



安全ガイド Safety Guide

協和精工株式会社の切削工具をご使用いただく前に

Prior to use Cutting Tools of KYOWA CO.,LTD

弊社工具製品を、安全に使用していただくために、
本安全ガイドを必ずお読みください。

























You are kindly requested to read this safety guide in order to use our cutting products safely.

使用上の注意事項

Notice Point for Usage

- 鋭い切れ刃になっているので、直接手を触れるとけがをする危険があります。
特にケースから抜き取る際または機械への装着時は保護手袋等、保護具を使用してください。
Touching sharp cutting edge with bare hands can cause injury.
Ensure to use protective equipment such as protective gloves especially when removing tools from cases.
- 不適切な使用方法等により、工具が破損、飛散しけがをする危険があります。
安全カバー、保護メガネ等の保護具を使用してください。
Unsuitable usage can cause breakage and flying debris of tools.
Ensure to use protective equipment such as safety cover and eye protection.
- 衝撃的な負荷や磨耗が大きくなると急激に切削抵抗がかかり、工具が破損、飛散しけがをする危険があります。
安全カバー、保護メガネ等の保護具を使用してください。
Shocking overload and excess wearing can cause breakage and flying debris of tools with hasty cutting resistance.
Ensure to use protective equipment such as safety cover and eye protection.
- 工具や被削材又は切り屑は加工中、高温になりますので、加工直後に直接手で触れると火傷をする危険があります。
保護手袋等、保護具を使用してください。
Tools, workpieces and chips are very hot immediately after processing.
Never touch them with bare hands in order to prevent from burn.
Ensure to use protective equipment such as protective gloves.
- 工具を改造したり、所定の使用目的以外に使用しないでください。
工具が破損、飛散しけがをする危険があります。
Modifying tools or irregular usage other than the original purpose can cause breakage and flying debris of tools.
- 切削条件表は初期設定の参考値としてください。
加工する形状と使用する設備に合わせて条件を調整してください。
Referential cutting conditions can be used for reference data on first stage.
Ensure to adjust the conditions according to cutting shape and using machine.

マークの見方 Method to see the Mark

	マーク Mark	説明	Explanation
素材 Material		PCD：多結晶ダイヤモンド	Poly crystalline Diamond
		c BN：立方晶窒化ホウ素	Cubic Boron Nitride
		極超微粒子合金	Super Micro Grain Tungsten Carbide
		超微粒子合金	Micro Grain Tungsten Carbide
		微粒子合金	Regular Grain Carbide
刃数・刃径の許容差 No. of Flute Tolerance of Flute Diameter		1 枚刃 刃径の許容差を表示します	1 Flutes Shown Flute Tolerance
		2 枚刃（センターカット） 刃径の許容差を表示します	2 Flutes (Center Cut) Shown Flute Tolerance
		2 枚刃（ボールエンドミル） 刃径の許容差を表示します	2 Flutes (Ball Endmill) Shown Flute Tolerance
		2 枚刃（センターVエンドミル） 刃径の許容差を表示します	2 Flutes (Center V Endmill) Shown Flute Tolerance
		3 枚刃（ボールエンドミル） 刃径の許容差を表示します	3 Flutes (ball Endmill) Shown Flute Tolerance
		3 枚刃（ラジアスエンドミル） 刃径の許容差を表示します	3 Flutes (Radius Endmill) Shown Flute Tolerance
		4 枚刃（センターカット） 刃径の許容差を表示します	4 Flutes (Center Cut) Shown Flute Tolerance
		2 枚刃ドリル 刃径の許容差を表示します	2 Flutes Drill Shown Flute Tolerance
柄径の許容差 Tolerance of Shank		ϕd の許容差 柄径の許容差を表示します	Tolerance of ϕd Shown Shank Tolerance
ネジレ角 Twist Angle		ネジレ角 刃溝のネジレ角度を表示します	Twist Angle Shown Twist Angle of Flute Groove
刃形形状 Flute Shape		ピンカド スクエアエンドミルのコーナーがピンカドを表示します	Sharpe Edge Shown Sharpe Edge of Square Endmill Corner
		コーナー R 許容差 ラジアスエンドミルのコーナー R 許容差を表示します	Tolerance of Corner R Shown Corner R Tolerance of Radius Endmill
		C 面取り許容差 コーナー C 面付エンドミルの C 面取り許容差を表示します	Tolerance of Chamfer Shown Chamfer Tolerance of Endmill with Corner Chamfer
		R 許容差 ボールエンドミルの R 許容差を表示します	Tolerance of Radius Shown Radius Tolerance of Ball Endmill
先端角度 Edge Angle		先端角度（30°、45°、60°、70°、80°、90°、120°、180°） 先端角度を表示します	Edge Angle Shown Edge Angle
喰付寸法 Chamfer Size		喰付寸法 底刃付リーマの喰付寸法を表示します	Chamfer Size Shown Chamfer Size of Reamer with Bottom Flute
表面処理 Coating		T i C N コート チタンカーボンナイトライドコーティング処理工具	TiCN Coating Coated by Titanium Carbon Nitride
		T i A l N コート チタンアルミナコーティング処理工具	TiAlN Coating Coated by Titanium Aluminum Nitride
		DLC コート	DLC Coating

■	安全ガイド	Safety Guide	.....	1
■	マークの見方	Method to see the Mark	.....	2
■	CONTENTS	Contents	.....	3
■	シリーズ紹介	Introduction of Series	.....	4
■	CBN ボールエンドミル寸法早見表	CBN ball Endmill Quick dimension reference table by R	.....	10
■	CBN コーナーR付エンドミル寸法早見表	CBN Corner R Endmill Quick dimension reference table by Flute diameter	.....	13

PCD 製品 Poly crystalline Diamond 21

■	ボールエンドミル 超硬加工用	Ball Endmill For Tungsten Carbide	.....	22
■	コーナーR付エンドミル 超硬加工用	Corner R Endmill For Tungsten Carbide	.....	23
■	スパイラルボールエンドミル	Spiral Ball Endmill	.....	24
■	スパイラルスクエアエンドミル	Spiral Square Endmill	.....	25
■	ドリル	Drill	.....	27

CBN 製品 Cubic Boron Nitride 33

■	3 枚刃スパイラルボールエンドミル	3 Flutes Spiral Ball Endmill	.....	34
■	3 枚刃スパイラルコーナーR付エンドミル	3 Flutes Spiral Corner R Endmill	.....	35
■	スパイラルボールエンドミル	Spiral Ball Endmill	.....	38
■	スパイラルコーナーR付エンドミル	Spiral Corner R Endmill	.....	40
■	スパイラルボールエンドミル	Spiral Ball Endmill	.....	42
■	スパイラルコーナーR付エンドミル	Spiral Corner R Endmill	.....	43
■	ボールエンドミル	Ball Endmill	.....	44
■	コーナーR付エンドミル	Corner R Endmill	.....	45
■	リップ用ボールエンドミル	Ball Endmill for Deep Rib	.....	46
■	リップ用コーナーR付エンドミル	Corner R Endmill for Deep Rib	.....	47
■	V形エンドミル	V type Endmill	.....	50
■	V形R付エンドミル	V type R Endmill	.....	51
■	ボールエンドミル	Ball Endmill	.....	52
■	コーナーR付エンドミル	Corner R Endmill	.....	53
■	ボールエンドミル	Ball Endmill	.....	56
■	コーナーR付エンドミル	Corner R Endmill	.....	57
■	1 枚刃コーナーR付エンドミル	1 Flutes Corner R Endmill	.....	58

一般超硬製品 Tungsten Carbide 61

■	ルーマ型ドリル コートなし	Micro Drill Non coating	.....	62
■	ルーマ型ドリル DLCコート	Micro Drill DLC coating	.....	68
■	ルーマ型ドリル コートなし	Micro Drill Non coating	.....	70
■	センタードリル コートなし	Center Drill Non coating	.....	74
■	センタードリル TiAlNコート	Center Drill TiAlN coating	.....	74
■	センタードリル コートなし	Center Drill Non coating	.....	75
■	センタードリル TiAlNコート	Center Drill TiAlN coating	.....	75
■	面取り付ドリル	Step Drill	.....	76
■	スクエアエンドミル	Square Endmill	.....	79
■	リップ用エンドミル	Long Neck Endmill	.....	97
■	ボールエンドミル	Ball Endmill	.....	101
■	コーナーR付エンドミル	Corner R Endmill	.....	104
■	コーナーC面付エンドミル	Corner C Endmill	.....	115
■	センターVエンドミル	Center V Endmill	.....	116
■	面取りカッター	Chamfering Cutter	.....	121
■	裏面取りカッター 片角タイプ	Chamfering Cutter single Anguler type	.....	122
■	裏面取りカッター 両角タイプ	Chamfering Cutter W Anguler type	.....	124
■	底刃付リーマ	Reamer with Bottom Flute	.....	126
■	底刃付リーマ TiAlNコート	Reamer with Bottom Flute TiAlN coating	.....	134
■	スパイラルリーマ	Spiral Reamer	.....	142

アルミ合金加工用製品 For Aluminun Alloy 145

■	スクエアエンドミル	Square Endmill	.....	146
■	3 枚刃スクエアエンドミル	3 Flutes Square Endmill	.....	147
■	3 枚刃コーナーR付エンドミル	3 Flutes Corner R Endmill	.....	148

樹脂加工用製品 For Resin 153






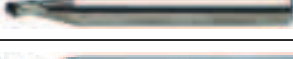
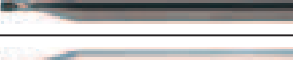
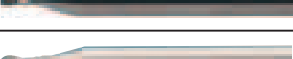



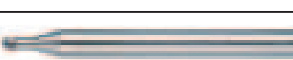
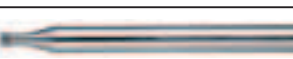

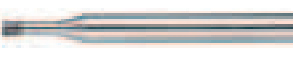





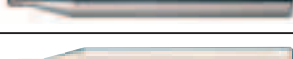




■	スクエアエンドミル	Square Endmill	.....	154
■	リップ用エンドミル	Long Neck Endmill	.....	156
■	ボールエンドミル	Ball Endmill	.....	157
■	リップ用ボールエンドミル	Long Neck Ball Endmill	.....	158

切削条件参考 Referential Cutting Conditions 161

■	PCD 切削条件参考	PCD Referential Cutting Conditions	.....	162
■	CBN 切削条件参考	CBN Referential Cutting Conditions	.....	171
■	一般超硬製品切削条件参考	Tungsten Carbide Referential Cutting Conditions	.....	177
■	アルミ合金加工用製品切削条件参考	For Aluminum Alloy Referential Cutting Conditions	.....	208
■	樹脂加工用製品切削条件参考	For Resin Referential Cutting Conditions	.....	212



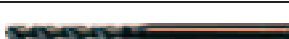






















シリーズ紹介(1)

Introduction of Series (1)

シリーズ名 Series Name	形状 Shape	刃数 No. of Flute	型番 Model	特徴 Feature	形状 Shape	サイズ Size	ページ Page
PCD製品 Poly crystalline Diamond	ボール Ball	2	DCBE-2	ボールエンドミル 超硬加工用 Ball Endmill For Tungsten Carbide		R0.2~R1	22
	ラジラス Radius	2	DCRE-2	コーナーR付エンドミル 超硬加工用 Corner R Endmill For Tungsten Carbide		φ0.5~φ2	23
	ボール Ball	2	DBE-2	PCD 2枚刃スパイラルボールエンドミル PCD 2 Flutes Spiral Ball Endmill		R0.1~R1.5	24
	スクエア Square	2	DSE-2	PCD 2枚刃スパイラルスクエアエンドミル PCD 2 Flutes Spiral Square Endmill		φ0.2~φ6	25
	ドリル Drill	2	DRD-2	PCDドリル PCD Drill		φ0.3~φ3	27
CBN製品 Cubic Boron Nitride	ボール Ball	3	SBBE-3	3枚刃スパイラルボールエンドミル 3 Flutes Spiral Ball Endmill		R0.5~R1.5	34
	ラジラス Radius	3	SBREF-3	シャンク径φ4、3枚刃スパイラルコーナーR付エンドミル 3 Flutes Spiral Corner R Endmill		φ0.3~φ2	35
	ラジラス Radius	3	SBRE-3	3枚刃スパイラルコーナーR付エンドミル 3 Flutes Spiral Corner R Endmill		φ3~φ6	37
	ボール Ball	2	SBBEF-2	シャンクφ4、30°ネジレ Shank φ4 Helical 30°		R0.1~R1.5	38
	ラジラス Radius	2	SBREF-2	シャンクφ4、30°ネジレ Shank φ4 Helical 30°		φ0.3~φ3	40
	ボール Ball	2	SBBE-2	シャンクφ6、30°ネジレ Shank φ6 Helical 30°		R0.1~R3	42
	ラジラス Radius	2	SBRE-2	シャンクφ6、30°ネジレ Shank φ6 Helical 30°		φ0.3~φ6	43
	ボール Ball	2	BSB-2	ショート刃長(刃径×2) Short Flute(Flute Diameter×2)		R0.2~R1	44
	ラジラス Radius	2	BSR-2	ショート刃長(刃径×2) Short Flute(Flute Diameter×2)		φ0.5~φ2	45
	ボール Ball	2	BRB-2	ロングネックボールエンドミル Long Neck Ball Endmill		R0.2~R1	46
	ラジラス Radius	2	BRR-2	ロングネックコーナーR付エンドミル Long Neck Corner R Endmill		φ0.5~φ2	47
	V 形 V Shape	3	BMC-3	先端角90° 3枚刃 Edge Angle 90°		φ0.5~φ6	49
	V 形 V Shape	2	BVEF-2	先端角30° 40° 60° 90° Edge Angle 30° 40° 60° 90°		30°~90°	50
	R 形 R shape	2	BVREF-2	先端R 0.1、0.2 Edge R 0.1、0.2		30°~90°	51
	ボール Ball	2	BBEF-2	シャンク径φ4 直刃 Shank φ4 Straight Endmill		R0.1~R1.5	52
	ラジラス Radius	2	BREF-2	シャンク径φ4 直刃 Shank φ4 Straight Endmill		φ0.3~φ3	53
	ボール Ball	2	BBE-2	シャンク径φ6 直刃 Shank φ6 Straight Endmill		R0.1~R3	56
	ラジラス Radius	2	BRE-2	シャンク径φ6 直刃 Shank φ6 Straight Endmill		φ0.3~φ6	57
	ラジラス Radius	1	BREF-1	1枚刃コーナーR付エンドミル 1 Flutes Corner R Endmill		φ0.1~φ1	58
	リーマ Reamer	4	BHR-4	スパイラル刃リーマ Spiral Reamer		φ1.5~φ6.03	59

シリーズ紹介(2)

Introduction of Series (2)

シリーズ名 Series Name	形状 Shape	刃数 No. of Flute	型番 Model	特 徴 Feature	形 状 Shape	サイズ Size	ページ Page
超硬製品 Tungsten Carbide	ルーマ型ドリル Drill	2	KDR-2	ルーマ型ドリル、シャंकφ3 Micro Drill		φ0.03~φ3	62
	ルーマ型ドリル Drill	2	KDRLS-2	ロングシャंकドリル Long Shank Drill		φ0.3~φ3	66
	ルーマ型ドリル Drill	2	KDR-DLC	ルーマ型ドリル、DLC付 Micro Drill DLC coating		φ0.08~φ3	68
	ルーマ型ドリル Drill	2	KDR-90	ルーマ型ドリル 先端角90° Micro Drill Point Angle 90°		φ0.5~φ3	70
	ルーマ型ドリル Drill	2	KDR-F	ルーマ型ドリル 先端フラット Micro Drill Point Angle 180°		φ0.5~φ3	72
	ドリル Drill	2	KCD-60	センタードリル コートなし Center Drill Non coating		φ0.3~φ3	74
	ドリル Drill	2	KCDA-60	センタードリル TiAlN付 Center Drill TiAlN coating		φ0.3~φ3	74
	ドリル Drill	2	KCD-90	センタードリル コートなし Center Drill Non coating		φ0.3~φ3	75
	ドリル Drill	2	KCDA-90	センタードリル TiAlN付 Center Drill TiAlN coating		φ0.3~φ3	75
	ドリル Drill	2	KDD-2	先端刃径0.05とび 面取刃付ドリル 0.05pitch F/D Flute Length=2~25, Groove Length=8~40		φ0.5~φ6	76
	スクエア Square	2	KMSE-2	0.01とびシャंकφ3 Short Flute Length 0.01pitch Flute Diameter, Shank φ3		φ0.1~φ3	79
	スクエア Square	2	KMSEA-2	0.01とびTiAlN付 Short Flute Length with TiAlN coating		φ0.1~φ3	82
	スクエア Square	2	KSE-2	0.01とびシャंकφ6 Short Flute Length 0.01pitch Flute Diameter, Shank φ6		φ3~φ6	86
	スクエア Square	2	KSEL-2	ロング刃長 Long Flute Length Flute Length=Flute Diameter ×4~12		φ0.1~φ6	90
	スクエア Square	2	KSEA-2	TiAlN付 刃長ショート~ロング Various Flute Length with TiAlN coating		φ1~φ4	94
	スクエア Square	2	KSET-2	ショート刃長 TiCN付 Short Flute Length with TiCN coating		φ0.1~φ6	95
	スクエア Square	4	KMSEA-4	4枚刃 TiAlN付 Short Flute Length with TiAlN coating		φ0.5~φ3	96
	スクエア Square	2	KRE-2	ロングネックエンドミル Long Neck Endmill 0.1pitch Flute Diameter		φ0.2~φ6	97
	ボール Ball	2	KMBE-2	ショート刃長 シャंकφ3 Short Flute Length Flute Length=Flute Diameter ×2, Shank φ3		R0.1~R1.5	101
	ボール Ball	2	KLB-2	ロング刃長 Long Flute Length Flute Length=Flute Diameter ×3~12		R0.1~R3	102
	ボール Ball	2	KTBL-2	テーパネック(両角1°) Taper Neck Taper Angle 1°(Double Angle)		R0.1~R3	103
	ラジアス Radius	2	KSER-2	刃長ショート~ロング コーナーR付 CornerR R0.05~R1		φ1~φ4	104
	ラジアス Radius	2	KSRA-2	TiAlN付シャंकφ3 CornerR R0.1~R1 with TiAlN coating, Shank φ3		φ0.5~φ3	107
	ラジアス Radius	4	KSRA-4	TiAlN付シャंकφ3 CornerR R0.1~R1 with TiAlN coating, Shank φ3		φ1~φ3	108
	ラジアス Radius	2	KSR-2	コーナーR付(R0.1~R2) CornerR R0.1~R2		φ1~φ6	109

被削材 Workpiece							
炭素鋼 Carbon Steel 一般構造用鋼 General Structural Steel SS S55C	合金鋼 Alloy Steel 工具鋼 Tool Steel SMC SKT SKS SKD	プリハードン鋼 Pre-Harden Steel HPM-1 NAK55 SKT	樹脂 Resin ナイロン Nylon アクリル Acrylic	焼入れ鋼 Harden Steel SKD (HRC50~65)	アルミ合金 Aluminum Alloy ADC AC	炭素繊維 Carbon fiber CFRP	マシナブルセラミック Machinable Ceramics
○	○	○	○		○		
○	○	○	○		○		
			◎		◎	○	○
○	○	○	○		○		
○	○	○	○		○		
○	○	○			○		
○	○	○					
○	○	○			○		
○	○	○			○		
○	○	○			○		
○	○	○			○		
◎	◎	◎					
○	○	○	○		○		
○	○	○			○		
◎	◎	◎					
◎	◎	◎					
◎	◎	◎					
○	○	○			○		
○	○	○			○		
○	○	○			○		
○	○	○			○		
○	○	○			○		
○	○	○			○		
◎	◎	◎		○			
◎	◎	◎		○			
○	○	○			○		

被削材 Workpiece							
炭素鋼 Carbon Steel 一般構造用鋼 General Structural Steel SS S55C	合金鋼 Alloy Steel 工具鋼 Tool Steel SMC SKT SKS SKD	プリハードン鋼 Pre-Harden Steel HPM-1 NAK55 SKT	樹脂 Resin ナイロン Nylon アクリル Acrylic	焼入れ鋼 Harden Steel SKD (HRC50~65)	アルミ合金 Aluminum Alloy ADC AC	炭素繊維 Carbon fiber CFRP	マシナブルセラミック Machinable Ceramics
○	○	○			○		
○	○	○			○		
◎	◎	◎					
◎	◎	◎					
○	○	○			○		
○	○	○	○		○		
○	○	○	○		○		
○	○	○	○		○		
◎	◎	◎					
○	○	○			○		
					◎		
					◎		
					◎		
					◎		
					◎		
			◎		◎		
			◎		◎		
			◎		◎		
			◎		◎		
			◎		◎		
			◎		◎		

CBNボールエンドミル寸法早見表

CBN Ball Endmill Quick dimension reference table by R

単位 [寸法 : mm] Unit [size : mm]

品番 Code No.	R	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
R 0. 1									
SBBEF-2010006	0.1	0.2	0.6	0.2	50	4	2	スパイラル Spiral	38
SBBE-2010	0.1	0.2	0.6	0.2	50	6	2	スパイラル Spiral	42
BBEF-2010006	0.1	0.2	0.6	0.2	50	4	1	直刃 Straight	52
BBE-2010S	0.1	0.2	0.6	0.2	50	6	1	直刃 Straight	56
SBBEF-2010012	0.1	0.2	1.2	0.2	50	4	2	スパイラル Spiral	38
BBEF-2010012	0.1	0.2	1.2	0.2	50	4	1	直刃 Straight	52
R 0. 1 5									
SBBEF-2015009	0.15	0.3	0.9	0.3	50	4	2	スパイラル Spiral	38
SBBE-2015	0.15	0.3	0.9	0.3	50	6	2	スパイラル Spiral	42
BBEF-2015009	0.15	0.3	0.9	0.3	50	4	2	直刃 Straight	52
BBE-2015S	0.15	0.3	0.9	0.3	50	6	2	直刃 Straight	56
SBBEF-2015018	0.15	0.3	1.8	0.3	50	4	2	スパイラル Spiral	38
BBEF-2015018	0.15	0.3	1.8	0.3	50	4	2	直刃 Straight	52
R 0. 2									
BSB-2020008	0.2	0.4	0.8	0.5	40	3	2	直刃 Straight	44
SBBEF-2020012	0.2	0.4	1.2	0.4	50	4	2	スパイラル Spiral	38
SBBE-2020	0.2	0.4	1.2	0.4	50	6	2	スパイラル Spiral	42
BBEF-2020012	0.2	0.4	1.2	0.4	50	4	2	直刃 Straight	52
BBE-2020S	0.2	0.4	1.2	0.4	50	6	2	直刃 Straight	56
BRB-2020020	0.2	0.4	2	0.5	40	3	2	直刃 Straight	46
SBBEF-2020024	0.2	0.4	2.4	0.4	50	4	2	スパイラル Spiral	38
BBEF-2020024	0.2	0.4	2.4	0.4	50	4	2	直刃 Straight	52
BRB-2020040	0.2	0.4	4	0.5	40	3	2	直刃 Straight	46
R 0. 2 5									
BSB-2025010	0.25	0.5	1	0.5	40	3	2	直刃 Straight	44
SBBEF-2025015	0.25	0.5	1.5	0.5	50	4	2	スパイラル Spiral	38
SBBE-2025	0.25	0.5	1.5	0.5	50	6	2	スパイラル Spiral	42
BBEF-2025015	0.25	0.5	1.5	0.5	50	4	2	直刃 Straight	52
BBE-2025S	0.25	0.5	1.5	0.5	50	6	2	直刃 Straight	56
BRB-2025020	0.25	0.5	2	0.5	40	3	2	直刃 Straight	46
SBBEF-2025030	0.25	0.5	3	0.5	50	4	2	スパイラル Spiral	38
BBEF-2025030	0.25	0.5	3	0.5	50	4	2	直刃 Straight	52
BRB-2025040	0.25	0.5	4	0.5	40	3	2	直刃 Straight	46
R 0. 3									
BSB-2030012	0.3	0.6	1.2	0.6	40	3	2	直刃 Straight	44
SBBEF-2030018	0.3	0.6	1.8	0.6	50	4	2	スパイラル Spiral	38
SBBE-2030	0.3	0.6	1.8	0.6	50	6	2	スパイラル Spiral	42
BBEF-2030018	0.3	0.6	1.8	0.6	50	4	2	直刃 Straight	52
BBE-2030S	0.3	0.6	1.8	0.6	50	6	2	直刃 Straight	56
BRB-2030020	0.3	0.6	2	0.6	40	3	2	直刃 Straight	46
SBBEF-2030036	0.3	0.6	3.6	0.6	50	4	2	スパイラル Spiral	38
BBEF-2030036	0.3	0.6	3.6	0.6	50	4	2	直刃 Straight	52
BRB-2030040	0.3	0.6	4	0.6	40	3	2	直刃 Straight	46
R 0. 4									
BSB-2040016	0.4	0.8	1.6	0.8	40	3	2	直刃 Straight	44
SBBEF-2040024	0.4	0.8	2.4	0.8	50	4	2	スパイラル Spiral	38
SBBE-2040	0.4	0.8	2.4	0.8	50	6	2	スパイラル Spiral	42
BBEF-2040024	0.4	0.8	2.4	0.8	50	4	2	直刃 Straight	52
BBE-2040S	0.4	0.8	2.4	0.8	50	6	2	直刃 Straight	56
BRB-2040040	0.4	0.8	4	0.8	40	3	2	直刃 Straight	46
SBBEF-2040048	0.4	0.8	4.8	0.8	50	4	2	スパイラル Spiral	38
BBEF-2040048	0.4	0.8	4.8	0.8	50	4	2	直刃 Straight	52
BRB-2040060	0.4	0.8	6	0.8	40	3	2	直刃 Straight	46

品番 Code No.	R	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
R 0.5									
BSB-2050020	0.5	1	2	1	50	4	2	直刃 Straight	44
SBBE-3050	0.5	1	2	1	50	6	3	スパイラル Spiral	34
SBBEF-2050030	0.5	1	3	1	50	4	2	スパイラル Spiral	38
SBBE-2050	0.5	1	3	1	50	6	2	スパイラル Spiral	42
BBEF-2050030	0.5	1	3	1	50	4	2	直刃 Straight	52
BBE-2050S	0.5	1	3	1	50	6	2	直刃 Straight	56
BRB-2050040	0.5	1	4	1	50	4	2	直刃 Straight	46
SBBEF-2050040	0.5	1	4	1	50	4	2	スパイラル Spiral	38
SBBEF-2050050	0.5	1	5	1	50	4	2	スパイラル Spiral	38
BRB-2050060	0.5	1	6	1	50	4	2	直刃 Straight	46
SBBEF-2050060	0.5	1	6	1	50	4	2	スパイラル Spiral	38
BBEF-2050060	0.5	1	6	1	50	4	2	直刃 Straight	52
BRB-2050080	0.5	1	8	1	50	4	2	直刃 Straight	46
SBBEF-2050080	0.5	1	8	1	50	4	2	スパイラル Spiral	38
BRB-2050100	0.5	1	10	1	50	4	2	直刃 Straight	46
SBBEF-2050100	0.5	1	10	1	50	4	2	スパイラル Spiral	38
R 0.6									
BSB-2060024	0.6	1.2	2.4	1.2	50	4	2	直刃 Straight	44
SBBEF-2060036	0.6	1.2	3.6	1.2	50	4	2	スパイラル Spiral	38
SBBE-2060	0.6	1.2	3.6	1.2	50	6	2	スパイラル Spiral	42
BBEF-2060036	0.6	1.2	3.6	1.2	50	4	2	直刃 Straight	52
BBE-2060S	0.6	1.2	3.6	1.2	50	6	2	直刃 Straight	56
BRB-2060050	0.6	1.2	5	1.2	50	4	2	直刃 Straight	46
SBBEF-2060072	0.6	1.2	7.2	1.2	50	4	2	スパイラル Spiral	38
BBEF-2060072	0.6	1.2	7.2	1.2	50	4	2	直刃 Straight	52
BRB-2060080	0.6	1.2	8	1.2	50	4	2	直刃 Straight	46
R 0.7									
BSB-2070028	0.7	1.4	2.8	1.2	50	4	2	直刃 Straight	44
SBBEF-2070042	0.7	1.4	4.2	1.4	50	4	2	スパイラル Spiral	38
SBBE-2070	0.7	1.4	4.2	1.4	50	6	2	スパイラル Spiral	42
BBEF-2070042	0.7	1.4	4.2	1.4	50	4	2	直刃 Straight	52
BBE-2070S	0.7	1.4	4.2	1.4	50	6	2	直刃 Straight	56
BRB-2070050	0.7	1.4	5	1.2	50	4	2	直刃 Straight	46
BRB-2070080	0.7	1.4	8	1.2	50	4	2	直刃 Straight	46
SBBEF-2070084	0.7	1.4	8.4	1.4	50	4	2	スパイラル Spiral	38
BBEF-2070084	0.7	1.4	8.4	1.4	50	4	2	直刃 Straight	52
R 0.75									
BSB-2075030	0.75	1.5	3	1.2	50	4	2	直刃 Straight	44
SBBE-3075	0.75	1.5	3	1.5	50	6	3	スパイラル Spiral	34
SBBEF-2075045	0.75	1.5	4.5	1.5	50	4	2	スパイラル Spiral	38
SBBE-2075	0.75	1.5	4.5	1.5	50	6	2	スパイラル Spiral	42
BBEF-2075045	0.75	1.5	4.5	1.5	50	4	2	直刃 Straight	52
BBE-2075S	0.75	1.5	4.5	1.5	50	6	2	直刃 Straight	56
SBBEF-2075090	0.75	1.5	9	1.5	50	4	2	スパイラル Spiral	38
BBEF-2075090	0.75	1.5	9	1.5	50	4	2	直刃 Straight	52
R 0.8									
BSB-2080032	0.8	1.6	3.2	1.2	50	4	2	直刃 Straight	44
SBBEF-2080048	0.8	1.6	4.8	1.5	50	4	2	スパイラル Spiral	38
SBBE-2080	0.8	1.6	4.8	1.5	50	6	2	スパイラル Spiral	42
BBEF-2080048	0.8	1.6	4.8	1.5	50	4	2	直刃 Straight	52
BBE-2080S	0.8	1.6	4.8	1.5	50	6	2	直刃 Straight	56
BRB-2080050	0.8	1.6	5	1.2	50	4	2	直刃 Straight	46
BRB-2080080	0.8	1.6	8	1.2	50	4	2	直刃 Straight	46

品番 Code No.	R	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
SBBEF-2080096	0.8	1.6	9.6	1.5	50	4	2	スパイラル Spiral	39
BBEF-2080096	0.8	1.6	9.6	1.5	50	4	2	直刃 Straight	52
R 0. 9									
BSB-2090036	0.9	1.8	3.6	1.5	50	4	2	直刃 Straight	44
BRB-2090050	0.9	1.8	5	1.5	50	4	2	直刃 Straight	46
SBBEF-2090054	0.9	1.8	5.4	1.5	50	4	2	スパイラル Spiral	39
SBBE-2090	0.9	1.8	5.4	1.5	50	6	2	スパイラル Spiral	42
BBEF-2090054	0.9	1.8	5.4	1.5	50	4	2	直刃 Straight	52
BBE-2090S	0.9	1.8	5.4	1.5	50	6	2	直刃 Straight	56
BRB-2090080	0.9	1.8	8	1.5	50	4	2	直刃 Straight	46
SBBEF-2090108	0.9	1.8	10.8	1.5	50	4	2	スパイラル Spiral	39
BBEF-2090108	0.9	1.8	10.8	1.5	50	4	2	直刃 Straight	52
R 1. 0									
BSB-2100040	1	2	4	1.5	50	4	2	直刃 Straight	44
SBBE-3100	1	2	4	1.5	50	6	3	スパイラル Spiral	34
SBBEF-2100060	1	2	6	1.5	50	4	2	スパイラル Spiral	39
SBBE-2100	1	2	6	1.5	50	6	2	スパイラル Spiral	42
BBEF-2100060	1	2	6	1.5	50	4	2	直刃 Straight	52
BBE-2100S	1	2	6	1.5	50	6	2	直刃 Straight	56
BRB-2100060	1	2	6	1.5	50	4	2	直刃 Straight	46
BRB-2100080	1	2	8	1.5	50	4	2	直刃 Straight	46
BRB-2100100	1	2	10	1.5	50	4	2	直刃 Straight	46
SBBEF-2100120	1	2	12	1.5	50	4	2	スパイラル Spiral	39
BBEF-2100120	1	2	12	1.5	50	4	2	直刃 Straight	52
R 1. 5									
SBBE-3150	1.5	3	6	2	50	6	3	スパイラル Spiral	34
SBBEF-2150090	1.5	3	9	2	50	4	2	スパイラル Spiral	39
SBBE-2150	1.5	3	9	2	50	6	2	スパイラル Spiral	42
BBEF-2150090	1.5	3	9	2	50	4	2	直刃 Straight	52
BBE-2150S	1.5	3	9	2	50	6	2	直刃 Straight	56
SBBEF-2150180	1.5	3	18	2	60	4	2	スパイラル Spiral	39
BBEF-2150180	1.5	3	18	2	60	4	2	直刃 Straight	52
R 2. 0									
SBBE-2200	2	4	12	2.5	50	6	2	スパイラル Spiral	42
BBE-2200S	2	4	12	2.5	50	6	2	直刃 Straight	56
R 2. 5									
SBBE-2250	2.5	5	15	3	60	6	2	スパイラル Spiral	42
BBE-2250S	2.5	5	15	3	60	6	2	直刃 Straight	56
R 3. 0									
SBBE-2300	3	6	20	3.5	60	6	2	スパイラル Spiral	42
BBE-2300S	3	6	20	3.5	60	6	2	直刃 Straight	56

CBNコーナーR付エンドミル寸法早見表

CBN Ball Endmill Quick dimension reference table by Flute diameter

単位 [寸法 : mm] Unit [size : mm]

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
φ 0.1									
BREF-101001003	0.1	0.01	0.3	0.1	50	4	1	直刃 Straight	58
BREF-101001005	0.1	0.01	0.5	0.1	50	4	1	直刃 Straight	58
φ 0.2									
BREF-102001006	0.2	0.01	0.6	0.2	50	4	1	直刃 Straight	58
BREF-102001012	0.2	0.01	1.2	0.2	50	4	1	直刃 Straight	58
BREF-102002006	0.2	0.02	0.6	0.2	50	4	1	直刃 Straight	58
BREF-102002012	0.2	0.02	1.2	0.2	50	4	1	直刃 Straight	58
φ 0.3									
BREF-103001009	0.3	0.01	0.9	0.3	50	4	1	直刃 Straight	58
BREF-103001018	0.3	0.01	1.8	0.3	50	4	1	直刃 Straight	58
BREF-103002009	0.3	0.02	0.9	0.3	50	4	1	直刃 Straight	58
SBREF-303002010	0.3	0.02	1	0.5	50	4	3	スパイラル Spiral	35
BREF-103002018	0.3	0.02	1.8	0.3	50	4	1	直刃 Straight	58
SBREF-303002020	0.3	0.02	2	0.5	50	4	3	スパイラル Spiral	35
BREF-203003005	0.3	0.03	0.5	0.3	50	4	2	直刃 Straight	53
SBREF-203003009	0.3	0.03	0.9	0.3	50	4	2	スパイラル Spiral	40
BREF-203003009	0.3	0.03	0.9	0.3	50	4	2	直刃 Straight	53
SBREF-203003018	0.3	0.03	1.8	0.3	50	4	2	スパイラル Spiral	40
BREF-203003018	0.3	0.03	1.8	0.3	50	4	2	直刃 Straight	53
BREF-203005005	0.3	0.05	0.5	0.3	50	4	2	直刃 Straight	53
SBREF-203005009	0.3	0.05	0.9	0.3	50	4	2	スパイラル Spiral	40
BREF-203005009	0.3	0.05	0.9	0.3	50	4	2	直刃 Straight	53
SBRE-203005	0.3	0.05	0.9	0.3	50	6	2	スパイラル Spiral	43
BRE-203005S	0.3	0.05	0.9	0.3	50	6	2	直刃 Straight	57
SBREF-303005010	0.3	0.05	1	0.5	50	4	3	スパイラル Spiral	35
SBREF-203005018	0.3	0.05	1.8	0.3	50	4	2	スパイラル Spiral	40
BREF-203005018	0.3	0.05	1.8	0.3	50	4	2	直刃 Straight	53
SBREF-303005020	0.3	0.05	2	0.5	50	4	3	スパイラル Spiral	35
φ 0.4									
BREF-104001012	0.4	0.01	1.2	0.4	50	4	1	直刃 Straight	58
BREF-104001024	0.4	0.01	2.4	0.4	50	4	1	直刃 Straight	58
BREF-104002012	0.4	0.02	1.2	0.4	50	4	1	直刃 Straight	58
SBREF-304002012	0.4	0.02	1.2	0.5	50	4	3	スパイラル Spiral	35
BREF-104002024	0.4	0.02	2.4	0.4	50	4	1	直刃 Straight	58
SBREF-304002024	0.4	0.02	2.4	0.5	50	4	3	スパイラル Spiral	35
BREF-204003005	0.4	0.03	0.5	0.4	50	4	2	直刃 Straight	53
SBREF-204003012	0.4	0.03	1.2	0.4	50	4	2	スパイラル Spiral	40
BREF-204003012	0.4	0.03	1.2	0.4	50	4	2	直刃 Straight	53
SBREF-204003024	0.4	0.03	2.4	0.4	50	4	2	スパイラル Spiral	40
BREF-204003024	0.4	0.03	2.4	0.4	50	4	2	直刃 Straight	53
BREF-204005005	0.4	0.05	0.5	0.4	50	4	2	直刃 Straight	53
BREF-204005012	0.4	0.05	1.2	0.4	50	4	2	直刃 Straight	53
SBRE-204005	0.4	0.05	1.2	0.4	50	6	2	スパイラル Spiral	43
BRE-204005S	0.4	0.05	1.2	0.4	50	6	2	直刃 Straight	57
SBREF-304005012	0.4	0.05	1.2	0.5	50	4	3	スパイラル Spiral	35
BREF-204005024	0.4	0.05	2.4	0.4	50	4	2	直刃 Straight	53
SBREF-304005024	0.4	0.05	2.4	0.5	50	4	3	スパイラル Spiral	35
BREF-204010005	0.4	0.1	0.5	0.4	50	4	2	直刃 Straight	53
SBREF-204010012	0.4	0.1	1.2	0.4	50	4	2	スパイラル Spiral	40
BREF-204010012	0.4	0.1	1.2	0.4	50	4	2	直刃 Straight	53
SBREF-204010024	0.4	0.1	2.4	0.4	50	4	2	スパイラル Spiral	40
BREF-204010024	0.4	0.1	2.4	0.4	50	4	2	直刃 Straight	53

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
φ 0.5									
BREF-105001015	0.5	0.01	1.5	0.5	50	4	1	直刃 Straight	58
BREF-105001030	0.5	0.01	3.0	0.5	50	4	1	直刃 Straight	58
BREF-105002015	0.5	0.02	1.5	0.5	50	4	1	直刃 Straight	58
SBREF-305002015	0.5	0.02	1.5	0.5	50	4	3	スパイラル Spiral	35
BREF-105002030	0.5	0.02	3.0	0.5	50	4	1	直刃 Straight	58
SBREF-305002030	0.5	0.02	3	0.5	50	4	3	スパイラル Spiral	35
BREF-205003005	0.5	0.03	0.5	0.5	50	4	2	直刃 Straight	53
BREF-205003010	0.5	0.03	1	0.5	50	4	2	直刃 Straight	53
SBREF-205003015	0.5	0.03	1.5	0.5	50	4	2	スパイラル Spiral	40
BREF-205003015	0.5	0.03	1.5	0.5	50	4	2	直刃 Straight	53
BREF-205003020	0.5	0.03	2	0.5	50	4	2	直刃 Straight	53
SBREF-205003030	0.5	0.03	3	0.5	50	4	2	スパイラル Spiral	40
BREF-205003030	0.5	0.03	3	0.5	50	4	2	直刃 Straight	53
BREF-205005005	0.5	0.05	0.5	0.5	50	4	2	直刃 Straight	53
BREF-205005010	0.5	0.05	1	0.5	50	4	2	直刃 Straight	53
BREF-205005015	0.5	0.05	1.5	0.5	50	4	2	直刃 Straight	53
BREF-205005020	0.5	0.05	2	0.5	50	4	2	直刃 Straight	53
BREF-205005030	0.5	0.05	3	0.5	50	4	2	直刃 Straight	53
BREF-205010005	0.5	0.1	0.5	0.5	40	4	2	直刃 Straight	53
BSR-20501001	0.5	0.1	1	0.5	40	3	2	直刃 Straight	45
BREF-205010010	0.5	0.1	1	0.5	50	4	2	直刃 Straight	54
SBREF-205010015	0.5	0.1	1.5	0.5	50	4	2	スパイラル Spiral	40
BREF-205010015	0.5	0.1	1.5	0.5	50	4	2	直刃 Straight	54
SBREF-305010015	0.5	0.1	1.5	0.5	50	4	3	スパイラル Spiral	35
SBREF-205010	0.5	0.1	1.5	0.5	50	6	2	スパイラル Spiral	43
BRE-205010S	0.5	0.1	1.5	0.5	50	6	2	直刃 Straight	57
BRR-20502001	0.5	0.1	2	0.5	40	3	2	直刃 Straight	47
BREF-205010020	0.5	0.1	2	0.5	50	4	2	直刃 Straight	54
SBREF-205010030	0.5	0.1	3	0.5	50	4	2	スパイラル Spiral	40
BREF-205010030	0.5	0.1	3	0.5	50	4	2	直刃 Straight	54
SBREF-305010030	0.5	0.1	3	0.5	50	4	3	スパイラル Spiral	35
BRR-20504001	0.5	0.1	4	0.5	40	3	2	直刃 Straight	47
BSR-20501002	0.5	0.2	1	0.5	40	3	2	直刃 Straight	45
BRR-20502002	0.5	0.2	2	0.5	40	3	2	直刃 Straight	47
BRR-20504002	0.5	0.2	4	0.5	40	3	2	直刃 Straight	47
φ 0.6									
SBREF-306002018	0.6	0.02	1.8	0.6	50	4	3	スパイラル Spiral	35
SBREF-306002036	0.6	0.02	3.6	0.6	50	4	3	スパイラル Spiral	35
BSR-20601201	0.6	0.1	1.2	0.6	40	3	2	直刃 Straight	45
SBREF-306010018	0.6	0.1	1.8	0.6	50	4	3	スパイラル Spiral	35
BRR-20602001	0.6	0.1	2	0.6	40	3	2	直刃 Straight	47
SBREF-306010036	0.6	0.1	3.6	0.6	50	4	3	スパイラル Spiral	35
BRR-20604001	0.6	0.1	4	0.6	40	3	2	直刃 Straight	47
BSR-20601202	0.6	0.2	1.2	0.6	40	3	2	直刃 Straight	45
BRR-20602002	0.6	0.2	2	0.6	40	3	2	直刃 Straight	47
BRR-20604002	0.6	0.2	4	0.6	40	3	2	直刃 Straight	47
φ 0.7									
SBREF-307002021	0.7	0.02	2.1	0.7	50	4	3	スパイラル Spiral	35
SBREF-307002042	0.7	0.02	4.2	0.7	50	4	3	スパイラル Spiral	35
BSR-20701401	0.7	0.1	1.4	0.7	40	3	2	直刃 Straight	45
BRR-20702001	0.7	0.1	2	0.7	40	3	2	直刃 Straight	47
SBREF-307010021	0.7	0.1	2.1	0.7	50	4	3	スパイラル Spiral	35
BRR-20704001	0.7	0.1	4	0.7	40	3	2	直刃 Straight	47

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
SBREF-307010042	0.7	0.1	4.2	0.7	50	4	3	スパイラル Spiral	35
BSR-20701402	0.7	0.2	1.4	0.7	40	3	2	直刃 Straight	45
BRR-20702002	0.7	0.2	2	0.7	40	3	2	直刃 Straight	47
BRR-20704002	0.7	0.2	4	0.7	40	3	2	直刃 Straight	47
φ 0.8									
SBREF-308002024	0.8	0.02	2.4	0.8	50	4	3	スパイラル Spiral	35
SBREF-308002048	0.8	0.02	4.8	0.8	50	4	3	スパイラル Spiral	35
BSR-20801601	0.8	0.1	1.6	0.8	40	3	2	直刃 Straight	45
SBREF-308010024	0.8	0.1	2.4	0.8	50	4	3	スパイラル Spiral	35
BRR-20804001	0.8	0.1	4	0.8	40	3	2	直刃 Straight	47
SBREF-308010048	0.8	0.1	4.8	0.8	50	4	3	スパイラル Spiral	35
BRR-20806001	0.8	0.1	6	0.8	40	3	2	直刃 Straight	47
BSR-20801602	0.8	0.2	1.6	0.8	40	3	2	直刃 Straight	45
BRR-20804002	0.8	0.2	4	0.8	40	3	2	直刃 Straight	47
BRR-20806002	0.8	0.2	6	0.8	40	3	2	直刃 Straight	47
φ 0.9									
SBREF-309002027	0.9	0.02	2.7	0.9	50	4	3	スパイラル Spiral	35
SBREF-309002054	0.9	0.02	5.4	0.9	50	4	3	スパイラル Spiral	35
BSR-20901801	0.9	0.1	1.8	0.9	40	3	2	直刃 Straight	45
SBREF-309010027	0.9	0.1	2.7	0.9	50	4	3	スパイラル Spiral	36
BRR-20904001	0.9	0.1	4	0.9	40	3	2	直刃 Straight	47
SBREF-309010054	0.9	0.1	5.4	0.9	50	4	3	スパイラル Spiral	36
BRR-20906001	0.9	0.1	6	0.9	40	3	2	直刃 Straight	47
BSR-20901802	0.9	0.2	1.8	0.9	40	3	2	直刃 Straight	45
BRR-20904002	0.9	0.2	4	0.9	40	3	2	直刃 Straight	47
BRR-20906002	0.9	0.2	6	0.9	40	3	2	直刃 Straight	47
φ 1.0									
BREF-110001030	1	0.01	3	1	50	4	1	直刃 Straight	58
BREF-110001060	1	0.01	6	1	50	4	1	直刃 Straight	58
BREF-110002030	1	0.02	3	1	50	4	1	直刃 Straight	58
SBREF-310002030	1	0.02	3	1	50	4	3	スパイラル Spiral	36
SBREF-310002040	1	0.02	4	1	50	4	3	スパイラル Spiral	36
SBREF-310002050	1	0.02	5	1	50	4	3	スパイラル Spiral	36
BREF-110002060	1	0.02	6	1	50	4	1	直刃 Straight	58
SBREF-310002060	1	0.02	6	1	50	4	3	スパイラル Spiral	36
SBREF-310002080	1	0.02	8	1	50	4	3	スパイラル Spiral	36
SBREF-310002100	1	0.02	10	1	50	4	3	スパイラル Spiral	36
BREF-210003020	1	0.03	2	1	50	4	2	直刃 Straight	54
SBREF-210003030	1	0.03	3	1	50	4	2	スパイラル Spiral	40
BREF-210003030	1	0.03	3	1	50	4	2	直刃 Straight	54
SBREF-210003040	1	0.03	4	1	50	4	2	スパイラル Spiral	40
BREF-210003040	1	0.03	4	1	50	4	2	直刃 Straight	54
SBREF-210003050	1	0.03	5	1	50	4	2	スパイラル Spiral	40
BREF-210003050	1	0.03	5	1	50	4	2	直刃 Straight	54
SBREF-210003060	1	0.03	6	1	50	4	2	スパイラル Spiral	40
BREF-210003060	1	0.03	6	1	50	4	2	直刃 Straight	54
SBREF-210003080	1	0.03	8	1	50	4	2	スパイラル Spiral	40
BREF-210003080	1	0.03	8	1	50	4	2	直刃 Straight	54
SBREF-210003100	1	0.03	10	1	50	4	2	スパイラル Spiral	40
BREF-210003100	1	0.03	10	1	50	4	2	直刃 Straight	54
BREF-210005020	1	0.05	2	1	50	4	2	直刃 Straight	54
BREF-210005030	1	0.05	3	1	50	4	2	直刃 Straight	54
BREF-210005040	1	0.05	4	1	50	4	2	直刃 Straight	54
BREF-210005050	1	0.05	5	1	50	4	2	直刃 Straight	54

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
BREF-210005060	1	0.05	6	1	50	4	2	直刃 Straight	54
BREF-210005080	1	0.05	8	1	50	4	2	直刃 Straight	54
BREF-210005100	1	0.05	10	1	50	4	2	直刃 Straight	54
BSR-21002001	1	0.1	2	1	50	4	2	直刃 Straight	45
BREF-210010020	1	0.1	2	1	50	4	2	直刃 Straight	54
SBREF-210010030	1	0.1	3	1	50	4	2	スパイラル Spiral	40
BREF-210010030	1	0.1	3	1	50	4	2	直刃 Straight	54
SBREF-310010030	1	0.1	3	1	50	4	3	スパイラル Spiral	36
SBRE-210010	1	0.1	3	1	50	6	2	スパイラル Spiral	43
BRE-210010S	1	0.1	3	1	50	6	2	直刃 Straight	57
SBREF-210010040	1	0.1	4	1	50	4	2	スパイラル Spiral	40
BRR-21004001	1	0.1	4	1	50	4	2	直刃 Straight	47
BREF-210010040	1	0.1	4	1	50	4	2	直刃 Straight	54
SBREF-310010040	1	0.1	4	1	50	4	3	スパイラル Spiral	36
SBREF-210010050	1	0.1	5	1	50	4	2	スパイラル Spiral	40
SBREF-310010050	1	0.1	5	1	50	4	3	スパイラル Spiral	36
BREF-210010050	1	0.1	5	1	50	4	3	直刃 Straight	54
SBREF-210010060	1	0.1	6	1	50	4	2	スパイラル Spiral	40
BRR-21006001	1	0.1	6	1	50	4	2	直刃 Straight	47
BREF-210010060	1	0.1	6	1	50	4	2	直刃 Straight	54
SBREF-310010060	1	0.1	6	1	50	4	3	スパイラル Spiral	36
SBREF-210010080	1	0.1	8	1	50	4	2	スパイラル Spiral	40
BRR-21008001	1	0.1	8	1	50	4	2	直刃 Straight	47
BREF-210010080	1	0.1	8	1	50	4	2	直刃 Straight	54
SBREF-310010080	1	0.1	8	1	50	4	3	スパイラル Spiral	36
SBREF-210010100	1	0.1	10	1	50	4	2	スパイラル Spiral	40
BRR-21010001	1	0.1	10	1	50	4	2	直刃 Straight	47
BREF-210010100	1	0.1	10	1	50	4	2	直刃 Straight	54
SBREF-310010100	1	0.1	10	1	50	4	3	スパイラル Spiral	36
BSR-21002002	1	0.2	2	1	50	4	2	直刃 Straight	45
BREF-210020020	1	0.2	2	1	50	4	2	直刃 Straight	54
SBREF-210020030	1	0.2	3	1	50	4	2	スパイラル Spiral	40
BREF-210020030	1	0.2	3	1	50	4	2	直刃 Straight	54
SBRE-210020	1	0.2	3	1	50	6	2	スパイラル Spiral	43
BRE-210020S	1	0.2	3	1	50	6	2	直刃 Straight	57
SBREF-210020040	1	0.2	4	1	50	4	2	スパイラル Spiral	40
BRR-21004002	1	0.2	4	1	50	4	2	直刃 Straight	47
BREF-210020040	1	0.2	4	1	50	4	2	直刃 Straight	54
SBREF-210020050	1	0.2	5	1	50	4	2	スパイラル Spiral	41
BREF-210020050	1	0.2	5	1	50	4	2	直刃 Straight	54
SBREF-210020060	1	0.2	6	1	50	4	2	スパイラル Spiral	41
BRR-21006002	1	0.2	6	1	50	4	2	直刃 Straight	47
BREF-210020060	1	0.2	6	1	50	4	2	直刃 Straight	54
SBREF-210020080	1	0.2	8	1	50	4	2	スパイラル Spiral	41
BRR-21008002	1	0.2	8	1	50	4	2	直刃 Straight	48
BREF-210020080	1	0.2	8	1	50	4	2	直刃 Straight	54
SBREF-210020100	1	0.2	10	1	50	4	2	スパイラル Spiral	41
BRR-21010002	1	0.2	10	1	50	4	2	直刃 Straight	48
BREF-210020100	1	0.2	10	1	50	4	2	直刃 Straight	54
BSR-21002003	1	0.3	2	1	50	4	2	直刃 Straight	45
BRR-21004003	1	0.3	4	1	50	4	2	直刃 Straight	48
BRR-21006003	1	0.3	6	1	50	4	2	直刃 Straight	48
BRR-21008003	1	0.3	8	1	50	4	2	直刃 Straight	48
BRR-21010003	1	0.3	10	1	50	4	2	直刃 Straight	48

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
φ 1.5									
SBREF-315002045	1.5	0.02	4.5	1.5	50	4	3	スパイラル Spiral	36
SBREF-315002090	1.5	0.02	9	1.5	50	4	3	スパイラル Spiral	36
SBREF-215003045	1.5	0.03	4.5	1.5	50	4	2	スパイラル Spiral	41
BREF-215003045	1.5	0.03	4.5	1.5	50	4	2	直刃 Straight	54
SBREF-215003090	1.5	0.03	9	1.5	50	4	2	スパイラル Spiral	41
BREF-215003090	1.5	0.03	9	1.5	50	4	2	直刃 Straight	54
BREF-215005045	1.5	0.05	4.5	1.5	50	4	2	直刃 Straight	54
BREF-215005090	1.5	0.05	9	1.5	50	4	2	直刃 Straight	54
BSR-21503001	1.5	0.1	3	1.5	50	4	2	直刃 Straight	45
SBREF-215010045	1.5	0.1	4.5	1.5	50	4	2	スパイラル Spiral	41
BREF-215010045	1.5	0.1	4.5	1.5	50	4	2	直刃 Straight	54
SBREF-315010045	1.5	0.1	4.5	1.5	50	4	3	スパイラル Spiral	36
SBRE-215010	1.5	0.1	4.5	1.5	50	6	2	スパイラル Spiral	43
BRE-215010S	1.5	0.1	4.5	1.5	50	6	2	直刃 Straight	57
BRR-21505001	1.5	0.1	5	1.5	50	4	2	直刃 Straight	48
BRR-21508001	1.5	0.1	8	1.5	50	4	2	直刃 Straight	48
SBREF-215010090	1.5	0.1	9	1.5	50	4	2	スパイラル Spiral	41
BREF-215010090	1.5	0.1	9	1.5	50	4	2	直刃 Straight	54
SBREF-315010090	1.5	0.1	9	1.5	50	4	3	スパイラル Spiral	36
BSR-21503002	1.5	0.2	3	1.5	50	4	2	直刃 Straight	45
SBREF-215020045	1.5	0.2	4.5	1.5	50	4	2	スパイラル Spiral	41
BREF-215020045	1.5	0.2	4.5	1.5	50	4	2	直刃 Straight	54
SBRE-215020	1.5	0.2	4.5	1.5	50	6	2	スパイラル Spiral	43
BRE-215020S	1.5	0.2	4.5	1.5	50	6	2	直刃 Straight	57
BRR-21505002	1.5	0.2	5	1.5	50	4	2	直刃 Straight	48
BRR-21508002	1.5	0.2	8	1.5	50	4	2	直刃 Straight	48
SBREF-215020090	1.5	0.2	9	1.5	50	4	2	スパイラル Spiral	41
BREF-215020090	1.5	0.2	9	1.5	50	4	2	直刃 Straight	54
BSR-21503003	1.5	0.3	3	1.5	50	4	2	直刃 Straight	45
BRR-21505003	1.5	0.3	5	1.5	50	4	2	直刃 Straight	48
BRR-21508003	1.5	0.3	8	1.5	50	4	2	直刃 Straight	48
φ 2.0									
SBREF-320002060	2	0.02	6	1.5	50	4	3	スパイラル Spiral	36
SBREF-320002120	2	0.02	12	1.5	50	4	3	スパイラル Spiral	36
SBREF-220003060	2	0.03	6	1.5	50	4	2	スパイラル Spiral	41
BREF-220003060	2	0.03	6	1.5	50	4	2	直刃 Straight	54
SBREF-220003120	2	0.03	12	1.5	50	4	2	スパイラル Spiral	41
BREF-220003120	2	0.03	12	1.5	50	4	2	直刃 Straight	54
SBREF-220005060	2	0.05	6	1.5	50	4	2	直刃 Straight	55
BREF-220005120	2	0.05	12	1.5	50	4	2	直刃 Straight	55
BSR-22004001	2	0.1	4	1.5	50	4	2	直刃 Straight	45
SBREF-220010060	2	0.1	6	1.5	50	4	2	スパイラル Spiral	41
BRR-22006001	2	0.1	6	1.5	50	4	2	直刃 Straight	48
BREF-220010060	2	0.1	6	1.5	50	4	2	直刃 Straight	55
SBREF-320010060	2	0.1	6	1.5	50	4	3	スパイラル Spiral	36
BRR-22008001	2	0.1	8	1.5	50	4	2	直刃 Straight	48
BRR-22010001	2	0.1	10	1.5	50	4	2	直刃 Straight	48
SBREF-220010120	2	0.1	12	1.5	50	4	2	スパイラル Spiral	41
BREF-220010120	2	0.1	12	1.5	50	4	2	直刃 Straight	55
SBREF-320010120	2	0.1	12	1.5	50	4	3	スパイラル Spiral	36
BSR-22004002	2	0.2	4	1.5	50	4	2	直刃 Straight	45
SBREF-220020060	2	0.2	6	1.5	50	4	2	スパイラル Spiral	41
BRR-22006002	2	0.2	6	1.5	50	4	2	直刃 Straight	48

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
BREF-220020060	2	0.2	6	1.5	50	4	2	直刃 Straight	55
SBREF-320020060	2	0.2	6	1.5	50	4	3	スパイラル Spiral	36
SBRE-220020	2	0.2	6	1.5	50	6	2	スパイラル Spiral	43
BRE-2200205	2	0.2	6	1.5	50	6	2	直刃 Straight	57
BRE-2200305	2	0.3	6	1.5	50	6	2	直刃 Straight	57
BRR-22008002	2	0.2	8	1.5	50	4	2	直刃 Straight	48
BRR-22010002	2	0.2	10	1.5	50	4	2	直刃 Straight	48
SBREF-220020120	2	0.2	12	1.5	50	4	2	スパイラル Spiral	41
BREF-220020120	2	0.2	12	1.5	50	4	2	直刃 Straight	55
SBREF-320020120	2	0.2	12	1.5	50	4	3	スパイラル Spiral	36
BSR-22004003	2	0.3	4	1.5	50	4	2	直刃 Straight	45
SBREF-220030060	2	0.3	6	1.5	50	4	2	スパイラル Spiral	41
BRR-22006003	2	0.3	6	1.5	50	4	2	直刃 Straight	48
BREF-220030060	2	0.3	6	1.5	50	4	2	直刃 Straight	55
SBRE-220030	2	0.3	6	1.5	50	6	2	スパイラル Spiral	43
BRR-22008003	2	0.3	8	1.5	50	4	2	直刃 Straight	48
BRR-22010003	2	0.3	10	1.5	50	4	2	直刃 Straight	48
SBREF-220030120	2	0.3	12	1.5	50	4	2	スパイラル Spiral	41
BREF-220030120	2	0.3	12	1.5	50	4	2	直刃 Straight	55
BSR-22004004	2	0.4	4	1.5	50	4	2	直刃 Straight	45
BRR-22006004	2	0.4	6	1.5	50	4	2	直刃 Straight	48
BRR-22008004	2	0.4	8	1.5	50	4	2	直刃 Straight	48
BRR-22010004	2	0.4	10	1.5	50	4	2	直刃 Straight	48
BSR-22004005	2	0.5	4	1.5	50	4	2	直刃 Straight	45
BRR-22006005	2	0.5	6	1.5	50	4	2	直刃 Straight	48
BRR-22008005	2	0.5	8	1.5	50	4	2	直刃 Straight	48
BRR-22010005	2	0.5	10	1.5	50	4	2	直刃 Straight	48
φ 3.0									
SBRE-330002090	3	0.02	9	1.5	50	6	3	スパイラル Spiral	37
SBRE-330002180	3	0.02	18	1.5	50	6	3	スパイラル Spiral	37
SBREF-230003090	3	0.03	9	2	50	4	2	スパイラル Spiral	41
BREF-230003090	3	0.03	9	2	50	4	2	直刃 Straight	55
SBREF-230003180	3	0.03	18	2	60	4	2	スパイラル Spiral	41
BREF-230003180	3	0.03	18	2	60	4	2	直刃 Straight	55
BREF-230005090	3	0.05	9	2	50	4	2	直刃 Straight	55
BREF-230005180	3	0.05	18	2	60	4	2	直刃 Straight	55
SBRE-330010090	3	0.1	9	1.5	50	6	3	スパイラル Spiral	37
SBREF-230010090	3	0.1	9	2	50	4	2	スパイラル Spiral	41
BREF-230010090	3	0.1	9	2	50	4	2	直刃 Straight	55
SBRE-330010180	3	0.1	18	1.5	50	6	3	スパイラル Spiral	37
SBREF-230010180	3	0.1	18	2	60	4	2	スパイラル Spiral	41
BREF-230010180	3	0.1	18	2	60	4	2	直刃 Straight	55
SBRE-330020090	3	0.2	9	1.5	50	6	3	スパイラル Spiral	37
SBREF-230020090	3	0.2	9	2	50	4	2	スパイラル Spiral	41
BREF-230020090	3	0.2	9	2	50	4	2	直刃 Straight	55
SBRE-230020	3	0.2	9	2	50	6	2	スパイラル Spiral	43
BRE-2300205	3	0.2	9	2	50	6	2	直刃 Straight	57
BRE-2300305	3	0.3	9	2	50	6	2	直刃 Straight	57
BRE-2300505	3	0.5	9	2	50	6	2	直刃 Straight	57
SBRE-330020180	3	0.2	18	1.5	50	6	3	スパイラル Spiral	37
SBREF-230020180	3	0.2	18	2	60	4	2	スパイラル Spiral	41
BREF-230020180	3	0.2	18	2	60	4	2	直刃 Straight	55
SBREF-230030090	3	0.3	9	2	50	4	2	スパイラル Spiral	41
BREF-230030090	3	0.3	9	2	50	4	2	直刃 Straight	55

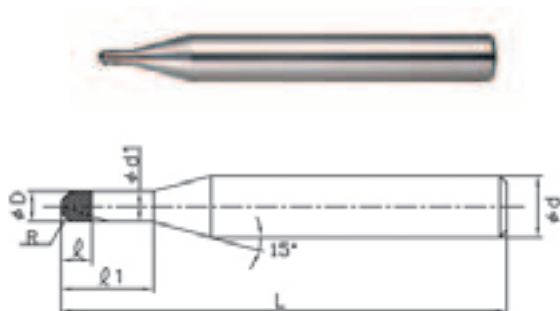
品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	刃数 Number of Flutes	仕様 Specification	ページ Page
SBRE-230030	3	0.3	9	2	50	6	2	スパイラル Spiral	43
SBREF-230030180	3	0.3	18	2	60	4	2	スパイラル Spiral	41
BREF-230030180	3	0.3	18	2	60	4	2	直刃 Straight	55
SBRE-330050090	3	0.5	9	1.5	50	6	3	スパイラル Spiral	37
SBREF-230050090	3	0.5	9	2	50	4	2	スパイラル Spiral	41
BREF-230050090	3	0.5	9	2	50	4	2	直刃 Straight	55
SBRE-230050	3	0.5	9	2	50	6	2	スパイラル Spiral	43
SBRE-330050180	3	0.5	18	1.5	50	6	3	スパイラル Spiral	37
SBREF-230050180	3	0.5	18	2	60	4	2	スパイラル Spiral	41
BREF-230050180	3	0.5	18	2	60	4	2	直刃 Straight	55
φ 4.0									
SBRE-240003	4	0.03	12	2	50	6	2	スパイラル Spiral	43
BRE-240003S	4	0.03	12	2	50	6	2	直刃 Straight	57
SBRE-340005200	4	0.05	20	2	60	6	3	スパイラル Spiral	37
SBRE-240010	4	0.1	12	2	50	6	2	スパイラル Spiral	43
SBRE-340010200	4	0.1	20	2	60	6	3	スパイラル Spiral	37
SBRE-240020	4	0.2	12	2	50	6	2	スパイラル Spiral	43
BRE-240020S	4	0.2	12	2	50	6	2	直刃 Straight	57
SBRE-340020200	4	0.2	20	2	60	6	3	スパイラル Spiral	37
SBRE-240030	4	0.3	12	2	50	6	2	スパイラル Spiral	43
BRE-240030S	4	0.3	12	2	50	6	2	直刃 Straight	57
SBRE-240050	4	0.5	12	2	50	6	2	スパイラル Spiral	43
BRE-240050S	4	0.5	12	2	50	6	2	直刃 Straight	57
SBRE-340050200	4	0.5	20	2	60	6	3	スパイラル Spiral	37
φ 5.0									
SBRE-250003	5	0.03	15	2	60	6	2	スパイラル Spiral	43
BRE-250003S	5	0.03	15	2	60	6	2	直刃 Straight	57
SBRE-350005240	5	0.05	24	2	70	6	3	スパイラル Spiral	37
SBRE-250010	5	0.1	15	2	60	6	2	スパイラル Spiral	43
SBRE-350010240	5	0.1	24	2	70	6	3	スパイラル Spiral	37
SBRE-250020	5	0.2	15	2	60	6	2	スパイラル Spiral	43
BRE-250020S	5	0.2	15	2	60	6	2	直刃 Straight	57
SBRE-350020240	5	0.2	24	2	70	6	3	スパイラル Spiral	37
SBRE-250030	5	0.3	15	2	60	6	2	スパイラル Spiral	43
BRE-250030S	5	0.3	15	2	60	6	2	直刃 Straight	57
SBRE-250050	5	0.5	15	2	60	6	2	スパイラル Spiral	43
BRE-250050S	5	0.5	15	2	60	6	2	直刃 Straight	57
SBRE-350050240	5	0.5	24	2	70	6	3	スパイラル Spiral	37
φ 6.0									
SBRE-260003	6	0.03	20	2	60	6	2	スパイラル Spiral	43
BRE-260003S	6	0.03	20	2	60	6	2	直刃 Straight	57
SBRE-360005300	6	0.05	30	2	70	6	3	スパイラル Spiral	37
SBRE-260010	6	0.1	20	2	60	6	2	スパイラル Spiral	43
SBRE-360010300	6	0.1	30	2	70	6	3	スパイラル Spiral	37
SBRE-260020	6	0.2	20	2	60	6	2	スパイラル Spiral	43
BRE-260020S	6	0.2	20	2	60	6	2	直刃 Straight	57
SBRE-360020300	6	0.2	30	2	70	6	3	スパイラル Spiral	37
SBRE-260030	6	0.3	20	2	60	6	2	スパイラル Spiral	43
BRE-260030S	6	0.3	20	2	60	6	2	直刃 Straight	57
SBRE-260050	6	0.5	20	2	60	6	2	スパイラル Spiral	43
BRE-260050S	6	0.5	20	2	60	6	2	直刃 Straight	57
SBRE-360050300	6	0.5	30	2	70	6	3	スパイラル Spiral	37

PCD 製品

Poly crystalline Diamond

DCBE-2

PCD 2枚刃ボールエンドミル 超硬加工用
PCD 2 Flutes Ball Endmill For Tungsten Carbide



PCD PCD多結晶ダイヤモンド Poly crystalline Diamond

刃径の許容差 Flute Diameter Tolerance
D 0 ~ - 0.01

柄径の許容差 Shank Diameter Tolerance
d 0 ~ - 0.003

ネジレ角0° Twist Angle 0°
(直刃 2枚刃) (2 Flutes Straight Endmill)

R許容差 R Tolerance
+ 0.005 ~ - 0.005

●切削条件表は P162 に記載

●Cutting conditions are recommended on page 162.

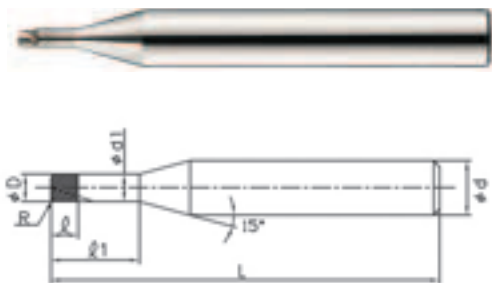
[寸法単位：mm]

[size : mm]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DCBE-2020	R0.2	0.4	0.8	0.3	0.36	0.6	50	4	105,600
DCBE-2025	R0.25	0.5	1	0.4	0.46	0.8	50	4	102,800
DCBE-2030	R0.3	0.6	1.2	0.5	0.56	1	50	4	100,000
DCBE-2040	R0.4	0.8	1.6	0.6	0.76	1	50	4	94,500
DCBE-2050	R0.5	1	2	1	0.95	1	50	4	88,900
DCBE-2060	R0.6	1.2	2.4	1.2	1.15	2	50	4	97,300
DCBE-2070	R0.7	1.4	2.8	1.4	1.35	2	50	4	97,300
DCBE-2075	R0.75	1.5	3	1.5	1.45	2	50	4	97,300
DCBE-2080	R0.8	1.6	3.2	1.5	1.55	2	50	4	100,000
DCBE-2090	R0.9	1.8	3.6	1.5	1.75	2	50	4	100,000
DCBE-2100	R1	2	4	1.5	1.95	2	50	4	100,000

DCRE-2

PCD 2枚刃コーナーR付エンドミル 超硬加工用
PCD 2 Flutes Corner R Endmill For Tungsten Carbide



PCD PCD多結晶ダイヤモンド Poly crystalline Diamond

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角0° Twist Angle 0°
(直刃 2枚刃) (2 Flutes Straight Endmill)

コーナーR許容差 corner R Tolerance
+0.005~-0.005

●切削条件表は P163 に記載

[寸法単位：mm]

●Cutting conditions are recommended on page 163.

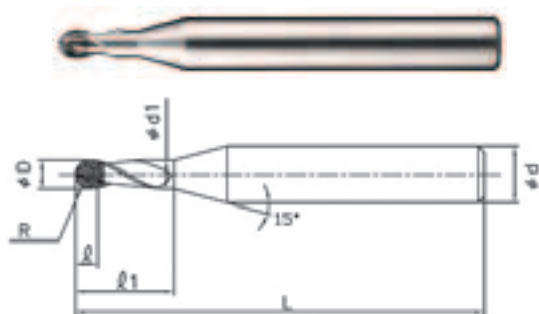
[size : mm]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DCRE-205005	0.5	R0.05	1	0.5	0.46	0.8	50	4	105,600
DCRE-205010	0.5	R0.1	1	0.5	0.46	0.8	50	4	105,600
DCRE-205020	0.5	R0.2	1	0.5	0.46	0.8	50	4	105,600
DCRE-210005	1	R0.05	2	1	0.95	1	50	4	94,500
DCRE-210010	1	R0.1	2	1	0.95	1	50	4	94,500
DCRE-210020	1	R0.2	2	1	0.95	1	50	4	94,500
DCRE-215005	1.5	R0.05	3	1.5	1.45	2	50	4	100,000
DCRE-215010	1.5	R0.1	3	1.5	1.45	2	50	4	100,000
DCRE-215020	1.5	R0.2	3	1.5	1.45	2	50	4	100,000
DCRE-220005	2	R0.05	4	1.5	1.95	2	50	4	105,600
DCRE-220010	2	R0.1	4	1.5	1.95	2	50	4	105,600
DCRE-220020	2	R0.2	4	1.5	1.95	2	50	4	105,600

DBE-2

PCD 2 枚刃スパイラルボールエンドミル PCD 2 Flutes Spiral Ball Endmill

- ソリッドPCDの刃先部はスパイラル形状。
Spiral Shape at Flute Edge of Solid PCD
- 非鉄金属やセラミック等の難削材まで加工可能。
Possible to cut Nonferrous metal and Difficult-to-cut Materials such as Ceramics



PCD PCD多結晶ダイヤモンド Poly crystalline Diamond

刃径の許容差 Flute Diameter Tolerance
D 0 ~ - 0.005

柄径の許容差 Shank Diameter Tolerance
d 0 ~ - 0.003

ネジレ角30° Twist Angle 30°

R許容差 R Tolerance
+ 0.003 ~ - 0.003

●切削条件表は P164に記載

●Cutting conditions are recommended on page 164.

単位 [寸法：mm / 価格：円]

Unit [size : mm / Retail Price : JPY]


品番 Code No.	R	刃径 D Flute Diameter	有効長 $\ell 1$ Effective Length	刃長 ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DBE-2010	R0.1	0.2	0.6	0.2	1	50	4	116,700
DBE-2015	R0.15	0.3	0.9	0.3	1	50	4	111,200
DBE-2020	R0.2	0.4	1.2	0.4	1	50	4	105,600
DBE-2025	R0.25	0.5	1.5	0.5	1	50	4	102,800
DBE-2030	R0.3	0.6	1.8	0.6	1	50	4	100,000
DBE-2040	R0.4	0.8	2.4	0.8	1	50	4	94,500
DBE-2050	R0.5	1	3	1	1	50	4	88,900
DBE-2060	R0.6	1.2	3.6	1.2	1	50	4	97,200
DBE-2070	R0.7	1.4	4.2	1.4	1	50	4	97,200
DBE-2075	R0.75	1.5	4.5	1.5	2	50	4	97,200
DBE-2080	R0.8	1.6	4.8	1.5	2	50	4	100,000
DBE-2090	R0.9	1.8	5.4	1.5	2	50	4	100,000
DBE-2100	R1	2	6	1.5	2	50	4	100,000
DBE-2150	R1.5	3	9	2	3	50	6	111,200


DSE-2

PCD 2 枚刃スパイラルスクエアエンドミル PCD 2 Flutes Spiral Square Endmill

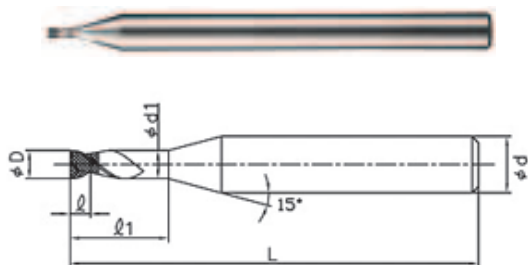
- ソリッドPCDの刃先部はスパイラル形状。
Spiral Shape at Flute Edge of Solid PCD
- 非鉄金属やセラミック等の難削材まで加工可能。
Possible to cut Nonferrous metal and Difficult-to cut Materials such as Ceramics

PCD PCD多結晶ダイヤモンド Poly crystalline Diamond

 刃径の許容差 Flute Diameter Tolerance
D 0 ~ -0.01

 柄径の許容差 Shank Diameter Tolerance
d 0 ~ -0.003

 ネジレ角30° Twist Angle 30°



●切削条件表は P167に記載

●Cutting conditions are recommended on page 167.

単位 [寸法 : mm / 価格 : 円]

Unit [size : mm / Retail Price : JPY]

品番 Code No.	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	PCD 層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DSE-2020	0.2	0.6	0.2	1	50	4	100,000
DSE-2030	0.3	0.9	0.3	1	50	4	94,500
DSE-2040	0.4	1.2	0.4	1	50	4	91,700
DSE-2050	0.5	1.5	0.5	1	50	4	88,900
DSE-2060	0.6	1.8	0.6	1	50	4	88,900
DSE-2070	0.7	2.1	0.7	1	50	4	83,400
DSE-2080	0.8	2.4	0.8	1	50	4	77,800
DSE-2090	0.9	2.7	0.9	1	50	4	77,800
DSE-2100	1	3	1	1	50	4	77,800
DSE-2110	1.1	3.3	1	1	50	4	77,800
DSE-2120	1.2	3.6	1	1	50	4	77,800
DSE-2130	1.3	3.9	1	1	50	4	77,800
DSE-2140	1.4	4.2	1	1	50	4	77,800
DSE-2150	1.5	4.5	1.5	2	50	4	83,400
DSE-2160	1.6	4.8	1.5	2	50	4	83,400
DSE-2170	1.7	5.1	1.5	2	50	4	83,400
DSE-2180	1.8	5.4	1.5	2	50	4	83,400
DSE-2190	1.9	5.7	1.5	2	50	4	83,400
DSE-2200	2	6	2	2	50	4	88,900
DSE-2210	2.1	6.3	2	2	50	4	88,900
DSE-2220	2.2	6.6	2	2	50	4	88,900
DSE-2230	2.3	6.9	2	2	50	4	88,900
DSE-2240	2.4	7.2	2	2	50	4	88,900

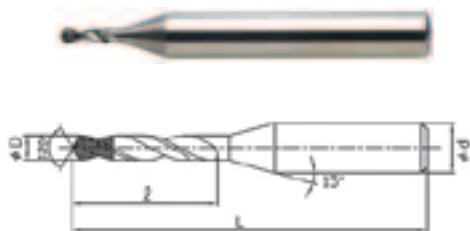
DSE-2

品番 Code No	刃径 D Flute Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	PCD 層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DSE-2250	2.5	7.5	2	2	50	4	100,000
DSE-2260	2.6	7.8	2	2	50	4	100,000
DSE-2270	2.7	8.1	2	2	50	4	100,000
DSE-2280	2.8	8.4	2	2	50	4	100,000
DSE-2290	2.9	8.7	2	2	50	4	100,000
DSE-2300	3	9	2.5	3	50	6	108,400
DSE-2350	3.5	10.5	2.5	3	50	6	108,400
DSE-2400	4	12	2.5	3	50	6	116,700
DSE-2450	4.5	13.5	2.5	3	50	6	116,700
DSE-2500	5	15	3	4	60	6	127,800
DSE-2550	5.5	16.5	3	4	60	6	130,600
DSE-2600	6	18	3	4	60	6	133,400


DRD-2


PCD ドリル PCD 2 Flutes Drill

- ソリッドPCDの刃先部はスパイラル形状。
Spiral Shape at Flute Edge of Solid PCD
- 非鉄金属やセラミック等の難削材まで加工可能。
Possible to cut Nonferrous metal and Difficult-to-cut Materials such as Ceramics



PCD PCD多結晶ダイヤモンド Poly crystalline Diamond

 刃径の許容差 Flute Diameter Tolerance
D 0 ~ - 0.005

 柄径の許容差 Shank Diameter Tolerance
d 0 ~ - 0.006

 ネジレ角30° Twist Angle 30°

 先端角度 120° Point Angle 120°

●切削条件表は P170 に記載

●Cutting conditions are recommended on page 170.

単位 [寸法 : mm / 価格 : 円]

Unit [size : mm / Retail Price : JPY]

品番 Code No.	刃径D Flute Diameter	刃長ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DRD-2030	0.3	4	1	38	3	69,500
DRD-2031	0.31	4	1	38	3	69,500
DRD-2032	0.32	4	1	38	3	69,500
DRD-2033	0.33	4	1	38	3	69,500
DRD-2034	0.34	4	1	38	3	69,500
DRD-2035	0.35	4	1	38	3	69,500
DRD-2036	0.36	4	1	38	3	69,500
DRD-2037	0.37	4	1	38	3	69,500
DRD-2038	0.38	4	1	38	3	69,500
DRD-2039	0.39	4	1	38	3	69,500
DRD-2040	0.4	5	1	38	3	66,700
DRD-2041	0.41	5	1	38	3	66,700
DRD-2042	0.42	5	1	38	3	66,700
DRD-2043	0.43	5	1	38	3	66,700
DRD-2044	0.44	5	1	38	3	66,700
DRD-2045	0.45	5	1	38	3	66,700
DRD-2046	0.46	5	1	38	3	66,700
DRD-2047	0.47	5	1	38	3	66,700
DRD-2048	0.48	5	1	38	3	66,700
DRD-2049	0.49	5	1	38	3	66,700
DRD-2050	0.5	5	1	38	3	61,200
DRD-2051	0.51	5	1	38	3	61,200
DRD-2052	0.52	5	1	38	3	61,200
DRD-2053	0.53	5	1	38	3	61,200

DRD-2

品番 Code No.	刃径D Flute Diameter	刃長 ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DRD-2054	0.54	5	1	38	3	61,200
DRD-2055	0.55	5	1	38	3	61,200
DRD-2056	0.56	5	1	38	3	61,200
DRD-2057	0.57	5	1	38	3	61,200
DRD-2058	0.58	5	1	38	3	61,200
DRD-2059	0.59	5	1	38	3	61,200
DRD-2060	0.6	7	1	38	3	61,200
DRD-2061	0.61	7	1	38	3	61,200
DRD-2062	0.62	7	1	38	3	61,200
DRD-2063	0.63	7	1	38	3	61,200
DRD-2064	0.64	7	1	38	3	61,200
DRD-2065	0.65	7	1	38	3	61,200
DRD-2066	0.66	7	1	38	3	61,200
DRD-2067	0.67	7	1	38	3	61,200
DRD-2068	0.68	7	1	38	3	61,200
DRD-2069	0.69	7	1	38	3	61,200
DRD-2070	0.7	8	1	38	3	61,200
DRD-2071	0.71	8	1	38	3	61,200
DRD-2072	0.72	8	1	38	3	61,200
DRD-2073	0.73	8	1	38	3	61,200
DRD-2074	0.74	8	1	38	3	61,200
DRD-2075	0.75	8	1	38	3	61,200
DRD-2076	0.76	8	1	38	3	61,200
DRD-2077	0.77	8	1	38	3	61,200
DRD-2078	0.78	8	1	38	3	61,200
DRD-2079	0.79	8	1	38	3	61,200
DRD-2080	0.8	8	1	38	3	55,600
DRD-2081	0.81	8	1	38	3	55,600
DRD-2082	0.82	8	1	38	3	55,600
DRD-2083	0.83	8	1	38	3	55,600
DRD-2084	0.84	8	1	38	3	55,600
DRD-2085	0.85	8	1	38	3	55,600
DRD-2086	0.86	8	1	38	3	55,600
DRD-2087	0.87	8	1	38	3	55,600
DRD-2088	0.88	8	1	38	3	55,600
DRD-2089	0.89	8	1	38	3	55,600
DRD-2090	0.9	8	1	38	3	55,600
DRD-2091	0.91	8	1	38	3	55,600
DRD-2092	0.92	8	1	38	3	55,600
DRD-2093	0.93	8	1	38	3	55,600
DRD-2094	0.94	8	1	38	3	55,600
DRD-2095	0.95	8	1	38	3	55,600

DRD-2

品番 Code No.	刃径D Flute Diameter	刃長 ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DRD-2096	0.96	8	1	38	3	55,600
DRD-2097	0.97	8	1	38	3	55,600
DRD-2098	0.98	8	1	38	3	55,600
DRD-2099	0.99	8	1	38	3	55,600
DRD-2100	1	8	1	38	3	55,600
DRD-2101	1.01	8	1	38	3	55,600
DRD-2102	1.02	8	1	38	3	55,600
DRD-2103	1.03	8	1	38	3	55,600
DRD-2104	1.04	8	1	38	3	55,600
DRD-2105	1.05	8	1	38	3	55,600
DRD-2106	1.06	8	1	38	3	55,600
DRD-2107	1.07	8	1	38	3	55,600
DRD-2108	1.08	8	1	38	3	55,600
DRD-2109	1.09	8	1	38	3	55,600
DRD-2110	1.1	8	1	38	3	55,600
DRD-2111	1.11	8	1	38	3	55,600
DRD-2112	1.12	8	1	38	3	55,600
DRD-2113	1.13	8	1	38	3	55,600
DRD-2114	1.14	8	1	38	3	55,600
DRD-2115	1.15	8	1	38	3	55,600
DRD-2116	1.16	8	1	38	3	55,600
DRD-2117	1.17	8	1	38	3	55,600
DRD-2118	1.18	8	1	38	3	55,600
DRD-2119	1.19	8	1	38	3	55,600
DRD-2120	1.2	8	1	38	3	55,600
DRD-2121	1.21	8	1	38	3	55,600
DRD-2122	1.22	8	1	38	3	55,600
DRD-2123	1.23	8	1	38	3	55,600
DRD-2124	1.24	8	1	38	3	55,600
DRD-2125	1.25	8	1	38	3	55,600
DRD-2126	1.26	8	1	38	3	55,600
DRD-2127	1.27	8	1	38	3	55,600
DRD-2128	1.28	8	1	38	3	55,600
DRD-2129	1.29	8	1	38	3	55,600
DRD-2130	1.3	8	1	38	3	55,600
DRD-2131	1.31	8	1	38	3	55,600
DRD-2132	1.32	8	1	38	3	55,600
DRD-2133	1.33	8	1	38	3	55,600
DRD-2134	1.34	8	1	38	3	55,600
DRD-2135	1.35	8	1	38	3	55,600
DRD-2136	1.36	8	1	38	3	55,600
DRD-2137	1.37	8	1	38	3	55,600

DRD-2

品番 Code No.	刃径D Flute Diameter	刃長 ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DRD-2138	1.38	8	1	38	3	55,600
DRD-2139	1.39	8	1	38	3	55,600
DRD-2140	1.4	8	1	38	3	55,600
DRD-2141	1.41	8	1	38	3	55,600
DRD-2142	1.42	8	1	38	3	55,600
DRD-2143	1.43	8	1	38	3	55,600
DRD-2144	1.44	8	1	38	3	55,600
DRD-2145	1.45	8	1	38	3	55,600
DRD-2146	1.46	8	1	38	3	55,600
DRD-2147	1.47	8	1	38	3	55,600
DRD-2148	1.48	8	1	38	3	55,600
DRD-2149	1.49	8	1	38	3	55,600
DRD-2150	1.5	8	2	38	3	61,200
DRD-2151	1.51	8	2	38	3	61,200
DRD-2152	1.52	8	2	38	3	61,200
DRD-2153	1.53	8	2	38	3	61,200
DRD-2154	1.54	8	2	38	3	61,200
DRD-2155	1.55	8	2	38	3	61,200
DRD-2156	1.56	8	2	38	3	61,200
DRD-2157	1.57	8	2	38	3	61,200
DRD-2158	1.58	8	2	38	3	61,200
DRD-2159	1.59	8	2	38	3	61,200
DRD-2160	1.6	8	2	38	3	61,200
DRD-2161	1.61	8	2	38	3	61,200
DRD-2162	1.62	8	2	38	3	61,200
DRD-2163	1.63	8	2	38	3	61,200
DRD-2164	1.64	8	2	38	3	61,200
DRD-2165	1.65	8	2	38	3	61,200
DRD-2166	1.66	8	2	38	3	61,200
DRD-2167	1.67	8	2	38	3	61,200
DRD-2168	1.68	8	2	38	3	61,200
DRD-2169	1.69	8	2	38	3	61,200
DRD-2170	1.7	10	2	38	3	61,200
DRD-2171	1.71	10	2	38	3	61,200
DRD-2172	1.72	10	2	38	3	61,200
DRD-2173	1.73	10	2	38	3	61,200
DRD-2174	1.74	10	2	38	3	61,200
DRD-2175	1.75	10	2	38	3	61,200
DRD-2176	1.76	10	2	38	3	61,200
DRD-2177	1.77	10	2	38	3	61,200
DRD-2178	1.78	10	2	38	3	61,200
DRD-2179	1.79	10	2	38	3	61,200

DRD-2

品番 Code No.	刃径D Flute Diameter	刃長 ℓ Flute Length	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
DRD-2180	1.8	10	2	38	3	61,200
DRD-2181	1.81	10	2	38	3	61,200
DRD-2182	1.82	10	2	38	3	61,200
DRD-2183	1.83	10	2	38	3	61,200
DRD-2184	1.84	10	2	38	3	61,200
DRD-2185	1.85	10	2	38	3	61,200
DRD-2186	1.86	10	2	38	3	61,200
DRD-2187	1.87	10	2	38	3	61,200
DRD-2188	1.88	10	2	38	3	61,200
DRD-2189	1.89	10	2	38	3	61,200
DRD-2190	1.9	10	2	38	3	61,200
DRD-2191	1.91	10	2	38	3	61,200
DRD-2192	1.92	10	2	38	3	61,200
DRD-2193	1.93	10	2	38	3	61,200
DRD-2194	1.94	10	2	38	3	61,200
DRD-2195	1.95	10	2	38	3	61,200
DRD-2196	1.96	10	2	38	3	61,200
DRD-2197	1.97	10	2	38	3	61,200
DRD-2198	1.98	10	2	38	3	61,200
DRD-2199	1.99	10	2	38	3	61,200
DRD-2200	2	10	2	38	3	66,700
DRD-2210	2.1	10	2	38	3	66,700
DRD-2220	2.2	10	2	38	3	66,700
DRD-2230	2.3	10	2	38	3	66,700
DRD-2240	2.4	10	2	38	3	66,700
DRD-2250	2.5	10	2	38	3	75,000
DRD-2260	2.6	10	2	38	3	75,000
DRD-2270	2.7	10	2	38	3	75,000
DRD-2280	2.8	10	3	38	3	75,000
DRD-2290	2.9	10	3	38	3	75,000
DRD-2300	3	10	3	38	3	75,000

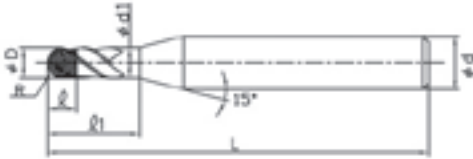
CBN 製品

Cubic Boron Nitride

SBBE-3

CBN 3枚刃スパイラルボールエンドミル
CBN 3 Flutes Spiral Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 切込量を多くする事が可能。
Possible to increase the depth of cut
- 高送りで高効率加工が可能。
Possible to cut by High Feed and High Efficiency



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角30° Twist Angle 30°

R許容差 R Tolerance
+0.005~-0.005

●切削条件表はP171に記載

●Cutting conditions are recommended on page 171.

単位[寸法: mm/価格: 円]

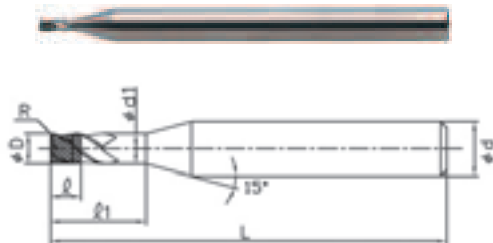
Unit [size: mm/Retail Price: JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBBE-3050	R0.5	1	2	1	1	50	6	27,000
SBBE-3075	R0.75	1.5	3	1.5	2	50	6	28,500
SBBE-3100	R1	2	4	1.5	2	50	6	30,000
SBBE-3150	R1.5	3	6	2	2	50	6	47,000

SBREF-3

CBN 3枚刃スパイラルコーナーR付エンドミル
CBN 3 Flutes Spiral Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高送りで高能率加工が可能。
Possible to cut by High Feed and High Efficiency



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角30° Twist Angle 30°

コーナーR許容差 corner R Tolerance
+0.005~-0.005

●切削条件表はP172に記載

●Cutting conditions are recommended on page 172.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBREF-303002010	0.3	R 0.02	1	0.5	0.26	0.6	50	4	30,000
SBREF-303002020	0.3	R 0.02	2	0.5	0.26	0.6	50	4	30,700
SBREF-303005010	0.3	R 0.05	1	0.5	0.26	0.6	50	4	30,000
SBREF-303005020	0.3	R 0.05	2	0.5	0.26	0.6	50	4	30,700
SBREF-304002012	0.4	R 0.02	1.2	0.5	0.36	0.6	50	4	28,400
SBREF-304002024	0.4	R 0.02	2.4	0.5	0.36	0.6	50	4	29,100
SBREF-304005012	0.4	R 0.05	1.2	0.5	0.36	0.6	50	4	28,400
SBREF-304005024	0.4	R 0.05	2.4	0.5	0.36	0.6	50	4	29,100
SBREF-305002015	0.5	R 0.02	1.5	0.5	0.46	0.6	50	4	27,600
SBREF-305002030	0.5	R 0.02	3	0.5	0.46	0.6	50	4	28,600
SBREF-305010015	0.5	R 0.1	1.5	0.5	0.46	0.6	50	4	27,600
SBREF-305010030	0.5	R 0.1	3	0.5	0.46	0.6	50	4	28,600
SBREF-306002018	0.6	R 0.02	1.8	0.6	0.56	0.6	50	4	27,600
SBREF-306002036	0.6	R 0.02	3.6	0.6	0.56	0.6	50	4	28,600
SBREF-306010018	0.6	R 0.1	1.8	0.6	0.56	0.6	50	4	27,600
SBREF-306010036	0.6	R 0.1	3.6	0.6	0.56	0.6	50	4	28,600
SBREF-307002021	0.7	R 0.02	2.1	0.7	0.66	1	50	4	27,600
SBREF-307002042	0.7	R 0.02	4.2	0.7	0.66	1	50	4	28,600
SBREF-307010021	0.7	R 0.1	2.1	0.7	0.66	1	50	4	27,600
SBREF-307010042	0.7	R 0.1	4.2	0.7	0.66	1	50	4	28,600
SBREF-308002024	0.8	R 0.02	2.4	0.8	0.76	1	50	4	27,000
SBREF-308002048	0.8	R 0.02	4.8	0.8	0.76	1	50	4	28,000
SBREF-308010024	0.8	R 0.1	2.4	0.8	0.76	1	50	4	27,000
SBREF-308010048	0.8	R 0.1	4.8	0.8	0.76	1	50	4	28,000
SBREF-309002027	0.9	R 0.02	2.7	0.9	0.85	1	50	4	27,000
SBREF-309002054	0.9	R 0.02	5.4	0.9	0.85	1	50	4	28,000

SBREF-3

CBN

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBREF-309010027	0.9	R 0.1	2.7	0.9	0.85	1	50	4	27,000
SBREF-309010054	0.9	R 0.1	5.4	0.9	0.85	1	50	4	28,000
SBREF-310002030	1	R 0.02	3	1	0.95	1	50	4	26,400
SBREF-310002040	1	R 0.02	4	1	0.95	1	50	4	27,400
SBREF-310002050	1	R 0.02	5	1	0.95	1	50	4	27,400
SBREF-310002060	1	R 0.02	6	1	0.95	1	50	4	27,400
SBREF-310002080	1	R 0.02	8	1	0.95	1	50	4	30,200
SBREF-310002100	1	R 0.02	10	1	0.95	1	50	4	31,600
SBREF-310010030	1	R 0.1	3	1	0.95	1	50	4	26,400
SBREF-310010040	1	R 0.1	4	1	0.95	1	50	4	27,400
SBREF-310010050	1	R 0.1	5	1	0.95	1	50	4	27,400
SBREF-310010060	1	R 0.1	6	1	0.95	1	50	4	27,400
SBREF-310010080	1	R 0.1	8	1	0.95	1	50	4	30,200
SBREF-310010100	1	R 0.1	10	1	0.95	1	50	4	31,600
SBREF-315002045	1.5	R 0.02	4.5	1.5	1.45	2	50	4	28,600
SBREF-315002090	1.5	R 0.02	9	1.5	1.45	2	50	4	30,000
SBREF-315010045	1.5	R 0.1	4.5	1.5	1.45	2	50	4	28,600
SBREF-315010090	1.5	R 0.1	9	1.5	1.45	2	50	4	30,000
SBREF-320002060	2	R 0.02	6	1.5	1.95	2	50	4	30,000
SBREF-320002120	2	R 0.02	12	1.5	1.95	2	50	4	31,800
SBREF-320010060	2	R 0.1	6	1.5	1.95	2	50	4	30,000
SBREF-320010120	2	R 0.1	12	1.5	1.95	2	50	4	31,800
SBREF-320020060	2	R 0.2	6	1.5	1.95	2	50	4	30,000
SBREF-320020120	2	R 0.2	12	1.5	1.95	2	50	4	31,800

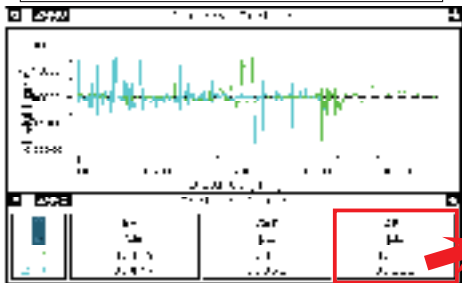
加工事例 Processing Example

刃径 ϕ 0.5mm
Flute Diameter ϕ 0.5mm



仕上げ加工した金型
(LEDコアピン64ヶ所)
被削材: ELMAX (HRC60)
Finishing Processed Die
(LED Core Pin 64 Places)
Work Material: ELMAX (HRC60)

面粗度実測値
Actual Value of Surface Roughness



<テスト結果> <Test Result>

- ・寿命判定基準: 面粗度50nm
- ・LEDコアピン64ヶ所(1個)仕上加工
- ・工具形状: 3枚刃R付きエンドミル[ϕ 0.5mm,R0.02mm]
- ・Tool Life Judging Standard: Surface Roughness 50nm
- ・LED Core Pin 64 Places (1 Piece) Finishing Process
- ・Tool Shape: 3 Flutes Corner R Endmill[ϕ 0.5mm,R0.02mm]

○超硬: コアピン数個で寿命
○cBN: 連続2個(128コアピン)

- ・Tungsten Carbide: Damaged in 5 to 6 Places Processing of Core Pin
- ・cBN: 2 Pieces Continuous Processing (128 Core Pin)

超硬の数十倍の寿命を実現
Realized Dozens Times Tool Life of Tungsten Carbide

切削条件
・切削油: オイルミスト
・S=19,000~40,000 r p m
・Ad x Rd=0.02 x 0.002~0.005mm
・F=360~1,500
切削時間総計: 5時間30分
Total Processing Time: 5 hours 30 minutes

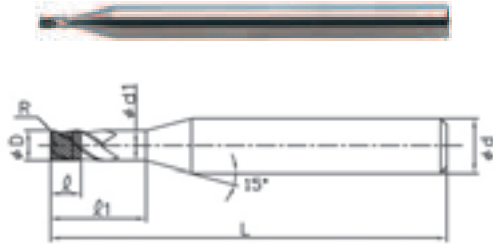
Cutting Condition
Cutting Oil: Oil Mist

手仕上げ研磨に並ぶ20~30nmの
切削仕上げ面粗度を実現しました
Realized 20 to 30nm Finishing Surface Roughness equal
to Hand Finish Polishing

SBRE-3

CBN 3枚刃スパイラルコーナーR付エンドミル
CBN 3 Flutes Spiral Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高送りで高効率加工が可能。
Possible to cut by High Feed and High Efficiency



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角30° Twist Angle 30°

コーナーR許容差 coner R Tolerance
+0.005~-0.005

●切削条件表はP172に記載

●Cutting conditions are recommended on page 172.

単位[寸法:mm/価格:円]

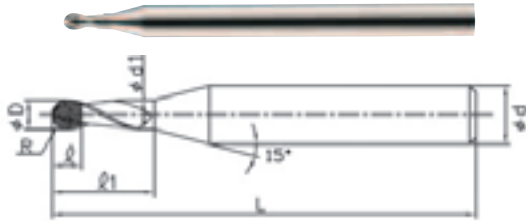
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBRE-330002090	3	R 0.02	9	1.5	2.95	2	50	6	40,500
SBRE-330002180	3	R 0.02	18	1.5	2.95	2	60	6	42,000
SBRE-330010090	3	R 0.1	9	1.5	2.95	2	50	6	40,500
SBRE-330010180	3	R 0.1	18	1.5	2.95	2	60	6	42,000
SBRE-330020090	3	R 0.2	9	1.5	2.95	2	50	6	40,500
SBRE-330020180	3	R 0.2	18	1.5	2.95	2	60	6	42,000
SBRE-330050090	3	R 0.5	9	1.5	2.95	2	50	6	40,500
SBRE-330050180	3	R 0.5	18	1.5	2.95	2	60	6	42,000
SBRE-340005200	4	R 0.05	20	2	3.95	2	60	6	52,100
SBRE-340010200	4	R 0.1	20	2	3.95	2	60	6	52,100
SBRE-340020200	4	R 0.2	20	2	3.95	2	60	6	52,100
SBRE-340050200	4	R 0.5	20	2	3.95	2	60	6	52,100
SBRE-350005240	5	R 0.05	24	2	4.95	2	70	6	54,700
SBRE-350010240	5	R 0.1	24	2	4.95	2	70	6	54,700
SBRE-350020240	5	R 0.2	24	2	4.95	2	70	6	54,700
SBRE-350050240	5	R 0.5	24	2	4.95	2	70	6	54,700
SBRE-360005300	6	R 0.05	30	2	5.95	2	70	6	62,400
SBRE-360010300	6	R 0.1	30	2	5.95	2	70	6	62,400
SBRE-360020300	6	R 0.2	30	2	5.95	2	70	6	62,400
SBRE-360050300	6	R 0.5	30	2	5.95	2	70	6	62,400

SBBEF-2

CBN 2枚刃スパイラルボールエンドミル
CBN 2 Flutes Spiral Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 切込量を多くする事が可能。
Possible to increase the depth of cut



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角30° Twist Angle 30°

R許容差 R Tolerance
+0.005~-0.005

●切削条件表はP173に記載

●Cutting conditions are recommended on page 173.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBBEF-2010006	R 0.1	0.2	0.6	0.2	0.18	0.4	50	4	25,000
SBBEF-2010012	R 0.1	0.2	1.2	0.2	0.18	0.4	50	4	25,500
SBBEF-2015009	R 0.15	0.3	0.9	0.3	0.28	0.6	50	4	24,300
SBBEF-2015018	R 0.15	0.3	1.8	0.3	0.28	0.6	50	4	25,000
SBBEF-2020012	R 0.2	0.4	1.2	0.4	0.37	0.6	50	4	23,100
SBBEF-2020024	R 0.2	0.4	2.4	0.4	0.37	0.6	50	4	23,600
SBBEF-2025015	R 0.25	0.5	1.5	0.5	0.46	0.6	50	4	22,400
SBBEF-2025030	R 0.25	0.5	3	0.5	0.46	0.6	50	4	23,100
SBBEF-2030018	R 0.3	0.6	1.8	0.6	0.56	0.6	50	4	21,000
SBBEF-2030036	R 0.3	0.6	3.6	0.6	0.56	0.6	50	4	21,500
SBBEF-2040024	R 0.4	0.8	2.4	0.8	0.76	1	50	4	21,000
SBBEF-2040048	R 0.4	0.8	4.8	0.8	0.76	1	50	4	21,500
SBBEF-2050030	R 0.5	1	3	1	0.95	1	50	4	20,500
SBBEF-2050040	R 0.5	1	4	1	0.95	1	50	4	21,000
SBBEF-2050050	R 0.5	1	5	1	0.95	1	50	4	21,000
SBBEF-2050060	R 0.5	1	6	1	0.95	1	50	4	21,000
SBBEF-2050080	R 0.5	1	8	1	0.95	1	50	4	23,100
SBBEF-2050100	R 0.5	1	10	1	0.95	1	50	4	24,100
SBBEF-2060036	R 0.6	1.2	3.6	1.2	1.15	2	50	4	21,500
SBBEF-2060072	R 0.6	1.2	7.2	1.2	1.15	2	50	4	22,000
SBBEF-2070042	R 0.7	1.4	4.2	1.4	1.35	2	50	4	21,500
SBBEF-2070084	R 0.7	1.4	8.4	1.4	1.35	2	50	4	22,000
SBBEF-2075045	R 0.75	1.5	4.5	1.5	1.45	2	50	4	21,500
SBBEF-2075090	R 0.75	1.5	9	1.5	1.45	2	50	4	22,000
SBBEF-2080048	R 0.8	1.6	4.8	1.5	1.55	2	50	4	22,000

SBBEF-2

品番 Code No.	R	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBBEF-2080096	R 0.8	1.6	9.6	1.5	1.55	2	50	4	22,400
SBBEF-2090054	R 0.9	1.8	5.4	1.5	1.75	2	50	4	22,000
SBBEF-2090108	R 0.9	1.8	10.8	1.5	1.75	2	50	4	22,400
SBBEF-2100060	R 1	2	6	1.5	1.95	2	50	4	22,000
SBBEF-2100120	R 1	2	12	1.5	1.95	2	50	4	22,400
SBBEF-2150090	R 1.5	3	9	2	2.95	2	50	4	35,400
SBBEF-2150180	R 1.5	3	18	2	2.95	2	60	4	36,700

加工設定 PROCESS SETTING

使用工具 Tool R1×有効長6 R1×Effective Length ×シャンクφ6 ×Shank Dia 6	(A) cBNスパイラル刃ボールエンドミル(荒・仕上加工) (A) cBN Spiral Flute Ball Endmill (Rough cutting & Finishing) (B) cBNストレート刃ボールエンドミル(仕上加工) (B) cBN Straight Flute Ball Endmill (Finishing) (C) TiAlNコーティング付超硬ボールエンドミル(荒・仕上加工) (A) TC Ball Endmill with TiAlN coating (Rough cutting & Finishing)	
加工物材質 Work Material	SKD11 (HRC62) 60mm×60mm×30mm	
使用機械 Machine	YASDA YBM-950V	
加工工程 Process	荒加工 Rough cutting	仕上加工 Finishing
回転数 Revolution	20,000min ⁻¹	20,000min ⁻¹
送り Feed	2,000mm/min	1,800mm/min
XYピッチ XY Cutting	0.5mm	0.07mm
Z切込み Z Cutting	0.1mm	0.06mm
加工深さ Cutting Depth	4.98mm	5mm
加工時間 Process Time	36min	11min
切削長さ Cutting Length	37.9m	38.1m

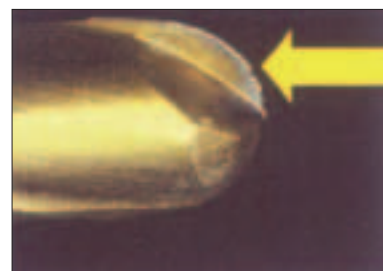
チッピング発生 Chipping Outbreak



No.1 (A) cBNスパイラル刃エンドミル
No.1 (A) cBN Spiral Endmill
(6個加工後)
(after 6pcs. Cutting)



No.2 (B) cBNストレート刃エンドミル
No.2 (A) cBN Straight Endmill
(2個加工後)
(after 2pcs. Cutting)

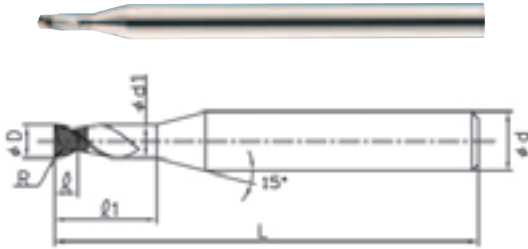


No.3 (C) 超硬エンドミル
No.3 (A) TC Endmill
(2個加工後)
(after 2pcs. Cutting)

SBREF-2

CBN 2枚刃スパイラルコーナーR付エンドミル
CBN 2 Flutes Spiral Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 切込量を多くする事が可能。
Possible to increase the depth of cut



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角30° Twist Angle 30°

コーナーR許容差 coner R Tolerance
+0.005~-0.005

●切削条件表はP173に記載

●Cutting conditions are recommended on page 173.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBREF-203003009	0.3	R 0.03	0.9	0.3	0.26	0.6	50	4	25,500
SBREF-203003018	0.3	R 0.03	1.8	0.3	0.26	0.6	50	4	26,200
SBREF-203005009	0.3	R 0.05	0.9	0.3	0.26	0.6	50	4	25,500
SBREF-203005018	0.3	R 0.05	1.8	0.3	0.26	0.6	50	4	26,200
SBREF-204003012	0.4	R 0.03	1.2	0.4	0.36	0.6	50	4	24,100
SBREF-204003024	0.4	R 0.03	2.4	0.4	0.36	0.6	50	4	24,800
SBREF-204010012	0.4	R 0.1	1.2	0.4	0.36	0.6	50	4	24,100
SBREF-204010024	0.4	R 0.1	2.4	0.4	0.36	0.6	50	4	24,800
SBREF-205003015	0.5	R 0.03	1.5	0.5	0.46	0.6	50	4	23,600
SBREF-205003030	0.5	R 0.03	3	0.5	0.46	0.6	50	4	24,300
SBREF-205010015	0.5	R 0.1	1.5	0.5	0.46	0.6	50	4	23,600
SBREF-205010030	0.5	R 0.1	3	0.5	0.46	0.6	50	4	24,300
SBREF-210003030	1	R 0.03	3	1	0.95	1	50	4	22,400
SBREF-210003040	1	R 0.03	4	1	0.95	1	50	4	23,400
SBREF-210003050	1	R 0.03	5	1	0.95	1	50	4	23,400
SBREF-210003060	1	R 0.03	6	1	0.95	1	50	4	23,400
SBREF-210003080	1	R 0.03	8	1	0.95	1	50	4	25,800
SBREF-210003100	1	R 0.03	10	1	0.95	1	50	4	27,000
SBREF-210010030	1	R 0.1	3	1	0.95	1	50	4	22,400
SBREF-210010040	1	R 0.1	4	1	0.95	1	50	4	23,400
SBREF-210010050	1	R 0.1	5	1	0.95	1	50	4	23,400
SBREF-210010060	1	R 0.1	6	1	0.95	1	50	4	23,400
SBREF-210010080	1	R 0.1	8	1	0.95	1	50	4	25,800
SBREF-210010100	1	R 0.1	10	1	0.95	1	50	4	27,000
SBREF-210020030	1	R 0.2	3	1	0.95	1	50	4	22,400
SBREF-210020040	1	R 0.2	4	1	0.95	1	50	4	23,400

CBN

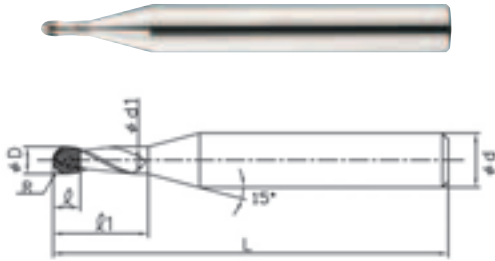
SBREF-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBREF-210020050	1	R 0.2	5	1	0.95	1	50	4	23,400
SBREF-210020060	1	R 0.2	6	1	0.95	1	50	4	23,400
SBREF-210020080	1	R 0.2	8	1	0.95	1	50	4	25,800
SBREF-210020100	1	R 0.2	10	1	0.95	1	50	4	27,000
SBREF-215003045	1.5	R 0.03	4.5	1.5	1.45	2	50	4	24,300
SBREF-215003090	1.5	R 0.03	9	1.5	1.45	2	50	4	25,500
SBREF-215010045	1.5	R 0.1	4.5	1.5	1.45	2	50	4	24,300
SBREF-215010090	1.5	R 0.1	9	1.5	1.45	2	50	4	25,500
SBREF-215020045	1.5	R 0.2	4.5	1.5	1.45	2	50	4	24,300
SBREF-215020090	1.5	R 0.2	9	1.5	1.45	2	50	4	25,500
SBREF-220003060	2	R 0.03	6	1.5	1.95	2	50	4	25,500
SBREF-220003120	2	R 0.03	12	1.5	1.95	2	50	4	27,000
SBREF-220010060	2	R 0.1	6	1.5	1.95	2	50	4	25,500
SBREF-220010120	2	R 0.1	12	1.5	1.95	2	50	4	27,000
SBREF-220020060	2	R 0.2	6	1.5	1.95	2	50	4	25,500
SBREF-220020120	2	R 0.2	12	1.5	1.95	2	50	4	27,000
SBREF-220030060	2	R 0.3	6	1.5	1.95	2	50	4	25,500
SBREF-220030120	2	R 0.3	12	1.5	1.95	2	50	4	27,000
SBREF-230003090	3	R 0.03	9	2	2.95	2	50	4	34,500
SBREF-230003180	3	R 0.03	18	2	2.95	2	60	4	35,800
SBREF-230010090	3	R 0.1	9	2	2.95	2	50	4	34,500
SBREF-230010180	3	R 0.1	18	2	2.95	2	60	4	35,800
SBREF-230020090	3	R 0.2	9	2	2.95	2	50	4	34,500
SBREF-230020180	3	R 0.2	18	2	2.95	2	60	4	35,800
SBREF-230030090	3	R 0.3	9	2	2.95	2	50	4	34,500
SBREF-230030180	3	R 0.3	18	2	2.95	2	60	4	35,800
SBREF-230050090	3	R 0.5	9	2	2.95	2	50	4	34,500
SBREF-230050180	3	R 0.5	18	2	2.95	2	60	4	35,800

SBBE-2


CBN 2枚刃スパイラルボールエンドミル CBN 2 Flutes Spiral Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 切込量を多くする事が可能。
Possible to increase the depth of cut



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角30° Twist Angle 30°

 R許容差 R Tolerance
+0.005~-0.005

●切削条件表はP173に記載

●Cutting conditions are recommended on page 173.

単位[寸法: mm/価格: 円]

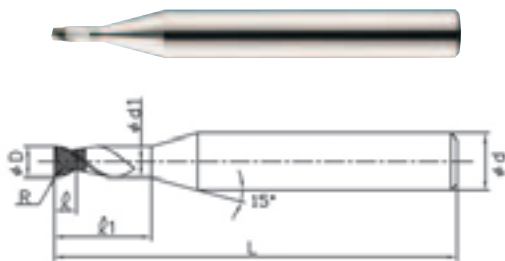
Unit [size: mm/Retail Price: JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBBE-2010	R 0.1	0.2	0.6	0.2	0.18	0.4	50	6	25,500
SBBE-2015	R 0.15	0.3	0.9	0.3	0.28	0.6	50	6	25,000
SBBE-2020	R 0.2	0.4	1.2	0.4	0.37	0.6	50	6	23,600
SBBE-2025	R 0.25	0.5	1.5	0.5	0.46	0.6	50	6	23,100
SBBE-2030	R 0.3	0.6	1.8	0.6	0.56	0.6	50	6	21,500
SBBE-2040	R 0.4	0.8	2.4	0.8	0.76	1	50	6	21,500
SBBE-2050	R 0.5	1	3	1	0.95	1	50	6	21,000
SBBE-2060	R 0.6	1.2	3.6	1.2	1.15	2	50	6	22,100
SBBE-2070	R 0.7	1.4	4.2	1.4	1.35	2	50	6	22,100
SBBE-2075	R 0.75	1.5	4.5	1.5	1.45	2	50	6	22,100
SBBE-2080	R 0.8	1.6	4.8	1.5	1.55	2	50	6	22,700
SBBE-2090	R 0.9	1.8	5.4	1.5	1.75	2	50	6	22,700
SBBE-2100	R 1	2	6	1.5	1.95	2	50	6	22,700
SBBE-2150	R 1.5	3	9	2	2.95	2	50	6	36,700
SBBE-2200	R 2	4	12	2.5	3.95	2.5	50	6	54,300
SBBE-2250	R 2.5	5	15	3	4.95	3.5	60	6	65,500
SBBE-2300	R 3	6	20	3.5	5.95	3.5	60	6	72,900

SBRE-2

CBN 2枚刃スパイラルコーナーR付エンドミル
CBN 2 Flutes Spiral Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 切込量を多くする事が可能。
Possible to increase the depth of cut



- CBN立方晶窒化ホウ素 Cubic Boron Nitride
- 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01
- 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003
- ネジレ角30° Twist Angle 30°
- コーナーR許容差 Corner R Tolerance
+0.005~-0.005

●切削条件表はP173に記載

●Cutting conditions are recommended on page 173.

単位[寸法:mm/価格:円]

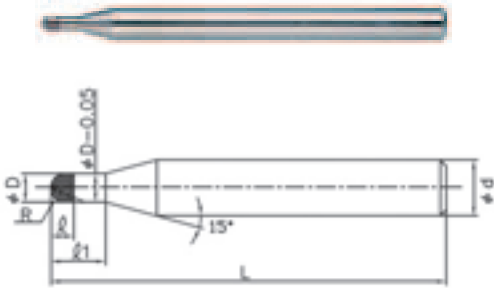
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
SBRE-203005	0.3	R 0.05	0.9	0.3	0.26	0.6	50	6	26,200
SBRE-204005	0.4	R 0.05	1.2	0.4	0.36	0.6	50	6	24,800
SBRE-205010	0.5	R 0.1	1.5	0.5	0.46	0.6	50	6	24,300
SBRE-210010	1	R 0.1	3	1	0.95	1	50	6	23,400
SBRE-210020	1	R 0.2	3	1	0.95	1	50	6	23,400
SBRE-215010	1.5	R 0.1	4.5	1.5	1.45	2	50	6	25,500
SBRE-215020	1.5	R 0.2	4.5	1.5	1.45	2	50	6	25,500
SBRE-220020	2	R 0.2	6	1.5	1.95	2	50	6	27,000
SBRE-220030	2	R 0.3	6	1.5	1.95	2	50	6	27,000
SBRE-230020	3	R 0.2	9	2	2.95	2	50	6	35,800
SBRE-230030	3	R 0.3	9	2	2.95	2	50	6	35,800
SBRE-230050	3	R 0.5	9	2	2.95	2	50	6	35,800
SBRE-240003	4	R 0.03	12	2	3.95	2	50	6	44,300
SBRE-240010	4	R 0.1	12	2	3.95	2	50	6	44,300
SBRE-240020	4	R 0.2	12	2	3.95	2	50	6	44,300
SBRE-240030	4	R 0.3	12	2	3.95	2	50	6	44,300
SBRE-240050	4	R 0.5	12	2	3.95	2	50	6	44,300
SBRE-250003	5	R 0.03	15	2	4.95	2	60	6	46,500
SBRE-250010	5	R 0.1	15	2	4.95	2	60	6	46,500
SBRE-250020	5	R 0.2	15	2	4.95	2	60	6	46,500
SBRE-250030	5	R 0.3	15	2	4.95	2	60	6	46,500
SBRE-250050	5	R 0.5	15	2	4.95	2	60	6	46,500
SBRE-260003	6	R 0.03	20	2	5.95	2	60	6	53,100
SBRE-260010	6	R 0.1	20	2	5.95	2	60	6	53,100
SBRE-260020	6	R 0.2	20	2	5.95	2	60	6	53,100
SBRE-260030	6	R 0.3	20	2	5.95	2	60	6	53,100
SBRE-260050	6	R 0.5	20	2	5.95	2	60	6	53,100


BSB-2

CBN 2枚刃ボールエンドミル CBN 2 Flutes Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life.




CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.02

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.006

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 R許容差 R Tolerance
+0.01~-0.01

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法:mm/価格:円]

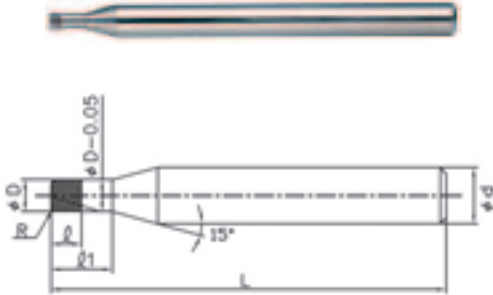
Unit [size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BSB-2020008	R 0.2	0.4	0.8	0.5	0.6	40	3	25,000
BSB-2025010	R 0.25	0.5	1	0.5	0.6	40	3	25,000
BSB-2030012	R 0.3	0.6	1.2	0.6	0.6	40	3	25,000
BSB-2040016	R 0.4	0.8	1.6	0.8	1	40	3	25,000
BSB-2050020	R 0.5	1	2	1	1	50	4	19,200
BSB-2060024	R 0.6	1.2	2.4	1.2	2	50	4	28,000
BSB-2070028	R 0.7	1.4	2.8	1.2	2	50	4	28,000
BSB-2075030	R 0.75	1.5	3	1.2	2	50	4	28,000
BSB-2080032	R 0.8	1.6	3.2	1.2	2	50	4	28,000
BSB-2090036	R 0.9	1.8	3.6	1.5	2	50	4	28,000
BSB-2100040	R 1	2	4	1.5	2	50	4	21,500

BSR-2

CBN 2枚刃コーナーR付エンドミル CBN 2 Flutes Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life.




CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.02

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.006

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 コーナーR許容差 corner R Tolerance
+0.02~-0.02

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法:mm/価格:円]

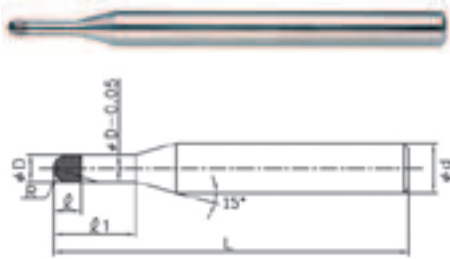
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l1 Effective Length	刃長 l Flute Length	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BSR-20501001	0.5	R 0.1	1	0.5	0.6	40	3	20,000
BSR-20501002	0.5	R 0.2	1	0.5	0.6	40	3	22,700
BSR-20601201	0.6	R 0.1	1.2	0.6	0.6	40	3	22,700
BSR-20601202	0.6	R 0.2	1.2	0.6	0.6	40	3	22,700
BSR-20701401	0.7	R 0.1	1.4	0.7	1	40	3	22,700
BSR-20701402	0.7	R 0.2	1.4	0.7	1	40	3	22,700
BSR-20801601	0.8	R 0.1	1.6	0.8	1	40	3	22,700
BSR-20801602	0.8	R 0.2	1.6	0.8	1	40	3	22,700
BSR-20901801	0.9	R 0.1	1.8	0.9	1	40	3	22,700
BSR-20901802	0.9	R 0.2	1.8	0.9	1	40	3	22,700
BSR-21002001	1	R 0.1	2	1	1	50	4	18,000
BSR-21002002	1	R 0.2	2	1	1	50	4	21,000
BSR-21002003	1	R 0.3	2	1	1	50	4	21,000
BSR-21503001	1.5	R 0.1	3	1.5	2	50	4	21,000
BSR-21503002	1.5	R 0.2	3	1.5	2	50	4	23,800
BSR-21503003	1.5	R 0.3	3	1.5	2	50	4	23,800
BSR-22004001	2	R 0.1	4	1.5	2	50	4	26,300
BSR-22004002	2	R 0.2	4	1.5	2	50	4	22,200
BSR-22004003	2	R 0.3	4	1.5	2	50	4	26,300
BSR-22004004	2	R 0.4	4	1.5	2	50	4	26,300
BSR-22004005	2	R 0.5	4	1.5	2	50	4	26,300

BRB-2

CBN 2枚刃リブ用ボールエンドミル
CBN 2 Flutes Ball Endmill for Deep Rib

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 深い加工用に首下を長くとりました。
Lengthened neck for deep processing



 CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.02

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.006

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 R許容差 R Tolerance
+0.01~-0.01

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法:mm/価格:円]

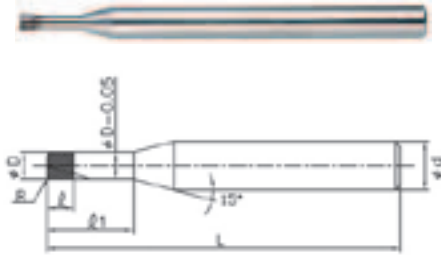
Unit [size:mm/Retail Price:JPY]


品番 Code No.	R	刃径 D Flute Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	CBN 層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BRB-2020020	R 0.2	0.4	2	0.5	0.6	40	3	27,500
BRB-2020040	R 0.2	0.4	4	0.5	0.6	40	3	31,000
BRB-2025020	R 0.25	0.5	2	0.5	0.6	40	3	27,500
BRB-2025040	R 0.25	0.5	4	0.5	0.6	40	3	31,000
BRB-2030020	R 0.3	0.6	2	0.6	0.6	40	3	27,500
BRB-2030040	R 0.3	0.6	4	0.6	0.6	40	3	31,000
BRB-2040040	R 0.4	0.8	4	0.8	1	40	3	27,500
BRB-2040060	R 0.4	0.8	6	0.8	1	40	3	31,000
BRB-2050040	R 0.5	1	4	1	1	50	4	21,000
BRB-2050060	R 0.5	1	6	1	1	50	4	22,900
BRB-2050080	R 0.5	1	8	1	1	50	4	25,000
BRB-2050100	R 0.5	1	10	1	1	50	4	26,200
BRB-2060050	R 0.6	1.2	5	1.2	2	50	4	30,500
BRB-2060080	R 0.6	1.2	8	1.2	2	50	4	35,800
BRB-2070050	R 0.7	1.4	5	1.2	2	50	4	30,500
BRB-2070080	R 0.7	1.4	8	1.2	2	50	4	35,800
BRB-2080050	R 0.8	1.6	5	1.2	2	50	4	30,500
BRB-2080080	R 0.8	1.6	8	1.2	2	50	4	35,800
BRB-2090050	R 0.9	1.8	5	1.5	2	50	4	30,500
BRB-2090080	R 0.9	1.8	8	1.5	2	50	4	35,800
BRB-2100060	R 1	2	6	1.5	2	50	4	23,800
BRB-2100080	R 1	2	8	1.5	2	50	4	25,000
BRB-2100100	R 1	2	10	1.5	2	50	4	26,500


BRR-2

CBN 2枚刃リブ用コーナーR付エンドミル
CBN 2 Flutes Corner R Endmill for Deep Rib

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 深い加工用に首下を長くとりました。
Lengthened neck for deep processing




 CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.02

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.006

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 コーナーR許容差 corner R Tolerance
+0.02~-0.02

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l1 Effective Length	刃長 l Flute Length	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BRR-20502001	0.5	R 0.1	2	0.5	0.6	40	3	25,000
BRR-20504001	0.5	R 0.1	4	0.5	0.6	40	3	29,800
BRR-20502002	0.5	R 0.2	2	0.5	0.6	40	3	25,000
BRR-20504002	0.5	R 0.2	4	0.5	0.6	40	3	29,800
BRR-20602001	0.6	R 0.1	2	0.6	0.6	40	3	25,000
BRR-20604001	0.6	R 0.1	4	0.6	0.6	40	3	29,800
BRR-20602002	0.6	R 0.2	2	0.6	0.6	40	3	25,000
BRR-20604002	0.6	R 0.2	4	0.6	0.6	40	3	29,800
BRR-20702001	0.7	R 0.1	2	0.7	1	40	3	25,000
BRR-20704001	0.7	R 0.1	4	0.7	1	40	3	29,800
BRR-20702002	0.7	R 0.2	2	0.7	1	40	3	25,000
BRR-20704002	0.7	R 0.2	4	0.7	1	40	3	29,800
BRR-20804001	0.8	R 0.1	4	0.8	1	40	3	28,700
BRR-20806001	0.8	R 0.1	6	0.8	1	40	3	33,000
BRR-20804002	0.8	R 0.2	4	0.8	1	40	3	28,700
BRR-20806002	0.8	R 0.2	6	0.8	1	40	3	33,000
BRR-20904001	0.9	R 0.1	4	0.9	1	40	3	28,700
BRR-20906001	0.9	R 0.1	6	0.9	1	40	3	33,000
BRR-20904002	0.9	R 0.2	4	0.9	1	40	3	28,700
BRR-20906002	0.9	R 0.2	6	0.9	1	40	3	33,000
BRR-21004001	1	R 0.1	4	1	1	50	4	20,500
BRR-21006001	1	R 0.1	6	1	1	50	4	23,800
BRR-21008001	1	R 0.1	8	1	1	50	4	28,700
BRR-21010001	1	R 0.1	10	1	1	50	4	35,800
BRR-21004002	1	R 0.2	4	1	1	50	4	20,500
BRR-21006002	1	R 0.2	6	1	1	50	4	23,800

BRR-2

CBN


品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l_1 Effective Length	刃長 l Flute Length	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BRR-21008002	1	R 0.2	8	1	1	50	4	28,700
BRR-21010002	1	R 0.2	10	1	1	50	4	35,800
BRR-21004003	1	R 0.3	4	1	1	50	4	20,500
BRR-21006003	1	R 0.3	6	1	1	50	4	23,800
BRR-21008003	1	R 0.3	8	1	1	50	4	28,700
BRR-21010003	1	R 0.3	10	1	1	50	4	35,800
BRR-21505001	1.5	R 0.1	5	1.5	2	50	4	28,700
BRR-21508001	1.5	R 0.1	8	1.5	2	50	4	34,700
BRR-21505002	1.5	R 0.2	5	1.5	2	50	4	28,700
BRR-21508002	1.5	R 0.2	8	1.5	2	50	4	34,700
BRR-21505003	1.5	R 0.3	5	1.5	2	50	4	28,700
BRR-21508003	1.5	R 0.3	8	1.5	2	50	4	34,700
BRR-22006001	2	R 0.1	6	1.5	2	50	4	25,000
BRR-22008001	2	R 0.1	8	1.5	2	50	4	28,700
BRR-22010001	2	R 0.1	10	1.5	2	50	4	30,000
BRR-22006002	2	R 0.2	6	1.5	2	50	4	25,000
BRR-22008002	2	R 0.2	8	1.5	2	50	4	28,700
BRR-22010002	2	R 0.2	10	1.5	2	50	4	30,000
BRR-22006003	2	R 0.3	6	1.5	2	50	4	25,000
BRR-22008003	2	R 0.3	8	1.5	2	50	4	28,700
BRR-22010003	2	R 0.3	10	1.5	2	50	4	30,000
BRR-22006004	2	R 0.4	6	1.5	2	50	4	25,000
BRR-22008004	2	R 0.4	8	1.5	2	50	4	28,700
BRR-22010004	2	R 0.4	10	1.5	2	50	4	30,000
BRR-22006005	2	R 0.5	6	1.5	2	50	4	25,000
BRR-22008005	2	R 0.5	8	1.5	2	50	4	28,700
BRR-22010005	2	R 0.5	10	1.5	2	50	4	30,000

BMC-3

CBN3枚刃面取りカッター CBN3 Flutes V Type Endmill

■高硬度材・焼入れ鋼の直彫り加工に。
Direct cutting for Highly hardened material and quenching steel




 CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D +0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角 0° Twist Angle 0°
(直刃3枚刃) (3 Flutes Straight Endmill)

 先端角度 Edge Angle
 $90^\circ \pm 30'$

●切削条件表はP175に記載

●Cutting conditions are recommended on page 175.

単位[寸法: mm/価格: 円]

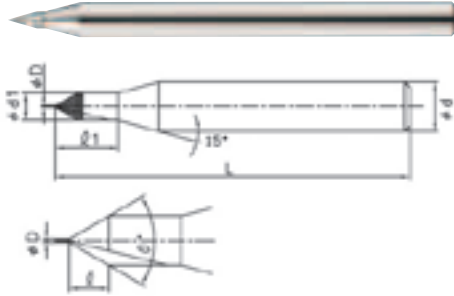
Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	有効長 l Effective Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Diameter	標準価格 Retail Price
BMC-305015	0.5	1.5	50	4	0.08	27,700
BMC-305050	0.5	5	50	4	0.08	28,800
BMC-310030	1	3	50	4	0.1	26,700
BMC-310080	1	8	50	4	0.1	27,700
BMC-312040	1.2	4	50	4	0.1	28,800
BMC-312100	1.2	10	50	4	0.1	30,400
BMC-315040	1.5	4	50	4	0.15	28,800
BMC-315100	1.5	10	50	4	0.15	30,400
BMC-320050	2	5	50	4	0.2	30,400
BMC-320100	2	10	50	4	0.2	30,400
BMC-320150	2	15	60	4	0.2	32,000
BMC-325060	2.5	6	50	4	0.2	35,200
BMC-325150	2.5	15	60	4	0.2	36,800
BMC-325200	2.5	20	60	4	0.2	36,800
BMC-330060	3	6	50	4	0.2	40,500
BMC-330150	3	15	60	4	0.2	42,100
BMC-330200	3	20	60	4	0.2	42,100
BMC-340100	4	10	50	4	0.3	51,200
BMC-340200	4	20	60	4	0.3	52,800
BMC-350150	5	15	60	6	0.3	61,000
BMC-350300	5	30	70	6	0.3	62,700
BMC-360150	6	15	60	6	0.3	72,500
BMC-360300	6	30	70	6	0.3	74,200


BVEF-2

CBN V形エンドミル CBN 2 Flutes V type Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- V溝、文字彫加工に最適。
Most suitable for V groove and engraving processing




CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D +0.02~-0.02

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 先端角度 Edge Angle
+15' ~-15'

●切削条件表はP175に記載

●Cutting conditions are recommended on page 175.

単位[寸法:mm/価格:円]

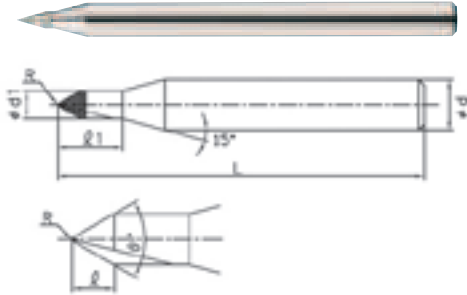
Unit [size:mm/Retail Price:JPY]

品番 Code No.	先端角 θ Edge Angle	先端径 D Edge Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	首径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BVEF-2030005	30°	0.05	6	3.64	2	2	50	4	28,600
BVEF-2030010	30°	0.1	6	3.54	2	2	50	4	28,600
BVEF-2040005	40°	0.05	4	2.68	2	2	50	4	28,600
BVEF-2040010	40°	0.1	4	2.61	2	2	50	4	28,600
BVEF-2060005	60°	0.05	4	1.69	2	2	50	4	26,000
BVEF-2060010	60°	0.1	4	1.65	2	2	50	4	26,000
BVEF-2090005	90°	0.05	4	0.975	2	2	50	4	26,000
BVEF-2090010	90°	0.1	4	0.95	2	2	50	4	26,000

BVREF-2

CBN V形R付エンドミル
CBN 2 Flutes R type Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- V溝、文字彫加工に最適。
Most suitable for V groove and engraving processing



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

先端角度 Edge Angle
+15' ~-15'

R許容差 R Tolerance
+0.02~-0.02

●切削条件表はP175に記載

●Cutting conditions are recommended on page 175.

単位[寸法:mm/価格:円]

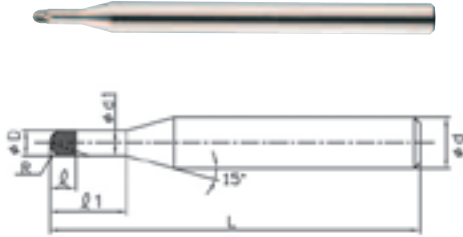
Unit [size:mm/Retail Price:JPY]


品番 Code No.	先端角 θ Edge Angle	先端R Edge R	有効長 l_1 Effective Length	刃長 l Flute Length	首径 d_1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BVREF-2030010	30°	R 0.1	6	3.64	2	2	50	4	34,100
BVREF-2030020	30°	R 0.2	6	3.54	2	2	50	4	34,100
BVREF-2040010	40°	R 0.1	4	2.68	2	2	50	4	34,100
BVREF-2040020	40°	R 0.2	4	2.61	2	2	50	4	34,100
BVREF-2060010	60°	R 0.1	4	1.69	2	2	50	4	31,000
BVREF-2060020	60°	R 0.2	4	1.65	2	2	50	4	31,000
BVREF-2090010	90°	R 0.1	4	0.975	2	2	50	4	31,000
BVREF-2090020	90°	R 0.2	4	0.95	2	2	50	4	31,000

BBEF-2


CBN 2枚刃ボールエンドミル CBN 2 Flutes Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life



 CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 R許容差 R Tolerance
+0.005~-0.005

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

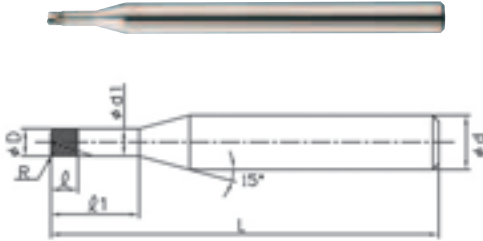
品番 Code No.	R	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BBEF-2010006	R 0.1	0.2	0.6	0.2	0.18	0.4	50	4	20,800
BBEF-2010012	R 0.1	0.2	1.2	0.2	0.18	0.4	50	4	21,200
BBEF-2015009	R 0.15	0.3	0.9	0.3	0.28	0.6	50	4	20,300
BBEF-2015018	R 0.15	0.3	1.8	0.3	0.28	0.6	50	4	20,800
BBEF-2020012	R 0.2	0.4	1.2	0.4	0.37	0.6	50	4	19,100
BBEF-2020024	R 0.2	0.4	2.4	0.4	0.37	0.6	50	4	19,600
BBEF-2025015	R 0.25	0.5	1.5	0.5	0.46	0.6	50	4	18,700
BBEF-2025030	R 0.25	0.5	3	0.5	0.46	0.6	50	4	19,100
BBEF-2030018	R 0.3	0.6	1.8	0.6	0.56	0.6	50	4	17,400
BBEF-2030036	R 0.3	0.6	3.6	0.6	0.56	0.6	50	4	17,900
BBEF-2040024	R 0.4	0.8	2.4	0.8	0.76	1	50	4	17,400
BBEF-2040048	R 0.4	0.8	4.8	0.8	0.76	1	50	4	17,900
BBEF-2050030	R 0.5	1	3	1	0.95	1	50	4	17,000
BBEF-2050060	R 0.5	1	6	1	0.95	1	50	4	17,400
BBEF-2060036	R 0.6	1.2	3.6	1.2	1.15	2	50	4	17,900
BBEF-2060072	R 0.6	1.2	7.2	1.2	1.15	2	50	4	18,400
BBEF-2070042	R 0.7	1.4	4.2	1.4	1.35	2	50	4	17,900
BBEF-2070084	R 0.7	1.4	8.4	1.4	1.35	2	50	4	18,400
BBEF-2075045	R 0.75	1.5	4.5	1.5	1.45	2	50	4	17,900
BBEF-2075090	R 0.75	1.5	9	1.5	1.45	2	50	4	18,400
BBEF-2080048	R 0.8	1.6	4.8	1.5	1.55	2	50	4	18,400
BBEF-2080096	R 0.8	1.6	9.6	1.5	1.55	2	50	4	18,700
BBEF-2090054	R 0.9	1.8	5.4	1.5	1.75	2	50	4	18,400
BBEF-2090108	R 0.9	1.8	10.8	1.5	1.75	2	50	4	18,700
BBEF-2100060	R 1	2	6	1.5	1.95	2	50	4	18,400
BBEF-2100120	R 1	2	12	1.5	1.95	2	50	4	18,700
BBEF-2150090	R 1.5	3	9	2	2.95	2	50	4	29,500
BBEF-2150180	R 1.5	3	18	2	2.95	2	60	4	30,600

※ R 0.1 のみ 1 枚刃仕様となります。 One Flute only for R0.1

BREF-2

CBN 2枚刃コーナーR付エンドミル CBN 2 Flutes Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

コーナーR許容差 corner R Tolerance
+0.005~-0.005

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BREF-203003005	0.3	R0.03	0.5	0.3	0.26	0.6	50	4	21,500
BREF-203003009	0.3	R0.03	0.9	0.3	0.26	0.6	50	4	21,500
BREF-203003018	0.3	R0.03	1.8	0.3	0.26	0.6	50	4	22,000
BREF-203005005	0.3	R0.05	0.5	0.3	0.26	0.6	50	4	21,500
BREF-203005009	0.3	R0.05	0.9	0.3	0.26	0.6	50	4	21,500
BREF-203005018	0.3	R0.05	1.8	0.3	0.26	0.6	50	4	22,000
BREF-204003005	0.4	R0.03	0.5	0.4	0.36	0.6	50	4	20,000
BREF-204003012	0.4	R0.03	1.2	0.4	0.36	0.6	50	4	20,000
BREF-204003024	0.4	R0.03	2.4	0.4	0.36	0.6	50	4	20,600
BREF-204005005	0.4	R0.05	0.5	0.4	0.36	0.6	50	4	20,000
BREF-204005012	0.4	R0.05	1.2	0.4	0.36	0.6	50	4	20,000
BREF-204005024	0.4	R0.05	2.4	0.4	0.36	0.6	50	4	20,600
BREF-204010005	0.4	R0.1	0.5	0.4	0.36	0.6	50	4	20,000
BREF-204010012	0.4	R0.1	1.2	0.4	0.36	0.6	50	4	20,000
BREF-204010024	0.4	R0.1	2.4	0.4	0.36	0.6	50	4	20,600
BREF-205003005	0.5	R0.03	0.5	0.5	-	0.6	50	4	19,100
BREF-205003010	0.5	R0.03	1	0.5	0.46	0.6	50	4	19,600
BREF-205003015	0.5	R0.03	1.5	0.5	0.46	0.6	50	4	19,600
BREF-205003020	0.5	R0.03	2	0.5	0.46	0.6	50	4	20,300
BREF-205003030	0.5	R0.03	3	0.5	0.46	0.6	50	4	20,300
BREF-205005005	0.5	R0.05	0.5	0.5	-	0.6	50	4	19,100
BREF-205005010	0.5	R0.05	1	0.5	0.46	0.6	50	4	19,600
BREF-205005015	0.5	R0.05	1.5	0.5	0.46	0.6	50	4	19,600
BREF-205005020	0.5	R0.05	2	0.5	0.46	0.6	50	4	20,300
BREF-205005030	0.5	R0.05	3	0.5	0.46	0.6	50	4	20,300
BREF-205010005	0.5	R0.1	0.5	0.5	-	0.6	50	4	19,100

BREF-2

CBN

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BREF-205010010	0.5	R0.1	1	0.5	0.46	0.6	50	4	19,600
BREF-205010015	0.5	R0.1	1.5	0.5	0.46	0.6	50	4	19,600
BREF-205010020	0.5	R0.1	2	0.5	0.46	0.6	50	4	20,300
BREF-205010030	0.5	R0.1	3	0.5	0.46	0.6	50	4	20,300
BREF-210003020	1	R0.03	2	1	0.95	1	50	4	18,700
BREF-210003030	1	R0.03	3	1	0.95	1	50	4	18,700
BREF-210003040	1	R0.03	4	1	0.95	1	50	4	19,600
BREF-210003050	1	R0.03	5	1	0.95	1	50	4	19,600
BREF-210003060	1	R0.03	6	1	0.95	1	50	4	19,600
BREF-210003080	1	R0.03	8	1	0.95	1	50	4	21,500
BREF-210003100	1	R0.03	10	1	0.95	1	50	4	22,400
BREF-210005020	1	R0.05	2	1	0.95	1	50	4	18,700
BREF-210005030	1	R0.05	3	1	0.95	1	50	4	18,700
BREF-210005040	1	R0.05	4	1	0.95	1	50	4	19,600
BREF-210005050	1	R0.05	5	1	0.95	1	50	4	19,600
BREF-210005060	1	R0.05	6	1	0.95	1	50	4	19,600
BREF-210005080	1	R0.05	8	1	0.95	1	50	4	21,500
BREF-210005100	1	R0.05	10	1	0.95	1	50	4	22,400
BREF-210010020	1	R0.1	2	1	0.95	1	50	4	18,700
BREF-210010030	1	R0.1	3	1	0.95	1	50	4	18,700
BREF-210010040	1	R0.1	4	1	0.95	1	50	4	19,600
BREF-210010050	1	R0.1	5	1	0.95	1	50	4	19,600
BREF-210010060	1	R0.1	6	1	0.95	1	50	4	19,600
BREF-210010080	1	R0.1	8	1	0.95	1	50	4	21,500
BREF-210010100	1	R0.1	10	1	0.95	1	50	4	22,400
BREF-210020020	1	R0.2	2	1	0.95	1	50	4	18,700
BREF-210020030	1	R0.2	3	1	0.95	1	50	4	18,700
BREF-210020040	1	R0.2	4	1	0.95	1	50	4	19,600
BREF-210020050	1	R0.2	5	1	0.95	1	50	4	19,600
BREF-210020060	1	R0.2	6	1	0.95	1	50	4	19,600
BREF-210020080	1	R0.2	8	1	0.95	1	50	4	21,500
BREF-210020100	1	R0.2	10	1	0.95	1	50	4	22,400
BREF-215003045	1.5	R0.03	4.5	1.5	1.45	2	50	4	20,300
BREF-215003090	1.5	R0.03	9	1.5	1.45	2	50	4	21,200
BREF-215005045	1.5	R0.05	4.5	1.5	1.45	2	50	4	20,300
BREF-215005090	1.5	R0.05	9	1.5	1.45	2	50	4	21,200
BREF-215010045	1.5	R0.1	4.5	1.5	1.45	2	50	4	20,300
BREF-215010090	1.5	R0.1	9	1.5	1.45	2	50	4	21,200
BREF-215020045	1.5	R0.2	4.5	1.5	1.45	2	50	4	20,300
BREF-215020090	1.5	R0.2	9	1.5	1.45	2	50	4	21,200
BREF-220003060	2	R0.03	6	1.5	1.95	2	50	4	21,200
BREF-220003120	2	R0.03	12	1.5	1.95	2	50	4	22,700

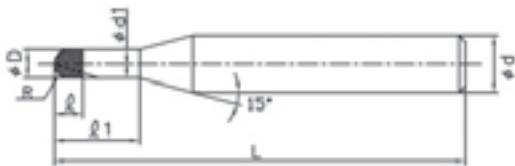
BREF-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BREF-220005060	2	R0.05	6	1.5	1.95	2	50	4	21,200
BREF-220005120	2	R0.05	12	1.5	1.95	2	50	4	22,700
BREF-220010060	2	R0.1	6	1.5	1.95	2	50	4	21,200
BREF-220010120	2	R0.1	12	1.5	1.95	2	50	4	22,700
BREF-220020060	2	R0.2	6	1.5	1.95	2	50	4	21,200
BREF-220020120	2	R0.2	12	1.5	1.95	2	50	4	22,700
BREF-220030060	2	R0.3	6	1.5	1.95	2	50	4	21,200
BREF-220030120	2	R0.3	12	1.5	1.95	2	50	4	22,700
BREF-230003090	3	R0.03	9	2	2.95	2	50	4	28,600
BREF-230003180	3	R0.03	18	2	2.95	2	60	4	29,900
BREF-230005090	3	R0.05	9	2	2.95	2	50	4	28,600
BREF-230005180	3	R0.05	18	2	2.95	2	60	4	29,900
BREF-230010090	3	R0.1	9	2	2.95	2	50	4	28,600
BREF-230010180	3	R0.1	18	2	2.95	2	60	4	29,900
BREF-230020090	3	R0.2	9	2	2.95	2	50	4	28,600
BREF-230020180	3	R0.2	18	2	2.95	2	60	4	29,900
BREF-230030090	3	R0.3	9	2	2.95	2	50	4	28,600
BREF-230030180	3	R0.3	18	2	2.95	2	60	4	29,900
BREF-230050090	3	R0.5	9	2	2.95	2	50	4	28,600
BREF-230050180	3	R0.5	18	2	2.95	2	60	4	29,900

BBE-2

CBN 2枚刃ボールエンドミル CBN 2 Flutes Ball Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life



CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 R許容差 R Tolerance
+0.005~-0.005

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

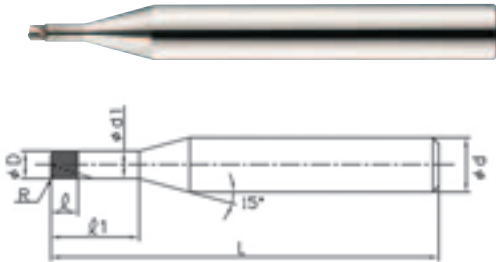
品番 Code No.	R	刃径 D Flute Diameter	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BBE-2010S	R0.1	0.2	0.6	0.2	0.18	0.4	50	6	21,200
BBE-2015S	R0.15	0.3	0.9	0.3	0.28	0.6	50	6	20,800
BBE-2020S	R0.2	0.4	1.2	0.4	0.37	0.6	50	6	19,600
BBE-2025S	R0.25	0.5	1.5	0.5	0.46	0.6	50	6	19,300
BBE-2030S	R0.3	0.6	1.8	0.6	0.56	0.6	50	6	17,900
BBE-2040S	R0.4	0.8	2.4	0.8	0.76	1	50	6	17,900
BBE-2050S	R0.5	1	3	1	0.95	1	50	6	17,400
BBE-2060S	R0.6	1.2	3.6	1.2	1.15	2	50	6	18,400
BBE-2070S	R0.7	1.4	4.2	1.4	1.35	2	50	6	18,400
BBE-2075S	R0.75	1.5	4.5	1.5	1.45	2	50	6	18,400
BBE-2080S	R0.8	1.6	4.8	1.5	1.55	2	50	6	18,700
BBE-2090S	R0.9	1.8	5.4	1.5	1.75	2	50	6	18,700
BBE-2100S	R1	2	6	1.5	1.95	2	50	6	18,700
BBE-2150S	R1.5	3	9	2	2.95	2	50	6	30,800
BBE-2200S	R2	4	12	2.5	3.95	2.5	50	6	45,300
BBE-2250S	R2.5	5	15	3	4.95	3.5	60	6	54,300
BBE-2300S	R3	6	20	3.5	5.95	3.5	60	6	60,800


※ R0.1 のみ 1 枚刃仕様となります。 One Flute only for R0.1

BRE-2


CBN 2枚刃コーナーR付エンドミル CBN 2 Flutes Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life




 CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角0° Twist Angle 0°
(直刃2枚刃) (2 Flutes Straight Endmill)

 コーナーR許容差 corner R Tolerance
+0.005~-0.005

●切削条件表はP174に記載

●Cutting conditions are recommended on page 174.

単位[寸法:mm/価格:円]

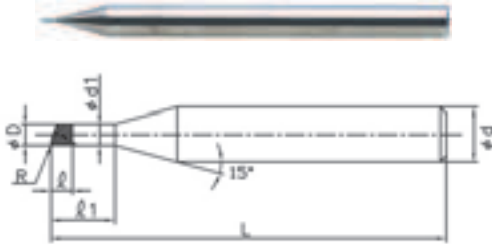
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l_1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BRE-203005S	0.3	R0.05	0.9	0.3	0.26	0.6	50	6	22,000
BRE-204005S	0.4	R0.05	1.2	0.4	0.36	0.6	50	6	20,800
BRE-205010S	0.5	R0.1	1.5	0.5	0.46	0.6	50	6	20,300
BRE-210010S	1	R0.1	3	1	0.95	1	50	6	19,600
BRE-210020S	1	R0.2	3	1	0.95	1	50	6	19,600
BRE-215010S	1.5	R0.1	4.5	1.5	1.45	2	50	6	21,400
BRE-215020S	1.5	R0.2	4.5	1.5	1.45	2	50	6	21,400
BRE-220020S	2	R0.2	6	1.5	1.95	2	50	6	22,500
BRE-220030S	2	R0.3	6	1.5	1.95	2	50	6	22,500
BRE-230020S	3	R0.2	9	2	2.95	2	50	6	29,800
BRE-230030S	3	R0.3	9	2	2.95	2	50	6	29,800
BRE-230050S	3	R0.5	9	2	2.95	2	50	6	29,800
BRE-240003S	4	R0.03	12	2	3.95	2	50	6	37,000
BRE-240020S	4	R0.2	12	2	3.95	2	50	6	37,000
BRE-240030S	4	R0.3	12	2	3.95	2	50	6	37,000
BRE-240050S	4	R0.5	12	2	3.95	2	50	6	37,000
BRE-250003S	5	R0.03	15	2	4.95	2	60	6	38,900
BRE-250020S	5	R0.2	15	2	4.95	2	60	6	38,900
BRE-250030S	5	R0.3	15	2	4.95	2	60	6	38,900
BRE-250050S	5	R0.5	15	2	4.95	2	60	6	38,900
BRE-260003S	6	R0.03	20	2	5.95	2	60	6	44,100
BRE-260020S	6	R0.2	20	2	5.95	2	60	6	44,100
BRE-260030S	6	R0.3	20	2	5.95	2	60	6	44,100
BRE-260050S	6	R0.5	20	2	5.95	2	60	6	44,100

BREF-1

CBN 1枚刃コーナーR付エンドミル CBN 1 Flutes Corner R Endmill

- 高硬度材・焼入れ鋼の直彫り加工。
Direct cutting for Highly hardened material and Quenching steel
- 高精度・高品位・長寿命加工が可能。
Possible to process with high accuracy, high quality and long tool life




CBN CBN立方晶窒化ホウ素 Cubic Boron Nitride

 刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

 柄径の許容差 Shank Diameter Tolerance
d 0~-0.003

 ネジレ角0° Twist Angle 0°
(直刃1枚刃) (1 Flutes Straight Endmill)

 コーナーR許容差 corner R Tolerance
+0.005~-0.005

●切削条件表はP176に記載

●Cutting conditions are recommended on page 176.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

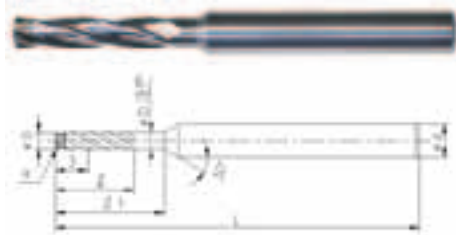
品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	有効長 l1 Effective Length	刃長 l Flute Length	首径 d1 Neck Diameter	CBN層 CBN Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BREF-101001003	0.1	R 0.01	0.3	0.1	0.09	0.25	50	4	40,500
BREF-101001005	0.1	R 0.01	0.5	0.1	0.09	0.25	50	4	41,000
BREF-102001006	0.2	R 0.01	0.6	0.2	0.18	0.4	50	4	38,000
BREF-102001012	0.2	R 0.01	1.2	0.2	0.18	0.4	50	4	38,500
BREF-102002006	0.2	R 0.02	0.6	0.2	0.18	0.4	50	4	37,000
BREF-102002012	0.2	R 0.02	1.2	0.2	0.18	0.4	50	4	37,500
BREF-103001009	0.3	R 0.01	0.9	0.3	0.28	0.6	50	4	36,000
BREF-103001018	0.3	R 0.01	1.8	0.3	0.28	0.6	50	4	36,500
BREF-103002009	0.3	R 0.02	0.9	0.3	0.28	0.6	50	4	34,000
BREF-103002018	0.3	R 0.02	1.8	0.3	0.28	0.6	50	4	34,500
BREF-104001012	0.4	R 0.01	1.2	0.4	0.37	0.6	50	4	29,000
BREF-104001024	0.4	R 0.01	2.4	0.4	0.37	0.6	50	4	29,500
BREF-104002012	0.4	R 0.02	1.2	0.4	0.37	0.6	50	4	27,000
BREF-104002024	0.4	R 0.02	2.4	0.4	0.37	0.6	50	4	27,500
BREF-105001015	0.5	R 0.01	1.5	0.5	0.46	0.6	50	4	26,000
BREF-105001030	0.5	R 0.01	3	0.5	0.46	0.6	50	4	26,500
BREF-105002015	0.5	R 0.02	1.5	0.5	0.46	0.6	50	4	25,000
BREF-105002030	0.5	R 0.02	3	0.5	0.46	0.6	50	4	25,500
BREF-110001030	1	R 0.01	3	1	0.95	1	50	4	24,000
BREF-110001060	1	R 0.01	6	1	0.95	1	50	4	25,000
BREF-110002030	1	R 0.02	3	1	0.95	1	50	4	24,000
BREF-110002060	1	R 0.02	6	1	0.95	1	50	4	25,000

BHR-4

CBN 4枚刃リーマー
CBN 4 Flutes Reamer

■高精度・高品位・長寿命加工が可能

Possible to process with high accuracy, high quality and long tool life



*底刃は付いておりません。
* Bottom flute is not given.



CBN立方晶窒化ホウ素 Cubic Boron Nitride



刃径の許容差 Flute Diameter Tolerance
D +0.004~0



柄径の許容差 Shank Diameter Tolerance
d 0~-0.003



ネジレ角20° Twist Angle 20°



喰付寸法 Chamfer Size
R0.2 φ1.5~φ2.03
R0.3 φ2.1~φ3.99
R0.4 φ4.0~φ4.99
R0.5 φ5.0~φ6.03

●切削条件表はP176に記載

●Cutting conditions are recommended on page 176.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	溝長 ℓ Groove Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BHR-4150	1.5	8	10	50	3	24,000
BHR-4160	1.6	8	10	50	3	24,000
BHR-4170	1.7	8	10	50	3	24,000
BHR-4180	1.8	8	10	50	3	24,000
BHR-4190	1.9	8	10	50	3	24,000
BHR-4198	1.98	13	15	50	3	26,000
BHR-4199	1.99	13	15	50	3	26,000
BHR-4200	2.00	13	15	50	3	26,000
BHR-4201	2.01	13	15	50	3	26,000
BHR-4202	2.02	13	15	50	3	26,000
BHR-4203	2.03	13	15	50	3	26,000
BHR-4210	2.1	13	15	50	3	26,000
BHR-4220	2.2	13	15	50	3	26,000
BHR-4230	2.3	13	15	50	3	26,000
BHR-4240	2.4	13	15	50	3	26,000
BHR-4250	2.5	13	15	50	3	26,700
BHR-4260	2.6	13	15	50	3	26,700
BHR-4270	2.7	13	15	50	3	26,700
BHR-4280	2.8	13	15	50	3	26,700
BHR-4290	2.9	13	15	50	3	26,700
BHR-4298	2.98	18	20	60	3	33,400
BHR-4299	2.99	18	20	60	3	33,400
BHR-4300	3.00	18	20	60	3	33,400
BHR-4301	3.01	18	20	60	3	33,400
BHR-4302	3.02	18	20	60	3	33,400
BHR-4303	3.03	18	20	60	3	33,400
BHR-4310	3.1	18	20	60	4	33,400

BHR-4

品番 Code No.	刃径 D Flute Diameter	溝長 ℓ Groov Length	有効長 ℓ 1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
BHR-4320	3.2	18	20	60	4	33,400
BHR-4330	3.3	18	20	60	4	33,400
BHR-4340	3.4	18	20	60	4	33,400
BHR-4350	3.5	18	20	60	4	35,200
BHR-4360	3.6	18	20	60	4	35,200
BHR-4370	3.7	18	20	60	4	35,200
BHR-4380	3.8	18	20	60	4	35,200
BHR-4390	3.9	18	20	60	4	35,200
BHR-4398	3.98	23	25	60	4	40,000
BHR-4399	3.99	23	25	60	4	40,000
BHR-4400	4.00	23	25	60	4	40,000
BHR-4401	4.01	23	25	60	4	40,000
BHR-4402	4.02	23	25	60	4	40,000
BHR-4403	4.03	23	25	60	4	40,000
BHR-4410	4.1	23	25	60	6	40,000
BHR-4420	4.2	23	25	60	6	40,000
BHR-4430	4.3	23	25	60	6	40,000
BHR-4440	4.4	23	25	60	6	40,000
BHR-4450	4.5	23	25	60	6	42,200
BHR-4460	4.6	23	25	60	6	42,200
BHR-4470	4.7	23	25	60	6	42,200
BHR-4480	4.8	23	25	60	6	42,200
BHR-4490	4.9	23	25	60	6	42,200
BHR-4498	4.98	28	30	70	6	44,100
BHR-4499	4.99	28	30	70	6	44,100
BHR-4500	5.00	28	30	70	6	44,100
BHR-4501	5.01	28	30	70	6	44,100
BHR-4502	5.02	28	30	70	6	44,100
BHR-4503	5.03	28	30	70	6	44,100
BHR-4510	5.1	28	30	70	6	44,100
BHR-4520	5.2	28	30	70	6	44,100
BHR-4530	5.3	28	30	70	6	44,100
BHR-4540	5.4	28	30	70	6	44,100
BHR-4550	5.5	28	30	70	6	46,500
BHR-4560	5.6	28	30	70	6	46,500
BHR-4570	5.7	28	30	70	6	46,500
BHR-4580	5.8	28	30	70	6	46,500
BHR-4590	5.9	28	30	70	6	46,500
BHR-4598	5.98	28	30	70	6	50,000
BHR-4599	5.99	28	30	70	6	50,000
BHR-4600	6.00	28	30	70	6	50,000
BHR-4601	6.01	28	30	70	6	50,000
BHR-4602	6.02	28	30	70	6	50,000
BHR-4603	6.03	28	30	70	6	50,000

超硬製品

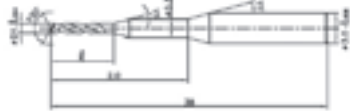
Tungsten Carbide

KDR-2

超硬ルーマ型ドリル
Tungsten Carbide 2 Flutes Micro Drill



- 刃径0.03及び0.04の形状
- Shape of Flute Diameter 0.03 and 0.04



- 刃径0.05以上の形状
- Shape of Flute Diameter more than 0.05



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D1 0〜-0.004



柄径の許容差 Shank Diameter Tolerance
d 0〜-0.006



ネジレ角30° Twist Angle30°



先端角度120° Point Angle 120°

- 切削条件表はP177に記載
- Cutting conditions are recommended on page 177.

単位[寸法: mm/価格: 円]

Unit [size: mm./Retail Price: JPY]

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2003	0.03	0.3	38	3	18,000
KDR-2004	0.04	0.4	38	3	12,000
KDR-2005	0.05	0.5	38	3	10,200
KDR-2006	0.06	0.6	38	3	9,340
KDR-2007	0.07	0.7	38	3	8,400
KDR-2008	0.08	0.8	38	3	7,200
KDR-2009	0.09	0.9	38	3	6,300
KDR-2010	0.1	1.2	38	3	4,870
KDR-2011	0.11	1.2	38	3	4,870
KDR-2012	0.12	1.4	38	3	4,870
KDR-2013	0.13	1.4	38	3	4,870
KDR-2014	0.14	1.4	38	3	4,870
KDR-2015	0.15	1.8	38	3	4,870
KDR-2016	0.16	1.8	38	3	4,870
KDR-2017	0.17	1.8	38	3	4,870
KDR-2018	0.18	2.1	38	3	4,440
KDR-2019	0.19	2.1	38	3	4,440
KDR-2020	0.2	2.4	38	3	4,440
KDR-2021	0.21	2.4	38	3	4,000
KDR-2022	0.22	2.6	38	3	4,000

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2023	0.23	2.6	38	3	4,000
KDR-2024	0.24	2.6	38	3	4,000
KDR-2025	0.25	3	38	3	4,000
KDR-2026	0.26	3	38	3	4,000
KDR-2027	0.27	3	38	3	4,000
KDR-2028	0.28	3.3	38	3	4,000
KDR-2029	0.29	3.3	38	3	4,000
KDR-2030	0.3	5	38	3	4,000
KDR-2031	0.31	5	38	3	3,000
KDR-2032	0.32	5	38	3	3,000
KDR-2033	0.33	5	38	3	3,000
KDR-2034	0.34	5	38	3	3,000
KDR-2035	0.35	5	38	3	3,000
KDR-2036	0.36	5	38	3	3,000
KDR-2037	0.37	5	38	3	3,000
KDR-2038	0.38	5	38	3	3,000
KDR-2039	0.39	5	38	3	3,000
KDR-2040	0.4	6	38	3	3,000
KDR-2041	0.41	6	38	3	3,000
KDR-2042	0.42	6	38	3	3,000
KDR-2043	0.43	6	38	3	3,000
KDR-2044	0.44	6	38	3	3,000
KDR-2045	0.45	6	38	3	3,000
KDR-2046	0.46	6	38	3	3,000
KDR-2047	0.47	6	38	3	3,000
KDR-2048	0.48	6	38	3	3,000
KDR-2049	0.49	6	38	3	3,000
KDR-2050	0.5	6	38	3	3,000
KDR-2051	0.51	6	38	3	3,000
KDR-2052	0.52	6	38	3	3,000
KDR-2053	0.53	6	38	3	3,000
KDR-2054	0.54	6	38	3	3,000
KDR-2055	0.55	6	38	3	3,000
KDR-2056	0.56	6	38	3	3,000
KDR-2057	0.57	6	38	3	3,000
KDR-2058	0.58	6	38	3	3,000
KDR-2059	0.59	6	38	3	3,000
KDR-2060	0.6	7	38	3	3,000
KDR-2061	0.61	7	38	3	3,000
KDR-2062	0.62	7	38	3	3,000
KDR-2063	0.63	7	38	3	3,000
KDR-2064	0.64	7	38	3	3,000
KDR-2065	0.65	7	38	3	3,000
KDR-2066	0.66	7	38	3	3,000
KDR-2067	0.67	7	38	3	3,000
KDR-2068	0.68	7	38	3	3,000
KDR-2069	0.69	7	38	3	3,000
KDR-2070	0.7	8	38	3	3,000

KDR-2

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2071	0.71	8	38	3	3,000
KDR-2072	0.72	8	38	3	3,000
KDR-2073	0.73	8	38	3	3,000
KDR-2074	0.74	8	38	3	3,000
KDR-2075	0.75	8	38	3	3,000
KDR-2076	0.76	8	38	3	3,000
KDR-2077	0.77	8	38	3	3,000
KDR-2078	0.78	8	38	3	3,000
KDR-2079	0.79	8	38	3	3,000
KDR-2080	0.8	8	38	3	3,000
KDR-2081	0.81	8	38	3	3,000
KDR-2082	0.82	8	38	3	3,000
KDR-2083	0.83	8	38	3	3,000
KDR-2084	0.84	8	38	3	3,000
KDR-2085	0.85	8	38	3	3,000
KDR-2086	0.86	8	38	3	3,000
KDR-2087	0.87	8	38	3	3,000
KDR-2088	0.88	8	38	3	3,000
KDR-2089	0.89	8	38	3	3,000
KDR-2090	0.9	8	38	3	3,000
KDR-2091	0.91	8	38	3	3,000
KDR-2092	0.92	8	38	3	3,000
KDR-2093	0.93	8	38	3	3,000
KDR-2094	0.94	8	38	3	3,000
KDR-2095	0.95	8	38	3	3,000
KDR-2096	0.96	8	38	3	3,000
KDR-2097	0.97	8	38	3	3,000
KDR-2098	0.98	8	38	3	3,000
KDR-2099	0.99	8	38	3	3,000
KDR-2100	1	10	38	3	3,000
KDR-2101	1.01	10	38	3	3,000
KDR-2102	1.02	10	38	3	3,000
KDR-2103	1.03	10	38	3	3,000
KDR-2104	1.04	10	38	3	3,000
KDR-2105	1.05	10	38	3	3,000
KDR-2106	1.06	10	38	3	3,000
KDR-2107	1.07	10	38	3	3,000
KDR-2108	1.08	10	38	3	3,000
KDR-2109	1.09	10	38	3	3,000
KDR-2110	1.1	10	38	3	3,000
KDR-2111	1.11	10	38	3	3,000
KDR-2112	1.12	10	38	3	3,000
KDR-2113	1.13	10	38	3	3,000
KDR-2114	1.14	10	38	3	3,000
KDR-2115	1.15	10	38	3	3,000
KDR-2116	1.16	10	38	3	3,000
KDR-2117	1.17	10	38	3	3,000
KDR-2118	1.18	10	38	3	3,000

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2119	1.19	10	38	3	3,000
KDR-2120	1.2	10	38	3	3,000
KDR-2121	1.21	10	38	3	3,000
KDR-2122	1.22	10	38	3	3,000
KDR-2123	1.23	10	38	3	3,000
KDR-2124	1.24	10	38	3	3,000
KDR-2125	1.25	10	38	3	3,000
KDR-2126	1.26	10	38	3	3,000
KDR-2127	1.27	10	38	3	3,000
KDR-2128	1.28	10	38	3	3,000
KDR-2129	1.29	10	38	3	3,000
KDR-2130	1.3	10	38	3	3,000
KDR-2131	1.31	10	38	3	3,000
KDR-2132	1.32	10	38	3	3,000
KDR-2133	1.33	10	38	3	3,000
KDR-2134	1.34	10	38	3	3,000
KDR-2135	1.35	10	38	3	3,000
KDR-2136	1.36	10	38	3	3,000
KDR-2137	1.37	10	38	3	3,000
KDR-2138	1.38	10	38	3	3,000
KDR-2139	1.39	10	38	3	3,000
KDR-2140	1.4	10	38	3	3,000
KDR-2141	1.41	10	38	3	3,000
KDR-2142	1.42	10	38	3	3,000
KDR-2143	1.43	10	38	3	3,000
KDR-2144	1.44	10	38	3	3,000
KDR-2145	1.45	10	38	3	3,000
KDR-2146	1.46	10	38	3	3,000
KDR-2147	1.47	10	38	3	3,000
KDR-2148	1.48	10	38	3	3,000
KDR-2149	1.49	10	38	3	3,000
KDR-2150	1.5	10	38	3	3,000
KDR-2151	1.51	10	38	3	3,000
KDR-2152	1.52	10	38	3	3,000
KDR-2153	1.53	10	38	3	3,000
KDR-2154	1.54	10	38	3	3,000
KDR-2155	1.55	10	38	3	3,000
KDR-2156	1.56	10	38	3	3,000
KDR-2157	1.57	10	38	3	3,000
KDR-2158	1.58	10	38	3	3,000
KDR-2159	1.59	10	38	3	3,000
KDR-2160	1.6	22	50	3	3,470
KDR-2161	1.61	22	50	3	3,470
KDR-2162	1.62	22	50	3	3,470
KDR-2163	1.63	22	50	3	3,470
KDR-2164	1.64	22	50	3	3,470
KDR-2165	1.65	22	50	3	3,470
KDR-2166	1.66	22	50	3	3,470

KDR-2

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2167	1.67	22	50	3	3,470
KDR-2168	1.68	22	50	3	3,470
KDR-2169	1.69	22	50	3	3,470
KDR-2170	1.7	22	50	3	3,470
KDR-2171	1.71	22	50	3	3,470
KDR-2172	1.72	22	50	3	3,470
KDR-2173	1.73	22	50	3	3,470
KDR-2174	1.74	22	50	3	3,470
KDR-2175	1.75	22	50	3	3,470
KDR-2176	1.76	22	50	3	3,470
KDR-2177	1.77	22	50	3	3,470
KDR-2178	1.78	22	50	3	3,470
KDR-2179	1.79	22	50	3	3,470
KDR-2180	1.8	22	50	3	3,470
KDR-2181	1.81	22	50	3	3,470
KDR-2182	1.82	22	50	3	3,470
KDR-2183	1.83	22	50	3	3,470
KDR-2184	1.84	22	50	3	3,470
KDR-2185	1.85	22	50	3	3,470
KDR-2186	1.86	22	50	3	3,470
KDR-2187	1.87	22	50	3	3,470
KDR-2188	1.88	22	50	3	3,470
KDR-2189	1.89	22	50	3	3,470
KDR-2190	1.9	22	50	3	3,470
KDR-2191	1.91	22	50	3	3,470
KDR-2192	1.92	22	50	3	3,470
KDR-2193	1.93	22	50	3	3,470
KDR-2194	1.94	22	50	3	3,470
KDR-2195	1.95	22	50	3	3,470
KDR-2196	1.96	22	50	3	3,470
KDR-2197	1.97	22	50	3	3,470
KDR-2198	1.98	22	50	3	3,470
KDR-2199	1.99	22	50	3	3,470
KDR-2200	2	22	50	3	3,470
KDR-2201	2.01	22	50	3	3,470
KDR-2202	2.02	22	50	3	3,470
KDR-2203	2.03	22	50	3	3,470
KDR-2204	2.04	22	50	3	3,470
KDR-2205	2.05	22	50	3	3,470
KDR-2206	2.06	22	50	3	3,470
KDR-2207	2.07	22	50	3	3,470
KDR-2208	2.08	22	50	3	3,470
KDR-2209	2.09	22	50	3	3,470
KDR-2210	2.1	22	50	3	3,470
KDR-2211	2.11	22	50	3	3,470
KDR-2212	2.12	22	50	3	3,470
KDR-2213	2.13	22	50	3	3,470
KDR-2214	2.14	22	50	3	3,470

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2215	2.15	22	50	3	3,470
KDR-2216	2.16	22	50	3	3,470
KDR-2217	2.17	22	50	3	3,470
KDR-2218	2.18	22	50	3	3,470
KDR-2219	2.19	22	50	3	3,470
KDR-2220	2.2	22	50	3	3,600
KDR-2221	2.21	22	50	3	3,600
KDR-2222	2.22	22	50	3	3,600
KDR-2223	2.23	22	50	3	3,600
KDR-2224	2.24	22	50	3	3,600
KDR-2225	2.25	22	50	3	3,600
KDR-2226	2.26	22	50	3	3,600
KDR-2227	2.27	22	50	3	3,600
KDR-2228	2.28	22	50	3	3,600
KDR-2229	2.29	22	50	3	3,600
KDR-2230	2.3	22	50	3	3,600
KDR-2231	2.31	22	50	3	3,600
KDR-2232	2.32	22	50	3	3,600
KDR-2233	2.33	22	50	3	3,600
KDR-2234	2.34	22	50	3	3,600
KDR-2235	2.35	22	50	3	3,600
KDR-2236	2.36	22	50	3	3,600
KDR-2237	2.37	22	50	3	3,600
KDR-2238	2.38	22	50	3	3,600
KDR-2239	2.39	22	50	3	3,600
KDR-2240	2.4	22	50	3	3,600
KDR-2241	2.41	22	50	3	3,600
KDR-2242	2.42	22	50	3	3,600
KDR-2243	2.43	22	50	3	3,600
KDR-2244	2.44	22	50	3	3,600
KDR-2245	2.45	22	50	3	3,600
KDR-2246	2.46	22	50	3	3,600
KDR-2247	2.47	22	50	3	3,600
KDR-2248	2.48	22	50	3	3,600
KDR-2249	2.49	22	50	3	3,600
KDR-2250	2.5	22	50	3	3,600
KDR-2251	2.51	22	50	3	3,600
KDR-2252	2.52	22	50	3	3,600
KDR-2253	2.53	22	50	3	3,600
KDR-2254	2.54	22	50	3	3,600
KDR-2255	2.55	22	50	3	3,600
KDR-2256	2.56	22	50	3	3,600
KDR-2257	2.57	22	50	3	3,600
KDR-2258	2.58	22	50	3	3,600
KDR-2259	2.59	22	50	3	3,600
KDR-2260	2.6	22	50	3	3,600
KDR-2261	2.61	22	50	3	3,600
KDR-2262	2.62	22	50	3	3,600

KDR-2

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-2263	2.63	22	50	3	3,600
KDR-2264	2.64	22	50	3	3,600
KDR-2265	2.65	22	50	3	3,600
KDR-2266	2.66	22	50	3	3,600
KDR-2267	2.67	22	50	3	3,600
KDR-2268	2.68	22	50	3	3,600
KDR-2269	2.69	22	50	3	3,600
KDR-2270	2.7	25	50	3	3,740
KDR-2271	2.71	25	50	3	3,740
KDR-2272	2.72	25	50	3	3,740
KDR-2273	2.73	25	50	3	3,740
KDR-2274	2.74	25	50	3	3,740
KDR-2275	2.75	25	50	3	3,740
KDR-2276	2.76	25	50	3	3,740
KDR-2277	2.77	25	50	3	3,740
KDR-2278	2.78	25	50	3	3,740
KDR-2279	2.79	25	50	3	3,740
KDR-2280	2.8	25	50	3	3,740
KDR-2281	2.81	25	50	3	3,740
KDR-2282	2.82	25	50	3	3,740
KDR-2283	2.83	25	50	3	3,740
KDR-2284	2.84	25	50	3	3,740
KDR-2285	2.85	25	50	3	3,740
KDR-2286	2.86	25	50	3	3,740
KDR-2287	2.87	25	50	3	3,740
KDR-2288	2.88	25	50	3	3,740
KDR-2289	2.89	25	50	3	3,740
KDR-2290	2.9	25	50	3	3,740
KDR-2291	2.91	25	50	3	3,740
KDR-2292	2.92	25	50	3	3,740
KDR-2293	2.93	25	50	3	3,740
KDR-2294	2.94	25	50	3	3,740
KDR-2295	2.95	25	50	3	3,740
KDR-2296	2.96	25	50	3	3,740
KDR-2297	2.97	25	50	3	3,740
KDR-2298	2.98	25	50	3	3,740
KDR-2299	2.99	25	50	3	3,740
KDR-2300	3	25	50	3	3,740

KDRLS-2

超硬ロングシャンクドリル
Tungsten Carbide Long Shank Drill

- 深掘加工用に全長を長くしました。
Lengthened full length for deep processing.



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D1 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.006



ネジレ角30° Twist Angle30°



先端角度120° Point Angle120°

- 切削条件表はP177に記載
- Cutting conditions are recommended on page 177.

単位[寸法 :mm/価格 :円]

Unit [size :mm/ Retail Price :JPY]

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDRLS-203002	0.3	2	100	3	9,400
KDRLS-203005	0.3	5	100	3	10,000
KDRLS-203502	0.35	2	100	3	9,400
KDRLS-203503	0.35	5	100	3	10,000
KDRLS-204003	0.4	3	100	3	9,400
KDRLS-204006	0.4	6	100	3	10,000
KDRLS-204503	0.45	3	100	3	9,400
KDRLS-204506	0.45	6	100	3	10,000
KDRLS-205003	0.5	3	100	3	8,700
KDRLS-205006	0.5	6	100	3	9,400
KDRLS-205503	0.55	3	100	3	8,700
KDRLS-205506	0.55	6	100	3	9,400
KDRLS-206003	0.6	3	100	3	8,700
KDRLS-206006	0.6	6	100	3	9,400
KDRLS-206503	0.65	3	100	3	8,700
KDRLS-206506	0.65	6	100	3	9,400
KDRLS-207004	0.7	4	100	3	8,700
KDRLS-207008	0.7	8	100	3	9,400
KDRLS-207504	0.75	4	100	3	8,700
KDRLS-207508	0.75	8	100	3	9,400

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDRLS-208004	0.8	4	100	3	8,700
KDRLS-208008	0.8	8	100	3	9,400
KDRLS-208504	0.85	4	100	3	8,700
KDRLS-208508	0.85	8	100	3	9,400
KDRLS-209004	0.9	4	100	3	8,700
KDRLS-209008	0.9	8	100	3	9,400
KDRLS-209504	0.95	4	100	3	8,700
KDRLS-209508	0.95	8	100	3	9,400
KDRLS-210005	1	5	100	3	8,400
KDRLS-210010	1	10	100	3	9,000
KDRLS-210505	1.05	5	100	3	8,400
KDRLS-210510	1.05	10	100	3	9,000
KDRLS-211005	1.1	5	100	3	8,400
KDRLS-211010	1.1	10	100	3	9,000
KDRLS-211505	1.15	5	100	3	8,400
KDRLS-211510	1.15	10	100	3	9,000
KDRLS-212005	1.2	5	100	3	8,400
KDRLS-212010	1.2	10	100	3	9,000
KDRLS-212505	1.25	5	100	3	8,400
KDRLS-212510	1.25	10	100	3	9,000
KDRLS-213005	1.3	5	100	3	8,400
KDRLS-213010	1.3	10	100	3	9,000
KDRLS-213505	1.35	5	100	3	8,400
KDRLS-213510	1.35	10	100	3	9,000
KDRLS-214005	1.4	5	100	3	8,400
KDRLS-214010	1.4	10	100	3	9,000
KDRLS-214505	1.45	5	100	3	8,400
KDRLS-214510	1.45	10	100	3	9,000
KDRLS-215005	1.5	5	100	3	8,400
KDRLS-215010	1.5	10	100	3	9,000
KDRLS-215505	1.55	5	100	3	8,400
KDRLS-215510	1.55	10	100	3	9,000
KDRLS-216007	1.6	7	100	3	8,700
KDRLS-216015	1.6	15	100	3	9,500
KDRLS-216507	1.65	7	100	3	8,700
KDRLS-216515	1.65	15	100	3	9,500
KDRLS-217007	1.7	7	100	3	8,700
KDRLS-217015	1.7	15	100	3	9,500
KDRLS-217507	1.75	7	100	3	8,700
KDRLS-217515	1.75	15	100	3	9,500
KDRLS-218007	1.8	7	100	3	8,700
KDRLS-218015	1.8	15	100	3	9,500
KDRLS-218507	1.85	7	100	3	8,700
KDRLS-218515	1.85	15	100	3	9,500
KDRLS-219007	1.9	7	100	3	8,700
KDRLS-219015	1.9	15	100	3	9,500
KDRLS-219507	1.95	7	100	3	8,700
KDRLS-219515	1.95	15	100	3	9,500

KDRLS-2

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDRLS-220010	2	10	100	3	8,700
KDRLS-220020	2	20	100	3	10,000
KDRLS-221010	2.1	10	100	3	8,700
KDRLS-221020	2.1	20	100	3	10,000
KDRLS-222010	2.2	10	100	3	8,700
KDRLS-222020	2.2	20	100	3	10,000
KDRLS-223010	2.3	10	100	3	8,700
KDRLS-223020	2.3	20	100	3	10,000
KDRLS-224012	2.4	12	100	3	9,000
KDRLS-224024	2.4	24	100	3	10,500
KDRLS-225012	2.5	12	100	3	9,000
KDRLS-225024	2.5	24	100	3	10,500
KDRLS-226012	2.6	12	100	3	9,000
KDRLS-226024	2.6	24	100	3	10,500
KDRLS-227012	2.7	12	100	3	9,000
KDRLS-227024	2.7	24	100	3	10,500
KDRLS-228012	2.8	12	100	3	9,000
KDRLS-228024	2.8	24	100	3	105,00
KDRLS-229012	2.9	12	100	3	9,000
KDRLS-229024	2.9	24	100	3	10,500
KDRLS-230012	3	12	100	3	9,000
KDRLS-230024	3	24	100	3	10,500

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price

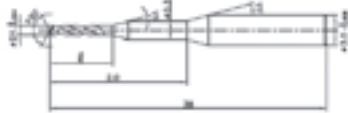
超硬製品
Tungsten Carbide

KDR-DLC

超硬ルーマ型ドリル DLC
Tungsten Carbide 2 Flutes Micro Drill DLC Coating



- 刃径0.03及び0.04の形状
- Shape of Flute Diameter 0.03 and 0.04



- 刃径0.05以上の形状
- Shape of Flute Diameter more than 0.05



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D1 0~-0.004



柄径の許容差 Shank Diameter Tolerance
d 0~-0.006



ネジレ角30° Twist Angle 30°



先端角度120° Point Angle 120°



DLCコート DLC Coating

- 切削条件表はP171に記載
- Cutting conditions are recommended on page 177.

単位[寸法 : mm / 価格 : 円]

Unit [size : mm / Retail Price : JPY]

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-DLC-2008	0.08	0.8	38	3	9,870
KDR-DLC-2009	0.09	0.9	38	3	9,000
KDR-DLC-2010	0.1	1.2	38	3	7,540
KDR-DLC-2011	0.11	1.2	38	3	7,540
KDR-DLC-2012	0.12	1.4	38	3	7,540
KDR-DLC-2013	0.13	1.4	38	3	7,540
KDR-DLC-2014	0.14	1.4	38	3	7,540
KDR-DLC-2015	0.15	1.8	38	3	7,540
KDR-DLC-2016	0.16	1.8	38	3	7,540
KDR-DLC-2017	0.17	1.8	38	3	7,540
KDR-DLC-2018	0.18	2.1	38	3	6,670
KDR-DLC-2019	0.19	2.1	38	3	6,670
KDR-DLC-2020	0.2	2.4	38	3	6,670
KDR-DLC-2021	0.21	2.4	38	3	6,670
KDR-DLC-2022	0.22	2.6	38	3	6,670
KDR-DLC-2023	0.23	2.6	38	3	6,670
KDR-DLC-2024	0.24	2.6	38	3	6,670
KDR-DLC-2025	0.25	3	38	3	6,670
KDR-DLC-2026	0.26	3	38	3	6,670
KDR-DLC-2027	0.27	3	38	3	6,670

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-DLC-2028	0.28	3.3	38	3	6,670
KDR-DLC-2029	0.29	3.3	38	3	6,670
KDR-DLC-2030	0.3	5	38	3	6,670
KDR-DLC-2031	0.31	5	38	3	5,670
KDR-DLC-2032	0.32	5	38	3	5,670
KDR-DLC-2033	0.33	5	38	3	5,670
KDR-DLC-2034	0.34	5	38	3	5,670
KDR-DLC-2035	0.35	5	38	3	5,670
KDR-DLC-2036	0.36	5	38	3	5,670
KDR-DLC-2037	0.37	5	38	3	5,670
KDR-DLC-2038	0.38	5	38	3	5,670
KDR-DLC-2039	0.39	5	38	3	5,670
KDR-DLC-2040	0.4	6	38	3	5,670
KDR-DLC-2041	0.41	6	38	3	5,670
KDR-DLC-2042	0.42	6	38	3	5,670
KDR-DLC-2043	0.43	6	38	3	5,670
KDR-DLC-2044	0.44	6	38	3	5,670
KDR-DLC-2045	0.45	6	38	3	5,670
KDR-DLC-2046	0.46	6	38	3	5,670
KDR-DLC-2047	0.47	6	38	3	5,670
KDR-DLC-2048	0.48	6	38	3	5,670
KDR-DLC-2049	0.49	6	38	3	5,670
KDR-DLC-2050	0.5	6	38	3	5,670
KDR-DLC-2051	0.51	6	38	3	5,670
KDR-DLC-2052	0.52	6	38	3	5,670
KDR-DLC-2053	0.53	6	38	3	5,670
KDR-DLC-2054	0.54	6	38	3	5,670
KDR-DLC-2055	0.55	6	38	3	5,670
KDR-DLC-2056	0.56	6	38	3	5,670
KDR-DLC-2057	0.57	6	38	3	5,670
KDR-DLC-2058	0.58	6	38	3	5,670
KDR-DLC-2059	0.59	6	38	3	5,670
KDR-DLC-2060	0.6	7	38	3	5,670
KDR-DLC-2061	0.61	7	38	3	5,670
KDR-DLC-2062	0.62	7	38	3	5,670
KDR-DLC-2063	0.63	7	38	3	5,670
KDR-DLC-2064	0.64	7	38	3	5,670
KDR-DLC-2065	0.65	7	38	3	5,670
KDR-DLC-2066	0.66	7	38	3	5,670
KDR-DLC-2067	0.67	7	38	3	5,670
KDR-DLC-2068	0.68	7	38	3	5,670
KDR-DLC-2069	0.69	7	38	3	5,670
KDR-DLC-2070	0.7	8	38	3	5,670
KDR-DLC-2071	0.71	8	38	3	5,670
KDR-DLC-2072	0.72	8	38	3	5,670
KDR-DLC-2073	0.73	8	38	3	5,670
KDR-DLC-2074	0.74	8	38	3	5,670
KDR-DLC-2075	0.75	8	38	3	5,670

KDR-DLC

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-DLC-2076	0.76	8	38	3	5,670
KDR-DLC-2077	0.77	8	38	3	5,670
KDR-DLC-2078	0.78	8	38	3	5,670
KDR-DLC-2079	0.79	8	38	3	5,670
KDR-DLC-2080	0.8	8	38	3	5,670
KDR-DLC-2081	0.81	8	38	3	5,670
KDR-DLC-2082	0.82	8	38	3	5,670
KDR-DLC-2083	0.83	8	38	3	5,670
KDR-DLC-2084	0.84	8	38	3	5,670
KDR-DLC-2085	0.85	8	38	3	5,670
KDR-DLC-2086	0.86	8	38	3	5,670
KDR-DLC-2087	0.87	8	38	3	5,670
KDR-DLC-2088	0.88	8	38	3	5,670
KDR-DLC-2089	0.89	8	38	3	5,670
KDR-DLC-2090	0.9	8	38	3	5,670
KDR-DLC-2091	0.91	8	38	3	5,670
KDR-DLC-2092	0.92	8	38	3	5,670
KDR-DLC-2093	0.93	8	38	3	5,670
KDR-DLC-2094	0.94	8	38	3	5,670
KDR-DLC-2095	0.95	8	38	3	5,670
KDR-DLC-2096	0.96	8	38	3	5,670
KDR-DLC-2097	0.97	8	38	3	5,670
KDR-DLC-2098	0.98	8	38	3	5,670
KDR-DLC-2099	0.99	8	38	3	5,670
KDR-DLC-2100	1	10	38	3	5,670
KDR-DLC-2105	1.05	10	38	3	5,670
KDR-DLC-2110	1.1	10	38	3	5,670
KDR-DLC-2115	1.15	10	38	3	5,670
KDR-DLC-2120	1.2	10	38	3	5,670
KDR-DLC-2125	1.25	10	38	3	5,670
KDR-DLC-2130	1.3	10	38	3	5,670
KDR-DLC-2135	1.35	10	38	3	5,670
KDR-DLC-2140	1.4	10	38	3	5,670
KDR-DLC-2145	1.45	10	38	3	5,670
KDR-DLC-2150	1.5	10	38	3	5,670
KDR-DLC-2155	1.55	10	38	3	5,670
KDR-DLC-2160	1.6	22	50	3	6,140
KDR-DLC-2165	1.65	22	50	3	6,140
KDR-DLC-2170	1.7	22	50	3	6,140
KDR-DLC-2175	1.75	22	50	3	6,140
KDR-DLC-2180	1.8	22	50	3	6,140
KDR-DLC-2185	1.85	22	50	3	6,140
KDR-DLC-2190	1.9	22	50	3	6,140
KDR-DLC-2195	1.95	22	50	3	6,140
KDR-DLC-2200	2	22	50	3	6,140
KDR-DLC-2205	2.05	22	50	3	6,140
KDR-DLC-2210	2.1	22	50	3	6,140
KDR-DLC-2215	2.15	22	50	3	6,140

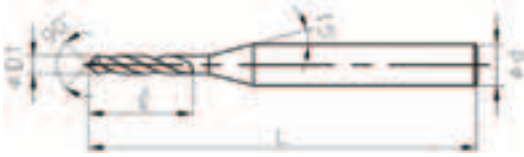
品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-DLC-2220	2.2	22	50	3	6,270
KDR-DLC-2225	2.25	22	50	3	6,270
KDR-DLC-2230	2.3	22	50	3	6,270
KDR-DLC-2235	2.35	22	50	3	6,270
KDR-DLC-2240	2.4	22	50	3	6,270
KDR-DLC-2245	2.45	22	50	3	6,270
KDR-DLC-2250	2.5	22	50	3	6,270
KDR-DLC-2255	2.55	22	50	3	6,270
KDR-DLC-2260	2.6	22	50	3	6,270
KDR-DLC-2265	2.65	22	50	3	6,270
KDR-DLC-2270	2.7	25	50	3	6,400
KDR-DLC-2275	2.75	25	50	3	6,400
KDR-DLC-2280	2.8	25	50	3	6,400
KDR-DLC-2285	2.85	25	50	3	6,400
KDR-DLC-2290	2.9	25	50	3	6,400
KDR-DLC-2295	2.95	25	50	3	6,400
KDR-DLC-2300	3	25	50	3	6,400

超硬製品

Tungsten Carbide

KDR-90

超硬ルーメ型ドリル
Tungsten Carbide 2 Flutes Micro Drill



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D1 0~-0.004



柄径の許容差 Shank Diameter Tolerance
d 0~-0.006



ネジレ角30° Twist Angle 30°



先端角度90° Point Angle 90°

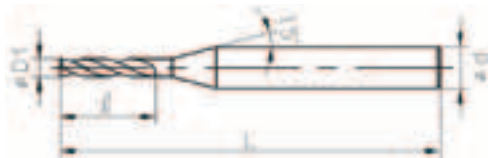
● 切削条件表はP177に記載
● Cutting conditions are recommended on page 177. 単位[寸法: mm / 価格: 円]
Unit [size: mm / Retail Price: JPY]

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-90-2050	0.5	5	38	3	3,590
KDR-90-2051	0.51	5	38	3	3,590
KDR-90-2052	0.52	5	38	3	3,590
KDR-90-2053	0.53	5	38	3	3,590
KDR-90-2054	0.54	5	38	3	3,590
KDR-90-2055	0.55	5	38	3	3,590
KDR-90-2056	0.56	5	38	3	3,590
KDR-90-2057	0.57	5	38	3	3,590
KDR-90-2058	0.58	5	38	3	3,590
KDR-90-2059	0.59	5	38	3	3,590
KDR-90-2060	0.6	6	38	3	3,590
KDR-90-2061	0.61	6	38	3	3,590
KDR-90-2062	0.62	6	38	3	3,590
KDR-90-2063	0.63	6	38	3	3,590
KDR-90-2064	0.64	6	38	3	3,590
KDR-90-2065	0.65	6	38	3	3,590
KDR-90-2066	0.66	6	38	3	3,590
KDR-90-2067	0.67	6	38	3	3,590
KDR-90-2068	0.68	6	38	3	3,590
KDR-90-2069	0.69	6	38	3	3,590

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-90-2070	0.7	7	38	3	3,590
KDR-90-2071	0.71	7	38	3	3,590
KDR-90-2072	0.72	7	38	3	3,590
KDR-90-2073	0.73	7	38	3	3,590
KDR-90-2074	0.74	7	38	3	3,590
KDR-90-2075	0.75	7	38	3	3,590
KDR-90-2076	0.76	7	38	3	3,590
KDR-90-2077	0.77	7	38	3	3,590
KDR-90-2078	0.78	7	38	3	3,590
KDR-90-2079	0.79	7	38	3	3,590
KDR-90-2080	0.8	7	38	3	3,590
KDR-90-2081	0.81	7	38	3	3,590
KDR-90-2082	0.82	7	38	3	3,590
KDR-90-2083	0.83	7	38	3	3,590
KDR-90-2084	0.84	7	38	3	3,590
KDR-90-2085	0.85	7	38	3	3,590
KDR-90-2086	0.86	7	38	3	3,590
KDR-90-2087	0.87	7	38	3	3,590
KDR-90-2088	0.88	7	38	3	3,590
KDR-90-2089	0.89	7	38	3	3,590
KDR-90-2090	0.9	7	38	3	3,590
KDR-90-2091	0.91	7	38	3	3,590
KDR-90-2092	0.92	7	38	3	3,590
KDR-90-2093	0.93	7	38	3	3,590
KDR-90-2094	0.94	7	38	3	3,590
KDR-90-2095	0.95	7	38	3	3,590
KDR-90-2096	0.96	7	38	3	3,590
KDR-90-2097	0.97	7	38	3	3,590
KDR-90-2098	0.98	7	38	3	3,590
KDR-90-2099	0.99	7	38	3	3,590
KDR-90-2100	1	9	38	3	3,590
KDR-90-2105	1.05	9	38	3	3,590
KDR-90-2110	1.1	9	38	3	3,590
KDR-90-2115	1.15	9	38	3	3,590
KDR-90-2120	1.2	9	38	3	3,590
KDR-90-2125	1.25	9	38	3	3,590
KDR-90-2130	1.3	9	38	3	3,590
KDR-90-2135	1.35	9	38	3	3,590
KDR-90-2140	1.4	9	38	3	3,590
KDR-90-2145	1.45	9	38	3	3,590
KDR-90-2150	1.5	9	38	3	3,590
KDR-90-2155	1.55	9	38	3	3,590
KDR-90-2160	1.6	21	50	3	3,590
KDR-90-2165	1.65	21	50	3	4,070
KDR-90-2170	1.7	21	50	3	4,070
KDR-90-2175	1.75	21	50	3	4,070
KDR-90-2180	1.8	21	50	3	4,070
KDR-90-2185	1.85	21	50	3	4,070

KDR-F

超硬レーマ型ドリル
Tungsten Carbide 2 Flutes Micro Drill



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D1 0〜-0.004



柄径の許容差 Shank Diameter Tolerance
d 0〜-0.006



ネジレ角30° Twist Angle30°



先端角度180° Point Angle 180°

●切削条件表はP177に記載
●Cutting conditions are recommended on page 177. 単位[寸法: mm/価格: 円]
Unit [size: mm./Retail Price: JPY]

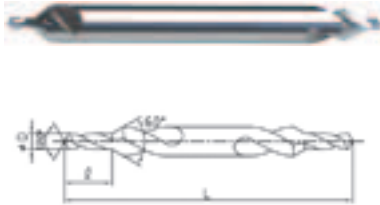
品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-F-2050	0.5	5	38	3	3,590
KDR-F-2051	0.51	5	38	3	3,590
KDR-F-2052	0.52	5	38	3	3,590
KDR-F-2053	0.53	5	38	3	3,590
KDR-F-2054	0.54	5	38	3	3,590
KDR-F-2055	0.55	5	38	3	3,590
KDR-F-2056	0.56	5	38	3	3,590
KDR-F-2057	0.57	5	38	3	3,590
KDR-F-2058	0.58	5	38	3	3,590
KDR-F-2059	0.59	5	38	3	3,590
KDR-F-2060	0.6	6	38	3	3,590
KDR-F-2061	0.61	6	38	3	3,590
KDR-F-2062	0.62	6	38	3	3,590
KDR-F-2063	0.63	6	38	3	3,590
KDR-F-2064	0.64	6	38	3	3,590
KDR-F-2065	0.65	6	38	3	3,590
KDR-F-2066	0.66	6	38	3	3,590
KDR-F-2067	0.67	6	38	3	3,590
KDR-F-2068	0.68	6	38	3	3,590
KDR-F-2069	0.69	6	38	3	3,590

品番 Code No.	刃径 D1 Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KDR-F-2070	0.7	7	38	3	3,590
KDR-F-2071	0.71	7	38	3	3,590
KDR-F-2072	0.72	7	38	3	3,590
KDR-F-2073	0.73	7	38	3	3,590
KDR-F-2074	0.74	7	38	3	3,590
KDR-F-2075	0.75	7	38	3	3,590
KDR-F-2076	0.76	7	38	3	3,590
KDR-F-2077	0.77	7	38	3	3,590
KDR-F-2078	0.78	7	38	3	3,590
KDR-F-2079	0.79	7	38	3	3,590
KDR-F-2080	0.8	7	38	3	3,590
KDR-F-2081	0.81	7	38	3	3,590
KDR-F-2082	0.82	7	38	3	3,590
KDR-F-2083	0.83	7	38	3	3,590
KDR-F-2084	0.84	7	38	3	3,590
KDR-F-2085	0.85	7	38	3	3,590
KDR-F-2086	0.86	7	38	3	3,590
KDR-F-2087	0.87	7	38	3	3,590
KDR-F-2088	0.88	7	38	3	3,590
KDR-F-2089	0.89	7	38	3	3,590
KDR-F-2090	0.9	7	38	3	3,590
KDR-F-2091	0.91	7	38	3	3,590
KDR-F-2092	0.92	7	38	3	3,590
KDR-F-2093	0.93	7	38	3	3,590
KDR-F-2094	0.94	7	38	3	3,590
KDR-F-2095	0.95	7	38	3	3,590
KDR-F-2096	0.96	7	38	3	3,590
KDR-F-2097	0.97	7	38	3	3,590
KDR-F-2098	0.98	7	38	3	3,590
KDR-F-2099	0.99	7	38	3	3,590
KDR-F-2100	1	9	38	3	3,590
KDR-F-2105	1.05	9	38	3	3,590
KDR-F-2110	1.1	9	38	3	3,590
KDR-F-2115	1.15	9	38	3	3,590
KDR-F-2120	1.2	9	38	3	3,590
KDR-F-2125	1.25	9	38	3	3,590
KDR-F-2130	1.3	9	38	3	3,590
KDR-F-2135	1.35	9	38	3	3,590
KDR-F-2140	1.4	9	38	3	3,590
KDR-F-2145	1.45	9	38	3	3,590
KDR-F-2150	1.5	9	38	3	3,590
KDR-F-2155	1.55	9	38	3	3,590
KDR-F-2160	1.6	21	50	3	3,590
KDR-F-2165	1.65	21	50	3	4,070
KDR-F-2170	1.7	21	50	3	4,070
KDR-F-2175	1.75	21	50	3	4,070
KDR-F-2180	1.8	21	50	3	4,070
KDR-F-2185	1.85	21	50	3	4,070

KCD-60

超硬センタードリル・ノンコート
Tungsten Carbide 2 Flutes Drill (Turbo Drill)

- 先端径、太径ともネジレ角30°
Twist Angle 30° at both Small Flute Diameter and Large Flute Diameter
- バリを抑制し高効率加工が可能。
Possible to cut by High Efficiency without Bur



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3 < d ≤ 6 0~-0.008
d=8 0~-0.009

ネジレ角30° 先端径、太径とも
Twist Angle 30°
Both Small Flute Diameter and Large Flute Diameter

先端角度120° Point Angle 120°

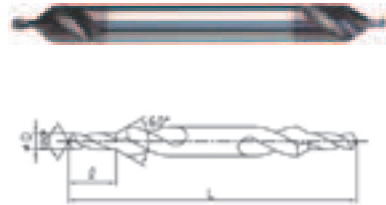
●切削条件表はP178に記載 単位[寸法:mm/価格:円]
●Cutting conditions are recommended on page 178. Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KCD-6003	0.3	0.3	60	3	9,300
KCD-6004	0.4	0.5	60	3	9,000
KCD-6005	0.5	0.6	60	3	8,500
KCD-6008	0.8	1	60	3	7,200
KCD-6010	1	1.3	60	4	6,400
KCD-6012	1.2	1.5	60	4	6,400
KCD-6015	1.5	1.9	60	4	6,400
KCD-6020	2	2.6	60	6	9,000
KCD-6020L	2	2.6	150	6	13,800
KCD-6025	2.5	3.2	60	6	9,000
KCD-6025L	2.5	3.2	150	6	13,800
KCD-6030	3	3.9	70	8	12,500
KCD-6030L	3	3.9	150	8	17,800

KCDA-60

超硬センタードリル・TiAlN
Tungsten Carbide 2 Flutes Drill (Turbo Drill)
TiAlN Coating

- 先端径、太径ともネジレ角30°
Twist Angle 30° at both Small Flute Diameter and Large Flute Diameter
- バリを抑制し高効率加工が可能。
Possible to cut by High Efficiency without Bur



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3 < d ≤ 6 0~-0.008
d=8 0~-0.009

ネジレ角30° 先端径、太径とも
Twist Angle 30°
Both Small Flute Diameter and Large Flute Diameter

先端角度120° Point Angle 120°

TiAlNコート TiAlN コート TiAlN Coating

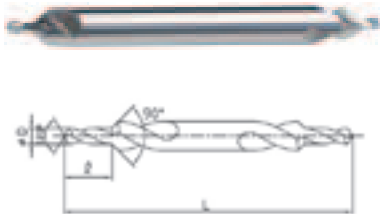
●切削条件表はP178に記載 単位[寸法:mm/価格:円]
●Cutting conditions are recommended on page 178. Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KCDA-6003	0.3	0.3	60	3	10,600
KCDA-6004	0.4	0.5	60	3	10,300
KCDA-6005	0.5	0.6	60	3	10,000
KCDA-6008	0.8	1	60	3	8,500
KCDA-6010	1	1.3	60	4	7,900
KCDA-6012	1.2	1.5	60	4	7,900
KCDA-6015	1.5	1.9	60	4	7,900
KCDA-6020	2	2.6	60	6	10,600
KCDA-6020L	2	2.6	150	6	17,000
KCDA-6025	2.5	3.2	60	6	10,600
KCDA-6025L	2.5	3.2	150	6	17,000
KCDA-6030	3	3.9	70	8	14,300
KCDA-6030L	3	3.9	150	8	21,200

KCD-90

超硬センタードリル・ノンコート
Tungsten Carbide 2 Flutes Drill (Turbo Drill)

- 先端径、太径ともネジレ角30°
Twist Angle 30° at both Small Flute Diameter and Large Flute Diameter
- バリを抑制し高効率加工が可能。
Possible to cut by High Efficiency without Bur



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3 < d ≤ 6 0~-0.008
d=8 0~-0.009



ネジレ角30° 先端径、太径とも
Twist Angle 30°
Both Small Flute Diameter and Large Flute Diameter



先端角度120° Point Angle 120°

●切削条件表はP178に記載

●Cutting conditions are recommended on page 178.

単位[寸法:mm/価格:円]

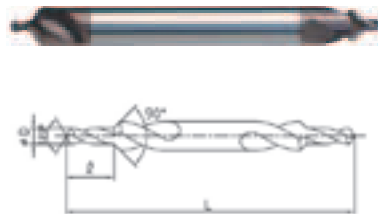
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KCD-9003	0.3	0.3	60	3	9,300
KCD-9004	0.4	0.5	60	3	9,000
KCD-9005	0.5	0.6	60	3	8,500
KCD-9008	0.8	1	60	3	7,200
KCD-9010	1	1.3	60	4	6,400
KCD-9012	1.2	1.5	60	4	6,400
KCD-9015	1.5	1.9	60	4	6,400
KCD-9020	2	2.6	60	6	9,000
KCD-9020L	2	2.6	150	6	13,800
KCD-9025	2.5	3.2	60	6	9,000
KCD-9025L	2.5	3.2	150	6	13,800
KCD-9030	3	3.9	70	8	12,500
KCD-9030L	3	3.9	150	8	17,800

KCDA-90

超硬センタードリル・TiAlN
Tungsten Carbide 2 Flutes Drill (Turbo Drill)
TiAlN Coating

- 先端径、太径ともネジレ角30°
Twist Angle 30° at both Small Flute Diameter and Large Flute Diameter
- バリを抑制し高効率加工が可能。
Possible to cut by High Efficiency without Bur



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3 < d ≤ 6 0~-0.008
d=8 0~-0.009



ネジレ角30° 先端径、太径とも
Twist Angle 30°
Both Small Flute Diameter and Large Flute Diameter



先端角度120° Point Angle 120°

TiAlNコート TiAlN コート TiAlN Coating

●切削条件表はP178に記載

●Cutting conditions are recommended on page 178.

単位[寸法:mm/価格:円]

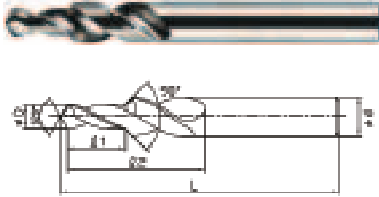
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KCDA-9003	0.3	0.3	60	3	10,600
KCDA-9004	0.4	0.5	60	3	10,300
KCDA-9005	0.5	0.6	60	3	10,000
KCDA-9008	0.8	1	60	3	8,500
KCDA-9010	1	1.3	60	4	7,900
KCDA-9012	1.2	1.5	60	4	7,900
KCDA-9015	1.5	1.9	60	4	7,900
KCDA-9020	2	2.6	60	6	10,600
KCDA-9020L	2	2.6	150	6	17,000
KCDA-9025	2.5	3.2	60	6	10,600
KCDA-9025L	2.5	3.2	150	6	17,000
KCDA-9030	3	3.9	70	8	14,300
KCDA-9030L	3	3.9	150	8	21,200

KDD-2

超硬段付ドリル 90°面取刃付 Tungsten Carbide 2 Flutes Step Drill

- 先端径、太径ともネジレ角30°
Twist Angle 30° at both Small Flute Diameter and Large Flute Diameter
- 刃径を0.05とびにラインナップ。
Line-upped at pitch 0.05



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3<d≤6 0~-0.008
d=8 0~-0.009



ネジレ角30° 先端径、太径とも
Twist Angle 30°
Both Small Flute Diameter and Large Flute Diameter



先端角度120° Point Angle 120°
面取角度 90° (両角) ±30°

●切条件表はP179に記載

●Cutting conditions are recommended on page 179.

単位[寸法: mm/価格: 円]
Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ1 Flute Length	溝長 ℓ2 Groove Length	全長 L Total Length	柄径 d Shank Diameter	適用ネジ Applicable Thread	標準価格 Retail Price
KDD-205002	0.5	2	8	50	3	—	7,900
KDD-205005	0.5	5	12	50	3	—	9,000
KDD-205502	0.55	2	8	50	3	—	7,900
KDD-205505	0.55	5	12	50	3	—	9,000
KDD-206002	0.6	2	8	50	3	—	7,900
KDD-206005	0.6	5	12	50	3	—	9,000
KDD-206502	0.65	2	8	50	3	—	7,900
KDD-206505	0.65	5	12	50	3	—	9,000
KDD-207002	0.7	2	8	50	3	—	7,900
KDD-207005	0.7	5	12	50	3	—	9,000
KDD-207503	0.75	3	10	50	3	M1×0.25	7,900
KDD-207506	0.75	6	15	50	3	M1×0.25	9,000
KDD-208003	0.8	3	10	50	3	M1×0.2	7,500
KDD-208006	0.8	6	15	50	3	M1×0.2	8,500
KDD-208503	0.85	3	10	50	3	M1.1×0.25	7,500
KDD-208506	0.85	6	15	50	3	M1.1×0.25	8,500
KDD-209003	0.9	3	10	50	3	M1.1×0.2	7,500
KDD-209006	0.9	6	15	50	3	M1.1×0.2	8,500
KDD-209503	0.95	3	10	50	3	M1.2×0.25	7,500
KDD-209506	0.95	6	15	50	3	M1.2×0.25	8,500
KDD-210003	1	3	10	50	3	M1.2×0.2	7,200
KDD-210006	1	6	15	50	3	M1.2×0.2	7,900

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ1 Flute Length	溝長 ℓ2 Groove Length	全長 L Total Length	柄径 d Shank Diameter	適用ネジ Applicable Thread	標準価格 Retail Price
KDD-210503	1.05	3	10	50	3	—	7,200
KDD-210506	1.05	6	15	50	3	—	7,900
KDD-211003	1.1	3	10	50	3	M1.4×0.3	7,200
KDD-211006	1.1	6	15	50	3	M1.4×0.3	7,900
KDD-211503	1.15	3	10	50	3	—	7,200
KDD-211506	1.15	6	15	50	3	—	7,900
KDD-212003	1.2	3	10	50	3	M1.4×0.2	7,200
KDD-212006	1.2	6	15	50	3	M1.4×0.2	7,900
KDD-212503	1.25	3	10	50	3	M1.6×0.35	7,200
KDD-212506	1.25	6	15	50	3	M1.6×0.35	7,900
KDD-213003	1.3	3	10	50	3	—	7,200
KDD-213006	1.3	6	15	50	3	—	7,900
KDD-213503	1.35	3	10	50	3	—	7,200
KDD-213506	1.35	6	15	50	3	—	7,900
KDD-214003	1.4	3	10	50	3	M1.6×0.2	7,200
KDD-214006	1.4	6	15	50	3	M1.7×0.3	7,900
KDD-214503	1.45	3	10	50	3	—	7,200
KDD-214506	1.45	6	15	50	3	—	7,900
KDD-215003	1.5	3	10	50	3	M1.7×0.2	7,200
KDD-215006	1.5	6	15	50	3	M1.7×0.2	7,900
KDD-215503	1.55	3	10	50	3	—	7,200
KDD-215506	1.55	6	15	50	3	—	7,900
KDD-216005	1.6	5	15	60	4	M1.8×0.2	8,500
KDD-216010	1.6	10	20	60	4	M1.8×0.2	9,600
KDD-216505	1.65	5	15	60	4	—	8,500
KDD-216510	1.65	10	20	60	4	—	9,600
KDD-217005	1.7	5	15	60	4	—	8,500
KDD-217010	1.7	10	20	60	4	—	9,600
KDD-217505	1.75	5	15	60	4	M2×0.25	8,500
KDD-217510	1.75	10	20	60	4	M2.2×0.45	9,600
KDD-218005	1.8	5	15	60	4	—	8,500
KDD-218010	1.8	10	20	60	4	—	9,600
KDD-218505	1.85	5	15	60	4	—	8,500
KDD-218510	1.85	10	20	60	4	—	9,600
KDD-219005	1.9	5	15	60	4	—	8,500
KDD-219010	1.9	10	20	60	4	—	9,600
KDD-219505	1.95	5	15	60	4	M2.2×0.25	8,500
KDD-219510	1.95	10	20	60	4	M2.3×0.35	9,600
KDD-220005	2	5	15	60	4	—	8,500
KDD-220010	2	10	20	60	4	—	9,600
KDD-220505	2.05	5	15	60	4	—	8,500
KDD-220510	2.05	10	20	60	4	—	9,600
KDD-221006	2.1	6	15	60	4	M2.5×0.45	8,500
KDD-221012	2.1	12	20	60	4	M2.5×0.45	9,600
KDD-221506	2.15	6	15	60	4	—	8,500
KDD-221512	2.15	12	20	60	4	—	9,600
KDD-222006	2.2	6	15	60	4	M2.5×0.35	8,500
KDD-222012	2.2	12	20	60	4	M2.6×0.45	9,600

KDD-2

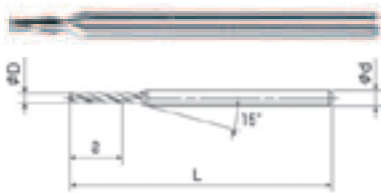
品番 Code No.	刃径 D Flute Diameter	刃長 ℓ1 Flute Length	溝長 ℓ2 Groove Length	全長 L Total Length	柄径 d Shank Diameter	適用ネジ Applicable Thread	標準価格 Retail Price
KDD-222506	2.25	6	15	60	4		8,500
KDD-222512	2.25	12	20	60	4		9,600
KDD-223006	2.3	6	15	60	4		8,500
KDD-223012	2.3	12	20	60	4		9,600
KDD-223506	2.35	6	15	60	4		8,500
KDD-223512	2.35	12	20	60	4		9,600
KDD-224006	2.4	6	15	60	4	M2.6×0.35	8,500
KDD-224012	2.4	12	20	60	4	M2.6×0.35	9,600
KDD-224506	2.45	6	15	60	4		8,500
KDD-224512	2.45	12	20	60	4		9,600
KDD-225006	2.5	6	15	70	6	M3×0.5	10,600
KDD-225012	2.5	12	20	70	6	M3×0.5	12,500
KDD-225506	2.55	6	15	70	6		10,600
KDD-225512	2.55	12	20	70	6		12,500
KDD-226006	2.6	6	15	70	6		10,600
KDD-226012	2.6	12	20	70	6		12,500
KDD-226510	2.65	10	25	70	6	M3×0.35	10,600
KDD-226520	2.65	20	35	70	6	M3×0.35	12,500
KDD-227010	2.7	10	25	70	6		10,600
KDD-227020	2.7	20	35	70	6		12,500
KDD-227510	2.75	10	25	70	6		10,600
KDD-227520	2.75	20	35	70	6		12,500
KDD-228010	2.8	10	25	70	6		10,600
KDD-228020	2.8	20	35	70	6		12,500
KDD-228510	2.85	10	25	70	6		10,600
KDD-228520	2.85	20	35	70	6		12,500
KDD-229010	2.9	10	25	70	6		10,600
KDD-229020	2.9	20	35	70	6		12,500
KDD-229510	2.95	10	25	70	6		10,600
KDD-229520	2.95	20	35	70	6		12,500
KDD-230010	3	10	25	70	6	M3.5×0.6	10,600
KDD-230020	3	20	35	70	6	M3.5×0.6	12,500
KDD-230510	3.05	10	25	70	6		10,600
KDD-230520	3.05	20	35	70	6		12,500
KDD-231010	3.1	10	25	70	6		10,600
KDD-231020	3.1	20	35	70	6		12,500
KDD-231510	3.15	10	25	70	6	M3.5×0.35	10,600
KDD-231520	3.15	20	35	70	6	M3.5×0.35	12,500
KDD-232010	3.2	10	25	70	6		10,600
KDD-232020	3.2	20	35	70	6		12,500
KDD-232510	3.25	10	25	70	6		10,600
KDD-232520	3.25	20	35	70	6		12,500
KDD-233010	3.3	10	25	70	6	M4×0.7	10,600
KDD-233020	3.3	20	35	70	6	M4×0.7	12,500
KDD-233510	3.35	10	25	70	6		10,600
KDD-233520	3.35	20	35	70	6		12,500
KDD-234010	3.4	10	25	70	6		10,600
KDD-234020	3.4	20	35	70	6		12,500

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ1 Flute Length	溝長 ℓ2 Groove Length	全長 L Total Length	柄径 d Shank Diameter	適用ネジ Applicable Thread	標準価格 Retail Price
KDD-234510	3.45	10	25	70	6		10,600
KDD-234520	3.45	20	35	70	6		12,500
KDD-235010	3.5	10	25	70	6	M4×0.5	10,600
KDD-235020	3.5	20	35	70	6	M4×0.5	12,500
KDD-235510	3.55	10	25	70	6		10,600
KDD-235520	3.55	20	35	70	6		12,500
KDD-236010	3.6	10	25	70	6		10,600
KDD-236020	3.6	20	35	70	6		12,500
KDD-236510	3.65	10	25	70	6		10,600
KDD-236520	3.65	20	35	70	6		12,500
KDD-237010	3.7	10	25	70	6		10,600
KDD-237020	3.7	20	35	70	6		12,500
KDD-237510	3.75	10	25	70	6	M4.5×0.75	10,600
KDD-237520	3.75	20	35	70	6	M4.5×0.75	12,500
KDD-238010	3.8	10	25	70	6		10,600
KDD-238020	3.8	20	35	70	6		12,500
KDD-238510	3.85	10	25	70	6		10,600
KDD-238520	3.85	20	35	70	6		12,500
KDD-239010	3.9	10	25	70	6		10,600
KDD-239020	3.9	20	35	70	6		12,500
KDD-239510	3.95	10	25	70	6		10,600
KDD-239520	3.95	20	35	70	6		12,500
KDD-240010	4	10	25	80	8	M4.5×0.5	13,200
KDD-240020	4	20	35	80	8	M4.5×0.5	14,900
KDD-240510	4.05	10	25	80	8		13,200
KDD-240520	4.05	20	35	80	8		14,900
KDD-241010	4.1	10	25	80	8	M5×0.9	13,200
KDD-241020	4.1	20	35	80	8	M5×0.9	14,900
KDD-241510	4.15	10	25	80	8		13,200
KDD-241520	4.15	20	35	80	8		14,900
KDD-242010	4.2	10	25	80	8	M5×0.8	13,200
KDD-242020	4.2	20	35	80	8	M5×0.8	14,900
KDD-242510	4.25	10	25	80	8		13,200
KDD-242520	4.25	20	35	80	8		14,900
KDD-243010	4.3	10	25	80	8		13,200
KDD-243020	4.3	20	35	80	8		14,900
KDD-243510	4.35	10	25	80	8		13,200
KDD-243520	4.35	20	35	80	8		14,900
KDD-244010	4.4	10	25	80	8		13,200
KDD-244020	4.4	20	35	80	8		14,900
KDD-244510	4.45	10	25	80	8		13,200
KDD-244520	4.45	20	35	80	8		14,900
KDD-245010	4.5	10	25	80	8	M5×0.5	13,200
KDD-245020	4.5	20	35	80	8	M5×0.5	14,900
KDD-245510	4.55	10	25	80	8		13,200
KDD-245520	4.55	20	35	80	8		14,900
KDD-246010	4.6	10	25	80	8	M5.5×0.9	13,200
KDD-246020	4.6	20	35	80	8	M5.5×0.9	14,900

KMSE-2

超硬ミニチュアエンドミル Tungsten Carbide Miniature Endmill

■刃径をΦ0.1～Φ3まで0.01とびにラインナップ
Line-upped Φ0.1～Φ3 at pitch 0.01



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0～-0.01



柄径の許容差 Shank Diameter Tolerance
d 0～-0.006



ネジレ角30° Twist Angle 30°



ピンカド Sharp Edge

●切削条件表はP180に記載

●Cutting conditions are recommended on page 180.

単位[寸法: mm/価格: ¥]
Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2010	0.1	0.2	40	3	15,900
KMSE-2011	0.11	0.2	40	3	14,100
KMSE-2012	0.12	0.3	40	3	14,100
KMSE-2013	0.13	0.3	40	3	14,100
KMSE-2014	0.14	0.3	40	3	14,100
KMSE-2015	0.15	0.3	40	3	14,100
KMSE-2016	0.16	0.3	40	3	14,100
KMSE-2017	0.17	0.3	40	3	14,100
KMSE-2018	0.18	0.3	40	3	14,100
KMSE-2019	0.19	0.3	40	3	14,100
KMSE-2020	0.2	0.4	40	3	10,600
KMSE-2021	0.21	0.5	40	3	11,700
KMSE-2022	0.22	0.5	40	3	11,700
KMSE-2023	0.23	0.5	40	3	11,700
KMSE-2024	0.24	0.5	40	3	11,700
KMSE-2025	0.25	0.5	40	3	11,700
KMSE-2026	0.26	0.8	40	3	11,700
KMSE-2027	0.27	0.8	40	3	11,700
KMSE-2028	0.28	0.8	40	3	11,700
KMSE-2029	0.29	0.8	40	3	11,700
KMSE-2030	0.3	1	40	3	9,700
KMSE-2031	0.31	1	40	3	10,600

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2032	0.32	1	40	3	10,600
KMSE-2033	0.33	1	40	3	10,600
KMSE-2034	0.34	1	40	3	10,600
KMSE-2035	0.35	1	40	3	10,600
KMSE-2036	0.36	1	40	3	10,600
KMSE-2037	0.37	1	40	3	10,600
KMSE-2038	0.38	1	40	3	10,600
KMSE-2039	0.39	1	40	3	10,600
KMSE-2040	0.4	1	40	3	8,500
KMSE-2041	0.41	1	40	3	9,100
KMSE-2042	0.42	1	40	3	9,100
KMSE-2043	0.43	1	40	3	9,100
KMSE-2044	0.44	1	40	3	9,100
KMSE-2045	0.45	1	40	3	9,100
KMSE-2046	0.46	1	40	3	9,100
KMSE-2047	0.47	1	40	3	9,100
KMSE-2048	0.48	1	40	3	9,100
KMSE-2049	0.49	1	40	3	9,100
KMSE-2050	0.5	1	40	3	7,600
KMSE-2051	0.51	1	40	3	8,300
KMSE-2052	0.52	1	40	3	8,300
KMSE-2053	0.53	1	40	3	8,300
KMSE-2054	0.54	1	40	3	8,300
KMSE-2055	0.55	1	40	3	8,300
KMSE-2056	0.56	1	40	3	8,300
KMSE-2057	0.57	1	40	3	8,300
KMSE-2058	0.58	1	40	3	8,300
KMSE-2059	0.59	1	40	3	8,300
KMSE-2060	0.6	2	40	3	7,600
KMSE-2061	0.61	2	40	3	8,300
KMSE-2062	0.62	2	40	3	8,300
KMSE-2063	0.63	2	40	3	8,300
KMSE-2064	0.64	2	40	3	8,300
KMSE-2065	0.65	2	40	3	8,300
KMSE-2066	0.66	2	40	3	8,300
KMSE-2067	0.67	2	40	3	8,300
KMSE-2068	0.68	2	40	3	8,300
KMSE-2069	0.69	2	40	3	8,300
KMSE-2070	0.7	2	40	3	7,300
KMSE-2071	0.71	2	40	3	8,000
KMSE-2072	0.72	2	40	3	8,000
KMSE-2073	0.73	2	40	3	8,000
KMSE-2074	0.74	2	40	3	8,000
KMSE-2075	0.75	2	40	3	8,000
KMSE-2076	0.76	2	40	3	8,000
KMSE-2077	0.77	2	40	3	8,000
KMSE-2078	0.78	2	40	3	8,000
KMSE-2079	0.79	2	40	3	8,000

KMSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2080	0.8	2.5	40	3	7,300
KMSE-2081	0.81	2.5	40	3	8,000
KMSE-2082	0.82	2.5	40	3	8,000
KMSE-2083	0.83	2.5	40	3	8,000
KMSE-2084	0.84	2.5	40	3	8,000
KMSE-2085	0.85	2.5	40	3	8,000
KMSE-2086	0.86	2.5	40	3	8,000
KMSE-2087	0.87	2.5	40	3	8,000
KMSE-2088	0.88	2.5	40	3	8,000
KMSE-2089	0.89	2.5	40	3	8,000
KMSE-2090	0.9	2.5	40	3	6,700
KMSE-2091	0.91	2.5	40	3	7,600
KMSE-2092	0.92	2.5	40	3	7,600
KMSE-2093	0.93	2.5	40	3	7,600
KMSE-2094	0.94	2.5	40	3	7,600
KMSE-2095	0.95	2.5	40	3	7,600
KMSE-2096	0.96	2.5	40	3	7,600
KMSE-2097	0.97	2.5	40	3	7,600
KMSE-2098	0.98	2.5	40	3	7,600
KMSE-2099	0.99	2.5	40	3	7,600
KMSE-2100	1	3	40	3	6,400
KMSE-2101	1.01	3	40	3	7,300
KMSE-2102	1.02	3	40	3	7,300
KMSE-2103	1.03	3	40	3	7,300
KMSE-2104	1.04	3	40	3	7,300
KMSE-2105	1.05	3	40	3	7,300
KMSE-2106	1.06	3	40	3	7,300
KMSE-2107	1.07	3	40	3	7,300
KMSE-2108	1.08	3	40	3	7,300
KMSE-2109	1.09	3	40	3	7,300
KMSE-2110	1.1	3	40	3	6,400
KMSE-2111	1.11	3	40	3	7,300
KMSE-2112	1.12	3	40	3	7,300
KMSE-2113	1.13	3	40	3	7,300
KMSE-2114	1.14	3	40	3	7,300
KMSE-2115	1.15	3	40	3	7,300
KMSE-2116	1.16	3	40	3	7,300
KMSE-2117	1.17	3	40	3	7,300
KMSE-2118	1.18	3	40	3	7,300
KMSE-2119	1.19	3	40	3	7,300
KMSE-2120	1.2	3	40	3	6,400
KMSE-2121	1.21	3	40	3	7,300
KMSE-2122	1.22	3	40	3	7,300
KMSE-2123	1.23	3	40	3	7,300
KMSE-2124	1.24	3	40	3	7,300
KMSE-2125	1.25	3	40	3	7,300
KMSE-2126	1.26	3	40	3	7,300
KMSE-2127	1.27	3	40	3	7,300

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2128	1.28	3	40	3	7,300
KMSE-2129	1.29	3	40	3	7,300
KMSE-2130	1.3	3	40	3	6,400
KMSE-2131	1.31	3	40	3	7,300
KMSE-2132	1.32	3	40	3	7,300
KMSE-2133	1.33	3	40	3	7,300
KMSE-2134	1.34	3	40	3	7,300
KMSE-2135	1.35	3	40	3	7,300
KMSE-2136	1.36	3	40	3	7,300
KMSE-2137	1.37	3	40	3	7,300
KMSE-2138	1.38	3	40	3	7,300
KMSE-2139	1.39	3	40	3	7,300
KMSE-2140	1.4	3	40	3	6,400
KMSE-2141	1.41	3	40	3	7,300
KMSE-2142	1.42	3	40	3	7,300
KMSE-2143	1.43	3	40	3	7,300
KMSE-2144	1.44	3	40	3	7,300
KMSE-2145	1.45	3	40	3	7,300
KMSE-2146	1.46	3	40	3	7,300
KMSE-2147	1.47	3	40	3	7,300
KMSE-2148	1.48	3	40	3	7,300
KMSE-2149	1.49	3	40	3	7,300
KMSE-2150	1.5	5	40	3	6,400
KMSE-2151	1.51	5	40	3	7,300
KMSE-2152	1.52	5	40	3	7,300
KMSE-2153	1.53	5	40	3	7,300
KMSE-2154	1.54	5	40	3	7,300
KMSE-2155	1.55	5	40	3	7,300
KMSE-2156	1.56	5	40	3	7,300
KMSE-2157	1.57	5	40	3	7,300
KMSE-2158	1.58	5	40	3	7,300
KMSE-2159	1.59	5	40	3	7,300
KMSE-2160	1.6	5	40	3	6,400
KMSE-2161	1.61	5	40	3	7,300
KMSE-2162	1.62	5	40	3	7,300
KMSE-2163	1.63	5	40	3	7,300
KMSE-2164	1.64	5	40	3	7,300
KMSE-2165	1.65	5	40	3	7,300
KMSE-2166	1.66	5	40	3	7,300
KMSE-2167	1.67	5	40	3	7,300
KMSE-2168	1.68	5	40	3	7,300
KMSE-2169	1.69	5	40	3	7,300
KMSE-2170	1.7	5	40	3	6,400
KMSE-2171	1.71	5	40	3	7,300
KMSE-2172	1.72	5	40	3	7,300
KMSE-2173	1.73	5	40	3	7,300
KMSE-2174	1.74	5	40	3	7,300
KMSE-2175	1.75	5	40	3	7,300

超硬製品

Tungsten Carbide

KMSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2176	1.76	5	40	3	7,300
KMSE-2177	1.77	5	40	3	7,300
KMSE-2178	1.78	5	40	3	7,300
KMSE-2179	1.79	5	40	3	7,300
KMSE-2180	1.8	5	40	3	6,400
KMSE-2181	1.81	5	40	3	7,300
KMSE-2182	1.82	5	40	3	7,300
KMSE-2183	1.83	5	40	3	7,300
KMSE-2184	1.84	5	40	3	7,300
KMSE-2185	1.85	5	40	3	7,300
KMSE-2186	1.86	5	40	3	7,300
KMSE-2187	1.87	5	40	3	7,300
KMSE-2188	1.88	5	40	3	7,300
KMSE-2189	1.89	5	40	3	7,300
KMSE-2190	1.9	5	40	3	6,200
KMSE-2191	1.91	5	40	3	7,000
KMSE-2192	1.92	5	40	3	7,000
KMSE-2193	1.93	5	40	3	7,000
KMSE-2194	1.94	5	40	3	7,000
KMSE-2195	1.95	5	40	3	7,000
KMSE-2196	1.96	5	40	3	7,000
KMSE-2197	1.97	5	40	3	7,000
KMSE-2198	1.98	5	40	3	7,000
KMSE-2199	1.99	5	40	3	7,000
KMSE-2200	2	6	40	3	6,200
KMSE-2201	2.01	6	40	3	7,000
KMSE-2202	2.02	6	40	3	7,000
KMSE-2203	2.03	6	40	3	7,000
KMSE-2204	2.04	6	40	3	7,000
KMSE-2205	2.05	6	40	3	7,000
KMSE-2206	2.06	6	40	3	7,000
KMSE-2207	2.07	6	40	3	7,000
KMSE-2208	2.08	6	40	3	7,000
KMSE-2209	2.09	6	40	3	7,000
KMSE-2210	2.1	6	40	3	6,200
KMSE-2211	2.11	6	40	3	7,000
KMSE-2212	2.12	6	40	3	7,000
KMSE-2213	2.13	6	40	3	7,000
KMSE-2214	2.14	6	40	3	7,000
KMSE-2215	2.15	6	40	3	7,000
KMSE-2216	2.16	6	40	3	7,000
KMSE-2217	2.17	6	40	3	7,000
KMSE-2218	2.18	6	40	3	7,000
KMSE-2219	2.19	6	40	3	7,000
KMSE-2220	2.2	6	40	3	6,200
KMSE-2221	2.21	6	40	3	7,000
KMSE-2222	2.22	6	40	3	7,000
KMSE-2223	2.23	6	40	3	7,000

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2224	2.24	6	40	3	7,000
KMSE-2225	2.25	6	40	3	7,000
KMSE-2226	2.26	6	40	3	7,000
KMSE-2227	2.27	6	40	3	7,000
KMSE-2228	2.28	6	40	3	7,000
KMSE-2229	2.29	6	40	3	7,000
KMSE-2230	2.3	6	40	3	6,200
KMSE-2231	2.31	6	40	3	7,000
KMSE-2232	2.32	6	40	3	7,000
KMSE-2233	2.33	6	40	3	7,000
KMSE-2234	2.34	6	40	3	7,000
KMSE-2235	2.35	6	40	3	7,000
KMSE-2236	2.36	6	40	3	7,000
KMSE-2237	2.37	6	40	3	7,000
KMSE-2238	2.38	6	40	3	7,000
KMSE-2239	2.39	6	40	3	7,000
KMSE-2240	2.4	6	40	3	6,200
KMSE-2241	2.41	6	40	3	7,000
KMSE-2242	2.42	6	40	3	7,000
KMSE-2243	2.43	6	40	3	7,000
KMSE-2244	2.44	6	40	3	7,000
KMSE-2245	2.45	6	40	3	7,000
KMSE-2246	2.46	6	40	3	7,000
KMSE-2247	2.47	6	40	3	7,000
KMSE-2248	2.48	6	40	3	7,000
KMSE-2249	2.49	6	40	3	7,000
KMSE-2250	2.5	8	40	3	6,200
KMSE-2251	2.51	8	40	3	7,000
KMSE-2252	2.52	8	40	3	7,000
KMSE-2253	2.53	8	40	3	7,000
KMSE-2254	2.54	8	40	3	7,000
KMSE-2255	2.55	8	40	3	7,000
KMSE-2256	2.56	8	40	3	7,000
KMSE-2257	2.57	8	40	3	7,000
KMSE-2258	2.58	8	40	3	7,000
KMSE-2259	2.59	8	40	3	7,000
KMSE-2260	2.6	8	40	3	6,200
KMSE-2261	2.61	8	40	3	7,000
KMSE-2262	2.62	8	40	3	7,000
KMSE-2263	2.63	8	40	3	7,000
KMSE-2264	2.64	8	40	3	7,000
KMSE-2265	2.65	8	40	3	7,000
KMSE-2266	2.66	8	40	3	7,000
KMSE-2267	2.67	8	40	3	7,000
KMSE-2268	2.68	8	40	3	7,000
KMSE-2269	2.69	8	40	3	7,000
KMSE-2270	2.7	8	40	3	6,200
KMSE-2271	2.71	8	40	3	7,000

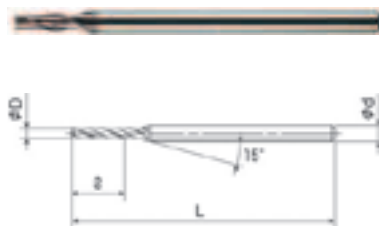
KMSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSE-2272	2.72	8	40	3	7,000
KMSE-2273	2.73	8	40	3	7,000
KMSE-2274	2.74	8	40	3	7,000
KMSE-2275	2.75	8	40	3	7,000
KMSE-2276	2.76	8	40	3	7,000
KMSE-2277	2.77	8	40	3	7,000
KMSE-2278	2.78	8	40	3	7,000
KMSE-2279	2.79	8	40	3	7,000
KMSE-2280	2.8	8	40	3	6,200
KMSE-2281	2.81	8	40	3	7,000
KMSE-2282	2.82	8	40	3	7,000
KMSE-2283	2.83	8	40	3	7,000
KMSE-2284	2.84	8	40	3	7,000
KMSE-2285	2.85	8	40	3	7,000
KMSE-2286	2.86	8	40	3	7,000
KMSE-2287	2.87	8	40	3	7,000
KMSE-2288	2.88	8	40	3	7,000
KMSE-2289	2.89	8	40	3	7,000
KMSE-2290	2.9	8	40	3	6,200
KMSE-2291	2.91	8	40	3	7,000
KMSE-2292	2.92	8	40	3	7,000
KMSE-2293	2.93	8	40	3	7,000
KMSE-2294	2.94	8	40	3	7,000
KMSE-2295	2.95	8	40	3	7,000
KMSE-2296	2.96	8	40	3	7,000
KMSE-2297	2.97	8	40	3	7,000
KMSE-2298	2.98	8	40	3	7,000
KMSE-2299	2.99	8	40	3	7,000
KMSE-2300	3	8	40	3	6,200

KMSEA-2

超硬ミニチュアエンドミル
Tungsten Carbide Miniature Endmill
TiAlN Coating

■刃径をΦ0.1~Φ3まで0.01とびにラインナップ
Line-upped Φ0.1~Φ3 at pitch 0.01



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.006

ネジレ角30° Twist Angle 30°

ピンカド Sharp Edge

TiAlNコート TiAlN コート TiAlN Coating

●切削条件表はP181に記載 単位[寸法: mm/価格: 円]
●Cutting conditions are recommended on page 181. Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-2010	0.1	0.2	50	3	18,400
KMSEA-2011	0.11	0.2	50	3	17,000
KMSEA-2012	0.12	0.3	50	3	17,000
KMSEA-2013	0.13	0.3	50	3	17,000
KMSEA-2014	0.14	0.3	50	3	17,000
KMSEA-2015	0.15	0.3	50	3	15,900
KMSEA-2016	0.16	0.3	50	3	15,900
KMSEA-2017	0.17	0.3	50	3	15,900
KMSEA-2018	0.18	0.3	50	3	15,900
KMSEA-2019	0.19	0.3	50	3	15,900
KMSEA-2020	0.2	0.4	50	3	12,800
KMSEA-2021	0.21	0.5	50	3	12,400
KMSEA-2022	0.22	0.5	50	3	12,400
KMSEA-2023	0.23	0.5	50	3	12,400
KMSEA-2024	0.24	0.5	50	3	12,400
KMSEA-2025	0.25	0.5	50	3	12,100
KMSEA-2026	0.26	0.8	50	3	12,100
KMSEA-2027	0.27	0.8	50	3	12,100

超硬製品

Tungsten Carbide

KMSEA-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-2028	0.28	0.8	50	3	12,100
KMSEA-2029	0.29	0.8	50	3	12,100
KMSEA-2030	0.3	1	50	3	11,400
KMSEA-2031	0.31	1	50	3	11,400
KMSEA-2032	0.32	1	50	3	11,400
KMSEA-2033	0.33	1	50	3	11,400
KMSEA-2034	0.34	1	50	3	11,400
KMSEA-2035	0.35	1	50	3	11,400
KMSEA-2036	0.36	1	50	3	11,400
KMSEA-2037	0.37	1	50	3	11,400
KMSEA-2038	0.38	1	50	3	11,400
KMSEA-2039	0.39	1	50	3	11,400
KMSEA-2040	0.4	1	50	3	10,000
KMSEA-2041	0.41	1	50	3	10,600
KMSEA-2042	0.42	1	50	3	10,600
KMSEA-2043	0.43	1	50	3	10,600
KMSEA-2044	0.44	1	50	3	10,600
KMSEA-2045	0.45	1	50	3	10,600
KMSEA-2046	0.46	1	50	3	10,600
KMSEA-2047	0.47	1	50	3	10,600
KMSEA-2048	0.48	1	50	3	10,600
KMSEA-2049	0.49	1	50	3	10,600
KMSEA-2050	0.5	1	50	3	8,900
KMSEA-2051	0.51	1	50	3	9,800
KMSEA-2052	0.52	1	50	3	9,800
KMSEA-2053	0.53	1	50	3	9,800
KMSEA-2054	0.54	1	50	3	9,800
KMSEA-2055	0.55	1	50	3	9,800
KMSEA-2056	0.56	1	50	3	9,800
KMSEA-2057	0.57	1	50	3	9,800
KMSEA-2058	0.58	1	50	3	9,800
KMSEA-2059	0.59	1	50	3	9,800
KMSEA-2060	0.6	2	50	3	8,900
KMSEA-2061	0.61	2	50	3	9,800
KMSEA-2062	0.62	2	50	3	9,800
KMSEA-2063	0.63	2	50	3	9,800
KMSEA-2064	0.64	2	50	3	9,800
KMSEA-2065	0.65	2	50	3	9,800
KMSEA-2066	0.66	2	50	3	9,800
KMSEA-2067	0.67	2	50	3	9,800
KMSEA-2068	0.68	2	50	3	9,800
KMSEA-2069	0.69	2	50	3	9,800
KMSEA-2070	0.7	2	50	3	8,500
KMSEA-2071	0.71	2	50	3	9,200
KMSEA-2072	0.72	2	50	3	9,200
KMSEA-2073	0.73	2	50	3	9,200
KMSEA-2074	0.74	2	50	3	9,200
KMSEA-2075	0.75	2	50	3	9,200

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-2076	0.76	2	50	3	9,200
KMSEA-2077	0.77	2	50	3	9,200
KMSEA-2078	0.78	2	50	3	9,200
KMSEA-2079	0.79	2	50	3	9,200
KMSEA-2080	0.8	2.5	50	3	8,500
KMSEA-2081	0.81	2.5	50	3	9,200
KMSEA-2082	0.82	2.5	50	3	9,200
KMSEA-2083	0.83	2.5	50	3	9,200
KMSEA-2084	0.84	2.5	50	3	9,200
KMSEA-2085	0.85	2.5	50	3	9,200
KMSEA-2086	0.86	2.5	50	3	9,200
KMSEA-2087	0.87	2.5	50	3	9,200
KMSEA-2088	0.88	2.5	50	3	9,200
KMSEA-2089	0.89	2.5	50	3	9,200
KMSEA-2090	0.9	2.5	50	3	7,800
KMSEA-2091	0.91	2.5	50	3	8,900
KMSEA-2092	0.92	2.5	50	3	8,900
KMSEA-2093	0.93	2.5	50	3	8,900
KMSEA-2094	0.94	2.5	50	3	8,900
KMSEA-2095	0.95	2.5	50	3	8,900
KMSEA-2096	0.96	2.5	50	3	8,900
KMSEA-2097	0.97	2.5	50	3	8,900
KMSEA-2098	0.98	2.5	50	3	8,900
KMSEA-2099	0.99	2.5	50	3	8,900
KMSEA-2100	1	3	50	3	7,500
KMSEA-2101	1.01	3	50	3	8,500
KMSEA-2102	1.02	3	50	3	8,500
KMSEA-2103	1.03	3	50	3	8,500
KMSEA-2104	1.04	3	50	3	8,500
KMSEA-2105	1.05	3	50	3	8,500
KMSEA-2106	1.06	3	50	3	8,500
KMSEA-2107	1.07	3	50	3	8,500
KMSEA-2108	1.08	3	50	3	8,500
KMSEA-2109	1.09	3	50	3	8,500
KMSEA-2110	1.1	3	50	3	7,500
KMSEA-2111	1.11	3	50	3	8,500
KMSEA-2112	1.12	3	50	3	8,500
KMSEA-2113	1.13	3	50	3	8,500
KMSEA-2114	1.14	3	50	3	8,500
KMSEA-2115	1.15	3	50	3	8,500
KMSEA-2116	1.16	3	50	3	8,500
KMSEA-2117	1.17	3	50	3	8,500
KMSEA-2118	1.18	3	50	3	8,500
KMSEA-2119	1.19	3	50	3	8,500
KMSEA-2120	1.2	3	50	3	7,500
KMSEA-2121	1.21	3	50	3	8,500
KMSEA-2122	1.22	3	50	3	8,500
KMSEA-2123	1.23	3	50	3	8,500

KMSEA-2

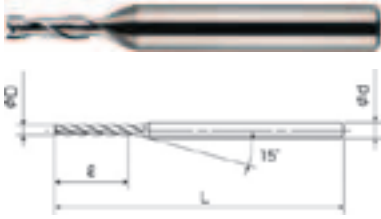
品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-2124	1.24	3	50	3	8,500
KMSEA-2125	1.25	3	50	3	8,500
KMSEA-2126	1.26	3	50	3	8,500
KMSEA-2127	1.27	3	50	3	8,500
KMSEA-2128	1.28	3	50	3	8,500
KMSEA-2129	1.29	3	50	3	8,500
KMSEA-2130	1.3	3	50	3	7,500
KMSEA-2131	1.31	3	50	3	8,500
KMSEA-2132	1.32	3	50	3	8,500
KMSEA-2133	1.33	3	50	3	8,500
KMSEA-2134	1.34	3	50	3	8,500
KMSEA-2135	1.35	3	50	3	8,500
KMSEA-2136	1.36	3	50	3	8,500
KMSEA-2137	1.37	3	50	3	8,500
KMSEA-2138	1.38	3	50	3	8,500
KMSEA-2139	1.39	3	50	3	8,500
KMSEA-2140	1.4	3	50	3	7,500
KMSEA-2141	1.41	3	50	3	8,500
KMSEA-2142	1.42	3	50	3	8,500
KMSEA-2143	1.43	3	50	3	8,500
KMSEA-2144	1.44	3	50	3	8,500
KMSEA-2145	1.45	3	50	3	8,500
KMSEA-2146	1.46	3	50	3	8,500
KMSEA-2147	1.47	3	50	3	8,500
KMSEA-2148	1.48	3	50	3	8,500
KMSEA-2149	1.49	3	50	3	8,500
KMSEA-2150	1.5	5	50	3	7,500
KMSEA-2151	1.51	5	50	3	8,500
KMSEA-2152	1.52	5	50	3	8,500
KMSEA-2153	1.53	5	50	3	8,500
KMSEA-2154	1.54	5	50	3	8,500
KMSEA-2155	1.55	5	50	3	8,500
KMSEA-2156	1.56	5	50	3	8,500
KMSEA-2157	1.57	5	50	3	8,500
KMSEA-2158	1.58	5	50	3	8,500
KMSEA-2159	1.59	5	50	3	8,500
KMSEA-2160	1.6	5	50	3	7,500
KMSEA-2161	1.61	5	50	3	8,500
KMSEA-2162	1.62	5	50	3	8,500
KMSEA-2163	1.63	5	50	3	8,500
KMSEA-2164	1.64	5	50	3	8,500
KMSEA-2165	1.65	5	50	3	8,500
KMSEA-2166	1.66	5	50	3	8,500
KMSEA-2167	1.67	5	50	3	8,500
KMSEA-2168	1.68	5	50	3	8,500
KMSEA-2169	1.69	5	50	3	8,500
KMSEA-2170	1.7	5	50	3	7,500
KMSEA-2171	1.71	5	50	3	8,500

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-2172	1.72	5	50	3	8,500
KMSEA-2173	1.73	5	50	3	8,500
KMSEA-2174	1.74	5	50	3	8,500
KMSEA-2175	1.75	5	50	3	8,500
KMSEA-2176	1.76	5	50	3	8,500
KMSEA-2177	1.77	5	50	3	8,500
KMSEA-2178	1.78	5	50	3	8,500
KMSEA-2179	1.79	5	50	3	8,500
KMSEA-2180	1.8	5	50	3	7,500
KMSEA-2181	1.81	5	50	3	8,500
KMSEA-2182	1.82	5	50	3	8,500
KMSEA-2183	1.83	5	50	3	8,500
KMSEA-2184	1.84	5	50	3	8,500
KMSEA-2185	1.85	5	50	3	8,500
KMSEA-2186	1.86	5	50	3	8,500
KMSEA-2187	1.87	5	50	3	8,500
KMSEA-2188	1.88	5	50	3	8,500
KMSEA-2189	1.89	5	50	3	8,500
KMSEA-2190	1.9	5	50	3	7,500
KMSEA-2191	1.91	5	50	3	8,500
KMSEA-2192	1.92	5	50	3	8,500
KMSEA-2193	1.93	5	50	3	8,500
KMSEA-2194	1.94	5	50	3	8,500
KMSEA-2195	1.95	5	50	3	8,500
KMSEA-2196	1.96	5	50	3	8,500
KMSEA-2197	1.97	5	50	3	8,500
KMSEA-2198	1.98	5	50	3	8,500
KMSEA-2199	1.99	5	50	3	8,500
KMSEA-2200	2	6	50	3	7,500
KMSEA-2201	2.01	6	50	3	8,500
KMSEA-2202	2.02	6	50	3	8,500
KMSEA-2203	2.03	6	50	3	8,500
KMSEA-2204	2.04	6	50	3	8,500
KMSEA-2205	2.05	6	50	3	8,500
KMSEA-2206	2.06	6	50	3	8,500
KMSEA-2207	2.07	6	50	3	8,500
KMSEA-2208	2.08	6	50	3	8,500
KMSEA-2209	2.09	6	50	3	8,500
KMSEA-2210	2.1	6	50	3	7,500
KMSEA-2211	2.11	6	50	3	8,500
KMSEA-2212	2.12	6	50	3	8,500
KMSEA-2213	2.13	6	50	3	8,500
KMSEA-2214	2.14	6	50	3	8,500
KMSEA-2215	2.15	6	50	3	8,500
KMSEA-2216	2.16	6	50	3	8,500
KMSEA-2217	2.17	6	50	3	8,500
KMSEA-2218	2.18	6	50	3	8,500
KMSEA-2219	2.19	6	50	3	8,500

KSE-2

超硬ソリッド 2 枚刃エンドミル Tungsten Carbide 2 Flutes Solid Endmill

■刃径をΦ3~Φ6まで0.01とびにラインナップ
Line-upped Φ3~Φ6 at pitch 0.01



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



ピンカド Sharp Edge

●切削条件表はP182に記載

●Cutting conditions are recommended on page 182.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2300	3	10	50	6	6,400
KSE-2301	3.01	10	50	6	7,200
KSE-2302	3.02	10	50	6	7,200
KSE-2303	3.03	10	50	6	7,200
KSE-2304	3.04	10	50	6	7,200
KSE-2305	3.05	10	50	6	7,200
KSE-2306	3.06	10	50	6	7,200
KSE-2307	3.07	10	50	6	7,200
KSE-2308	3.08	10	50	6	7,200
KSE-2309	3.09	10	50	6	7,200
KSE-2310	3.1	10	50	6	6,400
KSE-2311	3.11	10	50	6	7,200
KSE-2312	3.12	10	50	6	7,200
KSE-2313	3.13	10	50	6	7,200
KSE-2314	3.14	10	50	6	7,200
KSE-2315	3.15	10	50	6	7,200
KSE-2316	3.16	10	50	6	7,200
KSE-2317	3.17	10	50	6	7,200
KSE-2318	3.18	10	50	6	7,200
KSE-2319	3.19	10	50	6	7,200
KSE-2320	3.2	10	50	6	6,400
KSE-2321	3.21	10	50	6	7,200

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2322	3.22	10	50	6	7,200
KSE-2323	3.23	10	50	6	7,200
KSE-2324	3.24	10	50	6	7,200
KSE-2325	3.25	10	50	6	7,200
KSE-2326	3.26	10	50	6	7,200
KSE-2327	3.27	10	50	6	7,200
KSE-2328	3.28	10	50	6	7,200
KSE-2329	3.29	10	50	6	7,200
KSE-2330	3.3	10	50	6	6,400
KSE-2331	3.31	10	50	6	7,200
KSE-2332	3.32	10	50	6	7,200
KSE-2333	3.33	10	50	6	7,200
KSE-2334	3.34	10	50	6	7,200
KSE-2335	3.35	10	50	6	7,200
KSE-2336	3.36	10	50	6	7,200
KSE-2337	3.37	10	50	6	7,200
KSE-2338	3.38	10	50	6	7,200
KSE-2339	3.39	10	50	6	7,200
KSE-2340	3.4	10	50	6	6,400
KSE-2341	3.41	10	50	6	7,200
KSE-2342	3.42	10	50	6	7,200
KSE-2343	3.43	10	50	6	7,200
KSE-2344	3.44	10	50	6	7,200
KSE-2345	3.45	10	50	6	7,200
KSE-2346	3.46	10	50	6	7,200
KSE-2347	3.47	10	50	6	7,200
KSE-2348	3.48	10	50	6	7,200
KSE-2349	3.49	10	50	6	7,200
KSE-2350	3.5	10	50	6	6,400
KSE-2351	3.51	10	50	6	7,200
KSE-2352	3.52	10	50	6	7,200
KSE-2353	3.53	10	50	6	7,200
KSE-2354	3.54	10	50	6	7,200
KSE-2355	3.55	10	50	6	7,200
KSE-2356	3.56	10	50	6	7,200
KSE-2357	3.57	10	50	6	7,200
KSE-2358	3.58	10	50	6	7,200
KSE-2359	3.59	10	50	6	7,200
KSE-2360	3.6	10	50	6	6,400
KSE-2361	3.61	10	50	6	7,200
KSE-2362	3.62	10	50	6	7,200
KSE-2363	3.63	10	50	6	7,200
KSE-2364	3.64	10	50	6	7,200
KSE-2365	3.65	10	50	6	7,200
KSE-2366	3.66	10	50	6	7,200
KSE-2367	3.67	10	50	6	7,200
KSE-2368	3.68	10	50	6	7,200
KSE-2369	3.69	10	50	6	7,200

KSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2370	3.7	10	50	6	6,400
KSE-2371	3.71	10	50	6	7,200
KSE-2372	3.72	10	50	6	7,200
KSE-2373	3.73	10	50	6	7,200
KSE-2374	3.74	10	50	6	7,200
KSE-2375	3.75	10	50	6	7,200
KSE-2376	3.76	10	50	6	7,200
KSE-2377	3.77	10	50	6	7,200
KSE-2378	3.78	10	50	6	7,200
KSE-2379	3.79	10	50	6	7,200
KSE-2380	3.8	10	50	6	6,400
KSE-2381	3.81	10	50	6	7,200
KSE-2382	3.82	10	50	6	7,200
KSE-2383	3.83	10	50	6	7,200
KSE-2384	3.84	10	50	6	7,200
KSE-2385	3.85	10	50	6	7,200
KSE-2386	3.86	10	50	6	7,200
KSE-2387	3.87	10	50	6	7,200
KSE-2388	3.88	10	50	6	7,200
KSE-2389	3.89	10	50	6	7,200
KSE-2390	3.9	10	50	6	6,400
KSE-2391	3.91	10	50	6	7,200
KSE-2392	3.92	10	50	6	7,200
KSE-2393	3.93	10	50	6	7,200
KSE-2394	3.94	10	50	6	7,200
KSE-2395	3.95	10	50	6	7,200
KSE-2396	3.96	10	50	6	7,200
KSE-2397	3.97	10	50	6	7,200
KSE-2398	3.98	10	50	6	7,200
KSE-2399	3.99	10	50	6	7,200
KSE-2400	4	12	50	6	6,800
KSE-2401	4.01	12	50	6	8,000
KSE-2402	4.02	12	50	6	8,000
KSE-2403	4.03	12	50	6	8,000
KSE-2404	4.04	12	50	6	8,000
KSE-2405	4.05	12	50	6	8,000
KSE-2406	4.06	12	50	6	8,000
KSE-2407	4.07	12	50	6	8,000
KSE-2408	4.08	12	50	6	8,000
KSE-2409	4.09	12	50	6	8,000
KSE-2410	4.1	12	50	6	6,800
KSE-2411	4.11	12	50	6	8,000
KSE-2412	4.12	12	50	6	8,000
KSE-2413	4.13	12	50	6	8,000
KSE-2414	4.14	12	50	6	8,000
KSE-2415	4.15	12	50	6	8,000
KSE-2416	4.16	12	50	6	8,000
KSE-2417	4.17	12	50	6	8,000

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2418	4.18	12	50	6	8,000
KSE-2419	4.19	12	50	6	8,000
KSE-2420	4.2	12	50	6	6,800
KSE-2421	4.21	12	50	6	8,000
KSE-2422	4.22	12	50	6	8,000
KSE-2423	4.23	12	50	6	8,000
KSE-2424	4.24	12	50	6	8,000
KSE-2425	4.25	12	50	6	8,000
KSE-2426	4.26	12	50	6	8,000
KSE-2427	4.27	12	50	6	8,000
KSE-2428	4.28	12	50	6	8,000
KSE-2429	4.29	12	50	6	8,000
KSE-2430	4.3	12	50	6	6,800
KSE-2431	4.31	12	50	6	8,000
KSE-2432	4.32	12	50	6	8,000
KSE-2433	4.33	12	50	6	8,000
KSE-2434	4.34	12	50	6	8,000
KSE-2435	4.35	12	50	6	8,000
KSE-2436	4.36	12	50	6	8,000
KSE-2437	4.37	12	50	6	8,000
KSE-2438	4.38	12	50	6	8,000
KSE-2439	4.39	12	50	6	8,000
KSE-2440	4.4	12	50	6	6,800
KSE-2441	4.41	12	50	6	8,000
KSE-2442	4.42	12	50	6	8,000
KSE-2443	4.43	12	50	6	8,000
KSE-2444	4.44	12	50	6	8,000
KSE-2445	4.45	12	50	6	8,000
KSE-2446	4.46	12	50	6	8,000
KSE-2447	4.47	12	50	6	8,000
KSE-2448	4.48	12	50	6	8,000
KSE-2449	4.49	12	50	6	8,000
KSE-2450	4.5	12	50	6	6,800
KSE-2451	4.51	12	50	6	8,000
KSE-2452	4.52	12	50	6	8,000
KSE-2453	4.53	12	50	6	8,000
KSE-2454	4.54	12	50	6	8,000
KSE-2455	4.55	12	50	6	8,000
KSE-2456	4.56	12	50	6	8,000
KSE-2457	4.57	12	50	6	8,000
KSE-2458	4.58	12	50	6	8,000
KSE-2459	4.59	12	50	6	8,000
KSE-2460	4.6	12	50	6	6,800
KSE-2461	4.61	12	50	6	8,000
KSE-2462	4.62	12	50	6	8,000
KSE-2463	4.63	12	50	6	8,000
KSE-2464	4.64	12	50	6	8,000
KSE-2465	4.65	12	50	6	8,000

KSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2466	4.66	12	50	6	8,000
KSE-2467	4.67	12	50	6	8,000
KSE-2468	4.68	12	50	6	8,000
KSE-2469	4.69	12	50	6	8,000
KSE-2470	4.7	12	50	6	6,800
KSE-2471	4.71	12	50	6	8,000
KSE-2472	4.72	12	50	6	8,000
KSE-2473	4.73	12	50	6	8,000
KSE-2474	4.74	12	50	6	8,000
KSE-2475	4.75	12	50	6	8,000
KSE-2476	4.76	12	50	6	8,000
KSE-2477	4.77	12	50	6	8,000
KSE-2478	4.78	12	50	6	8,000
KSE-2479	4.79	12	50	6	8,000
KSE-2480	4.8	12	50	6	6,800
KSE-2481	4.81	12	50	6	8,000
KSE-2482	4.82	12	50	6	8,000
KSE-2483	4.83	12	50	6	8,000
KSE-2484	4.84	12	50	6	8,000
KSE-2485	4.85	12	50	6	8,000
KSE-2486	4.86	12	50	6	8,000
KSE-2487	4.87	12	50	6	8,000
KSE-2488	4.88	12	50	6	8,000
KSE-2489	4.89	12	50	6	8,000
KSE-2490	4.9	12	50	6	6,800
KSE-2491	4.91	12	50	6	8,000
KSE-2492	4.92	12	50	6	8,000
KSE-2493	4.93	12	50	6	8,000
KSE-2494	4.94	12	50	6	8,000
KSE-2495	4.95	12	50	6	8,000
KSE-2496	4.96	12	50	6	8,000
KSE-2497	4.97	12	50	6	8,000
KSE-2498	4.98	12	50	6	8,000
KSE-2499	4.99	12	50	6	8,000
KSE-2500	5	15	50	6	7,200
KSE-2501	5.01	15	50	6	8,500
KSE-2502	5.02	15	50	6	8,500
KSE-2503	5.03	15	50	6	8,500
KSE-2504	5.04	15	50	6	8,500
KSE-2505	5.05	15	50	6	8,500
KSE-2506	5.06	15	50	6	8,500
KSE-2507	5.07	15	50	6	8,500
KSE-2508	5.08	15	50	6	8,500
KSE-2509	5.09	15	50	6	8,500
KSE-2510	5.1	15	50	6	7,200
KSE-2511	5.11	15	50	6	8,500
KSE-2512	5.12	15	50	6	8,500
KSE-2513	5.13	15	50	6	8,500

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2514	5.14	15	50	6	8,500
KSE-2515	5.15	15	50	6	8,500
KSE-2516	5.16	15	50	6	8,500
KSE-2517	5.17	15	50	6	8,500
KSE-2518	5.18	15	50	6	8,500
KSE-2519	5.19	15	50	6	8,500
KSE-2520	5.2	15	50	6	7,200
KSE-2521	5.21	15	50	6	8,500
KSE-2522	5.22	15	50	6	8,500
KSE-2523	5.23	15	50	6	8,500
KSE-2524	5.24	15	50	6	8,500
KSE-2525	5.25	15	50	6	8,500
KSE-2526	5.26	15	50	6	8,500
KSE-2527	5.27	15	50	6	8,500
KSE-2528	5.28	15	50	6	8,500
KSE-2529	5.29	15	50	6	8,500
KSE-2530	5.3	15	50	6	7,200
KSE-2531	5.31	15	50	6	8,500
KSE-2532	5.32	15	50	6	8,500
KSE-2533	5.33	15	50	6	8,500
KSE-2534	5.34	15	50	6	8,500
KSE-2535	5.35	15	50	6	8,500
KSE-2536	5.36	15	50	6	8,500
KSE-2537	5.37	15	50	6	8,500
KSE-2538	5.38	15	50	6	8,500
KSE-2539	5.39	15	50	6	8,500
KSE-2540	5.4	15	50	6	7,200
KSE-2541	5.41	15	50	6	8,500
KSE-2542	5.42	15	50	6	8,500
KSE-2543	5.43	15	50	6	8,500
KSE-2544	5.44	15	50	6	8,500
KSE-2545	5.45	15	50	6	8,500
KSE-2546	5.46	15	50	6	8,500
KSE-2547	5.47	15	50	6	8,500
KSE-2548	5.48	15	50	6	8,500
KSE-2549	5.49	15	50	6	8,500
KSE-2550	5.5	15	50	6	7,200
KSE-2551	5.51	15	50	6	8,500
KSE-2552	5.52	15	50	6	8,500
KSE-2553	5.53	15	50	6	8,500
KSE-2554	5.54	15	50	6	8,500
KSE-2555	5.55	15	50	6	8,500
KSE-2556	5.56	15	50	6	8,500
KSE-2557	5.57	15	50	6	8,500
KSE-2558	5.58	15	50	6	8,500
KSE-2559	5.59	15	50	6	8,500
KSE-2560	5.6	15	50	6	7,200
KSE-2561	5.61	15	50	6	8,500

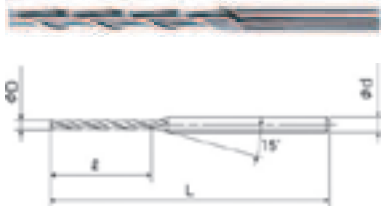
KSE-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSE-2562	5.62	15	50	6	8,500
KSE-2563	5.63	15	50	6	8,500
KSE-2564	5.64	15	50	6	8,500
KSE-2565	5.65	15	50	6	8,500
KSE-2566	5.66	15	50	6	8,500
KSE-2567	5.67	15	50	6	8,500
KSE-2568	5.68	15	50	6	8,500
KSE-2569	5.69	15	50	6	8,500
KSE-2570	5.7	15	50	6	7,200
KSE-2571	5.71	15	50	6	8,500
KSE-2572	5.72	15	50	6	8,500
KSE-2573	5.73	15	50	6	8,500
KSE-2574	5.74	15	50	6	8,500
KSE-2575	5.75	15	50	6	8,500
KSE-2576	5.76	15	50	6	8,500
KSE-2577	5.77	15	50	6	8,500
KSE-2578	5.78	15	50	6	8,500
KSE-2579	5.79	15	50	6	8,500
KSE-2580	5.8	15	50	6	7,200
KSE-2581	5.81	15	50	6	8,500
KSE-2582	5.82	15	50	6	8,500
KSE-2583	5.83	15	50	6	8,500
KSE-2584	5.84	15	50	6	8,500
KSE-2585	5.85	15	50	6	8,500
KSE-2586	5.86	15	50	6	8,500
KSE-2587	5.87	15	50	6	8,500
KSE-2588	5.88	15	50	6	8,500
KSE-2589	5.89	15	50	6	8,500
KSE-2590	5.9	15	50	6	7,200
KSE-2591	5.91	15	50	6	8,500
KSE-2592	5.92	15	50	6	8,500
KSE-2593	5.93	15	50	6	8,500
KSE-2594	5.94	15	50	6	8,500
KSE-2595	5.95	15	50	6	8,500
KSE-2596	5.96	15	50	6	8,500
KSE-2597	5.97	15	50	6	8,500
KSE-2598	5.98	15	50	6	8,500
KSE-2599	5.99	15	50	6	8,500
KSE-2600	6	15	50	6	7,500

KSEL-2

超硬ロングエンドミル Tungsten Carbide Long Endmill

■刃長が刃径の4倍～最大12倍までラインナップ
Line-upped flute length 4 times to max 12 times of flute diameter



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0～-0.01



柄径の許容差 Shank Diameter Tolerance
d = 3 0～-0.006
3 < d ≤ 6 0～-0.008



ネジレ角30° Twist Angle 30°

●切削条件表はP183に記載

●Cutting conditions are recommended on page 183.

単位[寸法 : mm / 価格 : ¥]

Unit [size : mm / Retail Price : JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-201003	0.1	0.3	40	3	16,000
KSEL-201004	0.1	0.4	40	3	16,500
KSEL-201005	0.1	0.5	40	3	17,000
KSEL-201006	0.1	0.6	40	3	17,400
KSEL-201007	0.1	0.7	40	3	17,600
KSEL-201008	0.1	0.8	40	3	18,500
KSEL-201010	0.1	1	40	3	19,100
KSEL-201012	0.1	1.2	40	3	19,500
KSEL-201015	0.1	1.5	40	3	20,000
KSEL-201505	0.15	0.5	40	3	14,100
KSEL-201510	0.15	1	40	3	15,900
KSEL-201515	0.15	1.5	40	3	17,600
KSEL-201520	0.15	2	40	3	18,400
KSEL-202006	0.2	0.6	40	3	10,600
KSEL-202010	0.2	1	40	3	11,300
KSEL-202015	0.2	1.5	40	3	12,300
KSEL-202020	0.2	2	40	3	13,400
KSEL-202025	0.2	2.5	40	3	14,000
KSEL-202510	0.25	1	40	3	11,300
KSEL-202520	0.25	2	40	3	12,300
KSEL-202525	0.25	2.5	40	3	13,400
KSEL-202530	0.25	3	40	3	14,000
KSEL-203015	0.3	1.5	40	3	10,200
KSEL-203020	0.3	2	40	3	11,300

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-203030	0.3	3	40	3	12,300
KSEL-203040	0.3	4	40	3	13,400
KSEL-203520	0.35	2	40	3	10,200
KSEL-203530	0.35	3	40	3	11,300
KSEL-203540	0.35	4	40	3	12,300
KSEL-203550	0.35	5	40	3	13,400
KSEL-204020	0.4	2	40	3	9,600
KSEL-204030	0.4	3	40	3	10,600
KSEL-204040	0.4	4	40	3	11,700
KSEL-204050	0.4	5	40	3	12,400
KSEL-204520	0.45	2	40	3	9,400
KSEL-204530	0.45	3	40	3	9,600
KSEL-204540	0.45	4	40	3	10,600
KSEL-204550	0.45	5	40	3	11,700
KSEL-204560	0.45	6	40	3	12,400
KSEL-205015	0.5	1.5	40	3	8,400
KSEL-205020	0.5	2	40	3	8,500
KSEL-205025	0.5	2.5	40	3	8,500
KSEL-205030	0.5	3	40	3	9,600
KSEL-205035	0.5	3.5	40	3	9,600
KSEL-205040	0.5	4	40	3	9,900
KSEL-205050	0.5	5	40	3	10,600
KSEL-205060	0.5	6	40	3	11,700
KSEL-205520	0.55	2	40	3	8,700
KSEL-205530	0.55	3	40	3	9,600
KSEL-205540	0.55	4	40	3	9,900
KSEL-205550	0.55	5	40	3	10,600
KSEL-205560	0.55	6	40	3	11,700
KSEL-206030	0.6	3	40	3	8,500
KSEL-206040	0.6	4	40	3	9,400
KSEL-206050	0.6	5	40	3	10,200
KSEL-206060	0.6	6	40	3	10,700
KSEL-206530	0.65	3	40	3	8,500
KSEL-206545	0.65	4.5	40	3	9,400
KSEL-206560	0.65	6	40	3	10,200
KSEL-206570	0.65	7	40	3	10,700
KSEL-207030	0.7	3	40	3	7,500
KSEL-207040	0.7	4	40	3	8,500
KSEL-207050	0.7	5	40	3	9,400
KSEL-207060	0.7	6	40	3	10,200
KSEL-207070	0.7	7	40	3	11,000
KSEL-207080	0.7	8	40	3	11,700
KSEL-207540	0.75	4	40	3	8,500
KSEL-207560	0.75	6	40	3	9,900
KSEL-207580	0.75	8	40	3	11,300
KSEL-207590	0.75	9	40	3	12,700
KSEL-208030	0.8	3	40	3	7,000
KSEL-208035	0.8	3.5	40	3	7,000

KSEL-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-208040	0.8	4	40	3	8,500
KSEL-208060	0.8	6	40	3	8,500
KSEL-208080	0.8	8	40	3	9,900
KSEL-208100	0.8	10	40	3	11,300
KSEL-208120	0.8	12	40	3	13,000
KSEL-208550	0.85	5	40	3	8,500
KSEL-208560	0.85	6	40	3	8,800
KSEL-208580	0.85	8	40	3	9,900
KSEL-208510	0.85	10	40	3	11,400
KSEL-209050	0.9	5	40	3	7,500
KSEL-209060	0.9	6	40	3	8,500
KSEL-209080	0.9	8	40	3	9,900
KSEL-209100	0.9	10	40	3	11,400
KSEL-209560	0.95	6	40	3	8,500
KSEL-209580	0.95	8	40	3	9,900
KSEL-209510	0.95	10	40	3	10,600
KSEL-209512	0.95	12	40	3	11,700
KSEL-210040	1	4	45	4	7,000
KSEL-210050	1	5	45	4	7,800
KSEL-210060	1	6	45	4	8,500
KSEL-210070	1	7	45	4	8,500
KSEL-210080	1	8	45	4	8,500
KSEL-210090	1	9	45	4	8,800
KSEL-210100	1	10	45	4	9,200
KSEL-210120	1	12	45	4	10,600
KSEL-210140	1	14	45	4	12,000
KSEL-210560	1.05	6	45	4	8,500
KSEL-210580	1.05	8	45	4	8,500
KSEL-210510	1.05	10	45	4	9,200
KSEL-210512	1.05	12	45	4	10,700
KSEL-211060	1.1	6	45	4	7,800
KSEL-211080	1.1	8	45	4	8,500
KSEL-211100	1.1	10	45	4	9,200
KSEL-211120	1.1	12	45	4	10,700
KSEL-211580	1.15	8	45	4	8,500
KSEL-211510	1.15	10	45	4	8,500
KSEL-211512	1.15	12	45	4	9,200
KSEL-211514	1.15	14	45	4	11,000
KSEL-212060	1.2	6	45	4	7,800
KSEL-212080	1.2	8	45	4	8,500
KSEL-212100	1.2	10	45	4	8,500
KSEL-212120	1.2	12	45	4	9,200
KSEL-212140	1.2	14	45	4	11,000
KSEL-212580	1.25	8	45	4	8,500
KSEL-212510	1.25	10	45	4	8,500
KSEL-212512	1.25	12	45	4	9,200
KSEL-212514	1.25	14	45	4	11,000
KSEL-213060	1.3	6	45	4	7,800

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-213080	1.3	8	45	4	8,500
KSEL-213100	1.3	10	45	4	8,500
KSEL-213120	1.3	12	45	4	9,200
KSEL-213150	1.3	15	45	4	11,700
KSEL-213580	1.35	8	45	4	8,500
KSEL-213510	1.35	10	45	4	8,500
KSEL-213512	1.35	12	45	4	9,200
KSEL-213515	1.35	15	45	4	11,700
KSEL-214060	1.4	6	45	4	7,800
KSEL-214080	1.4	8	45	4	8,800
KSEL-214100	1.4	10	45	4	8,800
KSEL-214120	1.4	12	45	4	9,600
KSEL-214140	1.4	14	45	4	11,000
KSEL-214160	1.4	16	45	4	12,000
KSEL-214580	1.45	8	45	4	8,800
KSEL-214512	1.45	12	45	4	9,600
KSEL-214515	1.45	15	50	4	10,600
KSEL-214518	1.45	18	50	4	12,000
KSEL-215060	1.5	6	45	4	7,800
KSEL-215080	1.5	8	45	4	8,500
KSEL-215100	1.5	10	45	4	9,200
KSEL-215120	1.5	12	45	4	9,200
KSEL-215150	1.5	15	50	4	10,600
KSEL-215180	1.5	18	55	4	11,300
KSEL-215200	1.5	20	60	4	12,300
KSEL-215580	1.55	8	45	4	8,800
KSEL-215512	1.55	12	45	4	9,600
KSEL-215516	1.55	16	50	4	10,600
KSEL-215520	1.55	20	60	4	12,500
KSEL-216080	1.6	8	45	4	7,800
KSEL-216100	1.6	10	45	4	9,200
KSEL-216120	1.6	12	45	4	9,200
KSEL-216160	1.6	16	50	4	10,600
KSEL-216200	1.6	20	60	4	12,500
KSEL-216580	1.65	8	45	4	7,800
KSEL-216512	1.65	12	45	4	9,200
KSEL-216516	1.65	16	50	4	10,600
KSEL-216520	1.65	20	60	4	12,500
KSEL-217080	1.7	8	45	4	7,800
KSEL-217100	1.7	10	45	4	9,200
KSEL-217120	1.7	12	45	4	9,200
KSEL-217150	1.7	15	50	4	9,900
KSEL-217170	1.7	17	50	4	10,600
KSEL-217210	1.7	21	60	4	12,500
KSEL-217510	1.75	10	45	4	9,200
KSEL-217515	1.75	15	50	4	9,200
KSEL-217518	1.75	18	55	4	10,600
KSEL-217521	1.75	21	60	4	12,500

KSEL-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-218080	1.8	8	45	4	7,800
KSEL-218100	1.8	10	45	4	9,200
KSEL-218120	1.8	12	45	4	9,200
KSEL-218150	1.8	15	50	4	9,900
KSEL-218180	1.8	18	55	4	10,600
KSEL-218220	1.8	22	60	4	12,500
KSEL-218510	1.85	10	45	4	9,200
KSEL-218515	1.85	15	50	4	9,900
KSEL-218518	1.85	18	55	4	10,600
KSEL-218522	1.85	22	60	4	12,500
KSEL-219080	1.9	8	45	4	7,800
KSEL-219100	1.9	10	45	4	9,200
KSEL-219120	1.9	12	45	4	9,200
KSEL-219150	1.9	15	50	4	9,900
KSEL-219190	1.9	19	55	4	10,600
KSEL-219220	1.9	22	60	4	12,500
KSEL-219510	1.95	10	45	4	9,200
KSEL-219515	1.95	15	50	4	9,900
KSEL-219520	1.95	20	60	4	10,600
KSEL-219524	1.95	24	60	4	12,500
KSEL-220080	2	8	45	4	7,000
KSEL-220100	2	10	45	4	7,800
KSEL-220120	2	12	45	4	7,800
KSEL-220150	2	15	50	4	8,800
KSEL-220170	2	17	55	4	9,200
KSEL-220200	2	20	60	4	10,200
KSEL-220220	2	22	60	4	11,000
KSEL-220240	2	24	60	4	12,000
KSEL-221100	2.1	10	45	4	7,800
KSEL-221150	2.1	15	50	4	8,800
KSEL-221200	2.1	20	60	4	10,200
KSEL-221250	2.1	25	60	4	12,000
KSEL-222100	2.2	10	45	4	7,800
KSEL-222150	2.2	15	50	4	8,800
KSEL-222200	2.2	20	60	4	10,200
KSEL-222250	2.2	25	60	4	1,2000
KSEL-223100	2.3	10	45	4	7,800
KSEL-223150	2.3	15	50	4	8,800
KSEL-223200	2.3	20	60	4	10,200
KSEL-223250	2.3	25	60	4	12,000
KSEL-224100	2.4	10	45	4	7,800
KSEL-224150	2.4	15	50	4	8,800
KSEL-224200	2.4	20	60	4	10,200
KSEL-224250	2.4	25	60	4	12,000
KSEL-225100	2.5	10	45	4	7,000
KSEL-225150	2.5	15	50	4	7,800
KSEL-225200	2.5	20	60	4	8,800
KSEL-225250	2.5	25	60	4	10,200

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-225300	2.5	30	70	4	12,000
KSEL-226100	2.6	10	45	4	7,000
KSEL-226150	2.6	15	50	4	7,800
KSEL-226200	2.6	20	60	4	8,800
KSEL-226250	2.6	25	60	4	10,200
KSEL-226300	2.6	30	70	4	12,000
KSEL-227100	2.7	10	45	4	7,000
KSEL-227150	2.7	15	50	4	7,800
KSEL-227200	2.7	20	60	4	8,800
KSEL-227250	2.7	25	60	4	10,200
KSEL-227300	2.7	30	70	4	12,000
KSEL-228100	2.8	10	45	4	7,000
KSEL-228150	2.8	15	50	4	7,800
KSEL-228200	2.8	20	60	4	8,800
KSEL-228250	2.8	25	60	4	10,200
KSEL-228300	2.8	30	70	4	12,000
KSEL-229150	2.9	15	50	4	7,800
KSEL-229200	2.9	20	60	4	8,800
KSEL-229250	2.9	25	60	4	10,200
KSEL-229300	2.9	30	70	4	12,000
KSEL-230150	3	15	60	6	7,800
KSEL-230200	3	20	60	6	8,500
KSEL-230250	3	25	70	6	8,800
KSEL-230300	3	30	70	6	10,200
KSEL-231300	3.1	30	70	6	11,300
KSEL-232300	3.2	30	70	6	11,300
KSEL-233300	3.3	30	70	6	11,300
KSEL-234300	3.4	30	70	6	11,300
KSEL-235200	3.5	20	70	6	8,500
KSEL-235250	3.5	25	70	6	8,800
KSEL-235300	3.5	30	70	6	10,200
KSEL-236300	3.6	30	70	6	11,300
KSEL-237300	3.7	30	70	6	11,300
KSEL-238300	3.8	30	70	6	11,300
KSEL-239300	3.9	30	70	6	11,300
KSEL-240200	4	20	70	6	9,200
KSEL-240250	4	25	70	6	10,200
KSEL-240300	4	30	70	6	11,300
KSEL-240350	4	35	80	6	12,000
KSEL-240400	4	40	80	6	12,800
KSEL-241300	4.1	30	70	6	12,300
KSEL-242300	4.2	30	70	6	12,300
KSEL-243300	4.3	30	70	6	12,300
KSEL-244300	4.4	30	70	6	12,300
KSEL-245300	4.5	30	70	6	11,300
KSEL-245350	4.5	35	80	6	12,000
KSEL-245400	4.5	40	80	6	12,800
KSEL-246300	4.6	30	70	6	12,300

KSEL-2

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSEL-247300	4.7	30	70	6	12,300
KSEL-248300	4.8	30	70	6	12,300
KSEL-249300	4.9	30	70	6	12,300
KSEL-250300	5	30	70	6	11,300
KSEL-250350	5	35	80	6	12,000
KSEL-250400	5	40	80	6	13,400
KSEL-250450	5	45	90	6	14,100
KSEL-250500	5	50	90	6	15,900
KSEL-251400	5.1	40	80	6	14,900
KSEL-252400	5.2	40	80	6	14,900
KSEL-253400	5.3	40	80	6	14,900
KSEL-254400	5.4	40	80	6	14,900
KSEL-255300	5.5	30	80	6	11,300
KSEL-255350	5.5	35	80	6	12,000
KSEL-255400	5.5	40	80	6	13,400
KSEL-255450	5.5	45	90	6	14,100
KSEL-255500	5.5	50	90	6	15,900
KSEL-256400	5.6	40	80	6	14,900
KSEL-257400	5.7	40	80	6	14,900
KSEL-258400	5.8	40	80	6	14,900
KSEL-259400	5.9	40	80	6	14,900
KSEL-260300	6	30	80	6	12,000
KSEL-260350	6	35	80	6	13,400
KSEL-260400	6	40	80	6	14,100
KSEL-260450	6	45	90	6	15,200
KSEL-260500	6	50	90	6	16,600
KSEL-260600	6	60	100	6	18,400

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price

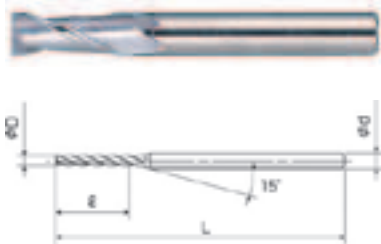
超硬製品

Tungsten Carbide

KSET-2

超硬 2 枚刃エンドミル
Tungsten Carbide 2 Flutes Endmill
TiCN Coating

■汎用タイプの2枚刃エンドミルです
2 flute endmill of general purpose



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3 < d ≤ 6 0~-0.008

ネジレ角30° Twist Angle 30°

ビンカド Sharp Edge

TiCNコート TiCN コート TiCN Coating

●切削条件表はP185に記載 単位[寸法: mm / 価格: 円]
●Cutting conditions are recommended on page 185. Unit [size: mm / Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSET-201002	0.1	0.2	40	3	17,600
KSET-202005	0.2	0.5	40	3	12,300
KSET-203010	0.3	1	40	3	11,300
KSET-204010	0.4	1	40	3	9,600
KSET-205015	0.5	1.5	40	3	8,500
KSET-206020	0.6	2	40	3	8,500
KSET-207020	0.7	2	40	3	8,100
KSET-208025	0.8	2.5	40	3	8,100
KSET-209030	0.9	3	40	3	7,500
KSET-210030	1	3	40	4	7,500
KSET-211030	1.1	3	40	4	7,500
KSET-212030	1.2	3	40	4	7,500
KSET-213030	1.3	3	40	4	7,500
KSET-214030	1.4	3	40	4	7,500
KSET-215040	1.5	4	40	4	7,500
KSET-216040	1.6	4	40	4	7,500
KSET-217040	1.7	4	40	4	7,500
KSET-218040	1.8	4	40	4	7,500
KSET-219040	1.9	4	40	4	7,500
KSET-220060	2	6	45	4	7,500
KSET-221060	2.1	6	45	4	7,500
KSET-222060	2.2	6	45	4	7,500
KSET-223060	2.3	6	45	4	7,500
KSET-224060	2.4	6	45	4	7,500
KSET-225080	2.5	8	45	4	7,500
KSET-226080	2.6	8	45	4	7,500
KSET-227080	2.7	8	45	4	7,500
KSET-228080	2.8	8	45	4	7,500
KSET-229080	2.9	8	45	4	7,500
KSET-230080	3	8	45	6	7,800

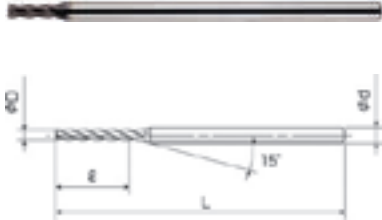
品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSET-235100	3.5	10	45	6	8,500
KSET-240110	4	11	45	6	9,200
KSET-245110	4.5	11	50	6	9,200
KSET-250130	5	13	50	6	9,900
KSET-255130	5.5	13	50	6	9,900
KSET-260130	6	13	50	6	10,200

超硬製品
Tungsten Carbide

KMSEA-4

超硬ミニチュア 4 枚刃エンドミル
Tungsten Carbide Miniature 4 Flutes Solid Endmill
TiAlN Coating

■刃径をΦ0.5～Φ3まで0.1とびにラインナップ
Line-upped Φ0.5～Φ3 at pitch 0.1



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0～-0.01



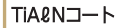
柄径の許容差 Shank Diameter Tolerance
d 0～-0.006



ネジレ角30° Twist Angle 30°



ピンカド Sharp Edge



TiAlNコート TiAlN Coating

●切削条件表はP187に記載
●Cutting conditions are recommended on page 187.

単位 [寸法 : mm / 価格 : 円]
Unit [size : mm / Retail Price : JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMSEA-4050	0.5	1	60	3	12,800
KMSEA-4060	0.6	2	60	3	11,700
KMSEA-4070	0.7	2	60	3	11,300
KMSEA-4080	0.8	2.5	60	3	10,600
KMSEA-4090	0.9	2.5	60	3	10,600
KMSEA-4100	1	3	60	3	10,100
KMSEA-4110	1.1	3	60	3	10,100
KMSEA-4120	1.2	3	60	3	9,900
KMSEA-4130	1.3	3	60	3	9,900
KMSEA-4140	1.4	3	60	3	9,900
KMSEA-4150	1.5	3	60	3	9,700
KMSEA-4160	1.6	3	60	3	9,700
KMSEA-4170	1.7	3	60	3	9,700
KMSEA-4180	1.8	3	60	3	9,700
KMSEA-4190	1.9	3	60	3	9,700
KMSEA-4200	2	6	60	3	9,400
KMSEA-4210	2.1	6	60	3	9,400
KMSEA-4220	2.2	6	60	3	9,400
KMSEA-4230	2.3	6	60	3	9,400
KMSEA-4240	2.4	6	60	3	9,400
KMSEA-4250	2.5	8	60	3	9,400
KMSEA-4260	2.6	8	60	3	9,400
KMSEA-4270	2.7	8	60	3	9,400
KMSEA-4280	2.8	8	60	3	9,400
KMSEA-4290	2.9	8	60	3	9,400
KMSEA-4300	3	8	60	3	9,600

品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price

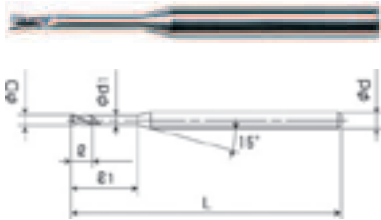
超硬製品

Tungsten Carbide

KRE-2

超硬リブ用エンドミル Tungsten Carbide Long Neck Endmill

- 刃径Φ0.2~Φ6まで0.1とびにラインナップ
Line-upped Φ0.2~Φ6 at pitch 0.1
- 深い加工用に首下を長くとりました
Long neck type for deep processing



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.008

ネジレ角30° Twist Angle 30°

ピンカド Sharp Edge

●切削条件表はP188に記載 単位[寸法: mm/価格: 円]
●Cutting conditions are recommended on page 188. Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-202005	0.2	0.5	0.3	0.18	40	4	10,600
KRE-202010	0.2	1	0.3	0.18	40	4	12,000
KRE-202015	0.2	1.5	0.3	0.18	40	4	13,800
KRE-202020	0.2	2	0.3	0.18	40	4	14,100
KRE-202030	0.2	3	0.3	0.18	40	4	14,500
KRE-202040	0.2	4	0.3	0.18	40	4	15,200
KRE-202050	0.2	5	0.3	0.18	40	4	15,900
KRE-203010	0.3	1	0.4	0.28	40	4	10,600
KRE-203020	0.3	2	0.4	0.28	40	4	12,000
KRE-203030	0.3	3	0.4	0.28	40	4	12,000
KRE-203040	0.3	4	0.4	0.28	40	4	12,000
KRE-203060	0.3	6	0.4	0.28	50	4	13,400
KRE-203080	0.3	8	0.4	0.28	50	4	14,900
KRE-203100	0.3	10	0.4	0.28	50	4	15,900
KRE-204020	0.4	2	0.6	0.37	40	4	10,600
KRE-204030	0.4	3	0.6	0.37	40	4	12,000
KRE-204040	0.4	4	0.6	0.37	40	4	12,000
KRE-204060	0.4	6	0.6	0.37	50	4	13,400
KRE-204080	0.4	8	0.6	0.37	50	4	14,900
KRE-204100	0.4	10	0.6	0.37	50	4	15,900

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-205020	0.5	2	0.7	0.46	40	4	5,300
KRE-205040	0.5	4	0.7	0.46	40	4	5,300
KRE-205060	0.5	6	0.7	0.46	50	4	5,300
KRE-205080	0.5	8	0.7	0.46	50	4	7,000
KRE-205100	0.5	10	0.7	0.46	50	4	8,800
KRE-205120	0.5	12	0.7	0.46	50	4	8,800
KRE-205160	0.5	16	0.7	0.46	60	4	10,600
KRE-205200	0.5	20	0.7	0.46	60	4	12,300
KRE-206020	0.6	2	0.9	0.56	40	4	5,300
KRE-206040	0.6	4	0.9	0.56	40	4	5,300
KRE-206060	0.6	6	0.9	0.56	50	4	5,300
KRE-206080	0.6	8	0.9	0.56	50	4	7,000
KRE-206100	0.6	10	0.9	0.56	50	4	8,800
KRE-206120	0.6	12	0.9	0.56	50	4	8,800
KRE-206160	0.6	16	0.9	0.56	60	4	10,600
KRE-206200	0.6	20	0.9	0.56	60	4	12,300
KRE-207020	0.7	2	1	0.66	40	4	5,300
KRE-207040	0.7	4	1	0.66	40	4	5,300
KRE-207060	0.7	6	1	0.66	50	4	5,300
KRE-207080	0.7	8	1	0.66	50	4	7,000
KRE-207100	0.7	10	1	0.66	50	4	8,800
KRE-207120	0.7	12	1	0.66	50	4	8,800
KRE-207160	0.7	16	1	0.66	60	4	10,600
KRE-207200	0.7	20	1	0.66	60	4	12,300
KRE-208040	0.8	4	1.2	0.76	40	4	5,300
KRE-208060	0.8	6	1.2	0.76	50	4	5,300
KRE-208080	0.8	8	1.2	0.76	50	4	5,300
KRE-208100	0.8	10	1.2	0.76	50	4	7,000
KRE-208120	0.8	12	1.2	0.76	50	4	8,500
KRE-208160	0.8	16	1.2	0.76	60	4	9,900
KRE-208200	0.8	20	1.2	0.76	60	4	11,300
KRE-209060	0.9	6	1.4	0.86	50	4	5,300
KRE-209080	0.9	8	1.4	0.86	50	4	5,300
KRE-209100	0.9	10	1.4	0.86	50	4	5,300
KRE-209120	0.9	12	1.4	0.86	50	4	7,000
KRE-209160	0.9	16	1.4	0.86	60	4	9,900
KRE-209200	0.9	20	1.4	0.86	60	4	11,300
KRE-210060	1	6	1.5	0.95	50	4	5,300
KRE-210080	1	8	1.5	0.95	50	4	5,300
KRE-210100	1	10	1.5	0.95	50	4	5,300
KRE-210120	1	12	1.5	0.95	50	4	5,300
KRE-210160	1	16	1.5	0.95	60	4	7,800
KRE-210200	1	20	1.5	0.95	60	4	8,800
KRE-210250	1	25	1.5	0.95	70	4	9,900
KRE-210300	1	30	1.5	0.95	70	4	11,300
KRE-211060	1.1	6	1.6	1.05	50	4	5,700
KRE-211120	1.1	12	1.6	1.05	50	4	5,700
KRE-211160	1.1	16	1.6	1.05	60	4	6,800

KRE-2

品番 Code No.	刃径 D Flute Diameter	有効長 L1 Effective Length	刃長 L Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-211200	1.1	20	1.6	1.05	60	4	6,800
KRE-211300	1.1	30	1.6	1.05	70	4	10,000
KRE-212060	1.2	6	1.8	1.15	50	4	6,400
KRE-212120	1.2	12	1.8	1.15	50	4	6,400
KRE-212160	1.2	16	1.8	1.15	60	4	6,400
KRE-212200	1.2	20	1.8	1.15	60	4	7,800
KRE-212300	1.2	30	1.8	1.15	70	4	10,000
KRE-213060	1.3	6	1.9	1.25	50	4	6,600
KRE-213120	1.3	12	1.9	1.25	50	4	6,600
KRE-213160	1.3	16	1.9	1.25	60	4	6,800
KRE-213200	1.3	20	1.9	1.25	60	4	6,800
KRE-213300	1.3	30	1.9	1.25	70	4	10,000
KRE-214060	1.4	6	2.1	1.35	50	4	6,500
KRE-214120	1.4	12	2.1	1.35	50	4	6,500
KRE-214160	1.4	16	2.1	1.35	60	4	6,500
KRE-214200	1.4	20	2.1	1.35	60	4	6,800
KRE-214300	1.4	30	2.1	1.35	70	4	10,000
KRE-215100	1.5	10	2.3	1.45	50	4	5,300
KRE-215120	1.5	12	2.3	1.45	50	4	5,300
KRE-215160	1.5	16	2.3	1.45	60	4	5,300
KRE-215200	1.5	20	2.3	1.45	60	4	5,300
KRE-215250	1.5	25	2.3	1.45	70	4	9,200
KRE-215300	1.5	30	2.3	1.45	70	4	11,300
KRE-216100	1.6	10	2.4	1.55	50	4	6,900
KRE-216160	1.6	16	2.4	1.55	60	4	6,900
KRE-216200	1.6	20	2.4	1.55	60	4	7,000
KRE-216300	1.6	30	2.4	1.55	70	4	10,000
KRE-217100	1.7	10	2.5	1.65	50	4	7,200
KRE-217160	1.7	16	2.5	1.65	60	4	7,200
KRE-217200	1.7	20	2.5	1.65	60	4	7,400
KRE-217300	1.7	30	2.5	1.65	70	4	10,200
KRE-218100	1.8	10	2.7	1.75	50	4	6,900
KRE-218160	1.8	16	2.7	1.75	60	4	6,900
KRE-218200	1.8	20	2.7	1.75	60	4	7,000
KRE-218300	1.8	30	2.7	1.75	70	4	10,000
KRE-219100	1.9	10	2.8	1.85	50	4	7,500
KRE-219160	1.9	16	2.8	1.85	60	4	7,500
KRE-219200	1.9	20	2.8	1.85	60	4	8,500
KRE-219300	1.9	30	2.8	1.85	70	4	10,000
KRE-220100	2	10	3	1.94	50	4	5,300
KRE-220120	2	12	3	1.94	50	4	5,300
KRE-220140	2	14	3	1.94	50	4	5,300
KRE-220160	2	16	3	1.94	60	4	5,300
KRE-220180	2	18	3	1.94	60	4	5,300
KRE-220200	2	20	3	1.94	60	4	5,300
KRE-220250	2	25	3	1.94	70	4	5,700
KRE-220300	2	30	3	1.94	70	4	7,000
KRE-220350	2	35	3	1.94	80	4	11,300

品番 Code No.	刃径 D Flute Diameter	有効長 L1 Effective Length	刃長 L Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-220400	2	40	3	1.94	80	4	12,800
KRE-221120	2.1	12	3.1	2.04	50	4	7,500
KRE-221160	2.1	16	3.1	2.04	60	4	7,500
KRE-221200	2.1	20	3.1	2.04	60	4	8,500
KRE-221300	2.1	30	3.1	2.04	70	4	10,000
KRE-222120	2.2	12	3.3	2.14	50	4	7,500
KRE-222160	2.2	16	3.3	2.14	60	4	7,500
KRE-222200	2.2	20	3.3	2.14	60	4	8,500
KRE-222300	2.2	30	3.3	2.14	70	4	10,000
KRE-223120	2.3	12	3.4	2.24	50	4	7,500
KRE-223160	2.3	16	3.4	2.24	60	4	7,500
KRE-223200	2.3	20	3.4	2.24	60	4	8,500
KRE-223300	2.3	30	3.4	2.24	70	4	10,000
KRE-224120	2.4	12	3.6	2.34	50	4	7,500
KRE-224160	2.4	16	3.6	2.34	60	4	7,500
KRE-224200	2.4	20	3.6	2.34	60	4	8,500
KRE-224300	2.4	30	3.6	2.34	70	4	10,000
KRE-225120	2.5	12	3.7	2.4	50	4	6,900
KRE-225160	2.5	16	3.7	2.4	60	4	6,900
KRE-225200	2.5	20	3.7	2.4	60	4	6,900
KRE-225300	2.5	30	3.7	2.4	70	4	7,700
KRE-225400	2.5	40	3.7	2.4	80	4	12,800
KRE-226120	2.6	12	3.9	2.5	50	4	7,500
KRE-226160	2.6	16	3.9	2.5	60	4	7,500
KRE-226200	2.6	20	3.9	2.5	60	4	7,500
KRE-226300	2.6	30	3.9	2.5	70	4	8,400
KRE-226400	2.6	40	3.9	2.5	80	4	12,800
KRE-227120	2.7	12	4	2.6	50	4	7,500
KRE-227160	2.7	16	4	2.6	60	4	7,500
KRE-227200	2.7	20	4	2.6	60	4	7,500
KRE-227300	2.7	30	4	2.6	70	4	8,400
KRE-227400	2.7	40	4	2.6	80	4	12,800
KRE-228120	2.8	12	4.2	2.7	50	4	7,500
KRE-228160	2.8	16	4.2	2.7	60	4	7,500
KRE-228200	2.8	20	4.2	2.7	60	4	7,500
KRE-228300	2.8	30	4.2	2.7	70	4	8,400
KRE-228400	2.8	40	4.2	2.7	80	4	12,800
KRE-229120	2.9	12	4.3	2.8	50	4	7,500
KRE-229160	2.9	16	4.3	2.8	60	4	7,500
KRE-229200	2.9	20	4.3	2.8	60	4	7,500
KRE-229300	2.9	30	4.3	2.8	70	4	8,400
KRE-229400	2.9	40	4.3	2.8	80	4	12,800
KRE-230120	3	12	4.5	2.9	50	6	6,400
KRE-230160	3	16	4.5	2.9	60	6	6,400
KRE-230200	3	20	4.5	2.9	60	6	6,400
KRE-230250	3	25	4.5	2.9	70	6	6,400
KRE-230300	3	30	4.5	2.9	70	6	9,900
KRE-230350	3	35	4.5	2.9	80	6	11,300

KRE-2

品番 Code No.	刃径 D Flute Diameter	有効長 L1 Effective Length	刃長 L Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-230400	3	40	4.5	2.9	80	6	12,800
KRE-230450	3	45	4.5	2.9	100	6	14,100
KRE-230500	3	50	4.5	2.9	100	6	15,900
KRE-231200	3.1	20	4.6	3	60	6	9,300
KRE-231250	3.1	25	4.6	3	70	6	9,300
KRE-231300	3.1	30	4.6	3	70	6	9,300
KRE-231400	3.1	40	4.6	3	80	6	12,800
KRE-231500	3.1	50	4.6	3	100	6	15,900
KRE-232200	3.2	20	4.8	3.1	60	6	9,300
KRE-232250	3.2	25	4.8	3.1	70	6	9,300
KRE-232300	3.2	30	4.8	3.1	70	6	9,300
KRE-232400	3.2	40	4.8	3.1	80	6	12,800
KRE-232500	3.2	50	4.8	3.1	100	6	15,900
KRE-233200	3.3	20	4.9	3.2	60	6	9,300
KRE-233250	3.3	25	4.9	3.2	70	6	9,300
KRE-233300	3.3	30	4.9	3.2	70	6	9,300
KRE-233400	3.3	40	4.9	3.2	80	6	12,800
KRE-233500	3.3	50	4.9	3.2	100	6	15,900
KRE-234200	3.4	20	5.1	3.3	60	6	9,300
KRE-234250	3.4	25	5.1	3.3	70	6	9,300
KRE-234300	3.4	30	5.1	3.3	70	6	9,300
KRE-234400	3.4	40	5.1	3.3	80	6	12,800
KRE-234500	3.4	50	5.1	3.3	100	6	15,900
KRE-235200	3.5	20	5.2	3.35	60	6	7,500
KRE-235250	3.5	25	5.2	3.35	70	6	7,500
KRE-235300	3.5	30	5.2	3.35	70	6	7,700
KRE-235400	3.5	40	5.2	3.35	80	6	10,600
KRE-235500	3.5	50	5.2	3.35	100	6	12,800
KRE-236200	3.6	20	5.4	3.45	60	6	9,600
KRE-236250	3.6	25	5.4	3.45	70	6	9,600
KRE-236300	3.6	30	5.4	3.45	70	6	9,600
KRE-236400	3.6	40	5.4	3.45	80	6	12,800
KRE-236500	3.6	50	5.4	3.45	100	6	15,900
KRE-237200	3.7	20	5.5	3.55	60	6	9,600
KRE-237250	3.7	25	5.5	3.55	70	6	9,600
KRE-237300	3.7	30	5.5	3.55	70	6	9,600
KRE-237400	3.7	40	5.5	3.55	80	6	12,800
KRE-237500	3.7	50	5.5	3.55	100	6	15,900
KRE-238200	3.8	20	5.7	3.65	60	6	9,600
KRE-238250	3.8	25	5.7	3.65	70	6	9,600
KRE-238300	3.8	30	5.7	3.65	70	6	9,600
KRE-238400	3.8	40	5.7	3.65	80	6	12,800
KRE-238500	3.8	50	5.7	3.65	100	6	15,900
KRE-239200	3.9	20	5.8	3.75	60	6	9,600
KRE-239250	3.9	25	5.8	3.75	70	6	9,600
KRE-239300	3.9	30	5.8	3.75	70	6	9,600
KRE-239400	3.9	40	5.8	3.75	80	6	12,800
KRE-239500	3.9	50	5.8	3.75	100	6	15,900

品番 Code No.	刃径 D Flute Diameter	有効長 L1 Effective Length	刃長 L Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-240200	4	20	6	3.8	60	6	7,400
KRE-240250	4	25	6	3.8	70	6	7,400
KRE-240300	4	30	6	3.8	70	6	7,900
KRE-240350	4	35	6	3.8	80	6	8,500
KRE-240400	4	40	6	3.8	80	6	10,600
KRE-240500	4	50	6	3.8	100	6	14,900
KRE-240600	4	60	6	3.8	120	6	15,900
KRE-241200	4.1	20	6.1	3.9	60	6	10,600
KRE-241250	4.1	25	6.1	3.9	70	6	10,600
KRE-241300	4.1	30	6.1	3.9	70	6	10,600
KRE-241400	4.1	40	6.1	3.9	80	6	13,800
KRE-241500	4.1	50	6.1	3.9	100	6	17,000
KRE-242200	4.2	20	6.3	4	60	6	10,600
KRE-242250	4.2	25	6.3	4	70	6	10,600
KRE-242300	4.2	30	6.3	4	70	6	10,600
KRE-242400	4.2	40	6.3	4	80	6	13,800
KRE-242500	4.2	50	6.3	4	100	6	17,000
KRE-243200	4.3	20	6.4	4.1	60	6	10,600
KRE-243250	4.3	25	6.4	4.1	70	6	10,600
KRE-243300	4.3	30	6.4	4.1	70	6	10,600
KRE-243400	4.3	40	6.4	4.1	80	6	13,800
KRE-243500	4.3	50	6.4	4.1	100	6	17,000
KRE-244200	4.4	20	6.6	4.2	60	6	10,600
KRE-244250	4.4	25	6.6	4.2	70	6	10,600
KRE-244300	4.4	30	6.6	4.2	70	6	10,600
KRE-244400	4.4	40	6.6	4.2	80	6	13,800
KRE-244500	4.4	50	6.6	4.2	100	6	17,000
KRE-245200	4.5	20	6.7	4.3	60	6	10,600
KRE-245250	4.5	25	6.7	4.3	70	6	10,600
KRE-245300	4.5	30	6.7	4.3	70	6	10,600
KRE-245400	4.5	40	6.7	4.3	80	6	13,800
KRE-245500	4.5	50	6.7	4.3	100	6	17,000
KRE-246200	4.6	20	6.9	4.4	60	6	10,600
KRE-246250	4.6	25	6.9	4.4	70	6	10,600
KRE-246300	4.6	30	6.9	4.4	70	6	10,600
KRE-246400	4.6	40	6.9	4.4	80	6	13,800
KRE-246500	4.6	50	6.9	4.4	100	6	17,000
KRE-247200	4.7	20	7	4.5	60	6	10,600
KRE-247250	4.7	25	7	4.5	70	6	10,600
KRE-247300	4.7	30	7	4.5	70	6	10,600
KRE-247400	4.7	40	7	4.5	80	6	13,800
KRE-247500	4.7	50	7	4.5	100	6	17,000
KRE-248200	4.8	20	7.2	4.6	60	6	10,600
KRE-248250	4.8	25	7.2	4.6	70	6	10,600
KRE-248300	4.8	30	7.2	4.6	70	6	10,600
KRE-248400	4.8	40	7.2	4.6	80	6	13,800
KRE-248500	4.8	50	7.2	4.6	100	6	17,000
KRE-249200	4.9	20	7.3	4.7	60	6	10,600

KRE-2

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-249250	4.9	25	7.3	4.7	70	6	10,600
KRE-249300	4.9	30	7.3	4.7	70	6	10,600
KRE-249400	4.9	40	7.3	4.7	80	6	13,800
KRE-249500	4.9	50	7.3	4.7	100	6	17,000
KRE-250200	5	20	7.5	4.8	60	6	8,500
KRE-250250	5	25	7.5	4.8	70	6	8,500
KRE-250300	5	30	7.5	4.8	70	6	8,500
KRE-250350	5	35	7.5	4.8	80	6	9,300
KRE-250400	5	40	7.5	4.8	80	6	10,400
KRE-250500	5	50	7.5	4.8	100	6	14,900
KRE-250600	5	60	7.5	4.8	120	6	17,000
KRE-251200	5.1	20	7.6	4.9	60	6	12,800
KRE-251300	5.1	30	7.6	4.9	70	6	12,800
KRE-251400	5.1	40	7.6	4.9	80	6	12,800
KRE-251500	5.1	50	7.6	4.9	100	6	16,600
KRE-251600	5.1	60	7.6	4.9	120	6	18,700
KRE-252200	5.2	20	7.8	5	60	6	12,800
KRE-252300	5.2	30	7.8	5	70	6	12,800
KRE-252400	5.2	40	7.8	5	80	6	12,800
KRE-252500	5.2	50	7.8	5	100	6	16,600
KRE-252600	5.2	60	7.8	5	120	6	18,700
KRE-253200	5.3	20	7.9	5.1	60	6	12,800
KRE-253300	5.3	30	7.9	5.1	70	6	12,800
KRE-253400	5.3	40	7.9	5.1	80	6	12,800
KRE-253500	5.3	50	7.9	5.1	100	6	16,600
KRE-253600	5.3	60	7.9	5.1	120	6	18,700
KRE-254200	5.4	20	8.1	5.2	60	6	12,800
KRE-254300	5.4	30	8.1	5.2	70	6	12,800
KRE-254400	5.4	40	8.1	5.2	80	6	12,800
KRE-254500	5.4	50	8.1	5.2	100	6	16,600
KRE-254600	5.4	60	8.1	5.2	120	6	18,700
KRE-255200	5.5	20	8.2	5.3	60	6	12,800
KRE-255300	5.5	30	8.2	5.3	70	6	12,800
KRE-255400	5.5	40	8.2	5.3	80	6	12,800
KRE-255500	5.5	50	8.2	5.3	100	6	16,600
KRE-255600	5.5	60	8.2	5.3	120	6	18,700
KRE-256200	5.6	20	8.4	5.4	60	6	12,800
KRE-256300	5.6	30	8.4	5.4	70	6	12,800
KRE-256400	5.6	40	8.4	5.4	80	6	12,800
KRE-256500	5.6	50	8.4	5.4	100	6	16,600
KRE-256600	5.6	60	8.4	5.4	120	6	18,700
KRE-257200	5.7	20	8.5	5.5	60	6	12,800
KRE-257300	5.7	30	8.5	5.5	70	6	12,800
KRE-257400	5.7	40	8.5	5.5	80	6	12,800
KRE-257500	5.7	50	8.5	5.5	100	6	16,600
KRE-257600	5.7	60	8.5	5.5	120	6	18,700
KRE-258200	5.8	20	8.7	5.6	60	6	12,800
KRE-258300	5.8	30	8.7	5.6	70	6	12,800

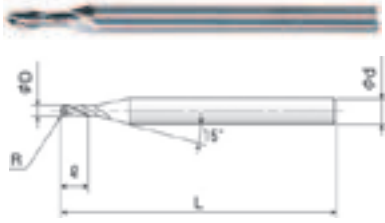
品番 Code No.	刃径 D Flute Diameter	有効長 ℓ1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KRE-258400	5.8	40	8.7	5.6	80	6	12,800
KRE-258500	5.8	50	8.7	5.6	100	6	16,600
KRE-258600	5.8	60	8.7	5.6	120	6	18,700
KRE-259200	5.9	20	8.8	5.7	60	6	12,800
KRE-259300	5.9	30	8.8	5.7	70	6	12,800
KRE-259400	5.9	40	8.8	5.7	80	6	12,800
KRE-259500	5.9	50	8.8	5.7	100	6	16,600
KRE-259600	5.9	60	8.8	5.7	120	6	18,700
KRE-260200	6	20	9	5.8	60	6	9,900
KRE-260300	6	30	9	5.8	70	6	9,900
KRE-260400	6	40	9	5.8	80	6	11,700
KRE-260500	6	50	9	5.8	100	6	14,900
KRE-260600	6	60	9	5.8	120	6	18,100

超硬製品
Tungsten Carbide

KMBE-2

超硬ミニチュアボールエンドミル
Tungsten Carbide Miniature Ball Endmill

■小径サイズで揃えていますので超精密加工に最適です
Best for ultra-precise processing due to small size



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.006



ネジレ角 30° Twist Angle 30°



R許容差 R Tolerance
+0.01~-0.01

●切削条件表はP190に記載

●Cutting conditions are recommended on page 190.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KMBE-2R0100	R0.1	0.2	0.4	40	3	13,100
KMBE-2R0125	R0.125	0.25	0.5	40	3	13,100
KMBE-2R0150	R0.15	0.3	1	40	3	10,200
KMBE-2R0175	R0.175	0.35	1	40	3	10,200
KMBE-2R0200	R0.2	0.4	1	40	3	10,200
KMBE-2R0250	R0.25	0.5	1	40	3	9,600
KMBE-2R0300	R0.3	0.6	2	40	3	9,600
KMBE-2R0350	R0.35	0.7	2	40	3	9,100
KMBE-2R0400	R0.4	0.8	2.5	40	3	9,100
KMBE-2R0450	R0.45	0.9	2.5	40	3	8,500
KMBE-2R0500	R0.5	1	3	40	3	8,000
KMBE-2R0550	R0.55	1.1	3	40	3	8,500
KMBE-2R0600	R0.6	1.2	3	40	3	8,500
KMBE-2R0650	R0.65	1.3	3	40	3	8,500
KMBE-2R0700	R0.7	1.4	3	40	3	8,500
KMBE-2R0750	R0.75	1.5	5	40	3	8,000
KMBE-2R0800	R0.8	1.6	5	40	3	8,500
KMBE-2R0850	R0.85	1.7	5	40	3	8,500
KMBE-2R0900	R0.9	1.8	5	40	3	8,500
KMBE-2R0950	R0.95	1.9	5	40	3	8,500
KMBE-2R1000	R1	2	6	40	3	8,000
KMBE-2R1050	R1.05	2.1	6	40	3	8,500
KMBE-2R1100	R1.1	2.2	6	40	3	8,500
KMBE-2R1150	R1.15	2.3	6	40	3	8,500
KMBE-2R1200	R1.2	2.4	6	40	3	8,500
KMBE-2R1250	R1.25	2.5	8	40	3	8,000
KMBE-2R1300	R1.3	2.6	8	40	3	8,500
KMBE-2R1350	R1.35	2.7	8	40	3	8,500
KMBE-2R1400	R1.4	2.8	8	40	3	8,500
KMBE-2R1450	R1.45	2.9	8	40	3	8,500
KMBE-2R1500	R1.5	3	8	40	3	8,500

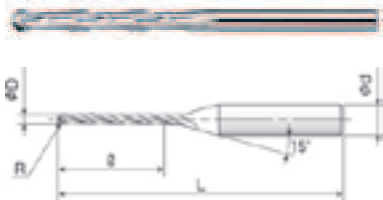
品番 Code No.	R	刃径 D Flute Diameter	刃長 l Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price

超硬製
品
Tungsten Carbide

KLB-2

超硬ロングボールエンドミル
Tungsten Carbide Long Ball Endmill

■刃長が刃径の3倍～最大12倍までラインナップ
Line-upped flute length 3 times to max 12 times of flute diameter



MG 超微粒子合金 MicroGrainTungstenCarbide

刃径の許容差 Flute Diameter Tolerance
D 0～-0.01

柄径の許容差 Shank Diameter Tolerance
d=3 0～-0.006
3<d≤6 0～-0.008

ネジレ角30° Twist Angle 30°

R許容差 R Tolerance
+0.01～-0.01

●切削条件表はP191に記載 単位[寸法:mm/価格:円]
●Cutting conditions are recommended on page 191. Unit [s size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KLB-2R01010	R 0.1	0.2	1	40	3	17,000
KLB-2R01015	R 0.1	0.2	1.5	40	3	18,400
KLB-2R01020	R 0.1	0.2	2	40	3	19,800
KLB-2R02020	R 0.2	0.4	2	40	3	16,300
KLB-2R02030	R 0.2	0.4	3	40	3	17,600
KLB-2R02040	R 0.2	0.4	4	40	3	19,400
KLB-2R03040	R 0.3	0.6	4	40	3	17,600
KLB-2R03060	R 0.3	0.6	6	40	3	19,400
KLB-2R03080	R 0.3	0.6	8	40	3	20,500
KLB-2R03100	R 0.3	0.6	10	40	3	22,900
KLB-2R04040	R 0.4	0.8	4	40	3	14,100
KLB-2R04060	R 0.4	0.8	6	40	3	16,300
KLB-2R04080	R 0.4	0.8	8	40	3	18,400
KLB-2R04100	R 0.4	0.8	10	40	3	21,200
KLB-2R05040	R 0.5	1	4	45	4	10,600
KLB-2R05060	R 0.5	1	6	45	4	13,400
KLB-2R05080	R 0.5	1	8	45	4	16,300
KLB-2R05100	R 0.5	1	10	45	4	18,400
KLB-2R10060	R 1	2	6	45	4	9,900
KLB-2R10080	R 1	2	8	45	4	10,600
KLB-2R10100	R 1	2	10	45	4	11,300
KLB-2R10120	R 1	2	12	45	4	14,100
KLB-2R10150	R 1	2	15	50	4	18,400
KLB-2R10200	R 1	2	20	60	4	21,200
KLB-2R15150	R 1.5	3	15	70	6	12,800
KLB-2R15200	R 1.5	3	20	70	6	14,900
KLB-2R15250	R 1.5	3	25	80	6	17,600
KLB-2R15300	R 1.5	3	30	80	6	20,800
KLB-2R20150	R 2	4	15	70	6	11,300
KLB-2R20200	R 2	4	20	80	6	12,800
KLB-2R20250	R 2	4	25	80	6	15,900
KLB-2R20300	R 2	4	30	80	6	20,500

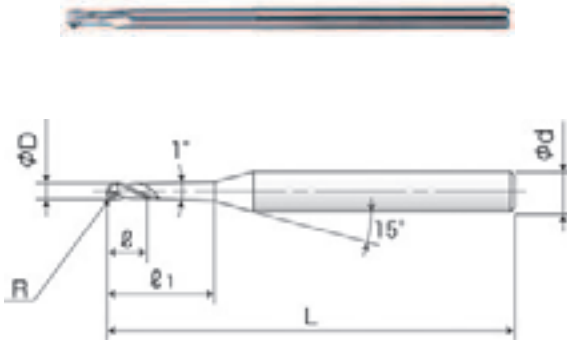
品番 Code No.	R	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KLB-2R20400	R 2	4	40	90	6	22,900
KLB-2R30300	R 3	6	30	90	6	15,900
KLB-2R30400	R 3	6	40	90	6	20,500
KLB-2R30500	R 3	6	50	100	6	27,600

超硬製成品
Tungsten Carbide

KTBL-2

超硬テーパネックボールエンドミル
Tungsten Carbide Taper Neck Ball Endmill

- 首部をテーパにして有効長を長くしました
Long effective length with taper neck
- 深彫り加工などに最適です
Suitable for deep processing



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=6 0~-0.008
d=8 0~-0.009



ネジレ角30° Twist Angle 30°



R許容差 R Tolerance
+0.01~-0.01

- 切削条件表はP192に記載
- Cutting conditions are recommended on page 192.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	首部勾配 Neck Taper	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KTBL-2R0110	R 0.1	0.2	10	0.4	1° (両角)	100	6	19,100
KTBL-2R0120	R 0.1	0.2	20	0.4	1° (両角)	100	6	20,500
KTBL-2R0151	R 0.15	0.3	10	0.6	1° (両角)	100	6	18,400
KTBL-2R0152	R 0.15	0.3	20	0.6	1° (両角)	100	6	19,800
KTBL-2R0210	R 0.2	0.4	10	0.8	1° (両角)	100	6	16,300
KTBL-2R0220	R 0.2	0.4	20	0.8	1° (両角)	100	6	17,300
KTBL-2R0251	R 0.25	0.5	10	1	1° (両角)	100	6	15,900
KTBL-2R0252	R 0.25	0.5	20	1	1° (両角)	100	6	17,000
KTBL-2R0310	R 0.3	0.6	10	1.5	1° (両角)	100	6	14,900
KTBL-2R0320	R 0.3	0.6	20	1.5	1° (両角)	100	6	15,900
KTBL-2R0410	R 0.4	0.8	10	2	1° (両角)	100	6	14,900
KTBL-2R0420	R 0.4	0.8	20	2	1° (両角)	100	6	15,900
KTBL-2R0530	R 0.5	1	30	3	1° (両角)	100	6	14,900
KTBL-2R0540	R 0.5	1	40	3	1° (両角)	100	6	14,900
KTBL-2R1040	R 1	2	40	6	1° (両角)	110	6	14,900
KTBL-2R1050	R 1	2	50	6	1° (両角)	110	6	15,900
KTBL-2R1540	R 1.5	3	40	9	1° (両角)	120	6	15,900
KTBL-2R1550	R 1.5	3	50	9	1° (両角)	120	6	17,000
KTBL-2R2040	R 2	4	40	10	1° (両角)	120	6	16,600
KTBL-2R2050	R 2	4	50	10	1° (両角)	120	6	17,300
KTBL-2R2060	R 2	4	60	10	1° (両角)	120	6	18,400
KTBL-2R2540	R 2.5	5	40	12	1° (両角)	120	6	16,600
KTBL-2R2550	R 2.5	5	50	12	1° (両角)	120	6	17,300
KTBL-2R2560	R 2.5	5	60	12	1° (両角)	120	6	18,400
KTBL-2R3040	R 3	6	40	14	1° (両角)	120	8	17,600
KTBL-2R3050	R 3	6	50	14	1° (両角)	120	8	18,400
KTBL-2R3060	R 3	6	60	14	1° (両角)	120	8	19,400

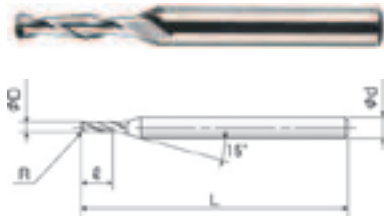
超硬製品

Tungsten Carbide

KSER-2

超硬 2 枚刃コーナーR付エンドミル
Tungsten Carbide 2 Flutes Corner R Endmill

■刃長が刃径の1倍～最大10倍までラインナップ
Line-upped flute length 1 times to max 10 times of flute diameter



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



コーナーR許容差 corner R Tolerance
+0.01~-0.01

●切削条件表はP193に記載

●Cutting conditions are recommended on page 193.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSER-210005010	1	R0.05	1	50	4	7,800
KSER-210005020	1	R0.05	2	50	4	7,800
KSER-210005030	1	R0.05	3	50	4	7,800
KSER-210005040	1	R0.05	4	50	4	8,500
KSER-210005050	1	R0.05	5	50	4	9,300
KSER-210005060	1	R0.05	6	50	4	10,300
KSER-210005070	1	R0.05	7	50	4	10,600
KSER-210005080	1	R0.05	8	50	4	11,400
KSER-210005090	1	R0.05	9	50	4	12,500
KSER-210005100	1	R0.05	10	50	4	12,800
KSER-210010010	1	R0.1	1	50	4	7,800
KSER-210010020	1	R0.1	2	50	4	7,800
KSER-210010030	1	R0.1	3	50	4	7,800
KSER-210010040	1	R0.1	4	50	4	8,500
KSER-210010050	1	R0.1	5	50	4	9,300
KSER-210010060	1	R0.1	6	50	4	10,300
KSER-210010070	1	R0.1	7	50	4	10,600
KSER-210010080	1	R0.1	8	50	4	11,400
KSER-210010090	1	R0.1	9	50	4	12,500
KSER-210010100	1	R0.1	10	50	4	12,800
KSER-210020010	1	R0.2	1	50	4	7,800
KSER-210020020	1	R0.2	2	50	4	7,800

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSER-210020030	1	R0.2	3	50	4	7,800
KSER-210020040	1	R0.2	4	50	4	8,500
KSER-210020050	1	R0.2	5	50	4	9,300
KSER-210020060	1	R0.2	6	50	4	10,300
KSER-210020070	1	R0.2	7	50	4	10,600
KSER-210020080	1	R0.2	8	50	4	11,400
KSER-210020090	1	R0.2	9	50	4	12,500
KSER-210020100	1	R0.2	10	50	4	12,800
KSER-210030010	1	R0.3	1	50	4	7,800
KSER-210030020	1	R0.3	2	50	4	7,800
KSER-210030030	1	R0.3	3	50	4	7,800
KSER-210030040	1	R0.3	4	50	4	8,500
KSER-210030050	1	R0.3	5	50	4	9,300
KSER-210030060	1	R0.3	6	50	4	10,300
KSER-210030070	1	R0.3	7	50	4	10,600
KSER-210030080	1	R0.3	8	50	4	11,400
KSER-210030090	1	R0.3	9	50	4	12,500
KSER-210030100	1	R0.3	10	50	4	12,800
KSER-215005020	1.5	R0.05	2	50	4	7,800
KSER-215005040	1.5	R0.05	4	50	4	7,800
KSER-215005060	1.5	R0.05	6	50	4	9,300
KSER-215005080	1.5	R0.05	8	50	4	10,600
KSER-215005100	1.5	R0.05	10	50	4	11,400
KSER-215005120	1.5	R0.05	12	50	4	12,500
KSER-215005150	1.5	R0.05	15	50	4	13,500
KSER-215010020	1.5	R0.1	2	50	4	7,800
KSER-215010040	1.5	R0.1	4	50	4	7,800
KSER-215010060	1.5	R0.1	6	50	4	9,300
KSER-215010080	1.5	R0.1	8	50	4	10,600
KSER-215010100	1.5	R0.1	10	50	4	11,400
KSER-215010120	1.5	R0.1	12	50	4	12,500
KSER-215010150	1.5	R0.1	15	50	4	13,500
KSER-215020020	1.5	R0.2	2	50	4	7,800
KSER-215020040	1.5	R0.2	4	50	4	7,800
KSER-215020060	1.5	R0.2	6	50	4	9,300
KSER-215020080	1.5	R0.2	8	50	4	10,600
KSER-215020100	1.5	R0.2	10	50	4	11,400
KSER-215020120	1.5	R0.2	12	50	4	12,500
KSER-215020150	1.5	R0.2	15	50	4	13,500
KSER-215030020	1.5	R0.3	2	50	4	7,800
KSER-215030040	1.5	R0.3	4	50	4	7,800
KSER-215030060	1.5	R0.3	6	50	4	9,300
KSER-215030080	1.5	R0.3	8	50	4	10,600
KSER-215030100	1.5	R0.3	10	50	4	11,400
KSER-215030120	1.5	R0.3	12	50	4	12,500
KSER-215030150	1.5	R0.3	15	50	4	13,500
KSER-215050020	1.5	R0.5	2	50	4	7,800
KSER-215050040	1.5	R0.5	4	50	4	7,800

KSER-2

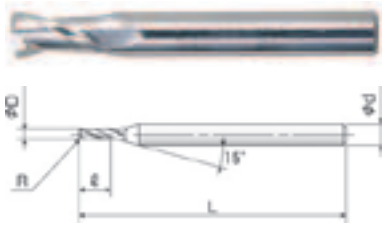
品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSER-215050060	1.5	R0.5	6	50	4	9,300
KSER-215050080	1.5	R0.5	8	50	4	10,600
KSER-215050100	1.5	R0.5	10	50	4	11,400
KSER-215050120	1.5	R0.5	12	50	4	12,500
KSER-215050150	1.5	R0.5	15	50	4	13,500
KSER-22005020	2	R0.05	2	50	4	7,800
KSER-22005040	2	R0.05	4	50	4	7,800
KSER-22005060	2	R0.05	6	50	4	7,800
KSER-22005080	2	R0.05	8	50	4	8,500
KSER-22005100	2	R0.05	10	50	4	9,300
KSER-22005120	2	R0.05	12	50	4	10,000
KSER-22005140	2	R0.05	14	50	4	10,600
KSER-22005160	2	R0.05	16	60	4	11,400
KSER-22005180	2	R0.05	18	60	4	12,500
KSER-22005200	2	R0.05	20	60	4	13,500
KSER-220010020	2	R0.1	2	50	4	7,800
KSER-220010040	2	R0.1	4	50	4	7,800
KSER-220010060	2	R0.1	6	50	4	7,800
KSER-220010080	2	R0.1	8	50	4	8,500
KSER-220010100	2	R0.1	10	50	4	9,300
KSER-220010120	2	R0.1	12	50	4	10,000
KSER-220010140	2	R0.1	14	50	4	10,600
KSER-220010160	2	R0.1	16	60	4	11,400
KSER-220010180	2	R0.1	18	60	4	12,500
KSER-220010200	2	R0.1	20	60	4	13,500
KSER-220020020	2	R0.2	2	50	4	7,800
KSER-220020040	2	R0.2	4	50	4	7,800
KSER-220020060	2	R0.2	6	50	4	7,800
KSER-220020080	2	R0.2	8	50	4	8,500
KSER-220020100	2	R0.2	10	50	4	9,300
KSER-220020120	2	R0.2	12	50	4	10,000
KSER-220020140	2	R0.2	14	50	4	10,600
KSER-220020160	2	R0.2	16	60	4	11,400
KSER-220020180	2	R0.2	18	60	4	12,500
KSER-220020200	2	R0.2	20	60	4	13,500
KSER-220030020	2	R0.3	2	50	4	7,800
KSER-220030040	2	R0.3	4	50	4	7,800
KSER-220030060	2	R0.3	6	50	4	7,800
KSER-220030080	2	R0.3	8	50	4	8,500
KSER-220030100	2	R0.3	10	50	4	9,300
KSER-220030120	2	R0.3	12	50	4	10,000
KSER-220030140	2	R0.3	14	50	4	10,600
KSER-220030160	2	R0.3	16	60	4	11,400
KSER-220030180	2	R0.3	18	60	4	12,500
KSER-220030200	2	R0.3	20	60	4	13,500
KSER-220050020	2	R0.5	2	50	4	7,800
KSER-220050040	2	R0.5	4	50	4	7,800
KSER-220050060	2	R0.5	6	50	4	7,800

品番 Code No.	刃径 D Flute Diameter	コーナー R Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSER-220050080	2	R0.5	8	50	4	8,500
KSER-220050100	2	R0.5	10	50	4	9,300
KSER-220050120	2	R0.5	12	50	4	10,000
KSER-220050140	2	R0.5	14	50	4	10,600
KSER-220050160	2	R0.5	16	60	4	11,400
KSER-220050180	2	R0.5	18	60	4	12,500
KSER-220050200	2	R0.5	20	60	4	13,500
KSER-230005030	3	R0.05	3	50	6	8,500
KSER-230005060	3	R0.05	6	50	6	8,500
KSER-230005090	3	R0.05	9	50	6	8,500
KSER-230005120	3	R0.05	12	50	6	9,200
KSER-230005150	3	R0.05	15	60	6	10,000
KSER-230005180	3	R0.05	18	60	6	10,600
KSER-230005210	3	R0.05	21	60	6	11,400
KSER-230005250	3	R0.05	25	70	6	12,500
KSER-230005300	3	R0.05	30	70	6	13,500
KSER-230010030	3	R0.1	3	50	6	8,500
KSER-230010060	3	R0.1	6	50	6	8,500
KSER-230010090	3	R0.1	9	50	6	8,500
KSER-230010120	3	R0.1	12	50	6	9,200
KSER-230010150	3	R0.1	15	60	6	10,000
KSER-230010180	3	R0.1	18	60	6	10,600
KSER-230010210	3	R0.1	21	60	6	11,400
KSER-230010250	3	R0.1	25	70	6	12,500
KSER-230010300	3	R0.1	30	70	6	13,500
KSER-230020030	3	R0.2	3	50	6	8,500
KSER-230020060	3	R0.2	6	50	6	8,500
KSER-230020090	3	R0.2	9	50	6	8,500
KSER-230020120	3	R0.2	12	50	6	9,200
KSER-230020150	3	R0.2	15	60	6	10,000
KSER-230020180	3	R0.2	18	60	6	10,600
KSER-230020210	3	R0.2	21	60	6	11,400
KSER-230020250	3	R0.2	25	70	6	12,500
KSER-230020300	3	R0.2	30	70	6	13,500
KSER-230030030	3	R0.3	3	50	6	8,500
KSER-230030060	3	R0.3	6	50	6	8,500
KSER-230030090	3	R0.3	9	50	6	8,500
KSER-230030120	3	R0.3	12	50	6	9,200
KSER-230030150	3	R0.3	15	60	6	10,000
KSER-230030180	3	R0.3	18	60	6	10,600
KSER-230030210	3	R0.3	21	60	6	11,400
KSER-230030250	3	R0.3	25	70	6	12,500
KSER-230030300	3	R0.3	30	70	6	13,500
KSER-230050030	3	R0.5	3	50	6	8,500
KSER-230050060	3	R0.5	6	50	6	8,500
KSER-230050090	3	R0.5	9	50	6	8,500
KSER-230050120	3	R0.5	12	50	6	9,200
KSER-230050150	3	R0.5	15	60	6	10,000

KSR-2

超硬 2 枚刃コーナーR付エンドミル Tungsten Carbide 2 Flutes Corner R Endmill

■コーナーRを用途に合わせてきめ細かく揃えました
Line-upped various sizes according to the use



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



コーナーR許容差 corner R Tolerance
+0.01~-0.01

●切削条件表はP196に記載

●Cutting conditions are recommended on page 196.

単位[寸法: mm/価格: 円]
Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-210010R	1	R0.1	3	40	4	7,800
KSR-210015R	1	R0.15	3	40	4	7,800
KSR-210020R	1	R0.2	3	40	4	7,800
KSR-210025R	1	R0.25	3	40	4	7,800
KSR-210030R	1	R0.3	3	40	4	7,800
KSR-211010R	1.1	R0.1	3	40	4	8,500
KSR-211015R	1.1	R0.15	3	40	4	8,500
KSR-211020R	1.1	R0.2	3	40	4	8,500
KSR-211025R	1.1	R0.25	3	40	4	8,500
KSR-211030R	1.1	R0.3	3	40	4	8,500
KSR-212010R	1.2	R0.1	3	40	4	8,500
KSR-212015R	1.2	R0.15	3	40	4	8,500
KSR-212020R	1.2	R0.2	3	40	4	8,500
KSR-212025R	1.2	R0.25	3	40	4	8,500
KSR-212030R	1.2	R0.3	3	40	4	8,500
KSR-213010R	1.3	R0.1	3	40	4	8,500
KSR-213015R	1.3	R0.15	3	40	4	8,500
KSR-213020R	1.3	R0.2	3	40	4	8,500
KSR-213025R	1.3	R0.25	3	40	4	8,500
KSR-213030R	1.3	R0.3	3	40	4	8,500
KSR-214010R	1.4	R0.1	3	40	4	8,500
KSR-214015R	1.4	R0.15	3	40	4	8,500

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-214020R	1.4	R0.2	3	40	4	8,500
KSR-214025R	1.4	R0.25	3	40	4	8,500
KSR-214030R	1.4	R0.3	3	40	4	8,500
KSR-215010R	1.5	R0.1	4	40	4	7,000
KSR-215015R	1.5	R0.15	4	40	4	7,800
KSR-215020R	1.5	R0.2	4	40	4	7,000
KSR-215025R	1.5	R0.25	4	40	4	7,800
KSR-215030R	1.5	R0.3	4	40	4	7,000
KSR-216010R	1.6	R0.1	4	40	4	7,800
KSR-216015R	1.6	R0.15	4	40	4	7,800
KSR-216020R	1.6	R0.2	4	40	4	7,800
KSR-216025R	1.6	R0.25	4	40	4	7,800
KSR-216030R	1.6	R0.3	4	40	4	7,800
KSR-217010R	1.7	R0.1	4	40	4	7,800
KSR-217015R	1.7	R0.15	4	40	4	7,800
KSR-217020R	1.7	R0.2	4	40	4	7,800
KSR-217025R	1.7	R0.25	4	40	4	7,800
KSR-217030R	1.7	R0.3	4	40	4	7,800
KSR-218010R	1.8	R0.1	4	40	4	7,800
KSR-218015R	1.8	R0.15	4	40	4	7,800
KSR-218020R	1.8	R0.2	4	40	4	7,800
KSR-218025R	1.8	R0.25	4	40	4	7,800
KSR-218030R	1.8	R0.3	4	40	4	7,800
KSR-219010R	1.9	R0.1	4	40	4	7,800
KSR-219015R	1.9	R0.15	4	40	4	7,800
KSR-219020R	1.9	R0.2	4	40	4	7,800
KSR-219025R	1.9	R0.25	4	40	4	7,800
KSR-219030R	1.9	R0.3	4	40	4	7,800
KSR-220010R	2	R0.1	6	40	4	7,000
KSR-220015R	2	R0.15	6	40	4	7,800
KSR-220020R	2	R0.2	6	40	4	7,000
KSR-220025R	2	R0.25	6	40	4	7,800
KSR-220030R	2	R0.3	6	40	4	7,000
KSR-220035R	2	R0.35	6	40	4	7,800
KSR-220040R	2	R0.4	6	40	4	7,800
KSR-220045R	2	R0.45	6	40	4	7,800
KSR-220050R	2	R0.5	6	40	4	7,000
KSR-221010R	2.1	R0.1	6	40	4	7,800
KSR-221015R	2.1	R0.15	6	40	4	7,800
KSR-221020R	2.1	R0.2	6	40	4	7,800
KSR-221025R	2.1	R0.25	6	40	4	7,800
KSR-221030R	2.1	R0.3	6	40	4	7,800
KSR-221035R	2.1	R0.35	6	40	4	7,800
KSR-221040R	2.1	R0.4	6	40	4	7,800
KSR-221050R	2.1	R0.5	6	40	4	7,800
KSR-222010R	2.2	R0.1	6	40	4	7,800
KSR-222015R	2.2	R0.15	6	40	4	7,800
KSR-222020R	2.2	R0.2	6	40	4	7,800

KSR-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-222025R	2.2	R0.25	6	40	4	7,800
KSR-222030R	2.2	R0.3	6	40	4	7,800
KSR-222035R	2.2	R0.35	6	40	4	7,800
KSR-222040R	2.2	R0.4	6	40	4	7,800
KSR-222050R	2.2	R0.5	6	40	4	7,800
KSR-223010R	2.3	R0.1	6	40	4	7,800
KSR-223015R	2.3	R0.15	6	40	4	7,800
KSR-223020R	2.3	R0.2	6	40	4	7,800
KSR-223025R	2.3	R0.25	6	40	4	7,800
KSR-223030R	2.3	R0.3	6	40	4	7,800
KSR-223035R	2.3	R0.35	6	40	4	7,800
KSR-223040R	2.3	R0.4	6	40	4	7,800
KSR-223050R	2.3	R0.5	6	40	4	7,800
KSR-224010R	2.4	R0.1	6	40	4	7,800
KSR-224015R	2.4	R0.15	6	40	4	7,800
KSR-224020R	2.4	R0.2	6	40	4	7,800
KSR-224025R	2.4	R0.25	6	40	4	7,800
KSR-224030R	2.4	R0.3	6	40	4	7,800
KSR-224035R	2.4	R0.35	6	40	4	7,800
KSR-224040R	2.4	R0.4	6	40	4	7,800
KSR-224050R	2.4	R0.5	6	40	4	7,800
KSR-225010R	2.5	R0.1	8	40	4	7,800
KSR-225015R	2.5	R0.15	8	40	4	8,500
KSR-225020R	2.5	R0.2	8	40	4	7,800
KSR-225025R	2.5	R0.25	8	40	4	8,500
KSR-225030R	2.5	R0.3	8	40	4	7,800
KSR-225035R	2.5	R0.35	8	40	4	8,500
KSR-225040R	2.5	R0.4	8	40	4	8,500
KSR-225045R	2.5	R0.45	8	40	4	8,500
KSR-225050R	2.5	R0.5	8	40	4	7,800
KSR-226010R	2.6	R0.1	8	40	4	8,200
KSR-226015R	2.6	R0.15	8	40	4	8,200
KSR-226020R	2.6	R0.2	8	40	4	8,200
KSR-226025R	2.6	R0.25	8	40	4	8,200
KSR-226030R	2.6	R0.3	8	40	4	8,200
KSR-226035R	2.6	R0.35	8	40	4	8,200
KSR-226040R	2.6	R0.4	8	40	4	8,200
KSR-226050R	2.6	R0.5	8	40	4	8,200
KSR-227010R	2.7	R0.1	8	40	4	8,200
KSR-227015R	2.7	R0.15	8	40	4	8,200
KSR-227020R	2.7	R0.2	8	40	4	8,200
KSR-227025R	2.7	R0.25	8	40	4	8,200
KSR-227030R	2.7	R0.3	8	40	4	8,200
KSR-227035R	2.7	R0.35	8	40	4	8,200
KSR-227040R	2.7	R0.4	8	40	4	8,200
KSR-227050R	2.7	R0.5	8	40	4	8,200
KSR-228010R	2.8	R0.1	8	40	4	8,200
KSR-228015R	2.8	R0.15	8	40	4	8,200

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-228020R	2.8	R0.2	8	40	4	8,200
KSR-228025R	2.8	R0.25	8	40	4	8,200
KSR-228030R	2.8	R0.3	8	40	4	8,200
KSR-228035R	2.8	R0.35	8	40	4	8,200
KSR-228040R	2.8	R0.4	8	40	4	8,200
KSR-228050R	2.8	R0.5	8	40	4	8,200
KSR-229010R	2.9	R0.1	8	40	4	8,200
KSR-229015R	2.9	R0.15	8	40	4	8,200
KSR-229020R	2.9	R0.2	8	40	4	8,200
KSR-229025R	2.9	R0.25	8	40	4	8,200
KSR-229030R	2.9	R0.3	8	40	4	8,200
KSR-229035R	2.9	R0.35	8	40	4	8,200
KSR-229040R	2.9	R0.4	8	40	4	8,200
KSR-229050R	2.9	R0.5	8	40	4	8,200
KSR-230010R	3	R0.1	8	45	6	8,300
KSR-230015R	3	R0.15	8	45	6	9,100
KSR-230020R	3	R0.2	8	45	6	8,300
KSR-230025R	3	R0.25	8	45	6	9,100
KSR-230030R	3	R0.3	8	45	6	8,300
KSR-230035R	3	R0.35	8	45	6	9,100
KSR-230040R	3	R0.4	8	45	6	8,300
KSR-230045R	3	R0.45	8	45	6	9,100
KSR-230050R	3	R0.5	8	45	6	10,100
KSR-230075R	3	R0.75	8	45	6	10,100
KSR-230100R	3	R1	8	45	6	9,200
KSR-231010R	3.1	R0.1	8	45	6	8,900
KSR-231015R	3.1	R0.15	8	45	6	8,900
KSR-231020R	3.1	R0.2	8	45	6	8,900
KSR-231025R	3.1	R0.25	8	45	6	8,900
KSR-231030R	3.1	R0.3	8	45	6	8,900
KSR-231035R	3.1	R0.35	8	45	6	8,900
KSR-231040R	3.1	R0.4	8	45	6	8,900
KSR-231050R	3.1	R0.5	8	45	6	8,900
KSR-231075R	3.1	R0.75	8	45	6	8,900
KSR-231100R	3.1	R1	8	45	6	8,900
KSR-232010R	3.2	R0.1	8	45	6	8,900
KSR-232015R	3.2	R0.15	8	45	6	8,900
KSR-232020R	3.2	R0.2	8	45	6	8,900
KSR-232025R	3.2	R0.25	8	45	6	8,900
KSR-232030R	3.2	R0.3	8	45	6	8,900
KSR-232035R	3.2	R0.35	8	45	6	8,900
KSR-232040R	3.2	R0.4	8	45	6	8,900
KSR-232050R	3.2	R0.5	8	45	6	8,900
KSR-232075R	3.2	R0.75	8	45	6	8,900
KSR-232100R	3.2	R1	8	45	6	8,900
KSR-233010R	3.3	R0.1	8	45	6	8,900
KSR-233015R	3.3	R0.15	8	45	6	8,900
KSR-233020R	3.3	R0.2	8	45	6	8,900

KSR-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-233025R	3.3	R0.25	8	45	6	8,900
KSR-233030R	3.3	R0.3	8	45	6	8,900
KSR-233035R	3.3	R0.35	8	45	6	8,900
KSR-233040R	3.3	R0.4	8	45	6	8,900
KSR-233050R	3.3	R0.5	8	45	6	8,900
KSR-233075R	3.3	R0.75	8	45	6	8,900
KSR-233100R	3.3	R1	8	45	6	8,900
KSR-234010R	3.4	R0.1	8	45	6	8,900
KSR-234015R	3.4	R0.15	8	45	6	8,900
KSR-234020R	3.4	R0.2	8	45	6	8,900
KSR-234025R	3.4	R0.25	8	45	6	8,900
KSR-234030R	3.4	R0.3	8	45	6	8,900
KSR-234035R	3.4	R0.35	8	45	6	8,900
KSR-234040R	3.4	R0.4	8	45	6	8,900
KSR-234050R	3.4	R0.5	8	45	6	8,900
KSR-234075R	3.4	R0.75	8	45	6	8,900
KSR-234100R	3.4	R1	8	45	6	8,900
KSR-235010R	3.5	R0.1	8	45	6	8,900
KSR-235015R	3.5	R0.15	8	45	6	8,900
KSR-235020R	3.5	R0.2	8	45	6	8,900
KSR-235025R	3.5	R0.25	8	45	6	8,900
KSR-235030R	3.5	R0.3	8	45	6	8,900
KSR-235035R	3.5	R0.35	8	45	6	8,900
KSR-235040R	3.5	R0.4	8	45	6	8,900
KSR-235050R	3.5	R0.5	8	45	6	8,900
KSR-235075R	3.5	R0.75	8	45	6	8,900
KSR-235100R	3.5	R1	8	45	6	8,900
KSR-236010R	3.6	R0.1	8	45	6	8,900
KSR-236015R	3.6	R0.15	8	45	6	8,900
KSR-236020R	3.6	R0.2	8	45	6	8,900
KSR-236025R	3.6	R0.25	8	45	6	8,900
KSR-236030R	3.6	R0.3	8	45	6	8,900
KSR-236035R	3.6	R0.35	8	45	6	8,900
KSR-236040R	3.6	R0.4	8	45	6	8,900
KSR-236050R	3.6	R0.5	8	45	6	8,900
KSR-236075R	3.6	R0.75	8	45	6	8,900
KSR-236100R	3.6	R1	8	45	6	8,900
KSR-237010R	3.7	R0.1	8	45	6	8,900
KSR-237015R	3.7	R0.15	8	45	6	8,900
KSR-237020R	3.7	R0.2	8	45	6	8,900
KSR-237025R	3.7	R0.25	8	45	6	8,900
KSR-237030R	3.7	R0.3	8	45	6	8,900
KSR-237035R	3.7	R0.35	8	45	6	8,900
KSR-237040R	3.7	R0.4	8	45	6	8,900
KSR-237050R	3.7	R0.5	8	45	6	8,900
KSR-237075R	3.7	R0.75	8	45	6	8,900
KSR-237100R	3.7	R1	8	45	6	8,900
KSR-238010R	3.8	R0.1	8	45	6	8,900

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-238015R	3.8	R0.15	8	45	6	8,900
KSR-238020R	3.8	R0.2	8	45	6	8,900
KSR-238025R	3.8	R0.25	8	45	6	8,900
KSR-238030R	3.8	R0.3	8	45	6	8,900
KSR-238035R	3.8	R0.35	8	45	6	8,900
KSR-238040R	3.8	R0.4	8	45	6	8,900
KSR-238050R	3.8	R0.5	8	45	6	8,900
KSR-238075R	3.8	R0.75	8	45	6	8,900
KSR-238100R	3.8	R1	8	45	6	8,900
KSR-239010R	3.9	R0.1	8	45	6	8,900
KSR-239015R	3.9	R0.15	8	45	6	8,900
KSR-239020R	3.9	R0.2	8	45	6	8,900
KSR-239025R	3.9	R0.25	8	45	6	8,900
KSR-239030R	3.9	R0.3	8	45	6	8,900
KSR-239035R	3.9	R0.35	8	45	6	8,900
KSR-239040R	3.9	R0.4	8	45	6	8,900
KSR-239050R	3.9	R0.5	8	45	6	8,900
KSR-239075R	3.9	R0.75	8	45	6	8,900
KSR-239100R	3.9	R1	8	45	6	8,900
KSR-240010R	4	R0.1	11	45	6	9,200
KSR-240015R	4	R0.15	11	45	6	10,100
KSR-240020R	4	R0.2	11	45	6	9,200
KSR-240025R	4	R0.25	11	45	6	10,100
KSR-240030R	4	R0.3	11	45	6	9,200
KSR-240035R	4	R0.35	11	45	6	10,100
KSR-240040R	4	R0.4	11	45	6	9,200
KSR-240045R	4	R0.45	11	45	6	10,100
KSR-240050R	4	R0.5	11	45	6	9,200
KSR-240075R	4	R0.75	11	45	6	10,100
KSR-240100R	4	R1	11	45	6	10,200
KSR-241010R	4.1	R0.1	11	45	6	9,500
KSR-241015R	4.1	R0.15	11	45	6	9,500
KSR-241020R	4.1	R0.2	11	45	6	9,500
KSR-241025R	4.1	R0.25	11	45	6	9,500
KSR-241030R	4.1	R0.3	11	45	6	9,500
KSR-241035R	4.1	R0.35	11	45	6	9,500
KSR-241040R	4.1	R0.4	11	45	6	9,500
KSR-241050R	4.1	R0.5	11	45	6	9,500
KSR-241075R	4.1	R0.75	11	45	6	9,500
KSR-241100R	4.1	R1	11	45	6	9,500
KSR-242010R	4.2	R0.1	11	45	6	9,500
KSR-242015R	4.2	R0.15	11	45	6	9,500
KSR-242020R	4.2	R0.2	11	45	6	9,500
KSR-242025R	4.2	R0.25	11	45	6	9,500
KSR-242030R	4.2	R0.3	11	45	6	9,500
KSR-242035R	4.2	R0.35	11	45	6	9,500
KSR-242040R	4.2	R0.4	11	45	6	9,500
KSR-242050R	4.2	R0.5	11	45	6	9,500

KSR-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-242075R	4.2	R0.75	11	45	6	9,500
KSR-242100R	4.2	R1	11	45	6	9,500
KSR-243010R	4.3	R0.1	11	45	6	9,500
KSR-243015R	4.3	R0.15	11	45	6	9,500
KSR-243020R	4.3	R0.2	11	45	6	9,500
KSR-243025R	4.3	R0.25	11	45	6	9,500
KSR-243030R	4.3	R0.3	11	45	6	9,500
KSR-243035R	4.3	R0.35	11	45	6	9,500
KSR-243040R	4.3	R0.4	11	45	6	9,500
KSR-243050R	4.3	R0.5	11	45	6	9,500
KSR-243075R	4.3	R0.75	11	45	6	9,500
KSR-243100R	4.3	R1	11	45	6	9,500
KSR-244010R	4.4	R0.1	11	45	6	9,500
KSR-244015R	4.4	R0.15	11	45	6	9,500
KSR-244020R	4.4	R0.2	11	45	6	9,500
KSR-244025R	4.4	R0.25	11	45	6	9,500
KSR-244030R	4.4	R0.3	11	45	6	9,500
KSR-244035R	4.4	R0.35	11	45	6	9,500
KSR-244040R	4.4	R0.4	11	45	6	9,500
KSR-244050R	4.4	R0.5	11	45	6	9,500
KSR-244075R	4.4	R0.75	11	45	6	9,500
KSR-244100R	4.4	R1	11	45	6	9,500
KSR-245010R	4.5	R0.1	11	45	6	9,500
KSR-245015R	4.5	R0.15	11	45	6	9,500
KSR-245020R	4.5	R0.2	11	45	6	9,500
KSR-245025R	4.5	R0.25	11	45	6	9,500
KSR-245030R	4.5	R0.3	11	45	6	9,500
KSR-245035R	4.5	R0.35	11	45	6	9,500
KSR-245040R	4.5	R0.4	11	45	6	9,500
KSR-245050R	4.5	R0.5	11	45	6	9,500
KSR-245075R	4.5	R0.75	11	45	6	9,500
KSR-245100R	4.5	R1	11	45	6	9,500
KSR-246010R	4.6	R0.1	11	45	6	9,500
KSR-246015R	4.6	R0.15	11	45	6	9,500
KSR-246020R	4.6	R0.2	11	45	6	9,500
KSR-246025R	4.6	R0.25	11	45	6	9,500
KSR-246030R	4.6	R0.3	11	45	6	9,500
KSR-246035R	4.6	R0.35	11	45	6	9,500
KSR-246040R	4.6	R0.4	11	45	6	9,500
KSR-246050R	4.6	R0.5	11	45	6	9,500
KSR-246075R	4.6	R0.75	11	45	6	9,500
KSR-246100R	4.6	R1	11	45	6	9,500
KSR-247010R	4.7	R0.1	11	45	6	9,500
KSR-247015R	4.7	R0.15	11	45	6	9,500
KSR-247020R	4.7	R0.2	11	45	6	9,500
KSR-247025R	4.7	R0.25	11	45	6	9,500
KSR-247030R	4.7	R0.3	11	45	6	9,500
KSR-247035R	4.7	R0.35	11	45	6	9,500

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-247040R	4.7	R0.4	11	45	6	9,500
KSR-247050R	4.7	R0.5	11	45	6	9,500
KSR-247075R	4.7	R0.75	11	45	6	9,500
KSR-247100R	4.7	R1	11	45	6	9,500
KSR-248010R	4.8	R0.1	11	45	6	9,500
KSR-248015R	4.8	R0.15	11	45	6	9,500
KSR-248020R	4.8	R0.2	11	45	6	9,500
KSR-248025R	4.8	R0.25	11	45	6	9,500
KSR-248030R	4.8	R0.3	11	45	6	9,500
KSR-248035R	4.8	R0.35	11	45	6	9,500
KSR-248040R	4.8	R0.4	11	45	6	9,500
KSR-248050R	4.8	R0.5	11	45	6	9,500
KSR-248075R	4.8	R0.75	11	45	6	9,500
KSR-248100R	4.8	R1	11	45	6	9,500
KSR-249010R	4.9	R0.1	11	45	6	9,500
KSR-249015R	4.9	R0.15	11	45	6	9,500
KSR-249020R	4.9	R0.2	11	45	6	9,500
KSR-249025R	4.9	R0.25	11	45	6	9,500
KSR-249030R	4.9	R0.3	11	45	6	9,500
KSR-249035R	4.9	R0.35	11	45	6	9,500
KSR-249040R	4.9	R0.4	11	45	6	9,500
KSR-249050R	4.9	R0.5	11	45	6	9,500
KSR-249075R	4.9	R0.75	11	45	6	9,500
KSR-249100R	4.9	R1	11	45	6	9,500
KSR-250010R	5.0	R0.1	13	50	6	9,400
KSR-250015R	5.0	R0.15	13	50	6	9,400
KSR-250020R	5.0	R0.2	13	50	6	9,400
KSR-250025R	5.0	R0.25	13	50	6	9,400
KSR-250030R	5.0	R0.3	13	50	6	9,400
KSR-250035R	5.0	R0.35	13	50	6	9,400
KSR-250040R	5.0	R0.4	13	50	6	9,400
KSR-250050R	5.0	R0.5	13	50	6	9,400
KSR-250075R	5.0	R0.75	13	50	6	9,400
KSR-250100R	5.0	R1	13	50	6	9,400
KSR-250125R	5.0	R1.25	13	50	6	9,400
KSR-250150R	5.0	R1.5	13	50	6	9,400
KSR-251010R	5.1	R0.1	13	50	6	9,400
KSR-251015R	5.1	R0.15	13	50	6	9,400
KSR-251020R	5.1	R0.2	13	50	6	9,400
KSR-251025R	5.1	R0.25	13	50	6	9,400
KSR-251030R	5.1	R0.3	13	50	6	9,400
KSR-251035R	5.1	R0.35	13	50	6	9,400
KSR-251040R	5.1	R0.4	13	50	6	9,400
KSR-251050R	5.1	R0.5	13	50	6	9,400
KSR-251075R	5.1	R0.75	13	50	6	9,400
KSR-251100R	5.1	R1	13	50	6	9,400
KSR-251125R	5.1	R1.25	13	50	6	9,400
KSR-251150R	5.1	R1.5	13	50	6	9,400

KSR-2

品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-252010R	5.2	R0.1	13	50	6	9,400
KSR-252015R	5.2	R0.15	13	50	6	9,400
KSR-252020R	5.2	R0.2	13	50	6	9,400
KSR-252025R	5.2	R0.25	13	50	6	9,400
KSR-252030R	5.2	R0.3	13	50	6	9,400
KSR-252035R	5.2	R0.35	13	50	6	9,400
KSR-252040R	5.2	R0.4	13	50	6	9,400
KSR-252050R	5.2	R0.5	13	50	6	9,400
KSR-252075R	5.2	R0.75	13	50	6	9,400
KSR-252100R	5.2	R1	13	50	6	9,400
KSR-252125R	5.2	R1.25	13	50	6	9,400
KSR-252150R	5.2	R1.5	13	50	6	9,400
KSR-253010R	5.3	R0.1	13	50	6	9,400
KSR-253015R	5.3	R0.15	13	50	6	9,400
KSR-253020R	5.3	R0.2	13	50	6	9,400
KSR-253025R	5.3	R0.25	13	50	6	9,400
KSR-253030R	5.3	R0.3	13	50	6	9,400
KSR-253035R	5.3	R0.35	13	50	6	9,400
KSR-253040R	5.3	R0.4	13	50	6	9,400
KSR-253050R	5.3	R0.5	13	50	6	9,400
KSR-253075R	5.3	R0.75	13	50	6	9,400
KSR-253100R	5.3	R1	13	50	6	9,400
KSR-253125R	5.3	R1.25	13	50	6	9,400
KSR-253150R	5.3	R1.5	13	50	6	9,400
KSR-254010R	5.4	R0.1	13	50	6	9,400
KSR-254015R	5.4	R0.15	13	50	6	9,400
KSR-254020R	5.4	R0.2	13	50	6	9,400
KSR-254025R	5.4	R0.25	13	50	6	9,400
KSR-254030R	5.4	R0.3	13	50	6	9,400
KSR-254035R	5.4	R0.35	13	50	6	9,400
KSR-254040R	5.4	R0.4	13	50	6	9,400
KSR-254050R	5.4	R0.5	13	50	6	9,400
KSR-254075R	5.4	R0.75	13	50	6	9,400
KSR-254100R	5.4	R1	13	50	6	9,400
KSR-254125R	5.4	R1.25	13	50	6	9,400
KSR-254150R	5.4	R1.5	13	50	6	9,400
KSR-255010R	5.5	R0.1	13	50	6	9,500
KSR-255015R	5.5	R0.15	13	50	6	9,500
KSR-255020R	5.5	R0.2	13	50	6	9,500
KSR-255025R	5.5	R0.25	13	50	6	9,500
KSR-255030R	5.5	R0.3	13	50	6	9,500
KSR-255035R	5.5	R0.35	13	50	6	9,500
KSR-255040R	5.5	R0.4	13	50	6	9,500
KSR-255050R	5.5	R0.5	13	50	6	9,500
KSR-255075R	5.5	R0.75	13	50	6	9,500
KSR-255100R	5.5	R1	13	50	6	9,500
KSR-255125R	5.5	R1.25	13	50	6	9,500
KSR-255150R	5.5	R1.5	13	50	6	9,500

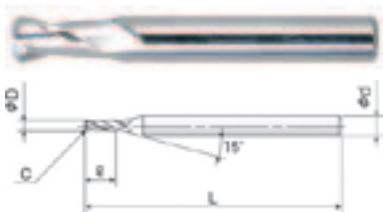
品番 Code No.	刃径 D Flute Diameter	コーナーR Corner R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSR-256010R	5.6	R0.1	13	50	6	9,500
KSR-256015R	5.6	R0.15	13	50	6	9,500
KSR-256020R	5.6	R0.2	13	50	6	9,500
KSR-256025R	5.6	R0.25	13	50	6	9,500
KSR-256030R	5.6	R0.3	13	50	6	9,500
KSR-256035R	5.6	R0.35	13	50	6	9,500
KSR-256040R	5.6	R0.4	13	50	6	9,500
KSR-256050R	5.6	R0.5	13	50	6	9,500
KSR-256075R	5.6	R0.75	13	50	6	9,500
KSR-256100R	5.6	R1	13	50	6	9,500
KSR-256125R	5.6	R1.25	13	50	6	9,500
KSR-256150R	5.6	R1.5	13	50	6	9,500
KSR-257010R	5.7	R0.1	13	50	6	9,500
KSR-257015R	5.7	R0.15	13	50	6	9,500
KSR-257020R	5.7	R0.2	13	50	6	9,500
KSR-257025R	5.7	R0.25	13	50	6	9,500
KSR-257030R	5.7	R0.3	13	50	6	9,500
KSR-257035R	5.7	R0.35	13	50	6	9,500
KSR-257040R	5.7	R0.4	13	50	6	9,500
KSR-257050R	5.7	R0.5	13	50	6	9,500
KSR-257075R	5.7	R0.75	13	50	6	9,500
KSR-257100R	5.7	R1	13	50	6	9,500
KSR-257125R	5.7	R1.25	13	50	6	9,500
KSR-257150R	5.7	R1.5	13	50	6	9,500
KSR-258010R	5.8	R0.1	13	50	6	9,500
KSR-258015R	5.8	R0.15	13	50	6	9,500
KSR-258020R	5.8	R0.2	13	50	6	9,500
KSR-258025R	5.8	R0.25	13	50	6	9,500
KSR-258030R	5.8	R0.3	13	50	6	9,500
KSR-258035R	5.8	R0.35	13	50	6	9,500
KSR-258040R	5.8	R0.4	13	50	6	9,500
KSR-258050R	5.8	R0.5	13	50	6	9,500
KSR-258075R	5.8	R0.75	13	50	6	9,500
KSR-258100R	5.8	R1	13	50	6	9,500
KSR-258125R	5.8	R1.25	13	50	6	9,500
KSR-258150R	5.8	R1.5	13	50	6	9,500
KSR-259010R	5.9	R0.1	13	50	6	9,500
KSR-259015R	5.9	R0.15	13	50	6	9,500
KSR-259020R	5.9	R0.2	13	50	6	9,500
KSR-259025R	5.9	R0.25	13	50	6	9,500
KSR-259030R	5.9	R0.3	13	50	6	9,500
KSR-259035R	5.9	R0.35	13	50	6	9,500
KSR-259040R	5.9	R0.4	13	50	6	9,500
KSR-259050R	5.9	R0.5	13	50	6	9,500
KSR-259075R	5.9	R0.75	13	50	6	9,500
KSR-259100R	5.9	R1	13	50	6	9,500
KSR-259125R	5.9	R1.25	13	50	6	9,500
KSR-259150R	5.9	R1.5	13	50	6	9,500

KSC-2

超硬 2 枚刃コーナーC面付エンドミル Tungsten Carbide 2 Flutes Corner C Endmill

■コーナーC面付のエンドミル
Endmill with corner C

■C面を幅広くラインナップ
Line-upped various C



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



コーナーC面の許容差 Tolerance of Corner C
+0.02~-0.02

●切削条件表はP196に記載

●Cutting conditions are recommended on page 196.

単位 [寸法: mm / 価格: ¥]
Unit [size: mm / Retail Price: JPY]

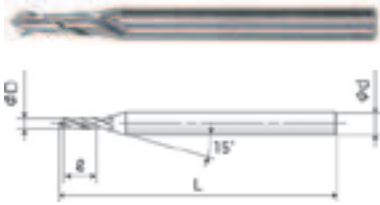
品番 Code No.	刃径 D Flute Diameter	コーナーC Corner C	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSC-210010C	1	0.1	3	40	4	6,500
KSC-210015C	1	0.15	3	40	4	6,500
KSC-210020C	1	0.2	3	40	4	6,500
KSC-210025C	1	0.25	3	40	4	6,500
KSC-210030C	1	0.3	4	40	4	6,500
KSC-215010C	1.5	0.1	4	40	4	6,500
KSC-215015C	1.5	0.15	4	40	4	6,500
KSC-215020C	1.5	0.2	4	40	4	6,500
KSC-215025C	1.5	0.25	4	40	4	6,500
KSC-215030C	1.5	0.3	4	40	4	6,500
KSC-220010C	2	0.1	6	40	4	6,500
KSC-220015C	2	0.15	6	40	4	6,500
KSC-220020C	2	0.2	6	40	4	6,500
KSC-220025C	2	0.25	6	40	4	6,500
KSC-220030C	2	0.3	6	40	4	6,500
KSC-220035C	2	0.35	6	40	4	6,500
KSC-220040C	2	0.4	6	40	4	6,500
KSC-220045C	2	0.45	6	40	4	6,500
KSC-220050C	2	0.5	6	40	4	6,500
KSC-225010C	2.5	0.1	8	40	4	7,000
KSC-225015C	2.5	0.15	8	40	4	7,000
KSC-225020C	2.5	0.2	8	40	4	7,000

品番 Code No.	刃径 D Flute Diameter	コーナーC Corner C	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSC-225025C	2.5	0.25	8	40	4	7,000
KSC-225030C	2.5	0.3	8	40	4	7,000
KSC-225035C	2.5	0.35	8	40	4	7,000
KSC-225040C	2.5	0.4	8	40	4	7,000
KSC-225045C	2.5	0.45	8	40	4	7,000
KSC-225050C	2.5	0.5	8	40	4	7,000
KSC-230010C	3	0.1	8	45	6	7,800
KSC-230015C	3	0.15	8	45	6	7,800
KSC-230020C	3	0.2	8	45	6	7,800
KSC-230025C	3	0.25	8	45	6	7,800
KSC-230030C	3	0.3	8	45	6	7,800
KSC-230035C	3	0.35	8	45	6	7,800
KSC-230040C	3	0.4	8	45	6	7,800
KSC-230045C	3	0.45	8	45	6	7,800
KSC-230050C	3	0.5	8	45	6	7,800
KSC-230075C	3	0.75	8	45	6	8,500
KSC-230100C	3	1	8	45	6	8,500
KSC-240010C	4	0.1	11	45	6	8,100
KSC-240015C	4	0.15	11	45	6	8,100
KSC-240020C	4	0.2	11	45	6	8,100
KSC-240025C	4	0.25	11	45	6	8,100
KSC-240030C	4	0.3	11	45	6	8,100
KSC-240035C	4	0.35	11	45	6	8,100
KSC-240040C	4	0.4	11	45	6	8,100
KSC-240045C	4	0.45	11	45	6	8,100
KSC-240050C	4	0.5	11	45	6	8,100
KSC-240075C	4	0.75	11	45	6	8,800
KSC-240100C	4	1	11	45	6	8,800
KSC-260010C	6	0.1	13	50	6	8,500
KSC-260015C	6	0.15	13	50	6	8,500
KSC-260020C	6	0.2	13	50	6	8,500
KSC-260025C	6	0.25	13	50	6	8,500
KSC-260030C	6	0.3	13	50	6	8,500
KSC-260035C	6	0.35	13	50	6	8,500
KSC-260040C	6	0.4	13	50	6	8,500
KSC-260045C	6	0.45	13	50	6	8,500
KSC-260050C	6	0.5	13	50	6	8,500
KSC-260075C	6	0.75	13	50	6	9,200
KSC-260100C	6	1	13	50	6	9,200
KSC-260125C	6	1.25	13	50	6	9,200
KSC-260150C	6	1.5	13	50	6	9,200
KSC-260175C	6	1.75	13	50	6	10,100
KSC-260200C	6	2	13	50	6	10,100

KSV-2

超硬センターVエンドミル
Tungsten Carbide Center V Endmill

■先端角30° 45° 60° 70° 80° 90° 120° を
小径サイズ(Φ0.5~Φ6)で揃えました
line-upped small diameter with edge angle
30° 45° 60° 70° 80° 90° 120°



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=3 0~-0.006
3<d≤6 0~-0.008



ネジレ角30° Twist Angle 30°

- 切削条件表はP197に記載
- Cutting conditions are recommended on page 197.

単位 [寸法 : mm / 価格 : 円]
Unit [size : mm / Retail Price : JPY]

KSV-2-90°形



先端角度90° +30°
-0°

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-29005	0.5	1	40	3	0.06	8,500
KSV-29006	0.6	1.2	40	3	0.06	8,500
KSV-29007	0.7	1.4	40	3	0.06	7,800
KSV-29008	0.8	1.6	40	3	0.06	7,800
KSV-29009	0.9	2	40	3	0.06	7,500
KSV-29010	1	2	45	4	0.1	7,000
KSV-29011	1.1	2.5	45	4	0.1	7,000
KSV-29012	1.2	2.5	45	4	0.1	7,000
KSV-29013	1.3	3	45	4	0.1	7,000
KSV-29014	1.4	3	45	4	0.1	7,000
KSV-29015	1.5	3	45	4	0.1	7,000
KSV-29016	1.6	3.5	45	4	0.1	7,000
KSV-29017	1.7	3.5	45	4	0.1	7,000
KSV-29018	1.8	4	45	4	0.1	7,000
KSV-29019	1.9	4	45	4	0.1	7,000
KSV-29020	2	4	45	4	0.2	7,000
KSV-29021	2.1	4.5	45	4	0.2	7,800
KSV-29022	2.2	4.5	45	4	0.2	7,800
KSV-29023	2.3	5	45	4	0.2	7,800
KSV-29024	2.4	5	45	4	0.2	7,800

KSV-2-90°形



先端角度90° +30°
-0°

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-29025	2.5	5	45	4	0.2	7,800
KSV-29026	2.6	6	45	4	0.2	7,800
KSV-29027	2.7	6	45	4	0.2	7,800
KSV-29028	2.8	6	45	4	0.2	7,800
KSV-29029	2.9	6	45	4	0.2	7,800
KSV-29030	3	6	45	4	0.2	7,800
KSV-29035	3.5	7	50	6	0.2	10,100
KSV-29040	4	8	50	6	0.2	10,100
KSV-29045	4.5	9	50	6	0.3	11,700
KSV-29050	5	10	60	6	0.3	11,700
KSV-29055	5.5	11	60	6	0.3	12,800
KSV-29060	6	12	60	6	0.3	12,800

KSV-2-60°形



先端角度60° +30°
-0°

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-26005	0.5	1	40	3	0.06	9,400
KSV-26006	0.6	1.2	40	3	0.06	9,400
KSV-26007	0.7	1.4	40	3	0.06	9,400
KSV-26008	0.8	1.6	40	3	0.06	8,500
KSV-26009	0.9	2	40	3	0.06	8,200
KSV-26010	1	2	45	4	0.08	7,800
KSV-26011	1.1	2.5	45	4	0.08	7,800
KSV-26012	1.2	2.5	45	4	0.08	7,800
KSV-26013	1.3	3	45	4	0.08	7,800
KSV-26014	1.4	3	45	4	0.08	7,800
KSV-26015	1.5	3	45	4	0.08	7,800
KSV-26016	1.6	3.5	45	4	0.08	7,800
KSV-26017	1.7	3.5	45	4	0.08	7,800
KSV-26018	1.8	4	45	4	0.08	7,800
KSV-26019	1.9	4	45	4	0.08	7,800
KSV-26020	2	4	45	4	0.1	7,800
KSV-26021	2.1	4.5	45	4	0.1	8,500
KSV-26022	2.2	4.5	45	4	0.1	8,500
KSV-26023	2.3	5	45	4	0.1	8,500
KSV-26024	2.4	5	45	4	0.1	8,500
KSV-26025	2.5	5	45	4	0.1	8,500
KSV-26026	2.6	6	45	4	0.1	8,500
KSV-26027	2.7	6	45	4	0.1	8,500
KSV-26028	2.8	6	45	4	0.1	8,500
KSV-26029	2.9	6	45	4	0.1	8,500
KSV-26030	3	6	45	4	0.1	8,500
KSV-26040	4	8	50	6	0.15	11,200
KSV-26050	5	10	60	6	0.2	12,900
KSV-26060	6	12	60	6	0.2	14,000

KSV-2

KSV-2-120°形  先端角度120° $+30'$
 $-0'$

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-212005	0.5	1	40	3	0.06	8,500
KSV-212006	0.6	1.2	40	3	0.06	8,500
KSV-212007	0.7	1.4	40	3	0.06	7,800
KSV-212008	0.8	1.6	40	3	0.06	7,800
KSV-212009	0.9	2	40	3	0.06	7,500
KSV-212010	1	2	45	4	0.1	7,000
KSV-212011	1.1	2.5	45	4	0.1	7,000
KSV-212012	1.2	2.5	45	4	0.1	7,000
KSV-212013	1.3	3	45	4	0.1	7,000
KSV-212014	1.4	3	45	4	0.1	7,000
KSV-212015	1.5	3	45	4	0.1	7,000
KSV-212016	1.6	3.5	45	4	0.1	7,000
KSV-212017	1.7	3.5	45	4	0.1	7,000
KSV-212018	1.8	4	45	4	0.1	7,000
KSV-212019	1.9	4	45	4	0.1	7,000
KSV-212020	2	4	45	4	0.2	7,000
KSV-212021	2.1	4.5	45	4	0.2	7,800
KSV-212022	2.2	4.5	45	4	0.2	7,800
KSV-212023	2.3	5	45	4	0.2	7,800
KSV-212024	2.4	5	45	4	0.2	7,800
KSV-212025	2.5	5	45	4	0.2	7,800
KSV-212026	2.6	6	45	4	0.2	7,800
KSV-212027	2.7	6	45	4	0.2	7,800
KSV-212028	2.8	6	45	4	0.2	7,800
KSV-212029	2.9	6	45	4	0.2	7,800
KSV-212030	3	6	45	4	0.2	7,800
KSV-212035	3.5	7	50	6	0.2	10,100
KSV-212040	4	8	50	6	0.2	10,100
KSV-212045	4.5	9	50	6	0.3	11,700
KSV-212050	5	10	60	6	0.3	11,700
KSV-212055	5.5	11	60	6	0.3	12,800
KSV-212060	6	12	60	6	0.3	12,800

KSV-2-30°形  先端角度30° $+30'$
 $-0'$

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-23005	0.5	1	40	3	0.06	9,200
KSV-23010	1	2	45	4	0.08	7,800
KSV-23015	1.5	3	45	4	0.08	7,800
KSV-23020	2	4	45	4	0.1	7,800
KSV-23025	2.5	5	45	4	0.1	8,500
KSV-23030	3	6	45	4	0.1	8,500
KSV-23040	4	8	60	6	0.15	12,200
KSV-23050	5	10	70	6	0.2	14,100
KSV-23060	6	12	70	6	0.2	15,500

KSV-2-45°形  先端角度45° $+30'$
 $-0'$

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-24505	0.5	1	40	3	0.06	9,200
KSV-24510	1	2	45	4	0.08	7,800
KSV-24515	1.5	3	45	4	0.08	7,800
KSV-24520	2	4	45	4	0.1	7,800
KSV-24525	2.5	5	45	4	0.1	8,500
KSV-24530	3	6	45	4	0.1	8,500
KSV-24540	4	8	60	6	0.15	12,200
KSV-24550	5	10	70	6	0.2	14,100
KSV-24560	6	12	70	6	0.2	15,500

KSV-2-70°形  先端角度70° $+30'$
 $-0'$

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-27005	0.5	1	40	3	0.06	8,500
KSV-27010	1	2	45	4	0.08	7,000
KSV-27015	1.5	3	45	4	0.08	7,000
KSV-27020	2	4	45	4	0.1	7,000
KSV-27025	2.5	5	45	4	0.1	7,800
KSV-27030	3	6	45	4	0.1	7,800
KSV-27040	4	8	50	6	0.15	11,200
KSV-27050	5	10	60	6	0.2	12,900
KSV-27060	6	12	60	6	0.2	14,000

KSV-2-80°形  先端角度80° $+30'$
 $-0'$

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSV-28005	0.5	1	40	3	0.06	8,500
KSV-28010	1	2	45	4	0.08	7,000
KSV-28015	1.5	3	45	4	0.08	7,000
KSV-28020	2	4	45	4	0.1	7,000
KSV-28025	2.5	5	45	4	0.1	7,800
KSV-28030	3	6	45	4	0.1	7,800
KSV-28040	4	8	50	6	0.15	11,200
KSV-28050	5	10	60	6	0.2	12,900
KSV-28060	6	12	60	6	0.2	14,000

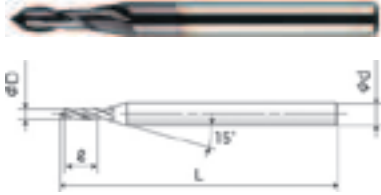
超硬製品

Tungsten Carbide

KSVA-2

超硬センターVエンドミル
Tungsten Carbide 2 Flutes Center V Endmill
TiAlN Coating

■先端角60° 90° 120°
edge angle 60° 90° 120°



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



先端角度 Edge Angle
60° 90° 120° +30°
-0°

TiAlNコート

TiAlN コート TiAlN Coating

●切削条件表はP199に記載

●Cutting conditions are recommended on page 199.

単位[寸法: mm/価格: 円]
Unit [size: mm/Retail Price: JPY]

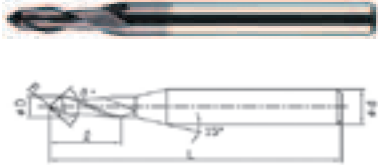
品番 Code No.	刃径 D Flute Diameter	先端角 Edge Angle	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSVA-209005	0.5	90°	1	40	3	0.06	10,700
KSVA-209006	0.6	90°	1.2	40	3	0.06	10,700
KSVA-209007	0.7	90°	1.4	40	3	0.06	9,900
KSVA-209008	0.8	90°	1.6	40	3	0.06	9,900
KSVA-209009	0.9	90°	2	40	3	0.06	9,600
KSVA-206010	1	60°	2	45	4	0.08	9,300
KSVA-209010	1	90°	2	45	4	0.1	9,300
KSVA-212010	1	120°	2	45	4	0.1	9,300
KSVA-209011	1.1	90°	2.5	45	4	0.1	9,300
KSVA-209012	1.2	90°	2.5	45	4	0.1	9,300
KSVA-209013	1.3	90°	3	45	4	0.1	9,300
KSVA-209014	1.4	90°	3	45	4	0.1	9,300
KSVA-206015	1.5	60°	3	45	4	0.08	9,300
KSVA-209015	1.5	90°	3	45	4	0.1	9,300
KSVA-212015	1.5	120°	3	45	4	0.1	9,300
KSVA-209016	1.6	90°	3.5	45	4	0.1	9,300
KSVA-209017	1.7	90°	3.5	45	4	0.1	9,300
KSVA-209018	1.8	90°	4	45	4	0.1	9,300
KSVA-209019	1.9	90°	4	45	4	0.1	9,300
KSVA-206020	2	60°	4	45	4	0.1	9,300
KSVA-209020	2	90°	4	45	4	0.2	9,300

品番 Code No.	刃径 D Flute Diameter	先端角 Edge Angle	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	先端フラット径 Edge Flat Diameter	標準価格 Retail Price
KSVA-212020	2	120°	4	45	4	0.2	9,300
KSVA-209021	2.1	90°	4.5	45	4	0.2	9,600
KSVA-209022	2.2	90°	4.5	45	4	0.2	9,600
KSVA-209023	2.3	90°	5	45	4	0.2	9,600
KSVA-209024	2.4	90°	5	45	4	0.2	9,600
KSVA-209025	2.5	90°	5	45	4	0.2	9,600
KSVA-209026	2.6	90°	6	45	4	0.2	9,600
KSVA-209027	2.7	90°	6	45	4	0.2	9,600
KSVA-209028	2.8	90°	6	45	4	0.2	9,600
KSVA-209029	2.9	90°	6	45	4	0.2	9,600
KSVA-206030	3	60°	6	50	6	0.1	10,600
KSVA-209030	3	90°	6	50	6	0.2	10,600
KSVA-212030	3	120°	6	50	6	0.2	10,600
KSVA-209035	3.5	90°	7	50	6	0.2	12,100
KSVA-206040	4	60°	8	50	6	0.15	13,200
KSVA-209040	4	90°	8	50	6	0.2	12,100
KSVA-212040	4	120°	8	50	6	0.2	12,100
KSVA-209045	4.5	90°	9	50	6	0.3	13,800
KSVA-206050	5	60°	10	60	6	0.2	14,900
KSVA-209050	5	90°	10	60	6	0.3	13,800
KSVA-212050	5	120°	10	60	6	0.3	13,800
KSVA-209055	5.5	90°	11	60	6	0.3	14,900
KSVA-206060	6	60°	12	60	6	0.2	16,400
KSVA-209060	6	90°	12	60	6	0.3	14,900
KSVA-212060	6	120°	12	60	6	0.3	14,900

KSVRA-2

超硬センターVエンドミル (先端R付)
Tungsten Carbide 2 Flutes Center V Endmill with Edge R
TiAlN Coating

■先端角60°90°120°
edge angle60°90°120°



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



先端角度 Edge Angle
60° 90° 120° +30°
-0°

TiAlNコート

TiAlN コート TiAlN Coating

●切削条件表はP2011に記載

●Cutting conditions are recommended on page 201.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	先端角 Edge Angle	先端 R Edge R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSVRA-206010010	1	60°	R0.1	2	50	4	11,400
KSVRA-206010015	1	60°	R0.15	2	50	4	11,400
KSVRA-206010020	1	60°	R0.2	2	50	4	11,400
KSVRA-206010025	1	60°	R0.25	2	50	4	11,400
KSVRA-206010030	1	60°	R0.3	2	50	4	11,400
KSVRA-209010010	1	90°	R0.1	2	50	4	11,400
KSVRA-209010015	1	90°	R0.15	2	50	4	11,400
KSVRA-209010020	1	90°	R0.2	2	50	4	11,400
KSVRA-209010025	1	90°	R0.25	2	50	4	11,400
KSVRA-209010030	1	90°	R0.3	2	50	4	11,400
KSVRA-212010010	1	120°	R0.1	2	50	4	11,400
KSVRA-212010015	1	120°	R0.15	2	50	4	11,400
KSVRA-212010020	1	120°	R0.2	2	50	4	11,400
KSVRA-212010025	1	120°	R0.25	2	50	4	11,400
KSVRA-212010030	1	120°	R0.3	2	50	4	11,400
KSVRA-206015010	1.5	60°	R0.1	3	50	4	11,400
KSVRA-206015015	1.5	60°	R0.15	3	50	4	11,400
KSVRA-206015020	1.5	60°	R0.2	3	50	4	11,400
KSVRA-206015025	1.5	60°	R0.25	3	50	4	11,400
KSVRA-206015030	1.5	60°	R0.3	3	50	4	11,400
KSVRA-209015010	1.5	90°	R0.1	3	50	4	11,400
KSVRA-209015015	1.5	90°	R0.15	3	50	4	11,400

KSVRA-2

品番 Code No.	刃径 D Flute Diameter	先端角 Edge Angle	先端 R Edge R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSVRA-209015020	1.5	90°	R0.2	3	50	4	11,400
KSVRA-209015025	1.5	90°	R0.25	3	50	4	11,400
KSVRA-209015030	1.5	90°	R0.3	3	50	4	11,400
KSVRA-212015010	1.5	120°	R0.1	3	50	4	11,400
KSVRA-212015015	1.5	120°	R0.15	3	50	4	11,400
KSVRA-212015020	1.5	120°	R0.2	3	50	4	11,400
KSVRA-212015025	1.5	120°	R0.25	3	50	4	11,400
KSVRA-212015030	1.5	120°	R0.3	3	50	4	11,400
KSVRA-206020010	2	60°	R0.1	4	50	4	11,400
KSVRA-206020015	2	60°	R0.15	4	50	4	11,400
KSVRA-206020020	2	60°	R0.2	4	50	4	11,400
KSVRA-206020025	2	60°	R0.25	4	50	4	11,400
KSVRA-206020030	2	60°	R0.3	4	50	4	11,400
KSVRA-206020040	2	60°	R0.4	4	50	4	11,400
KSVRA-206020050	2	60°	R0.5	4	50	4	11,400
KSVRA-209020010	2	90°	R0.1	4	50	4	11,400
KSVRA-209020015	2	90°	R0.15	4	50	4	11,400
KSVRA-209020020	2	90°	R0.2	4	50	4	11,400
KSVRA-209020025	2	90°	R0.25	4	50	4	11,400
KSVRA-209020030	2	90°	R0.3	4	50	4	11,400
KSVRA-209020040	2	90°	R0.4	4	50	4	11,400
KSVRA-209020050	2	90°	R0.5	4	50	4	11,400
KSVRA-212020010	2	120°	R0.1	4	50	4	11,400
KSVRA-212020015	2	120°	R0.15	4	50	4	11,400
KSVRA-212020020	2	120°	R0.2	4	50	4	11,400
KSVRA-212020025	2	120°	R0.25	4	50	4	11,400
KSVRA-212020030	2	120°	R0.3	4	50	4	11,400
KSVRA-212020040	2	120°	R0.4	4	50	4	11,400
KSVRA-212020050	2	120°	R0.5	4	50	4	11,400
KSVRA-206030010	3	60°	R0.1	6	50	6	13,200
KSVRA-206030015	3	60°	R0.15	6	50	6	13,200
KSVRA-206030020	3	60°	R0.2	6	50	6	13,200
KSVRA-206030025	3	60°	R0.25	6	50	6	13,200
KSVRA-206030030	3	60°	R0.3	6	50	6	13,200
KSVRA-206030040	3	60°	R0.4	6	50	6	13,200
KSVRA-206030050	3	60°	R0.5	6	50	6	13,200
KSVRA-206030075	3	60°	R0.75	6	50	6	13,200
KSVRA-206030100	3	60°	R1	6	50	6	13,200
KSVRA-209030010	3	90°	R0.1	6	50	6	13,200
KSVRA-209030015	3	90°	R0.15	6	50	6	13,200
KSVRA-209030020	3	90°	R0.2	6	50	6	13,200
KSVRA-209030025	3	90°	R0.25	6	50	6	13,200
KSVRA-209030030	3	90°	R0.3	6	50	6	13,200
KSVRA-209030040	3	90°	R0.4	6	50	6	13,200
KSVRA-209030050	3	90°	R0.5	6	50	6	13,200
KSVRA-209030075	3	90°	R0.75	6	50	6	13,200
KSVRA-209030100	3	90°	R1	6	50	6	13,200
KSVRA-212030010	3	120°	R0.1	6	50	6	13,200

超硬製品

Tungsten Carbide

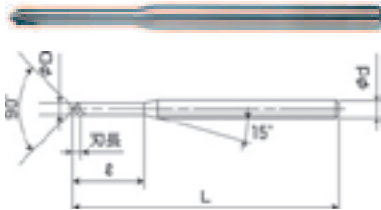
KSVRA-2

品番 Code No.	刃径 D Flute Diameter	先端角 Edge Angle	先端 R Edge R	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KSVRA-212030015	3	120°	R0.15	6	50	6	13,200
KSVRA-212030020	3	120°	R0.2	6	50	6	13,200
KSVRA-212030025	3	120°	R0.25	6	50	6	13,200
KSVRA-212030030	3	120°	R0.3	6	50	6	13,200
KSVRA-212030040	3	120°	R0.4	6	50	6	13,200
KSVRA-212030050	3	120°	R0.5	6	50	6	13,200
KSVRA-212030075	3	120°	R0.75	6	50	6	13,200
KSVRA-212030100	3	120°	R1	6	50	6	13,200
KSVRA-206060010	6	60°	R0.1	12	60	6	20,200
KSVRA-206060015	6	60°	R0.15	12	60	6	20,200
KSVRA-206060020	6	60°	R0.2	12	60	6	20,200
KSVRA-206060025	6	60°	R0.25	12	60	6	20,200
KSVRA-206060030	6	60°	R0.3	12	60	6	20,200
KSVRA-206060040	6	60°	R0.4	12	60	6	20,200
KSVRA-206060050	6	60°	R0.5	12	60	6	20,200
KSVRA-206060075	6	60°	R0.75	12	60	6	20,200
KSVRA-206060100	6	60°	R1	12	60	6	20,200
KSVRA-206060125	6	60°	R1.25	12	60	6	21,200
KSVRA-206060150	6	60°	R1.5	12	60	6	21,200
KSVRA-206060175	6	60°	R1.75	12	60	6	21,200
KSVRA-206060200	6	60°	R2	12	60	6	21,200
KSVRA-209060010	6	90°	R0.1	12	60	6	18,500
KSVRA-209060015	6	90°	R0.15	12	60	6	18,500
KSVRA-209060020	6	90°	R0.2	12	60	6	18,500
KSVRA-209060025	6	90°	R0.25	12	60	6	18,500
KSVRA-209060030	6	90°	R0.3	12	60	6	18,500
KSVRA-209060040	6	90°	R0.4	12	60	6	18,500
KSVRA-209060050	6	90°	R0.5	12	60	6	18,500
KSVRA-209060075	6	90°	R0.75	12	60	6	18,500
KSVRA-209060100	6	90°	R1	12	60	6	18,500
KSVRA-209060125	6	90°	R1.25	12	60	6	19,600
KSVRA-209060150	6	90°	R1.5	12	60	6	19,600
KSVRA-209060175	6	90°	R1.75	12	60	6	19,600
KSVRA-209060200	6	90°	R2	12	60	6	19,600
KSVRA-212060010	6	120°	R0.1	12	60	6	18,500
KSVRA-212060015	6	120°	R0.15	12	60	6	18,500
KSVRA-212060020	6	120°	R0.2	12	60	6	18,500
KSVRA-212060025	6	120°	R0.25	12	60	6	18,500
KSVRA-212060030	6	120°	R0.3	12	60	6	18,500
KSVRA-212060040	6	120°	R0.4	12	60	6	18,500
KSVRA-212060050	6	120°	R0.5	12	60	6	18,500
KSVRA-212060075	6	120°	R0.75	12	60	6	18,500
KSVRA-212060100	6	120°	R1	12	60	6	18,500
KSVRA-212060125	6	120°	R1.25	12	60	6	19,600
KSVRA-212060150	6	120°	R1.5	12	60	6	19,600
KSVRA-212060175	6	120°	R1.75	12	60	6	19,600
KSVRA-212060200	6	120°	R2	12	60	6	19,600

KMC-2

超硬面取りカッター Tungsten Carbide Chamfering Cutter

■精密加工部品の面取りや深彫りの面取り加工に
小径サイズを取り揃えました
Released for chamfering of precise parts and deep
cutting by small diameter



MG 超微粒子合金 Micro Grain Tungsten Carbide

刃径の許容差 Flute Diameter Tolerance
D 0~-0.01

柄径の許容差 Shank Diameter Tolerance
d 0~-0.008

ネジレ角0° Twist Angle 0°
(直刃2枚刃) (Straight 2 Flutes)

先端角度90° +15'
Edge Angle 90° -15'

●切削条件表はP203に記載 単位[寸法:mm/価格:円]
●Cutting conditions are recommended on page 203. Unit [s ize:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ Effective Length	全長 L Total Length	柄径 d Shank Diameter	先端フット径 Edge/flat Diameter	標準価格 Retail Price
KMC-29003S	0.3	1	40	4	0.03	5,700
KMC-29003L	0.3	3	40	4	0.06	6,400
KMC-29003060	0.3	6	40	4	0.06	7,500
KMC-29004S	0.4	1	40	4	0.03	5,700
KMC-29004L	0.4	3	40	4	0.06	6,400
KMC-29004060	0.4	6	40	4	0.06	7,500
KMC-29005S	0.5	1.5	40	4	0.04	4,900
KMC-29005L	0.5	5	40	4	0.08	6,000
KMC-29005075	0.5	7.5	40	4	0.08	7,000
KMC-29005100	0.5	10	40	4	0.08	7,500
KMC-29006S	0.6	1.5	40	4	0.04	4,900
KMC-29006L	0.6	5	40	4	0.08	6,000
KMC-29006100	0.6	10	40	4	0.08	7,500
KMC-29007S	0.7	2	40	4	0.04	4,600
KMC-29007L	0.7	6	40	4	0.08	5,700
KMC-29007100	0.7	10	40	4	0.08	6,700
KMC-29008S	0.8	2	40	4	0.04	4,600
KMC-29008L	0.8	6	40	4	0.08	5,700
KMC-29008100	0.8	10	40	4	0.08	6,700
KMC-29008150	0.8	15	50	4	0.08	7,000
KMC-29009S	0.9	3	40	4	0.04	4,600
KMC-29009L	0.9	8	40	4	0.08	5,700
KMC-29009150	0.9	15	50	4	0.08	7,000

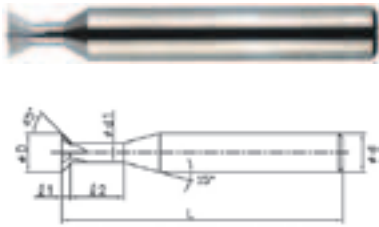
品番 Code No.	刃径 D Flute Diameter	有効長 ℓ Effective Length	全長 L Total Length	柄径 d Shank Diameter	先端フット径 Edge/flat Diameter	標準価格 Retail Price
KMC-29010S	1	3	45	4	0.06	4,300
KMC-29010L	1	8	60	4	0.1	5,300
KMC-29010100	1	10	60	4	0.1	5,300
KMC-29010150	1	15	60	4	0.1	5,500
KMC-29010200	1	20	60	4	0.1	6,000
KMC-29010250	1	25	70	4	0.1	6,500
KMC-29010300	1	30	70	4	0.1	7,000
KMC-29012S	1.2	4	45	4	0.1	4,300
KMC-29012L	1.2	10	60	4	0.1	5,300
KMC-29012150	1.2	15	60	4	0.1	5,500
KMC-29012200	1.2	20	60	4	0.1	6,000
KMC-29012250	1.2	25	70	4	0.1	6,500
KMC-29012300	1.2	30	70	4	0.1	7,000
KMC-29015S	1.5	4	45	4	0.06	4,300
KMC-29015L	1.5	10	60	4	0.1	5,300
KMC-29015150	1.5	15	60	4	0.1	5,500
KMC-29015200	1.5	20	60	4	0.1	6,000
KMC-29015250	1.5	25	70	4	0.1	6,500
KMC-29015300	1.5	30	70	4	0.1	7,000
KMC-29015350	1.5	35	80	4	0.15	7,700
KMC-29015400	1.5	40	80	4	0.15	8,000
KMC-29018S	1.8	5	45	4	0.06	4,300
KMC-29018100	1.8	10	45	4	0.06	4,500
KMC-29018L	1.8	15	60	4	0.1	5,300
KMC-29018200	1.8	20	60	4	0.1	6,000
KMC-29018250	1.8	25	70	4	0.1	6,500
KMC-29018300	1.8	30	70	4	0.1	7,000
KMC-29020S	2	5	45	4	0.1	4,300
KMC-29020100	2	10	45	4	0.1	4,500
KMC-29020L	2	15	60	4	0.2	5,300
KMC-29020200	2	20	60	4	0.2	6,000
KMC-29020250	2	25	70	4	0.2	6,500
KMC-29020300	2	30	70	4	0.2	7,000
KMC-29020350	2	35	80	4	0.2	7,700
KMC-29020400	2	40	80	4	0.2	8,000
KMC-29020500	2	50	100	4	0.2	9,400
KMC-29025S	2.5	6	45	4	0.1	4,900
KMC-29025L	2.5	20	60	4	0.2	6,000
KMC-29025300	2.5	30	70	4	0.2	7,400
KMC-29025400	2.5	40	80	4	0.2	8,400
KMC-29025500	2.5	50	100	4	0.2	9,500
KMC-29030S	3	6	45	4	0.1	4,900
KMC-29030L	3	20	60	4	0.2	6,000
KMC-29030300	3	30	70	4	0.2	7,400
KMC-29030400	3	40	80	4	0.2	8,400
KMC-29030500	3	50	100	4	0.2	9,500
KMC-29040L	4	—	70	4	0.2	5,700
KMC-29040120	4	—	120	4	0.2	8,000

KUMC-4

超硬裏面取りカッター

Tungsten Carbide Chamfering Cutter Single Angular type

- 直刃4枚刃 Straight 4 flutes
- 45° (片角タイプ) (Single Angular type)



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.05



柄径の許容差 Shank Diameter Tolerance
d=4, 6 0~-0.008
d=8, 10 0~-0.009



ネジレ角0° Twist Angle 0°
(直刃4枚刃) (4 Flutes Straight Endmill)
面取角度45° (片角) ±10' Chamfer Angle Tolerance

- 切削条件表はP205に記載
- Cutting conditions are recommended on page 205.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	外径 D Flute Diameter	有効長 l2 Effective Length	刃長 l1 Flute Length	首径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KUMC-445015S	1.5	4	0.2	1	50	4	11,400
KUMC-445015L	1.5	8	0.2	1	50	4	12,500
KUMC-445016S	1.6	4	0.25	1	50	4	11,400
KUMC-445016L	1.6	8	0.25	1	50	4	12,500
KUMC-445017S	1.7	4	0.3	1	50	4	11,400
KUMC-445017L	1.7	8	0.3	1	50	4	12,500
KUMC-445018S	1.8	4	0.3	1.1	50	4	11,400
KUMC-445018L	1.8	8	0.3	1.1	50	4	12,500
KUMC-445019S	1.9	4	0.3	1.2	50	4	11,400
KUMC-445019L	1.9	8	0.3	1.2	50	4	12,500
KUMC-445020S	2	5	0.4	1.1	50	4	11,400
KUMC-445020L	2	10	0.4	1.1	50	4	12,500
KUMC-445021S	2.1	5	0.4	1.2	50	4	11,400
KUMC-445021L	2.1	10	0.4	1.2	50	4	12,500
KUMC-445022S	2.2	5	0.4	1.3	50	4	11,400
KUMC-445022L	2.2	10	0.4	1.3	50	4	12,500
KUMC-445023S	2.3	5	0.4	1.4	50	4	11,400
KUMC-445023L	2.3	10	0.4	1.4	50	4	12,500
KUMC-445024S	2.4	5	0.4	1.5	50	4	11,400
KUMC-445024L	2.4	10	0.4	1.5	50	4	12,500
KUMC-445025S	2.5	6	0.5	1.4	50	4	11,400
KUMC-445025L	2.5	12	0.5	1.4	50	4	12,500
KUMC-445026S	2.6	6	0.5	1.5	50	4	11,400
KUMC-445026L	2.6	12	0.5	1.5	50	4	12,500

品番 Code No.	外径 D Flute Diameter	有効長 l2 Effective Length	刃長 l1 Flute Length	首径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KUMC-445027S	2.7	6	0.5	1.6	50	4	11,400
KUMC-445027L	2.7	12	0.5	1.6	50	4	12,500
KUMC-445028S	2.8	6	0.5	1.7	50	4	11,400
KUMC-445028L	2.8	12	0.5	1.7	50	4	12,500
KUMC-445029S	2.9	6	0.5	1.8	50	4	11,400
KUMC-445029L	2.9	12	0.5	1.8	50	4	12,500
KUMC-445030S	3	8	0.6	1.7	50	4	12,500
KUMC-445030L	3	16	0.6	1.7	50	4	13,500
KUMC-445031S	3.1	8	0.6	1.8	50	4	12,500
KUMC-445031L	3.1	16	0.6	1.8	50	4	13,500
KUMC-445032S	3.2	8	0.6	1.9	50	4	12,500
KUMC-445032L	3.2	16	0.6	1.9	50	4	13,500
KUMC-445033S	3.3	8	0.6	2	50	4	12,500
KUMC-445033L	3.3	16	0.6	2	50	4	13,500
KUMC-445034S	3.4	8	0.6	2.1	50	4	12,500
KUMC-445034L	3.4	16	0.6	2.1	50	4	13,500
KUMC-445035S	3.5	9	0.7	2	50	4	12,500
KUMC-445035L	3.5	18	0.7	2	50	4	13,500
KUMC-445036S	3.6	9	0.7	2.1	50	4	12,500
KUMC-445036L	3.6	18	0.7	2.1	50	4	13,500
KUMC-445037S	3.7	9	0.7	2.2	50	4	12,500
KUMC-445037L	3.7	18	0.7	2.2	50	4	13,500
KUMC-445038S	3.8	9	0.7	2.3	50	4	12,500
KUMC-445038L	3.8	18	0.7	2.3	50	4	13,500
KUMC-445039S	3.9	9	0.7	2.4	50	4	12,500
KUMC-445039L	3.9	18	0.7	2.4	50	4	13,500
KUMC-445040S	4	10	0.8	2.3	50	4	12,500
KUMC-445040L	4	20	0.8	2.3	60	4	13,500
KUMC-445041S	4.1	10	0.8	2.4	50	6	13,500
KUMC-445041L	4.1	20	0.8	2.4	60	6	14,900
KUMC-445042S	4.2	10	0.8	2.5	50	6	13,500
KUMC-445042L	4.2	20	0.8	2.5	60	6	14,900
KUMC-445043S	4.3	10	0.8	2.6	50	6	13,500
KUMC-445043L	4.3	20	0.8	2.6	60	6	14,900
KUMC-445044S	4.4	10	0.8	2.7	50	6	13,500
KUMC-445044L	4.4	20	0.8	2.7	60	6	14,900
KUMC-445045S	4.5	12	1	2.4	50	6	13,500
KUMC-445045L	4.5	24	1	2.4	60	6	14,900
KUMC-445046S	4.6	12	1	2.5	50	6	13,500
KUMC-445046L	4.6	24	1	2.5	60	6	14,900
KUMC-445047S	4.7	12	1	2.6	50	6	13,500
KUMC-445047L	4.7	24	1	2.6	60	6	14,900
KUMC-445048S	4.8	12	1	2.7	50	6	13,500
KUMC-445048L	4.8	24	1	2.7	60	6	14,900
KUMC-445049S	4.9	12	1	2.8	50	6	13,500
KUMC-445049L	4.9	24	1	2.8	60	6	14,900
KUMC-445050S	5	12	1.1	2.7	50	6	13,500
KUMC-445050L	5	24	1.1	2.7	60	6	14,900

KUMW-4

超硬裏面取りカッター

Tungsten Carbide Chamfering Cutter W Angular type

- 直刃4枚刃 Straight 4 flutes
- 90° (両角タイプ) (Double Angular type)



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.05



柄径の許容差 Shank Diameter Tolerance
d=4, 6 0~-0.008
d=8, 10 0~-0.009



ネジレ角0° Twist Angle 0°
(直刃4枚刃) (Straight 4 Flutes)
面取角度90° (両角) ±15° Chanfer Angle Tolerancs

- 切削条件表はP205に記載
- Cutting conditions are recommended on page 205.

単位[寸法:mm/価格:円]

Unit [size:mm/Retail Price:JPY]

品番 Code No.	外径 D Flute Diameter	有効長 ℓ2 Effective Length	刃長 ℓ1 Flute Length	首径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KUMW-490015S	1.5	4	0.4	1	50	4	11,400
KUMW-490015L	1.5	8	0.4	1	50	4	12,500
KUMW-490016S	1.6	4	0.5	1	50	4	11,400
KUMW-490016L	1.6	8	0.5	1	50	4	12,500
KUMW-490017S	1.7	4	0.6	1	50	4	11,400
KUMW-490017L	1.7	8	0.6	1	50	4	12,500
KUMW-490018S	1.8	4	0.6	1.1	50	4	11,400
KUMW-490018L	1.8	8	0.6	1.1	50	4	12,500
KUMW-490019S	1.9	4	0.6	1.2	50	4	11,400
KUMW-490019L	1.9	8	0.6	1.2	50	4	12,500
KUMW-490020S	2	5	0.8	1.1	50	4	11,400
KUMW-490020L	2	10	0.8	1.1	50	4	12,500
KUMW-490021S	2.1	5	0.8	1.2	50	4	11,400
KUMW-490021L	2.1	10	0.8	1.2	50	4	12,500
KUMW-490022S	2.2	5	0.8	1.3	50	4	11,400
KUMW-490022L	2.2	10	0.8	1.3	50	4	12,500
KUMW-490023S	2.3	5	0.8	1.4	50	4	11,400
KUMW-490023L	2.3	10	0.8	1.4	50	4	12,500
KUMW-490024S	2.4	5	0.8	1.5	50	4	11,400
KUMW-490024L	2.4	10	0.8	1.5	50	4	12,500
KUMW-490025S	2.5	6	1	1.4	50	4	11,400
KUMW-490025L	2.5	12	1	1.4	50	4	12,500
KUMW-490026S	2.6	6	1	1.5	50	4	11,400
KUMW-490026L	2.6	12	1	1.5	50	4	12,500

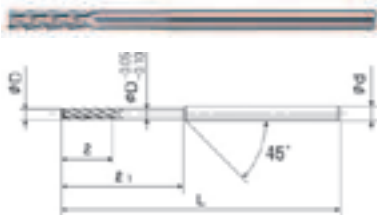
品番 Code No.	外径 D Flute Diameter	有効長 ℓ2 Effective Length	刃長 ℓ1 Flute Length	首径 d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KUMW-490027S	2.7	6	1	1.6	50	4	11,400
KUMW-490027L	2.7	12	1	1.6	50	4	12,500
KUMW-490028S	2.8	6	1	1.7	50	4	11,400
KUMW-490028L	2.8	12	1	1.7	50	4	12,500
KUMW-490029S	2.9	6	1	1.8	50	4	11,400
KUMW-490029L	2.9	12	1	1.8	50	4	12,500
KUMW-490030S	3	8	1.2	1.7	50	4	12,500
KUMW-490030L	3	16	1.2	1.7	50	4	13,500
KUMW-490031S	3.1	8	1.2	1.8	50	4	12,500
KUMW-490031L	3.1	16	1.2	1.8	50	4	13,500
KUMW-490032S	3.2	8	1.2	1.9	50	4	12,500
KUMW-490032L	3.2	16	1.2	1.9	50	4	13,500
KUMW-490033S	3.3	8	1.2	2	50	4	12,500
KUMW-490033L	3.3	16	1.2	2	50	4	13,500
KUMW-490034S	3.4	8	1.2	2.1	50	4	12,500
KUMW-490034L	3.4	16	1.2	2.1	50	4	13,500
KUMW-490035S	3.5	9	1.4	2	50	4	12,500
KUMW-490035L	3.5	18	1.4	2	50	4	13,500
KUMW-490036S	3.6	9	1.4	2.1	50	4	12,500
KUMW-490036L	3.6	18	1.4	2.1	50	4	13,500
KUMW-490037S	3.7	9	1.4	2.2	50	4	12,500
KUMW-490037L	3.7	18	1.4	2.2	50	4	13,500
KUMW-490038S	3.8	9	1.4	2.3	50	4	12,500
KUMW-490038L	3.8	18	1.4	2.3	50	4	13,500
KUMW-490039S	3.9	9	1.4	2.4	50	4	12,500
KUMW-490039L	3.9	18	1.4	2.4	50	4	13,500
KUMW-490040S	4	10	1.6	2.3	50	4	12,500
KUMW-490040L	4	20	1.6	2.3	60	4	13,500
KUMW-490041S	4.1	10	1.6	2.4	50	6	13,500
KUMW-490041L	4.1	20	1.6	2.4	60	6	14,900
KUMW-490042S	4.2	10	1.6	2.5	50	6	13,500
KUMW-490042L	4.2	20	1.6	2.5	60	6	14,900
KUMW-490043S	4.3	10	1.6	2.6	50	6	13,500
KUMW-490043L	4.3	20	1.6	2.6	60	6	14,900
KUMW-490044S	4.4	10	1.6	2.7	50	6	13,500
KUMW-490044L	4.4	20	1.6	2.7	60	6	14,900
KUMW-490045S	4.5	12	2	2.4	50	6	13,500
KUMW-490045L	4.5	24	2	2.4	60	6	14,900
KUMW-490046S	4.6	12	2	2.5	50	6	13,500
KUMW-490046L	4.6	24	2	2.5	60	6	14,900
KUMW-490047S	4.7	12	2	2.6	50	6	13,500
KUMW-490047L	4.7	24	2	2.6	60	6	14,900
KUMW-490048S	4.8	12	2	2.7	50	6	13,500
KUMW-490048L	4.8	24	2	2.7	60	6	14,900
KUMW-490049S	4.9	12	2	2.8	50	6	13,500
KUMW-490049L	4.9	24	2	2.8	60	6	14,900
KUMW-490050S	5	12	2.2	2.7	50	6	13,500
KUMW-490050L	5	24	2.2	2.7	60	6	14,900

KHR-4

超硬底刃付リーマ

Tungsten Carbide Reamer with Bottom Flute

■底刃が付いているので止まり穴の加工などに最適です
Best for stop hole processing due to having bottom flute



微粒子合金 (K10) Regular Grain Carbide



刃径の許容差 Flute Diameter Tolerance
 $D \leq 3.09$ $+0.005 \sim 0$
 $3.1 < D \leq 12.03$ $+0.007 \sim 0$



柄径の許容差 Shank Diameter Tolerance
 $d = 3$ $0 \sim -0.006$
 $3 < d \leq 6.05$ $0 \sim -0.008$
 $6 < d \leq 10$ $0 \sim -0.009$
 $d = 12$ $0 \sim -0.011$



ネジレ角 右ネジレ35° Twist Angle 35°



喰付寸法 (K=喰付角片角45°)
 Chamfer Size (K=Chamfer Angle Single 45°)
 $C = 0.1 \pm 0.03$ $\phi 1 \sim \phi 1.99$
 $C = 0.15 \pm 0.03$ $\phi 2 \sim \phi 3.09$
 $C = 0.2 \pm 0.03$ $\phi 3.1 \sim \phi 7.05$
 $C = 0.3 \pm 0.03$ $\phi 7.1 \sim \phi 10.05$
 $C = 0.4 \pm 0.03$ $\phi 10.1 \sim \phi 12.03$

●切削条件表はP206に記載

●Cutting conditions are recommended on page 206.

Unit [寸法: mm / 価格: ¥]
 Unit [size: mm / Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	有効長 l1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4050	0.50	4	10	50	3	10,200
KHR-4051	0.51	4	10	50	3	11,100
KHR-4052	0.52	4	10	50	3	11,100
KHR-4053	0.53	4	10	50	3	11,100
KHR-4054	0.54	4	10	50	3	11,100
KHR-4055	0.55	4	10	50	3	11,100
KHR-4056	0.56	4	10	50	3	11,100
KHR-4057	0.57	4	10	50	3	11,100
KHR-4058	0.58	4	10	50	3	11,100
KHR-4059	0.59	4	10	50	3	11,100
KHR-4060	0.60	4	10	50	3	10,200
KHR-4061	0.61	4	10	50	3	11,100
KHR-4062	0.62	4	10	50	3	11,100
KHR-4063	0.63	4	10	50	3	11,100
KHR-4064	0.64	4	10	50	3	11,100
KHR-4065	0.65	4	10	50	3	11,100
KHR-4066	0.66	4	10	50	3	11,100
KHR-4067	0.67	4	10	50	3	11,100
KHR-4068	0.68	4	10	50	3	11,100
KHR-4069	0.69	4	10	50	3	11,100
KHR-4070	0.70	4	10	50	3	10,200
KHR-4071	0.71	4	10	50	3	11,100

品番 Code No.	刃径 D Flute Diameter	刃長 l Flute Length	有効長 l1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4072	0.72	4	10	50	3	11,100
KHR-4073	0.73	4	10	50	3	11,100
KHR-4074	0.74	4	10	50	3	11,100
KHR-4075	0.75	4	10	50	3	11,100
KHR-4076	0.76	4	10	50	3	11,100
KHR-4077	0.77	4	10	50	3	11,100
KHR-4078	0.78	4	10	50	3	11,100
KHR-4079	0.79	5	12	50	3	11,100
KHR-4080	0.80	5	12	50	3	9,900
KHR-4081	0.81	5	12	50	3	10,600
KHR-4082	0.82	5	12	50	3	10,600
KHR-4083	0.83	5	12	50	3	10,600
KHR-4084	0.84	5	12	50	3	10,600
KHR-4085	0.85	5	12	50	3	10,600
KHR-4086	0.86	5	12	50	3	10,600
KHR-4087	0.87	5	12	50	3	10,600
KHR-4088	0.88	5	12	50	3	10,600
KHR-4089	0.89	5	12	50	3	10,600
KHR-4090	0.90	5	12	50	3	9,900
KHR-4091	0.91	5	12	50	3	10,600
KHR-4092	0.92	5	12	50	3	10,600
KHR-4093	0.93	5	12	50	3	10,600
KHR-4094	0.94	5	12	50	3	10,600
KHR-4095	0.95	5	12	50	3	10,600
KHR-4096	0.96	5	12	50	3	10,600
KHR-4097	0.97	5	12	50	3	10,600
KHR-4098	0.98	5	12	50	3	10,600
KHR-4099	0.99	5	12	50	3	10,600
KHR-4100	1	6	15	60	3	9,900
KHR-4101	1.01	6	15	60	3	10,600
KHR-4102	1.02	6	15	60	3	10,600
KHR-4103	1.03	6	15	60	3	10,600
KHR-4104	1.04	6	15	60	3	10,600
KHR-4105	1.05	6	15	60	3	10,600
KHR-4106	1.06	6	15	60	3	10,600
KHR-4107	1.07	6	15	60	3	10,600
KHR-4108	1.08	6	15	60	3	10,600
KHR-4109	1.09	6	15	60	3	10,600
KHR-4110	1.1	6	15	60	3	9,900
KHR-4111	1.11	6	15	60	3	10,600
KHR-4112	1.12	6	15	60	3	10,600
KHR-4113	1.13	6	15	60	3	10,600
KHR-4114	1.14	6	15	60	3	10,600
KHR-4115	1.15	6	15	60	3	10,600
KHR-4116	1.16	6	15	60	3	10,600
KHR-4117	1.17	6	15	60	3	10,600
KHR-4118	1.18	6	15	60	3	10,600
KHR-4119	1.19	6	15	60	3	10,600

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4120	1.2	6	15	60	3	9,900
KHR-4121	1.21	6	15	60	3	10,600
KHR-4122	1.22	6	15	60	3	10,600
KHR-4123	1.23	6	15	60	3	10,600
KHR-4124	1.24	6	15	60	3	10,600
KHR-4125	1.25	6	15	60	3	10,600
KHR-4126	1.26	6	15	60	3	10,600
KHR-4127	1.27	6	15	60	3	10,600
KHR-4128	1.28	6	15	60	3	10,600
KHR-4129	1.29	6	15	60	3	10,600
KHR-4130	1.3	6	15	60	3	9,900
KHR-4131	1.31	6	15	60	3	10,600
KHR-4132	1.32	6	15	60	3	10,600
KHR-4133	1.33	6	15	60	3	10,600
KHR-4134	1.34	6	15	60	3	10,600
KHR-4135	1.35	6	15	60	3	10,600
KHR-4136	1.36	6	15	60	3	10,600
KHR-4137	1.37	6	15	60	3	10,600
KHR-4138	1.38	6	15	60	3	10,600
KHR-4139	1.39	6	15	60	3	10,600
KHR-4140	1.4	6	15	60	3	9,900
KHR-4141	1.41	6	15	60	3	10,600
KHR-4142	1.42	6	15	60	3	10,600
KHR-4143	1.43	6	15	60	3	10,600
KHR-4144	1.44	6	15	60	3	10,600
KHR-4145	1.45	6	15	60	3	10,600
KHR-4146	1.46	6	15	60	3	10,600
KHR-4147	1.47	6	15	60	3	10,600
KHR-4148	1.48	6	15	60	3	10,600
KHR-4149	1.49	6	15	60	3	10,600
KHR-4150	1.5	8	20	60	3	9,900
KHR-4151	1.51	8	20	60	3	10,600
KHR-4152	1.52	8	20	60	3	10,600
KHR-4153	1.53	8	20	60	3	10,600
KHR-4154	1.54	8	20	60	3	10,600
KHR-4155	1.55	8	20	60	3	10,600
KHR-4156	1.56	8	20	60	3	10,600
KHR-4157	1.57	8	20	60	3	10,600
KHR-4158	1.58	8	20	60	3	10,600
KHR-4159	1.59	8	20	60	3	10,600
KHR-4160	1.6	8	20	60	3	9,900
KHR-4161	1.61	8	20	60	3	10,600
KHR-4162	1.62	8	20	60	3	10,600
KHR-4163	1.63	8	20	60	3	10,600
KHR-4164	1.64	8	20	60	3	10,600
KHR-4165	1.65	8	20	60	3	10,600
KHR-4166	1.66	8	20	60	3	10,600
KHR-4167	1.67	8	20	60	3	10,600

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4168	1.68	8	20	60	3	10,600
KHR-4169	1.69	8	20	60	3	10,600
KHR-4170	1.7	8	20	60	3	9,900
KHR-4171	1.71	8	20	60	3	10,600
KHR-4172	1.72	8	20	60	3	10,600
KHR-4173	1.73	8	20	60	3	10,600
KHR-4174	1.74	8	20	60	3	10,600
KHR-4175	1.75	8	20	60	3	10,600
KHR-4176	1.76	8	20	60	3	10,600
KHR-4177	1.77	8	20	60	3	10,600
KHR-4178	1.78	8	20	60	3	10,600
KHR-4179	1.79	8	20	60	3	10,600
KHR-4180	1.8	8	20	60	3	9,900
KHR-4181	1.81	8	20	60	3	10,600
KHR-4182	1.82	8	20	60	3	10,600
KHR-4183	1.83	8	20	60	3	10,600
KHR-4184	1.84	8	20	60	3	10,600
KHR-4185	1.85	8	20	60	3	10,600
KHR-4186	1.86	8	20	60	3	10,600
KHR-4187	1.87	8	20	60	3	10,600
KHR-4188	1.88	8	20	60	3	10,600
KHR-4189	1.89	8	20	60	3	10,600
KHR-4190	1.9	8	20	60	3	9,900
KHR-4191	1.91	10	24	60	3	10,600
KHR-4192	1.92	10	24	60	3	10,600
KHR-4193	1.93	10	24	60	3	10,600
KHR-4194	1.94	10	24	60	3	10,600
KHR-4195	1.95	10	24	60	3	10,600
KHR-4196	1.96	10	24	60	3	10,600
KHR-4197	1.97	10	24	60	3	10,600
KHR-4198	1.98	10	24	60	3	10,600
KHR-4199	1.99	10	24	60	3	10,600
KHR-4200	2	10	24	60	3	9,900
KHR-4201	2.01	10	24	60	3	10,600
KHR-4202	2.02	10	24	60	3	10,600
KHR-4203	2.03	10	24	60	3	10,600
KHR-4204	2.04	10	24	60	3	10,600
KHR-4205	2.05	10	24	60	3	10,600
KHR-4206	2.06	10	24	60	3	10,600
KHR-4207	2.07	10	24	60	3	10,600
KHR-4208	2.08	10	24	60	3	10,600
KHR-4209	2.09	10	24	60	3	10,600
KHR-4210	2.1	10	24	60	3	9,900
KHR-4211	2.11	10	24	60	3	10,600
KHR-4212	2.12	10	24	60	3	10,600
KHR-4213	2.13	10	24	60	3	10,600
KHR-4214	2.14	10	24	60	3	10,600
KHR-4215	2.15	10	24	60	3	10,600

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4216	2.16	10	24	60	3	10,600
KHR-4217	2.17	10	24	60	3	10,600
KHR-4218	2.18	10	24	60	3	10,600
KHR-4219	2.19	10	24	60	3	10,600
KHR-4220	2.2	10	24	60	3	9,900
KHR-4221	2.21	10	24	60	3	10,600
KHR-4222	2.22	10	24	60	3	10,600
KHR-4223	2.23	10	24	60	3	10,600
KHR-4224	2.24	10	24	60	3	10,600
KHR-4225	2.25	10	24	60	3	10,600
KHR-4226	2.26	10	24	60	3	10,600
KHR-4227	2.27	10	24	60	3	10,600
KHR-4228	2.28	10	24	60	3	10,600
KHR-4229	2.29	10	24	60	3	10,600
KHR-4230	2.3	10	24	60	3	9,900
KHR-4231	2.31	10	24	60	3	10,600
KHR-4232	2.32	10	24	60	3	10,600
KHR-4233	2.33	10	24	60	3	10,600
KHR-4234	2.34	10	24	60	3	10,600
KHR-4235	2.35	10	24	60	3	10,600
KHR-4236	2.36	10	24	60	3	10,600
KHR-4237	2.37	10	24	60	3	10,600
KHR-4238	2.38	10	24	60	3	10,600
KHR-4239	2.39	10	24	60	3	10,600
KHR-4240	2.4	10	24	60	3	9,900
KHR-4241	2.41	10	24	60	3	10,600
KHR-4242	2.42	10	24	60	3	10,600
KHR-4243	2.43	10	24	60	3	10,600
KHR-4244	2.44	10	24	60	3	10,600
KHR-4245	2.45	10	24	60	3	10,600
KHR-4246	2.46	10	24	60	3	10,600
KHR-4247	2.47	10	24	60	3	10,600
KHR-4248	2.48	10	24	60	3	10,600
KHR-4249	2.49	10	24	60	3	10,600
KHR-4250	2.5	10	24	60	3	9,900
KHR-4251	2.51	10	24	60	3	10,600
KHR-4252	2.52	10	24	60	3	10,600
KHR-4253	2.53	10	24	60	3	10,600
KHR-4254	2.54	10	24	60	3	10,600
KHR-4255	2.55	10	24	60	3	10,600
KHR-4256	2.56	10	24	60	3	10,600
KHR-4257	2.57	10	24	60	3	10,600
KHR-4258	2.58	10	24	60	3	10,600
KHR-4259	2.59	10	24	60	3	10,600
KHR-4260	2.6	10	24	60	3	9,900
KHR-4261	2.61	10	24	60	3	10,600
KHR-4262	2.62	10	24	60	3	10,600
KHR-4263	2.63	10	24	60	3	10,600

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4264	2.64	10	24	60	3	10,600
KHR-4265	2.65	10	24	60	3	10,600
KHR-4266	2.66	10	24	60	3	10,600
KHR-4267	2.67	10	24	60	3	10,600
KHR-4268	2.68	10	24	60	3	10,600
KHR-4269	2.69	10	24	60	3	10,600
KHR-4270	2.7	10	24	60	3	9,900
KHR-4271	2.71	10	24	60	3	10,600
KHR-4272	2.72	10	24	60	3	10,600
KHR-4273	2.73	10	24	60	3	10,600
KHR-4274	2.74	10	24	60	3	10,600
KHR-4275	2.75	10	24	60	3	10,600
KHR-4276	2.76	10	24	60	3	10,600
KHR-4277	2.77	10	24	60	3	10,600
KHR-4278	2.78	10	24	60	3	10,600
KHR-4279	2.79	10	24	60	3	10,600
KHR-4280	2.8	10	24	60	3	9,900
KHR-4281	2.81	10	24	60	3	10,600
KHR-4282	2.82	10	24	60	3	10,600
KHR-4283	2.83	10	24	60	3	10,600
KHR-4284	2.84	10	24	60	3	10,600
KHR-4285	2.85	10	24	60	3	10,600
KHR-4286	2.86	10	24	60	3	10,600
KHR-4287	2.87	10	24	60	3	10,600
KHR-4288	2.88	10	24	60	3	10,600
KHR-4289	2.89	10	24	60	3	10,600
KHR-4290	2.9	10	24	60	3	9,900
KHR-4291	2.91	15	30	60	3	11,500
KHR-4292	2.92	15	30	60	3	11,500
KHR-4293	2.93	15	30	60	3	11,500
KHR-4294	2.94	15	30	60	3	11,500
KHR-4295	2.95	15	30	60	3	11,500
KHR-4296	2.96	15	30	60	3	11,500
KHR-4297	2.97	15	30	60	3	11,500
KHR-4298	2.98	15	30	60	3	11,500
KHR-4299	2.99	15	30	60	3	11,500
KHR-4300	3	15	30	60	3	10,600
KHR-4301	3.01	15	30	60	3	11,500
KHR-4302	3.02	15	30	60	3	11,500
KHR-4303	3.03	15	30	60	3	11,500
KHR-4304	3.04	15	30	60	3	11,500
KHR-4305	3.05	15	30	60	3	11,500
KHR-4306	3.06	15	30	60	3	11,500
KHR-4307	3.07	15	30	60	3	11,500
KHR-4308	3.08	15	30	60	3	11,500
KHR-4309	3.09	15	30	60	3	11,500
KHR-4310	3.1	15	30	70	4	11,500
KHR-4311	3.11	15	30	70	4	12,800

超硬製品

Tungsten Carbide

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4312	3.12	15	30	70	4	12,800
KHR-4313	3.13	15	30	70	4	12,800
KHR-4314	3.14	15	30	70	4	12,800
KHR-4315	3.15	15	30	70	4	12,800
KHR-4316	3.16	15	30	70	4	12,800
KHR-4317	3.17	15	30	70	4	12,800
KHR-4318	3.18	15	30	70	4	12,800
KHR-4319	3.19	15	30	70	4	12,800
KHR-4320	3.2	15	30	70	4	11,500
KHR-4321	3.21	15	30	70	4	12,800
KHR-4322	3.22	15	30	70	4	12,800
KHR-4323	3.23	15	30	70	4	12,800
KHR-4324	3.24	15	30	70	4	12,800
KHR-4325	3.25	15	30	70	4	12,800
KHR-4326	3.26	15	30	70	4	12,800
KHR-4327	3.27	15	30	70	4	12,800
KHR-4328	3.28	15	30	70	4	12,800
KHR-4329	3.29	15	30	70	4	12,800
KHR-4330	3.3	15	30	70	4	11,500
KHR-4331	3.31	15	30	70	4	12,800
KHR-4332	3.32	15	30	70	4	12,800
KHR-4333	3.33	15	30	70	4	12,800
KHR-4334	3.34	15	30	70	4	12,800
KHR-4335	3.35	15	30	70	4	12,800
KHR-4336	3.36	15	30	70	4	12,800
KHR-4337	3.37	15	30	70	4	12,800
KHR-4338	3.38	15	30	70	4	12,800
KHR-4339	3.39	15	30	70	4	12,800
KHR-4340	3.4	15	30	70	4	11,500
KHR-4341	3.41	15	30	70	4	12,800
KHR-4342	3.42	15	30	70	4	12,800
KHR-4343	3.43	15	30	70	4	12,800
KHR-4344	3.44	15	30	70	4	12,800
KHR-4345	3.45	15	30	70	4	12,800
KHR-4346	3.46	15	30	70	4	12,800
KHR-4347	3.47	15	30	70	4	12,800
KHR-4348	3.48	15	30	70	4	12,800
KHR-4349	3.49	15	30	70	4	12,800
KHR-4350	3.5	15	30	70	4	11,500
KHR-4351	3.51	15	30	70	4	12,800
KHR-4352	3.52	15	30	70	4	12,800
KHR-4353	3.53	15	30	70	4	12,800
KHR-4354	3.54	15	30	70	4	12,800
KHR-4355	3.55	15	30	70	4	12,800
KHR-4356	3.56	15	30	70	4	12,800
KHR-4357	3.57	15	30	70	4	12,800
KHR-4358	3.58	15	30	70	4	12,800
KHR-4359	3.59	15	30	70	4	12,800

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4360	3.6	15	30	70	4	11,500
KHR-4361	3.61	15	30	70	4	12,800
KHR-4362	3.62	15	30	70	4	12,800
KHR-4363	3.63	15	30	70	4	12,800
KHR-4364	3.64	15	30	70	4	12,800
KHR-4365	3.65	15	30	70	4	12,800
KHR-4366	3.66	15	30	70	4	12,800
KHR-4367	3.67	15	30	70	4	12,800
KHR-4368	3.68	15	30	70	4	12,800
KHR-4369	3.69	15	30	70	4	12,800
KHR-4370	3.7	15	30	70	4	11,500
KHR-4371	3.71	15	30	70	4	12,800
KHR-4372	3.72	15	30	70	4	12,800
KHR-4373	3.73	15	30	70	4	12,800
KHR-4374	3.74	15	30	70	4	12,800
KHR-4375	3.75	15	30	70	4	12,800
KHR-4376	3.76	15	30	70	4	12,800
KHR-4377	3.77	15	30	70	4	12,800
KHR-4378	3.78	15	30	70	4	12,800
KHR-4379	3.79	15	30	70	4	12,800
KHR-4380	3.8	15	30	70	4	11,500
KHR-4381	3.81	15	30	70	4	12,800
KHR-4382	3.82	15	30	70	4	12,800
KHR-4383	3.83	15	30	70	4	12,800
KHR-4384	3.84	15	30	70	4	12,800
KHR-4385	3.85	15	30	70	4	12,800
KHR-4386	3.86	15	30	70	4	12,800
KHR-4387	3.87	15	30	70	4	12,800
KHR-4388	3.88	15	30	70	4	12,800
KHR-4389	3.89	15	30	70	4	12,800
KHR-4390	3.9	15	30	70	4	11,500
KHR-4391	3.91	20	35	70	4	13,400
KHR-4392	3.92	20	35	70	4	13,400
KHR-4393	3.93	20	35	70	4	13,400
KHR-4394	3.94	20	35	70	4	13,400
KHR-4395	3.95	20	35	70	4	13,400
KHR-4396	3.96	20	35	70	4	13,400
KHR-4397	3.97	20	35	70	4	13,400
KHR-4398	3.98	20	35	70	4	13,400
KHR-4399	3.99	20	35	70	4	13,400
KHR-4400	4	20	35	70	4	12,000
KHR-4401	4.01	20	35	70	4	13,400
KHR-4402	4.02	20	35	70	4	13,400
KHR-4403	4.03	20	35	70	4	13,400
KHR-4404	4.04	20	35	70	4	13,400
KHR-4405	4.05	20	35	70	4	13,400
KHR-4406	4.06	20	35	70	4	13,400
KHR-4407	4.07	20	35	70	4	13,400

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4408	4.08	20	35	70	4	13,400
KHR-4409	4.09	20	35	70	4	13,400
KHR-4410	4.1	20	35	80	6	12,800
KHR-4411	4.11	20	35	80	6	14,300
KHR-4412	4.12	20	35	80	6	14,300
KHR-4413	4.13	20	35	80	6	14,300
KHR-4414	4.14	20	35	80	6	14,300
KHR-4415	4.15	20	35	80	6	14,300
KHR-4416	4.16	20	35	80	6	14,300
KHR-4417	4.17	20	35	80	6	14,300
KHR-4418	4.18	20	35	80	6	14,300
KHR-4419	4.19	20	35	80	6	14,300
KHR-4420	4.2	20	35	80	6	12,800
KHR-4421	4.21	20	35	80	6	14,300
KHR-4422	4.22	20	35	80	6	14,300
KHR-4423	4.23	20	35	80	6	14,300
KHR-4424	4.24	20	35	80	6	14,300
KHR-4425	4.25	20	35	80	6	14,300
KHR-4426	4.26	20	35	80	6	14,300
KHR-4427	4.27	20	35	80	6	14,300
KHR-4428	4.28	20	35	80	6	14,300
KHR-4429	4.29	20	35	80	6	14,300
KHR-4430	4.3	20	35	80	6	12,800
KHR-4431	4.31	20	35	80	6	14,300
KHR-4432	4.32	20	35	80	6	14,300
KHR-4433	4.33	20	35	80	6	14,300
KHR-4434	4.34	20	35	80	6	14,300
KHR-4435	4.35	20	35	80	6	14,300
KHR-4436	4.36	20	35	80	6	14,300
KHR-4437	4.37	20	35	80	6	14,300
KHR-4438	4.38	20	35	80	6	14,300
KHR-4439	4.39	20	35	80	6	14,300
KHR-4440	4.4	20	35	80	6	12,800
KHR-4441	4.41	20	35	80	6	14,300
KHR-4442	4.42	20	35	80	6	14,300
KHR-4443	4.43	20	35	80	6	14,300
KHR-4444	4.44	20	35	80	6	14,300
KHR-4445	4.45	20	35	80	6	14,300
KHR-4446	4.46	20	35	80	6	14,300
KHR-4447	4.47	20	35	80	6	14,300
KHR-4448	4.48	20	35	80	6	14,300
KHR-4449	4.49	20	35	80	6	14,300
KHR-4450	4.5	20	35	80	6	12,800
KHR-4451	4.51	20	35	80	6	14,300
KHR-4452	4.52	20	35	80	6	14,300
KHR-4453	4.53	20	35	80	6	14,300
KHR-4454	4.54	20	35	80	6	14,300
KHR-4455	4.55	20	35	80	6	14,300

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4456	4.56	20	35	80	6	14,300
KHR-4457	4.57	20	35	80	6	14,300
KHR-4458	4.58	20	35	80	6	14,300
KHR-4459	4.59	20	35	80	6	14,300
KHR-4460	4.6	20	35	80	6	12,800
KHR-4461	4.61	20	35	80	6	14,300
KHR-4462	4.62	20	35	80	6	14,300
KHR-4463	4.63	20	35	80	6	14,300
KHR-4464	4.64	20	35	80	6	14,300
KHR-4465	4.65	20	35	80	6	14,300
KHR-4466	4.66	20	35	80	6	14,300
KHR-4467	4.67	20	35	80	6	14,300
KHR-4468	4.68	20	35	80	6	14,300
KHR-4469	4.69	20	35	80	6	14,300
KHR-4470	4.7	20	35	80	6	12,800
KHR-4471	4.71	20	35	80	6	14,300
KHR-4472	4.72	20	35	80	6	14,300
KHR-4473	4.73	20	35	80	6	14,300
KHR-4474	4.74	20	35	80	6	14,300
KHR-4475	4.75	20	35	80	6	14,300
KHR-4476	4.76	20	35	80	6	14,300
KHR-4477	4.77	20	35	80	6	14,300
KHR-4478	4.78	20	35	80	6	14,300
KHR-4479	4.79	20	35	80	6	14,300
KHR-4480	4.8	20	35	80	6	12,800
KHR-4481	4.81	20	35	80	6	14,300
KHR-4482	4.82	20	35	80	6	14,300
KHR-4483	4.83	20	35	80	6	14,300
KHR-4484	4.84	20	35	80	6	14,300
KHR-4485	4.85	20	35	80	6	14,300
KHR-4486	4.86	20	35	80	6	14,300
KHR-4487	4.87	20	35	80	6	14,300
KHR-4488	4.88	20	35	80	6	14,300
KHR-4489	4.89	20	35	80	6	14,300
KHR-4490	4.9	20	35	80	6	12,800
KHR-4491	4.91	24	40	80	6	14,900
KHR-4492	4.92	24	40	80	6	14,900
KHR-4493	4.93	24	40	80	6	14,900
KHR-4494	4.94	24	40	80	6	14,900
KHR-4495	4.95	24	40	80	6	14,900
KHR-4496	4.96	24	40	80	6	14,900
KHR-4497	4.97	24	40	80	6	14,900
KHR-4498	4.98	24	40	80	6	14,900
KHR-4499	4.99	24	40	80	6	14,900
KHR-4500	5	24	40	80	6	13,400
KHR-4501	5.01	24	40	80	6	14,900
KHR-4502	5.02	24	40	80	6	14,900
KHR-4503	5.03	24	40	80	6	14,900

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4504	5.04	24	40	80	6	14,900
KHR-4505	5.05	24	40	80	6	14,900
KHR-4506	5.06	24	40	80	6	14,900
KHR-4507	5.07	24	40	80	6	14,900
KHR-4508	5.08	24	40	80	6	14,900
KHR-4509	5.09	24	40	80	6	14,900
KHR-4510	5.1	24	40	80	6	13,400
KHR-4511	5.11	24	40	80	6	14,900
KHR-4512	5.12	24	40	80	6	14,900
KHR-4513	5.13	24	40	80	6	14,900
KHR-4514	5.14	24	40	80	6	14,900
KHR-4515	5.15	24	40	80	6	14,900
KHR-4516	5.16	24	40	80	6	14,900
KHR-4517	5.17	24	40	80	6	14,900
KHR-4518	5.18	24	40	80	6	14,900
KHR-4519	5.19	24	40	80	6	14,900
KHR-4520	5.2	24	40	80	6	13,400
KHR-4521	5.21	24	40	80	6	14,900
KHR-4522	5.22	24	40	80	6	14,900
KHR-4523	5.23	24	40	80	6	14,900
KHR-4524	5.24	24	40	80	6	14,900
KHR-4525	5.25	24	40	80	6	14,900
KHR-4526	5.26	24	40	80	6	14,900
KHR-4527	5.27	24	40	80	6	14,900
KHR-4528	5.28	24	40	80	6	14,900
KHR-4529	5.29	24	40	80	6	14,900
KHR-4530	5.3	24	40	80	6	13,400
KHR-4531	5.31	24	40	80	6	14,900
KHR-4532	5.32	24	40	80	6	14,900
KHR-4533	5.33	24	40	80	6	14,900
KHR-4534	5.34	24	40	80	6	14,900
KHR-4535	5.35	24	40	80	6	14,900
KHR-4536	5.36	24	40	80	6	14,900
KHR-4537	5.37	24	40	80	6	14,900
KHR-4538	5.38	24	40	80	6	14,900
KHR-4539	5.39	24	40	80	6	14,900
KHR-4540	5.4	24	40	80	6	13,400
KHR-4541	5.41	24	40	80	6	14,900
KHR-4542	5.42	24	40	80	6	14,900
KHR-4543	5.43	24	40	80	6	14,900
KHR-4544	5.44	24	40	80	6	14,900
KHR-4545	5.45	24	40	80	6	14,900
KHR-4546	5.46	24	40	80	6	14,900
KHR-4547	5.47	24	40	80	6	14,900
KHR-4548	5.48	24	40	80	6	14,900
KHR-4549	5.49	24	40	80	6	14,900
KHR-4550	5.5	24	40	80	6	13,400
KHR-4551	5.51	24	40	80	6	14,900

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4552	5.52	24	40	80	6	14,900
KHR-4553	5.53	24	40	80	6	14,900
KHR-4554	5.54	24	40	80	6	14,900
KHR-4555	5.55	24	40	80	6	14,900
KHR-4556	5.56	24	40	80	6	14,900
KHR-4557	5.57	24	40	80	6	14,900
KHR-4558	5.58	24	40	80	6	14,900
KHR-4559	5.59	24	40	80	6	14,900
KHR-4560	5.6	24	40	80	6	13,400
KHR-4561	5.61	24	40	80	6	14,900
KHR-4562	5.62	24	40	80	6	14,900
KHR-4563	5.63	24	40	80	6	14,900
KHR-4564	5.64	24	40	80	6	14,900
KHR-4565	5.65	24	40	80	6	14,900
KHR-4566	5.66	24	40	80	6	14,900
KHR-4567	5.67	24	40	80	6	14,900
KHR-4568	5.68	24	40	80	6	14,900
KHR-4569	5.69	24	40	80	6	14,900
KHR-4570	5.7	24	40	80	6	13,400
KHR-4571	5.71	24	40	80	6	14,900
KHR-4572	5.72	24	40	80	6	14,900
KHR-4573	5.73	24	40	80	6	14,900
KHR-4574	5.74	24	40	80	6	14,900
KHR-4575	5.75	24	40	80	6	14,900
KHR-4576	5.76	24	40	80	6	14,900
KHR-4577	5.77	24	40	80	6	14,900
KHR-4578	5.78	24	40	80	6	14,900
KHR-4579	5.79	24	40	80	6	14,900
KHR-4580	5.8	24	40	80	6	13,400
KHR-4581	5.81	24	40	80	6	14,900
KHR-4582	5.82	24	40	80	6	14,900
KHR-4583	5.83	24	40	80	6	14,900
KHR-4584	5.84	24	40	80	6	14,900
KHR-4585	5.85	24	40	80	6	14,900
KHR-4586	5.86	24	40	80	6	14,900
KHR-4587	5.87	24	40	80	6	14,900
KHR-4588	5.88	24	40	80	6	14,900
KHR-4589	5.89	24	40	80	6	14,900
KHR-4590	5.9	24	40	80	6	13,400
KHR-4591	5.91	24	40	80	6	14,900
KHR-4592	5.92	24	40	80	6	14,900
KHR-4593	5.93	24	40	80	6	14,900
KHR-4594	5.94	24	40	80	6	14,900
KHR-4595	5.95	24	40	80	6	14,900
KHR-4596	5.96	24	40	80	6	14,900
KHR-4597	5.97	24	40	80	6	14,900
KHR-4598	5.98	24	40	80	6	14,900
KHR-4599	5.99	24	40	80	6	14,900

KHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ ₁ Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4600	6	24	40	80	6	13,400
KHR-4601	6.01	24	40	80	6	14,900
KHR-4602	6.02	24	40	80	6	14,900
KHR-4603	6.03	24	40	80	6	14,900
KHR-4604	6.04	24	40	80	6	14,900
KHR-4605	6.05	24	40	80	6	14,900
KHR-4610	6.10	25	45	100	8	17,400
KHR-4615	6.15	25	45	100	8	19,000
KHR-4620	6.20	25	45	100	8	17,400
KHR-4625	6.25	25	45	100	8	19,000
KHR-4630	6.30	25	45	100	8	17,400
KHR-4635	6.35	25	45	100	8	19,000
KHR-4640	6.40	25	45	100	8	17,400
KHR-4645	6.45	25	45	100	8	19,000
KHR-4650	6.50	25	45	100	8	17,400
KHR-4655	6.55	25	45	100	8	19,000
KHR-4660	6.60	25	45	100	8	17,400
KHR-4665	6.65	25	45	100	8	19,000
KHR-4670	6.70	25	45	100	8	17,400
KHR-4675	6.75	25	45	100	8	19,000
KHR-4680	6.80	25	45	100	8	17,400
KHR-4685	6.85	25	45	100	8	19,000
KHR-4690	6.90	25	45	100	8	17,400
KHR-4695	6.95	25	45	100	8	19,000
KHR-4696	6.96	25	45	100	8	19,000
KHR-4697	6.97	25	45	100	8	19,000
KHR-4698	6.98	25	45	100	8	19,000
KHR-4699	6.99	25	45	100	8	19,000
KHR-4700	7.00	25	45	100	8	17,400
KHR-4701	7.01	25	45	100	8	19,000
KHR-4702	7.02	25	45	100	8	19,000
KHR-4703	7.03	25	45	100	8	19,000
KHR-4704	7.04	25	45	100	8	19,000
KHR-4705	7.05	25	45	100	8	19,000
KHR-4710	7.10	25	45	100	8	17,400
KHR-4715	7.15	25	45	100	8	19,000
KHR-4720	7.20	25	45	100	8	17,400
KHR-4725	7.25	25	45	100	8	19,000
KHR-4730	7.30	25	45	100	8	17,400
KHR-4735	7.35	25	45	100	8	19,000
KHR-4740	7.40	25	45	100	8	17,400
KHR-4745	7.45	25	45	100	8	19,000
KHR-4750	7.50	25	45	100	8	17,400
KHR-4755	7.55	25	45	100	8	19,000
KHR-4760	7.60	25	45	100	8	17,400
KHR-4765	7.65	25	45	100	8	19,000
KHR-4770	7.70	25	45	100	8	17,400
KHR-4775	7.75	25	45	100	8	19,000

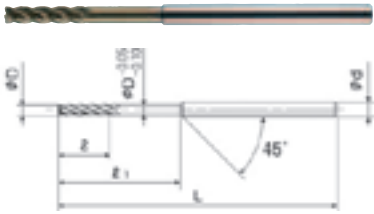
品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ ₁ Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHR-4780	7.80	25	45	100	8	17,400
KHR-4785	7.85	25	45	100	8	19,000
KHR-4790	7.90	25	45	100	8	17,400
KHR-4795	7.95	25	45	100	8	19,000
KHR-4796	7.96	25	45	100	8	19,000
KHR-4797	7.97	25	45	100	8	19,000
KHR-4798	7.98	25	45	100	8	19,000
KHR-4799	7.99	25	45	100	8	19,000
KHR-4800	8.00	25	45	100	8	17,400
KHR-4801	8.01	25	45	100	8	19,000
KHR-4802	8.02	25	45	100	8	19,000
KHR-4803	8.03	25	45	100	8	19,000
KHR-4804	8.04	25	45	100	8	19,000
KHR-4805	8.05	25	45	100	8	19,000
KHR-4810	8.10	25	50	100	10	21,700
KHR-4815	8.15	25	50	100	10	24,000
KHR-4820	8.20	25	50	100	10	21,700
KHR-4825	8.25	25	50	100	10	24,000
KHR-4830	8.30	25	50	100	10	21,700
KHR-4835	8.35	25	50	100	10	24,000
KHR-4840	8.40	25	50	100	10	21,700
KHR-4845	8.45	25	50	100	10	24,000
KHR-4850	8.50	25	50	100	10	21,700
KHR-4855	8.55	25	50	100	10	24,000
KHR-4860	8.60	25	50	100	10	21,700
KHR-4865	8.65	25	50	100	10	24,000
KHR-4870	8.70	25	50	100	10	21,700
KHR-4875	8.75	25	50	100	10	24,000
KHR-4880	8.80	25	50	100	10	21,700
KHR-4885	8.85	25	50	100	10	24,000
KHR-4890	8.90	25	50	100	10	21,700
KHR-4895	8.95	25	50	100	10	24,000
KHR-4896	8.96	25	50	100	10	24,000
KHR-4897	8.97	25	50	100	10	24,000
KHR-4898	8.98	25	50	100	10	24,000
KHR-4899	8.99	25	50	100	10	24,000
KHR-4900	9.00	25	50	100	10	21,700
KHR-4901	9.01	25	50	100	10	24,000
KHR-4902	9.02	25	50	100	10	24,000
KHR-4903	9.03	25	50	100	10	24,000
KHR-4904	9.04	25	50	100	10	24,000
KHR-4905	9.05	25	50	100	10	24,000
KHR-4910	9.10	25	50	100	10	21,700
KHR-4915	9.15	25	50	100	10	24,000
KHR-4920	9.20	25	50	100	10	21,700
KHR-4925	9.25	25	50	100	10	24,000
KHR-4930	9.30	25	50	100	10	21,700
KHR-4935	9.35	25	50	100	10	24,000

KHRA-4

超硬底刃付リーマ

Tungsten Carbide Reamer with Bottom Flute
TiAlN Coating

■底刃が付いているので止まり穴の加工などに最適です
Best for stop hole processing due to having bottom flute



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D ≤ 3.09 +0.005~0
3.1 < D ≤ 12.03 +0.007~0



柄径の許容差 Shank Diameter Tolerance
d = 3 0~-0.006
3 < d ≤ 6.05 0~-0.008
8 < d ≤ 10 0~-0.009
d = 12 0~-0.011



ネジレ角 右ネジレ35° Twist Angle 35°



喰付寸法 (K=喰付角片角45°)
Chamfer Size (K=Chamfer Angle Single 45°)
C=0.1±0.03 φ1~φ1.99
C=0.15±0.03 φ2~φ3.09
C=0.2±0.03 φ3.1~φ7.05
C=0.3±0.03 φ7.1~φ10.05
C=0.4±0.03 φ10.1~φ12.03

TiAlNコート TiAlN コート TiAlN Coating

●切削条件表はP206に記載

●Cutting conditions are recommended on page 206.

単位[寸法: mm/価格: 円]

Unit [size: mm/Retail Price: JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4050	0.50	4	10	50	3	11,900
KHRA-4051	0.51	4	10	50	3	12,800
KHRA-4052	0.52	4	10	50	3	12,800
KHRA-4053	0.53	4	10	50	3	12,800
KHRA-4054	0.54	4	10	50	3	12,800
KHRA-4055	0.55	4	10	50	3	12,800
KHRA-4056	0.56	4	10	50	3	12,800
KHRA-4057	0.57	4	10	50	3	12,800
KHRA-4058	0.58	4	10	50	3	12,800
KHRA-4059	0.59	4	10	50	3	12,800
KHRA-4060	0.60	4	10	50	3	11,900
KHRA-4061	0.61	4	10	50	3	12,800
KHRA-4062	0.62	4	10	50	3	12,800
KHRA-4063	0.63	4	10	50	3	12,800
KHRA-4064	0.64	4	10	50	3	12,800
KHRA-4065	0.65	4	10	50	3	12,800
KHRA-4066	0.66	4	10	50	3	12,800
KHRA-4067	0.67	4	10	50	3	12,800
KHRA-4068	0.68	4	10	50	3	12,800
KHRA-4069	0.69	4	10	50	3	12,800

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4070	0.70	4	10	50	3	11,900
KHRA-4071	0.71	4	10	50	3	12,800
KHRA-4072	0.72	4	10	50	3	12,800
KHRA-4073	0.73	4	10	50	3	12,800
KHRA-4074	0.74	4	10	50	3	12,800
KHRA-4075	0.75	4	10	50	3	12,800
KHRA-4076	0.76	4	10	50	3	12,800
KHRA-4077	0.77	4	10	50	3	12,800
KHRA-4078	0.78	4	10	50	3	12,800
KHRA-4079	0.79	5	12	50	3	12,800
KHRA-4080	0.80	5	12	50	3	11,600
KHRA-4081	0.81	5	12	50	3	12,300
KHRA-4082	0.82	5	12	50	3	12,300
KHRA-4083	0.83	5	12	50	3	12,300
KHRA-4084	0.84	5	12	50	3	12,300
KHRA-4085	0.85	5	12	50	3	12,300
KHRA-4086	0.86	5	12	50	3	12,300
KHRA-4087	0.87	5	12	50	3	12,300
KHRA-4088	0.88	5	12	50	3	12,300
KHRA-4089	0.89	5	12	50	3	12,300
KHRA-4090	0.90	5	12	50	3	11,600
KHRA-4091	0.91	5	12	50	3	12,300
KHRA-4092	0.92	5	12	50	3	12,300
KHRA-4093	0.93	5	12	50	3	12,300
KHRA-4094	0.94	5	12	50	3	12,300
KHRA-4095	0.95	5	12	50	3	12,300
KHRA-4096	0.96	5	12	50	3	12,300
KHRA-4097	0.97	5	12	50	3	12,300
KHRA-4098	0.98	5	12	50	3	12,300
KHRA-4099	0.99	5	12	50	3	12,300
KHRA-4100	1.00	6	15	60	3	11,400
KHRA-4101	1.01	6	15	60	3	12,000
KHRA-4102	1.02	6	15	60	3	12,000
KHRA-4103	1.03	6	15	60	3	12,000
KHRA-4104	1.04	6	15	60	3	12,000
KHRA-4105	1.05	6	15	60	3	12,000
KHRA-4106	1.06	6	15	60	3	12,000
KHRA-4107	1.07	6	15	60	3	12,000
KHRA-4108	1.08	6	15	60	3	12,000
KHRA-4109	1.09	6	15	60	3	12,000
KHRA-4110	1.10	6	15	60	3	11,400
KHRA-4111	1.11	6	15	60	3	12,000
KHRA-4112	1.12	6	15	60	3	12,000
KHRA-4113	1.13	6	15	60	3	12,000
KHRA-4114	1.14	6	15	60	3	12,000
KHRA-4115	1.15	6	15	60	3	12,000
KHRA-4116	1.16	6	15	60	3	12,000
KHRA-4117	1.17	6	15	60	3	12,000

KHRA-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4118	1.18	6	15	60	3	12,000
KHRA-4119	1.19	6	15	60	3	12,000
KHRA-4120	1.2	6	15	60	3	11,400
KHRA-4121	1.21	6	15	60	3	12,000
KHRA-4122	1.22	6	15	60	3	12,000
KHRA-4123	1.23	6	15	60	3	12,000
KHRA-4124	1.24	6	15	60	3	12,000
KHRA-4125	1.25	6	15	60	3	12,000
KHRA-4126	1.26	6	15	60	3	12,000
KHRA-4127	1.27	6	15	60	3	12,000
KHRA-4128	1.28	6	15	60	3	12,000
KHRA-4129	1.29	6	15	60	3	12,000
KHRA-4130	1.3	6	15	60	3	11,400
KHRA-4131	1.31	6	15	60	3	12,000
KHRA-4132	1.32	6	15	60	3	12,000
KHRA-4133	1.33	6	15	60	3	12,000
KHRA-4134	1.34	6	15	60	3	12,000
KHRA-4135	1.35	6	15	60	3	12,000
KHRA-4136	1.36	6	15	60	3	12,000
KHRA-4137	1.37	6	15	60	3	12,000
KHRA-4138	1.38	6	15	60	3	12,000
KHRA-4139	1.39	6	15	60	3	12,000
KHRA-4140	1.4	6	15	60	3	11,400
KHRA-4141	1.41	6	15	60	3	12,000
KHRA-4142	1.42	6	15	60	3	12,000
KHRA-4143	1.43	6	15	60	3	12,000
KHRA-4144	1.44	6	15	60	3	12,000
KHRA-4145	1.45	6	15	60	3	12,000
KHRA-4146	1.46	6	15	60	3	12,000
KHRA-4147	1.47	6	15	60	3	12,000
KHRA-4148	1.48	6	15	60	3	12,000
KHRA-4149	1.49	6	15	60	3	12,000
KHRA-4150	1.5	8	20	60	3	11,400
KHRA-4151	1.51	8	20	60	3	12,000
KHRA-4152	1.52	8	20	60	3	12,000
KHRA-4153	1.53	8	20	60	3	12,000
KHRA-4154	1.54	8	20	60	3	12,000
KHRA-4155	1.55	8	20	60	3	12,000
KHRA-4156	1.56	8	20	60	3	12,000
KHRA-4157	1.57	8	20	60	3	12,000
KHRA-4158	1.58	8	20	60	3	12,000
KHRA-4159	1.59	8	20	60	3	12,000
KHRA-4160	1.6	8	20	60	3	11,400
KHRA-4161	1.61	8	20	60	3	12,000
KHRA-4162	1.62	8	20	60	3	12,000
KHRA-4163	1.63	8	20	60	3	12,000
KHRA-4164	1.64	8	20	60	3	12,000
KHRA-4165	1.65	8	20	60	3	12,000

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4166	1.66	8	20	60	3	12,000
KHRA-4167	1.67	8	20	60	3	12,000
KHRA-4168	1.68	8	20	60	3	12,000
KHRA-4169	1.69	8	20	60	3	12,000
KHRA-4170	1.7	8	20	60	3	11,400
KHRA-4171	1.71	8	20	60	3	12,000
KHRA-4172	1.72	8	20	60	3	12,000
KHRA-4173	1.73	8	20	60	3	12,000
KHRA-4174	1.74	8	20	60	3	12,000
KHRA-4175	1.75	8	20	60	3	12,000
KHRA-4176	1.76	8	20	60	3	12,000
KHRA-4177	1.77	8	20	60	3	12,000
KHRA-4178	1.78	8	20	60	3	12,000
KHRA-4179	1.79	8	20	60	3	12,000
KHRA-4180	1.8	8	20	60	3	11,400
KHRA-4181	1.81	8	20	60	3	12,000
KHRA-4182	1.82	8	20	60	3	12,000
KHRA-4183	1.83	8	20	60	3	12,000
KHRA-4184	1.84	8	20	60	3	12,000
KHRA-4185	1.85	8	20	60	3	12,000
KHRA-4186	1.86	8	20	60	3	12,000
KHRA-4187	1.87	8	20	60	3	12,000
KHRA-4188	1.88	8	20	60	3	12,000
KHRA-4189	1.89	8	20	60	3	12,000
KHRA-4190	1.9	8	20	60	3	11,400
KHRA-4191	1.91	10	24	60	3	12,000
KHRA-4192	1.92	10	24	60	3	12,000
KHRA-4193	1.93	10	24	60	3	12,000
KHRA-4194	1.94	10	24	60	3	12,000
KHRA-4195	1.95	10	24	60	3	12,000
KHRA-4196	1.96	10	24	60	3	12,000
KHRA-4197	1.97	10	24	60	3	12,000
KHRA-4198	1.98	10	24	60	3	12,000
KHRA-4199	1.99	10	24	60	3	12,000
KHRA-4200	2	10	24	60	3	11,400
KHRA-4201	2.01	10	24	60	3	12,000
KHRA-4202	2.02	10	24	60	3	12,000
KHRA-4203	2.03	10	24	60	3	12,000
KHRA-4204	2.04	10	24	60	3	12,000
KHRA-4205	2.05	10	24	60	3	12,000
KHRA-4206	2.06	10	24	60	3	12,000
KHRA-4207	2.07	10	24	60	3	12,000
KHRA-4208	2.08	10	24	60	3	12,000
KHRA-4209	2.09	10	24	60	3	12,000
KHRA-4210	2.1	10	24	60	3	11,400
KHRA-4211	2.11	10	24	60	3	12,000
KHRA-4212	2.12	10	24	60	3	12,000
KHRA-4213	2.13	10	24	60	3	12,000

KHRA-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4214	2.14	10	24	60	3	12,000
KHRA-4215	2.15	10	24	60	3	12,000
KHRA-4216	2.16	10	24	60	3	12,000
KHRA-4217	2.17	10	24	60	3	12,000
KHRA-4218	2.18	10	24	60	3	12,000
KHRA-4219	2.19	10	24	60	3	12,000
KHRA-4220	2.2	10	24	60	3	11,400
KHRA-4221	2.21	10	24	60	3	12,000
KHRA-4222	2.22	10	24	60	3	12,000
KHRA-4223	2.23	10	24	60	3	12,000
KHRA-4224	2.24	10	24	60	3	12,000
KHRA-4225	2.25	10	24	60	3	12,000
KHRA-4226	2.26	10	24	60	3	12,000
KHRA-4227	2.27	10	24	60	3	12,000
KHRA-4228	2.28	10	24	60	3	12,000
KHRA-4229	2.29	10	24	60	3	12,000
KHRA-4230	2.3	10	24	60	3	11,400
KHRA-4231	2.31	10	24	60	3	12,000
KHRA-4232	2.32	10	24	60	3	12,000
KHRA-4233	2.33	10	24	60	3	12,000
KHRA-4234	2.34	10	24	60	3	12,000
KHRA-4235	2.35	10	24	60	3	12,000
KHRA-4236	2.36	10	24	60	3	12,000
KHRA-4237	2.37	10	24	60	3	12,000
KHRA-4238	2.38	10	24	60	3	12,000
KHRA-4239	2.39	10	24	60	3	12,000
KHRA-4240	2.4	10	24	60	3	11,400
KHRA-4241	2.41	10	24	60	3	12,000
KHRA-4242	2.42	10	24	60	3	12,000
KHRA-4243	2.43	10	24	60	3	12,000
KHRA-4244	2.44	10	24	60	3	12,000
KHRA-4245	2.45	10	24	60	3	12,000
KHRA-4246	2.46	10	24	60	3	12,000
KHRA-4247	2.47	10	24	60	3	12,000
KHRA-4248	2.48	10	24	60	3	12,000
KHRA-4249	2.49	10	24	60	3	12,000
KHRA-4250	2.5	10	24	60	3	11,400
KHRA-4251	2.51	10	24	60	3	12,000
KHRA-4252	2.52	10	24	60	3	12,000
KHRA-4253	2.53	10	24	60	3	12,000
KHRA-4254	2.54	10	24	60	3	12,000
KHRA-4255	2.55	10	24	60	3	12,000
KHRA-4256	2.56	10	24	60	3	12,000
KHRA-4257	2.57	10	24	60	3	12,000
KHRA-4258	2.58	10	24	60	3	12,000
KHRA-4259	2.59	10	24	60	3	12,000
KHRA-4260	2.6	10	24	60	3	11,400
KHRA-4261	2.61	10	24	60	3	12,000

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4262	2.62	10	24	60	3	12,000
KHRA-4263	2.63	10	24	60	3	12,000
KHRA-4264	2.64	10	24	60	3	12,000
KHRA-4265	2.65	10	24	60	3	12,000
KHRA-4266	2.66	10	24	60	3	12,000
KHRA-4267	2.67	10	24	60	3	12,000
KHRA-4268	2.68	10	24	60	3	12,000
KHRA-4269	2.69	10	24	60	3	12,000
KHRA-4270	2.7	10	24	60	3	11,400
KHRA-4271	2.71	10	24	60	3	12,000
KHRA-4272	2.72	10	24	60	3	12,000
KHRA-4273	2.73	10	24	60	3	12,000
KHRA-4274	2.74	10	24	60	3	12,000
KHRA-4275	2.75	10	24	60	3	12,000
KHRA-4276	2.76	10	24	60	3	12,000
KHRA-4277	2.77	10	24	60	3	12,000
KHRA-4278	2.78	10	24	60	3	12,000
KHRA-4279	2.79	10	24	60	3	12,000
KHRA-4280	2.8	10	24	60	3	11,400
KHRA-4281	2.81	10	24	60	3	12,000
KHRA-4282	2.82	10	24	60	3	12,000
KHRA-4283	2.83	10	24	60	3	12,000
KHRA-4284	2.84	10	24	60	3	12,000
KHRA-4285	2.85	10	24	60	3	12,000
KHRA-4286	2.86	10	24	60	3	12,000
KHRA-4287	2.87	10	24	60	3	12,000
KHRA-4288	2.88	10	24	60	3	12,000
KHRA-4289	2.89	10	24	60	3	12,000
KHRA-4290	2.9	10	24	60	3	11,400
KHRA-4291	2.91	15	30	60	3	12,800
KHRA-4292	2.92	15	30	60	3	12,800
KHRA-4293	2.93	15	30	60	3	12,800
KHRA-4294	2.94	15	30	60	3	12,800
KHRA-4295	2.95	15	30	60	3	12,800
KHRA-4296	2.96	15	30	60	3	12,800
KHRA-4297	2.97	15	30	60	3	12,800
KHRA-4298	2.98	15	30	60	3	12,800
KHRA-4299	2.99	15	30	60	3	12,800
KHRA-4300	3	15	30	60	3	12,000
KHRA-4301	3.01	15	30	60	3	12,800
KHRA-4302	3.02	15	30	60	3	12,800
KHRA-4303	3.03	15	30	60	3	12,800
KHRA-4304	3.04	15	30	60	3	12,800
KHRA-4305	3.05	15	30	60	3	12,800
KHRA-4306	3.06	15	30	60	3	12,800
KHRA-4307	3.07	15	30	60	3	12,800
KHRA-4308	3.08	15	30	60	3	12,800
KHRA-4309	3.09	15	30	60	3	12,800

KHRA-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4310	3.1	15	30	70	4	12,700
KHRA-4311	3.11	15	30	70	4	14,000
KHRA-4312	3.12	15	30	70	4	14,000
KHRA-4313	3.13	15	30	70	4	14,000
KHRA-4314	3.14	15	30	70	4	14,000
KHRA-4315	3.15	15	30	70	4	14,000
KHRA-4316	3.16	15	30	70	4	14,000
KHRA-4317	3.17	15	30	70	4	14,000
KHRA-4318	3.18	15	30	70	4	14,000
KHRA-4319	3.19	15	30	70	4	14,000
KHRA-4320	3.2	15	30	70	4	12,700
KHRA-4321	3.21	15	30	70	4	14,000
KHRA-4322	3.22	15	30	70	4	14,000
KHRA-4323	3.23	15	30	70	4	14,000
KHRA-4324	3.24	15	30	70	4	14,000
KHRA-4325	3.25	15	30	70	4	14,000
KHRA-4326	3.26	15	30	70	4	14,000
KHRA-4327	3.27	15	30	70	4	14,000
KHRA-4328	3.28	15	30	70	4	14,000
KHRA-4329	3.29	15	30	70	4	14,000
KHRA-4330	3.3	15	30	70	4	12,700
KHRA-4331	3.31	15	30	70	4	14,000
KHRA-4332	3.32	15	30	70	4	14,000
KHRA-4333	3.33	15	30	70	4	14,000
KHRA-4334	3.34	15	30	70	4	14,000
KHRA-4335	3.35	15	30	70	4	14,000
KHRA-4336	3.36	15	30	70	4	14,000
KHRA-4337	3.37	15	30	70	4	14,000
KHRA-4338	3.38	15	30	70	4	14,000
KHRA-4339	3.39	15	30	70	4	14,000
KHRA-4340	3.4	15	30	70	4	12,700
KHRA-4341	3.41	15	30	70	4	14,000
KHRA-4342	3.42	15	30	70	4	14,000
KHRA-4343	3.43	15	30	70	4	14,000
KHRA-4344	3.44	15	30	70	4	14,000
KHRA-4345	3.45	15	30	70	4	14,000
KHRA-4346	3.46	15	30	70	4	14,000
KHRA-4347	3.47	15	30	70	4	14,000
KHRA-4348	3.48	15	30	70	4	14,000
KHRA-4349	3.49	15	30	70	4	14,000
KHRA-4350	3.5	15	30	70	4	12,700
KHRA-4351	3.51	15	30	70	4	14,000
KHRA-4352	3.52	15	30	70	4	14,000
KHRA-4353	3.53	15	30	70	4	14,000
KHRA-4354	3.54	15	30	70	4	14,000
KHRA-4355	3.55	15	30	70	4	14,000
KHRA-4356	3.56	15	30	70	4	14,000
KHRA-4357	3.57	15	30	70	4	14,000

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4358	3.58	15	30	70	4	14,000
KHRA-4359	3.59	15	30	70	4	14,000
KHRA-4360	3.6	15	30	70	4	12,700
KHRA-4361	3.61	15	30	70	4	14,000
KHRA-4362	3.62	15	30	70	4	14,000
KHRA-4363	3.63	15	30	70	4	14,000
KHRA-4364	3.64	15	30	70	4	14,000
KHRA-4365	3.65	15	30	70	4	14,000
KHRA-4366	3.66	15	30	70	4	14,000
KHRA-4367	3.67	15	30	70	4	14,000
KHRA-4368	3.68	15	30	70	4	14,000
KHRA-4369	3.69	15	30	70	4	14,000
KHRA-4370	3.7	15	30	70	4	12,700
KHRA-4371	3.71	15	30	70	4	14,000
KHRA-4372	3.72	15	30	70	4	14,000
KHRA-4373	3.73	15	30	70	4	14,000
KHRA-4374	3.74	15	30	70	4	14,000
KHRA-4375	3.75	15	30	70	4	14,000
KHRA-4376	3.76	15	30	70	4	14,000
KHRA-4377	3.77	15	30	70	4	14,000
KHRA-4378	3.78	15	30	70	4	14,000
KHRA-4379	3.79	15	30	70	4	14,000
KHRA-4380	3.8	15	30	70	4	12,700
KHRA-4381	3.81	15	30	70	4	14,000
KHRA-4382	3.82	15	30	70	4	14,000
KHRA-4383	3.83	15	30	70	4	14,000
KHRA-4384	3.84	15	30	70	4	14,000
KHRA-4385	3.85	15	30	70	4	14,000
KHRA-4386	3.86	15	30	70	4	14,000
KHRA-4387	3.87	15	30	70	4	14,000
KHRA-4388	3.88	15	30	70	4	14,000
KHRA-4389	3.89	15	30	70	4	14,000
KHRA-4390	3.9	15	30	70	4	12,700
KHRA-4391	3.91	20	35	70	4	14,700
KHRA-4392	3.92	20	35	70	4	14,700
KHRA-4393	3.93	20	35	70	4	14,700
KHRA-4394	3.94	20	35	70	4	14,700
KHRA-4395	3.95	20	35	70	4	14,700
KHRA-4396	3.96	20	35	70	4	14,700
KHRA-4397	3.97	20	35	70	4	14,700
KHRA-4398	3.98	20	35	70	4	14,700
KHRA-4399	3.99	20	35	70	4	14,700
KHRA-4400	4	20	35	70	4	13,400
KHRA-4401	4.01	20	35	70	4	14,700
KHRA-4402	4.02	20	35	70	4	14,700
KHRA-4403	4.03	20	35	70	4	14,700
KHRA-4404	4.04	20	35	70	4	14,700
KHRA-4405	4.05	20	35	70	4	14,700

KHRA-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4406	4.06	20	35	70	4	14,700
KHRA-4407	4.07	20	35	70	4	14,700
KHRA-4408	4.08	20	35	70	4	14,700
KHRA-4409	4.09	20	35	70	4	14,700
KHRA-4410	4.1	20	35	80	6	14,300
KHRA-4411	4.11	20	35	80	6	15,700
KHRA-4412	4.12	20	35	80	6	15,700
KHRA-4413	4.13	20	35	80	6	15,700
KHRA-4414	4.14	20	35	80	6	15,700
KHRA-4415	4.15	20	35	80	6	15,700
KHRA-4416	4.16	20	35	80	6	15,700
KHRA-4417	4.17	20	35	80	6	15,700
KHRA-4418	4.18	20	35	80	6	15,700
KHRA-4419	4.19	20	35	80	6	15,700
KHRA-4420	4.2	20	35	80	6	14,300
KHRA-4421	4.21	20	35	80	6	15,700
KHRA-4422	4.22	20	35	80	6	15,700
KHRA-4423	4.23	20	35	80	6	15,700
KHRA-4424	4.24	20	35	80	6	15,700
KHRA-4425	4.25	20	35	80	6	15,700
KHRA-4426	4.26	20	35	80	6	15,700
KHRA-4427	4.27	20	35	80	6	15,700
KHRA-4428	4.28	20	35	80	6	15,700
KHRA-4429	4.29	20	35	80	6	15,700
KHRA-4430	4.3	20	35	80	6	14,300
KHRA-4431	4.31	20	35	80	6	15,700
KHRA-4432	4.32	20	35	80	6	15,700
KHRA-4433	4.33	20	35	80	6	15,700
KHRA-4434	4.34	20	35	80	6	15,700
KHRA-4435	4.35	20	35	80	6	15,700
KHRA-4436	4.36	20	35	80	6	15,700
KHRA-4437	4.37	20	35	80	6	15,700
KHRA-4438	4.38	20	35	80	6	15,700
KHRA-4439	4.39	20	35	80	6	15,700
KHRA-4440	4.4	20	35	80	6	14,300
KHRA-4441	4.41	20	35	80	6	15,700
KHRA-4442	4.42	20	35	80	6	15,700
KHRA-4443	4.43	20	35	80	6	15,700
KHRA-4444	4.44	20	35	80	6	15,700
KHRA-4445	4.45	20	35	80	6	15,700
KHRA-4446	4.46	20	35	80	6	15,700
KHRA-4447	4.47	20	35	80	6	15,700
KHRA-4448	4.48	20	35	80	6	15,700
KHRA-4449	4.49	20	35	80	6	15,700
KHRA-4450	4.5	20	35	80	6	14,300
KHRA-4451	4.51	20	35	80	6	15,700
KHRA-4452	4.52	20	35	80	6	15,700
KHRA-4453	4.53	20	35	80	6	15,700

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4454	4.54	20	35	80	6	15,700
KHRA-4455	4.55	20	35	80	6	15,700
KHRA-4456	4.56	20	35	80	6	15,700
KHRA-4457	4.57	20	35	80	6	15,700
KHRA-4458	4.58	20	35	80	6	15,700
KHRA-4459	4.59	20	35	80	6	15,700
KHRA-4460	4.6	20	35	80	6	14,300
KHRA-4461	4.61	20	35	80	6	15,700
KHRA-4462	4.62	20	35	80	6	15,700
KHRA-4463	4.63	20	35	80	6	15,700
KHRA-4464	4.64	20	35	80	6	15,700
KHRA-4465	4.65	20	35	80	6	15,700
KHRA-4466	4.66	20	35	80	6	15,700
KHRA-4467	4.67	20	35	80	6	15,700
KHRA-4468	4.68	20	35	80	6	15,700
KHRA-4469	4.69	20	35	80	6	15,700
KHRA-4470	4.7	20	35	80	6	14,300
KHRA-4471	4.71	20	35	80	6	15,700
KHRA-4472	4.72	20	35	80	6	15,700
KHRA-4473	4.73	20	35	80	6	15,700
KHRA-4474	4.74	20	35	80	6	15,700
KHRA-4475	4.75	20	35	80	6	15,700
KHRA-4476	4.76	20	35	80	6	15,700
KHRA-4477	4.77	20	35	80	6	15,700
KHRA-4478	4.78	20	35	80	6	15,700
KHRA-4479	4.79	20	35	80	6	15,700
KHRA-4480	4.8	20	35	80	6	14,300
KHRA-4481	4.81	20	35	80	6	15,700
KHRA-4482	4.82	20	35	80	6	15,700
KHRA-4483	4.83	20	35	80	6	15,700
KHRA-4484	4.84	20	35	80	6	15,700
KHRA-4485	4.85	20	35	80	6	15,700
KHRA-4486	4.86	20	35	80	6	15,700
KHRA-4487	4.87	20	35	80	6	15,700
KHRA-4488	4.88	20	35	80	6	15,700
KHRA-4489	4.89	20	35	80	6	15,700
KHRA-4490	4.9	20	35	80	6	14,300
KHRA-4491	4.91	24	40	80	6	16,400
KHRA-4492	4.92	24	40	80	6	16,400
KHRA-4493	4.93	24	40	80	6	16,400
KHRA-4494	4.94	24	40	80	6	16,400
KHRA-4495	4.95	24	40	80	6	16,400
KHRA-4496	4.96	24	40	80	6	16,400
KHRA-4497	4.97	24	40	80	6	16,400
KHRA-4498	4.98	24	40	80	6	16,400
KHRA-4499	4.99	24	40	80	6	16,400
KHRA-4500	5	24	40	80	6	15,000
KHRA-4501	5.01	24	40	80	6	16,400

KHRA-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4502	5.02	24	40	80	6	16,400
KHRA-4503	5.03	24	40	80	6	16,400
KHRA-4504	5.04	24	40	80	6	16,400
KHRA-4505	5.05	24	40	80	6	16,400
KHRA-4506	5.06	24	40	80	6	16,400
KHRA-4507	5.07	24	40	80	6	16,400
KHRA-4508	5.08	24	40	80	6	16,400
KHRA-4509	5.09	24	40	80	6	16,400
KHRA-4510	5.1	24	40	80	6	15,000
KHRA-4511	5.11	24	40	80	6	16,400
KHRA-4512	5.12	24	40	80	6	16,400
KHRA-4513	5.13	24	40	80	6	16,400
KHRA-4514	5.14	24	40	80	6	16,400
KHRA-4515	5.15	24	40	80	6	16,400
KHRA-4516	5.16	24	40	80	6	16,400
KHRA-4517	5.17	24	40	80	6	16,400
KHRA-4518	5.18	24	40	80	6	16,400
KHRA-4519	5.19	24	40	80	6	16,400
KHRA-4520	5.2	24	40	80	6	15,000
KHRA-4521	5.21	24	40	80	6	16,400
KHRA-4522	5.22	24	40	80	6	16,400
KHRA-4523	5.23	24	40	80	6	16,400
KHRA-4524	5.24	24	40	80	6	16,400
KHRA-4525	5.25	24	40	80	6	16,400
KHRA-4526	5.26	24	40	80	6	16,400
KHRA-4527	5.27	24	40	80	6	16,400
KHRA-4528	5.28	24	40	80	6	16,400
KHRA-4529	5.29	24	40	80	6	16,400
KHRA-4530	5.3	24	40	80	6	15,000
KHRA-4531	5.31	24	40	80	6	16,400
KHRA-4532	5.32	24	40	80	6	16,400
KHRA-4533	5.33	24	40	80	6	16,400
KHRA-4534	5.34	24	40	80	6	16,400
KHRA-4535	5.35	24	40	80	6	16,400
KHRA-4536	5.36	24	40	80	6	16,400
KHRA-4537	5.37	24	40	80	6	16,400
KHRA-4538	5.38	24	40	80	6	16,400
KHRA-4539	5.39	24	40	80	6	16,400
KHRA-4540	5.4	24	40	80	6	15,000
KHRA-4541	5.41	24	40	80	6	16,400
KHRA-4542	5.42	24	40	80	6	16,400
KHRA-4543	5.43	24	40	80	6	16,400
KHRA-4544	5.44	24	40	80	6	16,400
KHRA-4545	5.45	24	40	80	6	16,400
KHRA-4546	5.46	24	40	80	6	16,400
KHRA-4547	5.47	24	40	80	6	16,400
KHRA-4548	5.48	24	40	80	6	16,400
KHRA-4549	5.49	24	40	80	6	16,400

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4550	5.5	24	40	80	6	15,000
KHRA-4551	5.51	24	40	80	6	16,400
KHRA-4552	5.52	24	40	80	6	16,400
KHRA-4553	5.53	24	40	80	6	16,400
KHRA-4554	5.54	24	40	80	6	16,400
KHRA-4555	5.55	24	40	80	6	16,400
KHRA-4556	5.56	24	40	80	6	16,400
KHRA-4557	5.57	24	40	80	6	16,400
KHRA-4558	5.58	24	40	80	6	16,400
KHRA-4559	5.59	24	40	80	6	16,400
KHRA-4560	5.6	24	40	80	6	15,000
KHRA-4561	5.61	24	40	80	6	16,400
KHRA-4562	5.62	24	40	80	6	16,400
KHRA-4563	5.63	24	40	80	6	16,400
KHRA-4564	5.64	24	40	80	6	16,400
KHRA-4565	5.65	24	40	80	6	16,400
KHRA-4566	5.66	24	40	80	6	16,400
KHRA-4567	5.67	24	40	80	6	16,400
KHRA-4568	5.68	24	40	80	6	16,400
KHRA-4569	5.69	24	40	80	6	16,400
KHRA-4570	5.7	24	40	80	6	15,000
KHRA-4571	5.71	24	40	80	6	16,400
KHRA-4572	5.72	24	40	80	6	16,400
KHRA-4573	5.73	24	40	80	6	16,400
KHRA-4574	5.74	24	40	80	6	16,400
KHRA-4575	5.75	24	40	80	6	16,400
KHRA-4576	5.76	24	40	80	6	16,400
KHRA-4577	5.77	24	40	80	6	16,400
KHRA-4578	5.78	24	40	80	6	16,400
KHRA-4579	5.79	24	40	80	6	16,400
KHRA-4580	5.8	24	40	80	6	15,000
KHRA-4581	5.81	24	40	80	6	16,400
KHRA-4582	5.82	24	40	80	6	16,400
KHRA-4583	5.83	24	40	80	6	16,400
KHRA-4584	5.84	24	40	80	6	16,400
KHRA-4585	5.85	24	40	80	6	16,400
KHRA-4586	5.86	24	40	80	6	16,400
KHRA-4587	5.87	24	40	80	6	16,400
KHRA-4588	5.88	24	40	80	6	16,400
KHRA-4589	5.89	24	40	80	6	16,400
KHRA-4590	5.9	24	40	80	6	15,000
KHRA-4591	5.91	24	40	80	6	16,400
KHRA-4592	5.92	24	40	80	6	16,400
KHRA-4593	5.93	24	40	80	6	16,400
KHRA-4594	5.94	24	40	80	6	16,400
KHRA-4595	5.95	24	40	80	6	16,400
KHRA-4596	5.96	24	40	80	6	16,400
KHRA-4597	5.97	24	40	80	6	16,400

KHRA-4

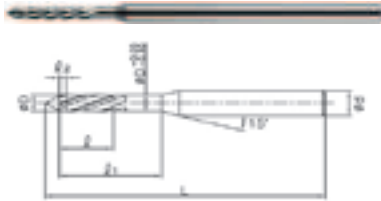
品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4598	5.98	24	40	80	6	16,400
KHRA-4599	5.99	24	40	80	6	16,400
KHRA-4600	6	24	40	80	6	15,000
KHRA-4601	6.01	24	40	80	6	16,400
KHRA-4602	6.02	24	40	80	6	16,400
KHRA-4603	6.03	24	40	80	6	16,400
KHRA-4604	6.04	24	40	80	6	16,400
KHRA-4605	6.05	24	40	80	6	16,400
KHRA-4610	6.10	25	45	100	8	20,000
KHRA-4615	6.15	25	45	100	8	21,700
KHRA-4620	6.20	25	45	100	8	20,000
KHRA-4625	6.25	25	45	100	8	21,700
KHRA-4630	6.30	25	45	100	8	20,000
KHRA-4635	6.35	25	45	100	8	21,700
KHRA-4640	6.40	25	45	100	8	20,000
KHRA-4645	6.45	25	45	100	8	21,700
KHRA-4650	6.50	25	45	100	8	20,000
KHRA-4655	6.55	25	45	100	8	21,700
KHRA-4660	6.60	25	45	100	8	20,000
KHRA-4665	6.65	25	45	100	8	21,700
KHRA-4670	6.70	25	45	100	8	20,000
KHRA-4675	6.75	25	45	100	8	21,700
KHRA-4680	6.80	25	45	100	8	20,000
KHRA-4685	6.85	25	45	100	8	21,700
KHRA-4690	6.90	25	45	100	8	20,000
KHRA-4695	6.95	25	45	100	8	21,700
KHRA-4696	6.96	25	45	100	8	21,700
KHRA-4697	6.97	25	45	100	8	21,700
KHRA-4698	6.98	25	45	100	8	21,700
KHRA-4699	6.99	25	45	100	8	21,700
KHRA-4700	7.00	25	45	100	8	20,000
KHRA-4701	7.01	25	45	100	8	21,700
KHRA-4702	7.02	25	45	100	8	21,700
KHRA-4703	7.03	25	45	100	8	21,700
KHRA-4704	7.04	25	45	100	8	21,700
KHRA-4705	7.05	25	45	100	8	21,700
KHRA-4710	7.10	25	45	100	8	20,000
KHRA-4715	7.15	25	45	100	8	21,700
KHRA-4720	7.20	25	45	100	8	20,000
KHRA-4725	7.25	25	45	100	8	21,700
KHRA-4730	7.30	25	45	100	8	20,000
KHRA-4735	7.35	25	45	100	8	21,700
KHRA-4740	7.40	25	45	100	8	20,000
KHRA-4745	7.45	25	45	100	8	21,700
KHRA-4750	7.50	25	45	100	8	20,000
KHRA-4755	7.55	25	45	100	8	21,700
KHRA-4760	7.60	25	45	100	8	20,000
KHRA-4765	7.65	25	45	100	8	21,700

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長 ℓ1 Effective Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
KHRA-4770	7.70	25	45	100	8	20,000
KHRA-4775	7.75	25	45	100	8	21,700
KHRA-4780	7.80	25	45	100	8	20,000
KHRA-4785	7.85	25	45	100	8	21,700
KHRA-4790	7.90	25	45	100	8	20,000
KHRA-4795	7.95	25	45	100	8	21,700
KHRA-4796	7.96	25	45	100	8	21,700
KHRA-4797	7.97	25	45	100	8	21,700
KHRA-4798	7.98	25	45	100	8	21,700
KHRA-4799	7.99	25	45	100	8	21,700
KHRA-4800	8.00	25	45	100	8	20,000
KHRA-4801	8.01	25	45	100	8	21,700
KHRA-4802	8.02	25	45	100	8	21,700
KHRA-4803	8.03	25	45	100	8	21,700
KHRA-4804	8.04	25	45	100	8	21,700
KHRA-4805	8.05	25	45	100	8	21,700
KHRA-4810	8.10	25	50	100	10	24,500
KHRA-4815	8.15	25	50	100	10	26,700
KHRA-4820	8.20	25	50	100	10	24,500
KHRA-4825	8.25	25	50	100	10	26,700
KHRA-4830	8.30	25	50	100	10	24,500
KHRA-4835	8.35	25	50	100	10	26,700
KHRA-4840	8.40	25	50	100	10	24,500
KHRA-4845	8.45	25	50	100	10	26,700
KHRA-4850	8.50	25	50	100	10	24,500
KHRA-4855	8.55	25	50	100	10	26,700
KHRA-4860	8.60	25	50	100	10	24,500
KHRA-4865	8.65	25	50	100	10	26,700
KHRA-4870	8.70	25	50	100	10	24,500
KHRA-4875	8.75	25	50	100	10	26,700
KHRA-4880	8.80	25	50	100	10	24,500
KHRA-4885	8.85	25	50	100	10	26,700
KHRA-4890	8.90	25	50	100	10	24,500
KHRA-4895	8.95	25	50	100	10	26,700
KHRA-4896	8.96	25	50	100	10	26,700
KHRA-4897	8.97	25	50	100	10	26,700
KHRA-4898	8.98	25	50	100	10	26,700
KHRA-4899	8.99	25	50	100	10	26,700
KHRA-4900	9.00	25	50	100	10	24,500
KHRA-4901	9.01	25	50	100	10	26,700
KHRA-4902	9.02	25	50	100	10	26,700
KHRA-4903	9.03	25	50	100	10	26,700
KHRA-4904	9.04	25	50	100	10	26,700
KHRA-4905	9.05	25	50	100	10	26,700
KHRA-4910	9.10	25	50	100	10	24,500
KHRA-4915	9.15	25	50	100	10	26,700
KHRA-4920	9.20	25	50	100	10	24,500
KHRA-4925	9.25	25	50	100	10	26,700

KSHR-4

超硬スパイラルリーマ
Tungsten Carbide 4 Flutes Spiral Reamer

■小径穴仕上加工用Φ0.5～Φ2.03まで0.01とびにラインナップ
Line-upped Φ0.5～Φ2.03 at pitch 0.01



超微粒子合金 Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D +0.002～+0.005



柄径の許容差 Shank Diameter Tolerance
d 0～-0.006



左ネジレ右刃 ネジレ角30°
Left Twist Right Flute Twist Angle 30°



喰付角片角2° Chamfer Angle Single 2°

●切削条件表はP207に記載

●Cutting conditions are recommended on page 207.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ _E Effective Length	全長 L Total Length	柄径 d Shank Diameter	喰付長ℓ _C Chamfer Length	標準価格 Retail Price
KSHR-4050	0.5	8	13	60	3	1.2	8,000
KSHR-4051	0.51	8	13	60	3	1.2	9,000
KSHR-4052	0.52	8	13	60	3	1.2	9,000
KSHR-4053	0.53	8	13	60	3	1.2	9,000
KSHR-4054	0.54	8	13	60	3	1.2	9,000
KSHR-4055	0.55	8	13	60	3	1.2	9,000
KSHR-4056	0.56	8	13	60	3	1.2	9,000
KSHR-4057	0.57	8	13	60	3	1.2	9,000
KSHR-4058	0.58	8	13	60	3	1.2	9,000
KSHR-4059	0.59	8	13	60	3	1.2	9,000
KSHR-4060	0.6	8	13	60	3	1.5	7,500
KSHR-4061	0.61	8	13	60	3	1.5	8,000
KSHR-4062	0.62	8	13	60	3	1.5	8,000
KSHR-4063	0.63	8	13	60	3	1.5	8,000
KSHR-4064	0.64	8	13	60	3	1.5	8,000
KSHR-4065	0.65	8	13	60	3	1.5	8,000
KSHR-4066	0.66	8	13	60	3	1.5	8,000
KSHR-4067	0.67	8	13	60	3	1.5	8,000
KSHR-4068	0.68	8	13	60	3	1.5	8,000
KSHR-4069	0.69	8	13	60	3	1.5	8,000
KSHR-4070	0.7	8	13	60	3	2	6,600
KSHR-4071	0.71	8	13	60	3	2	7,200

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ _E Effective Length	全長 L Total Length	柄径 d Shank Diameter	喰付長ℓ _C Chamfer Length	標準価格 Retail Price
KSHR-4072	0.72	8	13	60	3	2	7,200
KSHR-4073	0.73	8	13	60	3	2	7,200
KSHR-4074	0.74	8	13	60	3	2	7,200
KSHR-4075	0.75	8	13	60	3	2	7,200
KSHR-4076	0.76	8	13	60	3	2	7,200
KSHR-4077	0.77	8	13	60	3	2	7,200
KSHR-4078	0.78	8	13	60	3	2	7,200
KSHR-4079	0.79	8	13	60	3	2	7,200
KSHR-4080	0.8	8	16	60	3	2	6,300
KSHR-4081	0.81	8	16	60	3	2	6,600
KSHR-4082	0.82	8	16	60	3	2	6,600
KSHR-4083	0.83	8	16	60	3	2	6,600
KSHR-4084	0.84	8	16	60	3	2	6,600
KSHR-4085	0.85	8	16	60	3	2	6,600
KSHR-4086	0.86	8	16	60	3	2	6,600
KSHR-4087	0.87	8	16	60	3	2	6,600
KSHR-4088	0.88	8	16	60	3	2	6,600
KSHR-4089	0.89	8	16	60	3	2	6,600
KSHR-4090	0.9	8	16	60	3	2	6,100
KSHR-4091	0.91	8	16	60	3	2	6,300
KSHR-4092	0.92	8	16	60	3	2	6,300
KSHR-4093	0.93	8	16	60	3	2	6,300
KSHR-4094	0.94	8	16	60	3	2	6,300
KSHR-4095	0.95	8	16	60	3	2	6,300
KSHR-4096	0.96	8	16	60	3	2	6,300
KSHR-4097	0.97	8	16	60	3	2	6,300
KSHR-4098	0.98	8	16	60	3	2	6,300
KSHR-4099	0.99	8	16	60	3	2	6,300
KSHR-4100	1	8	16	60	3	2.5	5,300
KSHR-4101	1.01	10	16	60	3	2.5	6,100
KSHR-4102	1.02	10	16	60	3	2.5	6,100
KSHR-4103	1.03	10	16	60	3	2.5	6,100
KSHR-4104	1.04	10	16	60	3	2.5	6,100
KSHR-4105	1.05	10	16	60	3	2.5	6,100
KSHR-4106	1.06	10	16	60	3	2.5	6,100
KSHR-4107	1.07	10	16	60	3	2.5	6,100
KSHR-4108	1.08	10	16	60	3	2.5	6,100
KSHR-4109	1.09	10	16	60	3	2.5	6,100
KSHR-4110	1.1	10	16	60	3	2.5	5,300
KSHR-4111	1.11	10	16	60	3	2.5	6,100
KSHR-4112	1.12	10	16	60	3	2.5	6,100
KSHR-4113	1.13	10	16	60	3	2.5	6,100
KSHR-4114	1.14	10	16	60	3	2.5	6,100
KSHR-4115	1.15	10	16	60	3	2.5	6,100
KSHR-4116	1.16	10	16	60	3	2.5	6,100
KSHR-4117	1.17	10	16	60	3	2.5	6,100
KSHR-4118	1.18	10	16	60	3	2.5	6,100
KSHR-4119	1.19	10	16	60	3	2.5	6,100

KSHR-4

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ ₁ Effective Length	全長 L Total Length	柄径 d Shank Diameter	噴付長ℓ ₂ Chamber Length	標準価格 Retail Price
KSHR-4120	1.2	10	16	60	3	2.5	5,300
KSHR-4121	1.21	10	16	60	3	2.5	6,100
KSHR-4122	1.22	10	16	60	3	2.5	6,100
KSHR-4123	1.23	10	16	60	3	2.5	6,100
KSHR-4124	1.24	10	16	60	3	2.5	6,100
KSHR-4125	1.25	10	16	60	3	2.5	6,100
KSHR-4126	1.26	10	16	60	3	2.5	6,100
KSHR-4127	1.27	10	16	60	3	2.5	6,100
KSHR-4128	1.28	10	16	60	3	2.5	6,100
KSHR-4129	1.29	10	16	60	3	2.5	6,100
KSHR-4130	1.3	10	16	60	3	2.5	5,300
KSHR-4131	1.31	10	16	60	3	2.5	6,100
KSHR-4132	1.32	10	16	60	3	2.5	6,100
KSHR-4133	1.33	10	16	60	3	2.5	6,100
KSHR-4134	1.34	10	16	60	3	2.5	6,100
KSHR-4135	1.35	10	16	60	3	2.5	6,100
KSHR-4136	1.36	10	16	60	3	2.5	6,100
KSHR-4137	1.37	10	16	60	3	2.5	6,100
KSHR-4138	1.38	10	16	60	3	2.5	6,100
KSHR-4139	1.39	10	16	60	3	2.5	6,100
KSHR-4140	1.4	10	16	60	3	2.5	5,300
KSHR-4141	1.41	10	16	60	3	2.5	6,100
KSHR-4142	1.42	10	16	60	3	2.5	6,100
KSHR-4143	1.43	10	16	60	3	2.5	6,100
KSHR-4144	1.44	10	16	60	3	2.5	6,100
KSHR-4145	1.45	10	16	60	3	2.5	6,100
KSHR-4146	1.46	10	16	60	3	2.5	6,100
KSHR-4147	1.47	10	16	60	3	2.5	6,100
KSHR-4148	1.48	10	16	60	3	2.5	6,100
KSHR-4149	1.49	10	16	60	3	2.5	6,100
KSHR-4150	1.5	10	16	60	3	2.5	5,200
KSHR-4151	1.51	10	16	60	3	2.5	5,600
KSHR-4152	1.52	10	16	60	3	2.5	5,600
KSHR-4153	1.53	10	16	60	3	2.5	5,600
KSHR-4154	1.54	10	16	60	3	2.5	5,600
KSHR-4155	1.55	10	16	60	3	2.5	5,600
KSHR-4156	1.56	10	16	60	3	2.5	5,600
KSHR-4157	1.57	10	16	60	3	2.5	5,600
KSHR-4158	1.58	10	16	60	3	2.5	5,600
KSHR-4159	1.59	10	16	60	3	2.5	5,600
KSHR-4160	1.6	10	16	60	3	3	5,200
KSHR-4161	1.61	10	16	60	3	3	5,600
KSHR-4162	1.62	10	16	60	3	3	5,600
KSHR-4163	1.63	10	16	60	3	3	5,600
KSHR-4164	1.64	10	16	60	3	3	5,600
KSHR-4165	1.65	10	16	60	3	3	5,600
KSHR-4166	1.66	10	16	60	3	3	5,600
KSHR-4167	1.67	10	16	60	3	3	5,600

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	有効長ℓ ₁ Effective Length	全長 L Total Length	柄径 d Shank Diameter	噴付長ℓ ₂ Chamber Length	標準価格 Retail Price
KSHR-4168	1.68	10	16	60	3	3	5,600
KSHR-4169	1.69	10	16	60	3	3	5,600
KSHR-4170	1.7	10	16	60	3	3	5,200
KSHR-4171	1.71	10	16	60	3	3	5,600
KSHR-4172	1.72	10	16	60	3	3	5,600
KSHR-4173	1.73	10	16	60	3	3	5,600
KSHR-4174	1.74	10	16	60	3	3	5,600
KSHR-4175	1.75	10	16	60	3	3	5,600
KSHR-4176	1.76	10	16	60	3	3	5,600
KSHR-4177	1.77	10	16	60	3	3	5,600
KSHR-4178	1.78	10	16	60	3	3	5,600
KSHR-4179	1.79	10	16	60	3	3	5,600
KSHR-4180	1.8	10	16	60	3	3	5,200
KSHR-4181	1.81	10	16	60	3	3	5,600
KSHR-4182	1.82	10	16	60	3	3	5,600
KSHR-4183	1.83	10	16	60	3	3	5,600
KSHR-4184	1.84	10	16	60	3	3	5,600
KSHR-4185	1.85	10	16	60	3	3	5,600
KSHR-4186	1.86	10	16	60	3	3	5,600
KSHR-4187	1.87	10	16	60	3	3	5,600
KSHR-4188	1.88	10	16	60	3	3	5,600
KSHR-4189	1.89	10	16	60	3	3	5,600
KSHR-4190	1.9	10	16	60	3	3	5,200
KSHR-4191	1.91	10	16	60	3	3	5,600
KSHR-4192	1.92	10	16	60	3	3	5,600
KSHR-4193	1.93	10	16	60	3	3	5,600
KSHR-4194	1.94	10	16	60	3	3	5,600
KSHR-4195	1.95	10	16	60	3	3	5,600
KSHR-4196	1.96	10	16	60	3	3	5,600
KSHR-4197	1.97	10	16	60	3	3	5,600
KSHR-4198	1.98	10	16	60	3	3	5,600
KSHR-4199	1.99	10	16	60	3	3	5,600
KSHR-4200	2	10	16	60	3	3	4,800
KSHR-4201	2.01	12	18	60	3	3	5,600
KSHR-4202	2.02	12	18	60	3	3	5,600
KSHR-4203	2.03	12	18	60	3	3	5,600

超硬製品

Tungsten Carbide

アルミ合金用

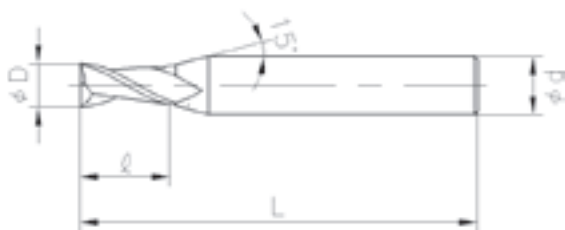
For Aluminum Alloy

ALES-2DLC

超硬2枚刃アルミニウム合金用エンドミル(ショート形)

Tungsten Carbide 2 Flutes Short Endmill for Aluminum Alloy

- 刃形状をアルミ合金加工用にして切れ味を良好にしました
Flute shape is arranged for Aluminum Alloy processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=h6



ネジレ角 45° Twist Angle 45°

DLCコート

DLCコート DLC Coating

- 切削条件表は P208に記載
- Cutting conditions are recommended on page 208.

単位[寸法：mm/価格：円]
Unit[Size：mm/Retail Price：JPY]

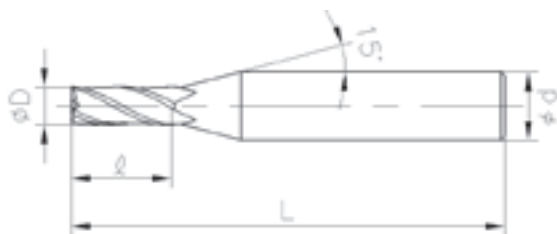
品番 Code No.	刃径D Flute Diameter	刃長ℓ Flute Length	全長L Total Length	柄径d Shank Diameter	標準価格 Retail Price
ALES-2010	1	2	45	4	5,600
ALES-2015	1.5	3	45	4	5,600
ALES-2020	2	4	45	4	5,600
ALES-2025	2.5	5	45	4	5,600
ALES-2030	3	6	50	6	6,800
ALES-2035	3.5	7	50	6	7,900
ALES-2040	4	8	50	6	7,000
ALES-2045	4.5	9	60	6	8,200
ALES-2050	5	10	60	6	7,500
ALES-2055	5.5	11	60	6	8,200
ALES-2060	6	12	60	6	7,800
ALES-2065	6.5	13	70	8	11,400
ALES-2070	7	14	70	8	11,400
ALES-2075	7.5	15	70	8	11,400
ALES-2080	8	16	70	8	11,400
ALES-2085	8.5	17	75	10	14,400
ALES-2090	9	18	75	10	14,400
ALES-2095	9.5	19	75	10	14,400
ALES-2100	10	20	75	10	14,400
ALES-2105	10.5	21	80	12	19,800
ALES-2110	11	22	80	12	19,800
ALES-2115	11.5	23	80	12	19,800
ALES-2120	12	24	80	12	19,800
ALES-2130	13	26	80	12	21,800
ALES-2140	14	28	80	12	26,700
ALES-2150	15	30	90	16	30,000
ALES-2160	16	32	100	16	31,000

ALE-3DLC

超硬3枚刃アルミニウム合金用エンドミル

Tungsten Carbide 3 Flutes Endmill for Aluminum Alloy

- 刃形状をアルミ合金加工用にして切れ味を良好にしました
Flute shape is arranged for Aluminum Alloy processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=h6



ネジレ角 45° Twist Angle 45°



DLCコート DLC Coating

- 切削条件表はP209に記載
- Cutting conditions are recommended on page 209.

単位[寸法：mm/価格：円]
Unit[Size：mm/Retail Price：JPY]

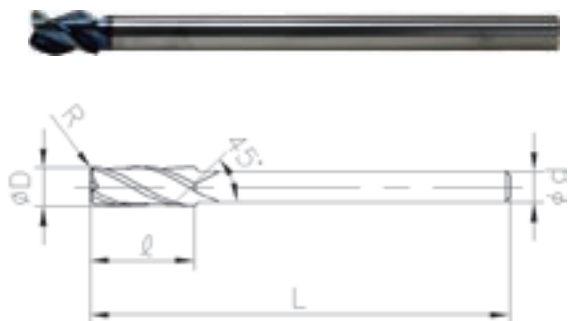
品番 Code No.	刃径D Flute Diameter	刃長ℓ Flute Length	全長L Total Length	柄径d Shank Diameter	標準価格 Retail Price
ALE-3030	3	9	60	6	8,500
ALE-3035	3.5	10	60	6	8,600
ALE-3040	4	12	60	6	8,600
ALE-3045	4.5	13	60	6	8,900
ALE-3050	5	15	60	6	8,900
ALE-3055	5.5	16	60	6	9,000
ALE-3060	6	18	60	6	9,000
ALE-3065	6.5	19	70	8	11,100
ALE-3070	7	21	70	8	11,100
ALE-3075	7.5	22	70	8	11,100
ALE-3080	8	24	70	8	11,500
ALE-3085	8.5	25	80	10	14,200
ALE-3090	9	27	80	10	14,200
ALE-3095	9.5	28	80	10	14,200
ALE-3100	10	30	80	10	14,200
ALE-3105	10.5	32	90	12	17,900
ALE-3110	11	33	90	12	17,900
ALE-3115	11.5	35	90	12	17,900
ALE-3120	12	36	90	12	18,300
ALE-3130	13	39	100	12	20,700
ALE-3140	14	42	100	12	24,500
ALE-3150	15	45	110	16	25,800
ALE-3160	16	48	110	16	26,500

ALRE-3DLC

超硬3枚刃アルミニウム合金用コーナーR付エンドミル(立ち壁対応型)

Tungsten Carbide 3 Flutes Endmill with Corner R for Aluminum Alloy

- 刃形状をアルミ合金加工用にして切れ味を良好にしました
Flute shape is arranged for Aluminum Alloy processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=h6



ネジレ角 45° Twist Angle 45°



DLCコート DLC Coating

- 切削条件表はP210に記載
- Cutting conditions are recommended on page 210.

単位[寸法：mm/価格：円]
Unit[Size：mm/Retail Price：JPY]

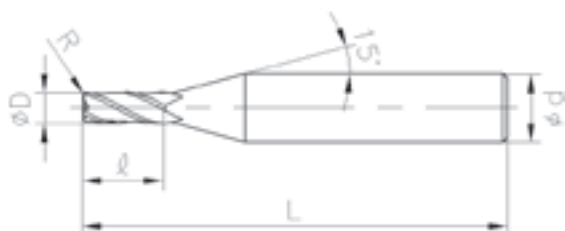
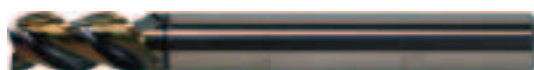
品番 Code No.	刃径D Flute Diameter	コーナーR Corner R	刃長ℓ Flute Length	全長L Total Length	柄径d Shank Diameter	標準価格 Retail Price
ALRE-30800	8	-	12	100	6	14,800
ALRE-30805	8	0.5	12	100	6	15,900
ALRE-30810	8	1	12	100	6	15,900
ALRE-31000	10	-	15	120	8	19,000
ALRE-31005	10	0.5	15	120	8	20,000
ALRE-31010	10	1	15	120	8	20,000
ALRE-31020	10	2	15	120	8	20,000
ALRE-31030	10	3	15	120	8	20,000
ALRE-31200	12	-	18	140	10	23,300
ALRE-31205	12	0.5	18	140	10	24,500
ALRE-31210	12	1	18	140	10	24,500
ALRE-31215	12	1.5	18	140	10	24,500
ALRE-31220	12	2	18	140	10	24,500
ALRE-31230	12	3	18	140	10	24,500
ALRE-31400	14	-	21	150	12	30,500
ALRE-31410	14	1	21	150	12	31,500
ALRE-31415	14	1.5	21	150	12	31,500
ALRE-31420	14	2	21	150	12	31,500
ALRE-31430	14	3	21	150	12	31,500
ALRE-31600	16	-	24	160	14	36,400
ALRE-31610	16	1	24	160	14	36,400
ALRE-31630	16	3	24	160	14	36,400

ALERS-3DLC

超硬3枚刃アルミニウム合金用コーナーR付エンドミル(ショート型)

Tungsten Carbide 3 Flutes Short Endmill with Corner R for Aluminum Alloy

- 刃形状をアルミ合金加工用に調整して切れ味を良好にしました
Flute shape is arranged for Aluminum Alloy processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d=h6



ネジレ角 45° Twist Angle 45°



コーナーR許容差 Tolerance of Corner R
+0.02~-0.02



DLCコート DLC Coating

- 切削条件表はP209に記載
- Cutting conditions are recommended on page 209.

単位[寸法: mm/価格: 円]
Unit[Size: mm/Retail Price: JPY]

品番 Code No.	刃径D Flute Diameter	コーナーR Corner R	刃長ℓ Flute Length	全長L Total Length	柄径d Shank Diameter	標準価格 Retail Price
ALERS-30302R	3	0.2	6	60	6	9,700
ALERS-30305R	3	0.5	6	60	6	9,700
ALERS-30402R	4	0.2	8	60	6	9,800
ALERS-30405R	4	0.5	8	60	6	9,800
ALERS-30410R	4	1	8	60	6	9,800
ALERS-30502R	5	0.2	10	60	6	10,000
ALERS-30505R	5	0.5	10	60	6	10,000
ALERS-30510R	5	1	10	60	6	10,000
ALERS-30603R	6	0.3	12	60	6	10,200
ALERS-30605R	6	0.5	12	60	6	10,200
ALERS-30610R	6	1	12	60	6	10,200
ALERS-30803R	8	0.3	16	70	8	12,800
ALERS-30805R	8	0.5	16	70	8	12,800
ALERS-30810R	8	1	16	70	8	12,800
ALERS-30815R	8	1.5	16	70	8	12,800
ALERS-30820R	8	2	16	70	8	12,800
ALERS-31003R	10	0.3	20	75	10	15,500
ALERS-31005R	10	0.5	20	75	10	15,500
ALERS-31010R	10	1	20	75	10	15,500
ALERS-31015R	10	1.5	20	75	10	15,500
ALERS-31020R	10	2	20	75	10	15,500
ALERS-31030R	10	3	20	75	10	15,500
ALERS-31205R	12	0.5	24	80	12	18,600
ALERS-31210R	12	1	24	80	12	18,600
ALERS-31215R	12	1.5	24	80	12	18,600
ALERS-31220R	12	2	24	80	12	18,600
ALERS-31230R	12	3	24	80	12	18,600

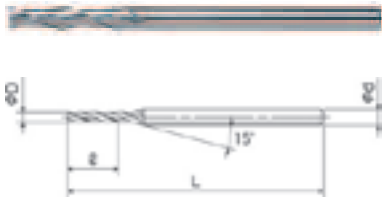
樹脂加工用製品

For Resin

PSE-2

樹脂加工用超硬2枚刃エンドミル
Tungsten Carbide 2 Flutes Endmill for Resin Processing

■刃形状を樹脂加工用にして切れ味を良好にしました
Flute shape is arranged for resin processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



ピンカド Sharp Edge

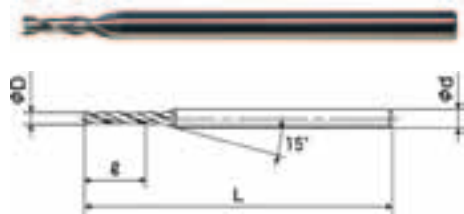
●切削条件表はP212に記載
●Cutting conditions are recommended on page 212. Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
PSE-202006	0.2	0.6	45	4	8,000
PSE-203010	0.3	1	45	4	7,200
PSE-204015	0.4	1.5	45	4	6,000
PSE-205015	0.5	1.5	45	4	6,000
PSE-206020	0.6	2	45	4	5,300
PSE-207020	0.7	2	45	4	5,300
PSE-208025	0.8	2.5	45	4	5,100
PSE-209030	0.9	3	45	4	4,800
PSE-210030	1	3	50	4	4,500
PSE-212040	1.2	4	50	4	4,500
PSE-215050	1.5	5	50	4	4,500
PSE-220060	2	6	50	4	4,500
PSE-225080	2.5	8	50	4	4,500
PSE-230103	3	10	80	3	5,300
PSE-230100	3	10	60	6	5,300
PSE-240124	4	12	80	4	6,000
PSE-240120	4	12	60	6	6,000
PSE-250150	5	15	60	6	6,600
PSE-260150	6	15	60	6	7,200
PSE-260210	6	21	100	6	8,000

PSELS-2

樹脂加工用超硬ロングシャンクエンドミル
Tungsten Carbide Long Shank Endmill for Resin Processing

■深堀用に全長を長くしました。
Lengthened full length for deep processing



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



ピンカド Sharp Edge

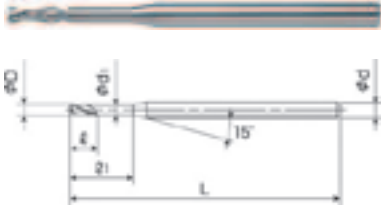
●切削条件表はP212に記載
●Cutting conditions are recommended on page 212. Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
PSELS-2002	0.2	0.4	80	4	8,400
PSELS-2003	0.3	0.6	80	4	7,300
PSELS-2004	0.4	0.8	80	4	6,200
PSELS-2005	0.5	1	80	4	6,200
PSELS-2006	0.6	1.2	80	4	5,600
PSELS-2007	0.7	1.4	80	4	5,600
PSELS-2008	0.8	1.6	80	4	5,300
PSELS-2009	0.9	1.8	80	4	5,000
PSELS-2010	1	2	80	4	4,800
PSELS-2012	1.2	2.4	80	4	4,800
PSELS-2015	1.5	3	80	4	4,800
PSELS-2020	2	4	80	4	4,800
PSELS-2025	2.5	5	80	4	4,800
PSELS-2030	3	6	80	6	5,600
PSELS-2040	4	8	80	6	6,200
PSELS-2050	5	10	80	6	6,700
PSELS-2060	6	12	80	6	7,300

PRE-2

樹脂加工用超硬リブ用エンドミル
Tungsten Carbide Endmill for Resin Processing
〈Long Neck Type〉

- 刃形状を樹脂加工用にして切れ味を良好にしました
Flute shape is arranged for resin processing with sharp edge
- 深い加工用に首下を長くとりました
Long neck type for deep processing



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle30°



ピンカド Sharp Edge

- 切削条件表はP213に記載
- Cutting conditions are recommended on page 213.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ ₁ Effective Length	刃長 ℓ Flute Length	首下径 d ₁ Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail price
PRE-203020	0.3	2	0.6	0.27	45	4	10,100
PRE-203040	0.3	4	0.6	0.27	45	4	10,100
PRE-203060	0.3	6	0.6	0.27	45	4	11,300
PRE-204020	0.4	2	0.8	0.37	45	4	10,100
PRE-204040	0.4	4	0.8	0.37	45	4	10,100
PRE-204060	0.4	6	0.8	0.37	45	4	11,300
PRE-205020	0.5	2	1	0.45	45	4	6,000
PRE-205040	0.5	4	1	0.45	45	4	6,000
PRE-205060	0.5	6	1	0.45	45	4	6,000
PRE-205080	0.5	8	1	0.45	45	4	7,500
PRE-205100	0.5	10	1	0.45	50	4	7,500
PRE-206040	0.6	4	1.2	0.55	45	4	6,000
PRE-206060	0.6	6	1.2	0.55	45	4	6,000
PRE-206100	0.6	10	1.2	0.55	50	4	7,500
PRE-207040	0.7	4	1.4	0.65	45	4	6,000
PRE-207060	0.7	6	1.4	0.65	45	4	6,000
PRE-207100	0.7	10	1.4	0.65	50	4	7,500
PRE-208060	0.8	6	1.6	0.75	45	4	6,000
PRE-208080	0.8	8	1.6	0.75	45	4	6,000
PRE-208120	0.8	12	1.6	0.75	50	4	7,200

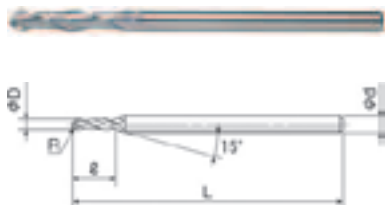
PRE-2

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ ₁ Effective Length	刃長 ℓ Flute Length	首下径 d ₁ Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail price
PRE-209060	0.9	6	1.8	0.85	45	4	6,000
PRE-209080	0.9	8	1.8	0.85	45	4	6,000
PRE-209120	0.9	12	1.8	0.85	50	4	7,200
PRE-210060	1	6	2	0.9	50	4	5,300
PRE-210080	1	8	2	0.9	50	4	5,300
PRE-210100	1	10	2	0.9	50	4	5,300
PRE-210120	1	12	2	0.9	50	4	5,300
PRE-210160	1	16	2	0.9	60	4	6,000
PRE-210200	1	20	2	0.9	60	4	6,000
PRE-212080	1.2	8	2.4	1.1	50	4	5,300
PRE-212120	1.2	12	2.4	1.1	50	4	5,300
PRE-212160	1.2	16	2.4	1.1	60	4	6,000
PRE-215060	1.5	6	3	1.4	50	4	5,300
PRE-215100	1.5	10	3	1.4	50	4	5,300
PRE-215120	1.5	12	3	1.4	50	4	5,300
PRE-215160	1.5	16	3	1.4	60	4	6,000
PRE-215200	1.5	20	3	1.4	60	4	6,000
PRE-215250	1.5	25	3	1.4	70	4	7,200
PRE-220080	2	8	4	1.9	50	4	5,300
PRE-220100	2	10	4	1.9	50	4	5,300
PRE-220120	2	12	4	1.9	50	4	5,300
PRE-220160	2	16	4	1.9	60	4	6,000
PRE-220200	2	20	4	1.9	60	4	6,000
PRE-220250	2	25	4	1.9	70	4	7,200
PRE-220300	2	30	4	1.9	70	4	7,500
PRE-230080	3	8	6	2.8	60	6	6,000
PRE-230120	3	12	6	2.8	60	6	6,000
PRE-230160	3	16	6	2.8	60	6	6,000
PRE-230200	3	20	6	2.8	60	6	6,000
PRE-230250	3	25	6	2.8	70	6	6,600
PRE-230300	3	30	6	2.8	70	6	7,800
PRE-230350	3	35	6	2.8	80	6	9,500
PRE-230400	3	40	6	2.8	80	6	10,600
PRE-240120	4	12	8	3.8	60	6	6,600
PRE-240160	4	16	8	3.8	60	6	6,600
PRE-240200	4	20	8	3.8	60	6	6,600
PRE-240250	4	25	8	3.8	70	6	7,200
PRE-240300	4	30	8	3.8	70	6	8,000
PRE-240350	4	35	8	3.8	80	6	9,500
PRE-240400	4	40	8	3.8	80	6	10,600
PRE-240450	4	45	8	3.8	100	6	11,300
PRE-240500	4	50	8	3.8	100	6	11,900
PRE-250160	5	16	10	4.8	60	6	7,500
PRE-250200	5	20	10	4.8	60	6	7,500
PRE-250300	5	30	10	4.8	70	6	9,000
PRE-250400	5	40	10	4.8	80	6	10,600
PRE-250500	5	50	10	4.8	100	6	11,900

PSB-2

樹脂加工用超硬ボールエンドミル
Tungsten Carbide Ball Endmill for Resin Processing

■刃形状を樹脂加工用にして切れ味を良好にしました
Flute shape is arranged for resin processing with sharp edge



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



R許容差 R Tolerance
+0.01~-0.01

●切削条件表はP214に記載

●Cutting conditions are recommended on page 214.

単位[寸法: mm/価格: 円]

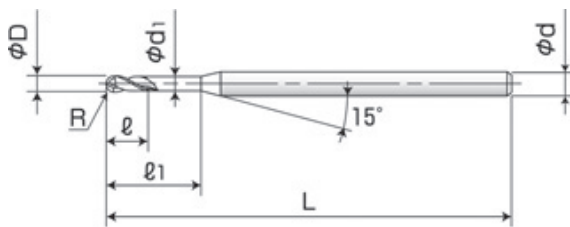
Unit [size: mm/Retail Price: JPY]

品番 Code No.	R	刃径 D Flute Diameter	刃長 ℓ Flute Length	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
PSB-201006	R0.1	0.2	0.6	45	4	10,600
PSB-202008	R0.2	0.4	0.8	45	4	9,000
PSB-202515	R0.25	0.5	1.5	45	4	9,000
PSB-203020	R0.3	0.6	2	45	4	8,300
PSB-204025	R0.4	0.8	2.5	45	4	7,800
PSB-205030	R0.5	1	3	50	4	7,200
PSB-206035	R0.6	1.2	3.5	50	4	7,200
PSB-207040	R0.7	1.4	4	50	4	7,200
PSB-207550	R0.75	1.5	5	50	4	7,200
PSB-208050	R0.8	1.6	5	50	4	7,200
PSB-209050	R0.9	1.8	5	50	4	7,200
PSB-210060	R1	2	6	50	4	7,200
PSB-215100	R1.5	3	10	60	6	8,300
PSB-215153	R1.5	3	15	80	3	8,300
PSB-220120	R2	4	12	60	6	8,300
PSB-220184	R2	4	18	80	4	9,000
PSB-225150	R2.5	5	15	60	6	9,000
PSB-230150	R3	6	15	60	6	9,500
PSB-230206	R3	6	20	100	6	10,400

PRB-2

樹脂加工用超硬リブ用ボールエンドミル
Tungsten Carbide Ball Endmill for Resin Processing
(Long Neck Type)

- 刃形状を樹脂加工用に調整して切れ味を良好にしました
Flute shape is arranged for resin processing with sharp edge
- 深い加工用に首下を長くとりました
Long neck type for deep processing



極超微粒子合金 Super Micro Grain Tungsten Carbide



刃径の許容差 Flute Diameter Tolerance
D 0~-0.01



柄径の許容差 Shank Diameter Tolerance
d 0~-0.008



ネジレ角30° Twist Angle 30°



R許容差 R Tolerance
+0.01~-0.01

- 切削条件表はP215に記載
- Cutting conditions are recommended on page 215.

単位[寸法:mm/価格:円]
Unit [size:mm/Retail Price:JPY]

品番 Code No.	R	刃径 D Flute Diameter	有効長ℓ1 Effective Length	刃長 ℓ Flute Length	首下径d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
PRB-2010020	R 0.1	0.2	2	0.3	0.18	45	4	11,300
PRB-2010040	R 0.1	0.2	4	0.3	0.18	45	4	11,900
PRB-2020020	R 0.2	0.4	2	0.6	0.37	45	4	10,100
PRB-2020040	R 0.2	0.4	4	0.6	0.37	45	4	10,600
PRB-2025020	R 0.25	0.5	2	0.8	0.45	45	4	6,800
PRB-2025040	R 0.25	0.5	4	0.8	0.45	45	4	6,800
PRB-2025060	R 0.25	0.5	6	0.8	0.45	45	4	6,800
PRB-2025080	R 0.25	0.5	8	0.8	0.45	45	4	7,800
PRB-2025100	R 0.25	0.5	10	0.8	0.45	50	4	7,800
PRB-2025120	R 0.25	0.5	12	0.8	0.45	50	4	9,000
PRB-2025150	R 0.25	0.5	15	0.8	0.45	50	4	9,000
PRB-2030040	R 0.3	0.6	4	1	0.55	45	4	7,500
PRB-2030060	R 0.3	0.6	6	1	0.55	45	4	7,500
PRB-2030100	R 0.3	0.6	10	1	0.55	50	4	8,600
PRB-2040040	R 0.4	0.8	4	1.2	0.75	45	4	7,200
PRB-2040060	R 0.4	0.8	6	1.2	0.75	45	4	7,200
PRB-2040100	R 0.4	0.8	10	1.2	0.75	50	4	8,000
PRB-2040120	R 0.4	0.8	12	1.2	0.75	50	4	8,000
PRB-2050040	R 0.5	1	4	1.5	0.9	50	4	6,300
PRB-2050080	R 0.5	1	8	1.5	0.9	50	4	6,300
PRB-2050120	R 0.5	1	12	1.5	0.9	50	4	6,800
PRB-2050160	R 0.5	1	16	1.5	0.9	60	4	7,500
PRB-2050200	R 0.5	1	20	1.5	0.9	60	4	8,600
PRB-2050250	R 0.5	1	25	1.5	0.9	70	4	9,000
PRB-2050300	R 0.5	1	30	1.5	0.9	70	4	10,100
PRB-2060080	R 0.6	1.2	8	1.8	1.1	50	4	6,300
PRB-2060120	R 0.6	1.2	12	1.8	1.1	50	4	6,800
PRB-2060160	R 0.6	1.2	16	1.8	1.1	60	4	7,500

PRB-2

品番 Code No.	R	刃径 D Flute Diameter	有効長 ℓ_1 Effective Length	刃長 ℓ Flute Length	首下径d1 Neck Diameter	全長 L Total Length	柄径 d Shank Diameter	標準価格 Retail Price
PRB-2070080	R 0.7	1.4	8	2	1.3	50	4	6,300
PRB-2070120	R 0.7	1.4	12	2	1.3	50	4	6,800
PRB-2070160	R 0.7	1.4	16	2	1.3	60	4	7,500
PRB-2075080	R 0.75	1.5	8	2.2	1.4	50	4	6,800
PRB-2075120	R 0.75	1.5	12	2.2	1.4	50	4	7,500
PRB-2075160	R 0.75	1.5	16	2.2	1.4	60	4	7,500
PRB-2075200	R 0.75	1.5	20	2.2	1.4	60	4	7,500
PRB-2075250	R 0.75	1.5	25	2.2	1.4	70	4	8,600
PRB-2080120	R 0.8	1.6	12	2.4	1.5	50	4	6,800
PRB-2080160	R 0.8	1.6	16	2.4	1.5	60	4	7,500
PRB-2080200	R 0.8	1.6	20	2.4	1.5	60	4	7,500
PRB-2090120	R 0.9	1.8	12	2.5	1.7	50	4	6,800
PRB-2090160	R 0.9	1.8	16	2.5	1.7	60	4	7,500
PRB-2090200	R 0.9	1.8	20	2.5	1.7	60	4	7,500
PRB-2100080	R 1	2	8	3	1.9	50	4	6,800
PRB-2100120	R 1	2	12	3	1.9	50	4	6,800
PRB-2100160	R 1	2	16	3	1.9	60	4	6,800
PRB-2100200	R 1	2	20	3	1.9	60	4	6,800
PRB-2100250	R 1	2	25	3	1.9	70	4	7,500
PRB-2100300	R 1	2	30	3	1.9	70	4	8,600
PRB-2100350	R 1	2	35	3	1.9	80	4	10,100
PRB-2100400	R 1	2	40	3	1.9	80	4	11,900
PRB-2150080	R 1.5	3	8	4	2.8	50	6	7,500
PRB-2150120	R 1.5	3	12	4	2.8	50	6	7,500
PRB-2150160	R 1.5	3	16	4	2.8	60	6	7,500
PRB-2150200	R 1.5	3	20	4	2.8	60	6	7,500
PRB-2150250	R 1.5	3	25	4	2.8	70	6	8,000
PRB-2150300	R 1.5	3	30	4	2.8	70	6	8,600
PRB-2150350	R 1.5	3	35	4	2.8	80	6	10,100
PRB-2150400	R 1.5	3	40	4	2.8	80	6	11,300
PRB-2200120	R 2	4	12	5	3.8	50	6	7,500
PRB-2200160	R 2	4	16	5	3.8	60	6	7,500
PRB-2200200	R 2	4	20	5	3.8	60	6	7,500
PRB-2200250	R 2	4	25	5	3.8	70	6	8,000
PRB-2200300	R 2	4	30	5	3.8	70	6	8,600
PRB-2200350	R 2	4	35	5	3.8	80	6	10,100
PRB-2200400	R 2	4	40	5	3.8	80	6	10,600
PRB-2200450	R 2	4	45	5	3.8	100	6	12,100
PRB-2200500	R 2	4	50	5	3.8	100	6	13,100
PRB-2250160	R 2.5	5	16	6	4.8	60	6	7,500
PRB-2250200	R 2.5	5	20	6	4.8	60	6	7,500
PRB-2250300	R 2.5	5	30	6	4.8	70	6	9,000
PRB-2250400	R 2.5	5	40	6	4.8	80	6	11,300
PRB-2250500	R 2.5	5	50	6	4.8	100	6	13,300

切削条件参考

Referential Cutting Conditions

DCBE-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	超硬合金 Tungsten Carbide										
	R mm	回転数 Revolution mm ⁻¹	送り速度 Feed mm/min	送り速度2 Feed2 mm/min	切込量 Cutting Depth Ad mm	切込量 Cutting Depth Rd mm					
0.2	50,000	70~140	15~ 50	0.005~0.008	0.03						
0.25	50,000	70~140	15~ 50	0.005~0.008	0.04						
0.3	45,000	85~160	25~ 55	0.008~0.011	0.05						
0.4	35,000	90~165	30~ 60	0.008~0.011	0.07						
0.5	30,000	100~170	30~ 60	0.01 ~0.02	0.1						
0.6	30,000	100~170	30~ 60	0.012~0.024	0.13						
0.7	28,000	115~170	30~ 65	0.014~0.028	0.16						
0.75	27,000	115~170	30~ 65	0.015~0.03	0.17						
0.8	26,000	120~175	35~ 70	0.016~0.032	0.19						
0.9	25,000	120~175	35~ 75	0.018~0.036	0.22						
1	25,000	120~175	40~ 80	0.02 ~0.04	0.25						

備考

- (1)この切削条件表は超硬(V10)を加工したデータをもとに作成しており、目安を示すものですので超硬材種・加工形状・機械の剛性等によって都度調整して下さい。
- (2)『送り速度2』については仕上げ加工時の目安を示すものです。
- (3)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

Remarks

- (1)Adjust the cutting conditions respectively according to Kinds of Tungsten Carbide,Cutting shape and Machine rigidity, etc. since these cutting conditions are shown just as Standard based on Date in processing Tungsten Carbide V10.
- (2)『Feed 2』 is shown just as Standard in case of finish processing.
- (3)Use rigid and accurate Machines and Tool Holders.
- (4)Shorten overhang as much as possible is recommendable.
- (5)Minimize Run out on fixing tool.

DCRE-2

切削条件参考 Referential Cutting Conditions

被削材 Workpiece	超硬合金 Tungsten Carbide										
	刃径 Flute Diameter mm	回転数 Revolution mm ⁻¹	送り速度 Feed mm/min	送り速度2 Feed2 mm/min	切込量 Cutting Depth Ad mm	切込量 Cutting Depth Rd mm					
0.5	35,000	150~300	20~ 40	0.005~0.01	0.03						
1	30,000	300~550	30~ 60	0.005~0.01	0.125						
1.5	25,000	250~450	30~ 60	0.007~0.014	0.18						
2	20,000	200~400	30~ 60	0.01 ~0.02	0.25						

備考

- (1)この切削条件表は超硬(V10)を加工したデータをもとに作成しており、目安を示すものですので超硬材種・加工形状・機械の剛性等によって都度調整して下さい。
- (2)『送り速度2』については仕上げ加工時の目安を示すものです。
- (3)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

Remarks

- (1)Adjust the cutting conditions respectively according to Kinds of Tungsten Carbide,Cutting shape and Machine rigidity, etc. since these cutting conditions are shown just as Standard based on Date in processing Tungsten Carbide V10.
- (2)『Feed 2』 is shown just as Standard in case of finish processing.
- (3)Use rigid and accurate Machines and Tool Holders.
- (4)Shorten overhang as much as possible is recommendable.
- (5)Minimize Run out on fixing tool.

DBE-2 切削条件参考

Referential Cutting Conditions

被削材 Workpiece	アルミ合金 Aluminum Alloy				ハイシリコンアルミ High Silicon Aluminum			
切削速度 Cutting Speed	150~250~400m/min				80~150~300m/min			
R mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut		回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut	
			Ad mm	Rd mm			Ad mm	Rd mm
0.1	60,000	360	0.005	0.02	50,000	250	0.005	0.02
0.15	60,000	420	0.01	0.03	50,000	300	0.01	0.03
0.2	60,000	450	0.02	0.06	50,000	340	0.02	0.06
0.25	60,000	550	0.03	0.07	50,000	400	0.03	0.07
0.3	60,000	640	0.05	0.1	50,000	480	0.05	0.1
0.4	60,000	720	0.1	0.15	50,000	540	0.1	0.15
0.5	60,000	750	0.1	0.3	50,000	600	0.1	0.3
0.6	60,000	780	0.1	0.3	50,000	650	0.1	0.3
0.7	60,000	800	0.15	0.4	50,000	720	0.15	0.4
0.75	60,000	800	0.15	0.4	50,000	720	0.15	0.4
0.8	60,000	800	0.15	0.4	50,000	720	0.15	0.4
0.9	60,000	900	0.15	0.4	50,000	800	0.15	0.4
1	60,000	1,000	0.2	0.5	48,000	900	0.2	0.5
1.5	44,000	1,300	0.2	0.8	32,000	1,000	0.2	0.8

被削材 Workpiece	銅・銅合金 Copper and Copper Alloy				MMC (セラミックス30%) MMC (Ceramics 30%)			
切削速度 Cutting Speed	60~120~300m/min				20~30~40m/min			
R mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut		回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut	
			Ad mm	Rd mm			Ad mm	Rd mm
0.1	50,000	150	0.005	0.02	50,000	150	0.003	0.01
0.15	50,000	200	0.01	0.03	43,000	170	0.005	0.015
0.2	50,000	240	0.02	0.06	32,000	180	0.01	0.02
0.25	50,000	280	0.03	0.07	26,000	200	0.015	0.03
0.3	50,000	320	0.05	0.1	22,000	220	0.02	0.05
0.4	50,000	360	0.1	0.15	16,000	240	0.03	0.08
0.5	50,000	400	0.1	0.3	12,000	300	0.03	0.1
0.6	50,000	420	0.1	0.3	10,800	320	0.03	0.15
0.7	42,000	450	0.15	0.4	9,200	360	0.05	0.15
0.75	42,000	450	0.15	0.4	8,600	360	0.05	0.2
0.8	42,000	450	0.15	0.4	8,000	360	0.05	0.2
0.9	38,000	500	0.15	0.4	7,200	400	0.05	0.25
1	34,000	550	0.2	0.5	6,500	450	0.08	0.3
1.5	23,000	700	0.2	0.8	4,500	500	0.08	0.5

DBE-2

切削条件参考 Referential Cutting Conditions

被削材 Workpiece	マシナブルセラミック Machinable Ceramics				石英ガラス Quartz Glass			
切削速度 Cutting Speed	5~8~15m/min				30~50~75m/min			
R mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut		回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut	
			Ad mm	Rd mm			Ad mm	Rd mm
0.1	20,000	70	0.003	0.01	50,000	250	0.003	0.01
0.15	14,000	75	0.005	0.015	50,000	300	0.005	0.015
0.2	10,000	80	0.01	0.02	48,000	360	0.01	0.02
0.25	8,500	80	0.015	0.03	38,000	450	0.015	0.03
0.3	7,000	90	0.02	0.05	32,000	540	0.02	0.05
0.4	5,200	100	0.03	0.08	24,000	600	0.03	0.08
0.5	4,200	120	0.03	0.1	20,000	750	0.03	0.1
0.6	3,500	120	0.03	0.15	16,000	800	0.03	0.15
0.7	3,000	150	0.05	0.15	13,500	900	0.05	0.15
0.75	2,800	150	0.05	0.2	12,800	900	0.05	0.2
0.8	2,700	150	0.05	0.2	12,000	900	0.05	0.2
0.9	2,400	150	0.05	0.25	10,500	850	0.05	0.25
1	2,100	140	0.08	0.3	9,500	850	0.08	0.3
1.5	1,400	130	0.08	0.5	6,700	740	0.08	0.5

被削材 Workpiece	カーボン Carbon				グラファイト Graphite			
切削速度 Cutting Speed	100~150~250m/min				150~200~350m/min			
R mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut		回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut	
			Ad mm	Rd mm			Ad mm	Rd mm
0.1	50,000	270	0.005	0.02	50,000	400	0.005	0.02
0.15	50,000	320	0.01	0.03	50,000	450	0.01	0.03
0.2	50,000	360	0.02	0.06	50,000	500	0.02	0.06
0.25	50,000	380	0.03	0.07	50,000	550	0.03	0.07
0.3	50,000	420	0.05	0.1	50,000	600	0.05	0.1
0.4	50,000	500	0.1	0.15	50,000	650	0.1	0.15
0.5	50,000	500	0.1	0.3	50,000	680	0.1	0.3
0.6	50,000	500	0.1	0.3	50,000	720	0.1	0.3
0.7	50,000	600	0.15	0.4	50,000	800	0.15	0.4
0.75	50,000	600	0.15	0.4	50,000	800	0.15	0.4
0.8	50,000	600	0.15	0.4	50,000	800	0.15	0.4
0.9	45,000	650	0.15	0.4	50,000	850	0.15	0.4
1	40,000	700	0.2	0.5	50,000	900	0.2	0.5
1.5	26,000	750	0.2	0.8	35,000	1,000	0.2	0.8

備考

- (1)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

Remarks

- (1)Use rigid and accurate Machines and Tool Holders.
- (2)Adjust Revolution and Feed Speed at the same rate.
- (3)Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity.
since these conditions are shown just as Standard.
- (4)Shorten overhang as much as possible is recommendable.
- (5)Minimize Run out on fixing tool.

DSE-2

切削条件参考 Referential Cutting Conditions

被削材 Workpiece	アルミ合金 Aluminum Alloy			ハイシリコンアルミ High Silicon Aluminum			銅・銅合金 Copper and Copper Alloy		
切削速度 Cutting Speed	250~350~500m/min			150~250~400m/min			150~200~350m/min		
刃 径	回転数	送り速度	切込量	回転数	送り速度	切込量	回転数	送り速度	切込量
Flute Diameter	Revolution	Feed	Depth of Cut	Revolution	Feed	Depth of Cut	Revolution	Feed	Depth of Cut
mm	min ⁻¹	mm/min	Ad mm	min ⁻¹	mm/min	Ad mm	min ⁻¹	mm/min	Ad mm
0.2	60,000	240	0.003	50,000	200	0.003	50,000	120	0.003
0.3	60,000	280	0.005	50,000	220	0.005	50,000	150	0.005
0.4	60,000	300	0.01	50,000	240	0.01	50,000	170	0.01
0.5	60,000	320	0.01	50,000	300	0.01	50,000	200	0.01
0.6	60,000	350	0.02	50,000	300	0.02	50,000	240	0.02
0.7	60,000	370	0.02	50,000	320	0.02	50,000	260	0.02
0.8	60,000	400	0.05	50,000	320	0.05	50,000	280	0.05
0.9	60,000	420	0.05	50,000	340	0.05	50,000	280	0.05
1	60,000	450	0.07	50,000	360	0.07	50,000	300	0.07
1.1	60,000	450	0.07	50,000	360	0.07	50,000	300	0.07
1.2	60,000	450	0.07	50,000	360	0.07	50,000	300	0.07
1.3	60,000	480	0.08	50,000	360	0.08	48,000	300	0.08
1.4	60,000	480	0.08	50,000	360	0.08	45,000	300	0.08
1.5	60,000	480	0.1	50,000	400	0.1	42,000	350	0.1
1.6	60,000	500	0.1	50,000	400	0.1	40,000	350	0.1
1.7	60,000	500	0.1	50,000	400	0.1	37,000	350	0.1
1.8	60,000	540	0.1	50,000	400	0.1	35,000	350	0.1
1.9	58,000	540	0.1	50,000	400	0.1	33,000	350	0.1
2	56,000	580	0.15	48,000	450	0.15	32,000	400	0.15
2.1	53,000	580	0.15	45,000	450	0.15	30,000	400	0.15
2.2	50,000	580	0.15	43,000	450	0.15	29,000	400	0.15
2.3	48,000	600	0.15	41,000	450	0.15	28,000	400	0.15
2.4	47,000	600	0.15	40,000	450	0.15	27,000	400	0.15
2.5	45,000	650	0.15	38,000	500	0.15	26,000	450	0.15
2.6	43,000	650	0.15	36,000	500	0.15	25,000	450	0.15
2.7	41,000	650	0.15	35,000	500	0.15	24,000	450	0.15
2.8	40,000	650	0.15	34,000	500	0.15	23,000	450	0.15
2.9	38,000	700	0.15	33,000	500	0.15	22,000	450	0.15
3	37,000	700	0.18	32,000	600	0.18	21,000	500	0.18
3.5	32,000	800	0.18	27,000	600	0.18	20,000	520	0.18
4	28,000	1,000	0.2	24,000	600	0.2	16,000	550	0.2
4.5	24,000	1,000	0.2	21,000	680	0.2	15,000	600	0.2
5	22,000	1,050	0.2	19,000	720	0.2	13,000	650	0.2
5.5	20,000	1,100	0.2	17,500	800	0.2	11,500	670	0.2
6	19,000	1,200	0.2	16,000	900	0.2	10,000	700	0.2

DSE-2 切削条件参考

Referential Cutting Conditions

被削材 Workpiece	MMC(セラミックス30%) MMC(Ceramics 30%)			マシナブルセラミックス Machinable Ceramics			石英ガラス Quartz Glass		
切削速度 Cutting Speed	20~30~40m/min			5~8~15m/min			40~60~80m/min		
刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm
0.2	47,000	20	0.002	14,000	5	0.002	50,000	36	0.002
0.3	30,000	20	0.003	9,000	6	0.003	50,000	40	0.003
0.4	24,000	25	0.005	7,000	6	0.005	47,000	40	0.005
0.5	20,000	25	0.005	5,500	7	0.005	37,000	45	0.005
0.6	16,000	30	0.01	4,600	7	0.01	30,000	45	0.01
0.7	15,000	30	0.01	4,000	7	0.01	27,000	45	0.01
0.8	13,000	32	0.01	3,400	7	0.01	23,000	50	0.01
0.9	10,500	32	0.01	3,000	7	0.01	21,000	50	0.01
1	9,500	35	0.015	2,800	8	0.015	19,000	65	0.015
1.1	8,600	35	0.015	2,500	8	0.015	17,000	65	0.015
1.2	8,000	35	0.015	2,300	8	0.015	16,000	65	0.015
1.3	7,300	35	0.02	2,100	8	0.02	14,500	65	0.02
1.4	6,800	35	0.02	2,000	8	0.02	13,500	65	0.02
1.5	6,300	35	0.03	1,800	8	0.03	12,800	65	0.03
1.6	6,000	35	0.03	1,700	8	0.03	12,000	65	0.03
1.7	5,600	35	0.03	1,600	8	0.03	11,500	65	0.03
1.8	5,300	35	0.03	1,550	8	0.03	11,000	65	0.03
1.9	5,000	35	0.03	1,450	8	0.03	10,500	65	0.03
2	4,700	40	0.05	1,400	9	0.05	9,500	80	0.05
2.1	4,500	40	0.05	1,300	9	0.05	9,000	80	0.05
2.2	4,300	40	0.05	1,250	9	0.05	8,500	80	0.05
2.3	4,100	40	0.05	1,200	9	0.05	8,300	80	0.05
2.4	4,000	40	0.05	1,150	9	0.05	8,000	80	0.05
2.5	3,800	40	0.05	1,100	9	0.05	7,600	80	0.05
2.6	3,600	40	0.05	1,080	9	0.05	7,300	80	0.05
2.7	3,500	40	0.05	1,040	9	0.05	7,000	80	0.05
2.8	3,400	40	0.05	1,000	9	0.05	6,800	80	0.05
2.9	3,300	40	0.05	950	9	0.05	6,500	80	0.05
3	3,200	45	0.06	900	10	0.06	6,200	100	0.06
3.5	2,700	45	0.06	800	10	0.06	5,400	100	0.06
4	2,400	45	0.08	700	10	0.08	4,700	100	0.08
4.5	2,200	50	0.08	600	10	0.08	4,200	100	0.08
5	1,900	50	0.08	550	12	0.08	3,800	120	0.08
5.5	1,700	50	0.08	500	12	0.08	3,300	120	0.08
6	1,600	50	0.1	450	12	0.1	3,000	120	0.1

備考

- (1)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

DSE-2

切削条件参考 Referential Cutting Conditions

被削材 Workpiece	カーボン Carbon			グラファイト Graphite					
切削速度 Cutting Speed	150~200~350m/min			150~250~400m/min					
刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm			
0.2	50,000	480	0.003	50,000	300	0.003			
0.3	50,000	560	0.005	50,000	320	0.005			
0.4	50,000	600	0.01	50,000	370	0.01			
0.5	50,000	720	0.01	50,000	420	0.01			
0.6	50,000	720	0.02	50,000	420	0.02			
0.7	50,000	720	0.02	50,000	420	0.02			
0.8	50,000	750	0.05	50,000	450	0.05			
0.9	50,000	750	0.05	50,000	450	0.05			
1	50,000	800	0.07	50,000	500	0.07			
1.1	50,000	800	0.07	50,000	500	0.07			
1.2	50,000	800	0.07	50,000	500	0.07			
1.3	48,000	800	0.08	50,000	500	0.08			
1.4	45,000	800	0.08	50,000	500	0.08			
1.5	42,000	850	0.1	50,000	560	0.1			
1.6	40,000	850	0.1	50,000	560	0.1			
1.7	37,000	850	0.1	46,000	560	0.1			
1.8	35,000	850	0.1	44,000	560	0.1			
1.9	33,000	850	0.1	42,000	560	0.1			
2	32,000	1,000	0.15	40,000	600	0.15			
2.1	30,000	1,000	0.15	38,000	600	0.15			
2.2	29,000	1,000	0.15	36,000	600	0.15			
2.3	28,000	1,000	0.15	34,000	600	0.15			
2.4	27,000	1,000	0.15	33,000	600	0.15			
2.5	26,000	1,100	0.15	32,000	650	0.15			
2.6	25,000	1,100	0.15	31,000	650	0.15			
2.7	24,000	1,100	0.15	30,000	650	0.15			
2.8	23,000	1,100	0.15	29,000	650	0.15			
2.9	22,000	1,100	0.15	28,000	650	0.15			
3	21,000	1,200	0.18	27,000	700	0.18			
3.5	18,000	1,200	0.18	23,000	700	0.18			
4	16,000	1,200	0.2	20,000	700	0.2			
4.5	14,200	1,200	0.2	18,000	750	0.2			
5	13,000	1,300	0.2	16,000	800	0.2			
5.5	11,500	1,300	0.2	14,500	850	0.2			
6	10,000	1,300	0.2	13,000	900	0.2			

Remarks

- (1) Use rigid and accurate Machines and Tool Holders.
- (2) Adjust Revolution and Feed Speed at the same rate.
- (3) Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity since these conditions are shown just as Standard.
- (4) Shorten overhang as much as possible is recommendable.
- (5) Minimize Run out on fixing tool.

DRD-2

切削条件参考 Referential Cutting Conditions

被削材 Workpiece	アルミ合金 Aluminum Alloy		ハイシリコンアルミ High Silicon Aluminum		銅・銅合金 Copper and Copper Alloy		FRP Fiber Reinforced Plastics	
	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
刃径 Flute Diameter mm								
0.3~1.0	30~70	0.005~0.01	20~60	0.005~0.01	20~60	0.005~0.01	20~60	0.005~0.01
1.01~2.0	40~80	0.01~0.05	30~70	0.01~0.05	30~70	0.01~0.05	30~70	0.02~0.05
2.1~3.0	50~120	0.04~0.1	40~100	0.04~0.1	40~100	0.03~0.08	40~100	0.03~0.08

被削材 Workpiece	MMC (セラミックス30%) MMC (Ceramics 30%)		カーボン Carbon		プラスチック Plastics			
	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev		
刃径 Flute Diameter mm								
0.3~1.0	10~40	0.005~0.01	20~60	0.005~0.01	20~60	0.005~0.01		
1.01~2.0	20~50	0.02~0.05	30~70	0.01~0.05	30~70	0.01~0.05		
2.1~3.0	30~70	0.03~0.1	40~100	0.04~0.1	40~100	0.04~0.1		

備考

- (1)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

Remarks

- (1)Use rigid and accurate Machines and Tool Holders.
- (2)Adjust Revolution and Feed Speed at the same rate.
- (3)Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity since these conditions are shown just as Standard.
- (4)Shorten overhang as much as possible is recommendable.
- (5)Minimize Run out on fixing tool.

SBBE-3

切削条件参考

Referential Cutting Conditions

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等			
	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
			Ad mm	Rd mm			Ad mm	Rd mm			Ad mm	Rd mm
R	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm
0.5	35,000	1,100~1,600	0.02~0.05	0.07	35,000	1,100~1,600	0.02~0.05	0.07	35,000	700~1,200	0.02~0.05	0.07
0.75	30,000	1,300~2,000	0.03~0.06	0.1	30,000	1,200~1,800	0.03~0.06	0.1	30,000	800~1,300	0.03~0.06	0.1
1	20,000	1,600~2,400	0.1 ~0.25	0.3	20,000	1,500~2,200	0.1 ~0.25	0.3	20,000	1,000~1,500	0.1 ~0.2	0.3
1.5	15,000	1,200~1,800	0.1 ~0.25	0.3	15,000	1,200~1,700	0.1 ~0.25	0.3	15,000	800~1,200	0.1 ~0.2	0.3

備考

- (1)オイルミストまたはエアブローをお奨めします。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)切込量は荒加工、中仕上げ加工の最大値を示しております。
必要とする面粗度に応じて切込量及びピックフィード・ピッチを調整してください。
- (4)切込量は、Adは深さ方向、Rdはピックフィード・ピッチを示しております。
- (5)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (6)工具突き出し量は、必要最低限でご使用ください。

Remarks

- (1)Oil mist or Air blow is recommendable.
- (2)Adjust Revolution and Feed Speed at the same rate.
- (3)Depth of cut is shown the maximum value in rough cutting and semi finish
Adjust Depth of cut and Pick feed pitch according to required surface roughness.
- (4)Depth of cut is shown as Ad : Axial depth and Rd : Pick feed pitch.
- (5)Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity
since these conditions are shown just as Standard.
- (6)Shorten overhang as much as possible is recommendable.

SBREF-3、SBRE-3

切削条件参考

Referential Cutting Conditions

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	刃径 Flute Diameter	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
	mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm
	0.3	50,000~	200~ 500	0.005~0.015	0.03	50,000~	150~ 360	0.005~0.015	0.03	50,000~	100~ 300	0.003~0.01	0.03
	0.4	50,000	350~ 600	0.005~0.015	0.04	50,000	200~ 500	0.005~0.015	0.04	50,000	150~ 360	0.005~0.015	0.04
	0.5	50,000	600~ 800	0.01~0.02	0.07	50,000	600~ 800	0.01~0.02	0.07	50,000	500~ 750	0.005~0.015	0.07
	0.6	50,000	600~ 800	0.01~0.02	0.07	50,000	600~ 800	0.01~0.02	0.07	50,000	500~ 750	0.01~0.02	0.07
	0.7	45,000	600~ 800	0.01~0.02	0.07	45,000	600~ 800	0.01~0.02	0.07	45,000	500~ 750	0.01~0.02	0.07
	0.8	45,000	600~ 860	0.01~0.02	0.08	45,000	600~ 860	0.01~0.02	0.08	45,000	600~ 800	0.01~0.02	0.08
	0.9	45,000	600~ 860	0.01~0.03	0.08	45,000	600~ 860	0.01~0.03	0.08	45,000	600~ 800	0.01~0.03	0.08
	1	40,000	800~1,000	0.02~0.04	0.3	40,000	800~1,000	0.02~0.04	0.3	35,000	600~ 900	0.02~0.04	0.3
	1.5	30,000	800~1,000	0.03~0.06	0.5	30,000	800~1,000	0.03~0.06	0.5	25,000	700~1,000	0.03~0.06	0.5
	2	20,000	800~1,000	0.05~0.15	0.6	20,000	800~1,000	0.05~0.15	0.6	15,000	700~1,000	0.05~0.1	0.6
	3	15,000	800~1,000	0.05~0.15	0.8	15,000	800~1,000	0.05~0.15	0.8	15,000	700~1,000	0.05~0.1	0.8
	4	12,000	900~1,100	0.1~0.2	1.0	12,000	900~1,100	0.1~0.2	1.0	12,000	800~1,000	0.1~0.2	1.0
	5	12,000	900~1,100	0.1~0.2	1.5	12,000	900~1,100	0.1~0.2	1.5	12,000	800~1,000	0.1~0.2	1.5
	6	10,000	1,000~1,200	0.1~0.2	2.0	10,000	1,000~1,200	0.1~0.2	2.0	10,000	900~1,100	0.1~0.2	2.0

備考

- (1)オイルミストまたはエアブローをお奨めします。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)切込量は荒加工、中仕上げの最大値を示しております。
必要とする面粗度に応じて切込量及びピックフィード・ピッチを調整してください。
- (4)切込量は、Adは深さ方向、Rdはピックフィード・ピッチを示しております。
- (5)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (6)工具突き出し量は、必要最低限でご使用ください。

Remarks

- (1)Oil mist or Air blow is recommendable.
- (2)Adjust Revolution and Feed Speed at the same rate.
- (3)Depth of cut is shown the maximum value in rough cutting and semi finish
Adjust Depth of cut and Pick feed pitch according to required surface roughness.
- (4)Depth of cut is shown as Ad: Axial depth and Rd: Pick feed pitch.
- (5)Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity
since these conditions are shown just as Standard.
- (6)Shorten overhang as much as possible is recommendable.

SBBEF-2、SBBE-2、SBREF-2、SBRE-2

切削条件参考

Referential Cutting Conditions

SBBEF-2、SBBE-2

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	R	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
		min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm
0.1	50,000~	150~ 300	0.005~0.015	0.02	50,000~	120~ 200	0.005~0.015	0.02	50,000~	60~ 150	0.003~0.01	0.02	
0.15	50,000~	300~ 600	0.005~0.015	0.02	50,000~	200~ 350	0.005~0.015	0.02	50,000~	100~ 250	0.003~0.01	0.02	
0.2	50,000	450~ 900	0.005~0.015	0.02	50,000	350~ 650	0.005~0.015	0.02	50,000	250~ 400	0.005~0.015	0.02	
0.25	50,000	600~1,100	0.01~0.02	0.04	50,000	450~ 900	0.01~0.02	0.04	50,000	350~ 600	0.005~0.015	0.04	
0.3	40,000	900~1,300	0.01~0.02	0.04	40,000	800~1,100	0.01~0.02	0.04	40,000	500~ 750	0.01~0.02	0.04	
0.4	40,000	900~1,300	0.01~0.02	0.04	40,000	800~1,100	0.01~0.02	0.04	40,000	500~ 750	0.01~0.02	0.04	
0.5	35,000	1,100~1,500	0.02~0.05	0.07	35,000	1,100~1,500	0.02~0.05	0.07	35,000	700~1,000	0.02~0.05	0.07	
0.6	35,000	1,100~1,500	0.02~0.05	0.07	35,000	1,100~1,500	0.02~0.05	0.07	35,000	700~1,000	0.02~0.05	0.07	
0.7	30,000	1,300~1,800	0.03~0.06	0.1	30,000	1,200~1,600	0.03~0.06	0.1	30,000	800~1,100	0.03~0.06	0.1	
0.75	30,000	1,300~1,800	0.03~0.06	0.1	30,000	1,200~1,600	0.03~0.06	0.1	30,000	800~1,100	0.03~0.06	0.1	
0.8	25,000	1,300~1,800	0.05~0.1	0.2	25,000	1,200~1,600	0.05~0.1	0.2	30,000	800~1,100	0.05~0.1	0.2	
0.9	25,000	1,400~2,000	0.05~0.1	0.2	25,000	1,300~1,800	0.05~0.1	0.2	25,000	1,000~1,300	0.05~0.1	0.2	
1	20,000	1,600~2,000	0.1~0.25	0.3	20,000	1,500~2,000	0.1~0.25	0.3	20,000	1,000~1,300	0.1~0.2	0.3	
1.5	15,000	1,200~1,500	0.1~0.25	0.3	15,000	1,200~1,500	0.1~0.25	0.3	15,000	800~1,000	0.1~0.2	0.3	
2	12,000	1,000~1,200	0.2~0.3	0.5	12,000	1,000~1,200	0.2~0.3	0.5	12,000	600~ 800	0.15~0.25	0.5	
2.5	12,000	1,000~1,200	0.2~0.3	0.5	12,000	1,000~1,200	0.2~0.3	0.5	12,000	600~ 800	0.15~0.25	0.5	
3	10,000	1,000~1,200	0.2~0.3	0.7	10,000	1,000~1,200	0.2~0.3	0.7	10,000	600~ 800	0.15~0.25	0.7	

SBREF-2、SBRE-2

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	刃径 Flute Diameter	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
		mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm
0.3	50,000~	200~ 400	0.005~0.015	0.03	50,000~	150~300	0.005~0.015	0.03	50,000~	100~ 250	0.003~0.01	0.03	
0.4	50,000	350~ 500	0.005~0.015	0.04	50,000	200~400	0.005~0.015	0.04	50,000	150~ 300	0.005~0.015	0.04	
0.5	50,000	600~ 700	0.01~0.02	0.07	50,000	600~700	0.01~0.02	0.07	50,000	500~ 600	0.005~0.015	0.07	
1	40,000	800~1,000	0.02~0.04	0.3	40,000	800~1,000	0.02~0.04	0.3	35,000	600~ 800	0.02~0.04	0.3	
1.5	30,000	800~1,000	0.03~0.06	0.5	30,000	800~1,000	0.03~0.06	0.5	25,000	700~ 900	0.03~0.06	0.5	
2	20,000	800~1,000	0.05~0.15	0.6	20,000	800~1,000	0.05~0.15	0.6	15,000	700~ 900	0.05~0.1	0.6	
3	15,000	800~1,000	0.05~0.15	0.8	15,000	800~1,000	0.05~0.15	0.8	15,000	700~ 900	0.05~0.1	0.8	
4	12,000	900~1,100	0.1~0.2	1.0	12,000	900~1,100	0.1~0.2	1.0	12,000	800~1,000	0.1~0.2	1.0	
5	12,000	900~1,100	0.1~0.2	1.5	12,000	900~1,100	0.1~0.2	1.5	12,000	800~1,000	0.1~0.2	1.5	
6	10,000	1,000~1,200	0.1~0.2	2.0	10,000	1,000~1,200	0.1~0.2	2.0	10,000	900~1,100	0.1~0.2	2.0	

BSB-2、BRB-2、BBEF-2、BBE-2 BSR-2、BRR-2、BREF-2、BRE-2

切削条件参考
Referential Cutting Conditions

BSB-2、BRB-2、BBEF-2、BBE-2

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	R	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
		min ⁻¹	mm/min	Ad mm	Rd mm			Ad mm	Rd mm			Ad mm	Rd mm
0.1	50,000~	150~ 300	0.003~0.005	0.005	50,000~	120~ 200	0.003~0.005	0.005	50,000~	60~ 150	0.001~0.003	0.005	
0.15	50,000~	300~ 600	0.003~0.005	0.005	50,000~	200~ 350	0.003~0.005	0.005	50,000~	100~ 250	0.001~0.003	0.005	
0.2	50,000	450~ 900	0.003~0.005	0.01	50,000	350~ 650	0.003~0.005	0.01	50,000	250~ 400	0.003~0.005	0.01	
0.25	50,000	600~1,100	0.005~0.01	0.01	50,000	450~ 900	0.005~0.01	0.01	50,000	350~ 600	0.003~0.005	0.01	
0.3	40,000	900~1,300	0.005~0.01	0.02	40,000	800~1,100	0.005~0.01	0.02	40,000	500~ 750	0.005~0.01	0.02	
0.4	40,000	900~1,300	0.005~0.01	0.03	40,000	800~1,100	0.005~0.01	0.03	40,000	500~ 750	0.005~0.01	0.03	
0.5	35,000	1,100~1,500	0.02~0.03	0.03	35,000	1,100~1,500	0.01~0.02	0.03	35,000	700~1,000	0.01~0.02	0.03	
0.6	35,000	1,100~1,500	0.02~0.03	0.03	35,000	1,100~1,500	0.01~0.02	0.03	35,000	700~1,000	0.01~0.02	0.03	
0.7	30,000	1,300~1,800	0.02~0.03	0.03	30,000	1,200~1,600	0.01~0.02	0.03	30,000	800~1,100	0.01~0.02	0.03	
0.75	30,000	1,300~1,800	0.02~0.03	0.03	30,000	1,200~1,600	0.02~0.03	0.03	30,000	800~1,100	0.01~0.02	0.03	
0.8	25,000	1,300~1,800	0.02~0.03	0.03	30,000	1,200~1,600	0.02~0.03	0.03	30,000	800~1,100	0.01~0.02	0.03	
0.9	25,000	1,400~2,000	0.02~0.03	0.03	25,000	1,300~1,800	0.02~0.03	0.03	25,000	1,000~1,300	0.01~0.02	0.03	
1	20,000	1,600~2,000	0.02~0.04	0.05	20,000	1,500~2,000	0.02~0.04	0.05	20,000	1,000~1,300	0.01~0.02	0.05	
1.5	15,000	1,200~1,500	0.02~0.04	0.05	15,000	1,200~1,500	0.02~0.04	0.05	15,000	800~1,000	0.02~0.03	0.05	
2	12,000	1,000~1,200	0.03~0.05	0.07	12,000	1,000~1,200	0.03~0.05	0.07	12,000	600~ 800	0.02~0.04	0.07	
2.5	12,000	1,000~1,200	0.03~0.05	0.07	12,000	1,000~1,200	0.03~0.05	0.07	12,000	600~ 800	0.02~0.04	0.07	
3	10,000	1,000~1,200	0.03~0.05	0.1	10,000	1,000~1,200	0.03~0.05	0.1	10,000	600~ 800	0.02~0.04	0.1	

BSR-2、BRR-2、BREF-2、BRE-2

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	刃径 Flute Diameter	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
				Ad mm	Rd mm			Ad mm	Rd mm			Ad mm	Rd mm
0.3	50,000	200~ 400	0.003~0.005	0.03	50,000	150~ 300	0.003~0.005	0.03	50,000	100~ 250	0.001~0.003	0.03	
0.4	50,000	350~ 500	0.003~0.005	0.04	50,000	200~ 400	0.003~0.005	0.04	50,000	150~ 300	0.003~0.005	0.04	
0.5	50,000	600~ 700	0.005~0.01	0.07	50,000	600~ 700	0.005~0.01	0.07	50,000	500~ 600	0.003~0.005	0.07	
1	40,000	800~1,000	0.02~0.03	0.3	40,000	800~1,000	0.02~0.03	0.3	35,000	600~ 800	0.005~0.01	0.3	
1.5	30,000	800~1,000	0.02~0.03	0.5	30,000	800~1,000	0.02~0.03	0.5	25,000	700~ 900	0.01~0.02	0.5	
2	20,000	800~1,000	0.02~0.04	0.6	20,000	800~1,000	0.02~0.04	0.6	15,000	700~ 900	0.01~0.02	0.6	
3	15,000	800~1,000	0.02~0.04	0.8	15,000	800~1,000	0.02~0.04	0.8	15,000	700~ 900	0.02~0.03	0.8	
4	12,000	900~1,100	0.03~0.05	1.0	12,000	900~1,100	0.03~0.05	1.0	12,000	800~1,000	0.02~0.04	1.0	
5	12,000	900~1,100	0.03~0.05	1.5	12,000	900~1,100	0.03~0.05	1.5	12,000	800~1,000	0.02~0.04	1.5	
6	10,000	1,000~1,200	0.03~0.05	2.0	10,000	1,000~1,200	0.03~0.05	2.0	10,000	900~1,100	0.02~0.04	2.0	

BMC-3、BVEF-2、BVREF-2

切削条件参考

Referential Cutting Conditions

硬度 Hardness 被削材 Workpiece	～HRC55 NAK80、STAVAX等			～HRC60 SKD11等			～HRC65 SKH等		
	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut
θ	min ⁻¹	mm/min	Ad mm	min ⁻¹	mm/min	Ad mm	min ⁻¹	mm/min	Ad mm
30°	40,000	700～900	0.005～0.01	40,000	700～900	0.005～0.01	40,000	600～800	0.005～0.01
40°	40,000	700～900	0.005～0.01	40,000	700～900	0.005～0.01	40,000	600～800	0.005～0.01
60°	40,000	700～900	0.005～0.01	40,000	700～900	0.005～0.01	40,000	600～800	0.005～0.01
90°	40,000	700～900	0.005～0.01	40,000	700～900	0.005～0.01	40,000	600～800	0.005～0.01

備考

- (1)オイルミストまたはエアブローをお奨めします。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)切込量は荒加工、中仕上げの最大値を示しております。
必要とする面粗度に応じて切込量及びピックフィード・ピッチを調整してください。
- (4)切込量は、Adは深さ方向、Rdはピックフィード・ピッチを示しております。
- (5)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (6)工具突き出し量は、必要最低限でご使用ください。

Remarks

- (1)Oil mist or Air blow is recommendable.
- (2)Adjust Revolution and Feed Speed at the same rate.
- (3)Depth of cut is shown the maximum value in rough cutting and semi finish
Adjust Depth of cut and Pick feed pitch according to required surface roughness.
- (4)Depth of cut is shown as Ad: Axial depth and Rd: Pick feed pitch.
- (5)Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity
since these conditions are shown just as Standard.
- (6)Shorten overhang as much as possible is recommendable.

BREF-1

切削条件参考

Referential Cutting Conditions

硬度 Hardness 被削材 Workpiece	~HRC55 NAK80、STAVAX等				~HRC60 SKD11等				~HRC65 SKH等				
	刃径 Flute Diameter	回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut		回転数 Revolution	送り速度 Feed	切込量 Depth of Cut	
	mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm	min ⁻¹	mm/min	Ad mm	Rd mm
	0.1	50,000~	30~60	0.0005~0.001	0.002	50,000~	30~60	0.0005~0.001	0.002	50,000~	20~50	0.0005~0.001	0.002
	0.2	50,000~	50~100	0.001~0.002	0.002	50,000~	50~100	0.001~0.002	0.002	50,000~	40~90	0.001~0.002	0.002
	0.3	50,000	60~150	0.001~0.002	0.003	50,000	60~150	0.001~0.002	0.003	50,000	50~120	0.001~0.002	0.003
	0.4	50,000	100~200	0.001~0.003	0.004	50,000	100~200	0.001~0.003	0.004	50,000	80~150	0.001~0.003	0.004
	0.5	50,000	150~300	0.001~0.003	0.005	50,000	150~300	0.001~0.003	0.005	50,000	120~200	0.001~0.003	0.005
	1	40,000	200~400	0.002~0.005	0.03	40,000	200~400	0.002~0.005	0.03	35,000	150~360	0.002~0.005	0.03

切削条件参考・CBN

Referential
Cutting
Conditions
CBN

BHR-4

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	焼入れ鋼~HRC65 Hardened material		鋳鉄(FC、FCD等) Cast iron	
切削速度 Cutting Speed	10~20m/min		25~45m/min	
刃径 Flute Diameter	送り量(mm/rev) Feed	リーマ代(mm) Reamer Stock Removal	送り量(mm/rev) Feed	リーマ代(mm) Reamer Stock Removal
1.5	0.01~0.02	0.05	0.01~0.02	0.07
2.0	0.01~0.03	0.05	0.01~0.03	0.07
3.0	0.03~0.06	0.08	0.03~0.06	0.1
4.0	0.03~0.06	0.08	0.03~0.06	0.1
5.0	0.04~0.08	0.1	0.04~0.08	0.2
6.0	0.04~0.08	0.1	0.04~0.08	0.2

KDR-2、KDR-90、KDR-F、KDRLS-2

切削条件参考

Referential Cutting Conditions

- KDR-F・KDRLS-2は下記条件の20%減の送り速度を推奨いたします。
KDR-F・KDRLS-2 shall be recommended to reduce 20% on the following conditions.

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		ステンレス鋼 Stainless Steel SUS303,SUS304,SUS416		アルミニウム合金 Aluminum Alloy ADC・AC	
	刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.03~0.09	2~10	0.0005~0.002	2~8	0.0005~0.001	2~6	0.0005~0.001	4~6	0.0005~0.001
0.1~0.29	5~15	0.002~0.01	5~12	0.001~0.005	2~8	0.0005~0.002	10~20	0.005~0.02
0.3~0.49	10~25	0.005~0.02	8~20	0.002~0.01	6~12	0.001~0.005	10~30	0.01~0.04
0.5~0.99	15~30	0.01~0.04	10~25	0.005~0.02	10~20	0.002~0.01	15~40	0.02~0.06
1.0~1.99	20~40	0.02~0.06	15~30	0.01~0.05	12~25	0.005~0.02	20~50	0.04~0.1
2.0~3.0	25~50	0.05~0.1	20~40	0.03~0.08	20~36	0.01~0.05	25~60	0.08~0.2
備考 Remarks	・工具取付時の振れを最小に抑えてください。 ・切削油を使用して下さい。				・Minimize Run out on fixing tool. ・Use Cutting Oil.			

KDR-DLC

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	アルミニウム合金 Aluminum Alloy ADC・AC		銅合金 Copper Alloy		樹脂 Rejin			
	刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	
0.03~0.09	04~06	0.0005~0.001	01~06	0.001~0.005	01~06	0.001~0.003		
0.1~0.29	10~20	0.005~0.02	05~10	0.002~0.008	06~14	0.005~0.010		
0.3~0.49	10~30	0.01~0.04	10~18	0.008~0.015	14~23	0.010~0.020		
0.5~0.99	15~40	0.02~0.06	18~30	0.015~0.040	23~30	0.020~0.040		
1.0~1.99	20~50	0.04~0.1	24~3000	0.040~0.080	30~38	0.050~0.070		
2.0~3.0	25~60	0.08~0.2	30~40	0.080~0.150	38~47	0.070~0.10		
備考 Remarks	・工具取付時の振れを最小に抑えてください。 ・切削油を使用して下さい。				・Minimize Run out on fixing tool. ・Use Cutting Oil.			

KCD-60、KCD-90、KCDA-60、KCDA-90

切削条件参考

Referential Cutting Conditions

- TiAlNコーティング付のKCDAは下記条件の20%~30%アップを推奨いたします。
KCDA with TiAlN coating shall be recommended to increase 20%~30% on the following conditions.

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		ステンレス鋼 Stainless Steel SUS303,SUS304,SUS416		鋳鉄 Cast iron FC・FCD		アルミニウム合金 Aluminum Alloy ADC・AC	
刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/rev	回転数 Revolution min ⁻¹	送り速度 Feed mm/rev	回転数 Revolution min ⁻¹	送り速度 Feed mm/rev	回転数 Revolution min ⁻¹	送り速度 Feed mm/rev	回転数 Revolution min ⁻¹	送り速度 Feed mm/rev
0.3	40,000	0.01 ~0.03	32,000	0.005~0.02	25,000	0.005~0.02	40,000	0.01 ~0.03	55,000	0.01~0.03
0.4	33,500	0.015~0.04	26,000	0.01 ~0.03	20,000	0.01 ~0.03	33,500	0.015~0.04	46,000	0.02~0.05
0.5	27,000	0.02 ~0.05	21,000	0.015~0.04	16,000	0.015~0.04	27,000	0.02 ~0.05	37,000	0.02~0.06
0.6	21,000	0.02 ~0.06	16,000	0.02 ~0.05	13,000	0.02 ~0.05	21,000	0.02 ~0.06	29,000	0.01~0.07
0.7	18,000	0.025~0.07	14,000	0.02 ~0.06	10,800	0.02 ~0.06	18,000	0.025~0.07	25,000	0.03~0.08
0.8	16,000	0.03 ~0.08	12,500	0.025~0.07	10,000	0.025~0.07	16,000	0.03 ~0.08	22,000	0.01~0.09
0.9	15,500	0.03 ~0.09	12,000	0.03 ~0.08	9,500	0.03 ~0.08	15,500	0.03 ~0.09	21,000	0.05~0.1
1.0	15,000	0.05 ~0.1	11,500	0.04 ~0.1	9,000	0.04 ~0.1	15,000	0.05 ~0.1	20,500	0.05~0.1
1.2	12,500	0.05 ~0.1	10,000	0.04 ~0.1	7,800	0.04 ~0.1	12,500	0.05 ~0.1	17,500	0.05~0.12
1.5	10,800	0.05 ~0.12	8,500	0.04 ~0.1	6,500	0.04 ~0.1	10,800	0.05 ~0.12	15,000	0.06~0.14
2.0	8,200	0.06 ~0.14	6,400	0.06 ~0.12	4,800	0.06 ~0.12	8,200	0.06 ~0.14	11,500	0.08~0.15
2.5	6,400	0.08 ~0.15	5,000	0.08 ~0.14	4,000	0.08 ~0.14	6,400	0.08 ~0.15	9,000	0.1 ~0.18
3.0	5,500	0.1 ~0.18	4,200	0.08 ~0.15	3,200	0.08 ~0.15	5,500	0.1 ~0.18	7,600	0.1 ~0.2
備考 Remarks	・回転数と送り速度は同じ割合で調整して下さい。・Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。・Use Cutting Oil.									

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KDD-2

切削条件参考

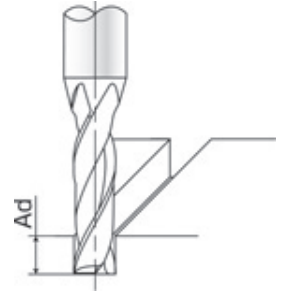
Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		ステンレス鋼 Stainless Steel SUS303,SUS304,SUS416		アルミニウム合金 Aluminum Alloy ADC・AC	
	刃 径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.5~0.95	15~30	0.01~0.02	10~20	0.007~0.015	6~15	0.001~0.005	40~60	0.06~0.15
1.0~1.95	25~40	0.02~0.04	10~20	0.01 ~0.02	10~20	0.005~0.02	60~80	0.1 ~0.2
2.0~2.95	25~40	0.04~0.06	15~25	0.02 ~0.04	20~30	0.01 ~0.03	60~80	0.1 ~0.2
3.0~3.95	30~40	0.06~0.08	20~30	0.04 ~0.06	20~30	0.03 ~0.05	60~80	0.1 ~0.2
4.0~4.95	30~40	0.08~0.1	20~30	0.05 ~0.08	20~30	0.04 ~0.06	60~80	0.1 ~0.2
5.0~6.0	30~45	0.1 ~0.12	20~30	0.05 ~0.1	20~30	0.05 ~0.1	80~100	0.2 ~0.3

KMSE-2

切削条件参考 Referential Cutting Conditions

刃 径 Flute Diameter	切込み深さ Cutting Depth Ad
$D < \varphi 0.2$	0.08D
$\varphi 0.2 \leq D < \varphi 1.0$	0.10D
$\varphi 1.0 \leq D$	0.30D

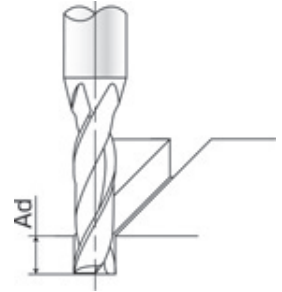


被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鑄 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.1 ~0.14	32,000	15	32,000	15	32,000	15	32,000	15
0.15~0.19	32,000	20	32,000	18	32,000	15	32,000	20
0.2 ~0.24	32,000	30	32,000	25	32,000	20	32,000	30
0.25~0.29	32,000	35	32,000	30	29,300	20	32,000	35
0.3 ~0.34	31,500	45	31,000	35	25,100	20	31,500	45
0.35~0.39	31,500	50	27,000	35	22,000	20	31,500	50
0.4 ~0.49	26,500	60	21,600	40	17,400	25	28,200	60
0.5 ~0.59	21,000	60	18,000	40	14,500	25	23,500	65
0.6 ~0.79	15,500	65	13,500	40	11,000	25	17,500	75
0.8 ~0.89	14,000	70	11,500	40	10,000	25	15,500	80
0.9 ~0.99	12,500	75	10,500	40	8,900	25	14,000	90
1 ~1.09	11,500	85	9,800	40	8,100	30	12,500	95
1.1 ~1.19	10,500	85	9,000	40	7,400	30	11,500	95
1.2 ~1.29	9,800	85	8,300	40	6,850	30	10,800	95
1.3 ~1.39	9,100	85	7,700	45	6,350	30	10,000	95
1.4 ~1.49	8,500	85	7,200	45	5,550	30	9,500	95
1.5 ~1.69	7,500	90	6,400	45	5,250	30	8,400	95
1.7 ~1.79	7,000	95	6,000	50	4,950	30	7,950	100
1.8 ~1.99	6,400	100	5,400	55	4,450	30	7,150	105
2 ~2.19	5,800	100	4,900	60	4,050	30	6,500	110
2.2 ~2.39	5,300	100	4,500	65	3,700	30	5,950	110
2.4 ~2.59	4,900	100	4,200	65	3,400	30	5,500	110
2.6 ~2.79	4,500	100	3,900	70	3,150	30	5,100	110
2.8 ~3	4,200	100	3,600	75	2,950	30	4,750	110
備 考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。・Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。・Use Cutting Oil. 							

KMSEA-2

切削条件参考 Referential Cutting Conditions

刃 径 Flute Diameter	切込み深さ Cutting Depth Ad
$D < \varphi 0.2$	0.05D
$\varphi 0.2 \leq D < \varphi 1.0$	0.1D
$\varphi 1.0 \leq D$	0.3D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鑄 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.1 ~ 0.14	32,000	15	32,000	15	32,000	10	32,000	15
0.15 ~ 0.19	32,000	20	32,000	20	32,000	15	32,000	20
0.2 ~ 0.24	32,000	50	32,000	45	32,000	30	32,000	50
0.25 ~ 0.29	32,000	60	32,000	55	32,000	30	32,000	60
0.3 ~ 0.34	32,000	70	32,000	60	32,000	40	32,000	70
0.35 ~ 0.39	32,000	80	32,000	70	32,000	45	32,000	80
0.4 ~ 0.49	32,000	85	32,000	80	32,000	50	32,000	85
0.5 ~ 0.59	32,000	85	29,500	80	25,000	60	32,000	85
0.6 ~ 0.79	32,000	85	24,500	80	21,000	60	32,000	85
0.8 ~ 0.89	24,500	90	18,500	80	15,500	70	24,500	90
0.9 ~ 0.99	22,000	90	16,500	80	14,000	70	22,000	90
1 ~ 1.09	19,500	100	14,500	80	12,500	75	19,500	100
1.1 ~ 1.19	18,400	100	13,700	80	11,800	75	18,400	100
1.2 ~ 1.29	17,300	100	12,900	80	11,100	75	17,300	100
1.3 ~ 1.39	16,200	100	12,100	90	10,400	75	16,200	100
1.4 ~ 1.49	15,100	110	11,300	90	9,700	75	15,100	110
1.5 ~ 1.69	14,000	110	10,500	90	8,900	75	14,000	110
1.7 ~ 1.79	13,000	120	9,800	100	8,300	75	13,000	120
1.8 ~ 1.99	12,000	120	9,100	100	7,600	75	12,000	120
2 ~ 2.19	11,000	130	8,400	110	7,000	75	11,000	130
2.2 ~ 2.39	10,000	130	7,900	110	6,600	75	10,000	130
2.4 ~ 2.59	9,000	140	7,400	120	6,200	80	9,000	140
2.6 ~ 2.79	8,000	140	6,900	120	5,800	80	8,000	140
2.8 ~ 3	7,400	150	6,350	130	5,300	90	7,400	150
備 考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。 ・切削油を使用して下さい。 				<ul style="list-style-type: none"> ・ Adjust Revolution and Feed Speed at the same rate. ・ Use Cutting Oil. 			

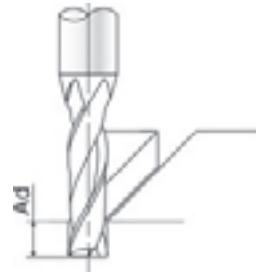
切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSE-2

切削条件参考 Referential Cutting Conditions

刃 径	切込み深さ Cutting Depth
Flute Diameter	Ad
D	0.3D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳 鉄 Cast iron FC・FCD		
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed m/min
	3.00~3.50	4,200	100	3,600	80	3,000	30	4,800	150
	3.51~4.00	3,200	100	2,700	80	2,200	30	3,600	150
	4.01~4.50	2,800	100	2,400	80	2,000	30	3,200	150
	4.51~5.00	2,500	100	2,150	80	1,750	30	2,850	160
	5.01~5.50	2,250	100	1,950	80	1,600	30	2,600	160
	5.51~6.00	2,100	100	1,800	80	1,500	30	2,400	180
備 考 Remarks	<ul style="list-style-type: none"> 回転数と送り速度は同じ割合で調整して下さい。 切削油を使用して下さい。 				<ul style="list-style-type: none"> Adjust Revolution and Feed Speed at the same rate. Use Cutting Oil. 				

KSEL-2

切削条件参考 Referential Cutting Conditions



刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	Ar	Ad
$D < \varphi 0.2$	0.05D	0.4D
$\varphi 0.2 \leq D < \varphi 1.0$	0.10D	0.4D
$\varphi 1.0 \leq D$	0.10D	0.8D

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鑄 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.1~0.2	32,000	15	32,000	15	32,000	15	32,000	15
0.3~0.4	19,000	20	19,000	20	19,000	20	19,000	20
0.5~0.6	13,000	25	13,000	25	10,000	20	13,000	25
0.7~0.8	9,600	30	9,600	30	7,400	20	9,600	30
0.9~1	7,500	40	7,500	40	5,800	25	7,500	40
1.1~1.2	6,200	40	6,200	40	4,800	25	6,200	40
1.3~1.4	5,300	40	5,300	40	4,100	30	5,300	40
1.5~1.6	4,600	40	4,600	40	3,600	30	4,600	40
1.7~1.8	4,100	40	4,100	40	3,200	30	4,100	40
1.9~2	3,700	40	3,700	40	2,800	30	3,700	40
2.1~2.2	3,300	50	3,300	50	2,600	35	3,300	50
2.3~2.4	3,000	50	3,000	50	2,400	35	3,000	50
2.5~2.6	2,800	55	2,800	55	2,200	40	2,800	55
2.7~2.8	2,600	55	2,600	55	2,000	40	2,600	55
2.9~3	2,500	55	2,500	55	1,900	40	2,500	60
3.1~3.5	2,100	55	2,000	55	1,600	40	2,200	60
3.6~4	1,750	55	1,550	50	1,250	40	1,950	80
4.1~4.5	1,550	55	1,400	50	1,100	40	1,700	80
4.6~5	1,400	55	1,250	50	1,000	40	1,550	80
5.1~5.5	1,200	55	1,150	50	920	40	1,400	80
5.6~6	1,100	55	1,050	50	845	40	1,300	80
備 考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。・Adjust Revolution and Feed Speed at the same rate. ・刃長により回転数、送り速度を調整して下さい。・Adjust Revolution and Feed Speed according to Flute Length. ・切削油を使用して下さい。・Use Cutting Oil. 							

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSEA-2

切削条件参考 Referential Cutting Conditions



刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	Ar	Ad
D	0.1D	0.8D

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
1	12,500	45	11,000	40	8,900	30	12,500	45
1.5	8,000	55	7,000	50	5,500	40	8,000	55
2	6,300	60	5,500	55	4,400	45	6,300	60
3	4,200	80	3,700	70	2,900	60	4,200	80
4	3,200	90	3,000	80	2,300	65	3,200	90
備 考 Remarks	<ul style="list-style-type: none"> • 回転数と送り速度は同じ割合で調整して下さい。 • Adjust Revolution and Feed Speed at the same rate. • 刃長により回転数、送り速度を調整して下さい。 • Adjust Revolution and Feed Speed according to Flute Length. (上記は5D程度の条件) The above list is shown in case of the cutting conditions of around 5D. • 切削油を使用して下さい。 • Use Cutting Oil. 							

切削条件参考・超硬

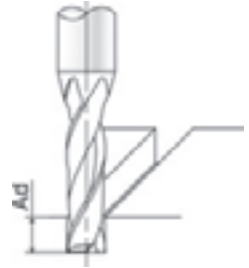
Referential
Cutting
Conditions
Tungsten
Carbide

KSET-2

切削条件参考

Referential Cutting Conditions

刃 径 Flute Diameter	切込み深さ Cutting Depth
	Ad
$D < \varphi 0.2$	0.05D
$\varphi 0.2 \leq D < \varphi 1.0$	0.1D
$\varphi 1.0 \leq D$	0.3D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.1	32,000	20	32,000	20	32,000	15
0.2	32,000	30	32,000	30	32,000	25
0.3	32,000	35	32,000	35	31,500	25
0.4	32,000	60	31,500	50	24,000	45
0.5	31,500	80	25,500	60	19,000	45
0.6	26,500	100	21,000	60	16,000	45
0.7	22,700	100	18,000	60	13,500	45
0.8	20,000	100	16,000	75	12,000	50
0.9	18,000	100	14,100	75	10,600	50
1	16,000	100	12,700	95	9,500	50
1.1	14,500	100	11,500	95	8,600	55
1.2	13,200	100	10,500	95	7,900	55
1.3	12,200	100	9,800	95	7,300	55
1.4	11,300	100	9,000	95	6,800	55
1.5	10,500	100	8,500	95	6,300	55
1.6	10,000	100	8,000	100	5,900	55
1.7	9,300	100	7,500	100	5,600	55
1.8	8,800	100	7,000	105	5,300	55
1.9	8,400	100	6,700	105	5,000	55
2	8,000	135	6,300	110	4,700	55
2.1	7,500	135	6,000	110	4,500	55
2.2	7,200	140	5,800	115	4,300	55
2.3	6,900	145	5,500	115	4,100	55
2.4	6,600	145	5,300	120	3,900	55
2.5	6,300	150	5,100	120	3,800	55
2.6	6,100	155	4,900	120	3,600	55
2.7	5,900	160	4,700	125	3,500	55
2.8	5,700	160	4,500	125	3,400	55
2.9	5,500	165	4,400	125	3,300	55
3	5,300	170	4,200	125	3,200	55
3.5	4,500	170	3,600	125	2,700	55
4	4,000	170	3,200	125	2,300	60

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSET-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT	
刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
4.5	3,500	170	2,800	125	2,100	60
5	3,200	170	2,500	125	1,900	60
5.5	2,900	170	2,300	125	1,700	60
6	2,600	170	2,100	125	1,600	60
備 考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。・ Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。・ Use Cutting Oil. 					

KMSEA-4

切削条件参考
Referential Cutting Conditions



刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	Ar	Ad
$D < \varphi 0.8$	0.05D	0.4D
$\varphi 0.8 \leq D < \varphi 1$	0.1D	0.4D
$\varphi 1 \leq D$	0.1D	0.8D

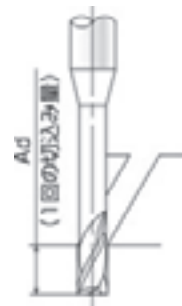
被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.5~0.7	26,000	160	20,000	170	16,500	135	26,000	160
0.8~0.9	22,000	170	16,500	170	14,000	135	22,000	170
1 ~1.1	18,400	180	13,700	170	11,800	135	18,400	180
1.2~1.3	16,200	200	12,100	170	10,400	135	16,200	200
1.4~1.5	14,000	210	10,500	170	8,900	135	14,000	210
1.6~1.7	13,000	220	9,800	170	8,300	135	13,000	220
1.8~1.9	12,000	220	9,100	170	7,600	135	12,000	220
2 ~2.1	11,000	240	8,400	180	7,000	135	11,000	240
2.2~2.3	10,000	240	7,900	180	6,600	135	10,000	240
2.4~2.5	9,000	250	7,400	200	6,200	150	9,000	250
2.6~2.7	8,000	250	6,900	200	5,800	150	8,000	250
2.8~3.0	7,400	270	6,350	210	5,300	160	7,400	270
備 考 Remarks	・回転数と送り速度は同じ割合で調整して下さい。・Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。・Use Cutting Oil.							

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KRE-2

切削条件参考 Referential Cutting Conditions



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材			合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD			プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		
	刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad
0.2	32,000	15~30	0.003 ~0.006	32,000	15~30	0.003 ~0.006	32,000	15~30	0.003 ~0.006
0.3	32,000	20~50	0.003 ~0.009	32,000	20~50	0.003 ~0.009	31,000	20~50	0.003 ~0.009
0.4	32,000	50~120	0.003 ~0.012	31,500	50~120	0.003 ~0.012	22,000	50~120	0.003 ~0.012
0.5	32,000	140~250	0.003 ~0.018	25,500	140~250	0.003 ~0.018	18,000	140~250	0.003 ~0.018
0.6	26,500	160~300	0.006 ~0.025	21,000	160~300	0.006 ~0.025	15,000	160~300	0.006 ~0.025
0.7	22,500	160~350	0.02 ~0.04	18,000	160~350	0.02 ~0.04	13,500	160~350	0.02 ~0.04
0.8	20,000	160~400	0.02 ~0.05	15,900	160~400	0.02 ~0.05	11,500	160~400	0.02 ~0.05
0.9	17,500	180~450	0.02 ~0.05	14,000	180~450	0.02 ~0.05	10,500	180~450	0.02 ~0.05
1	16,000	180~500	0.02 ~0.05	12,700	180~500	0.02 ~0.05	9,550	180~500	0.02 ~0.05
1.1~1.4	12,800	180~500	0.02 ~0.08	10,500	180~500	0.02 ~0.08	8,500	180~500	0.02 ~0.08
1.5	10,500	200~600	0.03 ~0.1	8,400	200~600	0.03 ~0.1	6,000	200~600	0.03 ~0.1
1.6~1.9	9,500	200~600	0.03 ~0.12	7,500	200~600	0.03 ~0.12	5,400	200~600	0.03 ~0.12
2	8,000	200~600	0.05 ~0.15	6,400	200~600	0.05 ~0.15	4,800	200~600	0.05 ~0.15
2.1~2.4	7,200	200~600	0.05 ~0.15	5,600	200~600	0.05 ~0.15	4,200	200~600	0.05 ~0.15
2.5	6,500	200~600	0.05 ~0.2	5,200	200~600	0.05 ~0.2	3,800	200~600	0.05 ~0.2
2.6~2.9	5,800	200~600	0.05 ~0.2	4,600	200~600	0.05 ~0.2	3,500	200~600	0.05 ~0.2
3	5,000	200~600	0.05 ~0.25	4,200	200~600	0.05 ~0.25	3,150	200~600	0.05 ~0.25
3.1~3.4	4,600	200~600	0.05 ~0.25	3,800	200~600	0.05 ~0.25	3,000	200~600	0.05 ~0.25

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KRE-2

切削条件参考

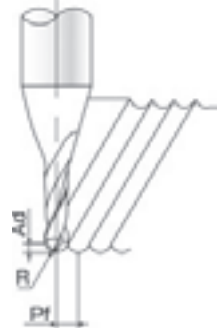
Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材			合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD			プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	Ad
3.5	4,500	200~600	0.05 ~0.3	3,600	200~600	0.05 ~0.3	2,800	200~600	0.05 ~0.3
3.6~3.9	4,400	200~600	0.05 ~0.3	3,500	200~600	0.05 ~0.3	2,600	200~600	0.05 ~0.3
4	4,200	150~500	0.05 ~0.4	3,300	150~500	0.05 ~0.4	2,500	150~500	0.05 ~0.4
4.1~4.4	4,200	150~500	0.05 ~0.4	3,300	150~500	0.05 ~0.4	2,500	150~500	0.05 ~0.4
4.5	4,000	150~500	0.05 ~0.4	3,200	150~500	0.05 ~0.4	2,400	150~500	0.05 ~0.4
4.6~4.9	3,800	150~500	0.05 ~0.4	3,000	150~500	0.05 ~0.4	2,200	150~500	0.05 ~0.4
5	3,600	150~500	0.05 ~0.5	2,800	150~500	0.05 ~0.5	2,100	150~500	0.05 ~0.5
5.1~5.4	3,600	150~500	0.05 ~0.5	2,800	150~500	0.05 ~0.5	2,100	150~500	0.05 ~0.5
5.5	3,400	150~500	0.05 ~0.5	2,600	150~500	0.05 ~0.5	2,000	150~500	0.05 ~0.5
5.6~5.9	3,200	150~500	0.05 ~0.5	2,500	150~500	0.05 ~0.5	2,000	150~500	0.05 ~0.5
6	3,200	150~500	0.05 ~0.5	2,500	150~500	0.05 ~0.5	2,000	150~500	0.05 ~0.5
備 考 Remarks	<ul style="list-style-type: none"> • 有効長により回転数、送り速度を調整して下さい。 • Adjust Revolution and Feed Speed according to Effective Length. • 回転数と送り速度は同じ割合で調整して下さい。 • Adjust Revolution and Feed Speed at the same rate. • 切削油を使用して下さい。 • Use Cutting Oil. 								

KMBE-2

切削条件参考

Referential Cutting Conditions



R	切込み深さ Cutting Depth	ピックフィード Pick Feed
	Ad	Pf
R < 0.4	0.05D	0.2D
0.4 ≤ R	0.10D	0.2D

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳鉄 Cast iron FC・FCD	
	R Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
R0.1	32,000	65	32,000	45	29,200	15	32,000	65
R0.15	32,000	75	29,200	50	19,500	20	32,000	75
R0.2	27,400	95	22,000	50	15,000	20	27,400	95
R0.25	26,300	100	21,900	55	14,600	20	26,300	100
R0.3	21,900	105	18,500	60	12,200	25	21,900	110
R0.4	16,500	105	11,500	60	9,900	30	16,500	110
R0.5	13,000	105	9,500	60	7,950	30	13,000	110
R0.6	11,000	105	7,950	65	6,600	30	11,000	115
R0.7	9,500	110	6,800	65	5,650	30	9,500	120
R0.8	8,350	115	5,950	70	4,950	30	8,350	125
R0.9	7,400	115	5,300	75	4,400	35	7,400	130
R1	6,650	115	4,750	80	3,950	40	6,650	135
R1.1	6,050	120	4,300	85	3,600	40	6,050	140
R1.2	5,550	120	3,950	85	3,300	40	5,550	140
R1.3	5,100	120	3,650	85	3,050	40	5,100	140
R1.4	4,750	125	3,400	90	2,800	40	4,750	140
R1.5	4,450	130	3,150	90	2,650	40	4,450	140
備考 Remarks	<ul style="list-style-type: none"> 回転数と送り速度は同じ割合で調整して下さい。 ピックフィードは要求品質に合わせて調整して下さい。 切削油を使用して下さい。 				<ul style="list-style-type: none"> Adjust Revolution and Feed Speed at the same rate. Adjust Pick Feed according to Required Quality. Use Cutting Oil. 			

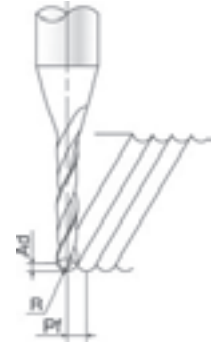
切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KLB-2

切削条件参考 Referential Cutting Conditions

R	切込み深さ Cutting Depth	ピックフィード Pick Feed
	Ad	Pf
R < 0.5	0.02D	0.1D
0.5 ≤ R	0.04D	0.1D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳鉄 Cast iron FC・FCD	
	R Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
R0.1	32,000	25	32,000	20	32,000	10	32,000	25
R0.2	32,000	43	23,000	26	19,800	15	32,000	45
R0.3	18,500	43	13,100	26	11,300	15	18,500	45
R0.4	14,500	43	10,200	26	8,800	15	14,500	45
R0.5	13,000	43	9,500	26	7,950	15	13,000	45
R1	6,650	46	4,750	35	3,950	20	6,650	55
R1.5	4,450	55	3,150	40	2,650	20	4,450	60
R2	4,450	55	3,150	40	2,650	20	4,450	60
R3	4,450	55	3,150	40	2,650	20	4,450	60
備考 Remarks	<ul style="list-style-type: none"> • 回転数と送り速度は同じ割合で調整して下さい。 • ピックフィードは要求品質に合わせて調整して下さい。 • 刃長により回転数、送り速度を調整して下さい。 • 切削油を使用して下さい。 				<ul style="list-style-type: none"> • Adjust Revolution and Feed Speed at the same rate. • Adjust Pick Feed according to Required Quality. • Adjust Revolution and Feed Speed according to Flute Length. • Use Cutting Oil. 			

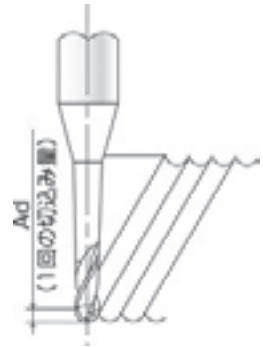
切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KTBL-2

切削条件参考 Referential Cutting Conditions

R	切込み深さ Cutting Depth	ピックフィード Pick Feed
	Ad	Pf
R < 0.5	0.05D	0.10D
0.5 ≤ R	0.08D	0.15D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳鉄 Cast iron FC・FCD	
	R Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
R0.1	32,000	32	32,000	20	29,200	10	32,000	32
R0.15	32,000	38	29,200	24	19,500	12	32,000	38
R0.2	27,400	48	22,000	24	15,000	12	27,400	48
R0.25	26,300	50	21,800	28	14,600	14	26,300	50
R0.3	21,900	52	18,500	32	12,200	16	21,900	56
R0.4	16,500	52	11,500	32	10,000	16	16,500	56
R0.5	13,000	52	9,500	32	7,950	16	13,000	56
R1	6,650	56	4,750	40	3,950	20	6,650	64
R1.5	6,000	56	4,500	40	3,750	20	6,000	64
R2	5,300	52	4,300	32	3,600	16	5,300	56
R2.5	5,100	52	3,650	32	3,050	16	5,100	56
R3	4,450	52	3,150	32	2,650	16	4,450	56
備考 Remarks	<ul style="list-style-type: none"> 有効長により回転数、送り速度を調整して下さい。 • Adjust Revolution and Feed Speed according to Effective Length. ピックフィードは要求品質に合わせて調整して下さい。 • Adjust Pick Feed according to Required Quality. 切削油を使用して下さい。 • Use Cutting Oil. 							

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSER-2

切削条件参考 Referential Cutting Conditions



刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	$\varphi 1 \leq D$	Ar	Ad

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳 鉄 Cast iron FC・FCD		
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
	1	13,500	50	11,500	45	8,600	35	13,500	50
	1.5	8,700	65	7,500	55	6,000	45	8,700	65
	2	6,800	70	5,900	60	4,700	50	6,800	70
	3	4,600	90	4,000	75	3,200	65	4,600	90
	4	3,500	100	3,200	90	2,500	70	3,500	100
備 考 Remarks	<ul style="list-style-type: none"> 回転数と送り速度は同じ割合で調整して下さい。 刃長により回転数、送り速度を調整して下さい。 (上記は 5D 程度の条件) 切削油を使用して下さい。 				<ul style="list-style-type: none"> Adjust Revolution and Feed Speed at the same rate. Adjust Revolution and Feed Speed according to Flute Length. The above list is shown in case of the cutting conditions of around 5D. Use Cutting Oil. 				

KSRA-2

切削条件参考

Referential Cutting Conditions

刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	Ar	Ad
$D < \varphi 1$	0.1D	0.4D
$\varphi 1 \leq D$	0.1D	1.5D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鋳 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
0.5	32,000	115	29,500	115	25,000	80	32,000	115
0.6	32,000	115	24,500	115	21,000	85	32,000	115
0.7	32,000	115	24,500	115	21,000	85	32,000	115
0.8	24,500	115	18,500	115	15,500	90	24,500	115
0.9	22,000	115	16,500	115	14,000	90	22,000	115
1	19,500	120	14,500	115	12,500	90	19,500	120
1.5	14,000	140	10,500	115	8,900	90	14,000	140
2	11,000	160	8,400	120	7,000	90	11,000	160
2.5	9,000	170	7,400	130	6,200	95	9,000	170
3	7,400	180	6,350	140	5,300	100	7,400	180

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSRA-4

切削条件参考
Referential Cutting Conditions

刃 径 Flute Diameter	切込み巾 Cutting Width	切込み深さ Cutting Depth
	Ar	Ad
D	0.1D	0.8D



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT		鑄 鉄 Cast iron FC・FCD	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
1	18,400	180	13,700	170	11,800	135	18,400	180
1.5	14,000	210	10,500	170	8,900	135	14,000	210
2	11,000	240	8,400	180	7,000	135	11,000	240
2.5	9,000	250	7,400	200	6,200	150	9,000	250
3	7,400	270	6,350	210	5,300	160	7,400	270

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSR-2、KSC-2

切削条件参考

Referential Cutting Conditions



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・ General Structural Steel S55C・SS材		合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD		プリハードン鋼 Pre-Harden Steel HPM-1・NAK55・SKT	
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min
1	16,000	70	12,700	65	9,500	35
1.5	10,500	70	8,500	65	6,300	35
2	8,000	95	6,300	75	4,700	35
2.5	6,300	105	5,100	85	3,800	35
3	5,300	120	4,200	90	3,200	35
4	4,000	120	3,200	90	2,300	40
6	2,600	120	2,100	90	1,600	40
備 考 Remarks	・回転数と送り速度は同じ割合で調整して下さい。・Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。・Use Cutting Oil.					







切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSV-2

切削条件参考 Referential Cutting Conditions

◆加工例 Cutting Sample

適用 Application						
	面取り加工 Chamfer Cutting	側面加工 Side Cutting	V溝加工 V Groove Cutting	皿面取り加工 Recess Cutting	センターモミ加工 Center Cutting	穴あけ加工 Drilling
型番 Model						
KSV-2 30° 45° 60° 70°	○	○	×	○	×	×
KSV-2 80° 90°	○	○	○	○	□	△
KSV-2 120°	○	○	○	○	○	○

○印は適合、□印は非鉄・鋳鉄などに適合、△印は厚みの薄い物に使用可、×印は不適合です。
Mark○ : Available、Mark□ : Available for Non-Ferrous Metal and Cast Iron、Mark△ : Available for Thin Workpiece、Mark× : Not Available

◆切削条件表 Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材						合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD					
	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V Groove Cutting		センターモミ・穴あけ Center Cutting Drilling		面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.5~0.6	10~18	0.002 ~0.01	10~18	0.002 ~0.01	10~18	0.01 ~0.02	10~18	0.002 ~0.01	8~15	0.001 ~0.003	8~15	0.004 ~0.01
0.7~0.9	15~25	0.006 ~0.02	15~25	0.006 ~0.02	15~25	0.01 ~0.03	10~18	0.006 ~0.02	10~18	0.001 ~0.003	10~18	0.006 ~0.02
1~2	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.008 ~0.02
2~3	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.01 ~0.03
3~4	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.01 ~0.03
4~5	20~30	0.01 ~0.04	20~30	0.01 ~0.04	20~30	0.02 ~0.05	15~25	0.008 ~0.03	15~25	0.003 ~0.01	15~25	0.01 ~0.04
5~6	20~30	0.02 ~0.05	20~30	0.02 ~0.05	20~30	0.02 ~0.05	15~25	0.008 ~0.03	15~25	0.003 ~0.01	15~25	0.01 ~0.04

KSV-2

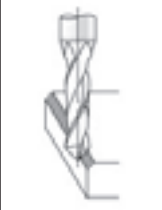

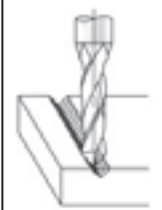
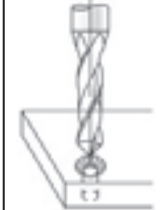
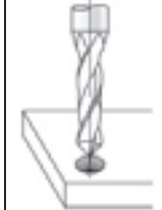
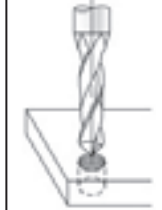
被削材 Workpiece	アルミニウム合金 Aluminum Alloy ADC・AC						鋳 鉄 Cast Iron FC・FCD					
	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V Groove Cutting		センターモミ・穴あけ Center Cutting Drilling		面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃 径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.5~0.6	25~35	0.006 ~0.016	25~35	0.006 ~0.016	25~35	0.02 ~0.04	25~35	0.006 ~0.016	25~35	0.006 ~0.016	25~35	0.01 ~0.03
0.7~0.9	30~40	0.01 ~0.02	30~40	0.01 ~0.02	30~40	0.03 ~0.07	30~40	0.01 ~0.02	30~40	0.01 ~0.02	30~40	0.01 ~0.03
1 ~2	40~80	0.02 ~0.04	40~80	0.02 ~0.04	40~80	0.04 ~0.08	30~40	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.03 ~0.06
2 ~3	40~80	0.02 ~0.04	40~80	0.02 ~0.04	40~80	0.06 ~0.1	30~45	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.06 ~0.08
3 ~4	40~80	0.02 ~0.04	40~80	0.02 ~0.04	40~80	0.06 ~0.1	30~45	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.06 ~0.08
4 ~5	40~80	0.02 ~0.05	40~80	0.02 ~0.05	40~80	0.06 ~0.12	30~50	0.02 ~0.05	30~50	0.02 ~0.05	30~50	0.06 ~0.1
5 ~6	40~80	0.02 ~0.05	40~80	0.02 ~0.05	40~80	0.06 ~0.12	30~50	0.02 ~0.05	30~50	0.02 ~0.05	30~50	0.06 ~0.1

備 考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。 ・切削油を使用して下さい。 	<ul style="list-style-type: none"> ・Adjust Revolution and Feed Speed at the same rate. ・Use Cutting Oil.
----------------	--	--

KSVA-2

切削条件参考
Referential Cutting Conditions

◆加工例 Cutting Sample

適用 Application						
	面取り加工 Chamfer Cutting	側面加工 Side Cutting	V溝加工 V Groove Cutting	皿面取り加工 Recess Cutting	センターモミ加工 Center Cutting	穴あけ加工 Drilling
型番 Model						
KSVA-2 60°	○	○	×	○	×	×
KSVA-2 90°	○	○	○	○	□	△
KSVA-2 120°	○	○	○	○	○	○

○印は適合、□印は非鉄・鋳鉄などに適合、△印は厚みの薄い物に使用可、×印は不適合です。
Mark○ : Available、Mark□ : Available for Non - Ferrous Metal and Cast Iron、Mark△ : Available for Thin Workpiece、Mark× : Not Available

◆切削条件表 Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材						合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD					
	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V Groove Cutting		センターモミ・穴あけ Center Cutting Drilling		面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.5~0.6	10~18	0.002 ~0.01	10~18	0.002 ~0.01	10~18	0.01 ~0.02	10~18	0.002 ~0.01	8~15	0.001 ~0.003	8~15	0.004 ~0.01
0.7~0.9	15~25	0.006 ~0.02	15~25	0.006 ~0.02	15~25	0.01 ~0.03	10~18	0.006 ~0.02	10~18	0.001 ~0.003	10~18	0.006 ~0.02
1~2	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.008 ~0.02
2~3	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.01 ~0.03
3~4	15~25	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	10~20	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.01 ~0.03
4~5	20~30	0.01 ~0.04	20~30	0.01 ~0.04	20~30	0.02 ~0.05	15~25	0.008 ~0.03	15~25	0.003 ~0.01	15~25	0.01 ~0.04
5~6	20~30	0.02 ~0.05	20~30	0.02 ~0.05	20~30	0.02 ~0.05	15~25	0.008 ~0.03	15~25	0.003 ~0.01	15~25	0.01 ~0.04

KSVA-2

被削材 Workpiece	鑄 鉄 Cast Iron FCT・FCD					
加工種類 Kinds of Processing	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃 径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.5~0.6	25~35	0.006~0.016	25~35	0.006~0.016	25~35	0.01~0.03
0.7~0.9	30~40	0.01 ~0.02	30~40	0.01 ~0.02	30~40	0.01~0.03
1 ~2	30~40	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.03~0.06
2 ~3	30~45	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.06~0.08
3 ~4	30~45	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.06~0.08
4 ~5	30~50	0.02 ~0.05	30~50	0.02 ~0.05	30~50	0.06~0.1
5 ~6	30~50	0.02 ~0.05	30~50	0.02 ~0.05	30~50	0.06~0.1
備 考 Remarks	・回転数と送り速度は同じ割合で調整して下さい。 ・Adjust Revolution and Feed Speed at the same rate. ・切削油を使用して下さい。 ・Use Cutting Oil.					



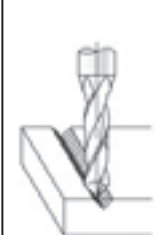
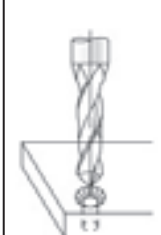
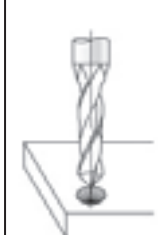
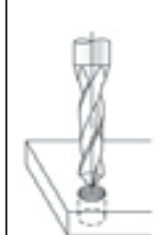
切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KSVRA-2

切削条件参考 Referential Cutting Conditions

◆加工例 Cutting Sample

適用 Application						
	面取り加工 Chamfer Cutting	側面加工 Side Cutting	V溝加工 V Groove Cutting	皿面取り加工 Recess Cutting	センターモミ加工 Center Cutting	穴あけ加工 Drilling
KSVRA-2 60°	○	○	×	○	×	×
KSVRA-2 90°	○	○	○	○	□	△
KSVRA-2 120°	○	○	○	○	○	○

○印は適合、□印は非鉄・鋳鉄などに適合、△印は厚みの薄い物に使用可、×印は不適合です。

Mark○ : Available、Mark□ : Available for Non - Ferrous Metal and Cast Iron、Mark△ : Available for Thin Workpiece、Mark× : Not Available

◆切削条件表 Referential Cutting Conditions

被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材						合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD					
	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling		面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
1	20~35	0.015 ~0.035	20~35	0.015 ~0.035	20~35	0.025 ~0.045	15~30	0.01 ~0.025	15~30	0.003 ~0.008	15~30	0.01 ~0.03
1.5	20~35	0.015 ~0.035	20~35	0.015 ~0.035	20~35	0.025 ~0.045	15~30	0.01 ~0.025	15~30	0.003 ~0.008	15~30	0.01 ~0.03
2	20~35	0.015 ~0.035	20~35	0.015 ~0.035	20~35	0.025 ~0.045	15~30	0.01 ~0.025	15~30	0.003 ~0.008	15~30	0.015 ~0.04
3	20~35	0.015 ~0.035	20~35	0.015 ~0.035	20~35	0.025 ~0.045	15~30	0.01 ~0.025	15~30	0.003 ~0.008	15~30	0.015 ~0.04
4	25~40	0.02 ~0.05	25~40	0.02 ~0.05	25~40	0.03 ~0.06	20~35	0.01 ~0.035	20~35	0.008 ~0.02	20~35	0.02 ~0.05
5	25~40	0.02 ~0.05	25~40	0.02 ~0.05	25~40	0.03 ~0.06	20~35	0.01 ~0.035	20~35	0.008 ~0.02	20~35	0.02 ~0.05
6	25~40	0.03 ~0.06	25~40	0.03 ~0.06	25~40	0.03 ~0.06	20~35	0.01 ~0.035	20~35	0.008 ~0.02	20~35	0.02 ~0.05

KSVRA-2

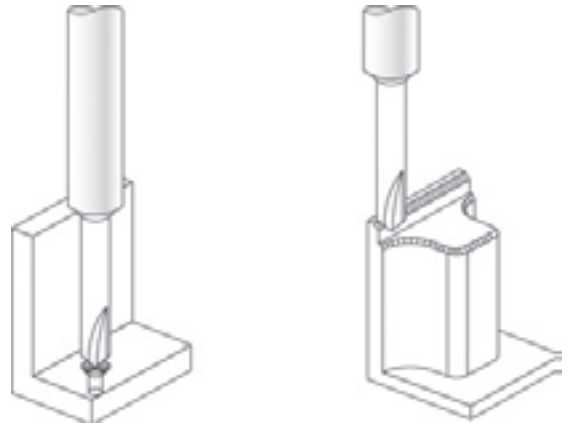
被削材 Workpiece	鋳 鉄 Cast Iron FCT・FCD					
加工種類 Kinds of Processing	面取り・側面加工 Chamfer Cutting Side Cutting		V溝加工 V groove Cutting		センターモミ・穴あけ Center Cutting Drilling	
刃 径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
1	45~70	0.03~0.05	45~70	0.03~0.05	45~70	0.04~0.07
1.5	45~70	0.03~0.05	45~70	0.03~0.05	45~70	0.04~0.07
2	45~70	0.03~0.05	45~70	0.03~0.05	45~70	0.04~0.07
3	45~70	0.03~0.05	45~70	0.03~0.05	45~70	0.07~0.1
4	45~80	0.03~0.06	45~80	0.03~0.06	45~80	0.07~0.1
5	45~80	0.03~0.06	45~80	0.03~0.06	45~80	0.07~0.12
6	45~80	0.03~0.06	45~80	0.03~0.06	45~80	0.07~0.12
備 考 Remarks	・回転数と送り速度は同じ割合で調整して下さい。 ・切削油を使用して下さい。			・Adjust Revolution and Feed Speed at the same rate. ・Use Cutting Oil.		

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KMC-2

切削条件参考 Referential Cutting Conditions



被削材 Workpiece	炭素鋼・一般構造用鋼 Carbon Steel・General Structural Steel S55C・SS材						合金鋼・工具鋼 Alloy Steel・Tool Steel SCM・SKT・SKS・SKD					
	面取り Chamfer Cutting		V溝加工 V Groove Cutting		センターモミ Center Cutting		面取り Chamfer Cutting		V溝加工 V groove Cutting		センターモミ Center Cutting	
刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.3~0.4	10~18	0.001 ~0.008	8~15	0.001 ~0.008	8~15	0.001 ~0.016	10~18	0.001 ~0.008	8~15	0.001 ~0.002	8~15	0.003 ~0.008
0.5~0.6	12~20	0.002 ~0.01	10~18	0.002 ~0.01	10~18	0.01 ~0.02	12~20	0.002 ~0.01	8~15	0.001 ~0.003	8~15	0.004 ~0.01
0.7~0.9	18~30	0.006 ~0.02	15~25	0.006 ~0.02	15~25	0.01 ~0.03	12~20	0.006 ~0.02	10~18	0.001 ~0.003	10~18	0.006 ~0.02
1 ~2	18~30	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	12~25	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.008 ~0.02
2 ~3	18~30	0.01 ~0.03	15~25	0.01 ~0.03	15~25	0.02 ~0.04	12~25	0.006 ~0.02	10~20	0.002 ~0.005	10~20	0.01 ~0.03
4	20~35	0.012 ~0.036	18~30	0.012 ~0.036	18~30	0.024 ~0.048	15~30	0.007 ~0.024	12~24	0.002 ~0.06	12~24	0.012 ~0.036

被削材 Workpiece	アルミニウム合金 Aluminum Alloy ADC・AC						鋳鉄 Cast Iron FC・FCD					
	面取り Chamfer Cutting		V溝加工 V Groove Cutting		センターモミ Center Cutting		面取り Chamfer Cutting		V溝加工 V groove Cutting		センターモミ Center Cutting	
刃径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
0.3~0.4	25~35	0.005 ~0.013	20~28	0.005 ~0.013	20~28	0.016 ~0.032	25~35	0.007 ~0.013	20~28	0.005 ~0.013	20~28	0.008 ~0.024
0.5~0.6	30~40	0.006 ~0.016	25~35	0.006 ~0.016	25~35	0.02 ~0.04	30~42	0.006 ~0.016	25~35	0.006 ~0.016	25~35	0.01 ~0.03
0.7~0.9	35~45	0.01 ~0.02	30~40	0.01 ~0.02	30~40	0.03 ~0.07	35~45	0.01 ~0.02	30~40	0.01 ~0.02	30~40	0.01 ~0.03

切削条件参考・超硬

Referential
Cutting
Conditions
Tungsten
Carbide

KMC-2

被削材 Workpiece	アルミニウム合金 Aluminum Alloy ADC・AC						鋳 鉄 Cast Iron FC・FCD					
	面取り Chamfer Cutting		V溝加工 V Groove Cutting		センターモミ Center Cutting		面取り Chamfer Cutting		V溝加工 V groove Cutting		センターモミ Center Cutting	
刃 径 Flute Diameter mm	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
1~2	45~95	0.02 ~0.04	40~80	0.02 ~0.04	40~80	0.04 ~0.08	35~55	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.03 ~0.06
2~3	45~95	0.02 ~0.04	40~80	0.02 ~0.04	40~80	0.06 ~0.1	35~55	0.02 ~0.04	30~45	0.02 ~0.04	30~45	0.06 ~0.08
4	55~110	0.024 ~0.048	45~95	0.024 ~0.048	45~95	0.072 ~0.12	40~65	0.024 ~0.048	35~55	0.024 ~0.048	35~55	0.072 ~0.096

備 考 Remarks	<ul style="list-style-type: none"> 加工形状により切削速度、送り速度を調整して下さい。 切削油を使用して下さい。 	<ul style="list-style-type: none"> Adjust Revolution and Feed Speed at the same rate. Use Cutting Oil.
----------------	---	--

KUMC-4、KUMW-4

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev
炭素工具鋼 Carbon Tool Steel	30～ 60	0.05 ～0.12
鋳 鉄 Cast Iron	30～ 80	0.05 ～0.12
合金鋼 Alloy Steel	25～ 70	0.03 ～0.08
プリハードン鋼 Pre-Harden Steel	15～ 40	0.02 ～0.06
ステンレス Stainless Steel	20～ 50	0.025～0.06
銅・銅合金 Copper and Copper Alloy	25～ 80	0.05 ～0.1
チタン合金 Titanium Alloy	15～ 30	0.02 ～0.05
アルミ合金 Aluminum Alloy	50～100	0.05 ～0.15
樹脂 Resin	50～120	0.1 ～0.2
備考 Remarks	<ul style="list-style-type: none"> 加工形状により切削速度、送り速度を調整して下さい。 Adjust Revolution and Feed Speed at the same rate. 	

KHR-4、KHRA-4

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	リーマ代 Reamer Stock Removal mm	推奨切削油 Recommendable Cutting Oil
炭素工具鋼 Carbon Tool Steel	10~30	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
鑄鉄 Cast Iron	10~30	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
合金鋼 Alloy Steel	10~30	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
プリハードン鋼 Pre-Harden Steel	10~30	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
ステンレス Stainless Steel	5~20	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
銅・銅合金 Copper and Copper Alloy	20~30	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
チタン合金 Titanium Alloy	5~15	0.01~0.3	0.05~0.3	水溶性 Water Soluable
アルミ合金 Aluminum Alloy	20~40	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
樹脂 Resin	15~20	0.01~0.3	0.05~0.3	不水溶性 Non-Water Soluable
備考 Remarks	・使用する機械により切削速度、送り、仕上代を調整して下さい。 ・ Adjust Cutting Speed, Feed and Finishing Stock Removal according to Using Machine			

KSHR-4

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	切削速度 Cutting Speed m/min	送り速度 Feed mm/rev	リーマ代 Reamer Stock Removal mm	推奨切削油 Recommendable Cutting Oil
炭素工具鋼 Carbon Tool Steel	5~15	0.05~0.15	0.05~0.1	不水溶性 Non-Water Soluable
鑄鉄 Cast Iron	10~25	0.05~0.15	0.05~0.1	不水溶性 Non-Water Soluable
合金鋼 Alloy Steel	5~20	0.05~0.15	0.05~0.1	不水溶性 Non-Water Soluable
プリハードン鋼 Pre-Harden Steel	3~10	0.05以下	0.05~0.1	不水溶性 Non-Water Soluable
ステンレス Stainless Steel	5~15	0.05~0.1	0.05~0.1	不水溶性 Non-Water Soluable
銅・銅合金 Copper and Copper Alloy	15~30	0.05~0.1	0.1	不水溶性 Non-Water Soluable
チタン合金 Titanium Alloy	3~10	0.05以下	0.05~0.1	水溶性 Water Soluable
アルミ合金 Aluminum Alloy	20~40	0.05	0.1 ~0.2	不水溶性 Non-Water Soluable
樹脂 Resin	15~20	0.1 ~0.15	0.1 ~0.2	不水溶性 Non-Water Soluable
備考 Remarks	・使用する機械により条件を調整して下さい。・ Adjust Conditions according to Using Machine			

ALES-2DLC

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	側面加工 Side Milling				溝加工 Grooving							
	アルミニウム合金 Aluminum Alloys A7075		銅合金 Copper Alloys C1100		アルミニウム合金 Aluminum Alloys A7075		銅合金 Copper Alloys C1100					
刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	回転数 Revolution min ⁻¹	送り速度 Feed mm/min				
1.0	32,000	220	23,500	220	32,000	220	23,500	220				
2.0	32,000	420	11,500	215	32,000	420	11,500	215				
3.0	21,000	700	7,950	250	21,000	700	7,950	250				
4.0	15,500	725	5,950	280	15,500	725	5,950	280				
5.0	12,500	760	4,750	295	12,500	760	4,750	295				
6.0	10,500	830	3,950	310	10,500	830	3,950	310				
8.0	7,950	890	2,950	350	7,950	890	2,950	350				
10.0	6,350	995	2,350	365	6,350	995	2,350	365				
12.0	5,300	1,050	1,950	390	5,300	1,050	1,950	390				
14.0	4,500	1,050	1,700	395	4,500	1,050	1,700	395				
16.0	3,950	1,050	1,450	390	3,950	1,050	1,450	390				
切込み深さ Depth of Cut	<table border="1"> <tr> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>				ap	ae	1.5D	0.1D	ap=0.5D			
ap	ae											
1.5D	0.1D											
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切削油を使用して下さい。 ・Use cutting Fluid. 											

ALE-3DLC,ALERS-3DLC

切削条件参考

Referential Cutting Conditions

側面切削 Side Milling

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075		アルミニウム合金鋳物 Aluminum Alloy Casting <Si 13%		銅合金 Copper Alloys C1100					
刃径 Flute Diameter mm	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min				
3.0	21,000	950	21,000	950	7,950	320				
4.0	15,500	1,100	15,500	1,100	5,950	350				
5.0	12,500	1,100	12,500	1,100	4,750	380				
6.0	10,500	1,200	10,500	1,200	3,950	400				
8.0	7,950	1,300	7,950	1,300	2,950	450				
10.0	6,350	1,500	6,350	1,500	2,350	480				
12.0	5,300	1,550	5,300	1,550	1,950	510				
16.0	3,950	1,550	3,950	1,550	1,450	510				
切込み深さ Depth of Cut	<table border="1"> <tr><td>ap</td><td>ae</td></tr> <tr><td>1.5D</td><td>0.1D</td></tr> </table>		ap	ae	1.5D	0.1D				
ap	ae									
1.5D	0.1D									
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 									

溝切削 Grooving

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075		アルミニウム合金鋳物 Aluminum Alloy Casting <Si 13%		銅合金 Copper Alloys C1100	
刃径 Flute Diameter mm	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min
3.0	21,000	670	21,000	670	7,950	325
4.0	15,500	700	15,500	700	5,950	365
5.0	12,500	745	12,500	745	4,750	385
6.0	10,500	820	10,500	820	3,950	405
8.0	7,950	865	7,950	865	2,950	455
10.0	6,350	970	6,350	970	2,350	475
12.0	5,300	1,050	5,300	1,050	1,950	510
16.0	3,950	1,050	3,950	1,050	1,450	510
切込み深さ Depth of Cut	全てap=0.5D					
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 					

ALRE-3DLC

切削条件参考

Referential Cutting Conditions

側面切削 Side Milling

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075				アルミニウム合金鋳物・ダイキャスト Aluminum Alloy Casting・Die Casting <Si 13%				マグネシウム合金・銅合金 Magnesium Alloy・Copper Alloys AZ91・AZ80A・C1100							
	標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling					
	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min				
8.0	7,950	1,500	20,000	3,750	7,950	1,500	12,000	2,250	2,950	460	8,000	1,150				
10.0	6,350	1,700	16,000	4,300	6,350	1,700	9,600	2,600	2,350	475	6,350	1,150				
12.0	5,300	1,750	13,300	4,400	5,300	1,750	8,000	2,650	1,950	510	5,300	1,250				
14.0	4,550	1,750	11,500	4,400	4,550	1,750	6,900	2,650	1,600	510	4,500	1,250				
16.0	3,950	1,750	10,000	4,400	3,950	1,750	6,000	2,650	1,450	510	4,000	1,250				
切込み深さ Depth of Cut	<table border="1"> <tr> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.2D</td> <td>0.1D</td> </tr> </table>												ap	ae	1.2D	0.1D
ap	ae															
1.2D	0.1D															
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 															

溝切削 Grooving

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075				アルミニウム合金鋳物 Aluminum Alloy Casting <Si 13%							
	標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling					
	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min				
8.0	8,000	1,000	20,000	2,500	8,000	1,000	12,000	1,500				
10.0	6,350	1,150	16,000	2,800	6,350	1,150	9,600	1,700				
12.0	5,300	1,200	13,300	2,950	5,300	1,200	8,000	1,750				
14.0	4,550	1,200	11,500	3,000	4,550	1,200	6,800	1,800				
16.0	3,950	1,200	10,000	3,000	3,950	1,200	6,000	1,800				
切込み深さ Depth of Cut	全てap=0.1D											
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 											

ALERT-3DLC

切削条件参考

Referential Cutting Conditions

側面切削 Side Milling

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075				アルミニウム合金鋳物・ダイキャスト Aluminum Alloy Casting・Die Casting <Si 13%				マグネシウム合金・銅合金 Magnesium Alloy・Copper Alloys AZ91・AZ80A・C1100			
	標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling	
	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min
3.0	21,000	1,100	40,000	2,100	21,000	1,100	24,000	1,250	7,950	325	17,000	625
4.0	15,500	1,250	32,000	2,550	15,500	1,250	19,200	1,550	5,950	365	14,300	800
5.0	12,500	1,300	32,000	3,250	12,500	1,275	19,200	1,950	4,750	385	12,700	925
6.0	10,500	1,400	26,500	3,500	10,500	1,400	15,900	2,150	3,950	400	10,600	960
8.0	7,950	1,500	20,000	3,750	7,950	1,500	12,000	2,250	2,950	460	8,000	1,130
10.0	6,350	1,700	16,000	4,300	6,350	1,700	9,600	2,580	2,350	475	6,350	1,150
12.0	5,300	1,750	13,300	4,400	5,300	1,750	8,000	2,650	1,950	510	5,300	1,250
16.0	3,950	1,750	10,000	4,400	3,950	1,750	6,000	2,650	1,450	510	4,000	1,250
切込み深さ Depth of Cut	ap 1.0D	ae 0.2D	ap 1.0D	ae 0.1D	ap 1.0D	ae 0.2D	ap 1.0D	ae 0.1D	ap 1.0D	ae 0.2D	ap 1.0D	ae 0.1D
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 											

溝切削 Grooving

被削材 Workpiece	アルミニウム合金展伸材 Aluminum Expanding Material A7075				アルミニウム合金鋳物・ダイキャスト Aluminum Alloy Casting・Die Casting <Si 13%				マグネシウム合金・銅合金 Magnesium Alloy・Copper Alloys AZ91・AZ80A・C1100			
	標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling		高速切削用 High Speed Milling		標準条件 Regular Milling			
	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min	回転速度 Speed mm ⁻¹	送り速度 Feed mm/min		
3.0	21,000	770	40,000	1,450	21,000	770	24,000	880	7,950	325		
4.0	15,500	810	32,000	1,700	15,500	810	19,200	1,000	5,950	375		
5.0	12,500	860	32,000	2,200	12,500	860	19,200	1,350	4,750	385		
6.0	10,500	950	26,500	2,400	10,500	950	15,900	1,450	3,950	400		
8.0	8,000	1,000	20,000	2,500	8,000	1,000	12,000	1,500	2,950	460		
10.0	6,350	1,150	16,000	2,800	6,350	1,150	9,600	1,700	2,350	475		
12.0	5,300	1,200	13,300	2,950	5,300	1,200	8,000	1,800	1,950	510		
16.0	3,950	1,200	10,000	3,000	3,950	1,200	6,000	1,800	1,450	510		
切込み深さ Depth of Cut	ap=0.5D		ap=0.25D		ap=0.5D		ap=0.25D		ap=0.5D			
備考 Remarks	<ul style="list-style-type: none"> ・機械、ホルダーは剛性のある精度の高いものをご使用ください。 ・Use a rigid and precise machine and holder. ・切込み深さ、機械剛性等使用状況により回転速度、送り速度を調整ください。 ・Please Adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used. ・切削油を使用して下さい。 ・Use cutting Fluid. 											

PSE-1DLC

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	樹脂 Resin			アルミ合金 Aluminum Alloy		
	刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth
0.1~0.2	32,000	130	0.1	32,000	80	0.05
0.3~0.5	32,000	140	0.2	32,000	90	0.07
0.6~0.9	26,500	170	0.5	32,000	120	0.15
1.0~1.4	16,000	250	0.8	22,500	200	0.5
1.5~1.9	10,500	350	1.2	16,000	220	0.7
2.0~2.4	8,000	350	1.4	12,000	250	1
2.5~3.0	6,300	370	1.8	9,500	270	1.2
備考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。 ・切りくずの巻き付きに注意し、適切に除去してください。 ・樹脂はエアブロー、アルミ合金の場合は切削油を使用して下さい。 			<ul style="list-style-type: none"> ・Adjust Revolution and Feed Speed at the same rate. ・Watch Winding of Chip and remove it adequately. ・Use Air Blow for Resin and use Cutting Oil for Aluminum Alloy. 		

PSE-2、PSELS-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	樹脂 Resin			アルミ合金 Aluminum Alloy		
	刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth
0.2	32,000	260	0.1	32,000	160	0.05
0.3	32,000	280	0.2	32,000	180	0.07
0.4	32,000	280	0.3	32,000	200	0.1
0.5	31,500	320	0.4	32,000	200	0.12
0.6	26,500	350	0.5	32,000	240	0.15
0.7	22,700	350	0.6	32,000	260	0.17
0.8	20,000	420	0.6	32,000	300	0.2
0.9	18,000	450	0.7	25,000	320	0.22
1	16,000	500	0.8	22,500	400	0.5
1.2	13,200	600	1	21,000	450	0.6
1.5	10,500	700	1.2	16,000	450	0.7
2	8,000	700	1.4	12,000	500	1
2.5	6,300	750	1.8	9,500	550	1.2
3	5,300	800	2	8,000	600	1.5
4	4,000	700	2.8	6,000	500	2
5	3,200	600	3.5	4,800	450	2.5
6	2,600	500	4.2	4,000	400	3
備考 Remarks	<ul style="list-style-type: none"> ・回転数と送り速度は同じ割合で調整して下さい。 ・切りくずの巻き付きに注意し、適切に除去してください。 ・樹脂はエアブロー、アルミ合金の場合は切削油を使用して下さい。 			<ul style="list-style-type: none"> ・Adjust Revolution and Feed Speed at the same rate. ・Watch Winding of Chip and remove it adequately. ・Use Air Blow for Resin and use Cutting Oil for Aluminum Alloy. 		

PRE-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	樹 脂 Resin			アルミ合金 Aluminum Alloy			
	刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth
	0.3	32,000	700~ 900	0.05~0.2	32,000	300~ 450	0.002~0.01
	0.4	32,000	750~1,000	0.05~0.25	32,000	300~ 500	0.003~0.01
	0.5	32,000	800~1,200	0.05~0.25	32,000	350~ 750	0.005~0.015
	0.6	32,000	750~1,200	0.1 ~0.4	32,000	350~ 900	0.005~0.02
	0.7	30,000	700~1,100	0.1 ~0.4	32,000	350~ 850	0.005~0.03
	0.8	26,000	600~1,000	0.12~0.5	32,000	400~1,050	0.005~0.05
	0.9	22,000	550~ 880	0.12~0.5	32,000	400~ 950	0.005~0.07
	1	20,000	500~ 800	0.15~0.6	28,000	400~1,200	0.005~0.08
	1.2	16,000	500~ 800	0.2 ~0.7	24,000	450~1,350	0.007~0.1
	1.5	12,600	450~ 700	0.25~0.9	19,000	450~1,200	0.01 ~0.12
	2	9,600	400~ 600	0.35~1.5	14,000	500~1,600	0.02 ~0.2
	3	6,400	350~ 550	0.5 ~2	9,500	500~1,750	0.03 ~0.25
	4	4,800	320~ 500	0.6 ~2.5	7,500	550~1,750	0.05 ~0.3
	5	4,000	300~ 450	0.8 ~3	6,000	550~1,800	0.1 ~0.3
備 考 Remarks	<ul style="list-style-type: none"> ・有効長により回転数、送り速度を調整して下さい。 ・樹脂はエアブロー、アルミ合金の場合は切削油を使用して下さい。 			<ul style="list-style-type: none"> ・Adjust Revolution and Feed Speed according to Effective Length. ・Use Air Blow for Resin and use Cutting Oil for Aluminum Alloy. 			

PSB-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	樹脂 Resin			アルミ合金 Aluminum Alloy		
	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth
0.1	32,000	250	0.025	32,000	130	0.01
0.2	32,000	250	0.05	32,000	130	0.02
0.25	27,000	250	0.06	32,000	160	0.025
0.3	20,000	280	0.075	32,000	200	0.03
0.4	15,500	300	0.1	20,000	320	0.04
0.5	12,000	350	0.12	16,800	480	0.1
0.6	10,000	360	0.15	15,000	600	0.12
0.7	8,500	350	0.175	12,800	700	0.14
0.75	8,000	320	0.185	11,800	650	0.15
0.8	7,500	360	0.2	10,000	800	0.16
0.9	6,800	380	0.225	8,500	1,000	0.18
1	5,800	320	0.5	7,800	980	0.2
1.5	4,000	300	0.75	5,800	900	0.3
2	3,000	220	1	4,500	760	0.4
2.5	2,400	160	1.25	3,600	660	0.5
3	2,300	140	1.5	3,500	580	0.6
備考 Remarks	<ul style="list-style-type: none"> • 回転数と送り速度は同じ割合で調整して下さい。 • ピックフィードは要求品質に合わせて調整して下さい。 • 切りくずの巻き付きに注意し、適切に除去して下さい。 • 樹脂はエアブロー、アルミ合金の場合は切削油を使用して下さい。 			<ul style="list-style-type: none"> • Adjust Revolution and Feed Speed at the same rate. • Adjust Pick Feed according to Required Quality. • Watch Winding of Chip and remove it adequately. • Use Air Blow for Resin and use Cutting Oil for Aluminum Alloy. 		

PRB-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	樹脂 Resin			アルミ合金 Aluminum Alloy		
	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切り込み深さ Cutting Depth
R mm						
0.1	32,000	550~880	0.05~0.1	32,000	280~450	0.002~0.01
0.2	32,000	550~880	0.05~0.2	32,000	280~450	0.003~0.01
0.25	28,000	600~960	0.05~0.2	32,000	350~600	0.005~0.015
0.3	24,000	600~960	0.1 ~0.3	32,000	450~720	0.005~0.02
0.4	20,000	450~720	0.12~0.4	26,000	480~750	0.006~0.05
0.5	15,000	350~560	0.15~0.5	21,000	490~780	0.006~0.08
0.6	12,000	300~480	0.2 ~0.6	18,000	500~800	0.01 ~0.1
0.7	10,000	350~400	0.22~0.7	15,000	500~800	0.02 ~0.1
0.75	9,500	350~400	0.25~0.75	14,000	500~800	0.02 ~0.12
0.8	9,000	230~360	0.25~0.8	12,000	500~800	0.03 ~0.15
0.9	8,000	200~320	0.3 ~0.9	10,000	550~850	0.03 ~0.15
1	7,000	180~280	0.35~1	9,500	550~850	0.03 ~0.2
1.5	4,800	120~200	0.5 ~1.5	7,000	380~600	0.05 ~0.25
2	3,600	100~160	0.6 ~2	5,500	350~550	0.1 ~0.3
2.5	3,000	75~120	0.8~2.5	4,500	300~500	0.15 ~0.3
備考 Remarks	<ul style="list-style-type: none"> •有効長により回転数、送り速度を調整して下さい。 •ピックフィードは要求品質に合わせて調整して下さい。 •樹脂はエアブロー、アルミ合金の場合は切削油を使用して下さい。 <ul style="list-style-type: none"> •Adjust Revolution and Feed Speed according to Effective Length. •Adjust Pick Feed according to Required Quality. •Use Air Blow for Resin and use Cutting Oil for Aluminum Alloy. 					

会社概要

商号 協和精工株式会社

創立 1963年8月

代表取締役 鈴木 豪

資本金 1,000万円

取引銀行 秋田銀行 湯沢支店

所在地 本 社 秋田県雄勝郡羽後町林崎字三ツ盛34-1

従業員数 95名 2016年10月現在

事業内容 精密刃工具製造販売、腕時計製造販売

取引業界 金型業界・自動車業界・電気電子業界・ジュエリー業界・時計業界 他

事業所紹介(近郊マップ)

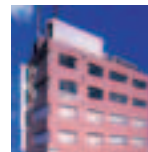
本社工場
(工具製造) 〒012-1103 秋田県雄勝郡羽後町林崎字三ツ森34-1
TEL 0183-62-4566 FAX 0183-62-2030
www.kyowaseiko.co.jp



皆瀬工場
(時計製造) 〒012-0183 秋田県湯沢市皆瀬字上小保内3
TEL 0183-46-2126 FAX 0183-46-2800
www.minase-ks.co.jp



柏営業所 〒277-0855 千葉県柏市南柏1-1-2 富士物産ビル5F
TEL 04-7142-7381 FAX 04-7147-7772



沿 革

1963年 (昭和38)	8月	協和精工創業(東京都江戸川区にて) 機械部品及び治工具の製造と販売を手掛ける
1964年	12月	腕時計側加工用段付ドリルの開発に成功 時計業界に画期的な工法をもたらす爆発的に売れる
1967年	12月	会社を千葉県柏市に移転 回転工具の本格的量産に入る 商号を有限会社協和精工に改める
1973年	1月	湯沢工場を新設 時計外装事業を開始
1977年	10月	株式会社に改組
1983年	9月	羽後工場完成
1988年	3月	子会社「ポリィア・プレシジョン株式会社(現:皆瀬工場)」設立 高級腕時計側・腕時計の製造販売を開始する
1990年	12月	超硬ボールエンドミルの開発に成功 生産体制を確立し本格的な販売を開始する
1993年	7月	羽後工場に本社を移転(柏本社と湯沢工場を羽後工場に統合) ポリィア・プレシジョン(株)と合併し皆瀬工場となる
2000年	4月	ISO9001 認証取得
2000年	12月	エンドミルの自社ブランド「KYOWA」製品の販売を開始
2002年	7月	日本初となる刃径φ0.1mmのcBN材エンドミルを開発 「アタックスミス」として製品化に成功する
2003年	10月	電界砥粒制御研磨を施した小径エンドミルの開発に成功
2005年	12月	自社ブランド時計「GREADY」の販売を開始
2006年	4月	「明日の日本を支える元気なモノ作り中小企業300社」に選定される
2007年	8月	「GREADY」が「ものづくり日本大賞」東北経済産業局長賞を受賞
2008年	11月	cBNスパイラルエンドミルで「超モノづくり部品大賞」機械部門賞を受賞
2009年	10月	電界砥粒研磨法の特許により「中小企業庁長官奨励賞」を受賞
2011年	1月	自社ブランド時計の新シリーズ「HiZ」の販売を開始
2011年	6月	ISO14001 認証取得
2011年	6月	PCD(ダイヤモンド焼結体)スパイラル刃ボールエンドミルの販売を開始
2013年	8月	創立50周年を迎える

