	0.5	2	45	4
3NEM 006 015 S04	0.6	1.5	40	4
3NEM 006 024 S04	0.6	2.4	45	4
3NEM 007 018 S04	0.7	1.8	40	4
3NEM 007 028 S04	0.7	2.8	45	4
3NEM 008 020 S04	0.8	2	40	4
3NEM 008 032 S04	0.8	3.2	45	4
3NEM 009 025 S04	0.9	2.5	40	4
3NEM 009 036 S04	0.9	3.6	45	4
3NEM 010 025 S04	1	2.5	40	4
3NEM 010 040 S04	1	4	45	4
3NEM 010 060 S04	1	6	50	4
3NEM 012 030 S04	1.2	3	40	4
3NEM 012 050 S04	1.2	5	40	4
3NEM 012 070 S04	1.2	7	50	4
3NEM 015 040 S04	1.5	4	40	4
3NEM 015 060 S04	1.5	6	40	4
3NEM 015 090 S04	1.5	9	60	4
3NEM 020 050 S04	2	5	40	4
3NEM 020 080 S04	2	8	50	4
3NEM 020 100 S04	2	10	60	4
3NEM 025 060 S04	2.5	6	45	4
3NEM 025 100 S04	2.5	10	50	4
3NEM 025 150 S04	2.5	15	60	4
3NEM 030 080 S04	3	8	50	4
3NEM 030 120 S04	3	12	60	4
3NEM 030 150 S04	3	15	80	4
3NEM 040 100 S04	4	10	50	4
3NEM 040 150 S04	4	15	80	4
3NEM 060 200 S06	6	20	80	6
3NEM 060 300 S06	6	30	110	6

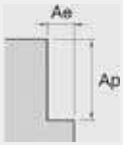
2NEM/3NEM

■ Apply 10% up values of below condition for 3NEM
■ 3NEMは下記数値の 10% Up 適用
■ 3NEM은 아래 수치의 10% Up 적용

• RPM : rev./min • Feed : mm/min

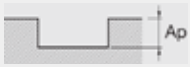
Material	Carbon Steels S50C			Alloy steels SCM / SKD / SUS			Prehardened Steels HPM / NAK			Aluminum			Copper		
Speed	40~50m/min			35~45m/min			23~35m/min			100~200m/min			60~80m/min		
Outside Diameter	RPM	FEED		RPM	FEED		RPM	FEED		RPM	FEED		RPM	FEED	
		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting
1mm	12,900	125	60	11,400	90	30	8,600	70	35	43,000	510	180	20,100	240	90
1.5mm	8,600	125	60	7,700	90	30	5,800	70	35	29,000	580	200	13,400	270	90
2mm	6,500	125	60	5,800	110	35	4,300	80	40	22,000	650	225	10,000	300	110
2.5mm	5,100	150	80	4,600	110	34	3,400	85	45	17,200	680	240	8,000	325	110
3mm	4,300	170	85	3,800	120	40	2,900	90	45	14,300	720	240	6,700	330	120
4mm	3,200	200	100	2,900	120	40	2,200	90	45	10,700	750	240	5,000	350	120
5mm	2,600	210	110	2,300	135	45	1,700	115	60	8,600	775	250	4,000	370	120
6mm	2,200	220	110	1,900	150	50	1,400	125	65	7,200	790	260	3,300	370	120
8mm	1,600	200	100	1,400	145	45	1,100	115	60	5,400	700	230	2,500	320	110
10mm	1,300	180	90	1,200	145	45	900	115	60	4,300	650	220	2,000	300	100
12mm	1,100	170	85	1,000	135	45	700	110	55	3,600	610	200	1,700	290	100

Depth of Cut



2D

Ae
Ø1 ~ 2.9=0.07D
Ø3 ~ 6=0.15D



Ap
Ø1 ~ 1.2=0.15D
Ø1.5 ~ 3.5=0.5D
Ø4 ~ 6=0.75D

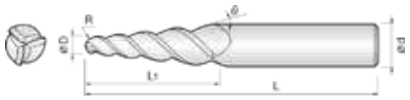
K TAPER 3ITBD

3 Flutes Taper Ball Endmills for Impellers

Pre-hardened steel, Cast iron, Non-metallic materials

- Suitable for special components with 3 axes and 5 axes sector such as impellers, blisks, tire profiles, turbine blades
- Available for simultaneous machining of roughing and finishing with only one tool.





3刃 インペラ 加工用 テーパ ボール エンドミル

プレハードン鋼, 一般鋼, 鋳物, 非鉄合金 加工 エンドミル

- インペラ, ブリスク, タイヤプロファイル, タービン刃 など 3軸と 5軸の片側角がある部品 加工に適合します.
- 工具の交替がなくて下面と傾斜面の仕上げ削り,粗削り 加工が同時に可能です.

3날 임펠라 가공용 테이퍼 볼 엔드밀

프리하든강, 일반강, 주물, 비철합금 가공 엔드밀

- 임펠라, 브리스크, 타이어 프로파일, 터빈날 등 3축과 5축의 편측각이 있는 부품 가공에 적합합니다.
- 공구의 교체없이 밑면과 경사면의 정삭,황삭 가공이 동시에 가능합니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	ShankDia
	R×D	θ	L1	L	d
3ITBD 010 010 120	R0.5X1	1°	12	50	6
3ITBD 010 010 200	R0.5X1	1°	20	60	6
3ITBD 010 020 150	R0.5X1	2°	15	55	6
3ITBD 010 020 200	R0.5X1	2°	20	60	6
3ITBD 010 030 150	R0.5X1	3°	15	55	6
3ITBD 010 030 200	R0.5X1	3°	20	60	6
3ITBD 010 040 200	R0.5X1	4°	20	60	6
3ITBD 010 050 200	R0.5X1	5°	20	60	6
3ITBD 010 060 200	R0.5X1	6°	20	60	6
3ITBD 010 070 200	R0.5X1	7°	20	60	6
3ITBD 010 080 180	R0.5X1	8°	18	60	6
3ITBD 020 010 120	R1X2	1°	12	50	6
3ITBD 020 010 200	R1X2	1°	20	60	6
3ITBD 020 020 150	R1X2	2°	15	55	6
3ITBD 020 020 200	R1X2	2°	20	60	6
3ITBD 020 030 150	R1X2	3°	15	55	6
3ITBD 020 030 200	R1X2	3°	20	60	6
3ITBD 020 030 300	R1X2	3°	30	70	6
3ITBD 020 040 200	R1X2	4°	20	60	6
3ITBD 020 050 200	R1X2	5°	20	60	6
3ITBD 020 050 300	R1X2	5°	30	75	8
3ITBD 020 060 190	R1X2	6°	19	60	6
3ITBD 020 060 290	R1X2	6°	29	75	8
3ITBD 020 070 160	R1X2	7°	16	60	6
3ITBD 020 070 250	R1X2	7°	25	70	8
3ITBD 020 080 150	R1X2	8°	15	60	6
3ITBD 020 080 220	R1X2	8°	22	70	8
3ITBD 030 010 200	R1.5X3	1°	20	60	6
3ITBD 030 010 320	R1.5X3	1°	32	75	6
3ITBD 030 020 200	R1.5X3	2°	20	60	6
3ITBD 030 030 200	R1.5X3	3°	20	60	6
3ITBD 030 030 300	R1.5X3	3°	30	70	6
3ITBD 030 030 390	R1.5X3	3°	39	80	8
3ITBD 030 040 200	R1.5X3	4°	20	65	6
3ITBD 030 050 180	R1.5X3	5°	18	60	6
3ITBD 030 050 300	R1.5X3	5°	30	75	8

K TAPER 3ITBD



单位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	ShankDia
	R×D	θ	L1	L	d
3ITBD 030 060 150	R1.5X3	6°	15	60	6
3ITBD 030 060 250	R1.5X3	6°	25	70	8
3ITBD 030 070 190	R1.5X3	7°	19	70	8
3ITBD 030 070 300	R1.5X3	7°	30	80	10
3ITBD 030 080 190	R1.5X3	8°	19	70	8
3ITBD 030 080 260	R1.5X3	8°	26	75	10
3ITBD 040 010 200	R2X4	1°	20	60	6
3ITBD 040 010 320	R2X4	1°	32	75	6
3ITBD 040 020 200	R2X4	2°	20	60	6
3ITBD 040 020 300	R2X4	2°	30	70	6
3ITBD 040 030 210	R2X4	3°	21	70	6
3ITBD 040 030 320	R2X4	3°	32	80	8
3ITBD 040 030 400	R2X4	3°	40	90	8
3ITBD 040 040 200	R2X4	4°	20	70	8
3ITBD 040 040 300	R2X4	4°	30	75	8
3ITBD 040 050 200	R2X4	5°	20	70	8
3ITBD 040 050 320	R2X4	5°	32	80	10
3ITBD 040 060 200	R2X4	6°	20	70	8
3ITBD 040 060 300	R2X4	6°	30	80	10
3ITBD 040 070 180	R2X4	7°	18	70	8
3ITBD 040 070 260	R2X4	7°	26	80	10
3ITBD 040 080 230	R2X4	8°	23	75	10
3ITBD 060 010 320	R3X6	1°	32	75	8
3ITBD 060 020 300	R3X6	2°	30	75	8
3ITBD 060 030 220	R3X6	3°	22	75	8
3ITBD 060 030 320	R3X6	3°	32	80	10
3ITBD 060 030 400	R3X6	3°	40	90	10
3ITBD 060 040 250	R3X6	4°	25	75	10
3ITBD 060 040 310	R3X6	4°	31	80	10
3ITBD 060 050 210	R3X6	5°	21	75	10
3ITBD 060 050 320	R3X6	5°	32	80	12
3ITBD 060 060 210	R3X6	6°	21	75	10
3ITBD 060 060 310	R3X6	6°	31	80	12
3ITBD 060 070 190	R3X6	7°	19	75	10
3ITBD 060 070 270	R3X6	7°	27	80	12

K TAPER 2TBM

2 Flutes Taper Ball Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Very nice work surface finish.

2刃 高速加工用 テーパ ボール エンドミル

高硬度鋼(HRC50以上), プレハードン鋼系列の高精密 加工 エンドミル

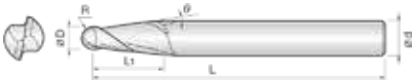
- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

2날 고속가공용 테이퍼 볼 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀 가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.





Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	R×D	θ	L1	L	d
2TBM 002 010 015	0.1R X 0.2	1°	1.5	40	4
2TBM 002 020 015	0.1R X 0.2	2°	1.5	40	4
2TBM 002 030 015	0.1R X 0.2	3°	1.5	40	4
2TBM 002 050 015	0.1R X 0.2	5°	1.5	40	4
2TBM 002 070 015	0.1R X 0.2	7°	1.5	40	4
2TBM 002 100 015	0.1R X 0.2	10°	1.5	40	4
2TBM 003 010 020	0.15R X 0.3	1°	2	40	4
2TBM 003 020 020	0.15R X 0.3	2°	2	40	4
2TBM 003 030 020	0.15R X 0.3	3°	2	40	4
2TBM 003 050 020	0.15R X 0.3	5°	2	40	4
2TBM 003 070 020	0.15R X 0.3	7°	2	40	4
2TBM 003 100 020	0.15R X 0.3	10°	2	40	4
2TBM 003 150 020	0.15R X 0.3	15°	2	40	4
2TBM 004 010 030	0.2R X 0.4	1°	3	40	4
2TBM 004 020 030	0.2R X 0.4	2°	3	40	4
2TBM 004 030 030	0.2R X 0.4	3°	3	40	4
2TBM 004 040 030	0.2R X 0.4	4°	3	40	4
2TBM 004 050 030	0.2R X 0.4	5°	3	40	4
2TBM 004 070 030	0.2R X 0.4	7°	3	40	4
2TBM 004 100 030	0.2R X 0.4	10°	3	40	4
2TBM 004 150 030	0.2R X 0.4	15°	3	40	4
2TBM 005 010 030	0.25R X 0.5	1°	3	40	4
2TBM 005 020 030	0.25R X 0.5	2°	3	40	4
2TBM 005 030 030	0.25R X 0.5	3°	3	40	4
2TBM 005 040 035	0.25R X 0.5	4°	3.5	40	4
2TBM 005 050 035	0.25R X 0.5	5°	3.5	40	4
2TBM 005 070 035	0.25R X 0.5	7°	3.5	40	4
2TBM 005 100 035	0.25R X 0.5	10°	3.5	40	4
2TBM 005 150 035	0.25R X 0.5	15°	3.5	40	4
2TBM 006 010 030	0.3R X 0.6	1°	3	40	4
2TBM 006 020 030	0.3R X 0.6	2°	3	40	4
2TBM 006 030 030	0.3R X 0.6	3°	3	40	4
2TBM 006 040 035	0.3R X 0.6	4°	3.5	40	4
2TBM 006 050 035	0.3R X 0.6	5°	3.5	40	4
2TBM 006 070 035	0.3R X 0.6	7°	3.5	40	4
2TBM 006 100 035	0.3R X 0.6	10°	3.5	40	4

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	R×D	θ	L1	L	d
2TBM 006 150 035	0.3R X 0.6	15°	3.5	40	4
2TBM 007 010 030	0.35R X 0.7	1°	3	40	4
2TBM 007 020 030	0.35R X 0.7	2°	3	40	4
2TBM 007 030 040	0.35R X 0.7	3°	4	40	4
2TBM 007 050 040	0.35R X 0.7	5°	4	40	4
2TBM 007 070 040	0.35R X 0.7	7°	4	40	4
2TBM 007 100 040	0.35R X 0.7	10°	4	40	4
2TBM 007 150 040	0.35R X 0.7	15°	4	40	4
2TBM 008 010 030	0.4R X 0.8	1°	3	40	4
2TBM 008 020 030	0.4R X 0.8	2°	3	40	4
2TBM 008 030 030	0.4R X 0.8	3°	3	40	4
2TBM 008 040 040	0.4R X 0.8	4°	4	40	4
2TBM 008 050 040	0.4R X 0.8	5°	4	40	4
2TBM 008 070 040	0.4R X 0.8	7°	4	40	4
2TBM 008 100 040	0.4R X 0.8	10°	4	40	4
2TBM 008 150 040	0.4R X 0.8	15°	4	40	4
2TBM 010 003 030	0.5R X 1	0°30	3	40	4
2TBM 010 010 030	0.5R X 1	1°	3	40	4
2TBM 010 013 040	0.5R X 1	1°30	4	40	4
2TBM 010 020 040	0.5R X 1	2°	4	40	4
2TBM 010 030 040	0.5R X 1	3°	4	40	4
2TBM 010 040 060	0.5R X 1	4°	6	45	4
2TBM 010 050 060	0.5R X 1	5°	6	45	4
2TBM 010 070 060	0.5R X 1	7°	6	45	4
2TBM 010 100 060	0.5R X 1	10°	6	45	4
2TBM 010 150 056	0.5R X 1	15°	5.6	45	4
2TBM 012 003 030	0.6R X 1.2	0°30	3	40	4
2TBM 012 010 030	0.6R X 1.2	1°	3	40	4
2TBM 012 013 040	0.6R X 1.2	1°30	4	40	4
2TBM 012 020 040	0.6R X 1.2	2°	4	40	4
2TBM 012 030 040	0.6R X 1.2	3°	4	40	4
2TBM 012 040 060	0.6R X 1.2	4°	6	45	4
2TBM 012 050 060	0.6R X 1.2	5°	6	45	4
2TBM 012 070 060	0.6R X 1.2	7°	6	45	4
2TBM 012 100 060	0.6R X 1.2	10°	6	45	4
2TBM 012 150 050	0.6R X 1.2	15°	5	45	4

0.2R~1R

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	R×D	θ	L1	L	d
2TBM 015 003 060	0.75R X 1.5	0°30	6	45	4
2TBM 015 010 060	0.75R X 1.5	1°	6	45	4
2TBM 015 013 060	0.75R X 1.5	1°30	6	45	4
2TBM 015 020 060	0.75R X 1.5	2°	6	45	4
2TBM 015 030 060	0.75R X 1.5	3°	6	45	4
2TBM 015 040 060	0.75R X 1.5	4°	6	45	4
2TBM 015 050 060	0.75R X 1.5	5°	6	45	4
2TBM 015 070 060	0.75R X 1.5	7°	6	45	4
2TBM 015 100 060	0.75R X 1.5	10°	6	45	4
2TBM 015 150 060	0.75R X 1.5	15°	6	50	6
2TBM 020 003 080	1R X 2	0°30	8	45	4
2TBM 020 010 080	1R X 2	1°	8	45	4
2TBM 020 013 080	1R X 2	1°30	8	45	4
2TBM 020 020 080	1R X 2	2°	8	45	4
2TBM 020 030 080	1R X 2	3°	8	45	4
2TBM 020 040 080	1R X 2	4°	8	45	4
2TBM 020 050 080	1R X 2	5°	8	45	4
2TBM 020 070 080	1R X 2	7°	8	45	4
2TBM 020 100 080	1R X 2	10°	8	50	6
2TBM 020 150 080	1R X 2	15°	8	50	6
2TBM 030 003 120	1.5R X 3	0°30	12	60	6
2TBM 030 010 120	1.5R X 3	1°	12	60	6
2TBM 030 013 120	1.5R X 3	1°30	12	60	6
2TBM 030 020 120	1.5R X 3	2°	12	60	6
2TBM 030 030 120	1.5R X 3	3°	12	60	6
2TBM 030 040 120	1.5R X 3	4°	12	60	6
2TBM 030 050 120	1.5R X 3	5°	12	60	6
2TBM 030 070 120	1.5R X 3	7°	12	60	6

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	R×D	θ	L1	L	d
2TBM 030 100 120	1.5R X 3	10°	12	60	8
2TBM 030 150 120	1.5R X 3	15°	16	70	10
2TBM 040 003 160	2R X 4	0°30	16	70	8
2TBM 040 010 160	2R X 4	1°	16	70	8
2TBM 040 013 160	2R X 4	1°30	16	70	8
2TBM 040 020 160	2R X 4	2°	16	70	8
2TBM 040 030 160	2R X 4	3°	16	70	8
2TBM 040 040 160	2R X 4	4°	16	70	8
2TBM 040 050 160	2R X 4	5°	16	70	8
2TBM 040 070 160	2R X 4	7°	16	70	8
2TBM 040 100 160	2R X 4	10°	16	70	10
2TBM 040 150 160	2R X 4	15°	16	80	12
2TBM 050 003 200	2.5R X 5	0°30	20	75	8
2TBM 050 010 200	2.5R X 5	1°	20	75	8
2TBM 050 013 200	2.5R X 5	1°30	20	75	8
2TBM 050 020 200	2.5R X 5	2°	20	75	8
2TBM 050 030 200	2.5R X 5	3°	20	75	8
2TBM 050 040 200	2.5R X 5	4°	20	75	8
2TBM 050 050 200	2.5R X 5	5°	20	80	10
2TBM 050 070 200	2.5R X 5	7°	20	80	10
2TBM 060 003 240	3R X 6	0°30	24	80	10
2TBM 060 010 240	3R X 6	1°	24	80	10
2TBM 060 013 240	3R X 6	1°30	24	80	10
2TBM 060 020 240	3R X 6	2°	24	80	10
2TBM 060 030 240	3R X 6	3°	24	80	10
2TBM 060 040 240	3R X 6	4°	24	80	10
2TBM 060 050 240	3R X 6	5°	24	90	12
2TBM 060 070 240	3R X 6	7°	24	90	12

2TBM

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Tool Steels/ / Prehardened Steels SKD61 / NAK				Hardened Steels SKD61			
Hardness	~ 45HRC				45 ~ 55HRC			
Radius	α≦15°		α>15°		α≦15°		α>15°	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.2	32,000	480	32,000	360	32,000	400	32,000	300
R0.25	32,000	640	32,000	480	32,000	550	32,000	400
R0.3	32,000	800	32,000	600	32,000	680	32,000	500
R0.4	32,000	1,200	32,000	880	32,000	1,040	28,000	680
R0.5	32,000	1,600	28,000	1,100	28,000	1,200	24,000	720
R0.75	32,000	1,800	24,000	1,100	24,000	1,200	20,000	720
R1	28,000	2,000	20,000	1,200	20,000	1,200	16,000	720
Depth of Cut								

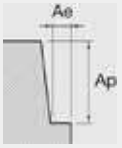
2TEM

• RPM : rev./min • Feed : mm/min

Material	Mild Steels / Carbon Steels SS400 / S55C		Alloy Steels / Tool Steels SCM / SKT / SKS / SKD		Hardened Steels/ Prehardened Steels SKT / SKD / NAK55 / HPM1		Hardened Steels/ Stainless Steels SUS304 / SKD		Hardened Steels	
Hardness	~750HN/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC		45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	14,000	140	14,000	117	11,700	80	10,800	80	9,500	35
1.5mm	9,500	140	9,500	117	8,000	80	7,400	80	6,300	35
2mm	7,200	140	7,200	117	6,000	80	5,600	80	4,700	35
2.5mm	5,600	130	5,600	113	4,800	80	4,500	80	3,800	35
3mm	4,700	130	4,700	113	4,000	80	3,700	80	3,200	35
4mm	3,500	130	3,500	113	3,000	80	2,800	75	2,300	35
5mm	2,800	130	2,800	113	2,400	80	2,200	75	1,900	35
6mm	2,300	130	2,300	113	2,000	80	1,800	75	1,600	35
8mm	1,800	130	1,800	113	1,500	80	1,400	75	1,200	35
10mm	1,400	130	1,400	108	1,200	80	1,100	75	950	35

Depth of Cut

Ap	Ae
2.5D	0.02D



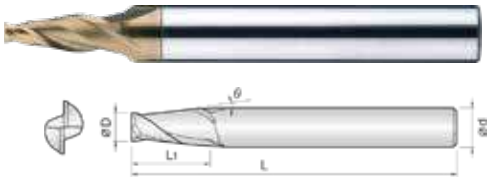
K TAPER 2TEM



2 Flutes Taper Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Very nice work surface finish.



2刃 高速加工用 テーパ エンドミル

高硬度鋼(HRC50以上), プレハードン鋼系列の高精密 加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

2날 고속가공용 테이퍼 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀 가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.

Size	D Tolerance
D≦Ø4	+0~ -0.01mm
D > Ø4	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
2TEM 002 003 010	0.2	0°30	1	40	4
2TEM 002 010 010	0.2	1°	1	40	4
2TEM 002 013 010	0.2	1°30	1	40	4
2TEM 002 020 010	0.2	2°	1	40	4
2TEM 002 030 010	0.2	3°	1	40	4
2TEM 002 050 010	0.2	5°	1	40	4
2TEM 002 070 010	0.2	7°	1	40	4
2TEM 002 100 010	0.2	10°	1	40	4
2TEM 002 150 010	0.2	15°	1	40	4
2TEM 003 003 012	0.3	0°30	1.2	40	4
2TEM 003 010 012	0.3	1°	1.2	40	4
2TEM 003 013 012	0.3	1°30	1.2	40	4
2TEM 003 020 012	0.3	2°	1.2	40	4
2TEM 003 030 012	0.3	3°	1.2	40	4
2TEM 003 050 012	0.3	5°	1.2	40	4
2TEM 003 070 015	0.3	7°	1.5	40	4
2TEM 003 100 015	0.3	10°	1.5	40	4
2TEM 003 150 015	0.3	15°	1.5	40	4
2TEM 004 003 016	0.4	0°30	1.6	40	4
2TEM 004 010 016	0.4	1°	1.6	40	4
2TEM 004 013 016	0.4	1°30	1.6	40	4
2TEM 004 020 016	0.4	2°	1.6	40	4
2TEM 004 030 016	0.4	3°	1.6	40	4
2TEM 004 050 016	0.4	5°	1.6	40	4
2TEM 004 070 020	0.4	7°	2	40	4
2TEM 004 100 020	0.4	10°	2	40	4
2TEM 004 150 020	0.4	15°	2	40	4
2TEM 005 003 020	0.5	0°30	2	40	4
2TEM 005 010 020	0.5	1°	2	40	4
2TEM 005 013 020	0.5	1°30	2	40	4
2TEM 005 020 020	0.5	2°	2	40	4
2TEM 005 030 020	0.5	3°	2	40	4
2TEM 005 050 020	0.5	5°	2	40	4
2TEM 005 070 025	0.5	7°	2.5	40	4
2TEM 005 100 025	0.5	10°	2.5	40	4
2TEM 005 150 025	0.5	15°	2.5	40	4
2TEM 005 200 025	0.5	20°	2.5	40	4

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
2TEM 006 003 020	0.6	0°30	2	40	4
2TEM 006 010 020	0.6	1°	2	40	4
2TEM 006 013 020	0.6	1°30	2	40	4
2TEM 006 020 020	0.6	2°	2	40	4
2TEM 006 030 020	0.6	3°	2	40	4
2TEM 006 050 020	0.6	5°	2	40	4
2TEM 006 070 025	0.6	7°	2.5	40	4
2TEM 006 100 025	0.6	10°	2.5	40	4
2TEM 006 150 025	0.6	15°	2.5	40	4
2TEM 006 200 025	0.6	20°	2.5	40	4
2TEM 007 010 025	0.7	1°	2.5	40	4
2TEM 007 013 025	0.7	1°30	2.5	40	4
2TEM 007 020 025	0.7	2°	2.5	40	4
2TEM 007 030 025	0.7	3°	2.5	40	4
2TEM 007 050 025	0.7	5°	2.5	40	4
2TEM 007 070 030	0.7	7°	3	40	4
2TEM 007 100 030	0.7	10°	3	40	4
2TEM 007 150 030	0.7	15°	3	40	4
2TEM 007 200 030	0.7	20°	3	40	4
2TEM 008 003 030	0.8	0°30	3	40	4
2TEM 008 010 030	0.8	1°	3	40	4
2TEM 008 013 030	0.8	1°30	3	40	4
2TEM 008 020 030	0.8	2°	3	40	4
2TEM 008 030 030	0.8	3°	3	40	4
2TEM 008 050 030	0.8	5°	3	40	4
2TEM 008 070 030	0.8	7°	3	40	4
2TEM 008 100 030	0.8	10°	3	40	4
2TEM 008 150 030	0.8	15°	3	40	4
2TEM 008 200 030	0.8	20°	3	40	4
2TEM 010 003 040	1	0°30	4	45	4
2TEM 010 010 040	1	1°	4	45	4
2TEM 010 013 040	1	1°30	4	45	4
2TEM 010 020 040	1	2°	4	45	4
2TEM 010 030 040	1	3°	4	45	4
2TEM 010 050 040	1	5°	4	45	4
2TEM 010 070 040	1	7°	4	45	4
2TEM 010 100 040	1	10°	4	45	4

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单位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
2TEM 010 150 040	1	15°	4	50	6
2TEM 010 200 040	1	20°	4	50	6
2TEM 015 003 050	1.5	0°30	5	45	4
2TEM 015 010 050	1.5	1°	5	45	4
2TEM 015 013 060	1.5	1°30	6	45	4
2TEM 015 020 070	1.5	2°	7	45	4
2TEM 015 030 080	1.5	3°	8	45	4
2TEM 015 050 100	1.5	5°	10	50	4
2TEM 015 070 100	1.5	7°	10	50	4
2TEM 015 100 100	1.5	10°	10	50	6
2TEM 015 150 060	1.5	15°	6	50	6
2TEM 015 200 060	1.5	20°	6	50	6
2TEM 020 003 060	2	0°30	6	45	4
2TEM 020 010 060	2	1°	6	45	4
2TEM 020 013 060	2	1°30	6	45	4
2TEM 020 020 080	2	2°	8	45	4
2TEM 020 030 100	2	3°	10	50	4
2TEM 020 050 100	2	5°	10	50	4
2TEM 020 070 100	2	7°	10	50	6
2TEM 020 100 110	2	10°	11	50	6
2TEM 020 150 070	2	15°	7	50	6
2TEM 020 200 070	2	20°	7	50	8
2TEM 025 003 080	2.5	0°30	8	45	6
2TEM 025 010 100	2.5	1°	10	50	6
2TEM 025 013 100	2.5	1°30	10	50	6
2TEM 025 020 120	2.5	2°	12	50	6
2TEM 025 030 120	2.5	3°	12	50	6
2TEM 025 050 120	2.5	5°	12	50	6
2TEM 025 070 120	2.5	7°	12	50	6
2TEM 025 100 100	2.5	10°	10	50	6
2TEM 025 150 100	2.5	15°	10	60	8
2TEM 025 200 100	2.5	20°	10	70	10
2TEM 030 003 120	3	0°30	12	50	6
2TEM 030 010 120	3	1°	12	50	6
2TEM 030 013 120	3	1°30	12	50	6
2TEM 030 020 120	3	2°	12	50	6

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
2TEM 030 030 120	3	3°	12	50	6
2TEM 030 050 120	3	5°	12	50	6
2TEM 030 070 120	3	7°	12	50	6
2TEM 030 100 080	3	10°	8	50	6
2TEM 030 150 090	3	15°	9	60	8
2TEM 030 200 090	3	20°	9	70	10
2TEM 040 003 150	4	0°30	15	60	6
2TEM 040 010 150	4	1°	15	60	6
2TEM 040 013 150	4	1°30	15	60	6
2TEM 040 020 150	4	2°	15	60	6
2TEM 040 030 180	4	3°	18	60	6
2TEM 040 050 230	4	5°	23	65	8
2TEM 040 070 240	4	7°	24	75	10
2TEM 040 100 220	4	10°	22	75	12
2TEM 060 003 200	6	0°30	20	65	8
2TEM 060 010 200	6	1°	20	65	8
2TEM 060 013 200	6	1°30	20	65	8
2TEM 060 020 200	6	2°	20	65	8
2TEM 060 030 190	6	3°	19	65	8
2TEM 060 050 230	6	5°	23	75	10
2TEM 060 070 240	6	7°	24	75	12
2TEM 060 100 170	6	10°	17	75	12
2TEM 070 003 250	7	0°30	25	70	8
2TEM 070 010 250	7	1°	25	70	8
2TEM 070 013 250	7	1°30	25	70	10
2TEM 070 030 280	7	3°	28	80	10
2TEM 070 050 280	7	5°	28	80	12
2TEM 080 003 320	8	0°30	32	90	10
2TEM 080 010 350	8	1°	35	90	10
2TEM 080 013 350	8	1°30	35	90	10
2TEM 080 020 280	8	2°	28	75	10
2TEM 080 030 350	8	3°	35	90	12
2TEM 080 050 450	8	5°	45	100	16
2TEM 080 070 320	8	7°	32	90	16
2TEM 080 100 340	8	10°	34	100	20

K TAPER 4TEM



4 Flutes Taper Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Very nice work surface finish.

4刃 高速加工用 テーパ エンドミル

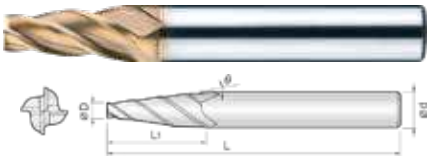
高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密 加工 エンドミル

- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

4날 고속가공용 테이퍼 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고정밀 가공 엔드밀

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다. • 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.



Size	D Tolerance
D≦Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TEM 030 003 110	3	0°30	11	50	6
4TEM 030 010 110	3	1°	11	50	6
4TEM 030 013 110	3	1°30	11	50	6
4TEM 030 020 150	3	2°	15	60	6
4TEM 030 023 150	3	2°30	15	60	6
4TEM 030 030 150	3	3°	15	60	6
4TEM 030 050 150	3	5°	15	60	6
4TEM 030 070 120	3	7°	12	60	6
4TEM 030 100 190	3	10°	19	80	10
4TEM 040 003 150	4	0°30	15	60	6
4TEM 040 010 150	4	1°	15	60	6
4TEM 040 013 150	4	1°30	15	60	6
4TEM 040 020 180	4	2°	18	60	6
4TEM 040 023 180	4	2°30	18	60	6
4TEM 040 030 180	4	3°	18	60	6
4TEM 040 050 230	4	5°	23	65	8
4TEM 040 070 250	4	7°	25	75	10
4TEM 050 003 180	5	0°30	18	60	6
4TEM 050 010 180	5	1°	18	60	6
4TEM 050 013 180	5	1°30	18	60	6
4TEM 050 020 150	5	2°	15	60	6
4TEM 050 023 200	5	2°30	20	65	8
4TEM 050 030 210	5	3°	21	65	8
4TEM 050 050 280	5	5°	28	80	10
4TEM 050 070 280	5	7°	28	80	12

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TEM 052 0147 120	5.2	1°47	12	60	6
4TEM 060 003 200	6	0°30	20	65	8
4TEM 060 010 200	6	1°	20	65	8
4TEM 060 013 200	6	1°30	20	65	8
4TEM 060 020 200	6	2°	20	65	8
4TEM 060 023 200	6	2°30	20	65	8
4TEM 060 030 260	6	3°	26	75	10
4TEM 060 050 230	6	5°	23	75	10
4TEM 060 070 240	6	7°	24	80	12
4TEM 060 100 390	6	10°	39	110	20
4TEM 080 003 250	8	0°30	25	75	10
4TEM 080 010 250	8	1°	25	75	10
4TEM 080 013 250	8	1°30	25	75	10
4TEM 080 020 250	8	2°	25	75	10
4TEM 080 023 230	8	2°30	23	75	10
4TEM 080 030 300	8	3°	30	80	12
4TEM 080 050 230	8	5°	23	85	12
4TEM 085 0147 240	8.5	1°47	24	75	10
4TEM 100 003 300	10	0°30	30	80	12
4TEM 100 010 300	10	1°	30	80	12
4TEM 100 013 300	10	1°30	30	80	12
4TEM 100 0147 320	10	1°47	32	85	12
4TEM 100 020 280	10	2°	28	80	12
4TEM 100 030 400	10	3°	40	100	16
4TEM 100 050 340	10	5°	34	100	16

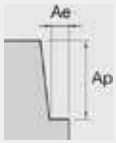
4TEM

• RPM : rev./min • Feed : mm/min

Material	Mild Steels / Carbon Steels SS400 / S55C		Alloy Steels / Tool Steels SCM / SKT / SKS / SKD		Hardened Steels / Prehardened Steels SKT / SKD / NAK55 / HPM1		Hardened Steels / Stainless Steels SUS304 / SKD		Hardened Steels	
Hardness	~750HN/mm2		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC		45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3mm	4,800	200	4,000	200	4,800	160	3,700	120	3,150	120
4mm	3,600	220	3,000	220	3,000	180	2,800	135	2,340	145
5mm	2,800	250	2,400	250	2,400	200	2,200	145	1,890	145
6mm	2,400	250	2,000	340	2,000	200	1,800	160	1,575	160
8mm	1,800	240	1,500	240	1,500	200	1,400	170	1,170	170
10mm	1,400	240	1,200	240	1,200	200	1,100	160	945	160

Depth of Cut

Ap	Ae
2.5D	0.02D



K TAPER 4TRE



4 Flutes Rib Taper Endmills

Endmills for pre-hardened and hardened steel (HRC50~)

- Optimum for deep grooving by 2bottom edge with 4flutes.
- High precise edge tolerance.
- Very nice work surface finish.

4刃 高速加工用 テーパ エンドミル

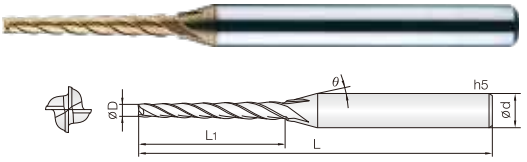
高硬度鋼(HRC50以上), プレハードン鋼 系列の高精密 加工 エンドミル

- 下刃2刃 形状と 横刃4刃 形状で深い溝 加工時に適合します.
- 高精密 公差 適用で 超精密 加工に適合します.
- 刃部刃先の粗さが優れて被削材の面粗さが優秀です.

4날 고속가공용 리브 테이퍼 엔드밀

고경도강(HRC50이상), 프리하든강 계열의 고속가공 엔드밀

- 밑날2날 형상과 옆날4날 형상으로 깊은 홈 가공시 적합합니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.



Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TRE 005 030 040	0.5	0°30	4	45	4
4TRE 005 030 060	0.5	0°30	6	45	4
4TRE 005 045 040	0.5	0°45	4	45	4
4TRE 005 045 060	0.5	0°45	6	45	4
4TRE 005 100 040	0.5	1°	4	45	4
4TRE 005 100 060	0.5	1°	6	45	4
4TRE 006 030 040	0.6	0°30	4	45	4
4TRE 006 030 060	0.6	0°30	6	45	4
4TRE 006 045 040	0.6	0°45	4	45	4
4TRE 006 045 060	0.6	0°45	6	45	4
4TRE 006 100 040	0.6	1°	4	45	4
4TRE 006 100 060	0.6	1°	6	45	4
4TRE 007 030 060	0.7	0°30	6	45	4
4TRE 007 030 080	0.7	0°30	8	45	4
4TRE 007 045 060	0.7	0°45	6	45	4
4TRE 007 045 080	0.7	0°45	8	45	4
4TRE 007 100 060	0.7	1°	6	45	4
4TRE 007 100 080	0.7	1°	8	45	4
4TRE 008 030 060	0.8	0°30	6	45	4
4TRE 008 030 080	0.8	0°30	8	45	4
4TRE 008 030 100	0.8	0°30	10	45	4
4TRE 008 045 060	0.8	0°45	6	45	4
4TRE 008 045 080	0.8	0°45	8	45	4
4TRE 008 045 100	0.8	0°45	10	45	4
4TRE 008 100 060	0.8	1°	6	45	4
4TRE 008 100 080	0.8	1°	8	45	4
4TRE 008 100 100	0.8	1°	10	45	4
4TRE 009 030 060	0.9	0°30	6	45	4
4TRE 009 030 080	0.9	0°30	8	45	4
4TRE 009 030 100	0.9	0°30	10	45	4
4TRE 009 045 060	0.9	0°45	6	45	4
4TRE 009 045 080	0.9	0°45	8	45	4

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TRE 009 045 100	0.9	0°45	10	45	4
4TRE 009 100 060	0.9	1°	6	45	4
4TRE 009 100 080	0.9	1°	8	45	4
4TRE 009 100 100	0.9	1°	10	45	4
4TRE 010 030 080	1	0°30	8	45	4
4TRE 010 030 100	1	0°30	10	45	4
4TRE 010 030 120	1	0°30	12	45	4
4TRE 010 045 080	1	0°45	8	45	4
4TRE 010 045 100	1	0°45	10	45	4
4TRE 010 045 120	1	0°45	12	45	4
4TRE 010 100 080	1	1°	8	45	4
4TRE 010 100 100	1	1°	10	45	4
4TRE 010 100 120	1	1°	12	45	4
4TRE 012 030 080	1.2	0°30	8	45	4
4TRE 012 030 100	1.2	0°30	10	45	4
4TRE 012 030 120	1.2	0°30	12	45	4
4TRE 012 030 160	1.2	0°30	16	50	4
4TRE 012 045 080	1.2	0°45	8	45	4
4TRE 012 045 100	1.2	0°45	10	45	4
4TRE 012 045 120	1.2	0°45	12	45	4
4TRE 012 045 160	1.2	0°45	16	50	4
4TRE 012 100 080	1.2	1°	8	45	4
4TRE 012 100 100	1.2	1°	10	45	4
4TRE 012 100 120	1.2	1°	12	45	4
4TRE 012 100 160	1.2	1°	16	50	4
4TRE 015 030 060	1.5	0°30	6	45	4
4TRE 015 030 100	1.5	0°30	10	45	4
4TRE 015 030 160	1.5	0°30	16	50	4
4TRE 015 030 200	1.5	0°30	20	60	4
4TRE 015 100 060	1.5	1°	6	45	4
4TRE 015 100 100	1.5	1°	10	45	4
4TRE 015 100 160	1.5	1°	16	50	4

K TAPER

4TRE

Ø0.5 ~ Ø2.5

Shield Edge

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TRE 015 100 200	1.5	1°	20	60	4
4TRE 015 100 250	1.5	1°	25	60	4
4TRE 015 130 060	1.5	1°30	6	45	4
4TRE 015 130 100	1.5	1°30	10	45	4
4TRE 015 130 160	1.5	1°30	16	50	4
4TRE 015 130 200	1.5	1°30	20	60	4
4TRE 015 130 250	1.5	1°30	25	60	4
4TRE 020 030 100	2	0°30	10	45	4
4TRE 020 030 160	2	0°30	16	50	4
4TRE 020 030 200	2	0°30	20	60	4
4TRE 020 030 250	2	0°30	25	60	4
4TRE 020 100 100	2	1°	10	45	4
4TRE 020 100 160	2	1°	16	50	4
4TRE 020 100 200	2	1°	20	60	4
4TRE 020 100 250	2	1°	25	60	4
4TRE 020 130 100	2	1°30	10	45	4
4TRE 020 130 160	2	1°30	16	50	4
4TRE 020 130 200	2	1°30	20	60	4

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4TRE 020 130 250	2	1°30	25	60	4
4TRE 025 030 100	2.5	0°30	10	45	4
4TRE 025 030 160	2.5	0°30	16	50	4
4TRE 025 030 200	2.5	0°30	20	60	4
4TRE 025 030 250	2.5	0°30	25	60	4
4TRE 025 100 100	2.5	1°	10	45	4
4TRE 025 100 160	2.5	1°	16	50	4
4TRE 025 100 200	2.5	1°	20	60	4
4TRE 025 100 250	2.5	1°	25	60	4
4TRE 025 130 100	2.5	1°30	10	45	4
4TRE 025 130 160	2.5	1°30	16	50	4
4TRE 025 130 200	2.5	1°30	20	60	4
4TRE 025 130 250	2.5	1°30	25	60	4

4TRE

• RPM : rev./min • Feed : mm/min

Material	Mild Steels / Carbon Steels SS400 / S55C			Alloy Steels / Tool Steels SCM / SKT / SKS / SKD			Prehardened Steels / Hardened Steels SKT / SKD / NAK55 / HPM1			Hardened Steels / Stainless Steels SUS304 / SKD			Hardened Steels SUS304 / SKD		
Hardness	~750HN/mm2			~ 30HRC			30HRC ~ 38HRC			38HRC ~ 45HRC			45HRC ~ 55HRC		
Outside Diameter	RPM	FEED	Ap	RPM	FEED	Ap	RPM	FEED	Ap	RPM	FEED	Ap	RPM	FEED	Ap
0.5mm	25,200	500	0.01 ~ 0.020	25,200	450	0.01 ~ 0.020	25,200	380	0.01 ~ 0.020	25,200	350	0.01 ~ 0.020	15,200	200	0.005 ~ 0.01
0.6mm	25,200	600	0.012 ~ 0.025	25,200	545	0.012 ~ 0.025	23,600	420	0.012 ~ 0.025	21,200	355	0.012 ~ 0.025	12,400	210	0.006 ~ 0.012
0.7mm	23,200	750	0.014 ~ 0.030	21,600	545	0.014 ~ 0.030	20,000	420	0.014 ~ 0.030	18,000	355	0.014 ~ 0.030	10,800	210	0.007 ~ 0.014
0.8mm	20,000	750	0.016 ~ 0.035	18,800	545	0.016 ~ 0.035	17,600	420	0.016 ~ 0.035	15,600	355	0.016 ~ 0.035	9,200	210	0.008 ~ 0.016
0.9mm	18,000	750	0.018 ~ 0.040	16,800	545	0.018 ~ 0.040	15,600	420	0.018 ~ 0.040	14,000	355	0.018 ~ 0.040	8,400	210	0.009 ~ 0.018
1mm	16,000	745	0.02 ~ 0.045	15,200	545	0.02 ~ 0.045	14,000	420	0.02 ~ 0.045	12,400	355	0.02 ~ 0.045	7,600	210	0.01 ~ 0.02
1.2mm	13,200	745	0.024 ~ 0.055	12,400	545	0.024 ~ 0.055	11,600	420	0.024 ~ 0.055	10,400	355	0.024 ~ 0.055	6,400	210	0.012 ~ 0.024
1.5mm	10,800	745	0.03 ~ 0.07	10,000	545	0.03 ~ 0.07	9,200	420	0.03 ~ 0.07	8,400	355	0.03 ~ 0.07	5,100	210	0.015 ~ 0.03
2mm	8,000	745	0.04 ~ 0.1	7,600	545	0.04 ~ 0.1	7,100	420	0.04 ~ 0.1	6,400	355	0.04 ~ 0.1	3,800	210	0.02 ~ 0.04
2.5mm	6,500	745	0.05 ~ 0.12	6,100	545	0.05 ~ 0.12	5,700	420	0.05 ~ 0.12	5,100	355	0.05 ~ 0.12	3,000	210	0.025 ~ 0.05
Depth of Cut															

K GENERAL 2DRC

2 Fluets Corner Rounding Cutter

Hardened steel(~HRC52), pre-hardened steel, tool steel and cast iron

- High precise edge tolerance.
- Very nice work surface finish.

2刃コーナー逆Rカッター

HRC52以下の高硬度鋼,プリハードン鋼,工具鋼,鋳鉄など被削材の加工

- 高精密公差を適用し,超精密加工に適しています。
- 刃先の粗さに優れ,被削材の面粗さが良好です。

2날 코너 역R커터

HRC52이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.





Size	D Tolerance
Ø0.5~0.9	+0~ -0.01mm
Ø1.4~5.9	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D x R	d_1	L1	L	d
2DRC 005 001 S04	0.5XR0.1	0.8	2.5	45	4
2DRC 005 0015 S04	0.5XR0.15	0.9	2.5	45	4
2DRC 005 002 S04	0.5XR0.2	1	2.5	45	4
2DRC 005 0025 S04	0.5XR025	1.1	2.5	45	4
2DRC 005 003 S04	0.5XR0.3	1.2	2.5	45	4
2DRC 005 0035 S04	0.5XR0.35	1.3	2.5	45	4
2DRC 005 004 S04	0.5XR0.4	1.4	2.5	45	4
2DRC 005 0045 S04	0.5XR0.45	1.5	2.5	45	4
2DRC 005 005 S04	0.5XR0.5	1.6	2.5	45	4
2DRC 009 005 S04	0.9XR0.5	2	3	45	4
2DRC 049 005 S06	4.9XR0.5	6	-	50	6
2DRC 005 0055 S04	0.5XR0.55	1.7	3	45	4
2DRC 005 006 S04	0.5XR0.6	1.8	3	45	4
2DRC 005 0065 S04	0.5XR0.65	1.9	3	45	4
2DRC 005 007 S04	0.5XR0.7	2	3	45	4
2DRC 009 0075 S04	0.9XR0.75	2.5	4	45	4
2DRC 009 008 S04	0.9XR0.8	2.6	4	45	4
2DRC 009 0085 S04	0.9XR0.85	2.7	4	45	4
2DRC 009 009 S04	0.9XR0.9	2.8	4	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D x R	d_1	L1	L	d
2DRC 009 0095 S04	0.9XR0.95	2.9	4	45	4
2DRC 009 010 S06	0.9XR1	3	5	50	6
2DRC 039 010 S06	3.9XR1	6	-	50	6
2DRC 059 010 S08	5.9XR1	8	-	60	8
2DRC 009 0125 S06	0.9XR1.25	3.5	5	50	6
2DRC 034 0125 S06	3.4XR1.25	6	-	50	6
2DRC 014 015 S06	1.4XR1.5	4.5	8	50	6
2DRC 049 015 S08	4.9XR1.5	8	-	60	8
2DRC 014 020 S06	1.4XR2	5.5	10	50	6
2DRC 039 020 S08	3.9XR2	8	-	60	8
2DRC 019 025 S08	1.9XR2.5	7	13	60	8
2DRC 019 030 S08	1.9XR3	8	-	60	8
2DRC 019 035 S10	1.9XR3.5	9	13	70	10
2DRC 019 040 S10	1.9XR4	10	-	70	10
2DRC 019 045 S12	1.9XR4.5	11	13	80	12
2DRC 019 050 S12	1.9XR5	12	-	80	12
2DRC 039 060 S16	3.9XR6	16	-	85	16
2DRC 059 070 S20	5.9XR7	20	-	85	20
2DRC 039 080 S20	3.9XR8	20	-	85	20

2DRC

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S54C ~ S55C		Alloy Steels / Tool Steels SKD / SUS / SCM		Hardened Steels(35 ~ 45Hrc) NAK / HPM	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1.9mm	3,200	60	2,300	50	2,500	40
2.9mm	2,500	60	1,800	50	1,800	40
3.9mm	1,850	60	1,400	50	1,400	40
4.9mm	1,600	60	1,100	50	1,200	40
5.9mm	1,400	60	900	50	1,000	40

0.5R ~ 2.5R 3R ~ 6R

4 Fluets Corner Rounding Cutter

Hardened steel(~HRC52), pre-hardened steel, tool steel and cast iron

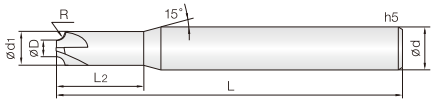
- High precise edge tolerance.
- Very nice work surface finish.



4刃コーナー逆Rカッター

HRC52以下の高硬度鋼,プリハードン鋼,工具鋼,鋳鉄など被削材の加工

- 高精密公差を適用し,超精密加工に適しています。
- 刃先の粗さに優れ,被削材の面粗さが良好です。



4날 코너 역R커터

HRC52이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 날부인선의 조도가 뛰어나 피삭재의 면조도가 우수합니다.

Size	D Tolerance
Ø1.4~5.9	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D x R	d_1	d_2	L	d
4DRC 014 0125 S06	1.4XR1.25	4	8	50	6
4DRC 019 010 S04	1.9XR1	4		50	4
4DRC 024 0075 S04	2.4XR0.75	4		50	4
4DRC 029 005 S04	2.9XR0.5	4		50	4
4DRC 039 010 S06	3.9XR1	6		50	6
4DRC 039 020 S08	3.9XR2	8		60	8
4DRC 039 030 S10	3.9XR3	10		70	10
4DRC 039 040 S12	3.9XR4	12		75	12
4DRC 039 060 S16	3.9XR6	16		80	16
4DRC 044 0075 S06	4.4XR0.75	6		50	6
4DRC 049 005 S06	4.9XR0.5	6		50	6
4DRC 049 015 S08	4.9XR1.5	10		60	8
4DRC 049 025 S10	4.9XR2.5	10		70	10
4DRC 054 0125 S08	5.4XR1.25	8		60	8
4DRC 059 010 S08	5.9XR1	8		60	8
4DRC 059 020 S10	5.9XR2	10		70	10
4DRC 059 030 S12	5.9XR3	12		75	12
4DRC 059 050 S16	5.9XR5	16		80	16

4DRC

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S54C ~ S55C		Alloy Steels / Tool Steels SKD / SUS / SCM		Hardened Steels(35 ~ 45Hrc) NAK / HPM	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1.9mm	5,940	1,260	4,950	1,050	3,960	840
2.9mm	5,280	1,130	4,400	940	3,520	750
3.9mm	4,700	1,010	3,910	840	3,100	670
4.9mm	4,200	910	3,400	750	2,800	600
5.9mm	3,700	820	3,000	670	2,400	540

K GENERAL 1DTE

1 Flute Straight Flute Taper Endmills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron. (~HRC50)

- Optimum for NC engraving by straight type one edge.
- Maximize engraving efficency by various edge diameter.

1刃直線刃テーパエンドミル

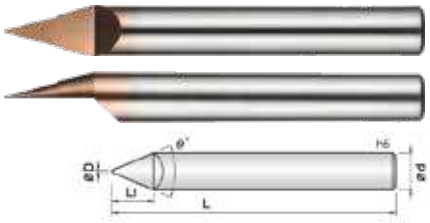
HRC50以下の高硬度鋼,プリハードン鋼,工具鋼,鋳鉄など被削材の加工

- 直線刃类型の1枚刃を適用し,彫刻NC作業に適しています。
- 種々の刃径を適用して彫刻作業時の効率性を最大限にしました。

1날 직선 날 테이퍼 엔드밀

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 1날을 적용하여 조각NC 작업에 적합합니다.
- 다양한 날경의 적용으로 조각 작업시 효율성을 최대화 하였습니다.



Size	D Tolerance
Ø0	+0.05~ -0mm
Ø0.1~0.2	+0~ -0.02mm

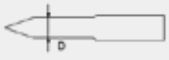
単位/Unit : mm

Order Number	Diameter	Angle	Length of Cut	Overall Length	Shank Dia
	D	θ	L1	L	d
1DTE 000 200 S04	0	20°	5	40	4
1DTE 000 200 S06	0	20°	5	50	6
1DTE 000 300 S04	0	30°	5	40	4
1DTE 000 300 S06	0	30°	5	50	6
1DTE 000 900 S04	0	90°	2	40	4
1DTE 000 900 S06	0	90°	3	50	6
1DTE 000 1200 S06	0	120°	1.73	50	6
1DTE 0005 200 S04	0.05	20°	5	40	4
1DTE 0005 200 S06	0.05	20°	5	50	6
1DTE 0005 300 S04	0.05	30°	5	40	4
1DTE 0005 300 S06	0.05	30°	5	50	6
1DTE 0005 900 S04	0.05	90°	1.97	40	4
1DTE 0005 900 S06	0.05	90°	2.97	50	6
1DTE 0005 1200 S06	0.05	120°	1.71	50	6
1DTE 001 200 S04	0.1	20°	5	40	4
1DTE 001 200 S06	0.1	20°	5	50	6
1DTE 001 300 S04	0.1	30°	5	40	4
1DTE 001 300 S06	0.1	30°	5	50	6
1DTE 001 600 S04	0.1	60°	3.37	40	4
1DTE 001 900 S04	0.1	90°	1.95	40	4
1DTE 001 900 S06	0.1	90°	2.95	50	6

Order Number	Diameter	Angle	Length of Cut	Overall Length	Shank Dia
	D	θ	L1	L	d
1DTE 001 1200 S06	0.1	120°	1.7	50	6
1DTE 0015 200 S04	0.15	20°	5	40	4
1DTE 0015 200 S06	0.15	20°	5	50	6
1DTE 0015 300 S04	0.15	30°	5	40	4
1DTE 0015 300 S06	0.15	30°	5	50	6
1DTE 0015 600 S04	0.15	60°	3.33	40	4
1DTE 0015 900 S04	0.15	90°	1.92	40	4
1DTE 0015 900 S06	0.15	90°	2.92	50	6
1DTE 0015 1200 S06	0.15	120°	1.68	50	6
1DTE 002 200 S04	0.2	20°	5	40	4
1DTE 002 200 S06	0.2	20°	5	50	6
1DTE 002 300 S04	0.2	30°	5	40	4
1DTE 002 300 S06	0.2	30°	5	50	6
1DTE 002 600 S04	0.2	60°	3.29	40	4
1DTE 002 900 S04	0.2	90°	1.9	40	4
1DTE 002 900 S06	0.2	90°	2.9	50	6
1DTE 002 1200 S06	0.2	120°	1.67	50	6
1DTE 003 200 S04	0.3	20°	5	40	4
1DTE 003 300 S04	0.3	30°	5	40	4
1DTE 003 600 S04	0.3	60°	3.2	40	4
1DTE 003 900 S04	0.3	90°	1.85	40	4

1DTE/2ATE/4DTE

• RPM : rev./min • Feed : mm/min

Material	Mild Steels / Carbon Steels S54C ~ S55C		Alloy Steels SKD / SUS / SCM		Prehardened Steels NAK / HPM	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	3,400 ~ 7,000	70 ~ 100	2,600 ~ 5,200	50 ~ 90	2,000 ~ 4,000	40 ~ 60
3mm	2,700 ~ 5,300	60 ~ 85	2,100 ~ 4,200	45 ~ 70	1,600 ~ 3,200	35 ~ 50
4mm	2,000 ~ 4,000	50 ~ 70	1,600 ~ 3,200	40 ~ 55	1,200 ~ 2,400	30 ~ 40
5mm	1,700 ~ 3,400	45 ~ 60	1,400 ~ 2,600	35 ~ 50	1,000 ~ 2,000	26 ~ 35
6mm	1,300 ~ 2,700	40 ~ 50	1,100 ~ 2,100	30 ~ 40	800 ~ 1,600	22 ~ 30
7mm	1,150 ~ 2,400	35 ~ 45	950 ~ 1,900	28 ~ 37	700 ~ 1,400	21 ~ 28
8mm	1,000 ~ 2,000	30 ~ 40	800 ~ 1,600	26 ~ 34	600 ~ 1,200	20 ~ 25
9mm	900 ~ 1,800	30 ~ 40	700 ~ 1,450	24 ~ 32	550 ~ 1,100	18 ~ 23
10mm	800 ~ 1,600	30 ~ 37	600 ~ 1,300	23 ~ 29	500 ~ 1,000	17 ~ 22
11mm	750 ~ 1,450	30 ~ 37	550 ~ 1,200	22 ~ 28	450 ~ 900	16 ~ 21
12mm	700 ~ 1,300	28 ~ 35	500 ~ 1,100	21 ~ 27	400 ~ 800	16 ~ 20
Depth of Cut	Ad : ~ 0.05D 					

2 Flutes Straight Flute Taper Endmills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron.(~HRC50)

- Optimum for NC engraving, chamfering and centering with straight 2flutes.
- Resin, plastic machining applicable with coated or non coated endmill.



2刃直線刃テーパエンドミル

HRC50以下の高硬度鋼,プリハードン鋼,工具鋼,鋳鉄など被削材の加工

- 直線刃类型の2枚刃を適用し,彫刻NC作業,被削材コーナー面取り,センタリング作業に適しています。
- コーティングと非コーティングに区分して樹脂,アクリルなどの加工も可能です。

2날 직선 날 테이퍼 엔드밀

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 2날을 적용하여 조각NC 작업, 피삭재 모서리 면취, 센터링 작업에 적합합니다.
- 코팅과 비코팅으로 구분하여 수지, 아크릴 등의 가공도 가능합니다.



Size	D Tolerance
Ø0	+0.05~ -0mm

単位/Unit : mm

Order Number		Diameter	Angle	Length of cut	Overall Length	Shank Dia
Non coated	Coated	D	θ	L1	L	d
2ATE 000 300 S03	2DTE 000 300 S03	0	30°	5.5	60	3
2ATE 000 300 S04	2DTE 000 300 S04	0	30°	7.4	60	4
2ATE 000 300 S06	2DTE 000 300 S06	0	30°	11.1	60	6
2ATE 000 600 S03	2DTE 000 600 S03	0	60°	2.5	60	3
2ATE 000 600 S04	2DTE 000 600 S04	0	60°	3.4	60	4
2ATE 000 600 S06	2DTE 000 600 S06	0	60°	5.1	60	6
2ATE 000 600 S08	2DTE 000 600 S08	0	60°	6.9	65	8
2ATE 000 600 S10	2DTE 000 600 S10	0	60°	8.6	70	10
2ATE 000 600 S12	2DTE 000 600 S12	0	60°	10.3	75	12
2ATE 000 900 S03	2DTE 000 900 S03	0	90°	1.5	60	3
2ATE 000 900 S04	2DTE 000 900 S04	0	90°	2	60	4
2ATE 000 900 S06	2DTE 000 900 S06	0	90°	3	60	6
2ATE 000 900 S08	2DTE 000 900 S08	0	90°	4	65	8
2ATE 000 900 S10	2DTE 000 900 S10	0	90°	5	70	10
2ATE 000 900 S12	2DTE 000 900 S12	0	90°	6	75	12
2ATE 000 1200 S03	2DTE 000 1200 S03	0	120°	0.86	60	3
2ATE 000 1200 S04	2DTE 000 1200 S04	0	120°	1.15	60	4
2ATE 000 1200 S06	2DTE 000 1200 S06	0	120°	1.73	60	6
2ATE 000 1200 S08	2DTE 000 1200 S08	0	120°	2.3	65	8
2ATE 000 1200 S10	2DTE 000 1200 S10	0	120°	2.88	70	10
2ATE 000 1200 S12	2DTE 000 1200 S12	0	120°	3.46	75	12

2AEN

• RPM : rev./min • Feed : mm/min

Material	Mild Steels / Carbon Steels SS400/S55C		Alloy Steels /Tools Steels SKD / SUS / SCM		Aluminum Alloys	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	1,400	100	800	50	4,800	280
3mm	1,400	100	800	50	4,800	280
4mm	1,280	100	690	50	4,200	280
5mm	1,300	100	640	50	3,300	280
6mm	1,150	100	600	50	2,900	280
8mm	1,000	100	530	50	2,600	280
10mm	850	90	490	40	2,400	260
12mm	720	90	410	40	1,900	260
14mm	610	90	340	40	1,700	240
16mm	550	90	310	40	1,500	230
Depth of Cut						

4 Flutes Straight Flute Taper End Mills

Endmills for various work materials,hardened steel(HRC~52), pre-hardened steel, tool steel and cast iron.

- Good wear resistance by Si-based PVD coating.
- Optimum for NC engravig, chamfering and centering with straight 4flutes.





4刃直線刃テーパエンドミル

HRC52以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- シリコン系コーティング(Si)処理し、耐摩耗性に優れています。
- 直線刃タイプ4刃を適用し、彫刻NC作業、被削材のエッジ面取り、センタリング作業に最高の性能を発揮します。

4날 직선 날 테이퍼 엔드밀

HRC52이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 직선날 타입 4날을 적용하여 조각NC 작업, 피삭재 모서리 면취, 센터링 작업에 최고의 성능을 발휘합니다.

Size	D Tolerance
Ø0	+0.05~ -0mm

単位/Unit : mm

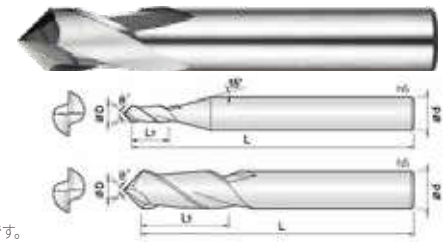
Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
4DTE 000 600 S03	0	60°	2.5	50	3
4DTE 000 600 S04	0	60°	3.4	50	4
4DTE 000 600 S06	0	60°	5.1	60	6
4DTE 000 600 S08	0	60°	6.9	65	8
4DTE 000 600 S10	0	60°	8.6	75	10
4DTE 000 600 S12	0	60°	10.3	80	12
4DTE 000 900 030	0	90°	3	100	6
4DTE 000 900 040	0	90°	4	100	8
4DTE 000 900 050	0	90°	5	100	10
4DTE 000 900 080	0	90°	8	100	16
4DTE 000 900 S03	0	90°	1.5	50	3
4DTE 000 900 S04	0	90°	2	50	4
4DTE 000 900 S06	0	90°	3	60	6
4DTE 000 900 S08	0	90°	4	65	8
4DTE 000 900 S10	0	90°	5	75	10
4DTE 000 900 S12	0	90°	6	80	12



2 Flutes Centering End Millls

Non coating: Acryl, ABS, Aluminum, non-ferrous and non-metallic materials
Coating: Pre-hardened steel, Cast iron, Non-metallic materials

- Multi function endmill for corner chamfering, side wall and centering.
- Endmills for various work materials, hardened steel(HRC50), pre-hardened steel, tool steel and cast iron.



2刃センタリングエンドミル

非コーティング：アクリル,ABS,アルミニウムなどの非鉄,非金属被削材加工エンドミル
コーティング：プリハードン鋼,一般鋼,鋳物非鉄合金加工エンドミル

- センタリング作業が可能であり,コーナー面取りと側面切削を同時に加工できる多機能エンドミルです。
- コーティングと非コーティングに区分してHRC50以下の高硬度鋼,プリハードン鋼,鋳鉄など種々の被削材加工が可能です。

2날 센터링 엔드밀

비코팅: 아크릴, ABS, 알루미늄 등 비철, 비금속 피삭재 가공 엔드밀
코 팅: 프리하든강, 일반강, 주물 비철합금 가공 엔드밀

- 센터링 작업이 가능하며, 모서리 면취와 측면절삭을 동시에 가공할 수 있는 다기능 엔드밀 입니다.
- 코팅과 비코팅으로 구분하여 HRC50이하의 고경도강, 프리하든강, 주철 등 다양한 피삭재 가공이 가능합니다.

Size	D Tolerance
Ø3~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø14~16	-0.015~ -0.03mm

単位/Unit : mm

Order Number		Diameter	Angle	Length of cut	Overall Length	Shank Dia
Non coated	Coated	D	θ	L1	L	d
2AEN 002 600 S03	2DEN 002 600 S03	0.2	60°	0.4	40	3
2AEN 002 900 S03	2DEN 002 900 S03	0.2	90°	0.4	40	3
2AEN 003 600 S03	2DEN 003 600 S03	0.3	60°	0.6	45	3
2AEN 003 900 S03	2DEN 003 900 S03	0.3	90°	0.6	45	3
2AEN 005 600 S03	2DEN 005 600 S03	0.5	60°	1	50	3
2AEN 005 900 S03	2DEN 005 900 S03	0.5	90°	1	50	3
2AEN 008 600 S03	2DEN 008 600 S03	0.8	60°	1.6	50	3
2AEN 008 900 S03	2DEN 008 900 S03	0.8	90°	1.6	50	3
2AEN 010 600 S03	2DEN 010 600 S03	1	60°	2	50	3
2AEN 010 900 S03	2DEN 010 900 S03	1	90°	2	50	3
2AEN 015 600 S03	2DEN 015 600 S03	1.5	60°	3	50	3
2AEN 015 900 S03	2DEN 015 900 S03	1.5	90°	3	50	3
2AEN 020 600 S03	2DEN 020 600 S03	2	60°	4	50	3
2AEN 020 900 S03	2DEN 020 900 S03	2	90°	4	50	3
2AEN 030 600 S03	2DEN 030 600 S03	3	60°	6	50	3
2AEN 030 600 S06	2DEN 030 600 S06	3	60°	6	50	6
2AEN 030 900 S03	2DEN 030 900 S03	3	90°	6	50	3
2AEN 030 900 S06	2DEN 030 900 S06	3	90°	6	50	6
2AEN 040 600 S06	2DEN 040 600 S06	4	60°	8	50	6
2AEN 040 900 S06	2DEN 040 900 S06	4	90°	8	50	6
2AEN 050 600 S06	2DEN 050 600 S06	5	60°	10	50	6
2AEN 050 900 S06	2DEN 050 900 S06	5	90°	10	50	6
2AEN 060 600 S06	2DEN 060 600 S06	6	60°	12	60	6
2AEN 060 900 S06	2DEN 060 900 S06	6	90°	12	60	6
2AEN 080 600 S08	2DEN 080 600 S08	8	60°	16	70	8
2AEN 080 900 S08	2DEN 080 900 S08	8	90°	16	70	8
2AEN 100 600 S10	2DEN 100 600 S10	10	60°	18	70	10
2AEN 100 900 S10	2DEN 100 900 S10	10	90°	18	70	10
2AEN 120 600 S12	2DEN 120 600 S12	12	60°	20	75	12
2AEN 120 900 S12	2DEN 120 900 S12	12	90°	20	75	12
2AEN 140 600 S14	2DEN 140 600 S14	14	60°	26	80	14
2AEN 140 900 S14	2DEN 140 900 S14	14	90°	26	80	14
2AEN 160 600 S16	2DEN 160 600 S16	16	60°	32	100	16
2AEN 160 900 S16	2DEN 160 900 S16	16	90°	32	100	16

K GENERAL 2NPO

2Flutes NC spotting drill

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron.

- Optimum for centering with helix 2flutes.
- Resin, plastic machining applicable with coated or non coated endmill.

2刃NCスポッティングドリル

HRC50以下の高硬度鋼,プリハードン鋼,工具鋼,鋳鉄など被削材の加工

- ねじれ类型の2枚刃を適用し,センタリング作業に適しています。
- コーティングと非コーティングに区分して樹脂,アクリルなどの加工も可能です。

2날 NC 스포팅 드릴

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 헬릭스 타입 2날을 적용하여 센터링 작업에 적합합니다.
- 코팅과 비코팅으로 구분하여 수지, 아크릴 등의 가공도 가능합니다.





Size	D Tolerance
Ø2~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16	-0.015~ -0.03mm

単位/Unit : mm

Order Number		Diameter	Angle	Length of cut	Overall Length	Shank Dia
Non coated	Coated	D	θ	L1	L	d
2NPO 003 090 040	2DPO 003 090 040	0.3	90°	0.9	40	3
2NPO 005 090 040	2DPO 005 090 040	0.5	90°	1.5	40	3
2NPO 008 090 040	2DPO 008 090 040	0.8	90°	2.4	40	3
2NPO 010 090 050	2DPO 010 090 050	1	90°	3	50	3
2NPO 010 120 050	2DPO 010 120 050	1	120°	3	50	3
2NPO 015 090 050	2DPO 015 090 050	1.5	90°	4.5	50	3
2NPO 020 090 050	2DPO 020 090 050	2	90°	6	50	3
2NPO 020 120 050	2DPO 020 120 050	2	120°	6	50	3
2NPO 030 090 050	2DPO 030 090 050	3	90°	10	50	3
2NPO 030 090 100	2DPO 030 090 100	3	90°	10	100	3
2NPO 030 120 050	2DPO 030 120 050	3	120°	10	50	3
2NPO 030 120 100	2DPO 030 120 100	3	120°	10	100	3
2NPO 040 090 050	2DPO 040 090 050	4	90°	12	50	4
2NPO 040 090 100	2DPO 040 090 100	4	90°	12	100	4
2NPO 040 120 050	2DPO 040 120 050	4	120°	12	50	4
2NPO 040 120 100	2DPO 040 120 100	4	120°	12	100	4
2NPO 060 090 070	2DPO 060 090 070	6	90°	15	70	6
2NPO 060 090 110	2DPO 060 090 110	6	90°	15	110	6
2NPO 060 120 070	2DPO 060 120 070	6	120°	15	70	6
2NPO 060 120 110	2DPO 060 120 110	6	120°	15	110	6
2NPO 080 090 080	2DPO 080 090 080	8	90°	25	80	8
2NPO 080 120 080	2DPO 080 120 080	8	120°	25	80	8
2NPO 100 090 090	2DPO 100 090 090	10	90°	25	90	10
2NPO 100 090 150	2DPO 100 090 150	10	90°	25	150	10
2NPO 100 120 090	2DPO 100 120 090	10	120°	25	90	10
2NPO 100 120 150	2DPO 100 120 150	10	120°	25	150	10
2NPO 120 090 090	2DPO 120 090 090	12	90°	30	90	12
2NPO 120 090 150	2DPO 120 090 150	12	90°	30	150	12
2NPO 120 120 090	2DPO 120 120 090	12	120°	30	90	12
2NPO 120 120 150	2DPO 120 120 150	12	120°	30	150	12
2NPO 160 090 110	2DPO 160 090 110	16	90°	35	110	16
2NPO 160 120 110	2DPO 160 120 110	16	120°	35	110	16

Ø0.8 ~ Ø1

2&3 Flutes 90° Chamfering Cutter

Endmills for various work materials,hardened steel(HRC~52), pre-hardened steel, tool steel and cast iron.

- Good wear resistance by Si-based PVD coating.
- Applied helix 2flutes design for better performance in corner chamfering.



2,3刃90°面取カッター

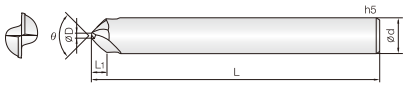
HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- シリコン系コーティング(Si)処理し、耐摩耗性に優れています。
- ヘリックスタイプ2刃を適用し、エッジ面取加工時の切削力が良く、被削材の粗度に優れています。

2,3날 90° 면취 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 실리콘계 코팅(Si) 처리하여 내마모성이 우수합니다.
- 헬릭스 타입 2날을 적용하여 모서리 면취 가공시 절삭력이 좋으며, 피삭재의 조도가 우수합니다.



Size	D Tolerance
Ø0.8~1	+0 ~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	θ	L1	L	d
2CFC 008 900 011	0.8	90°	1.1	50	3
2CFC 008 900 016	0.8	90°	1.6	50	4
2CFC 010 900 025	1	90°	2.5	60	6
2CFC 010 900 035	1	90°	3.5	70	8
2CFC 010 900 045	1	90°	4.5	80	10
2CFC 010 900 055	1	90°	5.5	90	12
3CFC 008 900 011	0.8	90°	1.1	50	3
3CFC 008 900 016	0.8	90°	1.6	50	4
3CFC 010 900 025	1	90°	2.5	60	6
3CFC 010 900 035	1	90°	3.5	65	8
3CFC 020 900 040	2	90°	4	75	10
3CFC 020 900 050	2	90°	5	80	12

2&3CFC

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels		Alloy Steels		Hardened Steels	
Hardness	~ 225HB		225 ~ 325HB		35 ~ 40HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
3Ø	4,200	70	3,000	55	2,500	40
4Ø	3,000	60	2,500	45	1,800	35
6Ø	2,000	40	1,500	35	1,200	25
8Ø	1,500	35	1,200	30	900	25
10Ø	1,200	35	1,000	25	900	20
12Ø	1,000	30	850	25	600	20
Depth of Cut	• Ap: 0.1d • Ap: Axial Depth					



•The parameters on the table is based on 2 flutes. To change the number of flutes, refer to the same diameter of other parameters and then adjust it.

Ø0.5 ~ Ø3

2 Flutes Miniature Chamfering End Mills

Pre-hardened steel, cast iron, non-metallic materials

- Multi function endmill for corner chamfering, side wall and centering.
- Applied fine WC grade optimized for various non-ferrous and non-metallic work materials.

2刃小径面取エンドミル

プリハードン鋼、一般鋼、鋳物・非鉄合金加工用のエンドミル

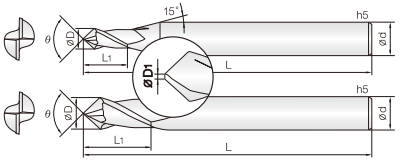
- センタリング作業及びエッジ面取りと側面切削を同時に加工できる多機能のエンドミルです。
- 微粒子の超硬合金を採用し、様々な非鉄合金やモックアップの被削材に適用可能です。

2날 소경 면취 엔드밀

프리하든강, 일반강, 주물 비철합금 가공엔드밀

- 센터링 작업 및 모서리 면취와 측면절삭을 동시에 가공 할 수 있는 다기능 엔드밀 입니다.
- 미립자 초경합금을 채택, 다양한 비철합금과 목업의 피삭재에 적용 가능합니다.





Size	D Tolerance
Ø0.5~3	+0 ~ -0.01mm

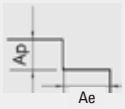
単位/Unit : mm

Order Number	Diameter	Neck Diameter	Angle	Length of cut	Overall Length	Shank Dia
	D	D1	θ	L1	L	d
2MCE 005 0005 090	0.5	0.05	90°	1	40	3
2MCE 006 0005 090	0.6	0.05	90°	1.2	40	3
2MCE 007 0005 090	0.7	0.05	90°	1.4	40	3
2MCE 008 0005 090	0.8	0.05	90°	1.6	40	3
2MCE 010 0005 090	1	0.05	90°	2	40	3
2MCE 010 001 090	1	0.1	90°	2	40	3
2MCE 010 001 120	1	0.1	120°	2	40	3
2MCE 012 001 090	1.2	0.1	90°	2.4	40	3
2MCE 015 001 090	1.5	0.1	90°	3	40	3
2MCE 015 001 120	1.5	0.1	120°	3	40	3
2MCE 020 001 090	2	0.1	90°	4	40	3
2MCE 020 002 090	2	0.2	90°	4	40	3
2MCE 020 002 120	2	0.2	120°	4	40	3
2MCE 025 002 090	2.5	0.2	90°	5	40	3
2MCE 030 002 090	3	0.2	90°	6	40	3
2MCE 030 002 120	3	0.2	120°	6	40	3

2MCE/2CCE

• RPM : rev./min • Feed : mm/min

Material	Mild Steels/ Carbon Steels				Alloy Steels				Prehardened Steels (30~45HRC)				Copper				Aluminum			
Outside Diameter	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
Ø1	28,000	230	1.5	0.05	24,500	180	1.5	0.05	17,500	120	1.5	0.05	23,000	150	1.5	0.1	50,000	400	1.5	0.2
Ø1.5	18,700	340	2	0.10	16,300	180	2	0.10	11,700	120	2	0.10	13,000	150	2	0.3	40,900	400	2	0.3
Ø2	14,000	360	2.5	0.15	12,300	220	2.5	0.15	8,800	170	2.5	0.15	11,500	150	2.5	0.4	31,800	400	2.5	0.4
Ø3	9,300	390	4	0.30	8,200	240	4	0.30	5,800	170	4	0.30	8,000	200	4	0.6	21,200	400	4	0.6
Ø4	7,000	390	5	0.40	6,100	240	5	0.40	4,400	180	5	0.40	6,000	200	5	0.8	15,900	500	5	0.8
Ø5	5,600	470	6	0.50	4,900	260	6	0.50	3,500	200	6	0.50	5,000	200	6	1.0	12,700	500	6	1.0
Ø6	4,700	480	8	0.60	4,100	270	8	0.60	2,900	200	8	0.60	4,000	200	8	1.2	10,600	500	8	1.2
Ø8	3,500	470	10	1.00	3,100	270	10	1.00	2,200	200	10	1.00	3,000	200	10	1.6	8,000	600	10	1.6
Ø10	2,800	480	12	1.20	2,500	280	12	1.20	1,800	200	12	1.20	2,400	200	12	2.0	6,400	600	12	2.0
Ø12	2,300	470	15	1.50	2,000	260	15	1.50	1,500	200	15	1.50	2,000	200	15	2.4	5,300	700	15	2.4
Depth of Cut	Side Milling *Ap: Axial Depth *Ae: Radial Depth																			



• Grooving with 2MCE is not possible and 2CCE is also not recommended.
• Above parameters are for side milling.

K GENERAL 2CCE

2 Flutes Corner C End Mills

Pre-hardened steel, cast iron, non-metallic materials

- Multi function endmill for corner chamfering, side wall.
- Minimize edge chipping by applying edge chamfering design.

2刃コーナー45°面取エンドミル

プリハードン鋼、一般鋼、鋳物・非鉄合金加工用のエンドミル

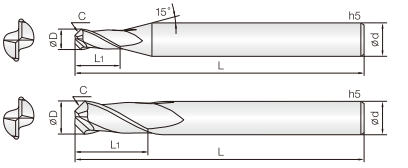
- エッジ面取りと側面切削を同時に加工できる多機能のエンドミルです。
- エンドミルの引線を面取設計し、エンドミルのチッピングを最小化しました。

2날 코너 45° 면취 엔드밀

프리하든강, 일반강, 주물 비철합금 가공엔드밀

- 모서리 면취와 측면절삭을 동시에 가공할 수 있는 다기능 엔드밀입니다.
- 엔드밀의 인선을 면취설계하여 엔드밀의 치핑을 최소화 하였습니다.





Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm

単位/Unit : mm

Order Number	Diameter	Chamfer	Length of Cut	Overall Length	Shank Dia
	D	C	L1	L	d
2CCE 010 0002 S04	1	0.02	2.5	45	4
2CCE 010 0005 S04	1	0.05	2.5	45	4
2CCE 010 001 S04	1	0.1	2.5	45	4
2CCE 010 002 S04	1	0.2	2.5	45	4
2CCE 010 003 S04	1	0.3	2.5	45	4
2CCE 015 0005 S04	1.5	0.05	4	45	4
2CCE 015 001 S04	1.5	0.1	4	45	4
2CCE 015 002 S04	1.5	0.2	4	45	4
2CCE 015 003 S04	1.5	0.3	4	45	4
2CCE 015 005 S04	1.5	0.5	4	45	4
2CCE 020 0005 S04	2	0.05	6	45	4
2CCE 020 001 S04	2	0.1	6	45	4
2CCE 020 002 S04	2	0.2	6	45	4
2CCE 020 003 S04	2	0.3	6	45	4
2CCE 020 004 S04	2	0.4	6	45	4
2CCE 020 005 S04	2	0.5	6	45	4
2CCE 030 0005 S06	3	0.05	8	50	6
2CCE 030 001 S06	3	0.1	8	50	6
2CCE 030 002 S06	3	0.2	8	50	6
2CCE 030 003 S06	3	0.3	8	50	6
2CCE 030 005 S06	3	0.5	8	50	6
2CCE 030 010 S06	3	1	8	50	6
2CCE 040 0005 S06	4	0.05	11	50	6
2CCE 040 001 S06	4	0.1	11	50	6
2CCE 040 002 S06	4	0.2	11	50	6
2CCE 040 003 S06	4	0.3	11	50	6
2CCE 040 005 S06	4	0.5	11	50	6
2CCE 040 010 S06	4	1	11	50	6
2CCE 040 015 S06	4	1.5	11	50	6
2CCE 050 001 S06	5	0.1	13	60	6
2CCE 050 002 S06	5	0.2	13	60	6
2CCE 050 005 S06	5	0.5	13	60	6
2CCE 050 010 S06	5	1	13	60	6



单位/Unit : mm

Order Number	Diameter	Chamfer	Length of Cut	Overall Length	Shank Dia
	D	C	L1	L	d
2CCE 050 015 S06	5	1.5	13	60	6
2CCE 050 020 S06	5	2	13	60	6
2CCE 060 0005 S06	6	0.05	13	60	6
2CCE 060 001 S06	6	0.1	13	60	6
2CCE 060 002 S06	6	0.2	13	60	6
2CCE 060 003 S06	6	0.3	13	60	6
2CCE 060 005 S06	6	0.5	13	60	6
2CCE 060 010 S06	6	1	13	60	6
2CCE 060 015 S06	6	1.5	13	60	6
2CCE 060 020 S06	6	2	13	60	6
2CCE 060 025 S06	6	2.5	13	60	6
2CCE 080 001 S08	8	0.1	19	70	8
2CCE 080 002 S08	8	0.2	19	70	8
2CCE 080 005 S08	8	0.5	19	70	8
2CCE 080 010 S08	8	1	19	70	8
2CCE 080 015 S08	8	1.5	19	70	8
2CCE 080 020 S08	8	2	19	70	8
2CCE 080 025 S08	8	2.5	19	70	8
2CCE 080 030 S08	8	3	19	70	8
2CCE 100 001 S10	10	0.1	22	75	10
2CCE 100 002 S10	10	0.2	22	75	10
2CCE 100 005 S10	10	0.5	22	75	10
2CCE 100 010 S10	10	1	22	75	10
2CCE 100 015 S10	10	1.5	22	75	10
2CCE 100 020 S10	10	2	22	75	10
2CCE 100 030 S10	10	3	22	75	10
2CCE 100 040 S10	10	4	22	75	10
2CCE 120 001 S12	12	0.1	26	80	12
2CCE 120 002 S12	12	0.2	26	80	12
2CCE 120 005 S12	12	0.5	26	80	12
2CCE 120 010 S12	12	1	26	80	12
2CCE 120 015 S12	12	1.5	26	80	12
2CCE 120 020 S12	12	2	26	80	12
2CCE 120 030 S12	12	3	26	80	12
2CCE 120 040 S12	12	4	26	80	12
2CCE 120 050 S12	12	5	26	80	12

K GENERAL 4TSC

4 Flutes T-Slot Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel, tool steel and cast iron.

- Various shapes and length provides optimum efficiency.
- Resin, plastic machining applicable with coated or non coated endmill.



4刃Tカッター

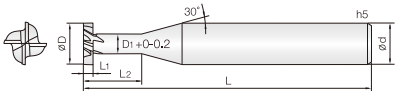
HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。
- コーティングと非コーティングに分けて樹脂、アクリルなどの加工も可能です。

4날 T 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.
- 코팅과 비코팅으로 구분하여 수지, 아크릴 등의 가공도 가능합니다.



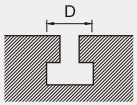
Size	D Tolerance
Ø2~5	+0~ -0.02mm
Ø6~12	-0.01~ -0.003mm

単位/Unit : mm

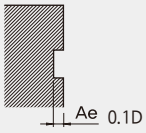
Order Number		Diameter	Length of Cut	Effective Length	Neck Diameter	Overall Length	Shank Dia
Non coated	Coated	D	L1	L2	D1	L	d
4TSC 020 003 040	4TSCD 020 003 040	2	0.3	4	1	50	6
4TSC 020 005 040	4TSCD 020 005 040	2	0.5	4	1	50	6
4TSC 030 003 045	4TSCD 030 003 045	3	0.3	4.5	1.5	50	6
4TSC 030 005 045	4TSCD 030 005 045	3	0.5	4.5	1.5	50	6
4TSC 030 010 045	4TSCD 030 010 045	3	1	4.5	1.5	50	6
4TSC 040 003 050	4TSCD 040 003 050	4	0.3	5	2	50	6
4TSC 040 005 050	4TSCD 040 005 050	4	0.5	5	2	50	6
4TSC 040 010 050	4TSCD 040 010 050	4	1	5	2	50	6
4TSC 050 005 045	4TSCD 050 005 045	5	0.5	4.5	2.5	50	6
4TSC 050 010 050	4TSCD 050 010 050	5	1	5	2.5	50	6
4TSC 050 015 055	4TSCD 050 015 055	5	1.5	5.5	2.5	50	6
4TSC 050 020 060	4TSCD 050 020 060	5	2	6	2.5	50	6
4TSC 060 005 045	4TSCD 060 005 045	6	0.5	4.5	3	60	6
4TSC 060 010 050	4TSCD 060 010 050	6	1	5	3	60	6
4TSC 060 015 055	4TSCD 060 015 055	6	1.5	5.5	3	60	6
4TSC 060 020 060	4TSCD 060 020 060	6	2	6	3	60	6
4TSC 080 005 045	4TSCD 080 005 045	8	0.5	4.5	4	60	8
4TSC 080 010 050	4TSCD 080 010 050	8	1	5	4	60	8
4TSC 080 015 055	4TSCD 080 015 055	8	1.5	5.5	4	60	8
4TSC 080 020 060	4TSCD 080 020 060	8	2	6	4	60	8
4TSC 080 030 070	4TSCD 080 030 070	8	3	7	4	60	8
4TSC 100 010 070	4TSCD 100 010 070	10	1	7	5	70	10
4TSC 100 020 080	4TSCD 100 020 080	10	2	8	5	70	10
4TSC 100 030 090	4TSCD 100 030 090	10	3	9	5	70	10

4TSC/4TSR/3TDR/4&6TDC/3&4HTC/4&6TAC

• RPM : rev./min • Feed : mm/min

Slotting						
Material	Mild Steels / Carbon Steels		Alloy Steels		Prehardened Steels	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
Ø1.5	3,050	117	1,890	77	1,530	59
Ø2	2,850	110	1,790	72	1,440	55
Ø2.5	2,680	99	1,700	66	1,350	50
Ø3	2,500	92	1,610	60	1,260	45
Ø4	2,150	81	1,430	54	1,080	41
Ø5	1,800	70	1,200	47	900	35
Ø6	1,430	59	950	39	720	30
Ø8	1,070	44	720	30	540	22
Ø10	860	35	580	23	430	17
Ø12	720	30	480	20	360	14
Depth of Cut						

• Use the same RPM and reduce the feed by 30% for 3TDR.

Side Cutting						
Material	Mild Steels / Carbon Steels		Alloy Steels		Prehardened Steels	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
Ø1.5	3,050	162	1,890	94	1,530	76
Ø2	2,850	149	1,790	88	1,440	70
Ø2.5	2,680	135	1,700	83	1,350	65
Ø3	2,500	122	1,610	79	1,260	59
Ø4	2,150	108	1,430	72	1,080	54
Ø5	1,800	95	1,200	65	900	49
Ø6	1,430	86	950	58	720	43
Ø8	1,070	64	720	43	540	32
Ø10	860	52	580	34	430	26
Ø12	720	43	480	29	360	22
Depth of Cut						

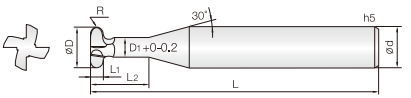
• When entering the tool to the workpiece, enter the tool from outside to the workpiece.
• The parameters on the table is based on 4 flutes. For using 3TDR, use the same RPM and reduce the feed by 30%.

4 Flutes T-R Slot Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel, tool steel and cast iron.

- Minimize edge chipping by applying straight 4flutes design.
- Various shapes and length provides optimum efficiency.





4刃T-Rカッター

HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- 直線刃タイプ4刃を適用し、引線部のチッピングを最小限に抑えました。
- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。

4날 T-R 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 4날을 적용하여 인선부 치핑을 최소화 하였습니다.
- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.

Size	D Tolerance
Ø5~12	-0.01~ -0.025mm

単位/Unit : mm

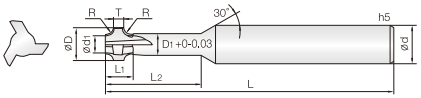
Order Number	Diameter	Length of Cut	Effective Length	Neck Diameter	Overall Length	Shank Dia
	DxR	L1	L2	D1	L	d
4TSR 050 010 045	5X0.5R	1	4.5	2.5	50	6
4TSR 050 010 070	5X0.5R	1	7	2.5	50	6
4TSR 050 020 055	5X1R	2	5.5	2.5	50	6
4TSR 060 010 050	6X0.5R	1	5	3	50	6
4TSR 060 010 080	6X0.5R	1	8	3	50	6
4TSR 060 015 055	6X0.75R	1.5	5.5	3	50	6
4TSR 060 020 060	6X1R	2	6	3	50	6
4TSR 060 020 100	6X1R	2	10	3	50	6
4TSR 080 020 070	8X1R	2	7	4	60	8
4TSR 080 020 130	8X1R	2	13	4	60	8
4TSR 080 030 080	8X1.5R	3	8	4	60	8
4TSR 100 040 100	10X2R	4	10	4.5	70	10
4TSR 100 040 160	10X2R	4	16	4.5	70	10
4TSR 120 060 150	12X3R	6	15	5	75	12
4TSR 120 060 210	12X3R	6	21	5	75	12

3 Flutes T-Double Corner Rouding Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel,tool steel and cast iron.

*Minimize edge chipping by applying straight 3flutes design.
*Various shapes and length provides optimum efficiency.





3刃T-ダブルRカッター

HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- 直線刃タイプ3刃を適用し、引線部のチッピングを最小限に抑えました。
- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。

3날 T-더블 R 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 3날을 적용하여 인선부 치핑을 최소화 하였습니다.
- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.

Size	D Tolerance
Ø1.9~12	+0 ~ -0.03mm

単位/Unit : mm

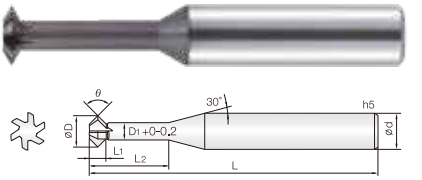
Order Number	Diameter	Front Diameter	Thickness	Length of Cut	Effective Length	Overall Length	Shank Dia
	DxR	D1	T	L1	L2	L	d
3TDR 019 002 080	1.9XR0.2	1.45	0.9	1.45	8	60	4
3TDR 024 003 090	2.4XR0.3	1.75	1.2	1.95	9	60	4
3TDR 026 004 100	2.6XR0.4	1.75	1.5	2.5	10	60	4
3TDR 029 005 120	2.9XR0.5	1.85	1.8	3	12	60	4
3TDR 049 005 150	4.9XR0.5	3.8	2	3.3	15	80	6
3TDR 068 010 200	6.8XR1	4.7	2.2	4.3	20	80	8
3TDR 079 015 250	7.9XR1.5	4.7	2.5	5.8	25	80	8
3TDR 099 020 300	9.9XR2	5.8	2.8	6.8	30	80	10
3TDR 119 030 350	11.9XR3	5.8	3	8.8	35	80	12

Ø1.5～Ø5 Ø6～Ø12 Ø1.5～Ø5 Ø6～Ø12

4&6 Flutes T-Double Angular Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel,tool steel and cast iron.

- Minimize edge chipping by applying straight 4flutes design.
- Various shapes and length provides optimum efficiency.



4&6刃T-ダブルアングルカッター

HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- 直線刃タイプ4刃を適用し、引線部のチッピングを最小限に抑えました。
- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。

4&6날 T-더블 앵글 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 4날을 적용하여 인선부 치핑을 최소화 하였습니다.
- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.

Size	D Tolerance
Ø1.5~5	+0~ -0.02mm
Ø6~12	-0.01~ -0.003mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of Cut	Effective Length	Neck Diameter	Overall Length	Shank Dia
	D	θ	L1	L2	D1	L	d
4TDC 015 600 030	1.5	60°	0.43	3	0.75	45	4
4TDC 015 900 030	1.5	90°	0.75	3	0.75	45	4
4TDC 020 600 050	2	60°	0.57	5	1	50	4
4TDC 020 900 050	2	90°	1	5	1	50	4
4TDC 025 600 060	2.5	60°	0.75	6	1.2	50	4
4TDC 025 900 060	2.5	90°	1.3	6	1.2	50	4
4TDC 030 600 075	3	60°	0.86	7.5	1.5	50	4
4TDC 030 600 120	3	60°	0.86	12	1.5	50	4
4TDC 030 900 075	3	90°	1.5	7.5	1.5	50	4
4TDC 030 900 120	3	90°	1.5	12	1.5	50	4
4TDC 040 600 100	4	60°	1.15	10	2	50	4
4TDC 040 600 160	4	60°	1.15	16	2	50	4
4TDC 040 900 100	4	90°	2	10	2	50	4
4TDC 040 900 160	4	90°	2	16	2	50	4
4TDC 050 600 125	5	60°	1.44	12.5	2.5	60	6
4TDC 050 600 200	5	60°	1.44	20	2.5	60	6
4TDC 050 900 125	5	90°	2.4	12.5	2.5	60	6
4TDC 050 900 200	5	90°	2.4	20	2.5	60	6
4TDC 060 600 150	6	60°	1.73	15	3	60	6
4TDC 060 600 250	6	60°	1.73	25	3	60	6
4TDC 060 900 150	6	90°	2.8	15	3	60	6
4TDC 060 900 250	6	90°	2.8	25	3	60	6
6TDC 080 600 200	8	60°	2.3	20	4	70	8
6TDC 080 600 280	8	60°	2.3	28	4	70	8
6TDC 080 900 200	8	90°	3.8	20	4	70	8
6TDC 080 900 280	8	90°	3.8	28	4	70	8
6TDC 100 600 250	10	60°	2.8	25	5	75	10
6TDC 100 600 350	10	60°	2.8	35	5	75	10
6TDC 100 900 250	10	90°	4.8	25	5	80	10
6TDC 100 900 350	10	90°	4.8	35	5	80	10
6TDC 120 600 300	12	60°	3.4	30	6	80	12
6TDC 120 600 420	12	60°	3.4	42	6	80	12
6TDC 120 900 300	12	90°	5.8	30	6	80	12
6TDC 120 900 420	12	90°	5.8	42	6	80	12

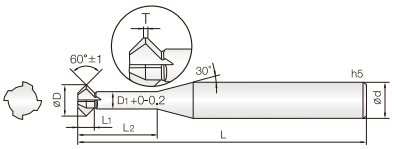
Ø0.57 ~ Ø8 Ø0.01 ~ Ø0.09

3&4 Flutes Thread Milling Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel,tool steel and cast iron.

- Minimize edge chipping and fracturing by applying straight flutes design which is appropriate to screw groove cutting.
- Various shapes and length provides optimum efficiency.





3&4刃溝加工用のカッター

HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- ねじ溝の加工に適した直線刃形状を設計し、ねじ溝を加工する時の引線部のチッピングを最小限に抑えました。
- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。

3&4날 홈 가공용 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 나사홈 가공에 적합한 직선날 형상을 설계하여, 나사홈 가공시의 인선부 치핑을 최소화 하였습니다.
- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.

Size	D Tolerance
Ø0.57~8	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Thickness	Length of Cut	Effective Length	Neck Diameter	Overall Length	Shank Dia
	D	T	L1	L2	D1	L	d
3HTC 0057 025 M008	0.57	0.01	0.16	2.5	0.3	40	4
3HTC 0065 028 M009	0.65	0.01	0.18	2.8	0.35	40	4
3HTC 007 030 M01	0.7	0.015	0.19	3	0.4	40	4
3HTC 009 036 M012	0.9	0.015	0.2	3.6	0.57	40	4
3HTC 0105 045 M014	1.05	0.02	0.24	4.5	0.66	40	4
3HTC 012 050 M016	1.2	0.02	0.28	5	0.75	40	4
4HTC 015 060 M02	1.5	0.025	0.31	6	1	45	4
4HTC 019 070 M025	1.9	0.025	0.34	7	1.35	45	4
4HTC 023 090 M03	2.3	0.03	0.43	9	1.6	65	6
4HTC 031 120 M04	3.1	0.04	0.56	12	2.2	65	6
4HTC 040 150 M05	4	0.05	0.62	15	3	65	6
4HTC 048 180 M06	4.8	0.07	0.79	18	3.55	75	6
4HTC 065 230 M08	6.5	0.08	0.94	23	5	80	8
4HTC 079 260 M10	7.9	0.09	1.13	26	6.1	80	8

K GENERAL 4&6TAN

4&6 Flutes T-Angular Cutter

Endmills for various work materials, hardened steel(HRC~50), pre-hardened steel,tool steel and cast iron.

- Minimize edge chipping by applying straight 4flutes design.
- Various shapes and length provides optimum efficiency.



4&6刃T-アングルカッター

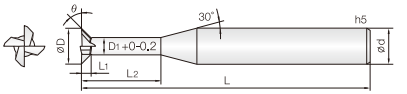
HRC50以下の高硬度鋼、プリハードン鋼、工具鋼、鋳鉄などの被削材加工

- 直線刃タイプ4刃を適用し、引線部のチッピングを最小限に抑えました。
- 多様な形状と有効長で工作物の干渉を最小限に抑え、作業効率が向上します。

4&6날 T-앵글 커터

HRC50이하의 고경도강, 프리하든강, 공구강, 주철 등 피삭재 가공

- 직선날 타입 4날을 적용하여 인선부 치핑을 최소화 하였습니다.
- 다양한 형상과 유효장으로 공작물 간섭을 최소화하여 작업효율이 향상됩니다.



Size	D Tolerance
Ø1.5~5	+0~ -0.02mm
Ø6~12	-0.01~ -0.003mm

単位/Unit : mm

Order Number	Diameter	Angle	Length of Cut	Effective Length	Neck Diameter	Overall Length	Shank Dia
	D	θ	L1	L2	D1	L	d
4TAN 015 300 030	1.5	30°	0.21	3	0.75	45	4
4TAN 015 450 030	1.5	45°	0.37	3	0.75	45	4
4TAN 020 300 050	2	30°	0.28	5	1	50	4
4TAN 020 450 050	2	45°	0.5	5	1	50	4
4TAN 025 300 060	2.5	30°	0.37	6	1.2	50	4
4TAN 025 450 060	2.5	45°	0.65	6	1.2	50	4
4TAN 030 300 075	3	30°	0.43	7.5	1.5	50	4
4TAN 030 300 120	3	30°	0.43	12	1.5	50	4
4TAN 030 450 075	3	45°	0.75	7.5	1.5	50	4
4TAN 030 450 120	3	45°	0.75	12	1.5	50	4
4TAN 040 300 100	4	30°	0.57	10	2	50	4
4TAN 040 300 160	4	30°	0.57	16	2	50	4
4TAN 040 450 100	4	45°	1	10	2	50	4
4TAN 040 450 160	4	45°	1	16	2	50	4
4TAN 050 300 125	5	30°	0.72	12.5	2.5	60	6
4TAN 050 450 125	5	45°	1.25	12.5	2.5	60	6
4TAN 060 300 150	6	30°	0.86	15	3	60	6
4TAN 060 300 240	6	30°	0.86	24	3	60	6
4TAN 060 450 150	6	45°	1.5	15	3	60	6
4TAN 060 450 240	6	45°	1.5	24	3	60	6
6TAN 080 300 200	8	30°	1.15	20	4	70	8
6TAN 080 300 280	8	30°	1.15	28	4	70	8
6TAN 080 450 200	8	45°	2	20	4	70	8
6TAN 080 450 280	8	45°	2	28	4	70	8
6TAN 100 300 250	10	30°	1.44	25	5	75	10
6TAN 100 300 350	10	30°	1.44	35	5	75	10
6TAN 100 450 250	10	45°	2.5	25	5	75	10
6TAN 100 450 350	10	45°	2.5	35	5	75	10
6TAN 120 300 300	12	30°	1.73	30	6	80	12
6TAN 120 300 420	12	30°	1.73	42	6	80	12
6TAN 120 450 300	12	45°	3	30	6	80	12
6TAN 120 450 420	12	45°	3	42	6	80	12

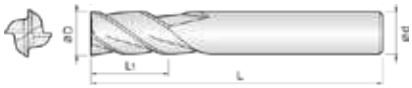
2F: Roughing
2F: Radius
D < 8
D > 8

Roughing and Finishing Endmill (4 Flutes)

Structure which facilitates at the same time process of roughing and finishing/4 Flutes (2flute for Roughing, 2flute for Finishing)

- Possible to process roughing and finishing at the same time/ Reduce time for setup (Improve Productivity)
- Designed to suppress vibraiton during semi-roughing/ Reduce noise





4刃マルチエンドミル

荒削りと仕上げ加工が同時に可能/4枚刃(2枚刃：仕上げ,2枚刃：荒削り)

- 不等分割と二重フルート適用で,振動防ぎとチップ排出が容易である。
- 同時に荒削りから仕上げ加工が可能/セットアップ時間の短縮(生産性向上)
- 中荒削り加工にも振動抑制構造設計/騒音減少

4날 황정삭 엔드밀

황삭과 정삭 가공 동시 가공 구조 / 4날(2날: 정삭, 2날:황삭)

- 동시에 황삭부터 정삭 가공 가능/ 셋업시간 단축 (생산성 향상)
- 중황삭 가공에도 진동 억제 구조 설계/ 소음 감소

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	R X D	L1	L	d
4FNR 060 003 130	0.3R X 6	13	60	6
4FNR 060 003 180	0.3R X 6	18	60	6
4FNR 080 005 065	0.5R X 8	19	65	8
4FNR 080 005 070	0.5R X 8	25	70	8
4FNR 100 005 070	0.5R X 10	22	70	10
4FNR 100 005 080	0.5R X 10	30	80	10
4FNR 120 010 080	1R X 12	26	80	12
4FNR 120 010 090	1R X 12	35	90	12
4FNR 140 010 080	1R X 14	32	80	14
4FNR 140 010 100	1R X 14	40	100	14
4FNR 160 010 090	1R X 16	32	90	16
4FNR 160 010 100	1R X 16	43	100	16
4FNR 200 010 100	1R X 20	38	100	20
4FNR 200 010 110	1R X 20	50	110	20

4FNR, 4FCE

ISO	Work Material		N/mm²	HB	min~Vmax
P	Carbon steel, cast steel, free-cutting steel	＜0.25%C	420	125	260 ~ 280
		0.25%C	650	190	200 ~ 230
		＜0.55%	850	250	160 ~ 190
		0.55%C	750	220	160 ~ 180
			1000	300	140 ~ 160
	Low alloy steel, cast steel Alloy component less than 5%		600	200	160 ~ 190
			930	275	120 ~ 140
			1000	300	130 ~ 150
			1200	350	140 ~ 160
	High alloy steel		680	200	130 ~ 160
	Cast steel, steel		1100	325	70 ~ 90
M	Stainless Steels, cast steel		680	200	110 ~ 200
			820	240	60 ~ 180
			600	180	80 ~ 120
K	Dutile Cast Iron			180	80 ~ 260
				260	130 ~ 240
	Cray Cast Iron			160	150 ~ 280
				250	90 ~ 280
	Malleable Cast Iron			130	150 ~ 280
				230	140 ~ 240
N	Copper alloy ＞ 1% Pb			110	400 ~ 430
				90	400 ~ 430
				100	270 ~ 300

Side Milling		
Diameter	Fz(min)	Fz(max)
6	0.05	0.132
8	0.06	0.176
10	0.06	0.196
12	0.07	0.216
14	0.08	0.24
16	0.1	0.26
20	0.1	0.36

Slotting		
Diameter	Fz(min)	Fz(max)
6	0.05	0.12
8	0.06	0.16
10	0.06	0.18
12	0.07	0.2
14	0.08	0.22
16	0.1	0.24
20	0.3	0.3

K BLUE 4FCE

2F: Roughing
2F: Radius
D<8
D<8

Roughing and Finishing Endmill (4 Flutes)

Structure which facilitates at the same time process of roughing and finishing/ 4 Flutes (2flute for Roughing, 2flute for Finishing)

- Possible to process roughing and finishing at the same time/ Reduce time for setup (Improve Productivity)
- Designed to suppress vibraiton during semi-roughing/ Reduce noise





4刃マルチエンドミル

荒削りと仕上げ加工が同時に可能/4枚刃(2枚刃：仕上げ,2枚刃：荒削り)

- 同時に荒削りから仕上げ加工が可能/セットアップ時間の短縮(生産性向上)
- 中荒削り加工にも振動抑制構造設計/騒音減少

4날 황정삭 엔드밀

황삭과 정삭 가공 동시 가공 구조 / 4날(2날: 정삭, 2날:황삭)

- 동시에 황삭부터 정삭 가공 가능/ 셋업시간 단축 (생산성 향상)
- 중황삭 가공에도 진동 억제 구조 설계/ 소음 감소

単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
4FCE 060 130 060	6	13	60	6
4FCE 060 180 060	6	18	60	6
4FCE 080 190 065	8	19	65	8
4FCE 080 250 070	8	25	70	8
4FCE 100 220 070	10	22	70	10
4FCE 100 300 080	10	30	80	10
4FCE 120 260 080	12	26	80	12
4FCE 120 350 090	12	35	90	12
4FCE 140 320 080	14	32	80	14
4FCE 140 400 100	14	40	100	14
4FCE 160 320 090	16	32	90	16
4FCE 160 430 100	16	43	100	16
4FCE 200 380 100	20	38	100	20
4FCE 200 500 100	20	50	100	20

K BLUE 2ECB

2Flutes Ball Endmills for Heavy cuts

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

- Good wear resistance by high quality Si-based PVD coating.
- Suitable shape is designed for tooling in wide areas.

2刃強力切削用ボールエンドミル

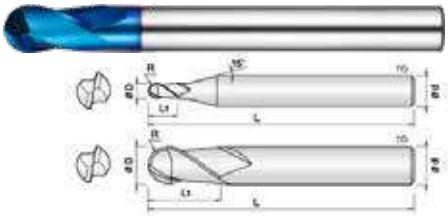
中低硬度鋼(HRC52以下),プリハードン鋼,炭素鋼,金型鋼など種々の被削材加工エンドミル

- 高含量シリコン系のコーティング(Si)処理で耐摩耗性に優れています。
- 広い領域の被削材加工に適した形状に設計しました。

2날 강력 절삭용 볼 엔드밀

중저경도강(HRC52이하), 프리하든강, 탄소강, 금형강 등 다양한 피삭재 가공 엔드밀

- 고함량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 넓은 영역의 피삭재 가공에 적합한 형상으로 설계 하였습니다.



Size	D Tolerance
Ø0.2~5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm
Ø16	-0.01~ -0.02mm

単位/Unit : mm

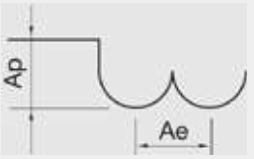
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
2ECB 002 004 S04	0.1R X 0.2	0.4	40	4
2ECB 003 006 S04	0.15R X 0.3	0.6	40	4
2ECB 004 008 S04	0.2R X 0.4	0.8	40	4
2ECB 005 010 S04	0.25R X 0.5	1	45	4
2ECB 006 012 S04	0.3R X 0.6	1.2	45	4
2ECB 007 014 S04	0.35R X 0.7	1.4	45	4
2ECB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

2ECB

• RPM : rev./min • Feed : mm/min

Material		Copper			Prehardened Steels / Hardened Steels NAK / SKD			Hardened Steels SKD / SKT		
Hardness					30~45HRc			45 ~ 55HRC		
Radius	Effective Length	RPM	FEED	Ap Axial Depth Ae Radial Depth	RPM	FEED	Ap Axial Depth Ae Radial Depth	RPM	FEED	Ap Axial Depth Ae Radial Depth
R0.05	0.2	44,000	315	Less than 0.010 0.050	44,000	315	Less than 0.005 0.040	33,000	210	Less than 0.004 0.040
R0.075	0.15	55,000	399	0.010 0.030	49,500	525	0.005 0.050	44,000	368	0.004 0.043
	0.2	59,400	452	0.012 0.008	59,400	662	0.020 0.060	48,730	525	0.016 0.048
	0.4	59,400	452	0.005 0.008	59,400	431	0.020 0.049	48,730	336	0.016 0.038
	0.3	59,400	756	0.020 0.013	59,400	788	0.030 0.090	48,730	630	0.024 0.072
	0.6	59,400	756	0.010 0.013	59,400	735	0.030 0.065	48,730	599	0.020 0.058
	0.4	59,400	914	0.028 0.016	59,400	1,050	0.040 0.120	48,730	840	0.032 0.096
R0.2	0.8	59,400	914	0.014 0.016	59,400	882	0.040 0.100	48,730	683	0.032 0.075
R0.25	0.5	61,600	1,313	0.035 0.022	58,300	1,313	0.050 0.150	47,850	1,050	0.040 0.120
R0.3	0.6	63,800	1,586	0.042 0.026	57,200	1,449	0.060 0.180	46,915	1,155	0.048 0.144
R0.35	0.7	60,500	1,775	0.049 0.031	55,000	1,512	0.070 0.210	45,183	1,208	0.056 0.168
	0.8	57,200	1,964	0.056 0.036	52,800	1,575	0.080 0.240	43,450	1,260	0.064 0.192
	2	57,200	1,964	0.300 0.036	49,500	1,129	0.080 0.150	38,500	851	0.064 0.100
	1	45,100	1,743	0.063 0.040	49,500	1,638	0.100 0.300	40,590	1,313	0.080 0.240
	2.5	45,100	1,743	0.022 0.040	44,000	1,050	0.100 0.200	34,650	840	0.080 0.160
R0.6	3	37,400	1,827	0.650 0.400	44,110	1,628	0.100 0.280	36,080	1,313	0.800 0.266
	1.5	29,700	1,922	0.087 0.068	38,500	1,680	0.150 0.450	31,570	1,344	0.120 0.360
	4	29,700	1,922	0.052 0.068	37,950	1,050	0.145 0.325	28,600	840	0.120 0.260
	2	22,000	1,869	0.112 0.089	33,000	1,943	0.200 0.600	27,060	1,554	0.160 0.480
	5	22,000	1,869	0.070 0.091	29,700	1,523	0.200 0.485	25,080	1,155	0.160 0.388
R1.25	6	17,600	1,932	0.067 0.115	28,050	1,680	0.250 0.542	23,100	1,344	0.200 0.430
	3	14,300	2,331	0.197 0.171	28,050	2,646	0.300 0.957	23,100	2,153	0.240 0.766
	8	14,300	2,331	0.100 0.171	28,050	2,468	0.300 0.765	23,100	19,740	0.240 0.612
R1.75	8	12,650	2,258	0.183 0.190	25,300	2,520	0.350 1.073	21,065	10,899	0.280 0.856
R2	4	11,000	2,184	0.266 0.208	23,100	2,573	0.400 1.380	19,030	2,058	0.320 1.100
	8	11,000	2,184	0.134 0.208	23,100	2,468	0.400 1.020	19,030	1,974	0.320 0.816
	5	9,130	2,090	0.215 0.240	19,800	2,688	0.500 1.660	16,280	2,153	0.400 1.330
R2.5	8	9,130	2,090	0.200 0.240	19,800	2,573	0.500 1.500	16,280	2,058	0.400 1.200
	10	9,130	2,090	0.190 0.240	19,800	2,520	0.500 1.300	16,280	1,995	0.400 1.020
	6	7,590	2,037	0.290 0.281	17,600	2,835	0.600 2.340	14,300	2,268	0.480 1.870
R3	10	7,590	2,037	0.250 0.281	17,600	2,625	0.600 1.800	14,300	2,100	0.480 1.440
	12	7,590	2,037	0.230 0.281	17,600	2,520	0.600 1.530	14,300	2,016	0.480 1.225
R3.5	14	6,941	1,544	0.315 0.228	15,950	2,468	0.700 2.315	12,788	1,974	0.560 1.853
	8	6,292	1,050	0.400 0.175	13,750	2,415	0.800 3.100	11,275	1,932	0.640 2.480
	14	6,292	1,050	0.400 0.175	13,750	2,100	0.800 2.050	11,275	1,680	0.640 1.640
R4.5	16	5,649	893	0.450 0.165	12,100	2,205	0.900 2.900	10,395	1,775	0.720 2.320
	10	5,005	735	0.500 0.154	11,550	2,310	1.000 3.750	9,515	1,869	0.800 3.000
R5	15	5,005	735	0.500 0.154	11,550	1,995	1.000 3.000	9,515	1,596	0.800 2.400
	18	5,005	735	0.500 0.154	11,550	1,785	1.000 2.550	9,515	1,428	0.800 2.040
R5.5	20	4,576	683	0.550 0.157	11,000	1,785	1.100 3.075	8,817	1,428	0.880 2.460
	18	4,147	630	0.600 0.159	9,900	1,785	1.200 3.600	8,118	1,428	0.960 2.880
	22	4,147	630	0.600 0.159	9,900	1,943	1.200 4.420	8,118	1,554	0.960 3.540
R6.5	24	4,101	686	0.549 0.156	9,900	1,916	1.098 3.938	7,912	1,617	0.878 3.152
R7	24	4,055	741	0.498 0.153	7,700	1,890	0.996 3.456	7,708	1,680	0.797 2.765
R8	30	3,284	630	0.413 0.147	7,700	1,785	0.827 3.318	6,243	1,428	0.661 2.654
R10	38	2,672	378	0.276 0.133	7,700	1,680	0.551 3.015	5,079	857	0.441 2.412

Depth of Cut



•Ap : Axial Depth
•Ae : Radial Depth
•D : Outside Diameter
•n : Speed
•Vf : Feed

K BLUE 2ECE

2Flutes Standard Endmills for Heavy cuts

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

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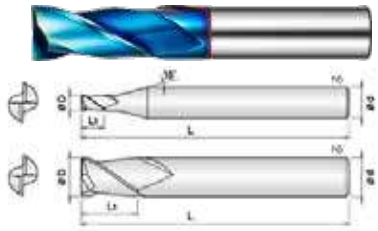
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Size	D Tolerance
Ø0.2~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ECE 002 004 S04	0.2	0.4	40	4
2ECE 003 006 S04	0.3	0.6	40	4
2ECE 004 008 S04	0.4	0.8	40	4
2ECE 005 010 S04	0.5	1	40	4
2ECE 006 012 S04	0.6	1.2	40	4
2ECE 007 014 S04	0.7	1.4	40	4
2ECE 008 016 S04	0.8	1.6	40	4
2ECE 009 018 S04	0.9	1.8	40	4
2ECE 010 025 S04	1	2.5	45	4
2ECE 012 030 S04	1.2	3	45	4
2ECE 015 040 S04	1.5	4	45	4
2ECE 020 060 S04	2	6	45	4
2ECE 025 080 S04	2.5	8	45	4
2ECE 030 080 S04	3	8	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ECE 030 080 S06	3	8	50	6
2ECE 040 110 S04	4	11	50	4
2ECE 040 110 S06	4	11	50	6
2ECE 050 130 S06	5	13	50	6
2ECE 060 130 050	6	13	50	6
2ECE 060 160 055	6	16	55	6
2ECE 080 200 060	8	20	60	8
2ECE 080 240 070	8	24	70	8
2ECE 100 220 070	10	22	70	10
2ECE 100 250 075	10	25	75	10
2ECE 120 260 075	12	26	75	12
2ECE 120 300 080	12	30	80	12
2ECE 160 400 090	16	40	90	16

2ECE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45C		Prehardened Steels NAK / CENA / KP4		Stainless Steels SUS		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35 HRc		35 ~ 45 HRc				45 ~ 55HRc	
Strength	~1,100N/mm2		1,100~1,500N/mm2				1500~2000N/mm2	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	14,322	179	9,900	105	8,910	74	7,722	32
1.5mm	13,530	189	9,768	116	8,096	84	6,534	32
2mm	12,716	200	8,316	126	6,930	95	5,544	37
2.5mm	11,330	210	7,282	137	6,028	116	4,752	37
3mm	9,812	221	6,116	147	5,082	126	3,696	42
4mm	8,316	315	5,082	189	4,268	158	3,234	42
5mm	6,930	336	4,158	200	3,476	168	2,552	53
6mm	6,116	368	3,696	231	3,124	189	2,200	58
8mm	4,620	399	2,772	210	2,310	189	1,848	79
10mm	3,586	347	2,200	168	1,848	168	1,496	63
12mm	3,014	294	1,848	137	1,496	137	1,276	58
16mm	2,420	231	1,496	116	1,166	116	990	42
20mm	1,848	179	1,166	84	924	84	748	32

Depth of Cut



0.5D
Up to Ø3:0.2D



0.05D

K BLUE 4ECE

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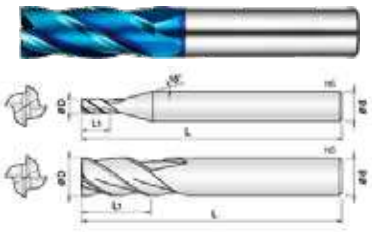
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Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø16	-0.015~ -0.03mm

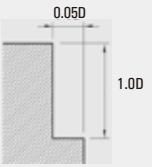
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4ECE 010 025 S04	1	2.5	45	4
4ECE 015 040 S04	1.5	4	45	4
4ECE 020 060 S04	2	6	45	4
4ECE 025 080 S04	2.5	8	45	4
4ECE 025 080 S06	2.5	8	45	6
4ECE 025 120 S06	2.5	12	50	6
4ECE 030 080 S04	3	8	50	4
4ECE 030 080 S06	3	8	50	6
4ECE 040 110 S04	4	11	50	4
4ECE 040 110 S06	4	11	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4ECE 050 130 S06	5	13	50	6
4ECE 060 130 050	6	13	50	6
4ECE 060 160 055	6	16	55	6
4ECE 080 200 060	8	20	60	8
4ECE 080 240 070	8	24	70	8
4ECE 100 220 070	10	22	70	10
4ECE 100 250 075	10	25	75	10
4ECE 120 260 075	12	26	75	12
4ECE 120 300 080	12	30	80	12
4ECE 160 400 090	16	40	90	16

4ECE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45C		Prehardened Steels NAK / CENA / KP4		Stainless Steels SUS		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35 HRc		35 ~ 45 HRc				45 ~ 55HRc	
Strength	~1100N/mm2		1100~1500N/mm2				1500~2000N/mm2	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2mm	12,716	294	8,316	179	6,930	147	5,544	53
3mm	9,812	336	6,116	210	5,082	179	3,696	63
4mm	8,316	599	5,082	368	4,268	294	3,234	63
5mm	6,930	630	4,158	378	3,476	315	2,552	74
6mm	6,116	693	3,696	431	3,124	347	2,200	84
8mm	4,620	746	2,772	399	2,310	368	1,848	116
10mm	3,586	641	2,200	315	1,848	315	1,496	95
12mm	3,014	546	1,848	263	1,496	252	1,276	84
14mm	2,662	536	1,606	236	1,331	231	1056	74
16mm	2,420	431	1,496	210	1,210	210	990	63
18mm	2002	368	1331	189	1045	184	902	53
20mm	1,848	336	1,166	168	924	158	748	42
Depth of Cut								

K BLUE 2ECR



2Flutes Corner Radius Endmills for Heavy cuts

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

- Good wear resistance by high quality Si-based PVD coating.
- Designed for minimizing edge chpping by corner R shape.

2刃強力切削用コーナーラジアスエンドミル

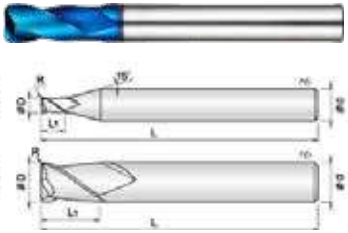
中低硬度鋼(HRC52以下),プリハードン鋼,炭素鋼,金型鋼など種々の被削材加工エンドミル

- 高含量シリコン系のコーティング(Si)処理で耐摩耗性に優れています。
- コーナーR形状を刃部のチッピングが少なくなるように設計しました。

2날 강력 절삭용 코너 레디우스 엔드밀

중저경도강(HRC52이하), 프리하든강, 탄소강, 금형강 등 다양한 피삭재 가공 엔드밀

- 고함량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm

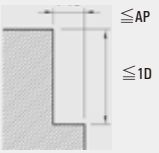
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
2ECR 010 001 S04	R0.1 X 1	3	50	4
2ECR 010 002 S04	R0.2 X 1	3	50	4
2ECR 010 003 S04	R0.3 X 1	3	50	4
2ECR 012 001 S04	R0.1 X 1.2	4	50	4
2ECR 012 002 S04	R0.2 X 1.2	4	50	4
2ECR 012 003 S04	R0.3 X 1.2	4	50	4
2ECR 015 001 S04	R0.1 X 1.5	4	50	4
2ECR 015 002 S04	R0.2 X 1.5	4	50	4
2ECR 015 003 S04	R0.3 X 1.5	4	50	4
2ECR 015 005 S04	R0.5 X 1.5	4	50	4
2ECR 020 001 S04	R0.1 X 2	6	50	4
2ECR 020 002 S04	R0.2 X 2	6	50	4
2ECR 020 003 S04	R0.3 X 2	6	50	4
2ECR 020 005 S04	R0.5 X 2	6	50	4
2ECR 025 001 S04	R0.1 X 2.5	6	50	4
2ECR 025 002 S04	R0.2 X 2.5	6	50	4
2ECR 025 003 S04	R0.3 X 2.5	6	50	4
2ECR 025 005 S04	R0.5 X 2.5	6	50	4
2ECR 030 001 S06	R0.1 X 3	8	60	6
2ECR 030 002 S06	R0.2 X 3	8	60	6
2ECR 030 003 S06	R0.3 X 3	8	60	6
2ECR 030 005 S06	R0.5 X 3	8	60	6
2ECR 030 010 S06	R1 X 3	8	60	6
2ECR 040 001 S04	R0.1 X 4	10	50	4
2ECR 040 001 S06	R0.1 X 4	10	70	6
2ECR 040 002 S04	R0.2 X 4	10	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
2ECR 040 002 S06	R0.2 X 4	10	70	6
2ECR 040 003 S04	R0.3 X 4	10	50	4
2ECR 040 003 S06	R0.3 X 4	10	70	6
2ECR 040 005 S04	R0.5 X 4	10	50	4
2ECR 040 005 S06	R0.5 X 4	10	70	6
2ECR 040 010 S04	R1 X 4	10	50	4
2ECR 040 010 S06	R1 X 4	10	70	6
2ECR 050 001 S06	R0.1 X 5	13	75	6
2ECR 050 002 S06	R0.2 X 5	13	75	6
2ECR 050 003 S06	R0.3 X 5	13	75	6
2ECR 050 005 S06	R0.5 X 5	13	75	6
2ECR 050 010 S06	R1 X 5	13	75	6
2ECR 060 002 080	R0.2 X 6	13	80	6
2ECR 060 003 080	R0.3 X 6	13	80	6
2ECR 060 005 080	R0.5 X 6	13	80	6
2ECR 060 010 080	R1 X 6	13	80	6
2ECR 080 003 090	R0.3 X 8	19	90	8
2ECR 080 005 090	R0.5 X 8	19	90	8
2ECR 080 010 090	R1 X 8	19	90	8
2ECR 100 003 100	R0.3 X 10	22	100	10
2ECR 100 005 100	R0.5 X 10	22	100	10
2ECR 100 010 100	R1 X 10	22	100	10
2ECR 120 003 110	R0.3 X 12	26	110	12
2ECR 120 005 110	R0.5 X 12	26	110	12
2ECR 120 010 110	R1 X 12	26	110	12
2ECR 120 020 110	R2 X 12	26	110	12

2ECR

• RPM : rev./min • Feed : mm/min

Material	General Steels			SKD61		
Hardness	~45 HRc			45~55 HRc		
Outside Diameter	RPM	FEED	Ap	RPM	FEED	Ap
0.1mm	44,000	42	0.001	44,000	42	0.001
0.2mm	44,000	105	0.002	44,000	105	0.002
0.3mm	44,000	210	0.005	44,000	210	0.005
0.4mm	44,000	630	0.010	44,000	630	0.010
0.5mm	44,000	1,050	0.015	44,000	1,008	0.015
0.6mm	44,000	1,260	0.020	44,000	1,260	0.020
0.7mm	44,000	1,470	0.020	44,000	1,470	0.020
0.8mm	44,000	1,680	0.030	44,000	1,680	0.030
0.9mm	44,000	1,890	0.040	44,000	1,680	0.040
1mm	44,000	2,100	0.060	35,200	1,680	0.060
1.5mm	44,000	3,150	0.120	35,200	1,995	0.080
2mm	33,000	3,150	0.180	26,400	1,995	0.100
2.5mm	26,400	2,730	0.250	20,900	1,680	0.130
3mm	22,000	2,415	0.300	17,600	1,470	0.150
4mm	16,500	2,100	0.400	13,200	1,260	0.200
5mm	13,200	1,680	0.500	9,900	945	0.250
6mm	11,000	1,470	0.600	7,700	735	0.300
8mm	8,800	1,050	0.800	6,160	578	0.400
10mm	7,040	945	1.000	4,950	525	0.500
12mm	5,940	861	1.000	4,180	473	0.500
16mm	2,640	399	3.000	1,320	105	0.800
20mm	2,090	336	4.000	1,100	84	1.000
Depth of Cut						

K BLUE 4ECR

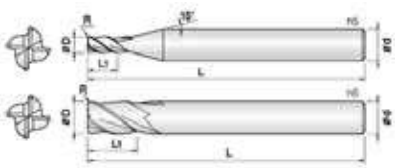


4Flutes Corner Radius Endmills for Heavy cuts

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

- Good wear resistance by high quality Si-based PVD coating.
- Designed for minimizing edge chipping by corner R shape.





4刃強力切削用コーナーラジアスエンドミル

中低硬度鋼(HRC52以下),プリハードン鋼,炭素鋼,金型鋼など種々の被削材加工エンドミル

- 高含量シリコン系のコーティング(Si)処理で耐摩耗性に優れています。
- コーナーR形状を刃部のチッピングが少なくなるように設計しました。

4날 강력 절삭용 코너 레디우스 엔드밀

중저경도강(HRC52이하), 프리하든강, 탄소강, 금형강 등 다양한 피삭재 가공 엔드밀

- 고함량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 코너R 형상을 날부치핑이 적도록 설계하였습니다.

Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.005~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4ECR 010 001 S04	R0.1X1	3	50	4
4ECR 010 002 S04	R0.2X1	3	50	4
4ECR 010 003 S04	R0.3X1	3	50	4
4ECR 012 001 S04	R0.1X1.2	4	50	4
4ECR 012 002 S04	R0.2X1.2	4	50	4
4ECR 012 003 S04	R0.3X1.2	4	50	4
4ECR 015 001 S04	R0.1X1.5	4	50	4
4ECR 015 002 S04	R0.2X1.5	4	50	4
4ECR 015 003 S04	R0.3X1.5	4	50	4
4ECR 015 005 S04	R0.5X1.5	4	50	4
4ECR 020 001 S04	R0.1X2	6	50	4
4ECR 020 002 S04	R0.2X2	6	50	4
4ECR 020 003 S04	R0.3X2	6	50	4
4ECR 020 005 S04	R0.5X2	6	50	4
4ECR 025 001 S04	R0.1X2.5	6	50	4
4ECR 025 002 S04	R0.2X2.5	6	50	4
4ECR 025 003 S04	R0.3X2.5	6	50	4
4ECR 025 005 S04	R0.5X2.5	6	50	4
4ECR 030 001 S04	R0.1X3	8	50	4
4ECR 030 001 S06	R0.1X3	8	50	6
4ECR 030 001 060	R0.1X3	8	60	6
4ECR 030 002 S04	R0.2X3	8	50	4
4ECR 030 002 S06	R0.2X3	8	50	6
4ECR 030 002 060	R0.2X3	8	60	6
4ECR 030 003 S04	R0.3X3	8	50	4
4ECR 030 003 S06	R0.3X3	8	50	6
4ECR 030 003 060	R0.3X3	8	60	6
4ECR 030 005 S04	R0.5X3	8	50	4
4ECR 030 005 S06	R0.5X3	8	50	6
4ECR 030 005 060	R0.5X3	8	60	6
4ECR 030 010 S04	R1X3	8	50	4
4ECR 030 010 S06	R1X3	8	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4ECR 030 010 060	R1X3	8	60	6
4ECR 040 001 S04	R0.1X4	10	50	4
4ECR 040 001 S06	R0.1X4	10	50	6
4ECR 040 001 070	R0.1X4	10	70	6
4ECR 040 002 S04	R0.2X4	10	50	4
4ECR 040 002 S06	R0.2X4	10	50	6
4ECR 040 002 070	R0.2X4	10	70	6
4ECR 040 003 S04	R0.3X4	10	50	4
4ECR 040 003 S06	R0.3X4	10	50	6
4ECR 040 003 070	R0.3X4	10	70	6
4ECR 040 005 S04	R0.5X4	10	50	4
4ECR 040 005 S06	R0.5X4	10	50	6
4ECR 040 005 070	R0.5X4	10	70	6
4ECR 040 010 S04	R1X4	10	50	4
4ECR 040 010 S06	R1X4	10	50	6
4ECR 040 010 070	R1X4	10	70	6
4ECR 050 001 S06	R0.1X5	10	50	6
4ECR 050 001 075	R0.1X5	13	75	6
4ECR 050 002 S06	R0.2X5	10	50	6
4ECR 050 002 075	R0.2X5	13	75	6
4ECR 050 003 S06	R0.3X5	10	50	6
4ECR 050 003 075	R0.3X5	13	75	6
4ECR 050 005 S06	R0.5X5	10	50	6
4ECR 050 005 075	R0.5X5	13	75	6
4ECR 050 010 S06	R1X5	10	50	6
4ECR 050 010 075	R1X5	13	75	6
4ECR 060 001 050	R0.1X6	10	50	6
4ECR 060 001 080	R0.1X6	13	80	6
4ECR 060 002 050	R0.2X6	10	50	6
4ECR 060 002 080	R0.2X6	13	80	6
4ECR 060 003 050	R0.3X6	10	50	6
4ECR 060 003 080	R0.3X6	13	80	6

K BLUE 4ECR



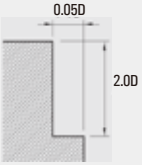
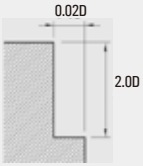
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4ECR 060 005 050	R0.5 X 6	10	50	6
4ECR 060 005 080	R0.5 X 6	13	80	6
4ECR 060 010 050	R1 X 6	10	50	6
4ECR 060 010 080	R1 X 6	13	80	6
4ECR 080 002 060	R0.2 X 8	16	60	8
4ECR 080 002 090	R0.2 X 8	19	90	8
4ECR 080 003 060	R0.3 X 8	16	60	8
4ECR 080 003 090	R0.3 X 8	19	90	8
4ECR 080 005 060	R0.5 X 8	16	60	8
4ECR 080 005 090	R0.5 X 8	19	90	8
4ECR 080 010 060	R1 X 8	16	60	8
4ECR 080 010 090	R1 X 8	19	90	8
4ECR 080 020 060	R2 X 8	16	60	8
4ECR 080 020 090	R2 X 8	19	90	8
4ECR 100 002 075	R0.2 X 10	18	75	10
4ECR 100 002 100	R0.2 X 10	22	100	10
4ECR 100 003 075	R0.3 X 10	18	75	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4ECR 100 003 100	R0.3 X 10	22	100	10
4ECR 100 005 075	R0.5 X 10	18	75	10
4ECR 100 005 100	R0.5 X 10	22	100	10
4ECR 100 010 075	R1 X 10	18	75	10
4ECR 100 010 100	R1 X 10	22	100	10
4ECR 100 020 075	R2 X 10	18	75	10
4ECR 100 020 100	R2 X 10	22	100	10
4ECR 120 002 075	R0.2 X 12	22	75	12
4ECR 120 002 110	R0.2 X 12	26	110	12
4ECR 120 003 075	R0.3 X 12	22	75	12
4ECR 120 003 110	R0.3 X 12	26	110	12
4ECR 120 005 075	R0.5 X 12	22	75	12
4ECR 120 005 110	R0.5 X 12	26	110	12
4ECR 120 010 075	R1 X 12	22	75	12
4ECR 120 010 110	R1 X 12	26	110	12
4ECR 120 020 075	R2 X 12	22	75	12
4ECR 120 020 110	R2 X 12	26	110	12

4ECR

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45		Prehardened Steels NAK / CENA / KP4		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35HRc		35 ~ 45HRc		45 ~ 55HRc	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	30,360	315	19,800	231	12,100	126
1.5mm	24,200	326	14,850	242	9,350	126
2mm	19,800	336	12,716	252	7,920	137
2.5mm	16,500	347	10,450	263	6,710	137
3mm	14,564	357	9,416	273	5,808	137
4mm	11,792	441	7,502	315	4,730	147
5mm	10,076	452	6,380	378	4,180	179
6mm	8,690	452	5,544	378	3,608	179
8mm	6,600	483	4,180	378	2,772	179
10mm	5,544	483	3,608	378	2,222	179
12mm	4,532	378	3,058	336	1,848	147
16mm	3,410	294	2,310	242	1,408	121
Depth of Cut						

K BLUE 3ESE



3 Flutes Endmills for Heavy cuts

Endmills for various work materials(~HRC52), pre-hardened steel, carbon steel, mold steel,SUS, Ti/Ni-base alloy, Inconel

- Good wear resistance by high quality Si-based PVD coating.
- Excellent work surface finish by 3 flute and deep chip pocket.

3刃強力切削用エンドミル

中低硬度鋼(HRC52以下),プリハードン鋼,炭素鋼,金型鋼,SUS,Ti/Ni系合金,
インコーネルなど種々の被削材加工エンドミル

- 高含量シリコン系のコーティング(Si)処理で耐摩耗性に優れています。
- 3枚刃適用及び深いポケットによりチップ排出が容易であり,被削材の面粗さに優れています。

3날 강력 절삭용 엔드밀

중저경도강(HRC52이하), 프리하든강, 탄소강, 금형강, SUS, Ti/Ni계 합금, 인코넬 등 다양한 피삭재 가공 엔드밀

- 고함량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다. • 3날 적용 및 깊은 포켓으로 칩배출이 원활하며, 피삭재 면조도가 우수합니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3ESE 010 025 S04	1	2.5	45	4
3ESE 012 030 S04	1.2	3	45	4
3ESE 015 040 S04	1.5	4	45	4
3ESE 020 060 S04	2	6	45	4
3ESE 025 080 S06	2.5	8	45	6
3ESE 030 080 S06	3	8	45	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3ESE 040 110 S06	4	11	50	6
3ESE 050 130 S06	5	13	50	6
3ESE 060 130 S06	6	13	55	6
3ESE 080 190 S08	8	19	60	8
3ESE 100 220 S10	10	22	70	10
3ESE 120 260 S12	12	26	80	12

K BLUE 4ESE



4 Flutes Endmills for Heavy cuts

Endmills for various work materials(~HRC52), pre-hardened steel, carbon steel, mold steel,SUS, Ti/Ni-base alloy, Inconel

- Good wear resistance by high quality Si-based PVD coating.
- Minimize chattering by unequal flute spacing design.

4刃強力切削用エンドミル

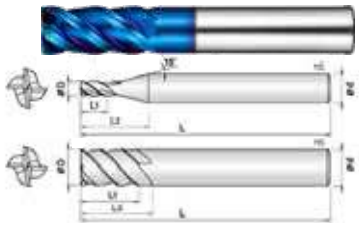
中低硬度鋼(HRC52以下),プリハードン鋼,炭素鋼,金型鋼,SUS,Ti/Ni系合金,
インコーネルなど種々の被削材加工エンドミル

- 高含量シリコン系のコーティング(Si)処理で耐摩耗性に優れています。
- 強力なチャタリング防止設計によりエンドミルの振動を最小限にしました。

4날 강력 절삭용 엔드밀

중저경도강(HRC52이하), 프리하든강, 탄소강, 금형강, SUS, Ti/Ni계 합금, 인코넬 등 다양한 피삭재 가공 엔드밀

- 고함량 실리콘계 코팅(Si)처리하여 내마모성이 우수합니다.
- 강력한 체터링방지 설계로 엔드밀의 진동을 최소화하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm

Size	D Tolerance
Ø16~20	-0.015~ -0.03mm

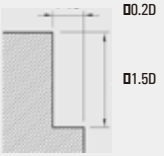
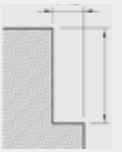
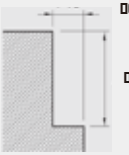
単位/Unit : mm

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
4ESE 010 025 S04	2.5		45	4
4ESE 010 040 S04	2.5	4	45	4
4ESE 012 030 S04	3		45	4
4ESE 012 050 S04	3	5	45	4
4ESE 015 040 S04	4		45	4
4ESE 015 060 S04	4	6	45	4
4ESE 020 060 S04	6		45	4
4ESE 020 100 S04	6	10	45	4
4ESE 025 070 S04	7		45	4
4ESE 025 100 S04	7	10	45	4
4ESE 030 080 S06	8		50	6
4ESE 030 100 S06	10		50	6
4ESE 030 120 S06	8	12	50	6
4ESE 040 100 S06	10		50	6
4ESE 040 120 S06	12		50	6
4ESE 040 160 S06	10	16	50	6
4ESE 050 120 S06	12		55	6

Order Number	Diameter	Length of Cut	Overall Length	Shank Dia
	D	L1	L	d
4ESE 050 160 S06	16		55	6
4ESE 050 200 S06	12	20	55	6
4ESE 060 130 S06	13		55	6
4ESE 060 180 S06	18		55	6
4ESE 060 210 055	13	21	55	6
4ESE 080 200 S08	20		60	8
4ESE 080 250 S08	25		70	8
4ESE 080 270 070	20	27	70	8
4ESE 100 220 S10	22		70	10
4ESE 100 300 S10	30		75	10
4ESE 100 320 075	22	32	75	10
4ESE 120 260 S12	26		75	12
4ESE 120 300 S12	30		80	12
4ESE 120 380 080	26	38	80	12
4ESE 140 320 090	32		90	14
4ESE 160 450 S16	35	45	90	16
4ESE 200 520 S20	40	52	100	20

3ESE/4ESE

• RPM : rev./min • Feed : mm/min

Side Cutting						
Material	Alloy Steels / Tools steel SKD61 / SK /NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	21,000	1,100	14,000	560	4,800	130
3mm	15,000	1,250	10,600	850	4,200	200
4mm	11,000	1,400	8,000	960	3,200	220
5mm	9,600	1,900	6,400	1,000	2,500	250
6mm	8,000	2,200	5,300	1,000	2,100	250
7mm	6,800	1,900	4,500	1,000	1,800	260
8mm	6,000	1,600	4,000	960	1,600	260
9mm	5,300	1,480	3,500	840	1,400	220
10mm	4,800	1,440	3,200	770	1,300	210
11mm	4,400	1,350	2,900	760	1,200	190
12mm	4,000	1,250	2,700	760	1,100	180
16mm	3,000	1,140	2,000	560	800	130
20mm	2,400	860	1,600	510	600	100
Depth of Cut						

• RPM : rev./min • Feed : mm/min

Slotting						
Material	Alloy Steels / Tools steel SKD61 / SK / NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	10,000	400	9,600	310	3,200	80
3mm	6,900	410	7,400	380	2,700	110
4mm	5,600	490	5,600	400	2,000	120
5mm	4,500	630	4,500	410	1,600	130
6mm	3,700	740	3,700	440	1,300	160
7mm	3,200	700	3,200	410	1,100	140
8mm	2,800	670	2,800	390	1,000	130
9mm	2,500	600	2,500	350	900	130
10mm	2,200	530	2,200	350	800	130
11mm	2,000	530	2,000	320	720	120
12mm	1,900	530	1,900	300	660	110
16mm	1,400	390	1,400	280	500	80
20mm	1,100	350	1,100	260	400	60
Depth of Cut						

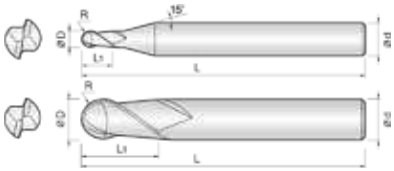
K GSERIES 2HGB

2 Flutes Standard Length Ball Endmills for Generality

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

- High precise edge tolerance.
- Minimize fracturing by high TRS ultra fine WC garde.





2刃 汎用 標準 長さ ボール エンドミル

中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

- 高精密 公差 適用で 超精密 加工に適合します.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

2날 범용 표준 길이 볼 엔드밀

중저경도강(HRC52이하),프리하든강 계열, 탄소강, 금형강 등 다양한 피삭재 가공

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2HGB 001 002 S04	0.05RX0.1	0.2	40	4
2HGB 0015 003 S04	0.075RX0.15	0.3	40	4
2HGB 002 004 S04	0.1RX0.2	0.4	40	4
2HGB 003 006 S04	0.15RX0.3	0.6	40	4
2HGB 004 008 S04	0.2RX0.4	0.8	40	4
2HGB 005 010 S04	0.25RX0.5	1	45	4
2HGB 006 012 S04	0.3RX0.6	1.2	45	4
2HGB 007 015 S04	0.35RX0.7	1.5	45	4
2HGB 008 020 S04	0.4RX0.8	2	45	4
2HGB 009 020 S04	0.45RX0.9	2	45	4
2HGB 010 025 070	0.5RX1	2.5	70	6
2HGB 010 025 100	0.5RX1	2.5	100	6
2HGB 010 025 S04	0.5RX1	2.5	50	4
2HGB 010 025 S06	0.5RX1	2.5	50	6
2HGB 012 030 S04	0.6RX1.2	3	50	4
2HGB 015 040 S04	0.75RX1.5	4	50	4
2HGB 015 040 S06	0.75RX1.5	4	50	6
2HGB 015 040 070	0.75RX1.5	4	70	6
2HGB 015 040 100	0.75RX1.5	4	100	6
2HGB 020 050 S04	1RX2	5	50	4
2HGB 020 050 S06	1RX2	5	50	6
2HGB 020 050 075	1RX2	5	75	6
2HGB 020 050 100	1RX2	5	100	6
2HGB 025 060 S04	1.25RX2.5	6	50	4
2HGB 025 060 S06	1.25RX2.5	6	60	6
2HGB 025 060 075	1.25RX2.5	6	75	6
2HGB 025 060 100	1.25RX2.5	6	100	6
2HGB 030 080 S03	1.5RX3	8	60	3
2HGB 030 080 S04	1.5RX3	8	50	4
2HGB 030 080 S06	1.5RX3	8	60	6
2HGB 030 080 080	1.5RX3	8	80	6
2HGB 030 080 100	1.5RX3	8	100	6
2HGB 035 080 S06	1.75RX3.5	8	60	6
2HGB 040 080 060	2RX4	8	60	4
2HGB 040 080 080	2RX4	8	80	4

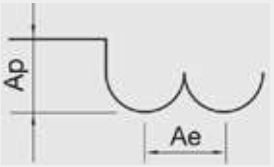
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2HGB 040 080 S06	2RX4	8	70	6
2HGB 040 080 090	2RX4	8	90	6
2HGB 040 080 120	2RX4	8	120	6
2HGB 045 080 S06	2.25RX4.5	8	70	6
2HGB 050 080 S05	2.5RX5	8	80	5
2HGB 050 100 S06	2.5RX5	10	75	6
2HGB 055 100 S06	2.75RX5.5	10	75	6
2HGB 060 100 060	3RX6	10	60	6
2HGB 060 120 080	3RX6	12	80	6
2HGB 060 120 100	3RX6	12	100	6
2HGB 060 120 120	3RX6	12	120	6
2HGB 070 140 S08	3.5RX7	14	80	8
2HGB 080 120 060	4RX8	12	60	8
2HGB 080 140 090	4RX8	14	90	8
2HGB 080 140 110	4RX8	14	110	8
2HGB 080 140 150	4RX8	14	150	8
2HGB 090 160 S10	4.5RX9	16	100	10
2HGB 100 150 070	5RX10	15	70	10
2HGB 100 180 100	5RX10	18	100	10
2HGB 100 180 120	5RX10	18	120	10
2HGB 100 180 150	5RX10	18	150	10
2HGB 100 180 180	5RX10	18	180	10
2HGB 110 200 S12	5.5RX11	20	110	12
2HGB 120 180 070	6RX12	18	70	12
2HGB 120 220 110	6RX12	22	110	12
2HGB 120 220 130	6RX12	22	130	12
2HGB 120 220 150	6RX12	22	150	12
2HGB 120 220 200	6RX12	22	200	12
2HGB 130 240 S14	6.5RX13	24	110	14
2HGB 140 240 S14	7RX14	24	110	14
2HGB 160 300 130	8RX16	30	130	16
2HGB 160 300 160	8RX16	30	160	16
2HGB 160 300 200	8RX16	30	200	16
2HGB 200 380 160	10RX20	38	160	20
2HGB 200 380 200	10RX20	38	200	20

2HGB

• RPM : rev./min • Feed : mm/min

Material		Copper			Prehardened Steels / Hardened Steels NAK / SKD			Hardened Steels SKD / SKT		
Hardness					30~45HRc			45~55HRc		
Radius	Effective Length	RPM	FEED	Ap Axial Depth Ae Radial Depth	RPM	FEED	Ap Axial Depth Ae Radial Depth	RPM	FEED	Ap Axial Depth Ae Radial Depth
R0.05	0.2	40,000	300	Less than 0.010 0.050	40,000	300	Less than 0.005 0.040	30,000	200	Less than 0.004 0.040
R0.075	0.15	50,000	380	0.010 0.030	45,000	500	0.005 0.050	40,000	350	0.004 0.043
	0.2	54,000	430	0.012 0.008	54,000	630	0.020 0.060	44,300	500	0.016 0.048
	0.4	54,000	430	0.005 0.008	54,000	410	0.020 0.049	44,300	320	0.016 0.038
	0.3	54,000	720	0.020 0.013	54,000	750	0.030 0.090	44,300	600	0.024 0.072
	0.6	54,000	720	0.010 0.013	54,000	700	0.030 0.065	44,300	570	0.020 0.058
	0.4	54,000	870	0.028 0.016	54,000	1,000	0.040 0.120	44,300	800	0.032 0.096
R0.2	0.8	54,000	870	0.014 0.016	54,000	840	0.040 0.100	44,300	650	0.032 0.075
R0.25	0.5	56,000	1,250	0.035 0.022	53,000	1,250	0.050 0.150	43,500	1,000	0.040 0.120
R0.3	0.6	58,000	1,510	0.042 0.026	52,000	1,380	0.060 0.180	42,650	1,100	0.048 0.144
R0.35	0.7	55,000	1,690	0.049 0.031	50,000	1,440	0.070 0.210	41,075	1,150	0.056 0.168
	0.8	52,000	1,870	0.056 0.036	48,000	1,500	0.080 0.240	39,500	1,200	0.064 0.192
	2	52,000	1,870	0.300 0.036	45,000	1,075	0.080 0.150	35,000	810	0.064 0.100
	1	41,000	1,660	0.063 0.040	45,000	1,560	0.100 0.300	36,900	1,250	0.080 0.240
	2.5	41,000	1,660	0.022 0.040	40,000	1,000	0.100 0.200	31,500	800	0.080 0.160
R0.6	3	34,000	1,740	0.650 0.400	40,100	1,550	0.100 0.280	32,800	1,250	0.800 0.266
	1.5	27,000	1,830	0.087 0.068	35,000	1,600	0.150 0.450	28,700	1,280	0.120 0.360
	4	27,000	1,830	0.052 0.068	34,500	1,000	0.145 0.325	26,000	800	0.120 0.260
	2	20,000	1,780	0.112 0.089	30,000	1,850	0.200 0.600	24,600	1,480	0.160 0.480
	5	20,000	1,780	0.070 0.091	27,000	1,450	0.200 0.485	22,800	1,100	0.160 0.388
R1.25	6	16,000	1,840	0.067 0.115	25,500	1,600	0.250 0.542	21,000	1,280	0.200 0.430
	3	13,000	2,220	0.197 0.1 71	25,500	2,520	0.300 0.957	21,000	2,050	0.240 0.766
	8	13,000	2,220	0.100 0.171	25,500	2,350	0.300 0.765	21,000	18,800	0.240 0.612
R1.75	8	11,500	2,150	0.183 0.190	23,000	2,400	0.350 1.073	19,150	10,380	0.280 0.856
R2	4	10,000	2,080	0.266 0.208	21,000	2,450	0.400 1.380	17,300	1,960	0.320 1.100
	8	10,000	2,080	0.134 0.208	21,000	2,350	0.400 1.020	17,300	1,880	0.320 0.816
	5	8,300	1,990	0.215 0.240	18,000	2,560	0.500 1.660	14,800	2,050	0.400 1.330
R2.5	8	8,300	1,990	0.200 0.240	18,000	2,450	0.500 1.500	14,800	1,960	0.400 1.200
	10	8,300	1,990	0.190 0.240	18,000	2,400	0.500 1.300	14,800	1,900	0.400 1.020
	6	6,900	1,940	0.290 0.281	16,000	2,700	0.600 2.340	13,000	2,160	0.480 1.870
R3	10	6,900	1,940	0.250 0.281	16,000	2,500	0.600 1.800	13,000	2,000	0.480 1.440
	12	6,900	1,940	0.230 0.281	16,000	2,400	0.600 1.530	13,000	1,920	0.480 1.225
R3.5	14	6,310	1,470	0.315 0.228	14,500	2,350	0.700 2.315	11,625	1,880	0.560 1.853
	8	5,720	1,000	0.400 0.175	12,500	2,300	0.800 3.100	10,250	1,840	0.640 2.480
	14	5,720	1,000	0.400 0.175	12,500	2,000	0.800 2.050	10,250	1,600	0.640 1.640
R4.5	16	5,135	850	0.450 0.165	11,000	2,100	0.900 2.900	9,450	1,690	0.720 2.320
	10	4,550	700	0.500 0.154	10,500	2,200	1.000 3.750	8,650	1,780	0.800 3.000
R5	15	4,550	700	0.500 0.154	10,500	1,900	1.000 3.000	8,650	1,520	0.800 2.400
	18	4,550	700	0.500 0.154	10,500	1,700	1.000 2.550	8,650	1,360	0.800 2.040
R5.5	20	4,160	650	0.550 0.157	10,000	1,700	1.100 3.075	8,015	1,360	0.880 2.460
	18	3,770	600	0.600 0.159	9,000	1,700	1.200 3.600	7,380	1,360	0.960 2.880
	22	3,770	600	0.600 0.159	9,000	1,850	1.200 4.420	7,380	1,480	0.960 3.540
R6.5	24	3,728	653	0.549 0.156	9,000	1,825	1.098 3.938	7,193	1,540	0.878 3.152
R7	24	3,686	706	0.498 0.153	7,000	1,800	0.996 3.456	7,007	1,600	0.797 2.765
R8	30	2,985	600	0.413 0.147	7,000	1,700	0.827 3.318	5,675	1,360	0.661 2.654
R10	38	2,429	360	0.276 0.133	7,000	1,600	0.551 3.015	4,617	816	0.441 2.412

Depth of Cut



•Ap : Axial Depth
•Ae : Radial Dept
•Vf : Feed

K GSERIES 2HGE

2 Flutes Standard Length Endmills for Generality

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

- High precise edge tolerance.
- Minimize fracturing by high TRS ultra fine WC garde.

2刃 汎用 標準 長さ ボール エンドミル

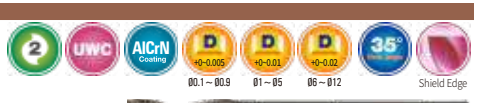
中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

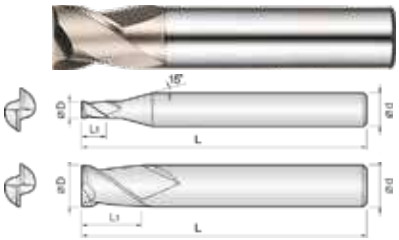
- 高精密 公差 適用で 超精密 加工に適合します.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

2날 범용 표준 길이 엔드밀

중저경도강(HRC52이하),프리하든강 계열, 탄소강, 금형강 등 다양한 피삭재 가공

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.





Size	D Tolerance
D < Ø1	+0~ -0.005mm
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2HGE 001 002 S04	0.1	0.2	40	4
2HGE 0015 003 S04	0.15	0.3	40	4
2HGE 002 004 S04	0.2	0.4	40	4
2HGE 0025 005 S04	0.25	0.5	40	4
2HGE 003 006 S04	0.3	0.6	40	4
2HGE 0035 007 S04	0.35	0.7	40	4
2HGE 004 008 S04	0.4	0.8	40	4
2HGE 0045 009 S04	0.45	0.9	40	4
2HGE 005 010 S04	0.5	1	40	4
2HGE 0055 011 S04	0.55	1.1	40	4
2HGE 006 012 S04	0.6	1.2	40	4
2HGE 0065 013 S04	0.65	1.3	40	4
2HGE 007 014 S04	0.7	1.4	40	4
2HGE 0075 015 S04	0.75	1.5	40	4
2HGE 008 016 S04	0.8	1.6	40	4
2HGE 0085 017 S04	0.85	1.7	40	4
2HGE 009 020 S04	0.9	2	40	4
2HGE 0095 020 S04	0.95	2	40	4
2HGE 010 010 S04	1	1	40	4
2HGE 010 025 S04	1	2.5	40	4
2HGE 010 025 S06	1	2.5	40	6
2HGE 010 025 060	1	2.5	60	6
2HGE 010 040 S06	1	4	50	6
2HGE 011 027 S04	1.1	2.7	40	4
2HGE 012 012 S04	1.2	1.2	40	4
2HGE 012 030 S04	1.2	3	40	4
2HGE 012 030 S06	1.2	3	40	6
2HGE 012 030 060	1.2	3	60	6
2HGE 012 060 S06	1.2	6	50	6
2HGE 013 032 S04	1.3	3.2	40	4
2HGE 014 035 S04	1.4	3.5	40	4
2HGE 015 015 S04	1.5	1.5	40	4
2HGE 015 040 S04	1.5	4	40	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2HGE 015 040 S06	1.5	4	40	6
2HGE 015 040 060	1.5	4	60	6
2HGE 016 040 S04	1.6	4	40	4
2HGE 017 042 S04	1.7	4.2	40	4
2HGE 018 045 S04	1.8	4.5	40	4
2HGE 019 050 S04	1.9	5	40	4
2HGE 020 020 S04	2	2	40	4
2HGE 020 060 S04	2	6	40	4
2HGE 020 060 S06	2	6	40	6
2HGE 020 060 060	2	6	60	6
2HGE 021 060 S04	2.1	6	40	4
2HGE 022 060 S04	2.2	6	40	4
2HGE 023 060 S04	2.3	6	40	4
2HGE 024 080 S04	2.4	8	45	4
2HGE 025 080 S04	2.5	8	45	4
2HGE 025 080 S06	2.5	8	45	6
2HGE 025 080 070	2.5	8	70	6
2HGE 026 080 S04	2.6	8	45	4
2HGE 027 080 S04	2.7	8	45	4
2HGE 028 080 S04	2.8	8	45	4
2HGE 029 080 S04	2.9	8	45	4
2HGE 030 030 S04	3	3	40	4
2HGE 030 080 S04	3	8	45	4
2HGE 030 080 S06	3	8	45	6
2HGE 030 080 070	3	8	70	6
2HGE 035 100 S06	3.5	10	45	6
2HGE 040 040 S04	4	4	40	4
2HGE 040 100 S04	4	10	45	4
2HGE 040 110 S06	4	11	45	6
2HGE 040 110 070	4	11	70	6
2HGE 045 110 S06	4.5	11	45	6
2HGE 050 130 S06	5	13	50	6
2HGE 050 130 080	5	13	80	6

K GSERIES 2HGE



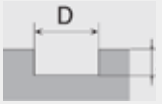
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2HGE 055 130 S06	5.5	13	50	6
2HGE 060 060 S06	6	6	45	6
2HGE 060 130 080	6	13	80	6
2HGE 060 130 S06	6	13	50	6
2HGE 060 150 S06	6	15	60	6
2HGE 065 160 S08	6.5	16	60	8
2HGE 070 160 S08	7	16	60	8
2HGE 075 160 S08	7.5	16	60	8
2HGE 080 080 S08	8	8	50	8
2HGE 080 190 S08	8	19	60	8
2HGE 080 200 S08	8	20	70	8
2HGE 085 190 S10	8.5	19	70	10
2HGE 090 190 S10	9	19	70	10
2HGE 095 190 S10	9.5	19	70	10
2HGE 100 100 S10	10	10	60	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2HGE 100 220 S10	10	22	70	10
2HGE 100 250 S10	10	25	75	10
2HGE 105 220 S12	10.5	22	75	12
2HGE 110 220 S12	11	22	75	12
2HGE 115 220 S12	11.5	22	75	12
2HGE 120 120 S12	12	12	65	12
2HGE 120 260 S12	12	26	75	12
2HGE 120 300 S12	12	30	80	12
2HGE 140 260 S14	14	26	80	14
2HGE 140 260 S16	14	26	85	16
2HGE 160 350 S16	16	35	100	16
2HGE 160 400 S16	16	40	100	16
2HGE 180 350 S18	18	35	100	18
2HGE 200 400 S20	20	40	100	20
2HGE 200 500 S20	20	50	110	20

2HGE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45C		Prehardened Steels NAK / CENA / KP4		Stainless Steels SUS		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35 HRc		35 ~ 45 HRc				45 ~ 55HRc	
Strength	~1,100N/mm2		1,100~1,500N/mm2				1500~2000N/mm2	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	13,020	170	9,000	100	8,100	70	7,020	30
1.5mm	12,300	180	8,880	110	7,360	80	5,940	30
2mm	11,560	190	7,560	120	6,300	90	5,040	35
2.5mm	10,300	200	6,620	130	5,480	110	4,320	35
3mm	8,920	210	5,560	140	4,620	120	3,360	40
4mm	7,560	300	4,620	180	3,880	150	2,940	40
5mm	6,300	320	3,780	190	3,160	160	2,320	50
6mm	5,560	350	3,360	220	2,840	180	2,000	55
8mm	4,200	380	2,520	200	2,100	180	1,680	75
10mm	3,260	330	2,000	160	1,680	160	1,360	60
12mm	2,740	280	1,680	130	1,360	130	1,160	55
16mm	2,200	220	1,360	110	1,060	110	900	40
20mm	1,680	170	1,060	80	840	80	680	30
Depth of Cut	 0.5D Up to Ø3:0.2D				 0.05D			

K GSERIES 4HGE

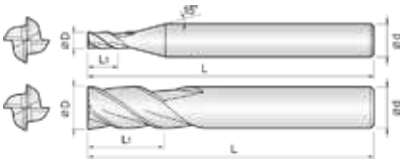
4 Flutes Standard Length Endmills for Generality

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

- High precise edge tolerance.
- Minimize fracturing by high TRS ultra fine WC garde.







4刃 汎用 標準 長さ エンドミル

中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

- 高精密 公差 適用で 超精密 加工に適合します.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

4날 범용 표준 길이 엔드밀

중저경도강(HRC52이하), 프리하든강 계열, 탄소강, 금형강 등 다양한 피삭재 가공

- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø5	+0~ -0.01mm
D > Ø5	+0~ -0.02mm

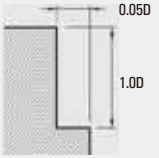
単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4HGE 008 020 S04	0.8	2	40	4
4HGE 010 010 S04	1	1	40	4
4HGE 010 025 S04	1	2.5	40	4
4HGE 010 025 S06	1	2.5	40	6
4HGE 010 025 060	1	2.5	60	6
4HGE 010 025 080	1	2.5	80	6
4HGE 010 040 S06	1	4	50	6
4HGE 012 012 S04	1.2	1.2	40	4
4HGE 012 030 S04	1.2	3	40	4
4HGE 012 030 S06	1.2	3	40	6
4HGE 012 030 060	1.2	3	60	6
4HGE 012 060 S06	1.2	6	50	6
4HGE 015 015 S04	1.5	1.5	40	4
4HGE 015 040 S04	1.5	4	40	4
4HGE 015 040 S06	1.5	4	40	6
4HGE 015 040 060	1.5	4	60	6
4HGE 015 040 080	1.5	4	80	6
4HGE 020 020 S04	2	2	40	4
4HGE 020 060 S04	2	6	40	4
4HGE 020 060 S06	2	6	40	6
4HGE 020 060 060	2	6	60	6
4HGE 020 060 100	2	6	100	6
4HGE 025 080 S04	2.5	8	45	4
4HGE 025 080 S06	2.5	8	45	6
4HGE 025 080 070	2.5	8	70	6
4HGE 025 080 100	2.5	8	100	6
4HGE 030 080 S03	3	8	45	3
4HGE 030 080 S04	3	8	45	4
4HGE 030 080 S06	3	8	45	6
4HGE 030 080 070	3	8	70	6
4HGE 030 080 100	3	8	100	6
4HGE 035 100 S06	3.5	10	45	6
4HGE 040 040 S04	4	4	40	4
4HGE 040 110 S04	4	11	45	4
4HGE 040 110 S06	4	11	45	6
4HGE 040 110 070	4	11	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4HGE 040 110 100	4	11	100	6
4HGE 045 110 S06	4.5	11	45	6
4HGE 050 130 S06	5	13	50	6
4HGE 050 130 080	5	13	80	6
4HGE 050 130 100	5	13	100	6
4HGE 055 130 S06	5.5	13	50	6
4HGE 060 060 S06	6	6	45	6
4HGE 060 130 S06	6	13	50	6
4HGE 060 130 080	6	13	80	6
4HGE 060 130 100	6	13	100	6
4HGE 060 150 S06	6	15	60	6
4HGE 065 160 S08	6.5	16	60	8
4HGE 070 160 S08	7	16	60	8
4HGE 075 160 S08	7.5	16	60	8
4HGE 080 080 S08	8	8	50	8
4HGE 080 190 S08	8	19	60	8
4HGE 080 200 S08	8	20	70	8
4HGE 085 190 S10	8.5	19	70	10
4HGE 090 190 S10	9	19	70	10
4HGE 095 190 S10	9.5	19	70	10
4HGE 100 100 S10	10	10	60	10
4HGE 100 220 S10	10	22	70	10
4HGE 100 250 S10	10	25	75	10
4HGE 105 220 S12	10.5	22	75	12
4HGE 110 220 S12	11	22	75	12
4HGE 115 220 S12	11.5	22	75	12
4HGE 120 120 S12	12	12	65	12
4HGE 120 260 S12	12	26	75	12
4HGE 120 300 S12	12	30	80	12
4HGE 140 260 S14	14	26	80	14
4HGE 140 260 S16	14	26	85	16
4HGE 160 350 S16	16	35	100	16
4HGE 160 400 S16	16	40	100	16
4HGE 180 350 S18	18	35	100	18
4HGE 200 400 S20	20	40	100	20
4HGE 200 450 S20	20	45	100	20

4HGE

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45C		Prehardened Steels NAK / CENA / KP4		Stainless Steels SUS		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35 HRc		35 ~ 45 HRc				45 ~ 55HRc	
Strength	~1100N/mm2		1100~1500N/mm2				1500~2000N/mm2	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
2mm	11,560	280	7,560	170	6,300	140	5,040	50
3mm	8,920	320	5,560	200	4,620	170	3,360	60
4mm	7,560	570	4,620	350	3,880	280	2,940	60
5mm	6,300	600	3,780	360	3,160	300	2,320	70
6mm	5,560	660	3,360	410	2,840	330	2,000	80
8mm	4,200	710	2,520	380	2,100	350	1,680	110
10mm	3,260	610	2,000	300	1,680	300	1,360	90
12mm	2,740	520	1,680	250	1,360	240	1,160	80
14mm	2,420	510	1,460	225	1,210	220	960	70
16mm	2,200	410	1,360	200	1,100	200	900	60
18mm	1820	350	1210	180	950	175	820	50
20mm	1,680	320	1,060	160	840	150	680	40
Depth of Cut								

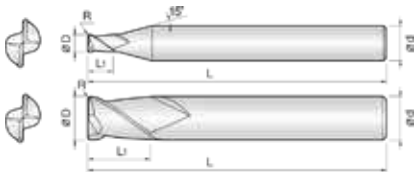
K GSERIES 2NGR

2 Flutes Corner Radius Endmills for Generality

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

- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.
- Minimize fracturing by high TRS ultra fine WC garde.





2刃 汎用 コーナー ラジウス エンドミル

中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 高精密 公差 適用で 超精密 加工に適合します.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

2날 범용 코너 레디우스 엔드밀

중저경도강(HRC52이하), 프리하든강 계열, 탄소강, 금형강 등 다양한 피삭재 가공

- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
2NGR 004 0005 S04	0.4XR0.05	0.8	45	4
2NGR 004 001 S04	0.4XR0.1	0.8	45	4
2NGR 005 0005 S04	0.5XR0.05	1	45	4
2NGR 005 001 S04	0.5XR0.1	1	45	4
2NGR 006 0005 S04	0.6XR0.05	1.2	45	4
2NGR 006 001 S04	0.6XR0.1	1.2	45	4
2NGR 006 002 S04	0.6XR0.2	1.2	45	4
2NGR 007 0005 S04	0.7XR0.05	1.4	45	4
2NGR 007 001 S04	0.7XR0.1	1.4	45	4
2NGR 007 002 S04	0.7XR0.2	1.4	45	4
2NGR 008 0005 S04	0.8XR0.05	1.6	45	4
2NGR 008 001 S04	0.8XR0.1	1.6	45	4
2NGR 008 002 S04	0.8XR0.2	1.6	45	4
2NGR 009 0005 S04	0.9XR0.05	1.8	45	4
2NGR 009 001 S04	0.9XR0.1	1.8	45	4
2NGR 010 001 S04	1XR0.1	2.5	45	4
2NGR 010 002 S04	1XR0.2	2.5	45	4
2NGR 010 003 S04	1XR0.3	2.5	45	4
2NGR 012 001 S04	1.2XR0.1	3.2	45	4
2NGR 012 002 S04	1.2XR0.2	3.2	45	4
2NGR 012 003 S04	1.2XR0.3	3.2	45	4
2NGR 015 001 S04	1.5XR0.1	4	45	4
2NGR 015 002 S04	1.5XR0.2	4	45	4
2NGR 015 003 S04	1.5XR0.3	4	45	4
2NGR 015 005 S04	1.5XR0.5	4	45	4
2NGR 020 001 S04	2XR0.1	6	45	4
2NGR 020 002 S04	2XR0.2	6	45	4
2NGR 020 003 S04	2XR0.3	6	45	4
2NGR 020 005 S04	2XR0.5	6	45	4
2NGR 025 001 S04	2.5XR0.1	6	50	4
2NGR 025 002 S04	2.5XR0.2	6	50	4
2NGR 025 003 S04	2.5XR0.3	6	50	4
2NGR 025 005 S04	2.5XR0.5	6	50	4
2NGR 030 001 S06	3XR0.1	8	60	6
2NGR 030 002 S06	3XR0.2	8	60	6
2NGR 030 003 S06	3XR0.3	8	60	6
2NGR 030 005 S06	3XR0.5	8	60	6
2NGR 030 010 S06	3XR1	8	60	6
2NGR 040 001 060	4XR0.1	9	60	4
2NGR 040 001 080	4XR0.1	9	80	4
2NGR 040 001 S06	4XR0.1	10	70	6
2NGR 040 002 060	4XR0.2	9	60	4
2NGR 040 002 080	4XR0.2	9	80	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
2NGR 040 002 S06	4XR0.2	10	70	6
2NGR 040 003 060	4XR0.3	9	60	4
2NGR 040 003 080	4XR0.3	9	80	4
2NGR 040 003 S06	4XR0.3	10	70	6
2NGR 040 005 060	4XR0.5	9	60	4
2NGR 040 005 080	4XR0.5	9	80	4
2NGR 040 005 S06	4XR0.5	10	70	6
2NGR 040 010 060	4XR1	9	60	4
2NGR 040 010 080	4XR1	9	80	4
2NGR 040 010 S06	4XR1	10	70	6
2NGR 050 001 S06	5XR0.1	13	75	6
2NGR 050 002 S06	5XR0.2	13	75	6
2NGR 050 003 S06	5XR0.3	13	75	6
2NGR 050 005 S06	5XR0.5	13	75	6
2NGR 050 010 S06	5XR1	13	75	6
2NGR 060 001 060	6XR0.1	11	60	6
2NGR 060 001 090	6XR0.1	13	90	6
2NGR 060 002 060	6XR0.2	11	60	6
2NGR 060 002 090	6XR0.2	13	90	6
2NGR 060 003 060	6XR0.3	11	60	6
2NGR 060 003 090	6XR0.3	13	90	6
2NGR 060 005 060	6XR0.5	11	60	6
2NGR 060 005 090	6XR0.5	13	90	6
2NGR 060 010 060	6XR1	11	60	6
2NGR 060 010 090	6XR1	13	90	6
2NGR 060 015 060	6XR1.5	11	60	6
2NGR 060 015 090	6XR1.5	13	90	6
2NGR 060 020 060	6XR2	11	60	6
2NGR 060 020 090	6XR2	13	90	6
2NGR 060 025 090	6XR2.5	13	90	6
2NGR 080 001 070	8XR0.1	16	70	8
2NGR 080 001 100	8XR0.1	19	100	8
2NGR 080 002 070	8XR0.2	16	70	8
2NGR 080 002 100	8XR0.2	19	100	8
2NGR 080 003 070	8XR0.3	16	70	8
2NGR 080 003 100	8XR0.3	19	100	8
2NGR 080 005 070	8XR0.5	16	70	8
2NGR 080 005 100	8XR0.5	19	100	8
2NGR 080 005 120	8XR0.5	19	120	8
2NGR 080 010 070	8XR1	16	70	8
2NGR 080 010 100	8XR1	19	100	8
2NGR 080 010 120	8XR1	19	120	8
2NGR 080 015 070	8XR1.5	16	70	8

K GSERIES

2NGR



単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
2NGR 080 015 100	8XR1.5	19	100	8
2NGR 080 020 070	8XR2	16	70	8
2NGR 080 020 100	8XR2	19	100	8
2NGR 080 025 100	8XR2.5	19	100	8
2NGR 080 030 100	8XR3	19	100	8
2NGR 080 035 100	8XR3.5	19	100	8
2NGR 100 001 075	10XR0.1	19	75	10
2NGR 100 001 100	10XR0.1	22	100	10
2NGR 100 002 075	10XR0.2	19	75	10
2NGR 100 002 100	10XR0.2	22	100	10
2NGR 100 003 075	10XR0.3	19	75	10
2NGR 100 003 100	10XR0.3	22	100	10
2NGR 100 005 075	10XR0.5	19	75	10
2NGR 100 005 100	10XR0.5	22	100	10
2NGR 100 005 130	10XR0.5	22	130	10
2NGR 100 010 075	10XR1	19	75	10
2NGR 100 010 100	10XR1	22	100	10
2NGR 100 010 130	10XR1	22	130	10
2NGR 100 015 075	10XR1.5	19	75	10
2NGR 100 015 100	10XR1.5	22	100	10
2NGR 100 015 130	10XR1.5	22	130	10
2NGR 100 020 075	10XR2	19	75	10
2NGR 100 020 100	10XR2	22	100	10
2NGR 100 025 100	10XR2.5	22	100	10

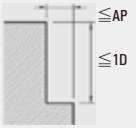
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	DxR	L1	L	d
2NGR 100 030 100	10XR3	22	100	10
2NGR 100 040 100	10XR4	22	100	10
2NGR 120 001 080	12XR0.1	22	80	12
2NGR 120 001 110	12XR0.1	26	110	12
2NGR 120 002 080	12XR0.2	22	80	12
2NGR 120 002 110	12XR0.2	26	110	12
2NGR 120 003 080	12XR0.3	22	80	12
2NGR 120 003 110	12XR0.3	26	110	12
2NGR 120 005 080	12XR0.5	22	80	12
2NGR 120 005 110	12XR0.5	26	110	12
2NGR 120 005 130	12XR0.5	26	130	12
2NGR 120 010 080	12XR1	22	80	12
2NGR 120 010 110	12XR1	26	110	12
2NGR 120 010 130	12XR1	26	130	12
2NGR 120 015 080	12XR1.5	22	80	12
2NGR 120 015 110	12XR1.5	26	110	12
2NGR 120 015 130	12XR1.5	26	130	12
2NGR 120 020 080	12XR2	22	80	12
2NGR 120 020 110	12XR2	26	110	12
2NGR 120 020 130	12XR2	26	130	12
2NGR 120 025 110	12XR2.5	26	110	12
2NGR 120 030 110	12XR3	26	110	12
2NGR 120 040 110	12XR4	26	110	12
2NGR 120 050 110	12XR5	26	110	12

2NGR

• RPM : rev./min • Feed : mm/min

Material	General Steels			SKD61		
Hardness	~45 HRc			45~55 HRc		
Outside Diameter	RPM	FEED	Ap	RPM	FEED	Ap
0.1mm	40,000	40	0.001	40,000	40	0.001
0.2mm	40,000	100	0.002	40,000	100	0.002
0.3mm	40,000	200	0.005	40,000	200	0.005
0.4mm	40,000	600	0.010	40,000	600	0.010
0.5mm	40,000	1,000	0.015	40,000	960	0.015
0.6mm	40,000	1,200	0.020	40,000	1,200	0.020
0.7mm	40,000	1,400	0.020	40,000	1,400	0.020
0.8mm	40,000	1,600	0.030	40,000	1,600	0.030
0.9mm	40,000	1,800	0.040	40,000	1,600	0.040
1mm	40,000	2,000	0.060	32,000	1,600	0.060
1.5mm	40,000	3,000	0.120	32,000	1,900	0.080
2mm	30,000	3,000	0.180	24,000	1,900	0.100
2.5mm	24,000	2,600	0.250	19,000	1,600	0.130
3mm	20,000	2,300	0.300	16,000	1,400	0.150
4mm	15,000	2,000	0.400	12,000	1,200	0.200
5mm	12,000	1,600	0.500	9,000	900	0.250
6mm	10,000	1,400	0.600	7,000	700	0.300
8mm	8,000	1,000	0.800	5,600	550	0.400
10mm	6,400	900	1.000	4,500	500	0.500
12mm	5,400	820	1.000	3,800	450	0.500
16mm	2,400	380	3.000	1,200	100	0.800
20mm	1,900	320	4.000	1,000	80	1.000

Depth of Cut





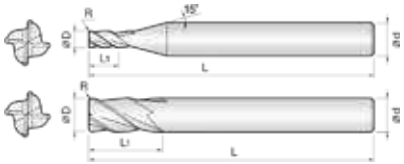
K GSERIES 4NGR

4 Flutes Corner Radius Endmills for Generality

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

- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.
- Minimize fracturing by high TRS ultra fine WC garde.





4刃 汎用 コーナー ラジウス エンドミル

中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

- コーナーR 形状を刃部チッピングが少ないように設計しました.
- 高精密 公差 適用で 超精密 加工に適合します.
- 抗折力が高い 超微粒子 超硬合金を採択して, 高移送 作業時 エンドミルの破損を最小化しました.

4날 범용 코너 레디우스 엔드밀

중저경도강(HRC52이하),프리하든강 계열, 탄소강, 금형강 등 다양한 피삭재 가공

- 코너R 형상을 날부치핑이 적도록 설계하였습니다.
- 고정밀 공차 적용으로 초정밀 가공에 적합합니다.
- 항절력이 높은 초미립자 초경합금을 채택하여, 고이송 작업시 엔드밀의 파손을 최소화 하였습니다.

Size	D Tolerance
D ≦ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4NGR 010 0005 S04	1XR0.05	2.5	45	4
4NGR 010 001 S04	1XR0.1	2.5	45	4
4NGR 010 002 S04	1XR0.2	2.5	45	4
4NGR 010 003 S04	1XR0.3	2.5	45	4
4NGR 015 0005 S04	1.5XR0.05	4	45	4
4NGR 015 001 S04	1.5XR0.1	4	45	4
4NGR 015 002 S04	1.5XR0.2	4	45	4
4NGR 015 003 S04	1.5XR0.3	4	45	4
4NGR 015 005 S04	1.5XR0.5	4	45	4
4NGR 020 0005 S04	2XR0.05	6	45	4
4NGR 020 001 S04	2XR0.1	6	45	4
4NGR 020 002 S04	2XR0.2	6	45	4
4NGR 020 003 S04	2XR0.3	6	45	4
4NGR 020 005 S04	2XR0.5	6	45	4
4NGR 025 001 S04	2.5XR0.1	6	50	4
4NGR 025 002 S04	2.5XR0.2	6	50	4
4NGR 025 003 S04	2.5XR0.3	6	50	4
4NGR 025 005 S04	2.5XR0.5	6	50	4
4NGR 030 001 S06	3XR0.1	8	60	6
4NGR 030 002 S06	3XR0.2	8	60	6
4NGR 030 003 S06	3XR0.3	8	60	6
4NGR 030 005 S06	3XR0.5	8	60	6
4NGR 030 010 S06	3XR1	8	60	6
4NGR 040 001 060	4XR0.1	9	60	4
4NGR 040 001 080	4XR0.1	9	80	4
4NGR 040 001 S06	4XR0.1	10	70	6
4NGR 040 002 060	4XR0.2	9	60	4
4NGR 040 002 080	4XR0.2	9	80	4
4NGR 040 002 S06	4XR0.2	10	70	6
4NGR 040 003 060	4XR0.3	9	60	4
4NGR 040 003 080	4XR0.3	9	80	4
4NGR 040 003 S06	4XR0.3	10	70	6
4NGR 040 005 060	4XR0.5	9	60	4
4NGR 040 005 080	4XR0.5	9	80	4
4NGR 040 005 S06	4XR0.5	10	70	6
4NGR 040 010 060	4XR1	9	60	4
4NGR 040 010 080	4XR1	9	80	4
4NGR 040 010 S06	4XR1	10	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4NGR 050 001 S06	5XR0.1	13	75	6
4NGR 050 002 S06	5XR0.2	13	75	6
4NGR 050 003 S06	5XR0.3	13	75	6
4NGR 050 005 S06	5XR0.5	13	75	6
4NGR 050 010 S06	5XR1	13	75	6
4NGR 060 001 060	6XR0.1	11	60	6
4NGR 060 001 080	6XR0.1	13	80	6
4NGR 060 002 060	6XR0.2	11	60	6
4NGR 060 002 080	6XR0.2	13	80	6
4NGR 060 003 060	6XR0.3	11	60	6
4NGR 060 003 080	6XR0.3	13	80	6
4NGR 060 005 060	6XR0.5	11	60	6
4NGR 060 005 080	6XR0.5	13	80	6
4NGR 060 010 060	6XR1	11	60	6
4NGR 060 010 080	6XR1	13	80	6
4NGR 060 015 060	6XR1.5	11	60	6
4NGR 060 015 080	6XR1.5	13	80	6
4NGR 060 020 060	6XR2	11	60	6
4NGR 060 020 080	6XR2	13	80	6
4NGR 080 001 070	8XR0.1	16	70	8
4NGR 080 001 090	8XR0.1	19	90	8
4NGR 080 002 070	8XR0.2	16	70	8
4NGR 080 002 090	8XR0.2	19	90	8
4NGR 080 003 070	8XR0.3	16	70	8
4NGR 080 003 090	8XR0.3	19	90	8
4NGR 080 005 070	8XR0.5	16	70	8
4NGR 080 005 090	8XR0.5	19	90	8
4NGR 080 005 110	8XR0.5	19	110	8
4NGR 080 010 070	8XR1	16	70	8
4NGR 080 010 090	8XR1	19	90	8
4NGR 080 010 110	8XR1	19	110	8
4NGR 080 015 070	8XR1.5	16	70	8
4NGR 080 015 090	8XR1.5	19	90	8
4NGR 080 015 110	8XR1.5	19	110	8
4NGR 080 020 070	8XR2	16	70	8
4NGR 080 020 090	8XR2	19	90	8
4NGR 080 020 110	8XR2	19	110	8
4NGR 080 025 090	8XR2.5	19	90	8

K GSERIES

4NGR



単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4NGR 100 001 075	10XR0.1	19	75	10
4NGR 100 001 100	10XR0.1	22	100	10
4NGR 100 002 075	10XR0.2	19	75	10
4NGR 100 002 100	10XR0.2	22	100	10
4NGR 100 003 075	10XR0.3	19	75	10
4NGR 100 003 100	10XR0.3	22	100	10
4NGR 100 005 075	10XR0.5	19	75	10
4NGR 100 005 100	10XR0.5	22	100	10
4NGR 100 005 120	10XR0.5	22	120	10
4NGR 100 010 075	10XR1	19	75	10
4NGR 100 010 100	10XR1	22	100	10
4NGR 100 010 120	10XR1	22	120	10
4NGR 100 015 075	10XR1.5	19	75	10
4NGR 100 015 100	10XR1.5	22	100	10
4NGR 100 015 120	10XR1.5	22	120	10
4NGR 100 020 075	10XR2	19	75	10
4NGR 100 020 100	10XR2	22	100	10
4NGR 100 020 120	10XR2	22	120	10
4NGR 100 025 075	10XR2.5	19	75	10
4NGR 100 025 100	10XR2.5	22	100	10
4NGR 100 025 120	10XR2.5	22	120	10
4NGR 100 030 100	10XR3	22	100	10
4NGR 120 002 080	12XR0.2	22	80	12
4NGR 120 002 110	12XR0.2	26	110	12
4NGR 120 003 080	12XR0.3	22	80	12

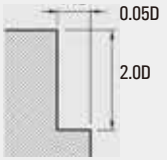
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D×R	L1	L	d
4NGR 120 003 110	12XR0.3	26	110	12
4NGR 120 005 080	12XR0.5	22	80	12
4NGR 120 005 110	12XR0.5	26	110	12
4NGR 120 005 130	12XR0.5	26	130	12
4NGR 120 010 080	12XR1	22	80	12
4NGR 120 010 110	12XR1	26	110	12
4NGR 120 010 130	12XR1	26	130	12
4NGR 120 015 080	12XR1.5	22	80	12
4NGR 120 015 110	12XR1.5	26	110	12
4NGR 120 015 130	12XR1.5	26	130	12
4NGR 120 020 080	12XR2	22	80	12
4NGR 120 020 110	12XR2	26	110	12
4NGR 120 020 130	12XR2	26	130	12
4NGR 120 025 080	12XR2.5	22	80	12
4NGR 120 025 110	12XR2.5	26	110	12
4NGR 120 025 130	12XR2.5	26	130	12
4NGR 120 030 080	12XR3	22	80	12
4NGR 120 030 110	12XR3	26	110	12
4NGR 120 030 130	12XR3	26	130	12
4NGR 120 035 110	12XR3.5	26	110	12
4NGR 120 040 110	12XR4	26	110	12
4NGR 160 005 110	16XR0.5	35	110	16
4NGR 160 005 160	16XR0.5	35	160	16
4NGR 160 010 110	16XR1	35	110	16
4NGR 160 010 160	16XR1	35	160	16

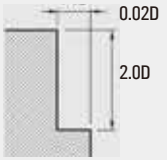
4NGR

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels SCM / SNCM / S45		Prehardened Steels NAK / CENA / KP4		Hardened Steels SKD / SKT / STAVAX	
Hardness	~ 35HRc		35 ~ 45HRc		45 ~ 55HRc	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	27,600	300	18,000	220	11,000	120
1.5mm	22,000	310	13,500	230	8,500	120
2mm	18,000	320	11,560	240	7,200	130
2.5mm	15,000	330	9,500	250	6,100	130
3mm	13,240	340	8,560	260	5,280	130
4mm	10,720	420	6,820	300	4,300	140
5mm	9,160	430	5,800	360	3,800	170
6mm	7,900	430	5,040	360	3,280	170
8mm	6,000	460	3,800	360	2,520	170
10mm	5,040	460	3,280	360	2,020	170
12mm	4,120	360	2,780	320	1,680	140
16mm	3,100	280	2,100	230	1,280	115

Depth of Cut





K GSERIES 2LGM

2 Flutes Long Length Endmills for Generality

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

- Optimum for various work materials by AlCrN coating.
- Minimize edge chipping by improving corner strength.

2刃汎用ロングエンドミル

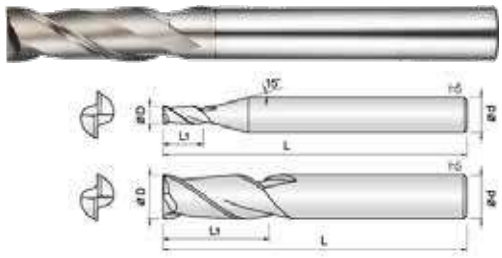
中低硬度鋼(HRC52以下),プリハードン鋼系列,炭素鋼,金型鋼など加工

- AlCrNコーティング処理で広い領域の被削材加工に適しています。
- コーナー部剛性を補強して刃部のチッピングを最小限にしました。

2날 범용 긴 길이 엔드밀

중저경도강(HRC52이하), 프리하든강 계열, 탄소강, 금형강 등 가공

- AlCrN 코팅 처리하여 넓은 영역의 피삭재 가공에 적합합니다.
- 코너부 강성을 보강하여 날부치핑을 최소화 하였습니다.



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø14~25	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LGM 010 030 S06	1	3	60	6
2LGM 010 050 S06	1	5	60	6
2LGM 010 070 S06	1	7	60	6
2LGM 010 100 S06	1	10	60	6
2LGM 010 150 S06	1	15	60	6
2LGM 015 060 S06	1.5	6	60	6
2LGM 015 075 S06	1.5	7.5	60	6
2LGM 015 100 S06	1.5	10	60	6
2LGM 015 150 S06	1.5	15	60	6
2LGM 015 200 S06	1.5	20	60	6
2LGM 020 060 S06	2	6	60	6
2LGM 020 100 S06	2	10	60	6
2LGM 020 150 S06	2	15	60	6
2LGM 020 200 S06	2	20	60	6
2LGM 030 120 S06	3	12	70	6
2LGM 030 150 S06	3	15	70	6
2LGM 030 200 S06	3	20	70	6
2LGM 030 250 S06	3	25	70	6
2LGM 030 300 S06	3	30	70	6
2LGM 040 150 S06	4	15	70	6
2LGM 040 200 S06	4	20	70	6
2LGM 040 300 S06	4	30	75	6
2LGM 050 200 S06	5	20	70	6
2LGM 050 250 S06	5	25	75	6
2LGM 050 300 S06	5	30	80	6
2LGM 060 200 S06	6	20	75	6
2LGM 060 200 100	6	20	100	6
2LGM 060 250 S06	6	25	75	6
2LGM 060 300 S06	6	30	80	6
2LGM 080 250 S08	8	25	75	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2LGM 080 250 100	8	25	100	8
2LGM 080 300 S08	8	30	80	8
2LGM 080 350 S08	8	35	80	8
2LGM 080 400 S08	8	40	90	8
2LGM 080 500 S08	8	50	100	8
2LGM 100 300 S10	10	30	80	10
2LGM 100 300 110	10	30	110	10
2LGM 100 350 S10	10	35	90	10
2LGM 100 400 S10	10	40	90	10
2LGM 100 500 S10	10	50	100	10
2LGM 100 600 S10	10	60	110	10
2LGM 120 300 S12	12	30	90	12
2LGM 120 350 110	12	35	110	12
2LGM 120 400 S12	12	40	100	12
2LGM 120 500 S12	12	50	100	12
2LGM 120 600 S12	12	60	110	12
2LGM 120 700 S12	12	70	130	12
2LGM 140 500 S14	14	50	110	14
2LGM 160 400 160	16	40	160	16
2LGM 160 550 S16	16	55	120	16
2LGM 160 700 S16	16	70	130	16
2LGM 160 800 S16	16	80	160	16
2LGM 200 500 160	20	50	160	20
2LGM 200 600 S20	20	60	130	20
2LGM 200 1000 S20	20	100	200	20
2LGM 250 750 S25	25	75	160	25

K GSERIES 4LGM

4 Flutes Long Length Endmills for Generality

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

- Optimum for various work materials by AlCrN coating.
- Minimize edge chipping by improving corner strength.

4刃汎用ロングエンドミル

中低硬度鋼(HRc52以下),プレハードン鋼 系列, 炭素鋼, 金型鋼など 多様な 被削材 加工

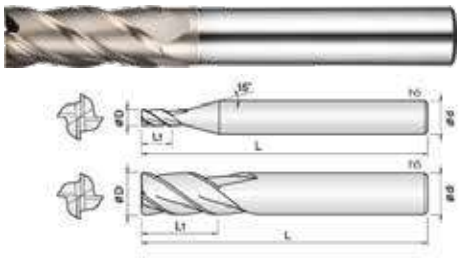
- AlCrNコーティング処理で広い領域の被削材加工に適しています。
- コーナー部剛性を補強して刃部のチッピングを最小限にしました。

4날 범용 긴 길이 엔드밀

중저경도강(HRC52이하), 프리하든강 계열, 탄소강, 금형강 등 가공

- AlCrN 코팅 처리하여 넓은 영역의 피삭재 가공에 적합합니다.
- 코너부 강성을 보강하여 날부치핑을 최소화 하였습니다.

Ø1~Ø5 Ø6~Ø12 Ø14~Ø25 Shield Edge



Size	D Tolerance
Ø1~5	+0~ -0.01mm
Ø6~12	-0.01~ -0.025mm
Ø14~25	-0.015~ -0.03mm

単位/Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LGM 010 030 S06	1	3	60	6
4LGM 010 050 S06	1	5	60	6
4LGM 015 060 S06	1.5	6	60	6
4LGM 015 080 S06	1.5	8	60	6
4LGM 020 080 S06	2	8	60	6
4LGM 020 100 S06	2	10	60	6
4LGM 030 100 S06	3	10	70	6
4LGM 030 150 S06	3	15	70	6
4LGM 030 200 S06	3	20	70	6
4LGM 030 250 S06	3	25	70	6
4LGM 040 120 S06	4	12	70	6
4LGM 040 150 S04	4	15	70	4
4LGM 040 150 S06	4	15	70	6
4LGM 040 200 S04	4	20	70	4
4LGM 040 200 S06	4	20	70	6
4LGM 040 250 S06	4	25	70	6
4LGM 040 300 S06	4	30	75	6
4LGM 050 200 S06	5	20	70	6
4LGM 050 250 S06	5	25	75	6
4LGM 050 300 S06	5	30	80	6
4LGM 060 200 S06	6	20	75	6
4LGM 060 200 100	6	20	100	6
4LGM 060 250 S06	6	25	75	6
4LGM 060 300 S06	6	30	80	6
4LGM 060 350 S06	6	35	80	6
4LGM 080 250 S08	8	25	75	8
4LGM 080 250 100	8	25	100	8
4LGM 080 300 S08	8	30	80	8
4LGM 080 350 S08	8	35	90	8
4LGM 080 400 S08	8	40	90	8

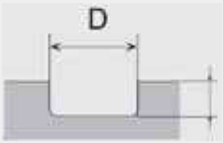
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4LGM 080 450 S08	8	45	100	8
4LGM 100 300 S10	10	30	80	10
4LGM 100 300 110	10	30	110	10
4LGM 100 350 S10	10	35	90	10
4LGM 100 400 S10	10	40	90	10
4LGM 100 500 S10	10	50	100	10
4LGM 100 600 S10	10	60	110	10
4LGM 120 300 S12	12	30	90	12
4LGM 120 350 110	12	35	110	12
4LGM 120 400 S12	12	40	100	12
4LGM 120 500 S12	12	50	100	12
4LGM 120 600 S12	12	60	110	12
4LGM 120 700 S12	12	70	130	12
4LGM 140 500 S14	14	50	110	14
4LGM 160 400 160	16	40	160	16
4LGM 160 550 S16	16	55	120	16
4LGM 160 700 S16	16	70	130	16
4LGM 180 800 160	18	80	160	18
4LGM 200 500 160	20	50	160	20
4LGM 200 600 S20	20	60	130	20
4LGM 200 1000 S20	20	100	200	20
4LGM 250 750 S25	25	75	160	25

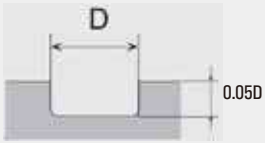
2LGM

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels / Prehardened Steels SKD61 / NAK		Hardened Steels SKD61	
Hardness	~ 30HRc		30 ~ 45HRc		45 ~ 55HRc	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	8,570	45	6,570	40	4,200	15
1.5mm	7,800	50	6,000	45	3,700	20
2mm	6,300	60	5,040	50	3,150	25
3mm	4,410	70	3,570	60	2,200	30
4mm	3,570	85	2,840	70	1,790	35
5mm	3,050	105	2,420	85	1,580	40
6mm	2,630	125	2,100	105	1,370	50
8mm	2,000	135	1,580	105	1,050	50
10mm	1,680	135	1,370	105	840	50
12mm	1,370	105	1,160	95	700	40
16mm	1,160	95	890	75	560	35
20mm	840	70	680	50	420	25
25mm	600	55	510	35	300	15

Depth of Cut



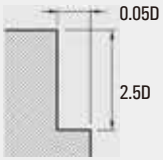


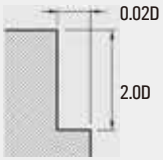
4LGM

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels / Prehardened Steels SKD61 / NAK		Hardened Steels SKD61	
Hardness	~ 30HRc		30 ~ 45HRc		45 ~ 55HRc	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	8,200	85	6,100	65	4,300	30
1.5mm	7,100	95	5,500	75	3,500	40
2mm	6,300	100	5,040	80	3,150	45
3mm	4,410	115	3,570	100	2,200	55
4mm	3,570	140	2,840	115	1,790	60
5mm	3,050	180	2,420	140	1,580	70
6mm	2,630	215	2,100	180	1,370	90
8mm	2,000	230	1,580	180	1,050	90
10mm	1,680	230	1,370	180	840	90
12mm	1,370	180	1,160	160	700	70
16mm	1,160	160	890	125	560	60
20mm	840	115	680	90	420	45
25mm	650	80	790	65	310	30

Depth of Cut





K THREAD MILL 4TMM

4 Flutes Multi-functional Thread Mill for Generality

Thread mill for Hardened steel(up to HRC40), pre-hardened steel, alloy steel, carbon steel, cast iron.

- With one 4TMM, it's available for drilling, threading and chamfering all together.
- It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.

4刃汎用多機能スレッドミル

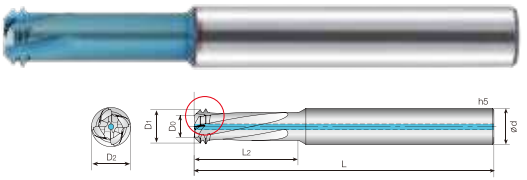
HRC40以下の高硬度鋼、プリハードン鋼、合金鋼、炭素鋼、鋳鉄の加工

- 4TMMの工具は、1つの工具でドリル、ねじ及びチャンバー作業をすべて行います。
- 多機能工具で詰まった穴、貫通穴、傾斜した曲面でも使用が可能です。

4날 범용 다기능 쓰레드밀

HRC40이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철가공

- 4TMM공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업을 모두 수행합니다.
- 다기능 공구로 막힌구멍, 관통구멍, 경사진 곡면에서도 사용이 가능합니다.



単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
			Z	Zt	D0	D1	D2	L2	Lk	L	d
ISO without coolant											
4TMM 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4TMM 024 085 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	8.5	0.4	60	6
4TMM 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4TMM 032 112 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	11.2	0.57	60	6
4TMM 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4TMM 039 144 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	14.4	0.7	60	6
4TMM 047 140 S06 M6	M6	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMM 047 170 S06 M6	M6	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMM 061 180 S08 M8	M8	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMM 061 220 S08 M8	M8	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMM 078 230 S08 M10	M10	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMM 078 280 S08 M10	M10	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMM 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMM 090 330 S10 M12	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMM 118 350 S12 M16	M16	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMM 118 430 S12 M16	M16	2	4	2	7.4	11.4	11.8	43	2	100	12
ISO With coolant											
4TMM 047 140 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMM 047 170 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMM 061 180 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMM 061 220 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMM 078 230 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMM 078 280 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMM 090 260 S10 M12C	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMM 090 330 S10 M12C	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMM 118 350 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMM 118 430 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	43	2	100	12

K THREAD MILL 4TMM

单位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
	UNC	UNF	Pitch(TPI)	Z	Zt	D0	D1	D2	L2	Lk	L	d
American UN Without coolant												
4TMM 021 072 S06	No.4,No.5		40	4	2	1	1.76	2.1	7.2	0.38	60	6
4TMM 021 088 S06	No.4,No.5		40	4	2	1	1.76	2.1	8.8	0.38	60	6
4TMM 026 086 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	8.6	0.45	60	6
4TMM 026 105 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	10.5	0.45	60	6
4TMM 030 100 S06	No.8	No.10	32	4	2	1.42	2.62	3	10	0.6	60	6
4TMM 030 122 S06	No.8	No.10	32	4	2	1.42	2.62	3	12.2	0.6	60	6
4TMM 035 114 S06	No.10, No.12		24	4	2	1.58	3.18	3.5	11.4	0.8	60	6
4TMM 048 145 S06	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	60	6
4TMM 048 180 S06	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	60	6
4TMM 050 144 S06		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	60	6
4TMM 050 178 S06		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	60	6
American UN With coolant												
4TMM 048 145 S08C	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	65	6
4TMM 048 180 S08C	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	65	6
4TMM 050 144 S08C		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	65	8
4TMM 050 178 S08C		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	65	8
4TMM 065 176 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	17.6	0.85	65	8
4TMM 065 218 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	21.8	0.85	65	8
4TMM 067 260 S08C	3/8"		16	4	2	3.98	6.18	6.7	26	1.1	65	8

4TMM

• RPM : rev./min • Feed : mm/min

Material	Aluminum		Stainless Steel		Alloy Steel/ Tool Steel		Hardened Steels	
Hardness					~30HRC		35~40HRC	
Outside Diameter	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
2Ø ~ 3Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 80	0.015 ~ 0.025	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.005 ~ 0.01
3Ø ~ 4Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 80	0.015 ~ 0.025	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.005 ~ 0.01
4Ø ~ 5Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 80	0.015 ~ 0.025	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.005 ~ 0.01
6Ø ~ 8Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 80	0.025 ~ 0.035	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.01 ~ 0.015
8Ø ~ 10Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 80	0.03 ~ 0.04	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.01 ~ 0.015
10Ø ~ 11Ø	100 ~ 130	0.05 ~ 0.06	70 ~ 80	0.03 ~ 0.04	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.015 ~ 0.02
11Ø ~ 12Ø	100 ~ 130	0.06 ~ 0.07	70 ~ 80	0.04 ~ 0.05	50 ~ 70	0.03 ~ 0.04	45 ~ 55	0.02 ~ 0.025

• Using shrink-fit chuck with great holding power is recommended.
• When the tool approaches the work material, reduce the feed by 50%.

K THREAD MILL 4TMA

4 Flutes Multi-functional Thread Mill for Aluminum

Thread mill for Aluminum, Aluminum alloy, non-ferrous and non-metalic materials.

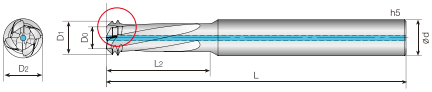
- With one 4TMA, it's available for drilling, threading and chamfering all together.
- It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.



4刃アルミ専用多機能スレッドミル

アルミ、アルミ合金などの非鉄・非金属の加工

- 4TMAの工具は、1つの工具でドリル、ねじ及びチャンパー作業をすべて行います。
- 多機能工具で詰まった穴、貫通穴、傾斜した曲面でも使用が可能です。



4날 알루미늄전용 다기능 쓰레드밀

알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 4TMA공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업을 모두 수행합니다.
- 다기능 공구로 막힌구멍, 관통구멍, 경사진 곡면에서도 사용이 가능합니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
			Z	Zt	D0	D1	D2	L2	Lk	L	d
ISO without coolant											
4TMA 0105 033 S04 M014	M1.4	0.3	4	2	0.61	0.95	1.05	3.3	0.17	45	4
4TMA 0105 040 S04 M014	M1.4	0.3	4	2	0.61	0.95	1.05	4	0.17	45	4
4TMA 012 037 S04 M016	M1.6～M1.8	0.35	4	2	0.65	1.04	1.2	3.7	0.195	45	4
4TMA 012 045 S04 M016	M1.6～M1.8	0.35	4	2	0.65	1.04	1.2	4.5	0.195	45	4
4TMA 0155 045 S04 M2	M2	0.4	4	2	0.94	1.4	1.55	4.5	0.23	45	4
4TMA 0155 055 S04 M2	M2	0.4	4	2	0.94	1.4	1.55	5.5	0.23	45	4
4TMA 020 055 S04 M025	M2.5～M2.6	0.45	4	2	1.16	1.85	2	5.5	0.345	45	4
4TMA 020 0675 S04 M025	M2.5～M2.6	0.45	4	2	1.16	1.85	2	6.75	0.345	45	4
4TMA 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4TMA 024 085 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	8.5	0.4	60	6
4TMA 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4TMA 032 112 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	11.2	0.57	60	6
4TMA 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4TMA 039 144 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	14.4	0.7	60	6
4TMA 047 140 S06 M6	M6～M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMA 047 170 S06 M6	M6～M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMA 061 180 S08 M8	M8～M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMA 061 220 S08 M8	M8～M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMA 078 230 S08 M10	M10～M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMA 078 280 S08 M10	M10～M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMA 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMA 090 330 S10 M12	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMA 118 350 S12 M16	M16～M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMA 118 430 S12 M16	M16～M23	2	4	2	7.4	11.4	11.8	43	2	100	12

K THREAD MILL 4TMA

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
			Z	Zt	D0	D1	D2	L2	Lk	L	d
ISO With coolant											
4TMA 047 140 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMA 047 170 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMA 061 180 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMA 061 220 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMA 078 230 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMA 078 280 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMA 090 260 S10 M12C	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMA 090 330 S10 M12C	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMA 118 350 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMA 118 430 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	43	2	100	12

Order Number	Thread			Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
	UNC	UNF	Pitch(TPI)	Z	Zt	D0	D1	D2	L2	Lk	L	d
American UN Without coolant												
4TMA 021 072 S06	No.4,No.5		40	4	2	1	1.76	2.1	7.2	0.38	60	6
4TMA 021 088 S06	No.4,No.5		40	4	2	1	1.76	2.1	8.8	0.38	60	6
4TMA 026 086 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	8.6	0.45	60	6
4TMA 026 105 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	10.5	0.45	60	6
4TMA 030 100 S06	No.8	No.10	32	4	2	1.42	2.62	3	10	0.6	60	6
4TMA 030 122 S06	No.8	No.10	32	4	2	1.42	2.62	3	12.2	0.6	60	6
4TMA 035 114 S06	No.10, No.12		24	4	2	1.58	3.18	3.5	11.4	0.8	60	6
4TMA 048 145 S06	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	60	6
4TMA 048 180 S06	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	60	6
4TMA 050 144 S06		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	60	6
4TMA 050 178 S06		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	60	6
American UN With coolant												
4TMA 048 145 S08C	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	60	6
4TMA 048 180 S08C	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	60	6
4TMA 050 144 S08C		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	60	6
4TMA 050 178 S08C		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	60	6
4TMA 065 176 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	17.6	0.85	65	8
4TMA 065 218 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	21.8	0.85	65	8
4TMA 067 260 S08C	3/8"		16	4	2	3.98	6.18	6.7	26	1.1	65	8

K THREAD MILL 4TMS

4 Flutes Multi-functional Thread Mill for Stainless Steel

Thread mill for Stainless and Titanium alloy.

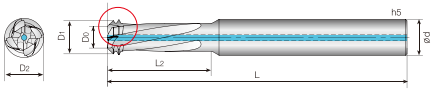
- With one 4TMS, it's available for drilling, threading and chamfering all together.
- It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.



4刃SUS加工用の多機能スレッドミル

SUS, チタン合金の加工

- 4TMSの工具は、1つの工具でドリル、ねじ及びチャンパー作業をすべて行います。
- 多機能工具で詰まった穴、貫通穴、傾斜した曲面でも使用が可能です。



4날 SUS 가공용 다기능 쓰레드밀

SUS, 티타늄합금 가공

- 4TMS공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업을 모두 수행합니다.
- 다기능 공구로 막힌구멍, 관통구멍, 경사진 곡면에서도 사용이 가능합니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
			Z	Zt	D0	D1	D2	L2	Lk	L	d
ISO without coolant											
4TMS 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4TMS 024 085 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	8.5	0.4	60	6
4TMS 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4TMS 032 112 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	11.2	0.57	60	6
4TMS 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4TMS 039 144 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	14.4	0.7	60	6
4TMS 047 140 S06 M6	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMS 047 170 S06 M6	M6 ~ M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMS 061 180 S08 M8	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMS 061 220 S08 M8	M8 ~ M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMS 078 230 S08 M10	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMS 078 280 S08 M10	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMS 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMS 090 330 S10 M12	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMS 118 350 S12 M16	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMS 118 430 S12 M16	M16 ~ M23	2	4	2	7.4	11.4	11.8	43	2	100	12
ISO With coolant											
4TMS 047 140 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4TMS 047 170 S06 M6C	M6 ~ M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4TMS 061 180 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4TMS 061 220 S08 M8C	M8 ~ M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4TMS 078 230 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4TMS 078 280 S08 M10C	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4TMS 090 260 S10 M12C	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4TMS 090 330 S10 M12C	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4TMS 118 350 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4TMS 118 430 S12 M16C	M16 ~ M23	2	4	2	7.4	11.4	11.8	43	2	100	12

K THREAD MILL 4TMS

單位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
	UNC	UNF	Pitch(TPI)	Z	Zt	D0	D1	D2	L2	Lk	L	d
American UN Without coolant												
4TMS 021 072 S06	No.4,No.5		40	4	2	1	1.76	2.1	7.2	0.38	60	6
4TMS 021 088 S06	No.4,No.5		40	4	2	1	1.76	2.1	8.8	0.38	60	6
4TMS 026 086 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	8.6	0.45	60	6
4TMS 026 105 S06	No.6,No.8		32	4	2	1.32	2.21	2.6	10.5	0.45	60	6
4TMS 030 100 S06	No.8	No.10	32	4	2	1.42	2.62	3	10	0.6	60	6
4TMS 030 122 S06	No.8	No.10	32	4	2	1.42	2.62	3	12.2	0.6	60	6
4TMS 035 114 S06	No.10,No.12		24	4	2	1.58	3.18	3.5	11.4	0.8	60	6
4TMS 048 145 S06	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	60	6
4TMS 048 180 S06	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	60	6
4TMS 050 144 S06		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	60	6
4TMS 050 178 S06		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	60	6

Order Number	Thread			Flutes	Teeth	Diameter			Effective Length	Length	Overall Length	Shank Dia
	UNC	UNF	Pitch(TPI)	Z	Zt	D0	D1	D2	L2	Lk	L	d
American UN With coolant												
4TMS 048 145 S08C	1/4"		20	4	2	2.69	4.29	4.8	14.5	0.8	65	8
4TMS 048 180 S08C	1/4"		20	4	2	2.69	4.29	4.8	18	0.8	65	8
4TMS 050 144 S08C		1/4"	28	4	2	3.2	4.58	5	14.4	0.69	65	8
4TMS 050 178 S08C		1/4"	28	4	2	3.2	4.58	5	17.8	0.69	65	8
4TMS 065 176 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	17.6	0.85	65	8
4TMS 065 218 S08C		5/16",3/8"	24	4	2	4.34	6.02	6.5	21.8	0.85	65	8
4TMS 067 260 S08C	3/8"		16	4	2	3.98	6.18	6.7	26	1.1	65	8

K THREAD MILL 4THM

4 Flutes Multi-functional Thread Mill with One Thread

Thread mill for Hardened steel(up to HRC58), pre-hardened steel, alloy steel, carbon steel, cast iron.

- 4THM tool can be used for threading of small diameter with deep hole.
- Threading for ISO, Unified screw, right and left screws are all possible.



4刃汎用多機能スレッドミル(1ねじ山)

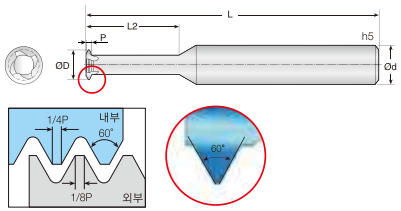
HRC58以下の熱処理鋼、プリハードン鋼、合金鋼、炭素鋼、鋳鉄の加工

- 小口径サイズの深穴のネジ加工に使用できます。
- ISO及びユニファイねじ加工と右ねじ及び左ねじの作業も可能です。

4날 범용 다기능 쓰레드밀(1나사산)

HRC58이하의 열처리강, 프리하든강, 합금강, 탄소강, 주철 가공

- 소구경 크기의 깊은홀의 나사 가공에 사용할 수 있습니다.
- ISO 및 유니파이 나사 가공과 오른나사 및 왼나사 작업이 모두 가능합니다.



単位/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
ISO without coolant											
4THM 0072 036 S03	M1x0.25					4	A	0.72	3.6	45	3
4THM 009 043 S03	M1.2x0.25	M1.4x0.25				4	A	0.9	4.3	45	3
		M1.6x0.25				4	A	0.9	4.3	45	3
4THM 0105 050 S03	M1.4x0.3					4	A	1.05	5	45	3
4THM 0115 031 S03	M1.6x0.35	M1.6x0.25				4	B	1.15	3.1	45	3
		M1.8x0.25		0-80		4	B	1.15	3.1	45	3
		M2x0.25				4	B	1.15	3.1	45	3
4THM 012 057 S03	M1.6x0.35	M2x0.35				4	A	1.2	5.7	45	3
		M2.2x0.35				4	A	1.2	5.7	45	3
4THM 014 037 S03	M2x0.4	M2x0.35	1-64	1-72		4	B	1.4	3.7	45	3
	M2.2x0.45	M2.2x0.35	2-56	2-64		4	B	1.4	3.7	45	3
4THM 0155 071 S03	M2x0.4					4	A	1.55	7.1	45	3
4THM 019 052 S03	M2.5x0.45	M2.5x0.35	3-48	3-56		4	B	1.9	5.2	45	3
		M3x0.35	4-40	4-48		4	B	1.9	5.2	45	3
4THM 020 090 S03	M2.5x0.45	M2.6x0.45				4	A	2	9	45	3
4THM 0237 0106 S03	M3x0.5	M3.5x0.5				4	A	2.37	10.6	45	3
		M4x0.5				4	A	2.37	10.6	45	3
4THM 0245 070 S03	M3x0.5	M3.5x0.5	5-40	5-44		4	B	2.45	7	45	3
	M3.5x0.6		6-32	6-40		4	B	2.45	7	45	3
4THM 032 095 S06	M4x0.7	M4x0.5	8-32	8-36	10-28	4	B	3.2	9.5	60	6
	M4.5x0.75		10-24	10-32		4	B	3.2	9.5	60	6
4THM 040 125 S06	M5x0.8	M5x0.5			10-36	4	B	4	12.5	60	6
	M6x1	M5.5x0.5	12-24	12-28	10-40	4	B	4	12.5	60	6
		M5x0.75			10-48	4	B	4	12.5	60	6
4THM 065 166 S08	M8x1.25	M10x1.25				4	B	6.5	16.6	60	8
		M12x1.25				4	B	6.5	16.6	60	8
		M14x1.25				4	B	6.5	16.6	60	8

K THREAD MILL 4THM

単位/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
4THM 082 208 S10	M10x1.5	M12x1.5				4	B	8.2	20.8	70	10
		M14x1.5				4	B	8.2	20.8	70	10
		M16x1.5				4	B	8.2	20.8	70	10
4THM 099 250 S10	M12x1.75	M14x1.75				4	B	9.9	25	70	10
		M16x1.75				4	B	9.9	25	70	10
		M18x1.75				4	B	9.9	25	70	10

4THM

• RPM : rev./min • Feed : mm/min

Material	Aluminum		Stainless Steel		Hardened Steels		Hardened Steels	
Hardness					35~45HRC		45~58HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
~ 1Ø	100 ~ 130	0.02 ~ 0.34	70 ~ 85	0.005 ~ 0.01	50 ~ 70	0.005 ~ 0.01	45 ~ 55	0.005 ~ 0.01
1Ø ~ 2Ø	100 ~ 130	0.02 ~ 0.34	70 ~ 85	0.005 ~ 0.01	50 ~ 70	0.005 ~ 0.01	45 ~ 55	0.005 ~ 0.01
2Ø ~ 3Ø	100 ~ 130	0.02 ~ 0.34	70 ~ 85	0.005 ~ 0.01	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
4Ø ~ 6Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
6Ø ~ 8Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
8Ø ~ 10Ø	100 ~ 130	0.05 ~ 0.06	70 ~ 85	0.02 ~ 0.03	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03

• Using shrink-fit chuck with great holding power is recommended.
• When the tool approaches the work material, reduce the feed by 50%.

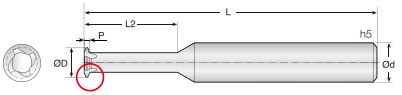
K THREAD MILL 4THA

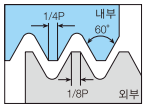
4 Flutes Multi-functional Thread Mill with One Thread for Aluminum

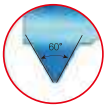
Thread mill for aluminum, aluminum alloy, non-ferrous and non-metalic materials.

- 4THA tool can be used for threading of small diameter with deep hole.
- Threading for ISO, Unified screw, right and left screws are all possible.









4刃アルミ専用の多機能スレッドミル (1ねじ山)

アルミ、アルミ合金などの非鉄・非金属の加工

- 小口径サイズの深穴のネジ加工に使用できます。
- ISO及びユニファイねじ加工と右ねじ及び左ねじの作業も可能です。

4날 알루미늄 전용 다기능 쓰레드밀(1나사산)

알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 소구경 크기의 깊은홀의 나사 가공에 사용할 수 있습니다.
- ISO 및 유니파이 나사 가공과 오른나사 및 왼나사 작업이 모두 가능합니다.

単位/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
ISO without coolant											
4THA 0072 036 S03	M1x0.25					4	A	0.72	3.6	45	3
4THA 009 043 S03	M1.2x0.25	M1.4x0.25				4	A	0.9	4.3	45	3
		M1.6x0.25				4	A	0.9	4.3	45	3
4THA 0105 050 S03	M1.4x0.3					4	A	1.05	5	45	3
4THA 0115 031 S03	M1.6x0.35	M1.6x0.25				4	B	1.15	3.1	45	3
		M1.8x0.25		0-80		4	B	1.15	3.1	45	3
		M2x0.25				4	B	1.15	3.1	45	3
4THA 012 057 S03	M1.6x0.35	M2x0.35				4	A	1.2	5.7	45	3
		M2.2x0.35				4	A	1.2	5.7	45	3
4THA 014 037 S03	M2x0.4	M2x0.35	1-64	1-72		4	B	1.4	3.7	45	3
	M2.2x0.45	M2.2x0.35	2-56	2-64		4	B	1.4	3.7	45	3
4THA 0155 071 S03	M2x0.4					4	A	1.55	7.1	45	3
4THA 019 052 S03	M2.5x0.45	M2.5x0.35	3-48	3-56		4	B	1.9	5.2	45	3
		M3x0.35	4-40	4-48		4	B	1.9	5.2	45	3
4THA 020 090 S03	M2.5x0.45	M2.6x0.45				4	A	2	9	45	3
4THA 0237 0106 S03	M3x0.5	M3.5x0.5				4	A	2.37	10.6	45	3
		M4x0.5				4	A	2.37	10.6	45	3
4THA 0245 070 S03	M3x0.5	M3.5x0.5	5-40	5-44		4	B	2.45	7	45	3
	M3.5x0.6		6-32	6-40		4	B	2.45	7	45	3
4THA 032 095 S06	M4x0.7	M4x0.5	8-32	8-36	10-28	4	B	3.2	9.5	60	6
	M4.5x0.75		10-24	10-32		4	B	3.2	9.5	60	6
4THA 040 125 S06	M5x0.8	M5x0.5			10-36	4	B	4	12.5	60	6
	M6x1	M5.5x0.5	12-24	12-28	10-40	4	B	4	12.5	60	6
		M5x0.75			10-48	4	B	4	12.5	60	6
4THA 065 166 S08	M8x1.25	M10x1.25				4	B	6.5	16.6	60	8
		M12x1.25				4	B	6.5	16.6	60	8
		M14x1.25				4	B	6.5	16.6	60	8

K THREAD MILL 4THA



单位/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
	M10x1.5	M12x1.5				4	B	8.2	20.8	70	10
4THA 082 208 S10		M14x1.5				4	B	8.2	20.8	70	10
		M16x1.5				4	B	8.2	20.8	70	10
	M12x1.75	M14x1.75				4	B	9.9	25	70	10
4THA 099 250 S10		M16x1.75				4	B	9.9	25	70	10
		M18x1.75				4	B	9.9	25	70	10

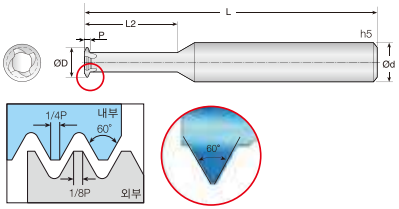
K THREAD MILL 4THS

4 Flutes Multi-functional Thread Mill with One Thread for Stainless Steel

Thread mill for SUS, Titanium alloy

- 4THS tool can be used for threading of small diameter with deep hole.
- Threading for ISO, Unified screw, right and left screws are all possible.





4刃SUS加工用の多機能スレッドミル(1ねじ山)

SUS、チタン合金の加工

- 小口径サイズの深穴のネジ加工に使用できます。
- ISO及びユニファイねじ加工と右ねじ及び左ねじの作業も可能です。

4날 SUS 가공용 다기능 쓰레드밀(1나사산)

SUS, 티타늄합금 가공

- 소구경 크기의 깊은홀의 나사 가공에 사용할 수 있습니다.
- ISO 및 유니파이 나사 가공과 오른나사 및 왼나사 작업이 모두 가능합니다.

단위/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
ISO without coolant											
4THS 0072 036 S03	M1x0.25					4	A	0.72	3.6	45	3
4THS 009 043 S03	M1.2x0.25	M1.4x0.25				4	A	0.9	4.3	45	3
		M1.6x0.25				4	A	0.9	4.3	45	3
4THS 0105 050 S03	M1.4x0.3					4	A	1.05	5	45	3
4THS 0115 031 S03	M1.6x0.35	M1.6x0.25				4	B	1.15	3.1	45	3
		M1.8x0.25		0-80		4	B	1.15	3.1	45	3
		M2x0.25				4	B	1.15	3.1	45	3
4THS 012 057 S03	M1.6x0.35	M2x0.35				4	A	1.2	5.7	45	3
		M2.2x0.35				4	A	1.2	5.7	45	3
4THS 014 037 S03	M2x0.4	M2x0.35	1-64	1-72		4	B	1.4	3.7	45	3
	M2.2x0.45	M2.2x0.35	2-56	2-64		4	B	1.4	3.7	45	3
4THS 0155 071 S03	M2x0.4					4	A	1.55	7.1	45	3
4THS 019 052 S03	M2.5x0.45	M2.5x0.35	3-48	3-56		4	B	1.9	5.2	45	3
		M3x0.35	4-40	4-48		4	B	1.9	5.2	45	3
4THS 020 090 S03	M2.5x0.45	M2.6x0.45				4	A	2	9	45	3
4THS 0237 0106 S03	M3x0.5	M3.5x0.5				4	A	2.37	10.6	45	3
		M4x0.5				4	A	2.37	10.6	45	3
4THS 0245 070 S03	M3x0.5	M3.5x0.5	5-40	5-44		4	B	2.45	7	45	3
	M3.5x0.6		6-32	6-40		4	B	2.45	7	45	3
4THS 032 095 S06	M4x0.7	M4x0.5	8-32	8-36	10-28	4	B	3.2	9.5	60	6
	M4.5x0.75		10-24	10-32		4	B	3.2	9.5	60	6
4THS 040 125 S06	M5x0.8	M5x0.5			10-36	4	B	4	12.5	60	6
	M6x1	M5.5x0.5	12-24	12-28	10-40	4	B	4	12.5	60	6
		M5x0.75			10-48	4	B	4	12.5	60	6
4THS 065 166 S08	M8x1.25	M10x1.25				4	B	6.5	16.6	60	8
		M12x1.25				4	B	6.5	16.6	60	8
		M14x1.25				4	B	6.5	16.6	60	8

K THREAD MILL 4THS

單位/Unit : mm

Order Number	Metric screw		Unified screw			Flutes	Type	Diameter	Effective Length	Overall Length	Shank Dia
	M Coarse	M Fine	UNC	UNF	UNS	Z		D	L2	L	d
	M10x1.5	M12x1.5				4	B	8.2	20.8	70	10
4THS 082 208 S10		M14x1.5				4	B	8.2	20.8	70	10
		M16x1.5				4	B	8.2	20.8	70	10
	M12x1.75	M14x1.75				4	B	9.9	25	70	10
4THS 099 250 S10		M16x1.75				4	B	9.9	25	70	10
		M18x1.75				4	B	9.9	25	70	10

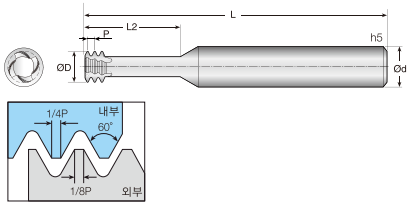
K THREAD MILL 4TSH

4 Flutes Short Flute Thread Mill for Generality

Thread mill for Hardened steel(up to HRC58), pre-hardened steel, alloy steel, carbon steel, cast iron.

- Powerful flute design applied for hardened steel.
- Improved cutting and chip removal reduce the risk of tool breaking in holes.
- It can be used for both right and left-handed threading.





4刃汎用短い刃スレッドミル

HRC58以下の熱処理鋼、プリハードン鋼、合金鋼、炭素鋼、鋳鉄の加工

- 硬化鋼内のねじ加工のため、丈夫で強力な刃のデザイン。
- 向上した切削及びチップ除去により、工具の性能を向上させます。
- 右ねじ及び左ねじの作業がすべて可能です。

4날 범용 짧은 날 쓰레드밀

HRC58이하의 열처리강, 프리하든강, 합금강, 탄소강, 주철 가공

- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩제거를 통해 공구 성능을 향상 시킵니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
ISO without coolant								
4TSH 0072 020 S04 M1	M1	0.25	4	3	0.72	2	45	4
4TSH 0072 025 S04 M1	M1	0.25	4	3	0.72	2.5	45	4
4TSH 009 024 S04 M012	M1.2	0.25	4	3	0.9	2.4	45	4
4TSH 009 030 S04 M012	M1.2	0.25	4	3	0.9	3	45	4
4TSH 0095 028 S06 M014	M1.4	0.3	4	3	0.95	2.8	50	6
4TSH 0095 035 S06 M014	M1.4	0.3	4	3	0.95	3.5	50	6
4TSH 011 032 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	3.2	50	6
4TSH 011 040 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	4	50	6
4TSH 012 050 S03 M016	M1.6 ~ 1.8	0.35	4	3	1.2	5	40	3
4TSH 014 040 S06 M2	M2	0.4	4	3	1.4	4	50	6
4TSH 014 050 S06 M2	M2	0.4	4	3	1.4	5	50	6
4TSH 0155 062 S03 M2	M2	0.4	4	3	1.55	6.2	40	3
4TSH 0155 062 S06 M2	M2	0.4	4	3	1.55	6.2	60	6
4TSH 016 044 S06 M022	M2.2	0.45	4	3	1.6	4.4	50	6
4TSH 016 055 S06 M022	M2.2	0.45	4	3	1.6	5.5	50	6
4TSH 018 050 S06 M025	M2.5	0.45	4	3	1.8	5	50	6
4TSH 018 0625 S06 M025	M2.5	0.45	4	3	1.8	6.25	50	6
4TSH 0195 077 S03 M025	M2.5	0.45	4	3	1.95	7.7	40	3
4TSH 0195 077 S06 M025	M2.5	0.45	4	3	1.95	7.7	60	6
4TSH 024 060 S06 M3	M3	0.5	4	3	2.4	6	50	6
4TSH 024 075 S06 M3	M3	0.5	4	3	2.4	7.5	50	6
4TSH 024 092 S03 M3	M3	0.5	4	3	2.4	9.2	40	3
4TSH 024 092 S06 M3	M3	0.5	4	3	2.4	9.2	60	6
4TSH 0275 108 S06 M035	M3.5	0.6	4	3	2.75	10.8	60	6
4TSH 031 080 S06 M4	M4	0.7	4	3	3.1	8	50	6
4TSH 031 100 S06 M4	M4	0.7	4	3	3.1	10	50	6
4TSH 0315 123 S06 M4	M4	0.7	4	3	3.15	12.3	60	6
4TSH 038 100 S06 M5	M5	0.8	4	3	3.8	10	50	6
4TSH 038 125 S06 M5	M5	0.8	4	3	3.8	12.5	50	6
4TSH 0405 154 S06 M5	M5	0.8	4	3	4.05	15.4	60	6
4TSH 046 120 S06 M6	M6	1	4	3	4.6	12	50	6

K THREAD MILL 4TSH

單位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
4TSH 046 150 S06 M6	M6	1	4	3	4.6	15	50	6
4TSH 048 185 S06 M6	M6	1	4	3	4.8	18.5	60	6
4TSH 062 160 S10 M8	M8	1.25	4	3	6.2	16	70	10
4TSH 062 200 S10 M8	M8	1.25	4	3	6.2	20	70	10
4TSH 065 246 S08 M8	M8	1.25	4	3	6.5	24.6	65	8
4TSH 075 200 S10 M10	M10	1.5	4	3	7.5	20	70	10
4TSH 075 250 S10 M10	M10	1.5	4	3	7.5	25	70	10
4TSH 082 308 S10 M10	M10	1.5	4	3	8.2	30.8	80	10
4TSH 090 240 S10 M12	M12	1.75	4	3	9	24	80	10
4TSH 090 300 S10 M12	M12	1.75	4	3	9	30	80	10
4TSH 099 370 S10 M12	M12	1.75	4	3	9.9	37	85	10
4TSH 115 320 S12 M16	M16	2	4	3	11.5	32	100	12
4TSH 115 400 S12 M16	M16	2	4	3	11.5	40	100	12
4TSH 119 490 S12 M16	M16	2	4	3	11.9	49	95	12
4TSH 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4TSH 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4TSH 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4TSH 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4TSH 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16
ISO With coolant								
4TSH 031 080 S06 M4C	M4	0.7	4	3	3.1	8	50	6
4TSH 031 100 S06 M4C	M4	0.7	4	3	3.1	10	50	6
4TSH 038 100 S06 M5C	M5	0.8	4	3	3.8	10	50	6
4TSH 038 125 S06 M5C	M5	0.8	4	3	3.8	12.5	50	6
4TSH 046 120 S06 M6C	M6	1	4	3	4.6	12	50	6
4TSH 046 150 S06 M6C	M6	1	4	3	4.6	15	50	6
4TSH 048 185 S06 M6C	M6	1	4	3	4.8	18.5	60	6
4TSH 062 160 S10 M8C	M8	1.25	4	3	6.2	16	70	10
4TSH 062 200 S10 M8C	M8	1.25	4	3	6.2	20	70	10
4TSH 065 246 S08 M8C	M8	1.25	4	3	6.5	24.6	65	8
4TSH 075 200 S10 M10C	M10	1.5	4	3	7.5	20	70	10
4TSH 075 250 S10 M10C	M10	1.5	4	3	7.5	25	70	10
4TSH 082 308 S10 M10C	M10	1.5	4	3	8.2	30.8	80	10
4TSH 090 240 S10 M12C	M12	1.75	4	3	9	24	80	10
4TSH 090 300 S10 M12C	M12	1.75	4	3	9	30	80	10
4TSH 099 370 S10 M12C	M12	1.75	4	3	9.9	37	85	10
4TSH 115 320 S12 M16C	M16	2	4	3	11.5	32	100	12
4TSH 115 400 S12 M16C	M16	2	4	3	11.5	40	100	12
4TSH 119 490 S12 M16C	M16	2	4	3	11.9	49	95	12
4TSH 140 360 S16 M18C	M18	2.5	4	3	14	36	135	16
4TSH 140 450 S16 M18C	M18	2.5	4	3	14	45	135	16
4TSH 150 400 S16 M20C	M20	2.5	4	3	15	40	135	16
4TSH 150 500 S16 M20C	M20	2.5	4	3	15	50	135	16
4TSH 159 613 S16 M20C	M20	2.5	4	3	15.9	61.3	115	16

THREAD MILL 4TSH

单位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN Without coolant									
4TSH 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4TSH 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4TSH 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4TSH 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4TSH 019 050 S06	No.3-48		48	4	3	1.9	5	50	6
4TSH 019 063 S06	No.3-48		48	4	3	1.9	6.3	50	6
4TSH 021 057 S06	No.4-40		40	4	3	2.1	5.7	50	6
4TSH 021 071 S06	No.4-40		40	4	3	2.1	7.1	50	6
4TSH 0255 070 S06	No.6-32		32	4	3	2.55	7	50	6
4TSH 0255 088 S06	No.6-32		32	4	3	2.55	8.8	50	6
4TSH 033 083 S06		No.8-36	36	4	3	3.3	8.3	50	6
4TSH 033 104 S06		No.8-36	36	4	3	3.3	10.4	50	6
4TSH 035 097 S06	No.10-24		24	4	3	3.5	9.7	65	6
4TSH 035 121 S06	No.10-24		24	4	3	3.5	12.1	65	6
4TSH 0475 127 S06	1/4"x20		20	4	3	4.75	12.7	65	6
4TSH 0475 159 S06	1/4"x20		20	4	3	4.75	15.9	65	6
4TSH 050 127 S06		1/4"x28	28	4	3	5	12.7	65	6
4TSH 050 159 S06		1/4"x28	28	4	3	5	15.9	65	6
4TSH 060 159 S10	5/16"x18		18	4	3	6	15.9	80	10
4TSH 060 198 S10	5/16"x18		18	4	3	6	19.8	80	10
4TSH 067 191 S10	3/8"x16		16	4	3	6.7	19.1	80	10
4TSH 067 238 S10	3/8"x16		16	4	3	6.7	23.8	80	10
4TSH 077 222 S10	7/16"x14		14	4	3	7.7	22.2	80	10
4TSH 077 278 S10	7/16"x14		14	4	3	7.7	27.8	80	10
4TSH 092 254 S10	1/2"x13		13	4	3	9.2	25.4	80	10
4TSH 092 318 S10	1/2"x13		13	4	3	9.2	31.8	100	10
4TSH 105 286 S12	9/16"x12		12	4	3	10.5	28.6	100	12
4TSH 105 357 S12	9/16"x12		12	4	3	10.5	35.7	100	12
4TSH 114 318 S12	5/8"x11		11	4	3	11.4	31.8	100	12
4TSH 114 397 S12	5/8"x11		11	4	3	11.4	39.7	100	12

K THREAD MILL 4TSH

単位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN With coolant									
4TSH 033 083 S06C		No.8-36	36	4	3	3.3	8.3	50	6
4TSH 033 104 S06C		No.8-36	36	4	3	3.3	10.4	50	6
4TSH 035 097 S06C	No.10-24		24	4	3	3.5	9.7	65	6
4TSH 035 121 S06C	No.10-24		24	4	3	3.5	12.1	65	6
4TSH 0475 127 S06C	1/4"x20		20	4	3	4.75	12.7	65	6
4TSH 0475 159 S06C	1/4"x20		20	4	3	4.75	15.9	65	6
4TSH 050 127 S06C		1/4"x28	28	4	3	5	12.7	65	6
4TSH 050 159 S06C		1/4"x28	28	4	3	5	15.9	65	6
4TSH 060 159 S10C	5/16"x18		18	4	3	6	15.9	80	10
4TSH 060 198 S10C	5/16"x18		18	4	3	6	19.8	80	10
4TSH 067 191 S10C	3/8"x16		16	4	3	6.7	19.1	80	10
4TSH 067 238 S10C	3/8"x16		16	4	3	6.7	23.8	80	10
4TSH 077 222 S10C	7/16"x14		14	4	3	7.7	22.2	80	10
4TSH 077 278 S10C	7/16"x14		14	4	3	7.7	27.8	80	10
4TSH 092 254 S10C	1/2"x13		13	4	3	9.2	25.4	80	10
4TSH 092 318 S10C	1/2"x13		13	4	3	9.2	31.8	100	10
4TSH 105 286 S12C	9/16"x12		12	4	3	10.5	28.6	100	12
4TSH 105 357 S12C	9/16"x12		12	4	3	10.5	35.7	100	12
4TSH 114 318 S12C	5/8"x11		11	4	3	11.4	31.8	100	12
4TSH 114 397 S12C	5/8"x11		11	4	3	11.4	39.7	100	12

4TSH

• RPM : rev./min • Feed : mm/min

Material	Aluminum		Stainless Steel		Hardened Steels		Hardened Steels	
Hardness					35~45HRC		45~58HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
~1Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.008 ~ 0.01
1Ø ~ 2Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.008 ~ 0.01
2Ø ~ 3Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
4Ø ~ 6Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
6Ø ~ 8Ø	100 ~ 130	0.05 ~ 0.06	70 ~ 85	0.03 ~ 0.04	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
8Ø ~ 10Ø	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
10Ø ~ 12Ø	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	50 ~ 70	0.03 ~ 0.04	45 ~ 55	0.03 ~ 0.04

• Using shrink-fit chuck with great holding power is recommended.
• When the tool approaches the work material, reduce the feed by 50%.

K THREAD MILL

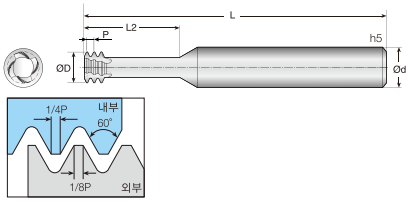
4TSA

4 Flutes Short Flute Thread Mill for Aluminum

Thread mill for Aluminum, Aluminum alloy, non-ferrous and non-metalic materials.

- Powerful flute design applied for hardened steel.
- Improved cutting and chip removal reduce the risk of tool breaking in holes.
- It can be used for both right and left-handed threading.





4刃アルミ専用の短い刃スレッドミル

アルミ、アルミ合金などの非鉄・非金属の加工

- 硬化鋼内のねじ加工のため、丈夫で強力な刃のデザイン。
- 向上した切削及びチップ除去により、工具の性能を向上させます。
- 右ねじ及び左ねじの作業がすべて可能です。

4날 알루미늄 전용 짧은 날 쓰레드밀

알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩제거를 통해 공구 성능을 향상 시킵니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
ISO without coolant								
4TSA 0072 020 S04 M1	M1	0.25	4	3	0.72	2	45	4
4TSA 0072 025 S04 M1	M1	0.25	4	3	0.72	2.5	45	4
4TSA 009 024 S04 M012	M1.2	0.25	4	3	0.9	2.4	45	4
4TSA 009 030 S04 M012	M1.2	0.25	4	3	0.9	3	45	4
4TSA 0095 028 S06 M014	M1.4	0.3	4	3	0.95	2.8	50	6
4TSA 0095 035 S06 M014	M1.4	0.3	4	3	0.95	3.5	50	6
4TSA 011 032 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	3.2	50	6
4TSA 011 040 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	4	50	6
4TSA 012 050 S03 M016	M1.6 ~ 1.8	0.35	4	3	1.2	5	40	3
4TSA 014 040 S06 M2	M2	0.4	4	3	1.4	4	50	6
4TSA 014 050 S06 M2	M2	0.4	4	3	1.4	5	50	6
4TSA 0155 062 S03 M2	M2	0.4	4	3	1.55	6.2	40	3
4TSA 0155 062 S06 M2	M2	0.4	4	3	1.55	6.2	60	6
4TSA 016 044 S06 M022	M2.2	0.45	4	3	1.6	4.4	50	6
4TSA 016 055 S06 M022	M2.2	0.45	4	3	1.6	5.5	50	6
4TSA 018 050 S06 M025	M2.5	0.45	4	3	1.8	5	50	6
4TSA 018 0625 S06 M025	M2.5	0.45	4	3	1.8	6.25	50	6
4TSA 0195 077 S03 M025	M2.5	0.45	4	3	1.95	7.7	40	3
4TSA 0195 077 S06 M025	M2.5	0.45	4	3	1.95	7.7	60	6
4TSA 024 060 S06 M3	M3	0.5	4	3	2.4	6	50	6
4TSA 024 075 S06 M3	M3	0.5	4	3	2.4	7.5	50	6
4TSA 024 092 S03 M3	M3	0.5	4	3	2.4	9.2	40	3
4TSA 024 092 S06 M3	M3	0.5	4	3	2.4	9.2	60	6
4TSA 0275 108 S06 M035	M3.5	0.6	4	3	2.75	10.8	60	6
4TSA 031 080 S06 M4	M4	0.7	4	3	3.1	8	50	6
4TSA 031 100 S06 M4	M4	0.7	4	3	3.1	10	50	6
4TSA 0315 123 S06 M4	M4	0.7	4	3	3.15	12.3	60	6
4TSA 038 100 S06 M5	M5	0.8	4	3	3.8	10	50	6
4TSA 038 125 S06 M5	M5	0.8	4	3	3.8	12.5	50	6
4TSA 0405 154 S06 M5	M5	0.8	4	3	4.05	15.4	60	6
4TSA 046 120 S06 M6	M6	1	4	3	4.6	12	50	6

K THREAD MILL 4TSA

單位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
4TSA 046 150 S06 M6	M6	1	4	3	4.6	15	50	6
4TSA 048 185 S06 M6	M6	1	4	3	4.8	18.5	60	6
4TSA 062 160 S10 M8	M8	1.25	4	3	6.2	16	70	10
4TSA 062 200 S10 M8	M8	1.25	4	3	6.2	20	70	10
4TSA 065 246 S08 M8	M8	1.25	4	3	6.5	24.6	65	8
4TSA 075 200 S10 M10	M10	1.5	4	3	7.5	20	70	10
4TSA 075 250 S10 M10	M10	1.5	4	3	7.5	25	70	10
4TSA 082 308 S10 M10	M10	1.5	4	3	8.2	30.8	80	10
4TSA 090 240 S10 M12	M12	1.75	4	3	9	24	80	10
4TSA 090 300 S10 M12	M12	1.75	4	3	9	30	80	10
4TSA 099 370 S10 M12	M12	1.75	4	3	9.9	37	85	10
4TSA 115 320 S12 M16	M16	2	4	3	11.5	32	100	12
4TSA 115 400 S12 M16	M16	2	4	3	11.5	40	100	12
4TSA 119 490 S12 M16	M16	2	4	3	11.9	49	95	12
4TSA 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4TSA 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4TSA 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4TSA 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4TSA 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16
ISO With coolant								
4TSA 031 080 S06 M4C	M4	0.7	4	3	3.1	8	50	6
4TSA 031 100 S06 M4C	M4	0.7	4	3	3.1	10	50	6
4TSA 038 100 S06 M5C	M5	0.8	4	3	3.8	10	50	6
4TSA 038 125 S06 M5C	M5	0.8	4	3	3.8	12.5	50	6
4TSA 046 120 S06 M6C	M6	1	4	3	4.6	12	50	6
4TSA 046 150 S06 M6C	M6	1	4	3	4.6	15	50	6
4TSA 048 185 S06 M6C	M6	1	4	3	4.8	18.5	60	6
4TSA 062 160 S10 M8C	M8	1.25	4	3	6.2	16	70	10
4TSA 062 200 S10 M8C	M8	1.25	4	3	6.2	20	70	10
4TSA 065 246 S08 M8C	M8	1.25	4	3	6.5	24.6	65	8
4TSA 075 200 S10 M10C	M10	1.5	4	3	7.5	20	70	10
4TSA 075 250 S10 M10C	M10	1.5	4	3	7.5	25	70	10
4TSA 082 308 S10 M10C	M10	1.5	4	3	8.2	30.8	80	10
4TSA 090 240 S10 M12C	M12	1.75	4	3	9	24	80	10
4TSA 090 300 S10 M12C	M12	1.75	4	3	9	30	80	10
4TSA 099 370 S10 M12C	M12	1.75	4	3	9.9	37	85	10
4TSA 115 320 S12 M16C	M16	2	4	3	11.5	32	100	12
4TSA 115 400 S12 M16C	M16	2	4	3	11.5	40	100	12
4TSA 119 490 S12 M16C	M16	2	4	3	11.9	49	95	12
4TSA 140 360 S16 M18C	M18	2.5	4	3	14	36	135	16
4TSA 140 450 S16 M18C	M18	2.5	4	3	14	45	135	16
4TSA 150 400 S16 M20C	M20	2.5	4	3	15	40	135	16
4TSA 150 500 S16 M20C	M20	2.5	4	3	15	50	135	16
4TSA 159 613 S16 M20C	M20	2.5	4	3	15.9	61.3	115	16

THREAD MILL 4TSA

单位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN Without coolant									
4TSA 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4TSA 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4TSA 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4TSA 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4TSA 019 050 S06	No.3-48		48	4	3	1.9	5	50	6
4TSA 019 063 S06	No.3-48		48	4	3	1.9	6.3	50	6
4TSA 021 057 S06	No.4-40		40	4	3	2.1	5.7	50	6
4TSA 021 071 S06	No.4-40		40	4	3	2.1	7.1	50	6
4TSA 0255 070 S06	No.6-32		32	4	3	2.55	7	50	6
4TSA 0255 088 S06	No.6-32		32	4	3	2.55	8.8	50	6
4TSA 033 083 S06		No.8-36	36	4	3	3.3	8.3	50	6
4TSA 033 104 S06		No.8-36	36	4	3	3.3	10.4	50	6
4TSA 035 097 S06	No.10-24		24	4	3	3.5	9.7	65	6
4TSA 035 121 S06	No.10-24		24	4	3	3.5	12.1	65	6
4TSA 0475 127 S06	1/4"x20		20	4	3	4.75	12.7	65	6
4TSA 0475 159 S06	1/4"x20		20	4	3	4.75	15.9	65	6
4TSA 050 127 S06		1/4"x28	28	4	3	5	12.7	65	6
4TSA 050 159 S06		1/4"x28	28	4	3	5	15.9	65	6
4TSA 060 159 S10	5/16"x18		18	4	3	6	15.9	80	10
4TSA 060 198 S10	5/16"x18		18	4	3	6	19.8	80	10
4TSA 067 191 S10	3/8"x16		16	4	3	6.7	19.1	80	10
4TSA 067 238 S10	3/8"x16		16	4	3	6.7	23.8	80	10
4TSA 077 222 S10	7/16"x14		14	4	3	7.7	22.2	80	10
4TSA 077 278 S10	7/16"x14		14	4	3	7.7	27.8	80	10
4TSA 092 254 S10	1/2"x13		13	4	3	9.2	25.4	80	10
4TSA 092 318 S10	1/2"x13		13	4	3	9.2	31.8	100	10
4TSA 105 286 S12	9/16"x12		12	4	3	10.5	28.6	100	12
4TSA 105 357 S12	9/16"x12		12	4	3	10.5	35.7	100	12
4TSA 114 318 S12	5/8"x11		11	4	3	11.4	31.8	100	12
4TSA 114 397 S12	5/8"x11		11	4	3	11.4	39.7	100	12

K THREAD MILL 4TSA



单位/Unit : mm

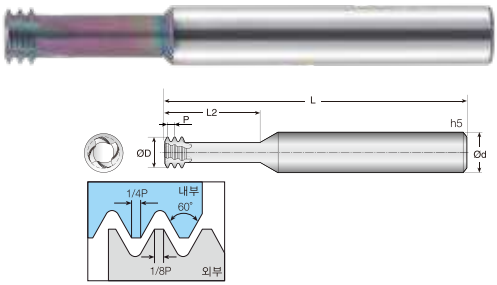
Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN With coolant									
4TSA 033 083 S06C		No.8-36	36	4	3	3.3	8.3	50	6
4TSA 033 104 S06C		No.8-36	36	4	3	3.3	10.4	50	6
4TSA 035 097 S06C	No.10-24		24	4	3	3.5	9.7	65	6
4TSA 035 121 S06C	No.10-24		24	4	3	3.5	12.1	65	6
4TSA 0475 127 S06C	1/4"x20		20	4	3	4.75	12.7	65	6
4TSA 0475 159 S06C	1/4"x20		20	4	3	4.75	15.9	65	6
4TSA 050 127 S06C		1/4"x28	28	4	3	5	12.7	65	6
4TSA 050 159 S06C		1/4"x28	28	4	3	5	15.9	65	6
4TSA 060 159 S10C	5/16"x18		18	4	3	6	15.9	80	10
4TSA 060 198 S10C	5/16"x18		18	4	3	6	19.8	80	10
4TSA 067 191 S10C	3/8"x16		16	4	3	6.7	19.1	80	10
4TSA 067 238 S10C	3/8"x16		16	4	3	6.7	23.8	80	10
4TSA 077 222 S10C	7/16"x14		14	4	3	7.7	22.2	80	10
4TSA 077 278 S10C	7/16"x14		14	4	3	7.7	27.8	80	10
4TSA 092 254 S10C	1/2"x13		13	4	3	9.2	25.4	80	10
4TSA 092 318 S10C	1/2"x13		13	4	3	9.2	31.8	100	10
4TSA 105 286 S12C	9/16"x12		12	4	3	10.5	28.6	100	12
4TSA 105 357 S12C	9/16"x12		12	4	3	10.5	35.7	100	12
4TSA 114 318 S12C	5/8"x11		11	4	3	11.4	31.8	100	12
4TSA 114 397 S12C	5/8"x11		11	4	3	11.4	39.7	100	12

K THREAD MILL 4TSS

4 Flutes Short Flute Thread Mill for Stainless Steel

Thread mill for SUS, Titanium alloy

- Powerful flute design applied for hardened steel.
- Improved cutting and chip removal reduce the risk of tool breaking in holes.
- It can be used for both right and left-handed threading.



4刃SUS加工用の短い刃スレッドミル

SUS、チタン合金の加工

- 硬化鋼内のねじ加工のため、丈夫で強力な刃のデザイン。
- 向上した切削及びチップ除去により、工具の性能を向上させます。
- 右ねじ及び左ねじの作業がすべて可能です。

4날 SUS 가공용 짧은 날 쓰레드밀

SUS, 티타늄 합금 가공

- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩제거를 통해 공구 성능을 향상 시킵니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
ISO without coolant								
4TSS 0072 020 S04 M1	M1	0.25	4	3	0.72	2	45	4
4TSS 0072 025 S04 M1	M1	0.25	4	3	0.72	2.5	45	4
4TSS 009 024 S04 M012	M1.2	0.25	4	3	0.9	2.4	45	4
4TSS 009 030 S04 M012	M1.2	0.25	4	3	0.9	3	45	4
4TSS 0095 028 S06 M014	M1.4	0.3	4	3	0.95	2.8	50	6
4TSS 0095 035 S06 M014	M1.4	0.3	4	3	0.95	3.5	50	6
4TSS 011 032 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	3.2	50	6
4TSS 011 040 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	4	50	6
4TSS 012 050 S03 M016	M1.6 ~ 1.8	0.35	4	3	1.2	5	40	3
4TSS 014 040 S06 M2	M2	0.4	4	3	1.4	4	50	6
4TSS 014 050 S06 M2	M2	0.4	4	3	1.4	5	50	6
4TSS 0155 062 S03 M2	M2	0.4	4	3	1.55	6.2	40	3
4TSS 0155 062 S06 M2	M2	0.4	4	3	1.55	6.2	60	6
4TSS 016 044 S06 M022	M2.2	0.45	4	3	1.6	4.4	50	6
4TSS 016 055 S06 M022	M2.2	0.45	4	3	1.6	5.5	50	6
4TSS 018 050 S06 M025	M2.5	0.45	4	3	1.8	5	50	6
4TSS 018 0625 S06 M025	M2.5	0.45	4	3	1.8	6.25	50	6
4TSS 0195 077 S03 M025	M2.5	0.45	4	3	1.95	7.7	40	3
4TSS 0195 077 S06 M025	M2.5	0.45	4	3	1.95	7.7	60	6
4TSS 024 060 S06 M3	M3	0.5	4	3	2.4	6	50	6
4TSS 024 075 S06 M3	M3	0.5	4	3	2.4	7.5	50	6
4TSS 024 092 S03 M3	M3	0.5	4	3	2.4	9.2	40	3
4TSS 024 092 S06 M3	M3	0.5	4	3	2.4	9.2	60	6
4TSS 0275 108 S06 M035	M3.5	0.6	4	3	2.75	10.8	60	6
4TSS 031 080 S06 M4	M4	0.7	4	3	3.1	8	50	6
4TSS 031 100 S06 M4	M4	0.7	4	3	3.1	10	50	6
4TSS 0315 123 S06 M4	M4	0.7	4	3	3.15	12.3	60	6
4TSS 038 100 S06 M5	M5	0.8	4	3	3.8	10	50	6
4TSS 038 125 S06 M5	M5	0.8	4	3	3.8	12.5	50	6
4TSS 0405 154 S06 M5	M5	0.8	4	3	4.05	15.4	60	6
4TSS 046 120 S06 M6	M6	1	4	3	4.6	12	50	6

K THREAD MILL 4TSS

單位/Unit : mm

Order Number	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D	L2	L	d
4TSS 046 150 S06 M6	M6	1	4	3	4.6	15	50	6
4TSS 048 185 S06 M6	M6	1	4	3	4.8	18.5	60	6
4TSS 062 160 S10 M8	M8	1.25	4	3	6.2	16	70	10
4TSS 062 200 S10 M8	M8	1.25	4	3	6.2	20	70	10
4TSS 065 246 S08 M8	M8	1.25	4	3	6.5	24.6	65	8
4TSS 075 200 S10 M10	M10	1.5	4	3	7.5	20	70	10
4TSS 075 250 S10 M10	M10	1.5	4	3	7.5	25	70	10
4TSS 082 308 S10 M10	M10	1.5	4	3	8.2	30.8	80	10
4TSS 090 240 S10 M12	M12	1.75	4	3	9	24	80	10
4TSS 090 300 S10 M12	M12	1.75	4	3	9	30	80	10
4TSS 099 370 S10 M12	M12	1.75	4	3	9.9	37	85	10
4TSS 115 320 S12 M16	M16	2	4	3	11.5	32	100	12
4TSS 115 400 S12 M16	M16	2	4	3	11.5	40	100	12
4TSS 119 490 S12 M16	M16	2	4	3	11.9	49	95	12
4TSS 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4TSS 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4TSS 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4TSS 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4TSS 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16
ISO With coolant								
4TSS 031 080 S06 M4C	M4	0.7	4	3	3.1	8	50	6
4TSS 031 100 S06 M4C	M4	0.7	4	3	3.1	10	50	6
4TSS 038 100 S06 M5C	M5	0.8	4	3	3.8	10	50	6
4TSS 038 125 S06 M5C	M5	0.8	4	3	3.8	12.5	50	6
4TSS 046 120 S06 M6C	M6	1	4	3	4.6	12	50	6
4TSS 046 150 S06 M6C	M6	1	4	3	4.6	15	50	6
4TSS 048 185 S06 M6C	M6	1	4	3	4.8	18.5	60	6
4TSS 062 160 S10 M8C	M8	1.25	4	3	6.2	16	70	10
4TSS 062 200 S10 M8C	M8	1.25	4	3	6.2	20	70	10
4TSS 065 246 S08 M8C	M8	1.25	4	3	6.5	24.6	65	8
4TSS 075 200 S10 M10C	M10	1.5	4	3	7.5	20	70	10
4TSS 075 250 S10 M10C	M10	1.5	4	3	7.5	25	70	10
4TSS 082 308 S10 M10C	M10	1.5	4	3	8.2	30.8	80	10
4TSS 090 240 S10 M12C	M12	1.75	4	3	9	24	80	10
4TSS 090 300 S10 M12C	M12	1.75	4	3	9	30	80	10
4TSS 099 370 S10 M12C	M12	1.75	4	3	9.9	37	85	10
4TSS 115 320 S12 M16C	M16	2	4	3	11.5	32	100	12
4TSS 115 400 S12 M16C	M16	2	4	3	11.5	40	100	12
4TSS 119 490 S12 M16C	M16	2	4	3	11.9	49	95	12
4TSS 140 360 S16 M18C	M18	2.5	4	3	14	36	135	16
4TSS 140 450 S16 M18C	M18	2.5	4	3	14	45	135	16
4TSS 150 400 S16 M20C	M20	2.5	4	3	15	40	135	16
4TSS 150 500 S16 M20C	M20	2.5	4	3	15	50	135	16
4TSS 159 613 S16 M20C	M20	2.5	4	3	15.9	61.3	115	16

K THREAD MILL 4TSS

单位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN Without coolant									
4TSS 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4TSS 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4TSS 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4TSS 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4TSS 019 050 S06	No.3-48		48	4	3	1.9	5	50	6
4TSS 019 063 S06	No.3-48		48	4	3	1.9	6.3	50	6
4TSS 021 057 S06	No.4-40		40	4	3	2.1	5.7	50	6
4TSS 021 071 S06	No.4-40		40	4	3	2.1	7.1	50	6
4TSS 0255 070 S06	No.6-32		32	4	3	2.55	7	50	6
4TSS 0255 088 S06	No.6-32		32	4	3	2.55	8.8	50	6
4TSS 033 083 S06		No.8-36	36	4	3	3.3	8.3	50	6
4TSS 033 104 S06		No.8-36	36	4	3	3.3	10.4	50	6
4TSS 035 097 S06	No.10-24		24	4	3	3.5	9.7	65	6
4TSS 035 121 S06	No.10-24		24	4	3	3.5	12.1	65	6
4TSS 0475 127 S06	1/4"x20		20	4	3	4.75	12.7	65	6
4TSS 0475 159 S06	1/4"x20		20	4	3	4.75	15.9	65	6
4TSS 050 127 S06		1/4"x28	28	4	3	5	12.7	65	6
4TSS 050 159 S06		1/4"x28	28	4	3	5	15.9	65	6
4TSS 060 159 S10	5/16"x18		18	4	3	6	15.9	80	10
4TSS 060 198 S10	5/16"x18		18	4	3	6	19.8	80	10
4TSS 067 191 S10	3/8"x16		16	4	3	6.7	19.1	80	10
4TSS 067 238 S10	3/8"x16		16	4	3	6.7	23.8	80	10
4TSS 077 222 S10	7/16"x14		14	4	3	7.7	22.2	80	10
4TSS 077 278 S10	7/16"x14		14	4	3	7.7	27.8	80	10
4TSS 092 254 S10	1/2"x13		13	4	3	9.2	25.4	80	10
4TSS 092 318 S10	1/2"x13		13	4	3	9.2	31.8	100	10
4TSS 105 286 S12	9/16"x12		12	4	3	10.5	28.6	100	12
4TSS 105 357 S12	9/16"x12		12	4	3	10.5	35.7	100	12
4TSS 114 318 S12	5/8"x11		11	4	3	11.4	31.8	100	12
4TSS 114 397 S12	5/8"x11		11	4	3	11.4	39.7	100	12

K THREAD MILL 4TSS

单位/Unit : mm

Order Number	Thread			Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	Z	Zt	D	L2	L	d
American UN With coolant									
4TSS 033 083 S06C		No.8-36	36	4	3	3.3	8.3	50	6
4TSS 033 104 S06C		No.8-36	36	4	3	3.3	10.4	50	6
4TSS 035 097 S06C	No.10-24		24	4	3	3.5	9.7	65	6
4TSS 035 121 S06C	No.10-24		24	4	3	3.5	12.1	65	6
4TSS 0475 127 S06C	1/4"x20		20	4	3	4.75	12.7	65	6
4TSS 0475 159 S06C	1/4"x20		20	4	3	4.75	15.9	65	6
4TSS 050 127 S06C		1/4"x28	28	4	3	5	12.7	65	6
4TSS 050 159 S06C		1/4"x28	28	4	3	5	15.9	65	6
4TSS 060 159 S10C	5/16"x18		18	4	3	6	15.9	80	10
4TSS 060 198 S10C	5/16"x18		18	4	3	6	19.8	80	10
4TSS 067 191 S10C	3/8"x16		16	4	3	6.7	19.1	80	10
4TSS 067 238 S10C	3/8"x16		16	4	3	6.7	23.8	80	10
4TSS 077 222 S10C	7/16"x14		14	4	3	7.7	22.2	80	10
4TSS 077 278 S10C	7/16"x14		14	4	3	7.7	27.8	80	10
4TSS 092 254 S10C	1/2"x13		13	4	3	9.2	25.4	80	10
4TSS 092 318 S10C	1/2"x13		13	4	3	9.2	31.8	100	10
4TSS 105 286 S12C	9/16"x12		12	4	3	10.5	28.6	100	12
4TSS 105 357 S12C	9/16"x12		12	4	3	10.5	35.7	100	12
4TSS 114 318 S12C	5/8"x11		11	4	3	11.4	31.8	100	12
4TSS 114 397 S12C	5/8"x11		11	4	3	11.4	39.7	100	12

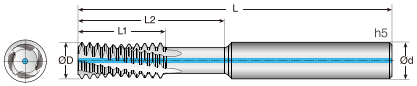
K THREAD MILL 4TUM

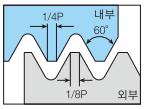
4 Flutes Helix Thread Mill for Generality

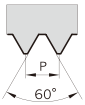
Thread mill for Hardened steel(up to HRC48), pre-hardened steel, alloy steel, carbon steel, cast iron.

- Coolant type of helix flutes for deep threading.
- With multiple flutes composition, it shortens threading time.
- Maximum drilling depth: 3xD2(Threading diameter)









4刃汎用ヘリックススレッドミル

HRC48以下の高硬度鋼、プリハードン鋼、合金鋼、炭素鋼、鋳鉄の加工

- 深ねじ加工のためのクーラントタイプのヘリカル刃
- 多重刃で構成され、一度に複数のねじ山を生成し、時間の短縮が可能です。
- 最大のねじ加工深さ:3xD2(ねじ加工直径)

4날 범용 헬릭스 쓰레드밀

HRC48이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철 가공

- 깊은 나사 가공을 위한 콜런트 타입 헬리컬 날
- 다중 날 로 구성되어 한번에 여러 나사산 생성으로 시간단축이 가능합니다.
- 최대 나사 가공깊이: 3xD2(나사가공 직경)

単位/Unit : mm

Order Number	Thread	Pitch	Guide Hole	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			mm	D	L1	L2	L	d
ISO without coolant								
4TUM 024 090 S04 M3	M3	0.5	2.5	2.4	4.7	9	45	4
4TUM 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4TUM 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4TUM 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4TUM 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4TUM 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4TUM 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4TUM 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4TUM 136 480 S14 M16	M16	2	14	13.6	25	48	100	14
ISO with coolant								
4TUM 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4TUM 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4TUM 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4TUM 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4TUM 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4TUM 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4TUM 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4TUM 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14

K THREAD MILL 4TUM

単位/Unit : mm

Order Number	Thread			Diameter	Thread Length	Number of threads	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	D	L1		L2	L	d
American Without coolant									
4TUM 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUM 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUM 0488 1905 S06	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUM 0516 1905 S06		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUM 0615 2398 S08	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUM 0765 3018 S08	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUM 0899 3444 S10	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUM 1034 4105 S12	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUM 1181 4445 S12	9/16"x12		12	11.81	23.29	11	44.45	80	12
American With coolant									
4TUM 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUM 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUM 0488 1905 S06C	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUM 0516 1905 S06C		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUM 0615 2398 S08C	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUM 0765 3018 S08C	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUM 0899 3444 S10C	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUM 1034 4105 S12C	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUM 1181 4445 S12C	9/16"x12		12	11.81	23.29	11	44.45	80	12

4TUM

• RPM : rev./min • Feed : mm/min

Material	Aluminum		Stainless Steel		Alloy Steel/ Tool Steel		Hardened Steels	
Hardness					~35HRC		35~48HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
2Ø ~ 3Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.005 ~ 0.008
3Ø ~ 4Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.005 ~ 0.008
4Ø ~ 5Ø	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
6Ø ~ 7Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	50 ~ 70	0.01 ~ 0.02	45 ~ 55	0.01 ~ 0.02
7Ø ~ 8Ø	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
8Ø ~ 9Ø	100 ~ 130	0.05 ~ 0.06	70 ~ 85	0.03 ~ 0.04	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
10Ø ~ 12Ø	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	50 ~ 70	0.02 ~ 0.03	45 ~ 55	0.02 ~ 0.03
12Ø ~ 14Ø	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	50 ~ 70	0.03 ~ 0.04	45 ~ 55	0.03 ~ 0.04

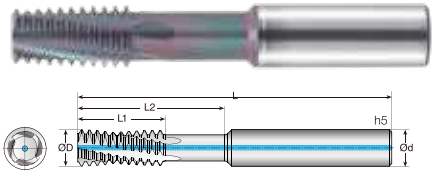
• Using shrink-fit chuck with great holding power is recommended.
• When the tool approaches the work material, reduce the feed by 50%.

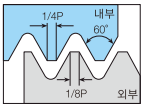
K THREAD MILL 4TUA

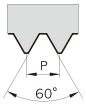
4 Flutes Helix Thread Mill for Aluminum

Thread mill for Aluminum, Aluminum alloy, non-ferrous and non-metallic materials.

- Coolant type of helix flutes for deep threading.
- With multiple flutes composition, it shortens threading time.
- Maximum drilling depth: 3xD2(Threading diameter)







4刃アルミ専用のヘリックススレッドミル

アルミ、アルミ合金などの非鉄・非金属の加工

- 深ねじ加工のためのクーラントタイプのヘリカル刃
- 多重刃で構成され、一度に複数のねじ山を生成し、時間の短縮が可能です。
- 最大のねじ加工深さ:3xD2(ねじ加工直径)

4날 알루미늄 전용 헬릭스 쓰레드밀

알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 깊은 나사 가공을 위한 콜런트 타입 헬리컬 날
- 다중 날 로 구성되어 한번에 여러 나사산 생성으로 시간단축이 가능합니다.
- 최대 나사 가공깊이: 3xD2(나사가공 직경)

単位/Unit : mm

Order Number	Thread	Pitch	Guide Hole	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			mm	D	L1	L2	L	d
ISO without coolant								
4TUA 024 090 S04 M3	M3	0.5	2.5	2.4	4.7	9	45	4
4TUA 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4TUA 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4TUA 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4TUA 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4TUA 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4TUA 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4TUA 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4TUA 136 480 S14 M16	M16	2	14	13.6	25	48	100	14
ISO with coolant								
4TUA 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4TUA 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4TUA 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4TUA 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4TUA 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4TUA 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4TUA 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4TUA 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14

K THREAD MILL 4TUA



单位/Unit : mm

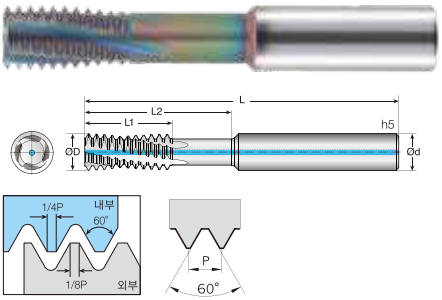
Order Number	Thread			Diameter	Thread Length	Number of threads	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	D	L1		L2	L	d
American Without coolant									
4TUA 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUA 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUA 0488 1905 S06	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUA 0516 1905 S06		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUA 0615 2398 S08	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUA 0765 3018 S08	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUA 0899 3444 S10	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUA 1034 4105 S12	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUA 1181 4445 S12	9/16"x12		12	11.81	23.29	11	44.45	80	12
American With coolant									
4TUA 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUA 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUA 0488 1905 S06C	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUA 0516 1905 S06C		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUA 0615 2398 S08C	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUA 0765 3018 S08C	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUA 0899 3444 S10C	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUA 1034 4105 S12C	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUA 1181 4445 S12C	9/16"x12		12	11.81	23.29	11	44.45	80	12

K THREAD MILL 4TUS

4 Flutes Helix Thread Mill for Stainless Steel

Thread mill for SUS, Titanium alloy

- Coolant type of helix flutes for deep threading.
- With multiple flutes composition, it shortens threading time.
- Maximum drilling depth: 3xD2(Threading diameter)



4刃SUS加工用のヘリックススレッドミル

SUS、チタン合金の加工

- 深ねじ加工のためのクーラントタイプのヘリカル刃
- 多重刃で構成され、一度に複数のねじ山を生成し、時間の短縮が可能です。
- 最大のねじ加工深さ:3xD2(ねじ加工直径)

4날 SUS 가공용 헬릭스 쓰레드밀

SUS, 티타늄 합금 가공

- 깊은 나사 가공을 위한 쿨런트 타입 헬리컬 날
- 다중 날 로 구성되어 한번에 여러 나사산 생성으로 시간단축이 가능합니다.
- 최대 나사 가공깊이: 3xD2(나사가공 직경)

単位/Unit : mm

Order Number	Thread	Pitch	Guide Hole	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			mm	D	L1	L2	L	d
ISO without coolant								
4TUS 024 090 S04 M3	M3	0.5	2.5	2.4	4.7	9	45	4
4TUS 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4TUS 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4TUS 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4TUS 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4TUS 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4TUS 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4TUS 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4TUS 136 480 S14 M16	M16	2	14	13.6	25	48	100	14
ISO with coolant								
4TUS 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4TUS 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4TUS 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4TUS 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4TUS 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4TUS 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4TUS 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4TUS 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14

K THREAD MILL 4TUS

單位/Unit : mm

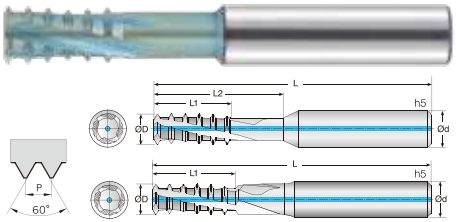
Order Number	Thread			Diameter	Thread Length	Number of threads	Effective Length	Overall Length	Shank Dia
	UNC	UNF	Pitch	D	L1		L2	L	d
American Without coolant									
4TUS 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUS 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUS 0488 1905 S06	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUS 0516 1905 S06		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUS 0615 2398 S08	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUS 0765 3018 S08	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUS 0899 3444 S10	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUS 1034 4105 S12	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUS 1181 4445 S12	9/16"x12		12	11.81	23.29	11	44.45	80	12
American With coolant									
4TUS 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4TUS 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4TUS 0488 1905 S06C	1/4"x20		20	4.88	10.21	8	19.05	65	6
4TUS 0516 1905 S06C		1/4"x28	28	5.16	10.01	11	19.05	65	6
4TUS 0615 2398 S08C	5/16"x18		18	6.15	12.7	9	23.98	65	8
4TUS 0765 3018 S08C	3/8"x16		16	7.65	15.9	10	30.18	65	8
4TUS 0899 3444 S10C	7/16x14		14	8.99	18.16	10	34.44	75	10
4TUS 1034 4105 S12C	1/2"x13		13	10.34	19.58	10	41.05	80	12
4TUS 1181 4445 S12C	9/16"x12		12	11.81	23.29	11	44.45	80	12

K THREAD MILL 4TNM

4 Flutes Helix Nick Type Thread Mill for Generality

Thread mill for Hardened steel(up to HRC62), pre-hardened steel, alloy steel, carbon steel, cast iron.

- High spindle speed and feed per tooth are available.
- Maximum drilling depth: 2xD, 2.5xD, 3xD (threading diameter)
- Rib type helical design is applied for deep threading.



4刃汎用ヘリックスニークタイプスレッドミル

HRC62以下の熱処理鋼、プリハードン鋼、合金鋼、炭素鋼、鋳鉄の加工

- 高い切削速度と刃あたりの高い移送が可能です。
- 最大のねじ加工深さ:2xD、2.5xD、3xD(ねじ加工直径)
- より深いねじ加工のためのヘリカルリブタイプを採用しました。

4날 범용 헬릭스 니크 타입 쓰레드밀

HRC 62이하의 열처리강, 프리하든강, 합금강, 탄소강, 주철 가공

- 높은 절삭 속도와 날 당 높은 이송이 가능합니다.
- 최대 나사가공 깊이: 2xD, 2.5xD, 3xD(나사가공 직경)
- 더 깊은 나사가공을 위한 헬리컬 리브 타입을 채용하였습니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO without coolant								
4TNM 022 060 S06 M3	M3	0.5	4	2.2	6		60	6
4TNM 022 080 S06 M3	M3	0.5	4	2.2	8		60	6
4TNM 024 090 S04 M3	M3	0.5	4	2.4	5.47	9	45	4
4TNM 029 084 S06 M4	M4	0.7	4	2.9	8.4		60	6
4TNM 029 112 S06 M4	M4	0.7	4	2.9	11.2		60	6
4TNM 0315 120 S04 M4	M4	0.7	4	3.15	7.64	12	45	4
4TNM 038 112 S06 M5	M5	0.8	4	3.8	11.2		60	6
4TNM 038 128 S06 M5	M5	0.8	4	3.8	12.8		60	6
4TNM 039 150 S04 M5	M5	0.8	4	3.9	8.73	15	50	4
4TNM 045 120 S06 M6	M6	1	4	4.5	12		60	6
4TNM 045 160 S06 M6	M6	1	4	4.5	16		60	6
4TNM 048 180 S06 M6	M6	1	4	4.8	10.9	18	60	6
4TNM 060 175 S06 M8	M8	1.25	4	6	17.5		65	6
4TNM 060 200 S06 M8	M8	1.25	4	6	20		65	6
4TNM 065 240 S08 M8	M8	1.25	4	6.5	13.62	24	65	8
4TNM 075 210 S08 M10	M10	1.5	4	7.5	21		75	8
4TNM 075 270 S08 M10	M10	1.5	4	7.5	27		75	8
4TNM 082 300 S10 M10	M10	1.5	4	8.2	16.34	30	75	10
4TNM 095 245 S10 M12	M12	1.75	4	9.5	24.5		80	10
4TNM 095 315 S10 M12	M12	1.75	4	9.5	31.5		80	10
4TNM 099 360 S10 M12	M12	1.75	4	9.9	19.06	36	85	10
4TNM 100 280 S10 M14	M14	2	4	10	28		85	10
4TNM 100 360 S10 M14	M14	2	4	10	36		90	10
4TNM 116 420 S12 M14	M14	2	4	11.6	21.75	42	90	12
4TNM 120 320 S12 M16	M16	2	4	12	32		95	12
4TNM 120 400 S12 M16	M16	2	4	12	40		100	12
4TNM 136 480 S14 M16	M16	2	4	13.6	25.75	48	100	14
4TNM 140 400 S14 M18	M18	2.5	4	14	40		95	14
4TNM 140 450 S14 M18	M18	2.5	4	14	45		105	14
4TNM 160 400 S16 M20	M20	2.5	4	16	40		105	16
4TNM 160 500 S16 M20	M20	2.5	4	16	50		115	16

K THREAD MILL 4TNM



単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO With coolant								
4TNM 045 120 S06 M6C	M6	1	4	4.5	12		60	6
4TNM 045 160 S06 M6C	M6	1	4	4.5	16		60	6
4TNM 048 180 S06 M6C	M6	1	4	4.8	10.9	18	60	6
4TNM 060 175 S06 M8C	M8	1.25	4	6	17.5		65	6
4TNM 060 200 S06 M8C	M8	1.25	4	6	20		65	6
4TNM 065 240 S08 M8C	M8	1.25	4	6.5	13.62	24	65	8
4TNM 075 210 S08 M10C	M10	1.5	4	7.5	21		75	8
4TNM 075 270 S08 M10C	M10	1.5	4	7.5	27		75	8
4TNM 082 300 S10 M10C	M10	1.5	4	8.2	16.34	30	75	10
4TNM 095 245 S10 M12C	M12	1.75	4	9.5	24.5		80	10
4TNM 095 315 S10 M12C	M12	1.75	4	9.5	31.5		80	10
4TNM 099 360 S10 M12C	M12	1.75	4	9.9	19.06	36	85	10
4TNM 100 280 S10 M14C	M14	2	4	10	28		85	10
4TNM 100 360 S10 M14C	M14	2	4	10	36		90	10
4TNM 116 420 S12 M14C	M14	2	4	11.6	21.75	42	90	12
4TNM 120 320 S12 M16C	M16	2	4	12	32		95	12
4TNM 120 400 S12 M16C	M16	2	4	12	40		100	12
4TNM 136 480 S14 M16C	M16	2	4	13.6	25.75	48	100	14
4TNM 140 400 S14 M18C	M18	2.5	4	14	40		95	14
4TNM 140 450 S14 M18C	M18	2.5	4	14	45		105	14
4TNM 160 400 S16 M20C	M20	2.5	4	16	40		105	16
4TNM 160 500 S16 M20C	M20	2.5	4	16	50		115	16

4TNM

• RPM : rev./min • Feed : mm/min

Material	Aluminum		Stainless Steel		Hardened Steels		Hardened Steels	
Hardness					30~40HRC		40~62HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
M3	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	60 ~ 70	0.01 ~ 0.02	50 ~ 60	0.008 ~ 0.01
M4	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	60 ~ 70	0.01 ~ 0.02	50 ~ 60	0.008 ~ 0.01
M5	100 ~ 130	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	60 ~ 70	0.01 ~ 0.02	50 ~ 60	0.01 ~ 0.02
M6	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	60 ~ 70	0.01 ~ 0.02	50 ~ 60	0.01 ~ 0.02
M8	100 ~ 130	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	60 ~ 70	0.02 ~ 0.03	50 ~ 60	0.02 ~ 0.03
M10	100 ~ 130	0.05 ~ 0.06	70 ~ 85	0.03 ~ 0.04	60 ~ 70	0.02 ~ 0.03	50 ~ 60	0.02 ~ 0.03
M12	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	60 ~ 70	0.02 ~ 0.03	50 ~ 60	0.02 ~ 0.03
M16	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	60 ~ 70	0.03 ~ 0.04	50 ~ 60	0.03 ~ 0.04
M20	100 ~ 130	0.06 ~ 0.07	70 ~ 85	0.05 ~ 0.06	60 ~ 70	0.03 ~ 0.04	50 ~ 60	0.03 ~ 0.04

• Using shrink-fit chuck with great holding power is recommended.
• When the tool approaches the work material, reduce the feed by 50%.

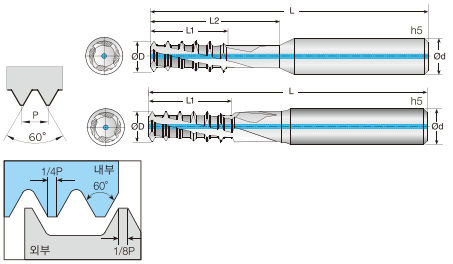
K THREAD MILL 4TNA

4 Flutes Helix Nick Type Thread Mill for Aluminum

Thread mill for Aluminum, Aluminum alloy, non-ferrous and non-metallic materials.

- High spindle speed and feed per tooth are available.
- Maximum drilling depth: 2xD, 2.5xD, 3xD (threading diameter)
- Rib type helical design is applied for deep threading.





4刃アルミ専用のヘリックスニークタイプスレッドミル

アルミ、アルミ合金などの非鉄・非金属の加工

- 高い切削速度と刃あたりの高い移送が可能です。
- 最大のねじ加工深さ:2xD、2.5xD、3xD(ねじ加工直径)
- より深いねじ加工のためのヘリカルリブタイプを採用しました。

4날 알루미늄 전용 헬릭스 니크 타입 쓰레드밀

알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 높은 절삭 속도와 날 당 높은 이송이 가능합니다.
- 최대 나사가공 깊이: 2xD, 2.5xD, 3xD(나사가공 직경)
- 더 깊은 나사가공을 위한 헬리컬 리브 타입을 채용하였습니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO without coolant								
4TNA 022 060 S06 M3	M3	0.5	4	2.2	6		60	6
4TNA 022 080 S06 M3	M3	0.5	4	2.2	8		60	6
4TNA 024 090 S04 M3	M3	0.5	4	2.4	5.47	9	45	4
4TNA 029 084 S06 M4	M4	0.7	4	2.9	8.4		60	6
4TNA 029 112 S06 M4	M4	0.7	4	2.9	11.2		60	6
4TNA 0315 120 S04 M4	M4	0.7	4	3.15	7.64	12	45	4
4TNA 038 112 S06 M5	M5	0.8	4	3.8	11.2		60	6
4TNA 038 128 S06 M5	M5	0.8	4	3.8	12.8		60	6
4TNA 039 150 S04 M5	M5	0.8	4	3.9	8.73	15	50	4
4TNA 045 120 S06 M6	M6	1	4	4.5	12		60	6
4TNA 045 160 S06 M6	M6	1	4	4.5	16		60	6
4TNA 048 180 S06 M6	M6	1	4	4.8	10.9	18	60	6
4TNA 060 175 S06 M8	M8	1.25	4	6	17.5		65	6
4TNA 060 200 S06 M8	M8	1.25	4	6	20		65	6
4TNA 065 240 S08 M8	M8	1.25	4	6.5	13.62	24	65	8
4TNA 075 210 S08 M10	M10	1.5	4	7.5	21		75	8
4TNA 075 270 S08 M10	M10	1.5	4	7.5	27		75	8
4TNA 082 300 S10 M10	M10	1.5	4	8.2	16.34	30	75	10
4TNA 095 245 S10 M12	M12	1.75	4	9.5	24.5		80	10
4TNA 095 315 S10 M12	M12	1.75	4	9.5	31.5		80	10
4TNA 099 360 S10 M12	M12	1.75	4	9.9	19.06	36	85	10
4TNA 100 280 S10 M14	M14	2	4	10	28		85	10
4TNA 100 360 S10 M14	M14	2	4	10	36		90	10
4TNA 116 420 S12 M14	M14	2	4	11.6	21.75	42	90	12
4TNA 120 320 S12 M16	M16	2	4	12	32		95	12
4TNA 120 400 S12 M16	M16	2	4	12	40		100	12
4TNA 136 480 S14 M16	M16	2	4	13.6	25.75	48	100	14
4TNA 140 400 S14 M18	M18	2.5	4	14	40		95	14
4TNA 140 450 S14 M18	M18	2.5	4	14	45		105	14
4TNA 160 400 S16 M20	M20	2.5	4	16	40		105	16
4TNA 160 500 S16 M20	M20	2.5	4	16	50		115	16

K THREAD MILL 4TNA



单位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO With coolant								
4TNA 045 120 S06 M6C	M6	1	4	4.5	12		60	6
4TNA 045 160 S06 M6C	M6	1	4	4.5	16		60	6
4TNA 048 180 S06 M6C	M6	1	4	4.8	10.9	18	60	6
4TNA 060 175 S06 M8C	M8	1.25	4	6	17.5		65	6
4TNA 060 200 S06 M8C	M8	1.25	4	6	20		65	6
4TNA 065 240 S08 M8C	M8	1.25	4	6.5	13.62	24	65	8
4TNA 075 210 S08 M10C	M10	1.5	4	7.5	21		75	8
4TNA 075 270 S08 M10C	M10	1.5	4	7.5	27		75	8
4TNA 082 300 S10 M10C	M10	1.5	4	8.2	16.34	30	75	10
4TNA 095 245 S10 M12C	M12	1.75	4	9.5	24.5		80	10
4TNA 095 315 S10 M12C	M12	1.75	4	9.5	31.5		80	10
4TNA 099 360 S10 M12C	M12	1.75	4	9.9	19.06	36	85	10
4TNA 100 280 S10 M14C	M14	2	4	10	28		85	10
4TNA 100 360 S10 M14C	M14	2	4	10	36		90	10
4TNA 116 420 S12 M14C	M14	2	4	11.6	21.75	42	90	12
4TNA 120 320 S12 M16C	M16	2	4	12	32		95	12
4TNA 120 400 S12 M16C	M16	2	4	12	40		100	12
4TNA 136 480 S14 M16C	M16	2	4	13.6	25.75	48	100	14
4TNA 140 400 S14 M18C	M18	2.5	4	14	40		95	14
4TNA 140 450 S14 M18C	M18	2.5	4	14	45		105	14
4TNA 160 400 S16 M20C	M20	2.5	4	16	40		105	16
4TNA 160 500 S16 M20C	M20	2.5	4	16	50		115	16

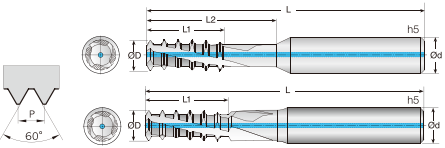
K THREAD MILL 4TNS

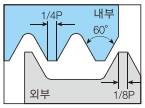
4 Flutes Helix Nick Type Thread Mill for Stainless Steel

Thread mill for SUS, Titanium alloy

- High spindle speed and feed per tooth are available.
- Maximum drilling depth: 2xD, 2.5xD, 3xD (threading diameter)
- Rib type helical design is applied for deep threading.







4刃SUS加工用のヘリックスニークタイプスレッドミル

SUS、チタン合金の加工

- 高い切削速度と刃あたりの高い移送が可能です。
- 最大のねじ加工深さ:2xD、2.5xD、3xD(ねじ加工直径)
- より深いねじ加工のためのヘリカルリブタイプを採用しました。

4날 SUS 가공용 헬릭스 니크 타입 쓰레드밀

SUS, 티타늄 합금 가공

- 높은 절삭 속도와 날 당 높은 이송이 가능합니다.
- 최대 나사가공 깊이: 2xD, 2.5xD, 3xD(나사가공 직경)
- 더 깊은 나사가공을 위한 헬리컬 리브 타입을 채용하였습니다.

単位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO without coolant								
4TNS 022 060 S06 M3	M3	0.5	4	2.2	6		60	6
4TNS 022 080 S06 M3	M3	0.5	4	2.2	8		60	6
4TNS 024 090 S04 M3	M3	0.5	4	2.4	5.47	9	45	4
4TNS 029 084 S06 M4	M4	0.7	4	2.9	8.4		60	6
4TNS 029 112 S06 M4	M4	0.7	4	2.9	11.2		60	6
4TNS 0315 120 S04 M4	M4	0.7	4	3.15	7.64	12	45	4
4TNS 038 112 S06 M5	M5	0.8	4	3.8	11.2		60	6
4TNS 038 128 S06 M5	M5	0.8	4	3.8	12.8		60	6
4TNS 039 150 S04 M5	M5	0.8	4	3.9	8.73	15	50	4
4TNS 045 120 S06 M6	M6	1	4	4.5	12		60	6
4TNS 045 160 S06 M6	M6	1	4	4.5	16		60	6
4TNS 048 180 S06 M6	M6	1	4	4.8	10.9	18	60	6
4TNS 060 175 S06 M8	M8	1.25	4	6	17.5		65	6
4TNS 060 200 S06 M8	M8	1.25	4	6	20		65	6
4TNS 065 240 S08 M8	M8	1.25	4	6.5	13.62	24	65	8
4TNS 075 210 S08 M10	M10	1.5	4	7.5	21		75	8
4TNS 075 270 S08 M10	M10	1.5	4	7.5	27		75	8
4TNS 082 300 S10 M10	M10	1.5	4	8.2	16.34	30	75	10
4TNS 095 245 S10 M12	M12	1.75	4	9.5	24.5		80	10
4TNS 095 315 S10 M12	M12	1.75	4	9.5	31.5		80	10
4TNS 099 360 S10 M12	M12	1.75	4	9.9	19.06	36	85	10
4TNS 100 280 S10 M14	M14	2	4	10	28		85	10
4TNS 100 360 S10 M14	M14	2	4	10	36		90	10
4TNS 116 420 S12 M14	M14	2	4	11.6	21.75	42	90	12
4TNS 120 320 S12 M16	M16	2	4	12	32		95	12
4TNS 120 400 S12 M16	M16	2	4	12	40		100	12
4TNS 136 480 S14 M16	M16	2	4	13.6	25.75	48	100	14
4TNS 140 400 S14 M18	M18	2.5	4	14	40		95	14
4TNS 140 450 S14 M18	M18	2.5	4	14	45		105	14
4TNS 160 400 S16 M20	M20	2.5	4	16	40		105	16
4TNS 160 500 S16 M20	M20	2.5	4	16	50		115	16

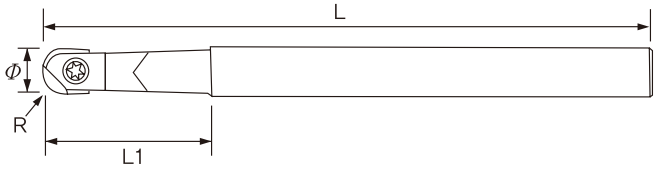
K THREAD MILL 4TNS

单位/Unit : mm

Order Number	Thread	Pitch	Flutes	Diameter	Thread Length	Effective Length	Overall Length	Shank Dia
			Z	D	L1	L2	L	d
ISO With coolant								
4TNS 045 120 S06 M6C	M6	1	4	4.5	12		60	6
4TNS 045 160 S06 M6C	M6	1	4	4.5	16		60	6
4TNS 048 180 S06 M6C	M6	1	4	4.8	10.9	18	60	6
4TNS 060 175 S06 M8C	M8	1.25	4	6	17.5		65	6
4TNS 060 200 S06 M8C	M8	1.25	4	6	20		65	6
4TNS 065 240 S08 M8C	M8	1.25	4	6.5	13.62	24	65	8
4TNS 075 210 S08 M10C	M10	1.5	4	7.5	21		75	8
4TNS 075 270 S08 M10C	M10	1.5	4	7.5	27		75	8
4TNS 082 300 S10 M10C	M10	1.5	4	8.2	16.34	30	75	10
4TNS 095 245 S10 M12C	M12	1.75	4	9.5	24.5		80	10
4TNS 095 315 S10 M12C	M12	1.75	4	9.5	31.5		80	10
4TNS 099 360 S10 M12C	M12	1.75	4	9.9	19.06	36	85	10
4TNS 100 280 S10 M14C	M14	2	4	10	28		85	10
4TNS 100 360 S10 M14C	M14	2	4	10	36		90	10
4TNS 116 420 S12 M14C	M14	2	4	11.6	21.75	42	90	12
4TNS 120 320 S12 M16C	M16	2	4	12	32		95	12
4TNS 120 400 S12 M16C	M16	2	4	12	40		100	12
4TNS 136 480 S14 M16C	M16	2	4	13.6	25.75	48	100	14
4TNS 140 400 S14 M18C	M18	2.5	4	14	40		95	14
4TNS 140 450 S14 M18C	M18	2.5	4	14	45		105	14
4TNS 160 400 S16 M20C	M20	2.5	4	16	40		105	16
4TNS 160 500 S16 M20C	M20	2.5	4	16	50		115	16

MIDAS ABPF HOLDER

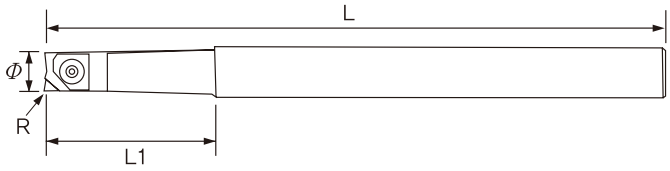




CARBIDE HOLDER

Dimension							
CODE NO.	Ø	R	L	L1	Insert	Screw	Wrench
C-ABPF 10×150	10	5	150	20	SP1W100 / SP1Q100 SP1W110	581-142	104-T10
C-ABPF 12×150	12	6	150	30	SP1W120 / SP1Q120 SP1W130 / SP1Q130	581-143	105-T20
C-ABPF 16×200	16	8	200	70	SP1W160 / SP1Q160 SP1W170 / SP1Q170	581-144	105-T20
C-ABPF 20×220	20	10	220	80	SP1W200 / SP1Q200 SP1W210 / SP1Q210	581-145	101-T25S
C-ABPF 25×250	25	12.5	250	80	SP1W250 / SP1Q250 SP1W260 / SP1Q260	581-146	105-T30A
C-ABPF 30×300	30	15	300	100	SP1W300 / SP1Q300	581-147	105-T30A





STEEL HOLDER

Dimension							
CODE NO.	Ø	R	L	L1	Insert	Screw	Wrench
ABPF 16×220	16	8	220	70	SP1W160 / SP1Q160 SP1W170 / SP1Q170	581-144	105-T20
ABPF 20×220	20	10	220	80	SP1W200 / SP1Q200 SP1W210 / SP1Q210	581-145	101-T25S
ABPF 25×250	25	12.5	250	80	SP1W250 / SP1Q250 SP1W260 / SP1Q260	581-146	105-T30A
ABPF 30×250	30	15	250	100	SP1W300 / SP1Q300	581-147	105-T30A

How to install insert

The marking part of insert is located on the top and installed in holder.

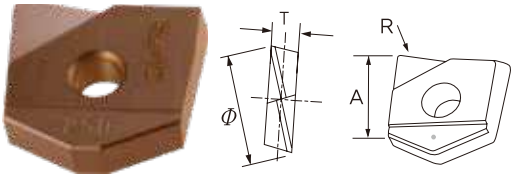
インサート 装着法

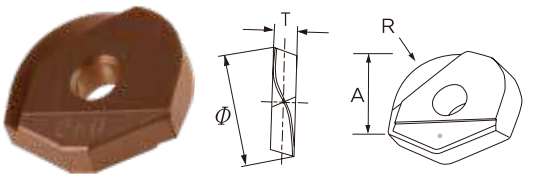
インサートにマーキングされた部分が ホルダーの上部分に装着するとうにしてください.

인서트 장착 방법

인서트의 마킹 부분은 상단에 위치하며 홀더에 장착됩니다.

MIDAS INSERT





SP1Q				
CODE NO.	R	A	Ø	T
SP1Q100×0.5R	0.5	11.6	10.0	2.7
SP1Q100×1.0R	1.5			
SP1Q120×0.5R	0.5	14.3	12.0	3.2
SP1Q120×1.0R	1.0			
SP1Q120×2.0R	2.0			
SP1Q130×0.3R	0.3	12.7	13.0	3.2
SP1Q130×0.5R	0.5			
SP1Q130×1.0R	1.0			
SP1Q160×0.5R	0.5	16.6	16.0	4.2
SP1Q160×1.0R	1.0			
SP1Q160×2.0R	2.0			
SP1Q170×0.5R	0.5	15.9	17.0	4.2
SP1Q170×1.0R	1.0			
SP1Q170×2.0R	2.0			
SP1Q200×0.5R	0.5	19.9	20.0	5.2
SP1Q200×1.0R	1.0			
SP1Q200×2.0R	2.0			
SP1Q210×0.5R	0.5	20.3	21.0	5.2
SP1Q210×1.0R	1.0			
SP1Q210×2.0R	2.0			
SP1Q250×0.5R	0.5	22.3	25.0	6.2
SP1Q250×1.0R	1.0			
SP1Q250×2.0R	2.0			
SP1Q260×0.5R	0.5	22.9	26.0	6.2
SP1Q260×1.0R	1.0			
SP1Q260×2.0R	2.0			
SP1Q300×0.5R	0.5	27.2	30.0	7.2
SP1Q300×1.0R	1.0			
SP1Q300×2.0R	2.0			

SP1W				
CODE NO.	R	A	Ø	T
SP1W100×5.0R	5.0	12.0	10.0	2.7
SP1W110×5.5R	5.5	12.0	11.0	
SP1W120×6.0R	6.0	14.6	12.0	3.2
SP1W130×6.5R	6.5	14.6	13.0	
SP1W160×8R	8.0	16.6	16.0	4.2
SP1W170×8.5R	8.5	17.0	17.0	
SP1W200×10R	10.0	20.3	20.0	5.2
SP1W210×10.5R	10.5	21.0	21.0	
SP1W250×12.5R	12.5	24.1	25.0	6.2
SP1W260×13R	13.0	24.5	26.0	
SP1W300×15R	15.0	29.2	30.0	7.2

Features

1. Tolerance (±0.01 below)
2. Use one holder
3. Compatible with other products

特徴

1. 公差(± 0.01)
2. 一つの ホルダー使用
3. 他製品との互換が可能

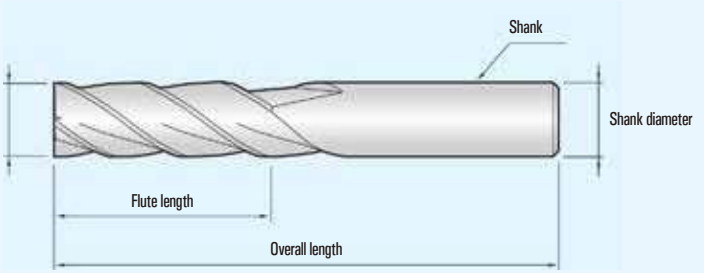
특징

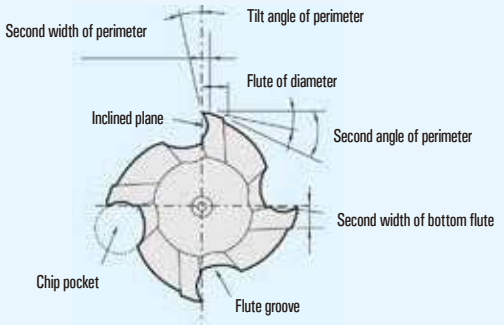
1. 공차 (±0.01)
2. 하나의 홀더 사용
3. 타제품과 호환 가능

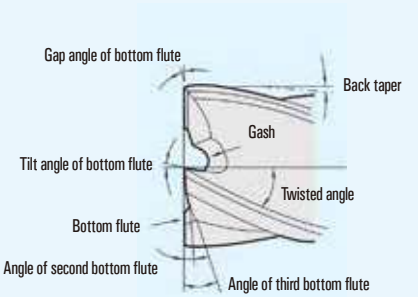
Machining Parameter Guidelines



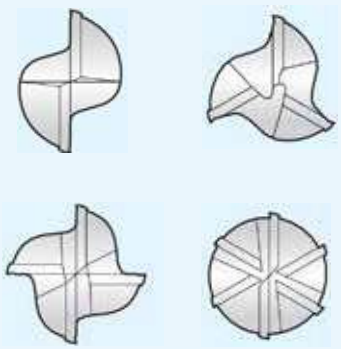
The main part details of Endmills





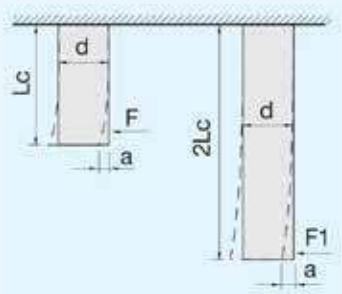


The discharge of chips and rigidity of tools by the number(N) of flutes.



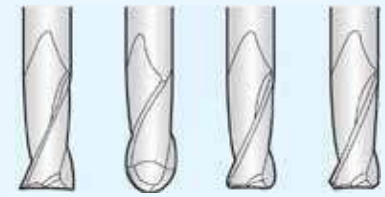
The number of flutes is essential part to control the performance of endmills. Generally, if there are few flutes, it is easy to discharge of chips but relatively section areas get smaller so that it makes the rigidity of tools fall down and enable tools to sway on cutting. On the other hand, if there are many flutes, the section areas get larger and the rigidity gets higher but the chip capacity goes down owing to lessened the chip pocket and it is easily blocked up by chips.

The rigidity of tools by the length(L) of the flute



The shorter length of tools, the higher the rigidity and performance of cutting.
The length of the flute become twice, the rigidity of Endmills falls to 1/8.
Because Endmills are the tools to move horizontal, it is important for the rigidity of tools to be in inverse proportion to the length of tools. Using a longer flute that need be is not good. You can choose suitable flutes for your cutting conditions now that COGO TOOLS, we have a variety of items.

The shape of the bottom flute



Main shapes of the bottom flute are Square End / Ball End / Radius End and COGO TOOLS deal with various types of items.
We've provided a lot of items for diverse uses as well as main items of the bottom flute.

Ideal cutting conditions

$$\text{R.P.M(N)} = \frac{1{,}000 \times Vc}{\pi \times D}$$

N : R.P.M
Vc : Speed of cutting (m/min)
D : Diameter of the endmill (mm)

$$\text{Feed rate(F)} = Ft \times Z \times N$$

F : Feed rate (m/min)
Ft : Quantity of feeding per a flute (m/min)
Z : The number of endmill
N : R.P.M



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