



Company Introduction

Nano-Mill Technology Co., Ltd has been established since year 2000. It's specialized in exporting Carbide end mill from Taiwan.. We created our brand "**Nano-mill**" and produce a wide range of high quality Carbide cutting tools. The production is specializing in high hard, high speed and soft metal cutting Solid Carbide End Mill. We supply end mill made of the best material from Germany and manifested by modern CNC grinding machines from Switzerland 'Rollomatic' and Schneeberger. The leading coating technology from Balzers is also adopted to achieve superior performance. Providing customers with the ultimate in quality and service is given. Nano's sales network spans the globe, and will continue to grow as it's innovations to flow with the ebbs and tides of the market.

公差表 Tolerance

平底刀 (mm) Square End Mills

Flute Dia.	Dia. Tolerance
1.0	0~-0.020
1.5	0~-0.020
2.0	0~-0.020
2.5	0~-0.020
3.0	0~-0.020
4.0	0~-0.020
5.0	0~-0.020
6.0	0~-0.025
8.0	0~-0.030
10.0	0~-0.035
12.0	0~-0.040
16.0	0~-0.040
20.0	0~-0.040

圓頭立銑刀 (mm) Ball Nose End Mills

Flute Dia.	Dia. Tolerance
R0.5	±0.01
R1	±0.01
R1.5	±0.01
R2	±0.01
R2.5	±0.01
R3	±0.01
R4	±0.01
R5	±0.01
R6	±0.015
R8	±0.02
R10	±0.02

圓鼻刀 (mm) Corner Radius End Mills

Flute Dia.	Dia. Tolerance	R Tolerance
3.0	0.000~-0.020	+0.02~0
4.0	0.000~-0.020	+0.02~0
6.0	-0.005~-0.025	+0.02~0
8.0	-0.010~-0.025	+0.03~0
10.0	-0.010~-0.030	+0.03~0
12.0	-0.010~-0.035	+0.03~0
16.0	-0.010~-0.040	+0.03~0

Shank Dia. (h6)	Shank Tolerance
Φ 3	0~-0.008
Φ 4	0~-0.008
Φ 6	0~-0.008
Φ 8	0~-0.008
Φ 10	0~-0.009
Φ 12	0~-0.011
Φ 16	0~-0.011
Φ 20	0~-0.013

Shank Dia. (h6)	Shank Tolerance
Φ 3	0~-0.008
Φ 4	0~-0.008
Φ 6	0~-0.008
Φ 8	0~-0.008
Φ 10	0~-0.009
Φ 12	0~-0.011
Φ 16	0~-0.011
Φ 20	0~-0.013

Shank Dia.(h6)	Shank Tolerance
Φ 3	0~-0.008
Φ 4	0~-0.008
Φ 6	0~-0.008
Φ 8	0~-0.008
Φ 10	0~-0.009
Φ 12	0~-0.011
Φ 16	0~-0.011
Φ 20	0~-0.013

硬質合金 Solid Carbide

MG J Series

Packing 

Co %	10
WC incl. Doping	90
Tungsten Carbide α	Φ 0.6μm
T.R.S. (N/mm ²)	>3600
Density (g/cm ³)	14.5
Hardness HRA	91.9
Hardness HV30(N/mm ²)	1610
ISO-Range	K30-K40

UMG H Series

Packing 

Co %	12
WC incl. Doping	88
Tungsten Carbide α	Φ 0.4μm
T.R.S. (N/mm ²)	>3800
Density (g/cm ³)	14.1
Hardness HRA	92.3
Hardness HV30(N/mm ²)	1680
ISO-Range	K20-K30

UMG V Series

Packing 

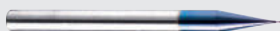
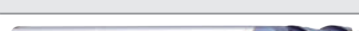
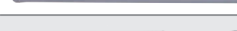
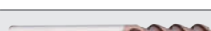
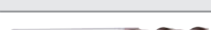
Co %	9
WC incl. Doping	89.83
Tungsten Carbide α	Φ 0.2μm
T.R.S. (N/mm ²)	>4000
Density (g/cm ³)	14.3
Hardness HRA	93.2
Hardness HV30(N/mm ²)	1950
ISO-Range	K05-K10



- 8  高速極高硬度切削用
High Speed Cutting & High Hard Cutting
- 23  高速極高硬度切削用
High Speed Cutting & High Hard Cutting
- 61  平刀系列
End Mills Series
- 80  圓鼻刀系列
Corner Radius End Mills
- 86  圓頭立銑刀系列
Ball Nose End Mills Series
- 91  軟金屬系列
Soft Materials Cutting Series
- 101  鑽頭系列
Carbide Drills Series High Performance Drills
- 113  螺紋銑刀系列
Thread Milling Tool Series
- 116  鉸刀系列
Carbide Reamers

鎢鋼刀具內容簡介表

CARBIDE INTRODUCCION TABLE TOOL

型號 Number	刀具形狀 Appearance	刀具類別 Type	頁數 Remarks
高速極高硬度切削用 HIGH SPEED CUTTING & HIGH HARD CUTTING			
VSBN		微小徑2刃球型立銑刀 Micro Diameter 2 Flutes Ball Nose End Mills	8
VSEN		微小徑2刃立銑刀 Micro Diameter Miniature 2 Flutes End Mills	9
VB		2刃球型立銑刀 Standard 2 Flutes Ball Nose End Mills	10
VB		4刃球型立銑刀 Standard 4 Flutes Ball Nose End Mills	11
VBN		2刃球型立銑刀 Standard 2 Flutes Ball Nose End Mills	12
VIBN		長柄2刃球型立銑刀 Long Shank 2 Flutes Ball Nose End Mills	13
VE		4刃立銑刀 Standard 4 Flutes Square End Mills	14
VEA		4刃立銑刀 4 Flutes Square End Mills	15
VEN		4刃立銑刀 4 Flutes Square End Mills	16
VER		圓鼻4刃立銑刀 4 Flutes Corner Radius End Mills	17
VLER		長柄圓鼻4刃立銑刀 4 Flutes Long Shank Corner Radius End Mills	18
VMR		短刃圓鼻4刃立銑刀 Short Flute 4 Flutes Corner Radius End Mills	19
VNB		長頸短刃2刃球型立銑刀 Long Neck Short Flutes Length 2 Flutes Ball Nose End Mills	20
高速極高硬度切削用 HIGH SPEED CUTTING & HIGH HARD CUTTING			
HSE		微小徑2刃立銑刀 Micro Diameter Miniature 2 Flutes End Mills	23
HE		2刃立銑刀 2 Flutes Square End Mills	24
HE		4刃立銑刀 4 Flutes Square End Mills	25
HEA		4刃立銑刀 4 Flutes Square End Mills	26
HEF		3刃立銑刀 3 Flutes Square End Mills	27
HEB		4刃立銑刀 4 Flutes Square End Mills	28
HXE		重切削3刃立銑刀 Heavy Cutting 3 Flutes End Mills	29
HXW		重切削3刃波浪銑刀 Heavy Cutting 3 Flutes End Mills	30
HVE		長柄4刃變化螺旋立銑刀 4 Flutes Square Variable helix angle End Mills	31
HXE		重切削4刃立銑刀 Heavy Cutting 4 Flutes End Mills	32
HVT		6刃立銑刀 6 Flutes Square End Mills	33

鎢鋼刀具內容簡介表

CARBIDE INTRODUCCION TABLE TOOL

LHVT		長刃型6刃立銑刀 6 Flutes Long Shank End Mills	34
HVTR		圓鼻6刃立銑刀 6 Flutes Corner Radius End Mills	35
HEL		長柄短刀2刃立銑刀 2 Flutes Long Shank Short Length Square End Mills	36
HEI		長柄短刀2刃立銑刀 2 Flutes Long Shank Short Length Square End Mills	36
HEJ		長柄短刀2刃立銑刀 2 Flutes Long Shank Short Length Square End Mills	36
HELF		長刃型2刃立銑刀 Long Flutes Square 2 Flutes End Mills	37
HEL		長柄型4刃立銑刀 4 Flutes Short Length Long Square End Mills	38
HELF		長刃型4刃立銑刀 4 Flutes Long Shank Square End Mills	39
HNE		長頸短刀2刃立銑刀 Long Neck Short Length Square 2 Flutes End Mills	40
HSB		微小徑2刃球型立銑刀 Micro Diameter 2 Flutes Ball Nose End Mills	42
HB		2刃球型立銑刀 Standard 2 Flutes Ball Nose End Mills	43
HIB		長柄型2刃球型立銑刀 Long Shank 2 Flutes Ball Nose End Mills	44
HJB		長柄型2刃球型立銑刀 Long Shank 2 Flutes Ball Nose End Mills	44
HKB		長柄型2刃球型立銑刀 Long Shank 2 Flutes Ball Nose End Mills	44
HBA		2刃球型立銑刀 Standard 2 Flutes Ball Nose End Mills	46
HB		4刃球型立銑刀 Standard 4 Flutes Ball Nose End Mills	47
HOB		強力短刀2刃球型立銑刀 Short length 2 Flutes Ball Nose End Mills	48
HLB		長斜頸2刃強力球型立銑刀 Long Neck Taper 2 Flutes Ball Nose End Mills	49
HNB		長頸短刀2刃球型立銑刀 Long Neck short 2 Flutes Ball Nose End Mills	50
HNR		圓鼻2刃立銑刀 2 Flutes Corner Radius Square End Mills	52
HER		圓鼻4刃立銑刀 4 Flutes Corner Radius End Mills	53
HMR		短刃圓鼻4刃立銑刀 Short flute 4 Flutes Corner Radius End Mills	54
HXR		重切削圓鼻4刃立銑刀 Heavy Cutting 4 Flutes Corner Radius End Mills	55
HLNR		長柄圓鼻2刃立銑刀 2 Flutes Long Shank Corner Radius Square End Mills	56
HLR		長柄圓鼻4刃立銑刀 4 Flutes Long Shank Corner Radius End Mills	57
HNMR		長頸短刀圓鼻2刃立銑刀 2 Flutes Long Neck Corner Radius End Mills	58

鎢鋼刀具內容簡介表 CARBIDE INTRODUCCION TABLE TOOL

平刀系列 END MILLS SERIES

JE		2刃立銑刀 2 Flutes Square End Mills	61
JEA		4刃立銑刀 4 Flutes Square End Mills	62
JE		4刃立銑刀 4 Flutes Square End Mills	63
JEF		3刃立銑刀 3 Flutes Square End Mills	64
JEL		長柄型4刃立銑刀 4 Flutes Long Shank Square End Mills	65
JELF		長刃型4刃立銑刀 4 Flutes Short Length Long Square End Mills	66
JELF		長刃型2刃立銑刀 2 Flutes short Length Long Square End Mills	67
JEL		長柄型2刃立銑刀 2 Flutes Long Short Length Square End Mills	68
JEI		長柄型2刃立銑刀 2 Flutes Long Short Length Square End Mills	68
JEJ		長柄型2刃立銑刀 2 Flutes Long Short Length Square End Mills	68
JTA		斜度刀2刃立銑刀 2 Flutes Taper Square End Mills	70
JVT		6刃立銑刀 6 Flutes Standard End Mills	73
LJVT		長刃型6刃立銑刀 6 Flutes Long Shank End Mills	74
JWA		3刃粗立銑刀 3 Flutes Roughing End Mills	75
LJWA		長柄長刃粗銑刀 3 Flutes Long Shank Square Roughing End Mills	76
JWA		4刃粗立銑刀 4 Flutes Roughing End Mills	77
LJWA		長柄4刃粗銑刀 4 Flutes Long Shank Square Roughing End Mills	78

圓鼻刀系列 CORNER RADIUS END MILLS

JNR		圓鼻2刃立銑刀 2 Flutes Corner Radius Square End Mills	80
JLNR		長柄圓鼻2刃立銑刀 2 Flutes Long Shank Corner Radius End Mills	81
JER		圓鼻4刃立銑刀 4 Flutes Corner Radius End Mills	82
JLR		長柄圓鼻4刃立銑刀 4 Flutes Long Shank Corner Radius End Mills	84

圓頭立銑刀系列 BALL NOSE END MILLS SERIES

JB		2刃球型立銑刀 2 Flutes Ball Nose End Mills	86
JBA		2刃球型立銑刀 2 Flutes Ball Nose End Mills	87
JB		4刃球型立銑刀 4 Flutes Ball Nose End Mills	88

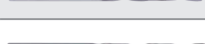
鎢鋼刀具內容簡介表 CARBIDE INTRODUCCION TABLE TOOL

JIB		長柄2刃球型立銑刀 2 Flutes Long Shank Ball Nose End Mills	89
JJB		長柄2刃球型立銑刀 2 Flutes Long Shank Ball Nose End Mills	89
JKB		長柄2刃球型立銑刀 2 Flutes Long Shank Ball Nose End Mills	89

軟金屬系列 SOFT MATERIALS CUTTING SERIES

AE		鋁合金專用2刃立銑刀 2 Flutes Aluminum Square End Mills	91
LAE		鋁合金專用2刃長刃立銑刀 2 Flutes Long Shank Square End Mills	92
AEW		鋁合金專用3刃立銑刀 3 Flutes Aluminum Square End Mills	93
AE		鋁合金專用3刃立銑刀 3 Flutes Aluminum Square End Mills	94
LAE		鋁合金專用3刃立銑刀 3 Flutes Long Shank Square End Mills	95
AEE		鋁合金專用3刃立銑刀 3 Flutes Aluminum Square End Mills	96
AB		鋁合金專用2刃球型立銑刀 2 Flutes Aluminum Ball Nose End Mills	97
		外角R刀3刃立銑刀 3F Corner Rounding Cutter	98
		60度90度120度2刃定位鑽頭 NC Spot Drills 60, 90, 120, Degree End Mills	99

鑽頭系列 CARBIDE DRILLS SERIES HIGH PERFORMANCE DRILLS

DSE		鋁、銅、塑膠、塑膠複合材料 超微粒鎢鋼微小徑鑽頭 For Aluminium, Copper, Plastics, Composite Material	101
DE		高速加工用極超硬極超微粒鎢鋼塗層高速鑽頭 High Performance Drills	102
DEF		高速加工用極超硬極超微粒鎢鋼塗層高速鑽頭 High Performance Drills	104
DEE		高速加工用超硬超微粒鎢鋼塗層高速鑽頭 High Performance Drills	106
DEEF		高速加工用超硬超微粒鎢鋼塗層高速鑽頭 High Performance Drills	108
DA		鋁銅合金專用3刃鑽頭 3-Flute Drills For Aluminium, Copper	110
		極超硬極超微粒鎢鋼塗層階梯鑽頭 Combined Drill and Chamfer Tool	111

螺紋銑刀系列 THREAD MILLING TOOL SERIES

TR		高硬度用螺紋銑刀 Thread Milling Tool Series	113
TH		高硬度用螺紋銑刀 Thread Milling Tool Series	114

鉸刀系列 CARBIDE REAMERS

RE		鎢鋼鉸刀超硬(0.1mm指定單位) Machine Reamers In Steps of 0.1mm	116
REA		超微粒鎢鋼NC機械鉸刀 NC Machine Reamers	118

符號圖解 GUIDE LINES to ICONS

WORK MATERIAL 被切削材硬度

HRC > 55 Work material hardness is up to HRC50°, HRC55°

HRC > 60 Work material hardness is up to HRC50°, HRC55°, HRC60°

HRC > 65 Work material hardness is up to HRC50°, HRC55°, HRC60°, HRC65°

COATING 鍍層

TIALN Ticsin HELICA ALTiN nAcoB

HELIX ANGLE 螺旋角

Helix 5°, 25°, 30°, 35°, 40°, 50°, 55°
螺旋角是 5°, 25°, 30°, 35°, 40°, 50°, 55°

SHINK NECK 縮頸

Best for long neck machining.
應用於深溝加工用。

CORNER R 圓隅角

R

CARBIDE 鎢鋼材質

UMG 0.2 μm CO 9% Super Micro Grain 極細超微粒子

UMG 0.4 μm CO 12% Super Micro Grain 極細超微粒子

MG 0.6 μm CO 10% Micro Grain 超微粒子

FLUTE 刃數

2 Flutes, 3 Flutes, 4 Flutes, 6 Flutes

Coating Classifying And Advantage 立銑刀的塗層種類及特點 End Mill Expert						
項目 Item	塗層種類 Coating Type	ALTiN	TIALN	nAcoB	Ticsin	HELICA
特性 Characteristic	表面硬度 (HV) Hardness(HV)	~3200	~2800	45(Gpa)	~3600	~2800
	塗層厚度(m) Thickness(m)	2.5~3	2.5~3	3	2.0~2.5	1~4
	耐氧化溫度 Oxidation Temp	900	800	1200	1100	1000
	摩擦係數 Friction Coefficient	0.3	0.3	0.45	0.4	0.25
	顏色 Color	黑 Black	黑 Black	藍 Blue	金 SoFe GOLD	棕 Copper
適用材質 Application	碳鋼 Carbon Steel	◎	◎	◎	○	○
	合金/工具/高速鋼 Alloy /Tool/ High Speed Steel	◎	◎	◎	○	◎
	不鏽鋼 Stainless Steel	X	○	○	◎	◎
	合金 Alloy	◎	○	◎	◎	○
	銅 / 鋁 Copper/Aluminum	X	X	X	X	X
	高溫合金 Incolnet	◎	○	◎	◎	○
	鈦合金 Titanium	X	○	○	◎	X
	塑膠/複合材料/木材/紙Plastic / Composites/Wood /Paper	X	X	X	X	X
切削方式 Cutting Way	乾式 Dry Cutting	◎	◎	○	◎	◎
	濕式 Wet Cutting	X	○	X	○	○
	油霧 Oil Spary	○	◎	◎	○	◎

符號說明ICON：◎最適合 Recommend ○適合 Suitable X不建議 Not Recommend

High Speed Cutting & High Hard Cutting

Standard 2 Flutes Ball Nose End Mills
Standard 4 Flutes Ball Nose End Mills
Long Shank 2 Flutes Ball Nose End Mills
Standard 4 Flutes Square End Mills
4 Flutes Square End Mills
4 Flutes Corner Radius End Mills
4 Flutes Long Shank Corner Radius End Mills
Short flute 4 Flutes Corner Radius End Mills
Long Neck Short Flutes Length 2 Flutes Ball Nose End Mills

高速極高硬度
切削用



High Speed Cutting & High Hard Cutting

Micro Diameter 2 Flutes Ball Nose End Mills



微小徑 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

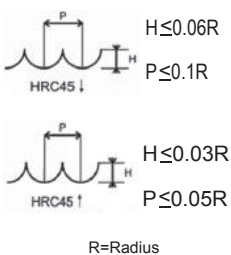


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
VSBN 0022	R0.10	0.4	50	4
VSBN 0032	R0.15	0.6	50	4
VSBN 0042	R0.20	0.8	50	4
VSBN 0052	R0.25	1.0	50	4
VSBN 0062	R0.30	1.2	50	4
VSBN 0072	R0.35	1.4	50	4
VSBN 0082	R0.40	1.6	50	4
VSBN 0092	R0.45	1.8	50	4
VSBN 0122	R0.6	2.4	50	4
VSBN 0142	R0.7	2.8	50	4
VSBN 0162	R0.8	3.2	50	4
VSBN 0182	R0.9	3.6	50	4

Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.1	32000	500-600	32000	400-500	25000	300-400
0.15	32000	500-600	32000	400-500	25000	300-400
0.2	32000	500-600	32000	400-500	25000	300-400
0.25	32000	600-700	32000	500-600	25000	400-500
0.3	32000	600-700	32000	500-600	25000	400-500
0.35	32000	700-800	32000	600-700	25000	500-600
0.4	32000	900-1000	32000	800-900	25000	600-700
0.45	32000	1000-1100	32000	900-1000	25000	600-700

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

Micro Diameter Miniature 2 Flutes End Mills



微小徑 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

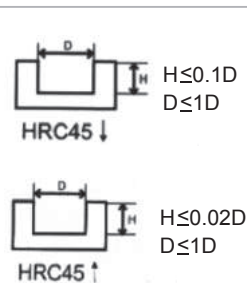


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
VSEN 0022	0.2	0.4	50	4
VSEN 0032	0.3	0.6	50	4
VSEN 0042	0.4	0.8	50	4
VSEN 0052	0.5	1.0	50	4
VSEN 0062	0.6	1.2	50	4
VSEN 0072	0.7	1.4	50	4
VSEN 0082	0.8	1.6	50	4
VSEN 0092	0.9	1.8	50	4
VSEN 0122	1.2	3	50	4
VSEN 0142	1.4	3	50	4
VSEN 0162	1.6	4	50	4
VSEN 0182	1.8	5	50	4

Recommended cutting condition for Micro Diameter Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.2	40000	100-300	30000	80-250	15000	50-150
0.3	40000	100-350	30000	80-300	15000	50-200
0.4	40000	100-400	25000	80-350	10000	50-250
0.5	40000	100-500	25000	80-400	10000	50-250
0.6	38000	100-600	25000	80-500	8000	50-250
0.7	36000	100-700	20000	80-600	8000	50-250
0.8	34000	100-800	20000	80-700	8000	50-250
0.9	32000	100-1000	20000	80-800	8000	50-250

DEPTH OF CUT





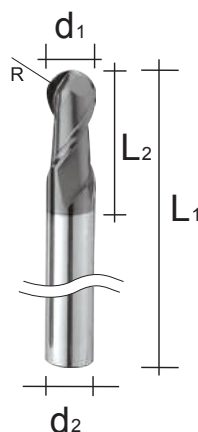
High Speed Cutting & High Hard Cutting

Standard 2 Flutes Ball Nose End Mills



2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

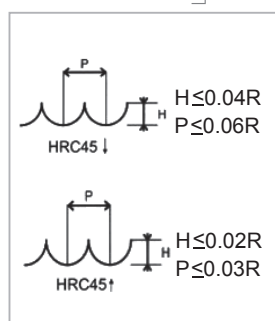
型號	直徑(D1)	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
VB 0102	R0.5	2	50	4
VB 0152	R0.75	3	50	4
VB 0202	R1.0	4	50	4
VB 0252	R1.25	5	50	4
VB 0302	R1.5	6	50	4
VB 0302A	R1.5	6	50	3
VB 0402	R2.0	8	50	4
VB 0502	R2.5	10	50	6
VB 0602	R3.0	12	50	6
VB 0802	R4.0	16	60	8
VB 1002	R5.0	20	75	10
VB 1202	R6.0	24	75	12
VB 1602	R8.0	32	100	16
VB 2002	R10.0	32	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
R0.5	45000	2000	45000	1800	28000	1000
R1	23000	2000	22000	1800	16000	900
R1.5	16000	2000	15000	1800	11000	900
R2	15000	2400	14000	2000	10000	1300
R3	13000	3200	11000	2000	9000	1500
R4	9000	2300	8000	1500	6200	1400
R5	7500	1900	6500	1200	5200	900
R6	6300	1600	5500	1000	4300	800
R8	4500	1200	3800	800	3300	700

DEPTH OF CUT

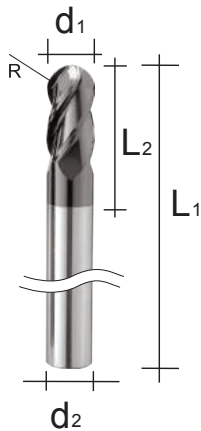


High Speed Cutting & High Hard Cutting

Standard 4 Flutes Ball Nose End Mills



4刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

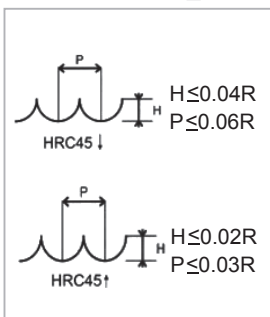


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
VB 0104	R0.5	2	50	4
VB 0154	R0.75	3	50	4
VB 0204	R1.0	4	50	4
VB 0304	R1.5	6	50	4
VB 0304A	R1.5	6	50	3
VB 0404	R2.0	8	50	4
VB 0504	R2.5	10	50	6
VB 0604	R3.0	12	50	6
VB 0804	R4.0	16	60	8
VB 1004	R5.0	20	75	10
VB 1204	R6.0	24	75	12
VB 1604	R8.0	32	100	16
VB 2004	R10.0	32	100	20

Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
R2	15000	3000	14000	2600	10000	1700
R3	13000	4000	11000	2600	9000	1900
R4	9000	2900	8000	1900	6200	1800
R5	7500	2400	6500	1500	5200	1100
R6	6300	2100	5500	1300	4300	1000
R8	4500	1500	3800	1000	3300	900
R10	3700	1200	3200	750	2600	600

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

Standard 2 Flutes Ball Nose End Mills



2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

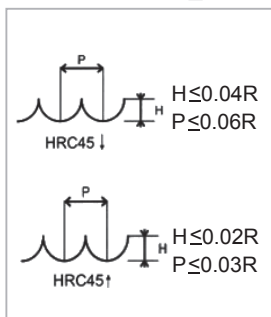


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
VBN 0102	R0.5	2	50	4
VBN 0152	R0.75	3	50	4
VBN 0202	R1.0	4	50	4
VBN 0252	R1.25	5	50	4
VBN 0302	R1.5	6	50	4
VBN 0302A	R1.5	6	50	3
VBN 0402	R2.0	8	50	4
VBN 0502	R2.5	10	50	6
VBN 0602	R3.0	12	50	6
VBN 0802	R4.0	16	60	8
VBN 1002	R5.0	20	75	10
VBN 1202	R6.0	24	75	12
VBN 1602	R8.0	32	100	16
VBN 2002	R10.0	32	100	20

Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
R0.5	45000	2000	45000	1800	28000	1000
R1	23000	2000	22000	1800	16000	900
R1.5	16000	2000	15000	1800	11000	900
R2	15000	2400	14000	2000	10000	1300
R3	13000	3200	11000	2000	9000	1500
R4	9000	2300	8000	1500	6200	1400
R5	7500	1900	6500	1200	5200	900
R6	6300	1600	5500	1000	4300	800
R8	4500	1200	3800	800	3300	700

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

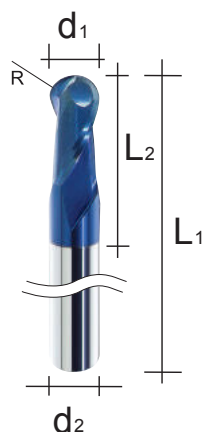
Long Shank 2 Flutes Ball Nose End Mills



長柄 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



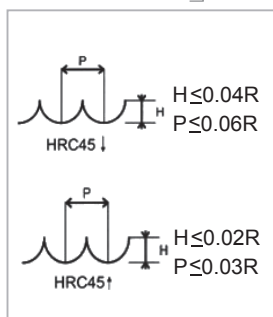
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
VIBN 0202	R1.0	4	75	6
VIBN 0302	R1.5	6	75	6
VIBN 0402	R2.0	8	75	6
VIBN 0502	R2.5	10	75	6
VIBN 0602	R3.0	12	75	6
VIBN 0802	R4.0	16	75	8
VJBN 0602	R3.0	12	100	6
VJBN 0802	R4.0	16	100	8
VJBN 1002	R5.0	20	100	10
VJBN 1202	R6.0	24	100	12



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	23000	2000	22000	1800	16000	900
1.5	16000	2000	15000	1800	11000	900
2	15000	2400	14000	2000	10000	1300
3	13000	3200	11000	2000	9000	1500
4	9000	2300	8000	1500	6200	1400
5	7500	1900	6500	1200	5200	900
6	6300	1600	5500	1000	4300	800

DEPTH OF CUT



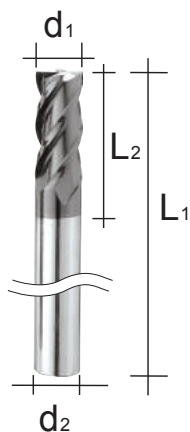


High Speed Cutting & High Hard Cutting

Standard 4 Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

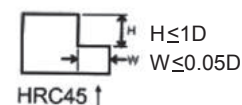
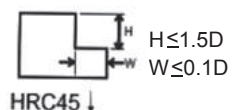


型號	直徑(D1)	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
VE 0104	1.0	3	50	4
VE 0154	1.5	4	50	4
VE 0204	2.0	6	50	4
VE 0254	2.5	7	50	4
VE 0304	3.0	8	50	4
VE 0304A	3.0	8	50	3
VE 0404	4.0	11	50	4
VE 0504	5.0	13	50	6
VE 0604	6.0	15	50	6
VE 0804	8.0	20	60	8
VE 1004	10.0	30	75	10
VE 1204	12.0	30	75	12
VE 1404	14.0	45	100	16
VE 1604	16.0	45	100	16
VE 1804	18.0	45	100	20
VE 2004	20.0	50	100	20
VE 2504	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	82	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

4 Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



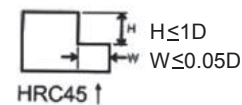
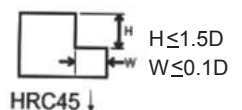
型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
VEA 0504	5.0	13	50	6
VEA 0604	6.0	15	50	6
VEA 0804	8.0	20	60	8
VEA 1004	10.0	30	75	10
VEA 1204	12.0	30	75	12
VEA 1404	14.0	45	100	16
VEA 1604	16.0	45	100	16
VEA 1804	18.0	45	100	20
VEA 2004	20.0	50	100	20
VEA 2504	25.0	50	100	25



Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	82	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT





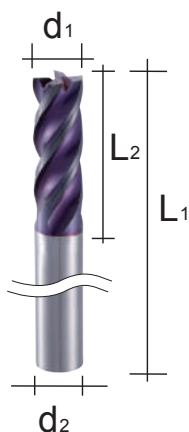
High Speed Cutting & High Hard Cutting

4 Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
VEN 0104	1.0	3	50	4
VEN 0154	1.5	4	50	4
VEN 0204	2.0	6	50	4
VEN 0304	3.0	8	50	4
VEN 0404	4.0	11	50	4
VEN 0504	5.0	13	50	6
VEN 0604	6.0	16	50	6
VEN 0804	8.0	20	60	8
VEN 1004	10.0	30	75	10
VEN 1204	12.0	30	75	12
VEN 1604	16.0	45	100	16
VEN 2004	20.0	50	100	20



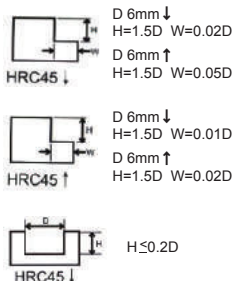
Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	20000	2000	16000	1000	9000	500
4	19000	2000	12000	1300	6000	550
5	13000	1800	10000	1400	5000	500
6	10000	3000	8000	1500	4500	700
8	8000	3200	5000	1300	3500	600
10	7000	3000	4500	1200	3000	550
12	5000	2000	4000	1100	2000	500
16	4000	1800	3500	1000	1800	450
20	3500	1600	3000	1000	1300	450

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	20000	2000	20000	1200	16000	1200
4	16000	2000	16000	1200	12000	1300
5	13000	1800	13000	1100	10000	1400
6	10000	3000	10000	2100	8000	1500
8	8000	2900	8000	1800	6000	1400
10	7000	2800	6000	1700	5000	1300
12	5000	2300	5500	1700	4500	1200
16	3500	1800	4500	1800	3500	1200
20	3000	1400	3000	1500	2600	1100

DEPTH OF CUT

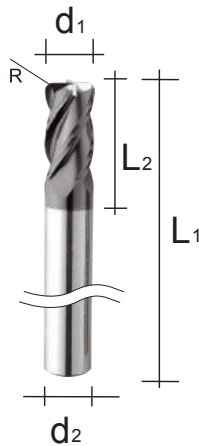


High Speed Cutting & High Hard Cutting

4 Flutes Corner Radius End Mills



圓鼻 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

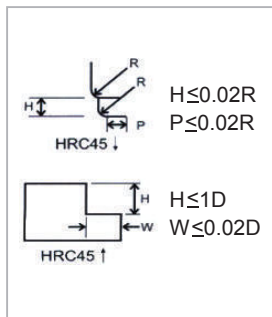


型號	刀徑(D1)	R	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Corner R	Flute Length	O.A.L	Shank Dia
VER 0102	1.0	0.2	2	50	4
VER 0202	2.0	0.2	4	50	4
VER 0205	2.0	0.5	4	50	4
VER 0252	2.5	0.2	5	50	4
VER 0255	2.5	0.5	5	50	4
VER 0302	3.0	0.2	6	50	4
VER 0305	3.0	0.5	6	50	4
VER 0310	3.0	1.0	6	50	4
VER 0402	4.0	0.2	8	50	4
VER 0405	4.0	0.5	8	50	4
VER 0410	4.0	1.0	8	50	4
VER 0505	5.0	0.5	10	50	6
VER 0510	5.0	1.0	10	50	6
VER 0602	6.0	0.2	12	50	6
VER 0605	6.0	0.5	12	50	6
VER 0610	6.0	1.0	12	50	6
VER 0615	6.0	1.5	12	50	6
VER 0620	6.0	2.0	12	50	6
VER 0805	8.0	0.5	16	60	8
VER 0810	8.0	1.0	16	60	8
VER 0820	8.0	2.0	16	60	8
VER 1005	10.0	0.5	20	75	10
VER 1010	10.0	1.0	20	75	10
VER 1020	10.0	2.0	20	75	10
VER 1030	10.0	3.0	20	75	10
VER 1205	12.0	0.5	24	75	12
VER 1210	12.0	1.0	24	75	12
VER 1220	12.0	2.0	24	75	12
VER 1230	12.0	3.0	24	75	12

Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	26000	1600	16500	1000	7500	300
3	19000	1800	12000	1200	5400	380
4	16000	3200	10000	1900	4800	480
5	14000	3300	8000	2000	3800	500
6	12000	3600	7200	2200	3500	650
8	9600	4000	5600	2200	2700	750
10	7000	3400	4400	1700	2100	650
12	6000	2800	3600	1400	1800	600
16	4500	2000	2800	1000	1400	450

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

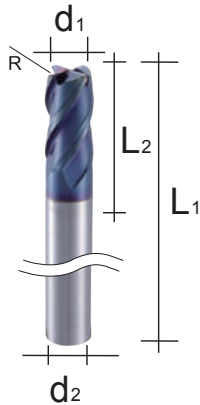
4 Flutes Long Shank Corner Radius End Mills



長柄圓鼻 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



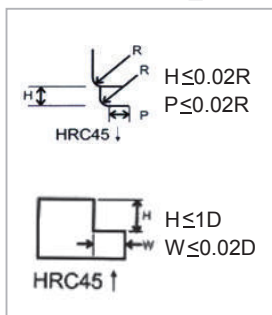
型號 Type No.	刀徑(D1) Diameter	R Corner R	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
VLER 0605	6.0	0.5	12	75	6
VLER 0605A	6.0	0.5	12	100	6
VLER 0610	6.0	1.0	12	75	6
VLER 0610A	6.0	1.0	12	100	6
VLER 0805	8.0	0.5	16	100	8
VLER 0810	8.0	1.0	16	100	8
VLER 1005	10.0	0.5	20	100	10
VLER 1010	10.0	1.0	20	100	10
VLER 1020	10.0	2.0	20	100	10
VLER 1210	12.0	1.0	24	100	12
VLER 1220	12.0	2.0	24	100	12



Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	26000	1600	16500	1000	7500	300
3	19000	1800	12000	1200	5400	360
4	16000	320	10000	1900	4800	480
5	14000	3300	8000	2000	3800	500
6	12000	3600	7200	2200	3500	650
8	9600	4000	5600	2200	2700	750
10	7000	3400	4400	1700	2100	650
12	6000	2800	3600	1400	1800	600

DEPTH OF CUT



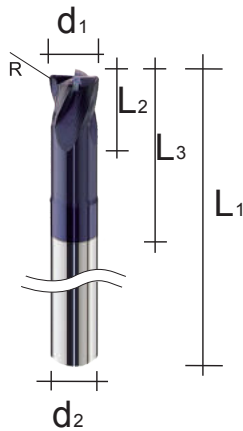
High Speed Cutting & High Hard Cutting

Short Flute 4 Flutes Corner Radius End Mills

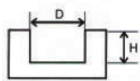


短刃 圓鼻4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號	刃徑(D1)	R	刃長(L2)	有效長(L3)	全長(L1)	柄徑(d2)
Type No.	Diameter	Corner R	Flute Length	Effective Length	O.A.L	Shank Dia
VMR 0605	6	0.5	6	15	50	6
VMR 0610	6	1.0	6	15	50	6
VMR 0805	8	0.5	8	20	50	8
VMR 0810	8	1.0	8	20	50	8
VMR 1010	10	1.0	10	25	50	10
VMR 1020	10	2.0	10	25	75	10
VMR 1030	10	3.0	10	25	75	10
VMR 1210	12	1.0	12	30	75	12
VMR 1220	12	2.0	12	30	75	12



「DEPTH OF CUT」



$$H \leq 0.3D$$

Recommended cutting condition for Corner Radius End Mills

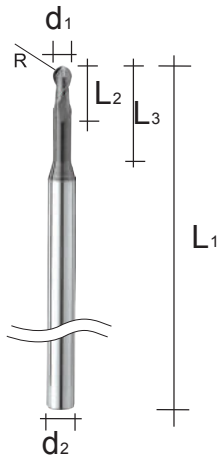
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	12000	12000	8000	8000	5000	4000
8	10000	10000	8000	8000	6000	4800
10	7000	5000	6000	4000	4500	2000
12	5000	7000	4000	6000	3000	3000

High Speed Cutting & High Hard Cutting

Long Neck Short Flutes Length 2 Flutes Ball Nose End Mills



長頸短刃 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號	直徑(D1)	刃長(L2)	有效長(L3)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	Effective Length	O.A.L	Shank Dia
VNB 0402	R0.2	0.8	2	50	4
VNB 0404	R0.2	0.8	4	50	4
VNB 0504	R0.25	1.0	4	50	4
VNB 0506	R0.25	1.0	6	50	4
VNB 0604	R0.3	1.2	4	50	4
VNB 0606	R0.3	1.2	6	50	4
VNB 0608	R0.3	1.2	8	50	4
VNB 0804	R0.4	1.2	4	50	4
VNB 0806	R0.4	1.2	6	50	4
VNB 0808	R0.4	1.2	8	50	4
VNB 0810	R0.4	1.2	10	50	4
VNB 1004	R0.5	1.5	4	50	4
VNB 1006	R0.5	1.5	6	50	4
VNB 1008	R0.5	1.5	8	50	4
VNB 1010	R0.5	1.5	10	50	4
VNB 1012	R0.5	1.5	12	50	4
VNB 1506	R0.75	3.0	6	50	4
VNB 1508	R0.75	3.0	8	50	4
VNB 1512	R0.75	3.0	12	50	4
VNB 1516	R0.75	3.0	16	50	4
VNB 1520	R0.75	3.0	20	50	4
VNB 2006	R1.0	4.0	6	50	4
VNB 2008	R1.0	4.0	8	50	4
VNB 2012	R1.0	4.0	12	50	4
VNB 2016	R1.0	4.0	16	50	4
VNB 2020	R1.0	4.0	20	50	4
VNB 3008	R1.5	4.0	8	50	4
VNB 3012	R1.5	4.0	12	50	4
VNB 3016	R1.5	4.0	16	50	4
VNB 3020	R1.5	4.0	20	75	6
VNB 3025	R1.5	4.0	25	75	6
VNB 4010	R2.0	5.0	10	75	6
VNB 4016	R2.0	5.0	16	75	6
VNB 4020	R2.0	5.0	20	75	6
VNB 4025	R2.0	5.0	25	75	6
VNB 4030	R2.0	5.0	30	75	6

High Speed Cutting & High Hard Cutting

Long Neck Short Flutes Length 2 Flutes Ball Nose End Mills



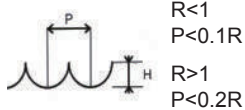
長頸短刃 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

Recommended cutting condition for

Long Neck Ball Nose End Mills Series

Material	Alloy Steels.Tool Steels.Hardened Steels S45C,SCM,S50C,SKS,SCr,SNCM,SKD11,SKD61,NAK80			
	RADIUS	Effective Length	SPEED (mm-1)	FEED mm/min
0.25	4	30000-40000	200-650	0.015
0.25	6	30000-40000	200-650	0.013
0.3	4	27000-40000	180-650	0.025
0.3	6	27000-40000	180-650	0.015
0.4	6	25000-40000	400-750	0.025
0.4	8	25000-40000	400-750	0.025
0.5	6	20000-32000	500-750	0.04
0.5	8	20000-32000	300-750	0.03
0.5	10	20000-32000	300-750	0.025
0.5	12	20000-32000	300-750	0.015
0.6	8	22000-25000	500-600	0.05
0.6	12	22000-25000	500-600	0.03
0.75	8	18000-20000	300-550	0.07
0.75	12	18000-20000	300-550	0.04
0.75	16	18000-20000	300-550	0.03
0.75	20	18000-20000	300-550	0.02
0.8	8	13000-18000	350-800	0.08
0.8	12	13000-18000	350-800	0.06
0.8	16	13000-18000	350-800	0.05
1.0	8	12000-17000	500-900	0.1
1.0	12	12000-17000	500-900	0.1
1.0	16	12000-17000	500-900	0.07
1.0	20	12000-17000	500-900	0.04
1.5	8	8000-11000	500-700	0.17
1.5	10	8000-11000	500-700	0.15
1.5	16	8000-11000	500-700	0.14
1.5	20	8000-11000	500-700	0.12
1.5	25	8000-11000	500-700	0.1
2.0	10	5000-8000	400-600	0.18
2.0	15	5000-8000	400-600	0.17
2.0	20	5000-8000	400-600	0.16
2.0	25	5000-8000	400-600	0.15
2.0	30	5000-8000	400-600	0.14

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

3 Flutes Square End Mills
 4 Flutes Square End Mills
 5 Flutes Square End Mills
 6 Flutes Square End Mills
 6 Flutes Long Shank End Mills
 4 Flutes Corner Radius End Mills
 6 Flutes Corner Radius End Mills
 Standard 4 Flutes Ball Nose End Mills
 Long Flutes Square 2 Flutes End Mills
 4 Flutes Long Shank Square End Mills
 Standard 2 Flutes Ball Nose End Mills
 Long Shank 2 Flutes Ball Nose End Mills
 2 Flutes Corner Radius Square End Mills
 Short length 2 Flutes Ball Nose End Mills
 Micro Diameter Miniature 2 Flutes End Mills
 Micro Diameter 2 Flutes Ball Nose End Mills
 Short flute 4 Flutes Corner Radius End Mills
 2 Flutes Long Neck Corner Radius End Mills
 Long Neck short 2 Flutes Ball Nose End Mills
 4 Flutes Long Shank Corner Radius End Mills
 4 Flutes Short Length Long Square End Mills
 Long Neck Taper 2 Flutes Ball Nose End Mills
 4 Flutes Square Variable helix angle End Mills
 Heavy Cutting 3 Flutes Corner Radius End Mills
 Heavy Cutting 4 Flutes Corner Radius End Mills
 Long Neck Short Length Square 2 Flutes End Mills
 2 Flutes Long Shank Short Length Square End Mills
 2 Flutes Long Shank Corner Radius Square End Mills

高速極高硬度 切削用



High Speed Cutting & High Hard Cutting

Micro Diameter Miniature 2 Flutes End Mills



微小徑 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

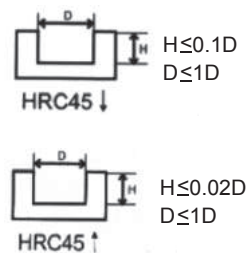


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HSE 0022	0.2	0.4	50	4
HSE 0032	0.3	0.6	50	4
HSE 0042	0.4	0.8	50	4
HSE 0052	0.5	1.0	50	4
HSE 0062	0.6	1.2	50	4
HSE 0072	0.7	1.4	50	4
HSE 0082	0.8	1.6	50	4
HSE 0092	0.9	1.8	50	4
HSE 0122	1.2	3	50	4
HSE 0142	1.4	3	50	4
HSE 0162	1.6	4	50	4
HSE 0182	1.8	5	50	4

Recommended cutting condition for Micro Diameter Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.2	40000	100-300	30000	80-250	15000	50-150
0.3	40000	100-350	30000	80-300	15000	50-200
0.4	40000	100-400	25000	80-350	10000	50-250
0.5	40000	100-500	25000	80-400	10000	50-250
0.6	38000	100-600	25000	80-500	8000	50-250
0.7	36000	100-700	20000	80-600	8000	50-250
0.8	34000	100-800	20000	80-700	8000	50-250
0.9	32000	100-1000	20000	80-800	8000	50-250

DEPTH OF CUT



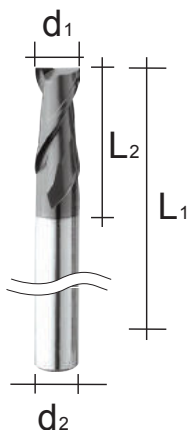


High Speed Cutting & High Hard Cutting

2 Flutes Square End Mills



2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

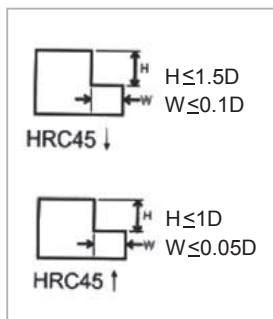


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HE 0102	1.0	3	50	4
HE 0152	1.5	4	50	4
HE 0202	2.0	6	50	4
HE 0252	2.5	7	50	4
HE 0302	3.0	8	50	4
HE 0302A	3.0	8	50	3
HE 0402	4.0	11	50	4
HE 0502	5.0	13	50	6
HE 0602	6.0	15	50	6
HE 0802	8.0	20	60	8
HE 1002	10.0	30	75	10
HE 1202	12.0	30	75	12
HE 1402	14.0	45	100	16
HE 1602	16.0	45	100	16
HE 1802	18.0	45	100	20
HE 2002	20.0	50	100	20
HE 2502	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	200	400	1200	100	800	70

DEPTH OF CUT

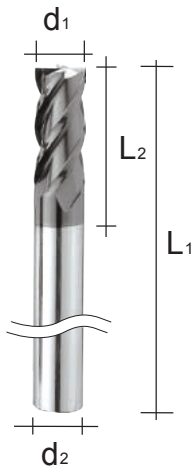


High Speed Cutting & High Hard Cutting

4 Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

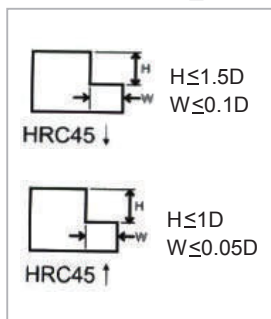


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HE 0104	1.0	3	50	4
HE 0154	1.5	4	50	4
HE 0204	2.0	6	50	4
HE 0254	2.5	7	50	4
HE 0304	3.0	8	50	4
HE 0304A	3.0	8	50	3
HE 0404	4.0	11	50	4
HE 0504	5.0	13	50	6
HE 0604	6.0	15	50	6
HE 0804	8.0	20	60	8
HE 1004	10.0	30	75	10
HE 1204	12.0	30	75	12
HE 1404	14.0	45	100	16
HE 1604	16.0	45	100	16
HE 1804	18.0	45	100	20
HE 2004	20.0	50	100	20
HE 2504	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	82	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT

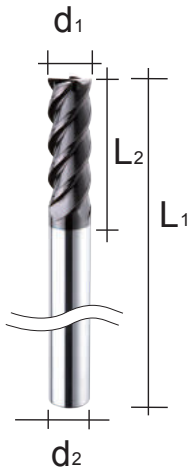


High Speed Cutting & High Hard Cutting

4 Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

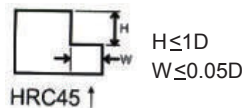
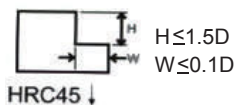


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEA 0104	1.0	3	50	4
HEA 0154	1.5	4	50	4
HEA 0204	2.0	6	50	4
HEA 0254	2.5	7	50	4
HEA 0304	3.0	8	50	4
HEA 0404	4.0	11	50	4
HEA 0504	5.0	13	50	6
HEA 0604	6.0	15	50	6
HEA 0804	8.0	20	60	8
HEA 1004	10.0	30	75	10
HEA 1204	12.0	30	75	12
HEA 1404	14.0	45	100	16
HEA 1604	16.0	45	100	16
HEA 1804	18.0	45	100	20
HEA 2004	20.0	50	100	20
HEA 2504	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	82	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT





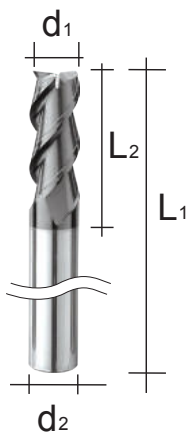
High Speed Cutting & High Hard Cutting

3 Flutes Square End Mills



3刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

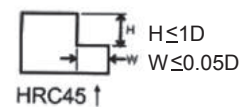
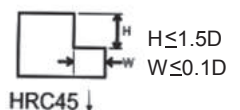
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEF 0103	1.0	3	50	4
HEF 0203	2.0	6	50	4
HEF 0303	3.0	8	50	4
HEF 0403	4.0	11	50	4
HEF 0503	5.0	13	50	6
HEF 0603	6.0	15	50	6
HEF 0803	8.0	20	60	8
HEF 1003	10.0	30	75	10
HEF 1203	12.0	30	75	12
HEF 1603	16.0	45	100	16
HEF 2003	20.0	50	100	20
HEF 2503	25.0	50	100	25



Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	82	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

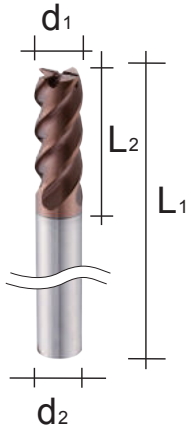
4Flutes Square End Mills



4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



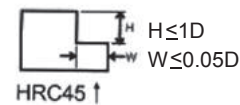
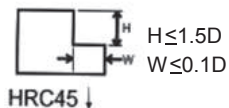
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEB 0204	2.0	6	50	6
HEB 0204A	2.0	6	50	4
HEB 0304	3.0	8	50	6
HEB 0304A	3.0	8	50	4
HEB 0404	4.0	11	50	6
HEB 0404A	4.0	11	50	4
HEB 0504	5.0	13	50	6
HEB 0604	6.0	16	50	6
HEB 0804	8.0	20	60	8
HEB 1004	10.0	30	75	10
HEB 1204	12.0	30	75	12
HEB 1604	16.0	40	100	16
HEB 2004	20.0	45	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	820	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

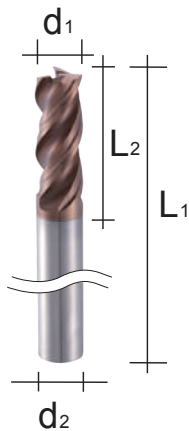
Heavy Cutting 3 Flutes End Mills



重切削 3刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



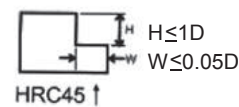
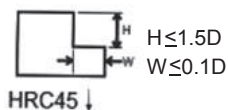
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
HXE 0203	2.0	6	50	4
HXE 0303	3.0	8	50	4
HXE 0403	4.0	11	50	4
HXE 0503	5.0	13	50	6
HXE 0603	6.0	16	50	6
HXE 0803	8.0	20	60	8
HXE 1003	10.0	30	75	10
HXE 1203	12.0	30	75	12
HXE 1603	16.0	40	100	16
HXE 2003	20.0	45	100	20



Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	820	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

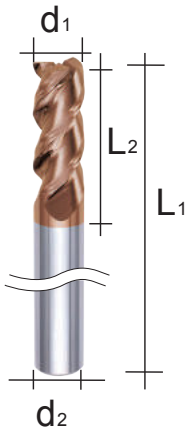
Heavy Cutting 3 Flutes End Mills



重切削 3刃波浪銑刀 極細微粒碳化鎢 高速極高硬度切削用



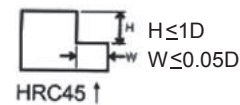
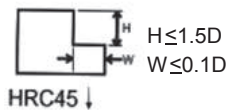
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HXW 0603	6.0	16	50	6
HXW 0803	8.0	20	60	8
HXW 1003	10.0	30	75	10
HXW 1203	12.0	30	75	12
HXW 1603	16.0	45	100	16
HXW 2003	20.0	55	120	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	820	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	300	400	150

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

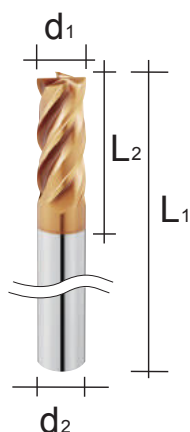
4 Flutes Square Variable Helix Angle End Mills



長柄 4刃變化螺旋立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HVE 0304	3.0	8	50	6
HVE 0404	4.0	11	50	6
HVE 0504	5.0	13	50	6
HVE 0604	6.0	16	50	6
HVE 0804	8.0	20	60	8
HVE 1004	10.0	25	75	10
HVE 1204	12.0	30	75	12
HVE 1604	16.0	40	100	16
HVE 2004	20.0	45	100	20



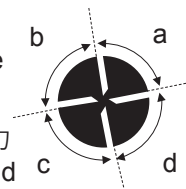
Variable
helix angle

變換螺旋角
 $\beta_1 \neq \beta_2$



Variable
rate

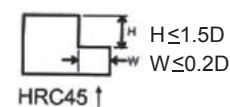
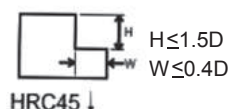
不等分底刃
 $a \neq b \neq c \neq d$



Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	22000	1800	16000	1300	10000	800
4	15000	1400	12000	1250	7000	700
5	13000	1600	10000	1400	6000	650
6	11500	1650	8500	1300	5000	800
8	8000	1800	6500	1350	3500	700
10	7000	1800	5000	1400	2800	750
12	6000	1700	4000	1300	2300	650
16	3560	1500	3000	1250	1800	700
20	3000	1450	2500	1250	1500	780

DEPTH OF CUT

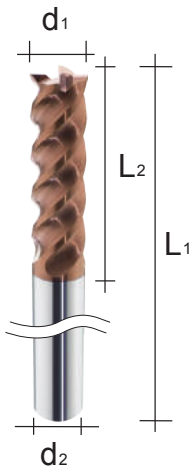


High Speed Cutting & High Hard Cutting

Heavy Cutting 4 Flutes End Mills



重切削 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

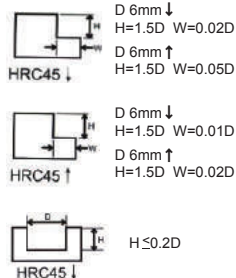


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HXE 0204	2.0	6	50	4
HXE 0254	2.0	6	50	4
HXE 0304	3.0	8	50	4
HXE 0304A	3.0	8	75	6
HXE 0404	4.0	11	50	4
HXE 0404A	4.0	11	75	6
HXE 0504	5.0	13	50	6
HXE 0604	6.0	15	50	6
HXE 0604A	6.0	15	75	6
HXE 0804	8.0	20	60	8
HXE 0804A	8.0	20	100	8
HXE 1004	10.0	25	75	10
HXE 1004A	10.0	25	100	10
HXE 1204	12.0	30	75	12
HXE 1204A	12.0	30	100	12
HXE 1604	16.0	40	100	16
HXE 1604A	16.0	40	150	16
HXE 2004	20.0	40	100	20
HXE 2004A	20.0	40	150	20

Recommended cutting condition for Power Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	20000	2000	16000	1000	9000	500
40	19000	2000	12000	1300	6000	550
5	13000	1800	10000	1400	5000	500
6	10000	3000	8000	1500	4500	700
8	8000	3200	5000	1300	3500	600
10	7000	3000	4500	1200	3000	500
12	5000	2000	4000	1100	2000	500
16	4000	1800	3500	1000	1800	450
20	3500	1600	3000	1000	1300	450
Depth of Cut						
3	20000	2000	20000	1200	16000	1200
40	16000	2000	16000	1200	12000	1300
5	13000	1800	13000	1100	10000	1400
6	10000	3000	10000	2100	8000	1500
8	8000	2900	8000	1800	6000	1400
10	7000	2800	6000	1700	5000	1300
12	5000	2300	5500	1700	4500	1200
16	3500	1800	4500	1800	3500	1200
20	3000	1400	3000	1500	2600	1100

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

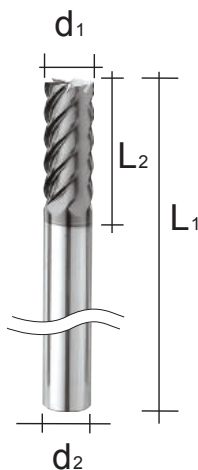
6 Flutes Square End Mills



6刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HVT 0606	6.0	15	50	6
HVT 0806	8.0	20	60	8
HVT 1006	10.0	25	75	10
HVT 1206	12.0	30	75	12
HVT 1606	16.0	40	100	16
HVT 2006	20.0	40	100	20
HVT 2506	25.0	40	100	25



DEPTH OF CUT

	H ≤ 1D W ≤ 0.02D HRC30
	H ≤ 1D W ≤ 0.015D HRC50
	H ≤ 1D W ≤ 0.01D MAX 0.2mm HRC60

D=Diameter

Recommended cutting condition for High Hardness End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	12000	3000	8000	2000	5600	1400
8	90000	2400	6700	1900	3600	1200
10	6900	2100	5000	1600	3000	900
12	6000	2400	4300	1700	2400	1000
16	4500	2100	2500	1000	1600	700



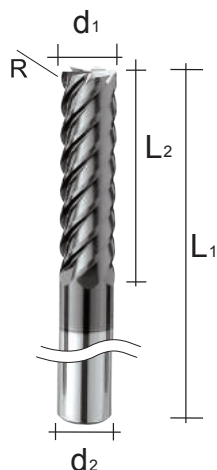
High Speed Cutting & High Hard Cutting

6 Flutes Long Shank End Mills

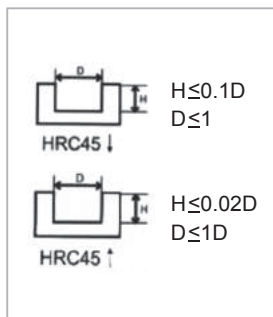


長刃型 6刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
LHVT 0606	6.0	25	75	6
LHVT 0606A	6.0	30	100	6
LHVT 0806	8.0	35	75	8
LHVT 0806A	8.0	35	100	8
LHVT 1006	10.0	40	100	10
LHVT 1006A	10.0	40	150	10
LHVT 1206	12.0	45	100	12
LHVT 1206A	12.0	45	150	12
LHVT 1606	16.0	60	150	16
LHVT 1606A	16.0	100	200	16
LHVT 2006	20.0	80	150	20
LHVT 2006A	20.0	100	200	20



DEPTH OF CUT



Recommended cutting condition for Micro Diameter Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.2	40000	100-300	30000	80-250	15000	50-150
0.3	40000	100-350	30000	80-300	15000	50-200
0.4	40000	100-400	25000	80-350	10000	50-250
0.5	40000	100-500	25000	80-400	10000	50-250
0.6	38000	100-600	25000	80-500	8000	50-250
0.7	36000	100-700	20000	80-600	8000	50-250
0.8	34000	100-800	20000	80-700	8000	50-250
0.9	32000	100-1000	20000	80-800	8000	50-250

High Speed Cutting & High Hard Cutting

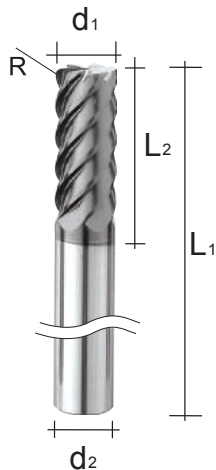
6 Flutes Corner Radius End Mills



圓鼻 6刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



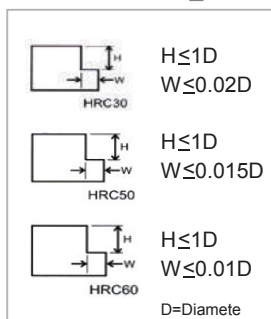
型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HVTR 0602	6.0	0.2	12	50	6
HVTR 0605	6.0	0.5	12	50	6
HVTR 0610	6.0	1.0	12	50	6
HVTR 0802	8.0	0.2	16	60	8
HVTR 0805	8.0	0.5	16	60	8
HVTR 0810	8.0	1.0	16	60	8
HVTR 1005	10.0	0.5	20	75	10
HVTR 1010	10.0	1.0	20	75	10
HVTR 1205	12.0	0.5	24	75	12
HVTR 1210	12.0	1.0	24	75	12
HVTR 1605	16.0	0.5	30	100	16
HVTR 1610	16.0	1.0	30	100	16



Recommended cutting condition for

High Hardness Corner Radius End Mills

DEPTH OF CUT



Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	15000	4000	9500	2500	6800	1800
8	11000	3000	8000	2300	4400	1500
10	8500	2500	6000	2000	3600	1100
12	7200	2800	5200	2000	2900	1200
16	5500	2500	3000	1200	2000	900



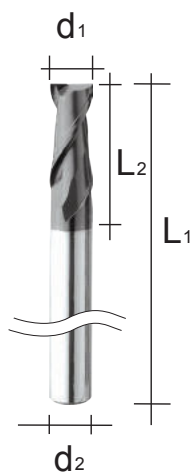
High Speed Cutting & High Hard Cutting

2 Flutes Long Shank Short Length Square End Mills



長柄短刀 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEL 0102	1.0	3	75	4
HEL 0202	2.0	6	75	4
HEL 0302	3.0	8	75	4
HEL 0402	4.0	10	75	4
HEL 0502	5.0	13	75	6
HEL 0602	6.0	15	75	6
HEL 0802	8.0	20	75	8



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEI 0302	3.0	8	100	4
HEI 0302A	3.0	8	100	6
HEI 0402	4.0	10	100	4
HEI 0402A	4.0	10	100	6
HEI 0502	5.0	13	100	6
HEI 0602	6.0	15	100	6
HEI 0802	8.0	20	100	8
HEI 1002	10.0	25	100	10
HEI 1202	12.0	30	100	12

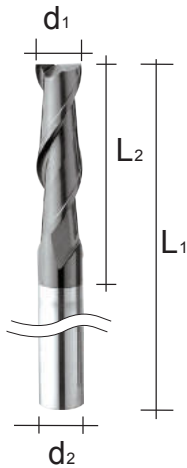
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEJ 0602	6.0	15	150	6
HEJ 0802	8.0	20	150	8
HEJ 1002	10.0	25	150	10
HEJ 1202	12.0	30	150	12
HEJ 1402	14.0	45	150	16
HEJ 1602	16.0	45	150	16
HEJ 1802	18.0	45	150	20

High Speed Cutting & High Hard Cutting

Long Flutes Square 2 Flutes End Mills



長刃型 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

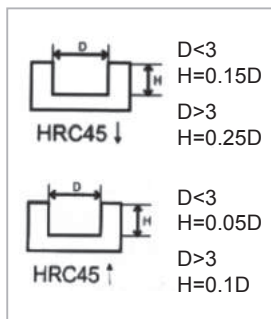


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HELF 0202	2.0	15	75	4
HELF 0302	3.0	15	75	4
HELF 0402	4.0	20	75	4
HELF 0502	5.0	25	75	6
HELF 0602	6.0	25	75	6
HELF 0602A	6.0	30	100	6
HELF 0802	8.0	25	75	8
HELF 0802A	8.0	35	100	8
HELF 1002	10.0	40	100	10
HELF 1002A	10.0	40	150	10
HELF 1202	12.0	45	100	12
HELF 1202A	12.0	45	150	12
HELF 1402	14.0	60	150	16
HELF 1602	16.0	75	150	16
HELF 1802	18.0	75	150	20
HELF 2002	20.0	75	150	20

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

DEPTH OF CUT

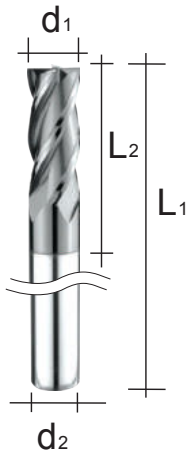


High Speed Cutting & High Hard Cutting

4 Flutes Short Length Long Square End Mills



長柄型 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

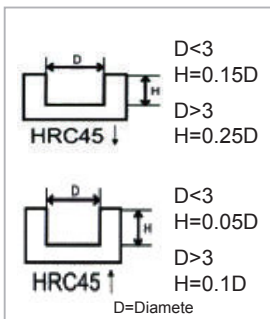


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HEL 0104	1.0	3	75	4
HEL 0104A	1.0	3	100	6
HEL 0154	1.5	4.5	75	4
HEL 0154A	1.5	4.5	100	6
HEL 0204	2.0	6	75	4
HEL 0204A	2.0	6	100	6
HEL 0304	3.0	8	75	4
HEL 0304A	3.0	8	100	6
HEL 0404	4.0	10	75	4
HEL 0404A	4.0	10	100	6
HEL 0504	5.0	13	75	6
HEL 0504A	5.0	13	100	6
HEL 0604	6.0	15	75	6
HEL 0604A	6.0	15	100	6
HEL 0604B	6.0	15	150	6
HEL 0804	8.0	20	75	8
HEL 0804A	8.0	20	100	8
HEL 0804B	8.0	20	150	8
HEL 1004	10.0	25	100	10
HEL 1004A	10.0	25	150	10
HEL 1204	12.0	30	100	12
HEL 1204A	12.0	30	150	12
HEL 1604	16.0	45	150	16
HEL 1604A	16.0	45	200	16
HEL 2004	20.0	50	150	20
HEL 2004A	20.0	50	200	20

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	820	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	3000	400	150

DEPTH OF CUT

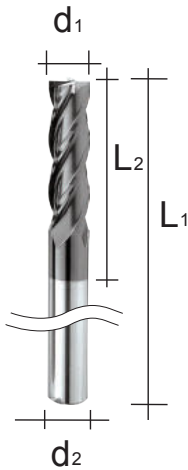


High Speed Cutting & High Hard Cutting

4 flutes Long Shank Square End Mills



長刃型 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

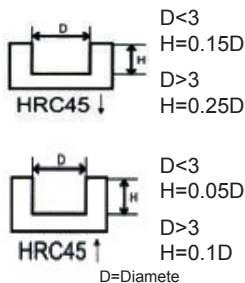


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HELF 0204	2.0	15	75	4
HELF 0304	3.0	15	75	6
HELF 0404	4.0	20	75	6
HELF 0504	5.0	25	75	6
HELF 0604	6.0	25	75	6
HELF 0604A	6.0	30	100	6
HELF 0804	8.0	25	75	8
HELF 0804A	8.0	35	100	8
HELF 1004	10.0	45	100	10
HELF 1004A	10.0	45	150	10
HELF 1204	12.0	45	100	12
HELF 1204A	12.0	45	150	12
HELF 1404	14.0	75	150	16
HELF 1604	16.0	75	150	16
HELF 1804	18.0	75	150	20
HELF 2004	20.0	75	150	20

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	22000	400	18000	200	9000	140
1.5	12000	500	11000	280	5200	150
2	10000	550	10000	280	4600	170
3	9000	600	5500	310	3500	220
4	6000	600	5000	400	2200	220
5	4800	750	4000	400	1700	240
6	4500	800	3800	420	1600	300
8	3500	820	2800	420	1000	300
10	3000	820	1800	420	900	300
12	2000	820	1600	350	800	300
16	1500	650	1000	300	500	150
20	1200	600	900	3000	400	150

DEPTH OF CUT

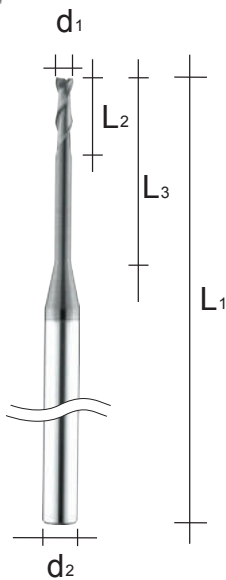


High Speed Cutting & High Hard Cutting

Long Neck Short Length Square 2 Flutes End Mills



長頸短刃 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	有效長(L3) Effective Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HNE 0402	0.4	0.8	2	50	4
HNE 0404	0.4	0.8	4	50	4
HNE 0504	0.5	1.0	4	50	4
HNE 0506	0.5	1.0	6	50	4
HNE 0604	0.6	1.2	4	50	4
HNE 0606	0.6	1.2	6	50	4
HNE 0608	0.6	1.2	8	50	4
HNE 0804	0.8	1.6	4	50	4
HNE 0806	0.8	1.6	6	50	4
HNE 0808	0.8	1.6	8	50	4
HNE 1006	1.0	3.0	6	50	4
HNE 1008	1.0	3.0	8	50	4
HNE 1010	1.0	3.0	10	50	4
HNE 1012	1.0	3.0	12	50	4
HNE 1016	1.0	3.0	16	50	4
HNE 1506	1.5	4.0	6	50	4
HNE 1508	1.5	4.0	8	50	4
HNE 1510	1.5	4.0	10	50	4
HNE 1512	1.5	4.0	12	50	4
HNE 1516	1.5	4.0	16	50	4
HNE 2008	2.0	6.0	8	50	4
HNE 2010	2.0	6.0	10	50	4
HNE 2012	2.0	6.0	12	50	4
HNE 2014	2.0	6.0	14	50	4
HNE 2016	2.0	6.0	16	50	4
HNE 2020	2.0	6.0	20	50	4
HNE 3010	3.0	6.0	10	50	4
HNE 3012	3.0	6.0	12	50	4
HNE 3014	3.0	6.0	14	50	4
HNE 3016	3.0	6.0	16	50	4
HNE 3020	3.0	6.0	20	75	4
HNE 3025	3.0	6.0	25	75	4
HNE 4014	4.0	10	14	75	6
HNE 4016	4.0	10	16	75	6
HNE 4020	4.0	10	20	75	6
HNE 4025	4.0	10	25	75	6
HNE 4030	4.0	10	30	75	6

High Speed Cutting & High Hard Cutting

Long Neck Short Length Square 2 Flutes End Mills

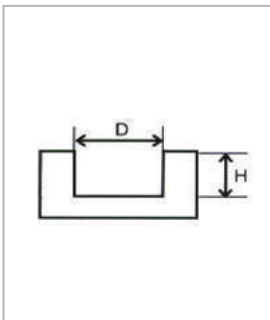


長頸短刃 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

Recommended cutting condition for Long Neck End Mills Series

Material	Alloy Steels.Tool Steels.Hardened Steels S45C,SCM,S50C,SKS,SCr,SNCM,SKD11,SKD61,NAK80			
	DIAMETER	Effective Length	SPEED (mm-1)	FEED mm/min
1	4	25000	1500	0.05
1	6	25000	1500	0.03
1	10	25000	1500	0.01
1.5	4	15000	1200	0.1
1.5	8	15000	1200	0.05
1.5	10	15000	1200	0.025
1.5	12	15000	1200	0.018
2	8	12000	900	0.2
2	10	8800	700	0.012
2	12	7500	600	0.05
2	16	7000	500	0.02
3	8	8000	600	0.5
3	12	8000	600	0.45
3	16	5500	450	0.18
3	20	4000	300	0.15
4	10	6000	400	0.7
4	16	6000	400	0.4

「DEPTH OF CUT」



High Speed Cutting & High Hard Cutting

Micro Diameter 2 Flutes Ball Nose End Mills



微小徑 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

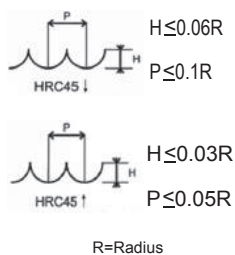


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HSB 0022	R0.10	0.4	50	4
HSB 0032	R0.15	0.6	50	4
HSB 0042	R0.20	0.8	50	4
HSB 0052	R0.25	1.0	50	4
HSB 0062	R0.30	1.2	50	4
HSB 0072	R0.35	1.4	50	4
HSB 0082	R0.40	1.6	50	4
HSB 0092	R0.45	1.8	50	4
HSB 0122	R0.6	2.4	50	4
HSB 0142	R0.7	2.8	50	4
HSB 0162	R0.8	3.2	50	4
HSB 0182	R0.9	3.6	50	4

Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.1	32000	500-600	32000	400-500	25000	300-400
0.15	32000	500-600	32000	400-500	25000	300-400
0.2	32000	500-600	32000	400-500	25000	300-400
0.25	32000	600-700	32000	500-600	25000	400-500
0.3	32000	600-700	32000	500-600	25000	400-500
0.35	32000	700-800	32000	600-700	25000	500-600
0.4	32000	900-1000	32000	800-900	25000	600-700
0.45	32000	1000-1100	32000	900-1000	25000	600-700

DEPTH OF CUT





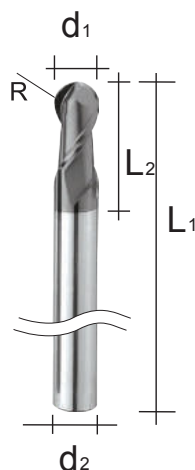
High Speed Cutting & High Hard Cutting

Standard 2 Flutes Ball Nose End Mills



2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

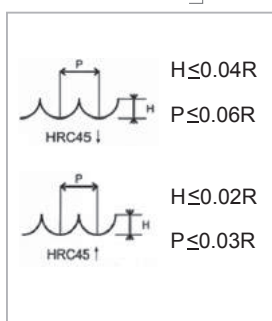
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HB 0102	R0.5	2	50	4
HB 0152	R0.75	3	50	4
HB 0202	R1.0	4	50	4
HB 0252	R1.25	5	50	4
HB 0302	R1.5	6	50	4
HB 0302A	R1.5	6	50	3
HB 0402	R2.0	8	50	4
HB 0502	R2.5	10	50	6
HB 0602	R3.0	12	50	6
HB 0802	R4.0	16	60	8
HB 1002	R5.0	20	75	10
HB 1202	R6.0	24	75	12
HB 1602	R8.0	32	100	16
HB 2002	R10.0	32	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.5	45000	2000	45000	1800	28000	1000
1	23000	2000	22000	1800	16000	900
1.5	16000	2000	15000	1800	11000	900
2	15000	2400	14000	2000	10000	1300
3	13000	3200	11000	2000	9000	1500
4	9000	2300	8000	1500	6200	1400
5	7500	1900	6500	1200	5200	900
6	6300	1600	5500	1000	4300	800
8	4500	1200	3800	800	3300	700

DEPTH OF CUT

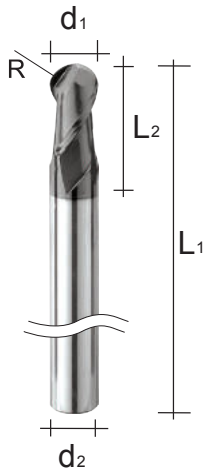


High Speed Cutting & High Hard Cutting

Long Shank 2 Flutes Ball Nose End Mills



長柄型 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HIB 0102	R0.5	2	75	4
HIB 0102A	R0.5	2	75	6
HIB 0152	R0.75	3	75	4
HIB 0152A	R0.75	3	75	6
HIB 0202	R1.0	4	75	4
HIB 0202A	R1.0	4	75	6
HIB 0302	R1.5	6	75	4
HIB 0302A	R1.5	6	75	6
HIB 0402	R2.0	8	75	4
HIB 0402A	R2.0	8	75	6
HIB 0502	R2.5	10	75	6
HIB 0602	R3.0	12	75	6
HIB 0802	R4.0	16	75	8

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HJB 0202	R1.0	4	100	6
HJB 0302	R1.5	6	100	6
HJB 0402	R2.0	8	100	6
HJB 0602	R3.0	12	100	6
HJB 0802	R4.0	16	100	8
HJB 1002	R5.0	20	100	10
HJB 1202	R6.0	24	100	12

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HKB 0602	R3.0	12	150	6
HKB 0802	R4.5	16	150	8
HKB 1002	R5.0	20	150	10
HKB 1202	R6.0	24	150	12
HKB 1602	R8.0	32	150	16
HKB 2002	R10.0	40	150	20
HKB 2502	R 12.5	40	150	25

High Speed Cutting & High Hard Cutting

Long Shank 2 Flutes Ball Nose End Mills

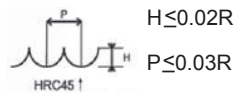
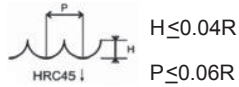


長柄型 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

Recommended cutting condition for Long Shank Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	23000	2000	22000	1800	16000	900
1.5	16000	2000	15000	1800	11000	900
2	15000	2400	14000	2000	10000	1300
3	13000	3200	11000	2000	9000	1500
4	9000	2300	8000	1500	6200	1400
5	7500	1900	6500	1200	5200	900
6	6300	1600	5500	1000	4300	800
8	4500	1200	3800	800	3300	700

DEPTH OF CUT





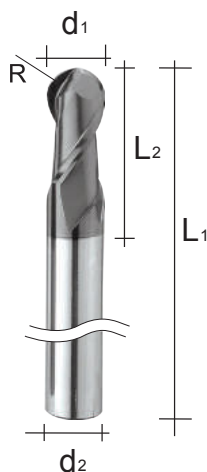
High Speed Cutting & High Hard Cutting

Standard 2 Flutes Ball Nose End Mills

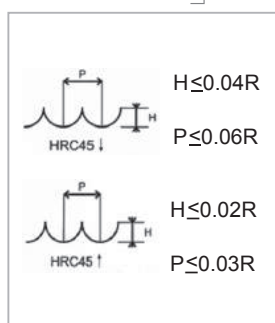


2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HBA 0102	R0.5	2	50	6
HBA 0152	R0.75	3	50	6
HBA 0202	R1.0	4	50	6
HBA 0252	R1.25	5	50	6
HBA 0302	R1.5	6	50	6
HBA 0402	R2.0	8	50	6



DEPTH OF CUT



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C,FC,FCD,SCM,S50C,SKS...		Alloy Steels,Tool Steels,SCr, SNCM,SKD11,SKD61,NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.5	20000	700	15000	2000	10000	1500
0.75	18500	800	14500	680	12000	5000
1	18000	830	14000	740	11000	640
1.25	17000	1060	12800	950	9900	640
1.5	15360	1400	11500	1020	9900	640
2	14700	2050	10800	960	8900	870

High Speed Cutting & High Hard Cutting

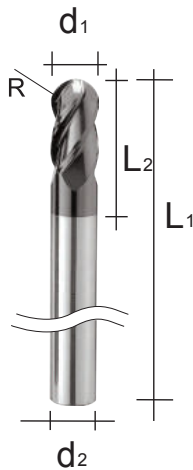
Standard 4 Flutes Ball Nose End Mills



4刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



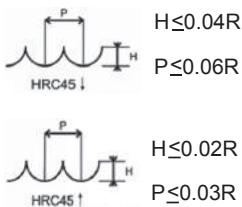
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HB 0104	R0.5	2	50	4
HB 0154	R0.75	3	50	4
HB 0204	R1.0	4	50	4
HB 0304	R1.5	6	50	4
HB 0304A	R1.5	6	50	3
HB 0404	R2.0	8	50	4
HB 0504	R2.5	10	50	6
HB 0604	R3.0	12	50	6
HB 0804	R4.0	16	60	8
HB 1004	R5.0	20	75	10
HB 1204	R6.0	24	75	12
HB 1604	R8.0	32	100	16
HB 2004	R10.0	32	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	15000	3000	14000	2600	10000	1700
3	13000	4000	11000	2600	9000	1900
4	9000	2900	8000	1900	6200	1800
5	7500	2400	6500	1500	5200	1100
6	6300	2100	5500	1300	4300	1000
8	4500	1500	3800	1000	3300	900
10	3700	1200	3200	750	2600	600

DEPTH OF CUT





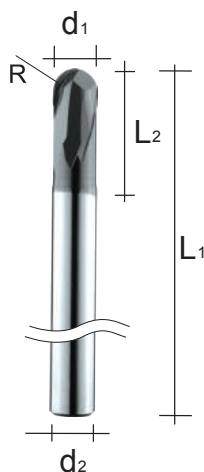
High Speed Cutting & High Hard Cutting

Short length 2 Flutes Ball Nose End Mills

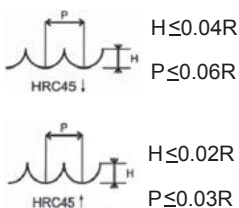


強力短刃 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HOB 0102	R0.5	1.0	50	6
HOB 0152	R0.75	1.5	50	6
HOB 0202	R1.0	1.5	50	6
HOB 0302	R1.5	2.5	50	6
HOB 0402	R2.0	3.0	50	6
HOB 0502	R2.5	3.5	50	6
HOB 0602	R3.0	4.5	50	6
HOB 0602A	R3.0	4.5	100	6
HOB 0802	R4.0	5.5	60	8
HOB 0802A	R4.0	5.5	100	8
HOB 1002	R5.0	6.5	75	10
HOB 1002A	R5.0	6.5	100	10
HOB 1202	R6.0	7.5	75	12
HOB 1202A	R6.0	7.5	100	12



DEPTH OF CUT



Recommended cutting condition for Power Ball Nose End Mills

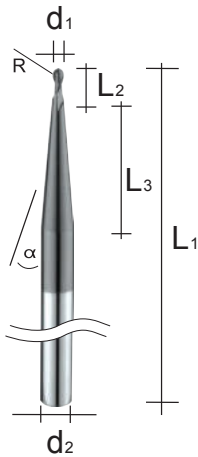
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	45000	2000	18000	1500	12000	1200
1.5	42000	2000	18000	1500	12000	1200
2	15000	3000	18000	1500	12000	1200
3	13000	5000	11000	3500	8000	1700
4	9000	3000	8000	2000	4000	1400
5	7500	2500	6500	1800	3500	1300

High Speed Cutting & High Hard Cutting

Long Neck Taper 2 Flutes Ball Nose End Mills

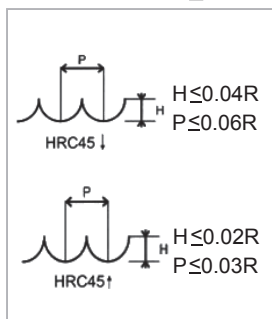


長斜頸 2刃強力球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	斜頸(α) Taper Angle	斜頸長(L3) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HLB 0103	R0.5	2	3°	32	75	6
HLB 0105	R0.5	2	5°	32	75	6
HLB 0203	R1.0	4	3°	27	100	6
HLB 0205	R1.0	4	5°	27	100	6
HLB 0315	R1.5	6	1.5°	35	100	6
HLB 0303	R1.5	6	3°	35	100	6
HLB 0415	R2.0	8	1.5°	28	100	6
HLB 0403	R2.0	8	3°	28	100	6
HLB 0603	R3.0	12	3°	32	100	8
HLB 0605	R3.0	12	5°	35	100	10
HLB 0603A	R3.0	12	3°	32	150	8
HLB 0605A	R3.0	12	5°	35	150	10
HLB 0803	R4.0	16	3°	36	100	10
HLB 0805	R4.0	16	5°	39	100	12
HLB 0803A	R4.0	16	3°	36	150	10
HLB 0805A	R4.0	16	5°	39	150	12
HLB 1003	R5.0	20	3°	40	100	12
HLB 1003A	R5.0	20	3°	40	150	12
HLB 1205	R6.0	24	5°	47	100	16

DEPTH OF CUT



Recommended cutting condition for Taper Neck Ball Nose End Mills

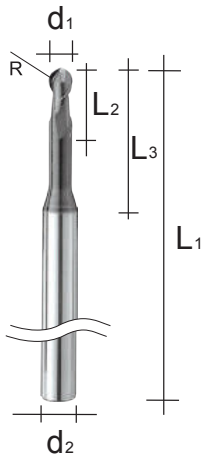
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	23000	2000	22000	1800	16000	900
1.5	16000	2000	15000	1800	11000	900
2	15000	2400	14000	2000	10000	1300
3	13000	3200	11000	2000	9000	1500

High Speed Cutting & High Hard Cutting

Long Neck short 2 Flutes Ball Nose End Mills



長頸短刀 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	有效長(L3) Effective Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HNB 0402	R0.2	0.8	2	50	4
HNB 0404	R0.2	0.8	4	50	4
HNB 0504	R0.25	1.0	4	50	4
HNB 0506	R0.25	1.0	6	50	4
HNB 0604	R0.3	1.2	4	50	4
HNB 0606	R0.3	1.2	6	50	4
HNB 0608	R0.3	1.2	8	50	4
HNB 0804	R0.4	1.2	4	50	4
HNB 0806	R0.4	1.2	6	50	4
HNB 0808	R0.4	1.2	8	50	4
HNB 0810	R0.4	1.2	10	50	4
HNB 1004	R0.5	1.5	4	50	4
HNB 1006	R0.5	1.5	6	50	4
HNB 1008	R0.5	1.5	8	50	4
HNB 1010	R0.5	1.5	10	50	4
HNB 1012	R0.5	1.5	12	50	4
HNB 1506	R0.75	3.0	6	50	4
HNB 1508	R0.75	3.0	8	50	4
HNB 1512	R0.75	3.0	12	50	4
HNB 1516	R0.75	3.0	16	50	4
HNB 1520	R0.75	3.0	20	50	4
HNB 2006	R1.0	4.0	6	50	4
HNB 2008	R1.0	4.0	8	50	4
HNB 2012	R1.0	4.0	12	50	4
HNB 2016	R1.0	4.0	16	50	4
HNB 2020	R1.0	4.0	20	50	4
HNB 3008	R1.5	4.0	8	50	4
HNB 3012	R1.5	4.0	12	50	4
HNB 3016	R1.5	4.0	16	50	4
HNB 3020	R1.5	4.0	20	75	6
HNB 3025	R1.5	4.0	25	75	6
HNB 4010	R2.0	5.0	10	75	6
HNB 4016	R2.0	5.0	16	75	6
HNB 4020	R2.0	5.0	20	75	6
HNB 4025	R2.0	5.0	25	75	6
HNB 4030	R2.0	5.0	30	75	6

High Speed Cutting & High Hard Cutting

Long Neck short 2 Flutes Ball Nose End Mills



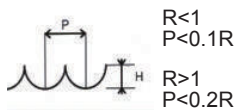
長頸短刃 2刃球型立銑刀 極細微粒碳化鎢 高速極高硬度切削用

Recommended cutting condition for

Long Neck Ball Nose End Mills Series

Material	Alloy Steels.Tool Steels.Hardened Steels S45C,SCM,S50C,SKS,SCr,SNCM,SKD11,SKD61,NAK80			
	RADIUS	Effective Length	SPEED (mm-1)	FEED mm/min
0.25	4	30000-40000	200-650	0.015
0.25	6	30000-40000	200-650	0.013
0.3	4	27000-40000	180-650	0.025
0.3	6	27000-40000	180-650	0.015
0.4	6	25000-40000	400-750	0.025
0.4	8	25000-40000	400-750	0.025
0.5	6	20000-32000	500-750	0.04
0.5	8	20000-32000	300-750	0.03
0.5	10	20000-32000	300-750	0.025
0.5	12	20000-32000	300-750	0.015
0.6	8	22000-25000	500-600	0.05
0.6	12	22000-25000	500-600	0.03
0.75	8	18000-20000	300-550	0.07
0.75	12	18000-20000	300-550	0.04
0.75	16	18000-20000	300-550	0.03
0.75	20	18000-20000	300-550	0.02
0.8	8	13000-18000	350-800	0.08
0.8	12	13000-18000	350-800	0.06
0.8	16	13000-18000	350-800	0.05
1.0	8	12000-17000	500-900	0.1
1.0	12	12000-17000	500-900	0.1
1.0	16	12000-17000	500-900	0.07
1.0	20	12000-17000	500-900	0.04
1.5	8	8000-11000	500-700	0.17
1.5	10	8000-11000	500-700	0.15
1.5	16	8000-11000	500-700	0.14
1.5	20	8000-11000	500-700	0.12
1.5	25	8000-11000	500-700	0.1
2.0	10	5000-8000	400-600	0.18
2.0	15	5000-8000	400-600	0.17
2.0	20	5000-8000	400-600	0.16
2.0	25	5000-8000	400-600	0.15
2.0	30	5000-8000	400-600	0.14

DEPTH OF CUT



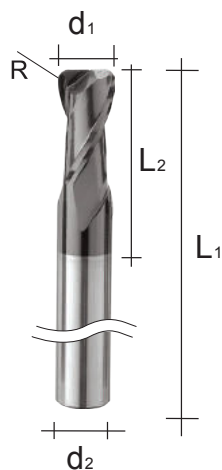


High Speed Cutting & High Hard Cutting

2 Flutes Corner Radius Square End Mills



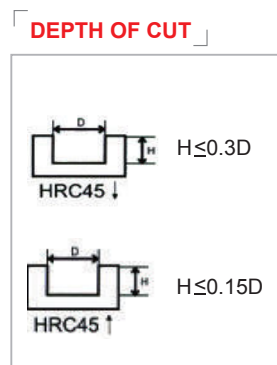
圓鼻 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號	刀徑(D1)	R	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Corner R	Flute Length	O.A.L	Shank Dia
HNR 0102	1.0	0.2	2	50	4
HNR 0202	2.0	0.2	4	50	4
HNR 0205	2.0	0.5	4	50	4
HNR 0302	3.0	0.2	6	50	4
HNR 0305	3.0	0.5	6	50	4
HNR 0310	3.0	1.0	6	50	4
HNR 0402	4.0	0.2	8	50	4
HNR 0405	4.0	0.5	8	50	4
HNR 0410	4.0	1.0	8	50	4
HNR 0602	6.0	0.2	12	50	6
HNR 0605	6.0	0.5	12	50	6
HNR 0610	6.0	1.0	12	50	6
HNR 0620	6.0	2.0	12	60	6
HNR 0805	8.0	0.5	16	60	8
HNR 0810	8.0	1.0	16	60	8
HNR 0820	8.0	2.0	16	60	8
HNR 1005	10.0	0.5	20	75	10
HNR 1010	10.0	1.0	20	75	10
HNR 1020	10.0	2.0	20	75	10
HNR 1205	12.0	0.5	24	75	12
HNR 1210	12.0	1.0	24	75	12
HNR 1220	12.0	2.0	24	75	12
HNR 1230	12.0	3.0	24	75	12

Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	7600	180	4800	120	2900	50
4	6500	260	4000	160	2500	55
5	5500	270	3200	160	2000	60
6	4800	300	2900	170	1800	70
8	3700	325	2200	170	1500	85
10	2900	280	1700	140	1100	70
12	2400	230	1400	120	1000	65
16	1800	170	1100	90	700	45

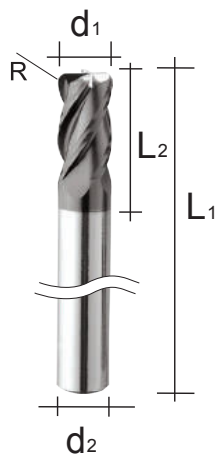


High Speed Cutting & High Hard Cutting

4 Flutes Corner Radius End Mills



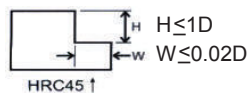
圓鼻 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
HER 0102	1.0	0.2	2	50	4
HER 0202	2.0	0.2	4	50	4
HER 0205	2.0	0.5	4	50	4
HER 0252	2.5	0.2	5	50	4
HER 0255	2.5	0.5	5	50	4
HER 0302	3.0	0.2	6	50	4
HER 0305	3.0	0.5	6	50	4
HER 0310	3.0	1.0	6	50	4
HER 0402	4.0	0.2	8	50	4
HER 0405	4.0	0.5	8	50	4
HER 0410	4.0	1.0	8	50	4
HER 0505	5.0	0.5	10	50	6
HER 0510	5.0	1.0	10	50	6
HER 0602	6.0	0.2	12	50	6
HER 0605	6.0	0.5	12	50	6
HER 0610	6.0	1.0	12	50	6
HER 0615	6.0	1.5	12	50	6
HER 0620	6.0	2.0	12	50	6
HER 0805	8.0	0.5	16	60	8
HER 0810	8.0	1.0	16	60	8
HER 0820	8.0	2.0	16	60	8
HER 1005	10.0	0.5	20	75	10
HER 1010	10.0	1.0	20	75	10
HER 1020	10.0	2.0	20	75	10
HER 1030	10.0	3.0	20	75	10
HER 1205	12.0	0.5	24	75	12
HER 1210	12.0	1.0	24	75	12
HER 1220	12.0	2.0	24	75	12
HER 1230	12.0	3.0	24	75	12

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	26000	1600	16500	1000	7500	300
3	19000	1800	12000	1200	5400	380
4	16000	3200	10000	1900	4800	480
5	14000	3300	8000	2000	3800	500
6	12000	3600	7200	2200	3500	650
8	9600	4000	5600	2200	2700	750
10	7000	3400	4400	1700	2100	650
12	6000	2800	3600	1400	1800	600
16	4500	2000	2800	1000	1400	450

DEPTH OF CUT



High Speed Cutting & High Hard Cutting

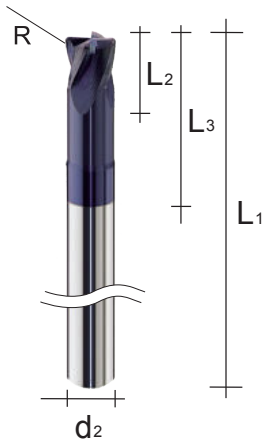
Short flute 4 Flutes Corner Radius End Mills



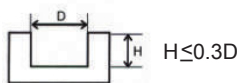
短刃 圓鼻4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	有效長(L3) Effective Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
HMR 0605	6	0.5	6	15	50	6
HMR 0610	6	1.0	6	15	50	6
HMR 0805	8	0.5	8	20	50	8
HMR 0810	8	1.0	8	20	50	8
HMR 1010	10	1.0	10	25	50	10
HMR 1020	10	2.0	10	25	75	10
HMR 1030	10	3.0	10	25	75	10
HMR 1210	12	1.0	12	30	75	12
HMR 1220	12	2.0	12	30	75	12



DEPTH OF CUT



Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	12000	12000	8000	8000	5000	4000
8	10000	10000	8000	8000	6000	4800
10	7000	5000	6000	4000	4500	2000
12	5000	7000	4000	6000	3000	3000

High Speed Cutting & High Hard Cutting

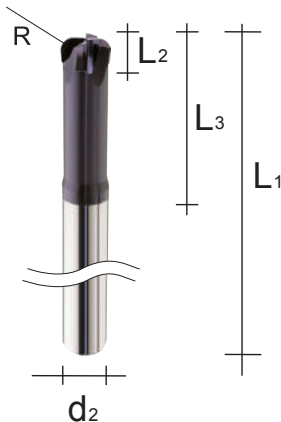
Heavy Cutting 4 Flutes Corner Radius End Mills



重切削 圓鼻4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



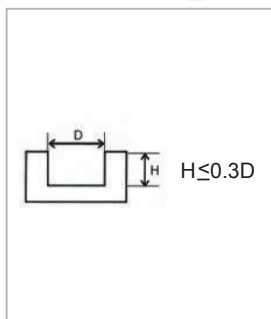
型號	直徑(D1)	頸徑(D1)	R	刃長(L2)	有效長(L3)	全長(L1)	柄徑(d2)
Type No.	Diameter	Diameter	Corner R	Flute Length	Effective Length	O.A.L.	Shank Dia
HXR 0615	6.0	5.4	1.5	3	18	50	6
HXR 0615A	6.0	5.4	1.5	3	18	75	6
HXR 0820	8.0	7.2	2.0	4	24	60	8
HXR 0820A	8.0	7.2	2.0	4	24	75	8
HXR 1020	10.0	9.0	2.0	5	30	75	10
HXR 1020A	10.0	9.0	2.0	5	30	100	10
HXR 1230	12.0	11.0	3.0	6	36	75	12
HXR 1230A	12.0	11.0	3.0	6	36	100	12



Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2×0.8	30250	9500	30400	9050	22800	6120
3×0.8	19950	11850	19950	11000	15200	7250
4×1	15200	11500	15200	11400	11400	7590
6×1.5	10050	12500	10000	11500	9050	8150
8×2	7550	13000	7550	12050	5650	8150
10×2	6030	13000	4510	9070	3040	3610
12×3	5030	13000	5030	12050	3800	8150

DEPTH OF CUT



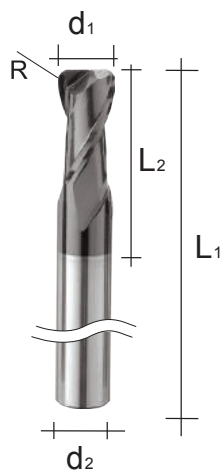


High Speed Cutting & High Hard Cutting

2 Flutes Long Shank Corner Radius Square End Mills



長柄圓鼻 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



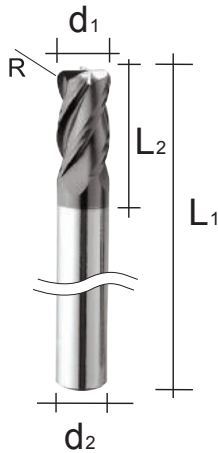
型號	刀徑(D1)	R	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Corner R	Flute Length	O.A.L	Shank Dia
HLNR 0402	4.0	0.2	8	75	4
HLNR 0405	4.0	0.5	8	75	4
HLNR 0410	4.0	1.0	8	75	4
HLNR 0602	6.0	0.2	12	100	6
HLNR 0605	6.0	0.5	12	100	6
HLNR 0610	6.0	1.0	12	100	6
HLNR 0620	6.0	2.0	12	100	6
HLNR 0805	8.0	0.5	16	100	8
HLNR 0810	8.0	1.0	16	100	8
HLNR 0820	8.0	2.0	16	100	8
HLNR 1005	10.0	0.5	20	100	10
HLNR 1010	10.0	1.0	20	100	10
HLNR 1020	10.0	2.0	20	100	10
HLNR 1030	10.0	3.0	20	100	10
HLNR 1205	12.0	0.5	24	100	12
HLNR 1210	12.0	1.0	24	100	12
HLNR 1220	12.0	2.0	20	100	12
HLNR 1230	12.0	3.0	20	100	12

High Speed Cutting & High Hard Cutting

4 Flutes Long Shank Corner Radius End Mills

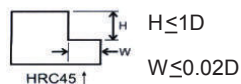
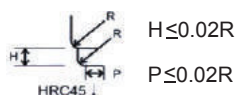


長柄圓鼻 4刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號	直徑(D1)	R	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Corner R	Flute Length	O.A.L	Shank Dia
HLR 0305	3.0	0.5	6	75	3
HLR 0305A	3.0	0.5	6	75	4
HLR 0402	4.0	0.2	8	75	4
HLR 0405	4.0	0.5	8	75	4
HLR 0602	6.0	0.2	12	75	6
HLR 0605	6.0	0.5	12	75	6
HLR 0605A	6.0	0.5	12	100	6
HLR 0610	6.0	1.0	12	75	6
HLR 0610A	6.0	1.0	12	100	6
HLR 0805	8.0	0.5	16	75	8
HLR 0805A	8.0	0.5	16	100	8
HLR 0810	8.0	1.0	16	75	8
HLR 0810A	8.0	1.0	16	100	8
HLR 1005	10.0	0.5	20	100	10
HLR 1005A	10.0	0.5	20	150	10
HLR 1010	10.0	1.0	20	100	10
HLR 1010A	10.0	1.0	20	150	10
HLR 1020	10.0	2.0	20	100	10
HLR 1020A	10.0	2.0	20	150	10
HLR 1030	10.0	3.0	20	100	10
HLR 1030A	10.0	3.0	20	150	10
HLR 1205	12.0	0.5	24	100	12
HLR 1205A	12.0	0.5	24	150	12
HLR 1210	12.0	1.0	24	100	12
HLR 1210A	12.0	1.0	24	150	12
HLR 1220	12.0	2.0	24	100	12
HLR 1220A	12.0	2.0	24	150	12
HLR 1230	12.0	3.0	24	100	12
HLR 1230A	12.0	3.0	24	150	12

DEPTH OF CUT



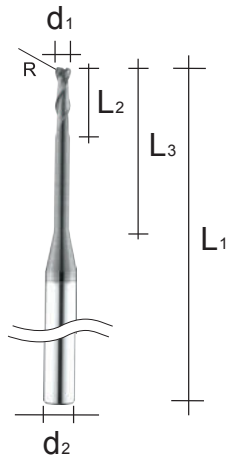
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	26000	1600	16500	1000	7500	300
3	19000	1800	12000	1200	5400	380
4	16000	3200	10000	1900	4800	480
5	14000	3300	8000	2000	3800	500
6	12000	3600	7200	2200	3500	650
8	9600	4000	5600	2200	2700	750
10	7000	3400	4400	1700	2100	650
12	6000	2800	3600	1400	1800	600

High Speed Cutting & High Hard Cutting

2 Flutes Long Neck Corner Radius End Mills



長頸短刃圓鼻 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用



型號 Type No.	刃徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	有效長(L3) Effective Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
HNMR 1004	1.0	0.2	2.0	4	50	4
HNMR 1006	1.0	0.2	2.0	6	50	4
HNMR 1008	1.0	0.2	2.0	8	50	4
HNMR 1012	1.0	0.2	2.0	12	50	4
HNMR 1504	1.5	0.2	2.0	4	50	4
HNMR 1506	1.5	0.2	2.0	6	50	4
HNMR 1508	1.5	0.2	2.0	8	50	4
HNMR 1512	1.5	0.2	2.0	12	50	4
HNMR 2008	2.0	0.2	4.0	8	50	4
HNMR 2010	2.0	0.2	4.0	10	50	4
HNMR 2012	2.0	0.2	4.0	12	50	4
HNMR 2016	2.0	0.2	4.0	16	50	4
HNMR 2008A	2.0	0.5	4.0	8	50	4
HNMR 2010A	2.0	0.5	4.0	10	50	4
HNMR 2012A	2.0	0.5	4.0	12	50	4
HNMR 2016A	2.0	0.5	4.0	16	50	4
HNMR 3008A	3.0	0.5	6.0	8	50	4
HNMR 3012A	3.0	0.5	6.0	12	50	4
HNMR 3016A	3.0	0.5	6.0	16	50	6
HNMR 3020A	3.0	0.5	6.0	20	50	6
HNMR 0308	3.0	0.2	6.0	8	50	4
HNMR 0312	3.0	0.2	6.0	12	50	4
HNMR 0316	3.0	0.2	6.0	16	50	4
HNMR 0320	3.0	0.2	6.0	20	50	4
HNMR 4012A	4.0	0.5	8.0	12	50	6
HNMR 4016A	4.0	0.5	8.0	16	75	6
HNMR 4020A	4.0	0.5	8.0	20	75	6
HNMR 4025A	4.0	0.5	8.0	25	75	6
HNMR 4030A	4.0	0.5	8.0	30	75	6
HNMR 0412	4.0	0.2	8.0	12	50	6
HNMR 0416	4.0	0.2	8.0	16	75	6
HNMR 0420	4.0	0.2	8.0	20	75	6
HNMR 0425	4.0	0.2	8.0	25	75	6
HNMR 0430	4.0	0.2	8.0	30	75	6

High Speed Cutting & High Hard Cutting

2 Flutes Long Neck Corner Radius End Mills

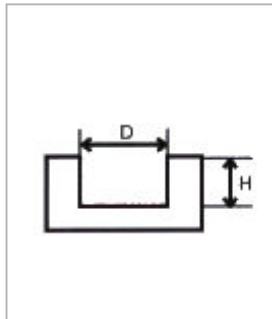


長頸短刃圓鼻 2刃立銑刀 極細微粒碳化鎢 高速極高硬度切削用

Recommended cutting condition for Corner Radius Long Neck End Mills

Material	Alloy Steels.Tool Steels.Hardened Steels			
	S45C,SCM,S50C,SKS,SCr,SNCM,SKD11,SKD61,NAK80			
RADIUS	Effective Length	SPEED (mm-1)	FEED mm/min	DEPTH OF CUT
1	4	30000	2200	0.15
1	6	30000	2200	0.12
1	8	30000	2200	0.12
1	10	30000	2200	0.12
1.5	4	25000	1800	0.20
1.5	6	25000	1800	0.18
1.5	8	25000	1800	0.15
1.5	10	25000	1800	0.15
1.5	12	25000	1800	0.15
2	8	20000	1500	0.30
2	10	20000	1500	0.30
2	12	20000	1500	0.25
2	16	20000	1500	0.25
3	8	12000	900	0.40
3	12	12000	900	0.40
3	16	12000	900	0.30
3	20	12000	900	0.30
4	10	9000	850	0.50
4	16	9000	850	0.40

「DEPTH OF CUT」



End Mills Series

2 Flutes Square End Mills
3 Flutes Square End Mills
4 Flutes Square End Mills
4 Flutes Long Shank Square End Mills
4 Flutes Short Length Long Square End Mills
2 Flutes short Length Long Square End Mills
2 Flutes Long Short Length Square End Mills

平刀系列



End Mills Series

2 Flutes Square End Mills

MG

0.6
μm

CO
10%

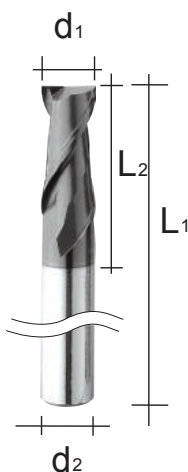
HRC
55

TIALN

35°

2 Flutes

2刃立銑刀 超微粒碳化鎢 立銑刀系列

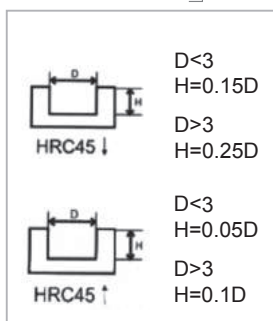


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JE 0102	1.0	3	50	4
JE 0152	1.5	4	50	4
JE 0202	2.0	6	50	4
JE 0252	2.5	7	50	4
JE 0302	3.0	8	50	4
JE 0302A	3.0	8	50	3
JE 0402	4.0	11	50	4
JE 0502	5.0	13	50	6
JE 0602	6.0	15	50	6
JE 0802	8.0	20	60	8
JE 1002	10.0	30	75	10
JE 1202	12.0	30	75	12
JE 1402	14.0	45	100	16
JE 1602	16.0	45	100	16
JE 1802	18.0	45	100	20
JE 2002	20.0	50	100	20
JE 2502	25.0	50	100	25

Recommended cutting condition for Roughing Cut Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

「DEPTH OF CUT」

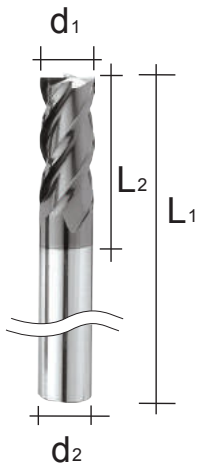


End Mills Series

4 Flutes Square End Mills



4刃立銑刀 超微粒碳化鎢 立銑刀系列

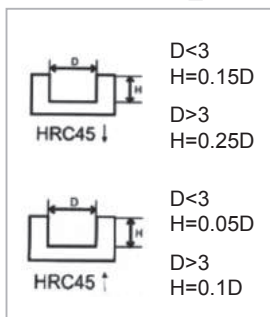


型號	直徑(D1)	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L.	Shank Dia
JEA 0104	1.0	3	50	4
JEA 0154	1.5	4	50	4
JEA 0204	2.0	6	50	4
JEA 0254	2.5	7	50	4
JEA 0304	3.0	8	50	4
JEA 0304A	3.0	8	50	3
JEA 0404	4.0	11	50	4
JEA 0504	5.0	13	50	6
JEA 0604	6.0	15	50	6
JEA 0804	8.0	20	60	8
JEA 1004	10.0	30	75	10
JEA 1204	12.0	30	75	12
JEA 1404	14.0	45	100	16
JEA 1604	16.0	45	100	16
JEA 1804	18.0	45	100	20
JEA 2004	20.0	50	100	20
JEA 2504	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

「DEPTH OF CUT」



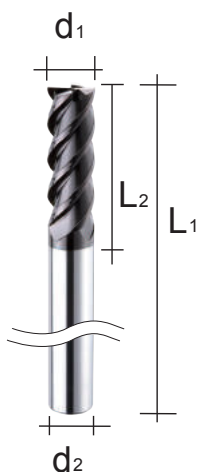


End Mills Series

4 Flutes Square End Mills



4刃立銑刀 超微粒碳化鎢 立銑刀系列

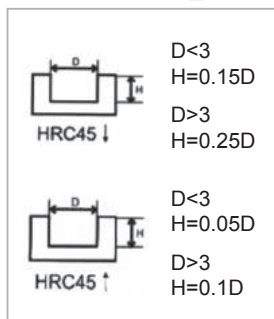


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
JE 0104	1.0	3	50	4
JE 0154	1.5	4	50	4
JE 0204	2.0	6	50	4
JE 0254	2.5	7	50	4
JE 0304	3.0	8	50	4
JE 0304A	3.0	8	50	3
JE 0404	4.0	11	50	4
JE 0504	5.0	13	50	6
JE 0604	6.0	15	50	6
JE 0804	8.0	20	60	8
JE 1004	10.0	30	75	10
JE 1204	12.0	30	75	12
JE 1404	14.0	45	100	16
JE 1604	16.0	45	100	16
JE 1804	18.0	45	100	20
JE 2004	20.0	50	100	20
JE 2504	25.0	50	100	25

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

「DEPTH OF CUT」





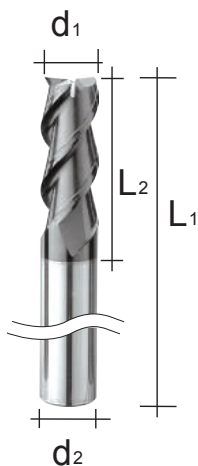
End Mills Series

3 Flutes Square End Mills



3刃立銑刀 超微粒碳化鎢 立銑刀系列

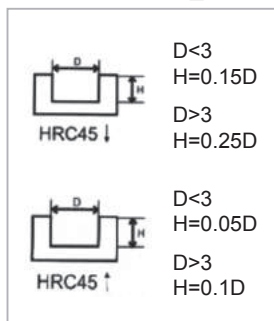
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JEF 0103	1.0	3	50	4
JEF 0203	2.0	6	50	4
JEF 0303	3.0	8	50	4
JEF 0403	4.0	11	50	4
JEF 0503	5.0	13	50	6
JEF 0603	6.0	15	50	6
JEF 0803	8.0	20	60	8
JEF 1003	10.0	30	75	10
JEF 1203	12.0	30	75	12
JEF 1603	16.0	45	100	16
JEF 2003	20.0	50	100	20
JEF 2503	25.0	50	100	25



Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	8000	550(300)	5500	300(100)	3500	200(95)
4	6500	550(300)	4500	300(100)	2200	200(95)
5	5000	800(400)	3600	350(120)	1800	210(100)
6	4000	800(400)	2800	350(120)	1500	210(110)
8	3500	800(400)	2600	350(120)	1300	210(100)
10	2500	800(400)	2000	350(120)	1100	210(100)
12	1800	750(350)	1500	350(120)	700	210(100)
16	1400	700(300)	1000	300(100)	500	170(70)

「DEPTH OF CUT」

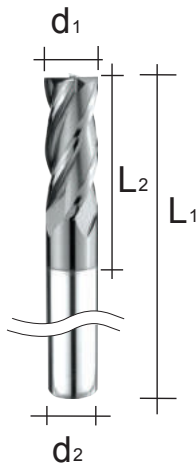


End Mills Series

4 Flutes Long Shank Square End Mills



長柄型 4刃立銑刀 超微粒碳化鎢 立銑刀系列

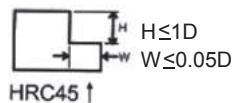
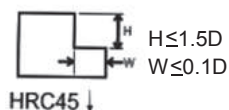


型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
JEL 0104	1.0	3	75	4
JEL 0104A	1.0	3	100	6
JEL 0154	1.5	4.5	75	4
JEL 0154A	1.5	4.5	100	6
JEL 0204	2.0	6	75	4
JEL 0204A	2.0	6	100	6
JEL 0304	3.0	8	75	4
JEL 0304A	3.0	8	100	6
JEL 0404	4.0	10	75	4
JEL 0404A	4.0	10	100	6
JEL 0504	5.0	13	75	6
JEL 0504A	5.0	13	100	6
JEL 0604	6.0	15	75	6
JEL 0604A	6.0	15	100	6
JEL 0604B	6.0	15	150	6
JEL 0804	8.0	20	75	8
JEL 0804A	8.0	20	100	8
JEL 0804B	8.0	20	150	8
JEL 1004	10.0	30	100	10
JEL 1004A	10.0	30	150	10
JEL 1204	12.0	30	100	12
JEL 1204A	12.0	30	150	12
JEL 1604	16.0	45	150	16
JEL 1604A	16.0	45	200	16
JEL 2004	20.0	50	150	20
JEL 2004A	20.0	50	200	20

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

DEPTH OF CUT

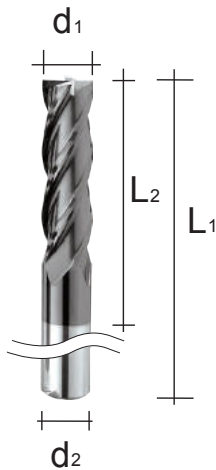


End Mills Series

4 Flutes Short Length Long Square End Mills



長刃型 4刃立銑刀 超微粒碳化鎢 立銑刀系列

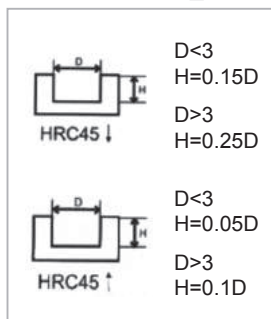


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
JELF 0204	2.0	15	75	4
JELF 0304	3.0	15	75	6
JELF 0404	4.0	20	75	6
JELF 0504	5.0	25	75	6
JELF 0604	6.0	25	75	6
JELF 0604A	6.0	30	100	6
JELF 0804	8.0	25	75	8
JELF 0804A	8.0	35	100	8
JELF 1004	10.0	45	100	10
JELF 1004A	10.0	50	150	10
JELF 1204	12.0	45	100	12
JELF 1204A	12.0	50	150	12
JELF 1404	14.0	60	150	16
JELF 1604	16.0	75	150	16
JELF 1804	18.0	75	150	20
JELF 2004	20.0	75	150	20

Recommended cutting condition for Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	3000	25	1700	20	1000	15
3	2300	35	1900	25	800	10
4	2000	45	1600	35	650	15
5	1800	40	1400	40	600	20
6	1700	60	1300	50	550	25
8	1300	60	1000	50	450	25
10	1000	60	800	50	350	25
12	800	60	700	50	300	25
16	700	50	600	40	250	20
20	500	40	400	30	200	20

DEPTH OF CUT

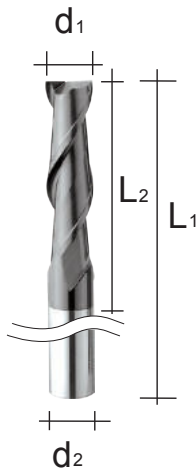


End Mills Series

2 Flutes short Length Long Square End Mills



長刃型 2刃立銑刀 超微粒碳化鎢 立銑刀系列

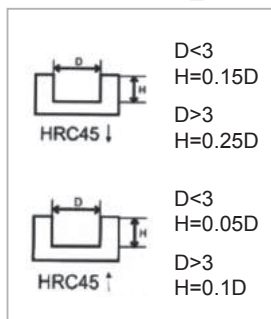


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
JELF 0202	2.0	15	75	4
JELF 0302	3.0	15	75	4
JELF 0402	4.0	20	75	4
JELF 0502	5.0	25	75	6
JELF 0602	6.0	25	75	6
JELF 0602A	6.0	30	100	6
JELF 0802	8.0	25	75	8
JELF 0802A	8.0	35	100	8
JELF 1002	10.0	40	100	10
JELF 1002A	10.0	40	150	10
JELF 1202	12.0	45	100	12
JELF 1202A	12.0	45	150	12
JELF 1402	14.0	60	150	16
JELF 1602	16.0	75	150	16
JELF 1802	18.0	75	150	20
JELF 2002	20.0	75	150	20

Recommended cutting condition for Long Flute Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	3000	50	2500	40	1000	15
3	2500	60	2000	50	800	20
4	2000	80	1700	70	700	30
5	1800	110	1500	85	600	40
6	1500	110	1400	75	550	50
8	1300	110	1100	75	450	50
10	1000	110	800	75	300	50
12	900	110	700	75	250	40
16	800	95	500	70	150	20
20	500	80	400	60	120	20

DEPTH OF CUT



End Mills Series

2 Flutes Long Short Length Square End Mills



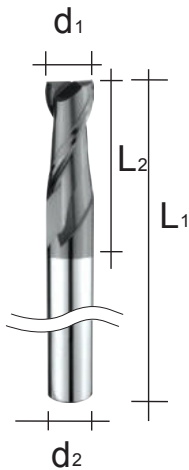
長柄型 2刃立銑刀 超微粒碳化鎢 立銑刀系列



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JEL 0102	1.0	3	75	4
JEL 0202	2.0	6	75	4
JEL 0302	3.0	8	75	4
JEL 0402	4.0	10	75	4
JEL 0502	5.0	13	75	6
JEL 0602	6.0	15	75	6
JEL 0802	8.0	20	75	8

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JEI 0302	3.0	8	100	4
JEI 0302A	3.0	8	100	6
JEI 0402	4.0	10	100	4
JEI 0402A	4.0	10	100	6
JEI 0502	5.0	13	100	6
JEI 0602	6.0	15	100	6
JEI 0802	8.0	20	100	8
JEI 1002	10.0	25	100	10
JEI 1202	12.0	30	100	12

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JEJ 0602	6.0	15	150	6
JEJ 0802	8.0	20	150	8
JEJ 1002	10.0	25	150	10
JEJ 1202	12.0	30	150	12
JEJ 1402	14.0	45	150	16
JEJ 1602	16.0	45	150	16
JEJ 1802	18.0	45	150	20
JEJ 2002	20.0	50	150	20



End Mills Series

2 Flutes Long Short Length Square End Mills

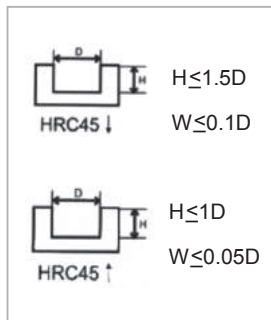


長柄型 2刃立銑刀 超微粒碳化鎢 立銑刀系列

Recommended cutting condition for Long Shank Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	20000	80	15000	45	11000	30
1.5	13600	135	10000	60	9000	40
2	9600	150	8500	50	6000	45
3	6500	200	5800	75	4000	60
4	5500	250	4000	80	3200	60
5	4500	300	3000	80	2500	70
6	4000	300	2500	80	2200	70
8	3500	350	2200	90	1700	70
10	3000	400	2000	90	1500	70
12	2500	400	1500	100	1000	70
16	2000	400	1200	100	800	70

DEPTH OF CUT

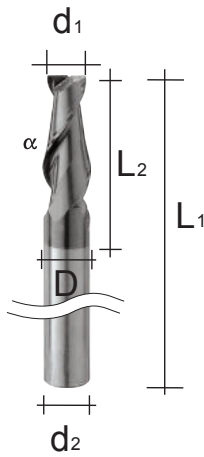


End Mills Series

2 Flutes Taper Square End Mills



斜度刀 2刃立銑刀 超微粒碳化鎢 平刀系列



型號	先端徑(D1)	刀長(L2)	斜度(α)	粗端徑(D)	全長(L1)	柄徑(d2)
Type No.	Small Mill Dia	Flute Length	Flute Length	Large Mill Dia	O.A.L.	Shank Dia
JTA 010005	1.0	4	0.5°	1.07	50	4
JTA 010010	1.0	4	1°	1.14	50	4
JTA 010015	1.0	4	1.5°	1.21	50	4
JTA 010020	1.0	4	2°	1.28	50	4
JTA 010025	1.0	4	2.5°	1.35	50	4
JTA 010030	1.0	4	3°	1.42	50	4
JTA 010050	1.0	5	5°	1.7	50	4
JTA 010070	1.0	5	7°	1.98	50	4
JTA 010100	1.5	5	10°	2.41	50	4
JTA 015005	1.5	5	0.5°	1.59	50	4
JTA 015010	1.5	5	1°	1.67	50	4
JTA 015015	1.5	5	1.5°	1.76	50	4
JTA 015020	1.5	5	2°	1.85	50	4
JTA 015025	1.5	5	2.5°	1.93	50	4
JTA 015030	1.5	5	3°	2.02	50	4
JTA 015050	1.5	5	5°	2.37	50	4
JTA 015070	1.5	5	7°	2.73	50	4
JTA 015100	1.5	5	10°	3.26	50	4
JTA 020005	2.0	6	0.5°	2.10	50	4
JTA 020010	2.0	6	1°	2.21	50	4
JTA 020015	2.0	6	1.5°	2.31	50	4
JTA 020020	2.0	6	2°	2.41	50	4
JTA 020025	2.0	6	2.5°	2.52	50	4
JTA 020030	2.0	6	3°	2.62	50	4
JTA 020050	2.0	6	5°	3.05	50	4
JTA 020070	2.0	6	7°	3.47	50	4
JTA 020100	2.0	6	10°	4.12	50	4
JTA 025005	2.5	8	0.5°	2.64	50	4
JTA 025010	2.5	8	1°	2.78	50	4
JTA 025015	2.5	8	1.5°	2.91	50	4
JTA 025020	2.5	8	2°	3.05	50	4
JTA 025025	2.5	8	2.5°	3.20	50	4
JTA 025030	2.5	8	3°	3.33	50	4
JTA 025050	2.5	8	5°	3.90	50	4
JTA 025070	2.5	8	7°	4.46	50	4
JTA 025100	2.5	8	10°	5.32	50	4
JTA 030005	3.0	10	0.5°	3.17	50	4
JTA 030010	3.0	10	1°	3.35	50	4
JTA 030015	3.0	10	1.5°	3.52	50	4
JTA 030020	3.0	10	2°	3.69	50	4
JTA 030025	3.0	10	2.5°	3.87	50	4
JTA 030030	3.0	10	3°	4.05	50	6
JTA 030050	3.0	10	5°	4.75	50	6
JTA 030070	3.0	10	7°	5.45	50	6
JTA 030100	3.0	10	10°	6.53	60	8

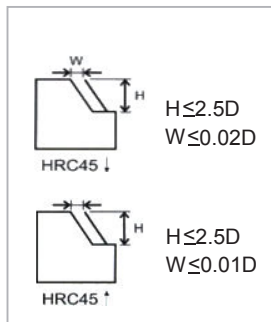
End Mills Series

2 Flutes Taper Square End Mills



斜度刀 2刃立銑刀 超微粒碳化鎢 平刀系列

DEPTH OF CUT



Recommended cutting condition for Long Flute, Taper End Mills

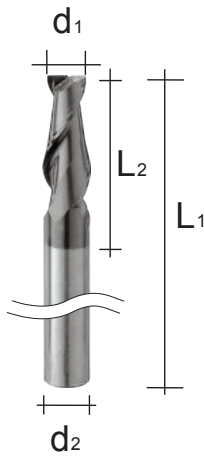
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
1	12000	65	6800	40	500	15
1.5	9600	70	5200	45	2000	15
2	7500	85	4000	48	1500	18
2.5	6800	100	3700	60	1700	20
4	3500	120	1800	60	600	20
6	2500	150	1600	80	550	25
8	2000	150	1200	80	450	25
10	1500	150	1000	80	350	25

End Mills Series

2 Flutes Taper Square End Mills



斜度刀 2刃立銑刀 超微粒碳化鎢 平刀系列



型號	先端徑(D1)	刀長(L2)	斜度(α)	粗端徑(D)	全長(L1)	柄徑(d2)
Type No.	Small Mill Dia	Flute Length	Flute Length	Large Mill Dia	O.A.L	Shank Dia
JTA 040005	4.0	15	0.5°	4.26	50	6
JTA 040010	4.0	15	1°	4.52	50	6
JTA 040015	4.0	15	1.5°	4.79	50	6
JTA 040020	4.0	15	2°	5.04	50	6
JTA 040025	4.0	15	2.5°	5.31	50	6
JTA 040030	4.0	15	3°	5.57	50	6
JTA 040050	4.0	15	5°	6.62	60	8
JTA 040070	4.0	15	7°	7.68	60	8
JTA 040100	4.0	15	10°	9.30	75	10
JTA 050005	5.0	20	0.5°	5.34	55	6
JTA 050010	5.0	20	1°	5.70	55	6
JTA 050015	5.0	20	1.5°	6.04	60	8
JTA 050020	5.0	20	2°	6.39	60	8
JTA 050025	5.0	20	2.5°	6.74	60	8
JTA 050030	5.0	20	3°	7.10	60	8
JTA 050050	5.0	20	5°	8.50	75	10
JTA 050070	5.0	20	7°	9.91	75	10
JTA 050100	5.0	20	10°	12.05	75	12
JTA 060005	6.0	20	0.5°	6.35	60	8
JTA 060010	6.0	20	1°	6.70	60	8
JTA 060015	6.0	20	1.5°	7.05	60	8
JTA 060020	6.0	20	2°	7.40	60	8
JTA 060025	6.0	20	2.5°	7.75	60	8
JTA 060030	6.0	20	3°	8.10	75	10
JTA 060050	6.0	20	5°	9.50	75	10
JTA 060070	6.0	20	7°	10.91	75	12
JTA 060100	6.0	20	10°	13.05	75	12
JTA 080005	8.0	25	0.5°	8.44	75	10
JTA 080010	8.0	25	1°	8.87	75	10
JTA 080015	8.0	25	1.5°	9.31	75	10
JTA 080020	8.0	25	2°	9.74	75	10
JTA 080025	8.0	25	2.5°	10.18	75	12
JTA 080030	8.0	25	3°	10.62	75	12
JTA 080050	8.0	25	5°	12.37	100	12
JTA 080070	8.0	25	7°	14.14	100	16
JTA 080100	8.0	25	10°	16.82	100	16
JTA 100005	10.0	35	0.5°	10.61	100	12
JTA 100010	10.0	35	1°	11.22	100	12
JTA 100015	10.0	35	1.5°	11.83	100	12
JTA 100020	10.0	35	2°	12.44	100	12
JTA 100025	10.0	35	2.5°	13.06	100	12
JTA 100030	10.0	35	3°	13.67	100	12
JTA 100050	10.0	35	5°	16.12	100	16
JTA 100070	10.0	35	7°	18.60	100	16
JTA 100100	10.0	35	10°	22.34	100	16

End Mills Series

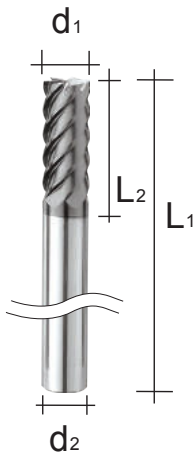
6 Flutes Standard End Mills



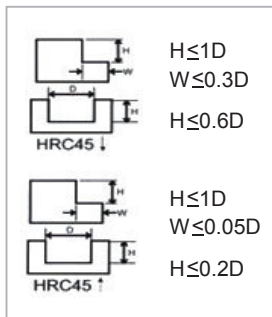
6刃立銑刀 超微粒碳化鎢 平刀系列



型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
JVT 0606	6.0	15	50	6
JVT 0806	8.0	20	60	8
JVT 1006	10.0	25	75	10
JVT 1206	12.0	30	75	12
JVT 1606	16.0	40	100	16
JVT 2006	20.0	40	100	20
JVT 2506	25.0	40	100	25



DEPTH OF CUT



Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	5500	1000	4500	850	3800	650
8	4000	1000	3500	850	3000	650
10	3300	1000	3100	850	2400	650
12	3000	900	2500	700	2000	600
16	2500	700	2000	550	1500	450
20	1800	550	1500	420	1200	380



End Mills Series

6 Flutes Long Shank End Mills



長刃型 6刃立銑刀 超微粒碳化鎢 平刀系列

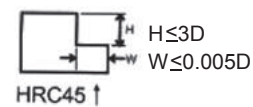
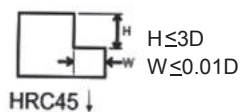
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
LJVT 0606	6.0	25	75	6
LJVT 0606A	6.0	30	100	6
LJVT 0806	8.0	35	75	8
LJVT 0806A	8.0	35	100	8
LJVT 1006	10.0	40	100	10
LJVT 1006A	10.0	40	150	10
LJVT 1206	12.0	45	100	12
LJVT 1206A	12.0	45	150	12
LJVT 1606	16.0	60	150	16
LJVT 1606A	16.0	100	200	16
LJVT 2006	20.0	80	150	20
LJVT 2006A	20.0	100	200	20



Recommended cutting condition for Long Flute

High Hardness Square End Mills

DEPTH OF CUT



Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	1900	400	1500	300	1200	220
8	1500	380	1100	280	900	200
10	1200	360	850	260	750	190
12	1000	340	700	230	650	180
16	750	280	550	200	450	150
20	600	240	450	170	350	120

End Mills Series

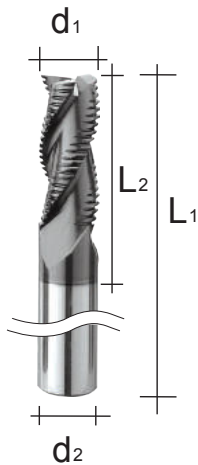
3 Flutes Roughing End Mills



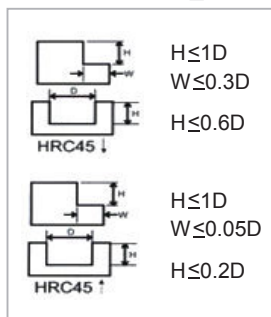
3刃粗立銑刀 超微粒碳化鎢 平刀系列



型號	直徑(D1)	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
JWA 0603	6.0	15	50	6
JWA 0803	8.0	20	60	8
JWA 1003	10.0	25	75	10
JWA 1203	12.0	30	75	12
JWA 1603	16.0	40	100	16
JWA 2003	20.0	40	100	20



DEPTH OF CUT



Recommended cutting condition for Roughing Cut Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	5500	550	3000	310	1150	120
8	4600	550	2500	310	920	120
10	3700	550	2000	310	730	120
12	3000	500	1700	310	600	120
16	2300	520	1200	310	460	120



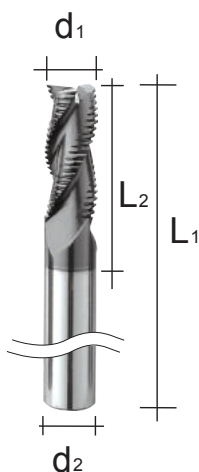
End Mills Series

3 Flutes Long Shank Square Roughing End Mills

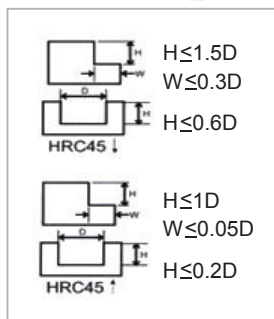


長柄長刃粗銑刀 超微粒碳化鎢 平刀系列

型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
LJWA 0603	6.0	15	100	6
LJWA 0803	8.0	20	100	8
LJWA 1003	10.0	25	100	10
LJWA 1203	12.0	30	100	12
LJWA 1603	16.0	40	150	16
LJWA 2003	20.0	40	150	20



「DEPTH OF CUT」



Recommended cutting condition for Roughing Cut Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	4400	440	2400	250	920	100
8	3600	440	2000	250	730	100
10	3000	440	1600	250	580	100
12	2400	440	1350	250	480	100
16	1800	440	960	250	370	100

End Mills Series

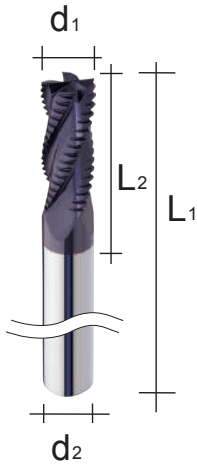
4 Flutes Roughing End Mills



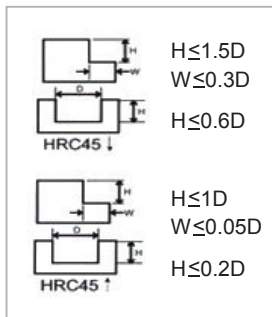
4刃粗立銑刀 超微粒碳化鎢 平刀系列



型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JWA 0604	6.0	15	50	6
JWA 0804	8.0	20	60	8
JWA 1004	10.0	25	75	10
JWA 1204	12.0	30	75	12
JWA 1604	16.0	40	100	16
JWA 2004	20.0	40	100	20



DEPTH OF CUT



Recommended cutting condition for Roughing Cut Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	5500	550	3000	310	1150	120
8	4600	550	2500	310	920	120
10	3700	550	2000	310	730	120
12	3000	500	1700	310	600	120
16	2300	520	1200	310	460	120

End Mills Series

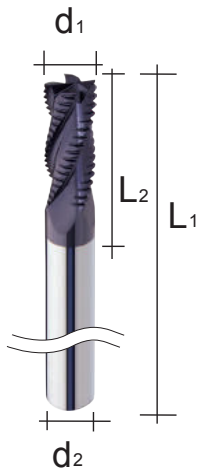
4 Flutes Long Shank Square Roughing End Mills



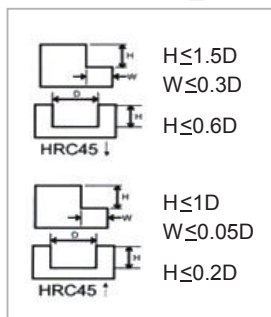
長柄4刃粗銑刀 超微粒碳化鎢 平刀系列



型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
LJWA 0604	6.0	15	100	6
LJWA 0804	8.0	20	100	8
LJWA 1004	10.0	25	100	10
LJWA 1204	12.0	30	100	12
LJWA 1604	16.0	40	150	16
LJWA 2004	20.0	40	150	20



DEPTH OF CUT



Recommended cutting condition for Roughing Cut Square End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
6	4400	440	2400	250	920	00
8	3600	440	2000	250	730	100
10	3000	440	1600	250	580	100
12	2400	440	1350	250	480	100
16	1800	440	960	250	370	100

I

Corner Radius End Mills



- 3 Flutes Roughing End Mills
- 4 Flutes Roughing End Mills
- 6 Flutes Long Shank End Mills
- 2 Flutes Taper Square End Mills
- 4 Flutes Corner Radius End Mills
- 2 Flutes Corner Radius Square End Mills
- 4 Flutes Long Shank Corner Radius End Mills
- 2 Flutes Long Shank Corner Radius End Mills
- 3 Flutes Long Shank Square Roughing End Mills
- 4 Flutes Long Shank Square Roughing End Mills

圓鼻刀系列

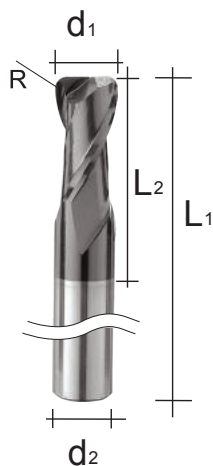


Corner Radius End Mills

2 Flutes Corner Radius Square End Mills



圓鼻 2刃立銑刀 超微粒碳化鎢 圓鼻刀系列

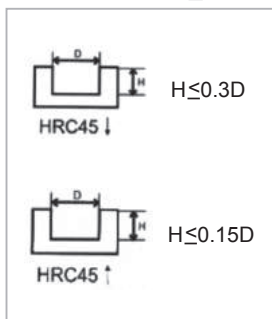


型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JNR 0102	1.0	0.2	2	50	4
JNR 0202	2.0	0.2	4	50	4
JNR 0205	2.0	0.5	4	50	4
JNR 0302	3.0	0.2	6	50	4
JNR 0305	3.0	0.5	6	50	4
JNR 0310	3.0	1.0	6	50	4
JNR 0402	4.0	0.2	8	50	4
JNR 0405	4.0	0.5	8	50	4
JNR 0410	4.0	1.0	8	50	4
JNR 0602	6.0	0.2	12	50	6
JNR 0605	6.0	0.5	12	50	6
JNR 0610	6.0	1.0	12	50	6
JNR 0620	6.0	2.0	12	60	6
JNR 0805	8.0	0.5	16	60	8
JNR 0810	8.0	1.0	16	60	8
JNR 0820	8.0	2.0	16	60	8
JNR 1005	10.0	0.5	20	75	10
JNR 1010	10.0	1.0	20	75	10
JNR 1020	10.0	2.0	20	75	10
JNR 1205	12.0	0.5	24	75	12
JNR 1210	12.0	1.0	24	75	12
JNR 1220	12.0	2.0	24	75	12
JNR 1230	12.0	3.0	24	75	12

Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	7600	180	4800	120	2900	50
4	6500	260	4000	160	2500	55
5	5500	270	3200	160	2000	60
6	4800	300	2900	170	1800	70
8	3700	350	2200	170	1500	85
10	2900	280	1700	140	1100	70
12	2400	230	1400	120	1000	65
16	1800	170	1100	90	700	45

DEPTH OF CUT





Corner Radius End Mills

2 Flutes Long Shank Corner Radius End Mills



長柄圓鼻 2刃立銑刀 超微粒碳化鎢 圓鼻刀系列



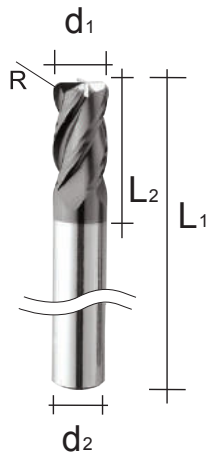
型號 Type No.	刀徑(D1) Diameter	R Corner R	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JLNR 0402	4.0	0.2	8	75	4
JLNR 0405	4.0	0.5	8	75	4
JLNR 0410	4.0	1.0	8	75	4
JLNR 0602	6.0	0.2	12	100	6
JLNR 0605	6.0	0.5	12	100	6
JLNR 0610	6.0	1.0	12	100	6
JLNR 0620	6.0	2.0	12	100	6
JLNR 0805	8.0	0.5	16	100	8
JLNR 0810	8.0	1.0	16	100	8
JLNR 0820	8.0	2.0	16	100	8
JLNR 1005	10.0	0.5	20	100	10
JLNR 1010	10.0	1.0	20	100	10
JLNR 1020	10.0	2.0	20	100	10
JLNR 1030	10.0	3.0	20	100	10
JLNR 1205	12.0	0.5	24	100	12
JLNR 1210	12.0	1.0	24	100	12
JLNR 1220	12.0	2.0	20	100	12
JLNR 1230	12.0	3.0	20	100	12

Corner Radius End Mills

4 Flutes Corner Radius End Mills



圓鼻 4刃立銑刀 超微粒碳化鎢 圓鼻刀系列



型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JER 0102	1.0	0.2	2	50	4
JER 0202	2.0	0.2	4	50	4
JER 0205	2.0	0.5	4	50	4
JER 0252	2.5	0.2	5	50	4
JER 0255	2.5	0.5	5	50	4
JER 0302	3.0	0.2	6	50	4
JER 0305	3.0	0.5	6	50	4
JER 0310	3.0	1.0	6	50	4
JER 0402	4.0	0.2	8	50	4
JER 0405	4.0	0.5	8	50	4
JER 0410	4.0	1.0	8	50	4
JER 0505	5.0	0.5	10	50	6
JER 0510	5.0	1.0	10	50	6
JER 0602	6.0	0.2	12	50	6
JER 0605	6.0	0.5	12	50	6
JER 0610	6.0	1.0	12	50	6
JER 0615	6.0	1.5	12	50	6
JER 0620	6.0	2.0	12	50	6
JER 0805	8.0	0.5	16	60	8
JER 0810	8.0	1.0	16	60	8
JER 0820	8.0	2.0	16	60	8
JER 1005	10.0	0.5	20	75	10
JER 1010	10.0	1.0	20	75	10
JER 1020	10.0	2.0	20	75	10
JER 1030	10.0	3.0	20	75	10
JER 1205	12.0	0.5	24	75	12
JER 1210	12.0	1.0	24	75	12
JER 1220	12.0	2.0	24	75	12
JER 1230	12.0	3.0	24	75	12

Corner Radius End Mills

4 Flutes Corner Radius End Mills

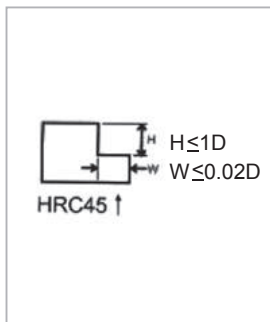


圓鼻 4刃立銑刀 超微粒碳化鎢 圓鼻刀系列

Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
3	9500	450	6000	290	3600	120
4	8000	800	5000	480	3200	160
5	6800	820	4000	500	2500	170
6	6000	900	3600	530	2300	220
8	4600	1000	2800	530	1800	250
10	3500	850	2200	420	1400	220
12	3000	720	1800	350	1200	200
16	2300	520	1400	250	900	150

DEPTH OF CUT



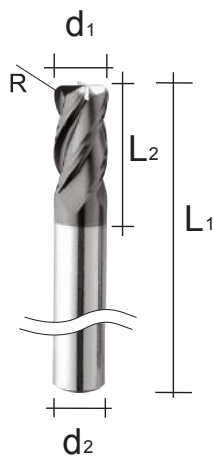


Corner Radius End Mills

4 Flutes Long Shank Corner Radius End Mills



長柄圓鼻 4刃立銑刀 超微粒碳化鎢 圓鼻刀系列

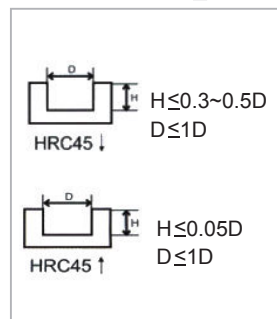


型號 Type No.	刀徑(D1) Diameter	R Corner R	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JLR 0305	3.0	0.5	6	75	3
JLR 0305A	3.0	0.5	6	75	4
JLR 0402	4.0	0.2	8	75	4
JLR 0405	4.0	0.5	8	75	4
JLR 0602	6.0	0.2	12	75	6
JLR 0605	6.0	0.5	12	75	6
JLR 0605A	6.0	0.5	12	100	6
JLR 0610	6.0	1.0	12	75	6
JLR 0610A	6.0	1.0	12	100	6
JLR 0805	8.0	0.5	16	75	8
JLR 0805A	8.0	0.5	16	100	8
JLR 0810	8.0	1.0	16	75	8
JLR 0810A	8.0	1.0	16	100	8
JLR 1005	10.0	0.5	20	100	10
JLR 1005A	10.0	0.5	20	150	10
JLR 1010	10.0	1.0	20	100	10
JLR 1010A	10.0	1.0	20	150	10
JLR 1020	10.0	2.0	20	100	10
JLR 1020A	10.0	2.0	20	150	10
JLR 1030	10.0	3.0	20	100	10
JLR 1030A	10.0	3.0	20	150	10
JLR 1205	12.0	0.5	24	100	12
JLR 1205A	12.0	0.5	24	150	12
JLR 1210	12.0	1.0	24	100	12
JLR 1210A	12.0	1.0	24	150	12
JLR 1220	12.0	2.0	24	100	12
JLR 1220A	12.0	2.0	24	150	12
JLR 1230	12.0	3.0	24	100	12
JLR 1230A	12.0	3.0	24	150	12

Recommended cutting condition for Corner Radius End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	9900	245	6500	1500	4400	65
3	7600	270	4800	180	2900	80
4	6500	490	4000	300	2500	100
5	5500	510	3200	320	2000	110
6	4800	560	2900	330	1800	140
8	3700	620	2200	330	1500	160
10	2900	530	1700	260	1100	140
12	2400	45	1400	220	1000	125
16	1800	320	1100	160	700	90

DEPTH OF CUT



Ball Nose End Mills Series

2 Flutes Ball Nose End Mills
4 Flutes Ball Nose End Mills
2 Flutes Long Shank Ball Nose End Mills

圓頭立銑刀系列





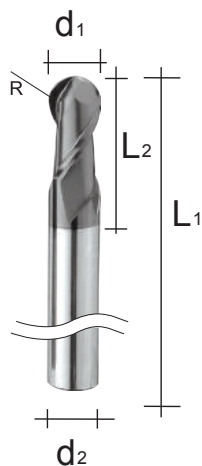
Ball Nose End Mills Series

2 Flutes Ball Nose End Mills



2刃球型立銑刀 超微粒碳化鎢 圓頭立銑刀系列

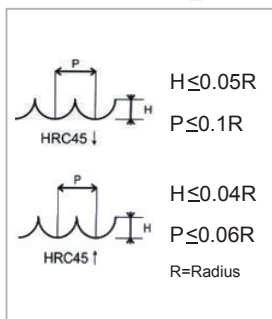
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JB 0102	R0.5	2	50	4
JB 0152	R0.75	3	50	4
JB 0202	R1.0	4	50	4
JB 0252	R1.25	5	50	4
JB 0302	R1.5	6	50	4
JB 0302A	R1.5	6	50	3
JB 0402	R2.0	8	50	4
JB 0502	R2.5	10	50	6
JB 0602	R3.0	12	50	6
JB 0802	R4.0	16	60	8
JB 1002	R5.0	20	75	10
JB 1202	R6.0	24	75	12
JB 1602	R8.0	32	100	16
JB 2002	R10.0	32	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.5	45000	800	35000	600	20000	200
1	23000	800	18000	600	10000	200
1.5	16000	1000	12000	600	6500	200
2	12000	1000	9500	700	5000	300
3	8000	1100	6000	700	3500	300
4	6000	1200	5000	800	2500	350
5	5000	1100	4000	800	2000	350
6	4000	1000	3000	700	1500	300
8	3000	1000	2000	700	1000	300

「DEPTH OF CUT」





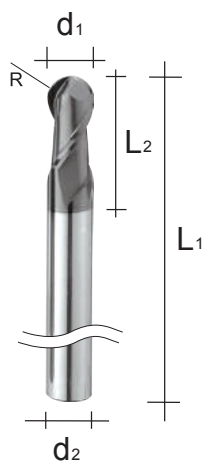
Ball Nose End Mills Series

2 Flutes Ball Nose End Mills



2刃球型立銑刀 超微粒碳化鎢 圓頭立銑刀系列

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JBA 0102	R0.5	2	50	6
JBA 0152	R0.75	3	50	6
JBA 0202	R1.0	4	50	6
JBA 0252	R1.25	5	50	6
JBA 0302	R1.5	6	50	6
JBA 0402	R2.0	8	50	6





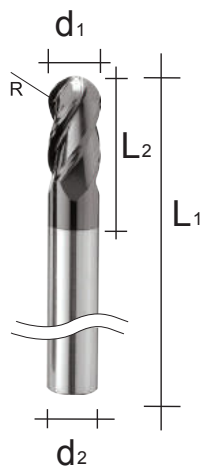
Ball Nose End Mills Series

4 Flutes Ball Nose End Mills



4刃球型立銑刀 超微粒碳化鎢 圓頭立銑刀系列

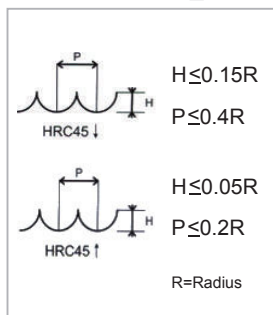
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JB 0104	R0.5	2	50	4
JB 0154	R0.75	3	50	4
JB 0204	R1.0	4	50	4
JB 0304	R1.5	6	50	4
JB 0304A	R1.5	6	50	3
JB 0404	R2.0	8	50	4
JB 0504	R2.5	10	50	6
JB 0604	R3.0	12	50	6
JB 0804	R4.0	16	60	8
JB 1004	R5.0	20	75	10
JB 1204	R6.0	24	75	12
JB 1604	R8.0	32	100	16
JB 2004	R10.0	32	100	20



Recommended cutting condition for Long Shank Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	12000	1200	9500	900	5000	400
3	8000	1400	6000	900	3500	500
4	6000	1600	5000	1000	2500	600
5	5000	1400	4000	1000	2000	600
6	4000	1200	3000	900	1500	500
8	3000	1200	2500	900	1000	500
10	2500	1000	2000	600	900	300

DEPTH OF CUT

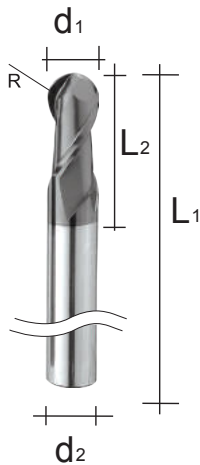


Ball Nose End Mills Series

2 Flutes Long Shank Ball Nose End Mills



長柄 2刃球型立銑刀 超微粒碳化鎢 圓頭立銑刀系列

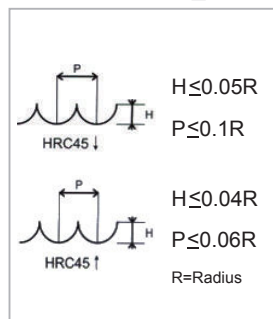


型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
JIB 0102	R0.5	2	75	4
JIB 0102A	R0.5	2	75	6
JIB 0152	R0.75	3	75	4
JIB 0152A	R0.75	3	75	6
JIB 0202	R1.0	4	75	4
JIB 0202A	R1.0	4	75	6
JIB 0302	R1.5	6	75	4
JIB 0302A	R1.5	6	75	6
JIB 0402	R2.0	8	75	4
JIB 0402A	R2.0	8	75	6
JIB 0502	R2.5	10	75	6
JIB 0602	R3.0	12	75	6
JIB 0802	R4.0	16	75	8
JJB 0202	R1.0	4	100	6
JJB 0302	R1.5	6	100	6
JJB 0402	R2.0	8	100	6
JJB 0602	R3.0	12	100	6
JJB 0802	R4.0	16	100	8
JJB 1002	R5.0	20	100	10
JJB 1202	R6.0	24	100	12
JKB 0602	R3.0	12	150	6
JKB 0802	R4.0	16	150	8
JKB 1002	R5.0	20	150	10
JKB 1202	R6.0	24	150	12
JKB 1602	R8.0	32	150	16
JKB 2002	R10.0	40	150	20
JKB 2502	R12.5	40	150	25

Recommended cutting condition for Long Shank Ball Nose End Mills

Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, S.Cr, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.5	45000	800	35000	600	20000	200
1	23000	800	18000	600	10000	200
1.5	16000	1000	12000	600	6500	200
2	12000	1000	9500	700	5000	300
3	8000	1100	6000	700	3500	300
4	6000	1200	5000	800	2500	350
5	5000	1100	4000	800	2000	350
6	4000	1000	3000	700	1500	300
8	3000	1000	2000	700	1000	300

DEPTH OF CUT



Soft Materials Cutting Series

3F Corner Rounding Cutter
2 Flutes Aluminum Square End Mills
3 Flutes Aluminum Square End Mills
3 Flutes Aluminum Square End Mills
2 Flutes Long Shank Square End Mills
3 Flutes Long Shank Square End Mills
2 Flutes Aluminum Ball Nose End Mills
NC Spot Drills 60°, 90°, 120° Degree End Mills

軟金屬系列



Soft Materials Cutting Series

2 Flutes Aluminum Square End Mills

MG

0.6
μm

CO
10%

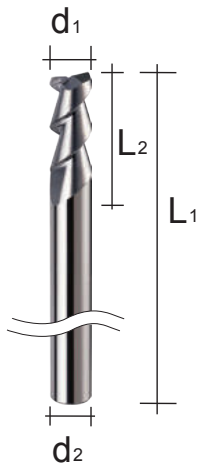
55°

2 Flutes

鋁合金專用 2刃立銑刀 超微粒碳化鎢 軟金屬系列



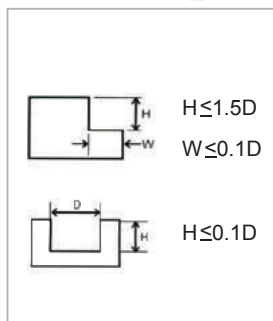
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
AE 0102	1.0	3	50	4
AE 0202	2.0	6	50	4
AE 0302	3.0	8	50	4
AE 0402	4.0	10	50	4
AE 0502	5.0	13	50	6
AE 0602	6.0	15	50	6
AE 0802	8.0	20	60	8
AE 1002	10.0	30	75	10
AE 1202	12.0	30	75	12
AE 1602	16.0	50	100	16
AE 2002	20.0	50	100	20



Recommended cutting condition for Square End Mills

Material	Aluminum 1070		Aluminum alloy 2014/4032/5052/6061/7075		Aluminum alloy AC85	
	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
DIAMETER						
2	37000	2000(800)	16000	850(350)	20000	1100(450)
3	35000	2000(900)	14000	850(450)	18000	1100(550)
4	26000	2000(1100)	11000	850(550)	13000	1100(660)
5	21000	2000(1100)	9000	850(550)	10000	1100(660)
6	17000	2000(1100)	7000	850(550)	9000	1100(660)
8	13000	2000(1100)	5500	850(650)	7000	1100(800)
10	11000	2000(1300)	7000	850(650)	5500	1100(800)
12	8800	2000(1300)	3600	850(800)	4500	1100(800)
16	6500	2000(1100)	3000	850(550)	3500	1100(900)
20	5300	2000(1100)	2200	850(550)	2500	1100(650)

「DEPTH OF CUT」



Soft Materials Cutting Series

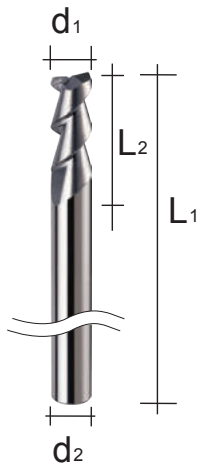
2 Flutes Long Shank Square End Mills



鋁合金專用 2刃長刃立銑刀 超微粒碳化鎢 軟金屬系列



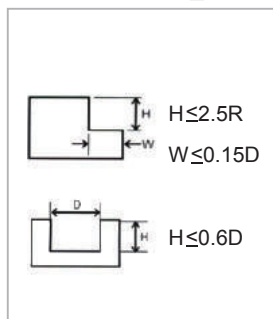
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
LAE 0302	3.0	12	75	6
LAE 0402	4.0	16	75	6
LAE 0502	5.0	20	75	6
LAE 0602	6.0	25	75	6
LAE 0802	8.0	35	75	8
LAE 0802A	8.0	35	100	8
LAE 1002	10.0	50	100	10
LAE 1202	12.0	50	100	12
LAE 1602	16.0	75	150	16
LAE 2002	20.0	75	150	20



Recommended cutting condition for Long Flute Square End Mills

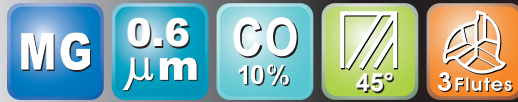
Material	Carbon Steels, Alloy Steels S45C, FC, FCD, SCM, S50C, SKS...		Alloy Steels, Tool Steels, SCR, SNCM, SKD11, SKD61, NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	30000	600(500)	15000	250(250)	18000	300(300)
3	26000	600(500)	11000	250(250)	13500	300(350)
4	20000	600(550)	8500	250(200)	10000	300(350)
5	15600	600(550)	6700	250(200)	8000	300(350)
6	13500	600(550)	5500	250(200)	6700	300(350)
8	10000	600(600)	4200	250(200)	5000	300(350)
10	7500	600(600)	3300	250(200)	4000	300(350)
12	6700	600(600)	2700	250(200)	3400	300(350)
16	5000	600(500)	2300	250(200)	2500	300(350)
20	4000	600(500)	1700	250(200)	2000	300(350)

「DEPTH OF CUT」



Soft Materials Cutting Series

3 Flutes Aluminum Square End Mills



鋁合金專用 3刃立銑刀 超微粒碳化鎢 軟金屬系列

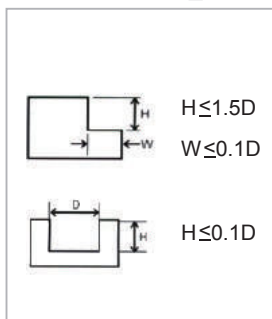
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
AEW 0606	6.0	16	50	6
AEW 0808	8.0	20	60	8
AEW 1010	10.0	25	75	10
AEW 1212	12.0	30	75	12
AEW 1616	16.0	50	100	16
AEW 2020	20.0	50	100	20



Recommended cutting condition for Square End Mills

Material	Aluminum 1070		Aluminum alloy 2014/4032/5052/6061/7075		Aluminum alloy AC85	
	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
DIAMETER						
2	37000	2000(800)	16000	850(350)	20000	1100(450)
3	35000	2000(900)	14000	850(450)	18000	1100(550)
4	26000	2000(1100)	11000	850(550)	13000	1100(660)
5	21000	2000(1100)	9000	850(550)	10000	1100(660)
6	17000	2000(1100)	7000	850(550)	9000	1100(660)
8	13000	2000(1100)	5500	850(650)	7000	1100(800)
10	11000	2000(1300)	7000	850(650)	5500	1100(800)
12	8800	2000(1300)	3600	850(800)	4500	1100(800)
16	6500	2000(1100)	3000	850(550)	3500	1100(900)
20	5300	2000(1100)	2200	850(550)	2500	1100(650)

「DEPTH OF CUT」



Soft Materials Cutting Series

3 Flutes Aluminum Square End Mills

MG

0.6
μm

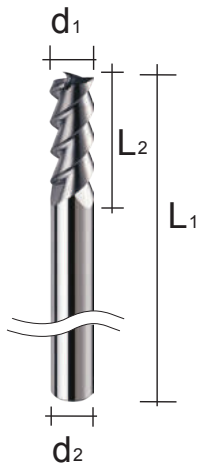
CO
10%

55°

3 Flutes

鋁合金專用 3刃立銑刀 超微粒碳化鎢 軟金屬系列

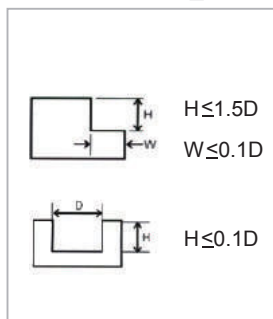
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
AE 0103	1.0	3	50	4
AE 0203	2.0	6	50	4
AE 0303	3.0	8	50	4
AE 0403	4.0	10	50	4
AE 0503	5.0	13	50	6
AE 0603	6.0	15	50	6
AE 0803	8.0	20	60	8
AE 1003	10.0	30	75	10
AE 1203	12.0	30	75	12
AE 1603	16.0	50	100	16
AE 2003	20.0	50	100	20



Recommended cutting condition for Square End Mills

Material	Aluminum 1070		Aluminum alloy 2014/4032/5052/6061/7075		Aluminum alloy AC85	
	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
DIAMETER						
2	37000	2400(950)	16000	1000(380)	20000	1300(500)
3	35000	2400(1050)	14000	1000(500)	18000	1300(600)
4	26000	2400(1200)	11000	1000(600)	13000	1300(720)
5	21000	2400(1200)	9000	1000(600)	10000	1300(720)
6	17000	2400(1200)	7000	1000(600)	9000	1300(720)
8	13000	2400(1200)	5500	1000(700)	7000	1300(880)
10	11000	2400(1400)	7000	1000(700)	5500	1300(880)
12	8800	2400(1400)	3600	1000(880)	4500	1300(880)
16	6500	2400(1200)	3000	1000(600)	3500	1300(1000)
20	5300	2400(1200)	2200	1000(600)	2500	1300(700)

「DEPTH OF CUT」



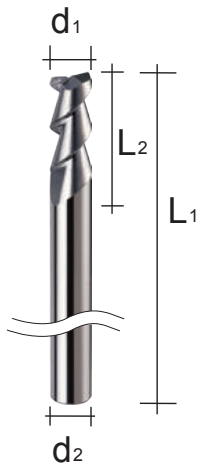
Soft Materials Cutting Series

3 Flutes Long Shank Square End Mills



鋁合金專用 3刃立銑刀 超微粒碳化鎢 軟金屬系列

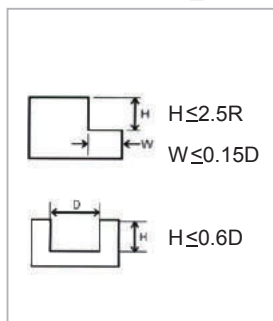
型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
LAE 0303	3.0	12	75	6
LAE 0403	4.0	16	75	6
LAE 0503	5.0	20	75	6
LAE 0603	6.0	25	75	6
LAE 0803	8.0	35	75	8
LAE 0803A	8.0	35	100	8
LAE 1003	10.0	45	100	10
LAE 1203	12.0	50	100	12
LAE 1603	16.0	75	150	16
LAE 2003	20.0	75	150	20



Recommended cutting condition for Long Shank Square End Mills

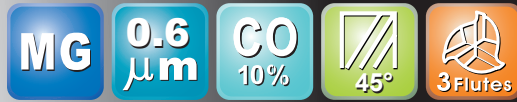
Material	Aluminum 1070		Aluminum alloy 2014/4032/5052/6061/7075		Aluminum alloy AC85	
	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
DIAMETER						
2	37000	2400(950)	16000	1000(380)	20000	1300(500)
3	35000	2400(1050)	14000	1000(500)	18000	1300(600)
4	26000	2400(1200)	11000	1000(600)	13000	1300(720)
5	21000	2400(1200)	9000	1000(600)	10000	1300(720)
6	17000	2400(1200)	7000	1000(600)	9000	1300(720)
8	13000	2400(1200)	5500	1000(700)	7000	1300(880)
10	11000	2400(1400)	7000	1000(700)	5500	1300(880)
12	8800	2400(1400)	3600	1000(880)	4500	1300(880)
16	6500	2400(1200)	3000	1000(600)	3500	1300(1000)
20	5300	2400(1200)	2200	1000(600)	2500	1300(700)

「DEPTH OF CUT」



High Speed Cutting & High Hard Cutting

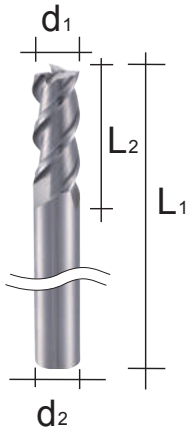
3 Flutes Aluminum Square End Mills



鋁合金專用 3刃立銑刀 超微粒碳化鎢 軟金屬系列



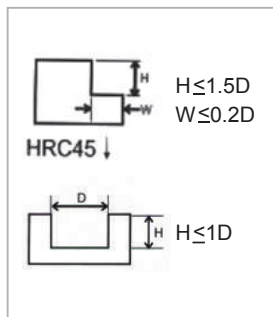
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L.	柄徑(d2) Shank Dia
AEE 0203	2.0	6	50	4
AEE 0303	3.0	9	50	4
AEE 0403	4.0	12	50	4
AEE 0503	5.0	15	50	6
AEE 0603	6.0	18	50	6
AEE 0803	8.0	20	60	8
AEE 1003	10.0	30	75	10
AEE 1203	12.0	30	75	12
AEE 1603	16.0	50	100	16
AEE 2003	20.0	50	100	20



Recommended cutting condition for Long Shank Square End Mills

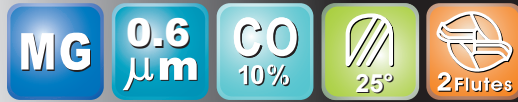
Material	Carbon Steels, Alloy Steels S45C,FC,FCF,SCM,S50C,SKS...		Alloy Steels,Tool Steels,SCr, SNCM,SKD11,SKD61,NAK80...		Hardened Steels SKD11	
Hardness	~HRC30		~HRC50		~HRC60	
DIAMETER	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
2	37000	2400(950)	16000	1000(380)	20000	1300(500)
3	35000	2400(1050)	14000	1000(500)	18000	1300(600)
4	26000	2400(1200)	11000	1000(600)	13000	1300(720)
5	21000	2400(1200)	9000	1000(600)	10000	1300(720)
6	17000	2400(1200)	7000	1000(600)	9000	1300(720)
8	1300	2400(1200)	5500	1000(700)	7000	1300(880)
10	11000	2400(1400)	7000	1000(700)	5500	1300(880)
12	8800	2400(1400)	3600	1000(880)	4500	1300(880)
16	6500	2400(1200)	3000	1000(600)	3500	1300(1000)
20	5300	2400(1200)	2200	1000(600)	2500	1300(700)

DEPTH OF CUT



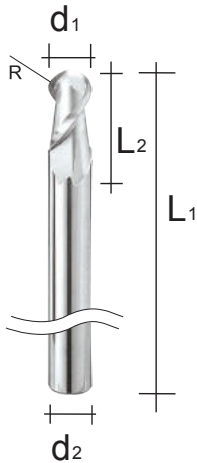
Soft Materials Cutting Series

2 Flutes Aluminum Ball Nose End Mills



鋁合金專用 2刃球型立銑刀 超微粒碳化鎢 軟金屬系列

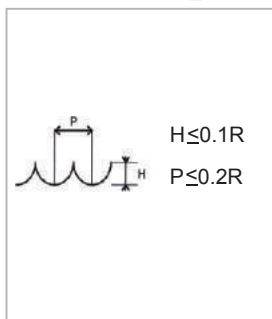
型號	直徑(D1)	刀長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
AB 0102	R0.5	2	50	4
AB 0152	R0.75	3	50	4
AB 0202	R1.0	4	50	4
AB 0302	R1.5	6	50	4
AB 0402	R2.0	8	50	4
AB 0502	R2.5	10	50	6
AB 0602	R3.0	12	50	6
AB 0802	R4.0	16	60	8
AB 1002	R5.0	20	75	10
AB 1202	R6.0	24	75	12
AB 1602	R8.0	32	100	16
AB 2002	R10.0	32	100	20



Recommended cutting condition for Ball Nose End Mills

Material	Aluminum 1070		Aluminum alloy 2014/4032/5052/6061/7075		Aluminum alloy AC85	
RADIUS	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min	SPEED (mm-1)	FEED mm/min
0.5	50000	2300	37000	2000	50000	1400
0.75	50000	3000	28000	2000	50000	1800
1	44000	4000	18500	2000	44000	2500
1.5	28000	4000	11500	2000	28000	2500
2	22000	4000	8800	2000	22000	2500
3	16000	4000	6400	2000	16000	2500
4	12000	4000	4800	2000	12000	2500
5	10000	4000	4000	2000	10000	2500
6	8000	4000	3200	2000	8000	2500

「DEPTH OF CUT」





Soft Materials Cutting Series

3F Corner Rounding Cutter

MG

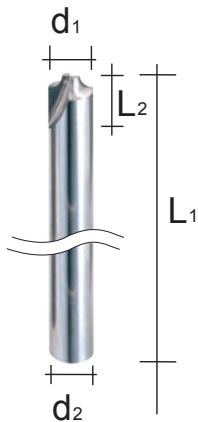
0.6
μm

CO
10%

HRC
▶ 55

外角R刀 3刃立銑刀 超微粒碳化鎢 軟金屬系列

R角 Corner R	先端徑(D1) Small Mill Dia	外徑(L2) Diameter	全長(L1) O.A.L	柄徑(d2) Shank Dia
R0.5	1.5	2.7	50	4
R0.75	1.5	3.2	50	4
R1.0	1.5	3.7	50	4
R1.25	1.5	4.2	50	4
R1.5	1.5	4.7	50	6
R1.75	1.5	5.2	50	6
R2.0	1.5	5.7	50	6
R2.5	1.5	6.7	50	8
R3.0	1.5	7.7	50	8
R4.0	2	10.2	60	12
R5.0	3	13.2	75	16
R6.0	3	15.2	75	16





Soft Materials Cutting Series

NC Spot Drills 60, 90, 120, Degree End Mills

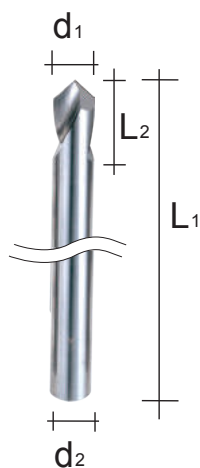
MG

0.6
μm

CO
10%

HRC
▶ 55

60度 90度 120度 2刃定位鑽頭 超微粒碳化鎢 軟金屬系列

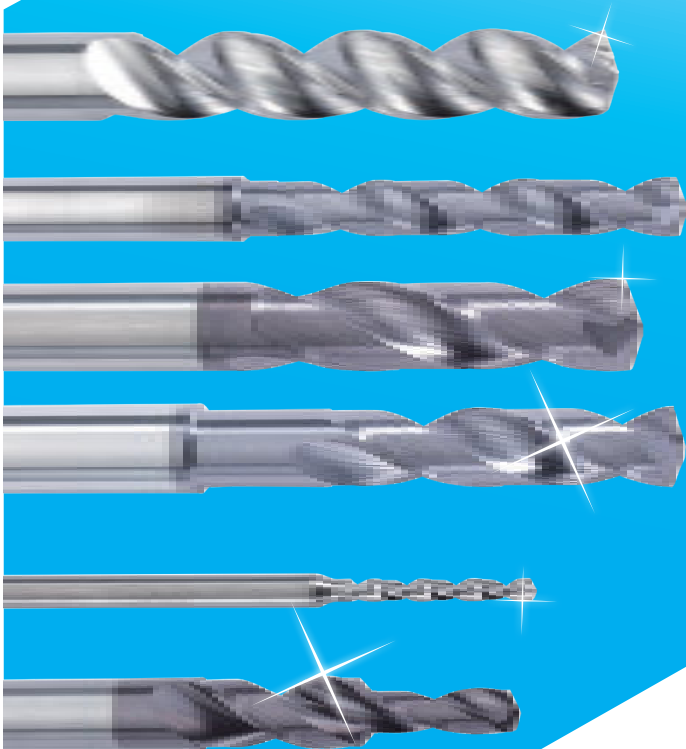


刀徑(d1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
2.0	4	50	2
3.0	6	50	3
4.0	8	50	4
4.0	8	75	4
4.0	8	100	4
6.0	12	50	6
6.0	12	75	6
6.0	12	100	6
6.0	12	150	6
8.0	16	60	8
8.0	16	100	8
8.0	16	150	8
8.0	16	200	8
10.0	20	75	10
10.0	20	100	10
10.0	20	150	10
10.0	20	200	10
12.0	24	75	12
12.0	24	100	12
12.0	24	150	12
12.0	24	200	12
16.0	30	100	16
16.0	30	150	16
16.0	30	200	16
20.0	30	100	20
20.0	30	150	20
20.0	30	200	20

Carbide Drills Series High Performance Drills

Micro Precision Drills
High Performance Drills
3-Flute Drills For Aluminium, Copper
Combined Drill and Chamfer Tool

鑽頭系列

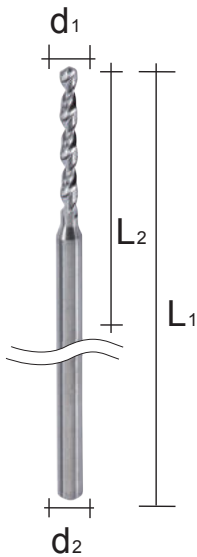


Micro Precision Drills

For Aluminium, Copper, Plastics, Composite Material

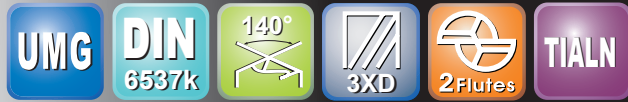


鋁、銅、塑膠、塑膠複合材料 超微粒鎢鋼微小徑鑽頭

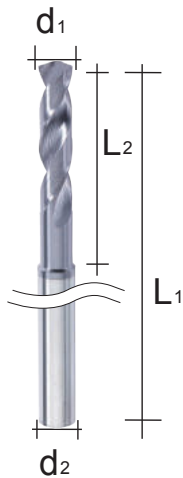


型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
DSE 0030	0.30	1.9	25	1.00
DSE 0035	0.35	2.4	25	1.00
DSE 0040	0.40	3.0	25	1.00
DSE 0045	0.45	3.0	25	1.00
DSE 0050	0.50	3.4	25	1.00
DSE 0055	0.55	3.9	25	1.00
DSE 0060	0.60	3.9	25	1.00
DSE 0065	0.65	4.2	25	1.00
DSE 0070	0.70	4.8	25	1.00
DSE 0075	0.75	4.8	25	1.00
DSE 0080	0.80	5.3	25	1.50
DSE 0085	0.85	5.3	25	1.50
DSE 0090	0.90	6.0	25	1.50
DSE 0095	0.95	6.0	25	1.50
DSE 0100	1.00	6.8	25	1.50
DSE 0105	1.05	6.8	25	1.50
DSE 0110	1.10	7.6	25	1.50
DSE 0115	1.15	7.6	25	1.50
DSE 0120	1.20	8.5	25	1.50
DSE 0125	1.25	8.5	25	1.50
DSE 0130	1.30	8.5	25	1.50
DSE 0135	1.35	9.5	25	1.50
DSE 0140	1.40	9.5	25	1.50

High Performance Drills



高速加工用 極超硬 極超微粒鎢鋼塗層高速鑽頭



型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
DE 0300	3.0	20	62	6
DE 0310	3.1	20	62	6
DE 0320	3.2	20	62	6
DE 0330	3.3	20	62	6
DE 0340	3.4	20	62	6
DE 0350	3.5	20	62	6
DE 0360	3.6	20	62	6
DE 0370	3.7	20	62	6
DE 0380	3.8	24	66	6
DE 0390	3.9	24	66	6
DE 0400	4.0	24	66	6
DE 0410	4.1	24	66	6
DE 0420	4.2	24	66	6
DE 0430	4.3	24	66	6
DE 0440	4.4	24	66	6
DE 0450	4.5	24	66	6
DE 0460	4.6	24	66	6
DE 0470	4.7	24	66	6
DE 0480	4.8	28	66	6
DE 0490	4.9	28	66	6
DE 0500	5.0	28	66	6
DE 0510	5.1	28	66	6
DE 0520	5.2	28	66	6
DE 0530	5.3	28	66	6
DE 0540	5.4	28	66	6
DE 0550	5.5	28	66	6
DE 0560	5.6	28	66	6
DE 0570	5.7	28	66	6
DE 0580	5.8	28	66	6
DE 0590	5.9	28	66	6
DE 0600	6.0	28	66	6
DE 0610	6.1	34	79	8
DE 0620	6.2	34	79	8
DE 0630	6.3	34	79	8
DE 0640	6.4	34	79	8
DE 0650	6.5	34	79	8
DE 0660	6.6	34	79	8
DE 0670	6.7	34	79	8
DE 0680	6.8	34	79	8

High Performance Drills



高速加工用 極超硬 極超微粒鎢鋼塗層高速鑽頭

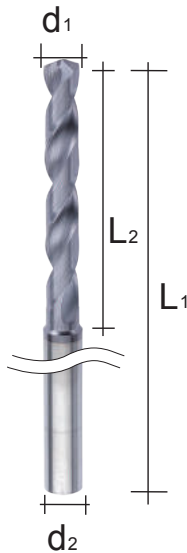
型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
DE 0690	6.9	34	79	8
DE 0700	7.0	34	79	8
DE 0710	7.1	41	79	8
DE 0720	7.2	41	79	8
DE 0730	7.3	41	79	8
DE 0740	7.4	41	79	8
DE 0750	7.5	41	79	8
DE 0760	7.6	41	79	8
DE 0770	7.7	41	79	8
DE 0780	7.8	41	79	8
DE 0790	7.9	41	79	8
DE 0800	8.0	41	79	8
DE 0810	8.1	47	89	10
DE 0820	8.2	47	89	10
DE 0830	8.3	47	89	10
DE 0840	8.4	47	89	10
DE 0850	8.5	47	89	10
DE 0860	8.6	47	89	10
DE 0870	8.7	47	89	10
DE 0880	8.8	47	89	10
DE 0890	8.9	47	89	10
DE 0900	9.0	47	89	10
DE 0910	9.1	47	89	10
DE 0920	9.2	47	89	10
DE 0930	9.3	47	89	10
DE 0940	9.4	47	89	10
DE 0950	9.5	47	89	10
DE 0960	9.6	47	89	10
DE 0970	9.7	47	89	10
DE 0980	9.8	47	89	10
DE 0990	9.9	47	89	10
DE 1000	10.0	47	89	10
DE 1020	10.2	55	102	12
DE 1050	10.5	55	102	12
DE 1080	10.8	55	102	12
DE 1100	11.0	55	102	12
DE 1150	11.5	55	102	12
DE 1200	12.0	55	102	12
DE 1250	12.5	60	107	14

型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
DE 1300	13.0	60	107	14
DE 1350	13.5	60	107	14
DE 1400	14.0	60	107	14
DE 1450	14.5	65	115	16
DE 1500	15.0	65	115	16
DE 1550	15.5	65	115	16
DE 1600	16.0	65	115	16
DE 1650	16.5	73	123	18
DE 1700	17.0	73	123	18
DE 1750	17.5	73	123	18
DE 1800	18.0	73	123	18
DE 1850	18.5	79	131	20
DE 1900	19.0	79	131	20
DE 1950	19.5	79	131	20
DE 2000	20.0	79	131	20

High Performance Drills



高速加工用 極超硬 極超微粒鎢鋼塗層高速鑽頭



型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia
DEF 0300	3.0	28	66	6
DEF 0310	3.1	28	66	6
DEF 0320	3.2	28	66	6
DEF 0330	3.3	28	66	6
DEF 0340	3.4	28	66	6
DEF 0350	3.5	28	66	6
DEF 0360	3.6	28	66	6
DEF 0370	3.7	28	66	6
DEF 0380	3.8	36	74	6
DEF 0390	3.9	36	74	6
DEF 0400	4.0	36	74	6
DEF 0410	4.1	36	74	6
DEF 0420	4.2	36	74	6
DEF 0430	4.3	36	74	6
DEF 0440	4.4	36	74	6
DEF 0450	4.5	36	74	6
DEF 0460	4.6	36	74	6
DEF 0470	4.7	36	74	6
DEF 0480	4.8	44	82	6
DEF 0490	4.9	44	82	6
DEF 0500	5.0	44	82	6
DEF 0510	5.1	44	82	6
DEF 0520	5.2	44	82	6
DEF 0530	5.3	44	82	6
DEF 0540	5.4	44	82	6
DEF 0550	5.5	44	82	6
DEF 0560	5.6	44	82	6
DEF 0570	5.7	44	82	6
DEF 0580	5.8	44	82	6
DEF 0590	5.9	44	82	6
DEF 0600	6.0	44	82	6
DEF 0610	6.1	53	91	8
DEF 0620	6.2	53	91	8
DEF 0630	6.3	53	91	8
DEF 0640	6.4	53	91	8
DEF 0650	6.5	53	91	8
DEF 0660	6.6	53	91	8
DEF 0670	6.7	53	91	8
DEF 0680	6.8	53	91	8

High Performance Drills



高速加工用 極超硬 極超微粒鎢鋼塗層高速鑽頭

型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia	型號 Type No.	直徑(D1) Diameter	刃長(L2) Flute Length	全長(L1) O.A.L	柄徑(d2) Shank Dia
DEF 0690	6.9	53	91	8	DEF 1300	13.0	77	124	14
DEF 0700	7.0	53	91	8	DEF 1350	13.5	77	124	14
DEF 0710	7.1	53	91	8	DEF 1400	14.0	77	124	14
DEF 0720	7.2	53	91	8	DEF 1450	14.5	83	133	16
DEF 0730	7.3	53	91	8	DEF 1500	15.0	83	133	16
DEF 0740	7.4	53	91	8	DEF 1550	15.5	83	133	16
DEF 0750	7.5	53	91	8	DEF 1600	16.0	83	133	16
DEF 0760	7.6	53	91	8	DEF 1650	16.5	93	143	18
DEF 0770	7.7	53	91	8	DEF 1700	17.0	93	143	18
DEF 0780	7.8	53	91	8	DEF 1750	17.5	93	143	18
DEF 0790	7.9	53	91	8	DEF 1800	18.0	93	143	18
DEF 0800	8.0	53	91	8	DEF 1850	18.5	101	153	20
DEF 0810	8.1	61	103	10	DEF 1900	19.0	101	153	20
DEF 0820	8.2	61	103	10	DEF 1950	19.5	101	153	20
DEF 0830	8.3	61	103	10	DEF 2000	20.0	101	153	20
DEF 0840	8.4	61	103	10					
DEF 0850	8.5	61	103	10					
DEF 0860	8.6	61	103	10					
DEF 0870	8.7	61	103	10					
DEF 0880	8.8	61	103	10					
DEF 0890	8.9	61	103	10					
DEF 0900	9.0	61	103	10					
DEF 0910	9.1	61	103	10					
DEF 0920	9.2	61	103	10					
DEF 0930	9.3	61	103	10					
DEF 0940	9.4	61	103	10					
DEF 0950	9.5	61	103	10					
DEF 0960	9.6	61	103	10					
DEF 0970	9.7	61	103	10					
DEF 0980	9.8	61	103	10					
DEF 0990	9.9	61	103	10					
DEF 1000	10.0	61	103	10					
DEF 1020	10.2	71	118	12					
DEF 1050	10.5	71	118	12					
DEF 1080	10.8	71	118	12					
DEF 1100	11.0	71	118	12					
DEF 1150	11.5	71	118	12					
DEF 1200	12.0	71	118	12					
DEF 1250	12.5	77	124	14					

High Performance Drills

MG

DIN
6539

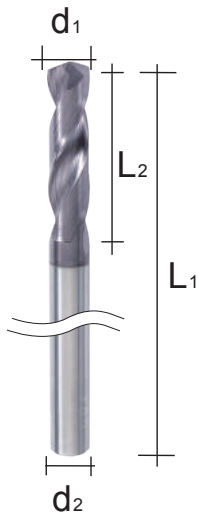
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3XD

2 Flutes

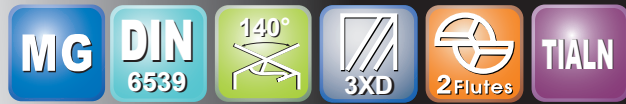
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高速加工用 超硬 超微粒鎢鋼塗層高速鑽頭



型號	直徑(D1)	刀長(L2)	全長(L1)
Type No.	Diameter	Flute Length	O.A.L.
DEE 0200	2.0	12	38
DEE 0210	2.1	12	38
DEE 0220	2.2	13	40
DEE 0230	2.3	13	40
DEE 0240	2.4	14	43
DEE 0250	2.5	14	43
DEE 0260	2.6	14	43
DEE 0270	2.7	16	46
DEE 0280	2.8	16	46
DEE 0290	2.9	16	46
DEE 0300	3.0	16	46
DEE 0310	3.1	18	49
DEE 0320	3.2	18	49
DEE 0330	3.3	18	49
DEE 0340	3.4	20	52
DEE 0350	3.5	20	52
DEE 0360	3.6	20	52
DEE 0370	3.7	20	55
DEE 0380	3.8	22	55
DEE 0390	3.9	22	55
DEE 0400	4.0	22	55
DEE 0410	4.1	22	55
DEE 0420	4.2	22	55
DEE 0430	4.3	24	58
DEE 0440	4.4	24	58
DEE 0450	4.5	24	58
DEE 0460	4.6	24	58
DEE 0470	4.7	24	58
DEE 0480	4.8	26	62
DEE 0490	4.9	26	62
DEE 0500	5.0	26	62
DEE 0510	5.1	26	62
DEE 0520	5.2	26	62
DEE 0530	5.3	26	62
DEE 0540	5.4	28	66
DEE 0550	5.5	28	66
DEE 0560	5.6	28	66
DEE 0570	5.7	28	66
DEE 0580	5.8	28	66

High Performance Drills



高速加工用 超硬 超微粒鎢鋼塗層高速鑽頭

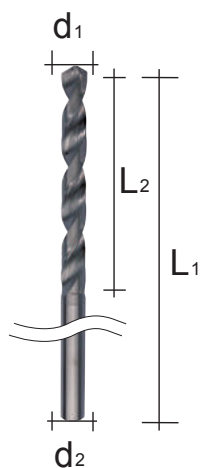
型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L
DEE 0590	5.9	28	66
DEE 0600	6.0	28	66
DEE 0610	6.1	31	70
DEE 0620	6.2	31	70
DEE 0630	6.3	31	70
DEE 0640	6.4	31	70
DEE 0650	6.5	31	70
DEE 0660	6.6	31	70
DEE 0670	6.7	31	70
DEE 0680	6.8	34	74
DEE 0690	6.9	34	74
DEE 0700	7.0	34	74
DEE 0710	7.1	34	74
DEE 0720	7.2	34	74
DEE 0730	7.3	34	74
DEE 0740	7.4	34	74
DEE 0750	7.5	34	74
DEE 0760	7.6	37	79
DEE 0770	7.7	37	79
DEE 0780	7.8	37	79
DEE 0790	7.9	37	79
DEE 0800	8.0	37	79
DEE 0810	8.1	37	79
DEE 0820	8.2	37	79
DEE 0830	8.3	37	79
DEE 0840	8.4	37	79
DEE 0850	8.5	37	79
DEE 0860	8.6	40	84
DEE 0870	8.7	40	84
DEE 0880	8.8	40	84
DEE 0890	8.9	40	84
DEE 0900	9.0	40	84
DEE 0910	9.1	40	84
DEE 0920	9.2	40	84
DEE 0930	9.3	40	84
DEE 0940	9.4	40	84
DEE 0950	9.5	40	84
DEE 0960	9.6	43	89
DEE 0970	9.7	43	89

型號 Type No.	直徑(D1) Diameter	刀長(L2) Flute Length	全長(L1) O.A.L
DEE 0980	9.8	43	89
DEE 0990	9.9	43	89
DEE 1000	10.0	43	89
DEE 1020	10.2	43	89
DEE 1050	10.5	43	89
DEE 1080	10.8	47	95
DEE 1100	11.0	47	95
DEE 1150	11.5	47	95
DEE 1200	12.0	51	102
DEE 1250	12.5	51	102
DEE 1300	13.0	51	102

High Performance Drills



高速加工用 超硬 超微粒鎢鋼塗層高速鑽頭



型號	直徑(D1)	刀長(L2)	全長(L1)
Type No.	Diameter	Flute Length	O.A.L
DEEF 0200	2.0	24	49
DEEF 0210	2.1	24	49
DEEF 0220	2.2	27	53
DEEF 0230	2.3	27	53
DEEF 0240	2.4	30	57
DEEF 0250	2.5	30	57
DEEF 0260	2.6	30	57
DEEF 0270	2.7	33	61
DEEF 0280	2.8	33	61
DEEF 0290	2.9	33	61
DEEF 0300	3.0	33	61
DEEF 0310	3.1	36	65
DEEF 0320	3.2	36	65
DEEF 0330	3.3	36	65
DEEF 0340	3.4	39	70
DEEF 0350	3.5	39	70
DEEF 0360	3.6	39	70
DEEF 0370	3.7	39	70
DEEF 0380	3.8	43	75
DEEF 0390	3.9	43	75
DEEF 0400	4.0	43	75
DEEF 0410	4.1	43	75
DEEF 0420	4.2	43	75
DEEF 0430	4.3	47	80
DEEF 0440	4.4	47	80
DEEF 0450	4.5	47	80
DEEF 0460	4.6	47	80
DEEF 0470	4.7	47	80
DEEF 0480	4.8	52	86
DEEF 0490	4.9	52	86
DEEF 0500	5.0	52	86
DEEF 0510	5.1	52	86
DEEF 0520	5.2	52	86
DEEF 0530	5.3	52	86
DEEF 0540	5.4	57	93
DEEF 0550	5.5	57	93
DEEF 0560	5.6	57	93
DEEF 0570	5.7	57	93
DEEF 0580	5.8	57	93

High Performance Drills



高速加工用 超硬 超微粒鎢鋼塗層高速鑽頭

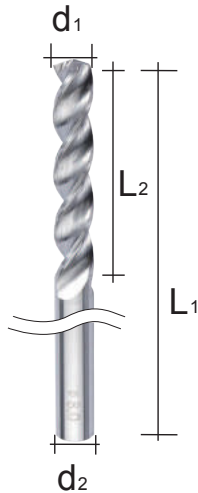
型號	直徑(D1)	刃長(L2)	全長(L1)
Type No.	Diameter	Flute Length	O.A.L
DEEF 0590	5.9	57	93
DEEF 0600	6.0	57	93
DEEF 0610	6.1	63	101
DEEF 0620	6.2	63	101
DEEF 0630	6.3	63	101
DEEF 0640	6.4	63	101
DEEF 0650	6.5	63	101
DEEF 0660	6.6	63	101
DEEF 0670	6.7	63	101
DEEF 0680	6.8	69	109
DEEF 0690	6.9	69	109
DEEF 0700	7.0	69	109
DEEF 0710	7.1	69	109
DEEF 0720	7.2	69	109
DEEF 0730	7.3	69	109
DEEF 0740	7.4	69	109
DEEF 0750	7.5	69	109
DEEF 0760	7.6	75	117
DEEF 0770	7.7	75	117
DEEF 0780	7.8	75	117
DEEF 0790	7.9	75	117
DEEF 0800	8.0	75	117
DEEF 0810	8.1	75	117
DEEF 0820	8.2	75	117
DEEF 0830	8.3	75	117
DEEF 0840	8.4	75	117
DEEF 0850	8.5	75	117
DEEF 0860	8.6	81	125
DEEF 0870	8.7	81	125
DEEF 0880	8.8	81	125
DEEF 0890	8.9	81	125
DEEF 0900	9.0	81	125
DEEF 0910	9.1	81	125
DEEF 0920	9.2	81	125
DEEF 0930	9.3	81	125
DEEF 0940	9.4	81	125
DEEF 0950	9.5	81	125
DEEF 0960	9.6	87	133
DEEF 0970	9.7	87	133

型號	直徑(D1)	刃長(L2)	全長(L1)
Type No.	Diameter	Flute Length	O.A.L
DEEF 0980	9.8	87	133
DEEF 0990	9.9	87	133
DEEF 1000	10.0	87	133
DEEF 1020	10.2	87	133
DEEF 1050	10.5	87	133
DEEF 1080	10.8	94	142
DEEF 1100	11.0	94	142
DEEF 1150	11.5	94	142
DEEF 1200	12.0	101	151
DEEF 1250	12.5	101	151
DEEF 1300	13.0	101	151

3-Flute Drills For Aluminium, Copper



鋁銅合金專用 3刃鑽頭



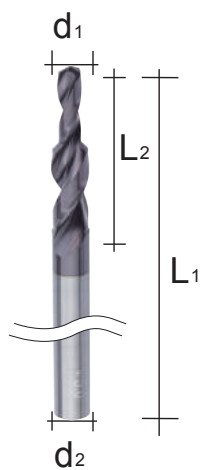
型號	直徑(D1)	刀長(L2)	全長(L1)	型號	直徑(D1)	刀長(L2)	全長(L1)
Type No.	Diameter	Flute Length	O.A.L.	Type No.	Diameter	Flute Length	O.A.L.
DA 0300	3.0	22	46	DA 0700	7.0	45	74
DA 0310	3.1	24	49	DA 0710	7.1	45	74
DA 0320	3.2	24	49	DA 0720	7.2	45	74
DA 0330	3.3	24	49	DA 0730	7.3	45	74
DA 0340	3.4	27	52	DA 0740	7.4	45	74
DA 0350	3.5	27	52	DA 0750	7.5	45	74
DA 0360	3.6	27	52	DA 0760	7.6	48	79
DA 0370	3.7	27	52	DA 0770	7.7	48	79
DA 0380	3.8	30	55	DA 0780	7.8	48	79
DA 0390	3.9	30	55	DA 0790	7.9	48	79
DA 0400	4.0	30	55	DA 0800	8.0	48	79
DA 0410	4.1	30	55	DA 0810	8.1	48	79
DA 0420	4.2	30	55	DA 0820	8.2	48	79
DA 0430	4.3	32	58	DA 0830	8.3	48	79
DA 0440	4.4	32	58	DA 0840	8.4	48	79
DA 0450	4.5	32	58	DA 0850	8.5	48	79
DA 0460	4.6	32	58	DA 0860	8.6	52	84
DA 0470	4.7	32	58	DA 0870	8.7	52	84
DA 0480	4.8	35	62	DA 0880	8.8	52	84
DA 0490	4.9	35	62	DA 0890	8.9	52	84
DA 0500	5.0	35	62	DA 0900	9.0	52	84
DA 0510	5.1	35	62	DA 0910	9.1	52	84
DA 0520	5.2	35	62	DA 0920	9.2	52	84
DA 0530	5.3	35	62	DA 0930	9.3	52	84
DA 0540	5.4	39	66	DA 0940	9.4	52	84
DA 0550	5.5	39	66	DA 0950	9.5	52	84
DA 0560	5.6	39	66	DA 0960	9.6	55	89
DA 0570	5.7	39	66	DA 0970	9.7	55	89
DA 0580	5.8	39	66	DA 0980	9.8	55	89
DA 0590	5.9	39	66	DA 0990	9.9	55	89
DA 0600	6.0	39	66	DA 1000	10.0	55	89
DA 0610	6.1	42	70	DA 1020	10.2	55	89
DA 0620	6.2	42	70	DA 1050	10.5	55	89
DA 0630	6.3	42	70	DA 1080	10.8	60	95
DA 0640	6.4	42	70	DA 1100	11.0	60	95
DA 0650	6.5	42	70	DA 1150	11.5	60	95
DA 0660	6.6	42	70	DA 1200	12.0	65	102
DA 0670	6.7	42	70	DA 1250	12.5	65	102
DA 0680	6.8	45	74	DA 1300	13.0	65	102
DA 0690	6.9	45	74				

Combined Drill and Chamfer Tool



極超硬 極超微粒鎢鋼塗層階梯鑽頭

型號	直徑(D1)	刃長(L1)	刃長(L2)	全長(L)	柄徑(d2)
Type No.	Diameter	Flute Length	Flute Length	O.A.L	Shank Dia
M4	3.3	11.4	28	66	6
M5	4.2	13.6	28	66	6
M6	5.0	16.5	41	79	8
M8	6.8	21.0	47	89	10
M10	8.5	25.5	55	102	12
M12	10.2	30.0	60	107	14
M14	12.0	34.5	65	115	16
M16	14.0	38.5	73	123	18



THREAD MILLING TOOL SERIES



Thread Milling Tool Series

螺紋銑刀系列

Thread Milling Tool Series

UMG

0.2
μm

15°

4 Flutes

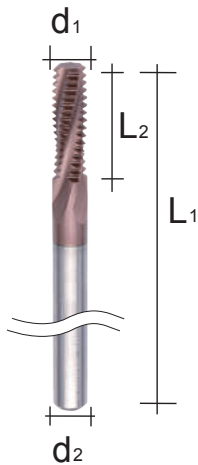
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HELICA

高硬度用螺紋銑刀



型號	螺距(D1)	粗牙(L2)	細牙(L1)	直徑(L1)	柄徑(d2)	刀數(d2)	刃長(d2)	全長(d2)
Type No.	Pitch	Coarse	Fine	Diameter	Shank Dia	Flute	Flute Length	O.A.L
TR 230505	0.5	M3	≥ M4	2.3	6	4	5.2	40
TR 230507	0.5	M3	≥ M4	2.3	6	4	7.2	40
TR 300707	0.7	M4		3.0	6	4	7.28	40
TR 300710	0.7	M4		3.0	6	4	10.08	40
TR 380809	0.8	M5		3.8	6	4	9.12	50
TR 380812	0.8	M5		3.8	6	4	12.32	50
TR 451010	1.0	M6	≥ M8	4.5	6	4	10.4	60
TR 451014	1.0	M6	≥ M8	4.5	6	4	14.4	60
TR 6012514	1.25	M8	≥ M10	6.0	6	4	14.25	60
TR 6012519	1.25	M8	≥ M10	6.0	6	4	19.25	60



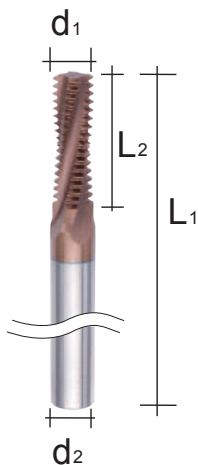
Thread Milling Tool Series



高硬度用螺紋銑刀



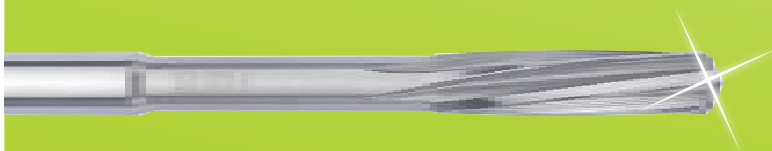
型號	直徑(L1)	刃長(d2)	全長(d2)	柄徑(d2)	刃數(d2)	螺距(d2)	螺牙(d2)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia	Flute	Pitch	Thread Size
TH 023005M3	2.3	5.2	40	6	3	0.5	M3
TH 023007M3	2.3	7.2	40	6	3	0.5	M3
TH 030007M4	3.0	7.28	40	6	3	0.7	M4
TH 030010M4	3.0	10.08	40	6	3	0.7	M4
TH 038009M5	3.8	9.12	50	6	3	0.8	M5
TH 038012M5	3.8	12.32	50	6	3	0.8	M5
TH 045010M6	4.5	10.4	60	6	3	1.0	M6
TH 045014M6	4.5	14.4	60	6	3	1.0	M6
TH 060014M8	6.0	14.25	60	8	3	1.25	M8
TH 060019M8	6.0	19.25	60	8	3	1.25	M8
TH 075017M10	7.5	17.1	60	8	3	1.5	M10
TH 075024M10	7.5	24.6	75	8	3	1.5	M10
TH 080019M12	8.0	19.95	60	8	3	1.75	M12
TH 080028M12	8.0	28.7	75	8	3	1.75	M12
TH 090019M12	9.0	19.95	75	10	4	1.75	M12
TH 090028M12	9.0	28.7	75	10	4	1.75	M12
TH 100026M14	10.0	26.8	75	10	4	2.0	M14
TH 100038M14	10.0	38.8	100	10	4	2.0	M14
TH 120026M16	12.0	26.8	80	12	4	2.0	M16
TH 120038M16	12.0	38.8	100	12	4	2.0	M16
TH 120031M18	12.0	31	100	12	4	2.5	M18
TH 120043M18	12.0	43.5	100	12	4	2.5	M18
TH 140033M20	14.0	33.5	100	14	4	2.5	M20
TH 140048M20	14.0	48.5	100	14	4	2.5	M20
TH 160040M24	16.0	40.2	100	16	5	3.0	M24
TH 160058M24	16.0	58.2	120	16	5	3.0	M24



Carbide Reamers

Machine Reamers In Steps of 0.1mm
NC Machine Reamers

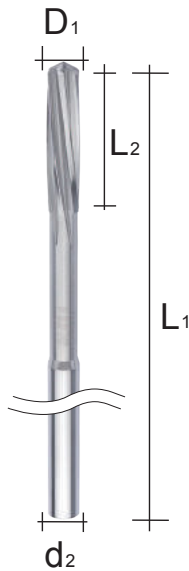
銑刀系列



Machine Reamers In Steps of 0.1mm



鎢鋼絞刀 超硬(0.1mm指定單位)



型號	直徑(D1)	刀長(L2)	全長(L1)	刀數
Type No.	Diameter	Flute Length	O.A.L	Flute
RE 0100	1.0	6	34	4
RE 0110	1.1	7	36	4
RE 0120	1.2	7	38	4
RE 0120	1.3	7	38	4
RE 0140	1.4	8	40	4
RE 0150	1.5	8	40	4
RE 0160	1.6	9	43	4
RE 0170	1.7	9	43	4
RE 0180	1.8	10	46	4
RE 0190	1.9	10	46	4
RE 0200	2.0	11	49	4
RE 0210	2.1	11	49	4
RE 0220	2.2	12	53	4
RE 0230	2.3	12	53	4
RE 0240	2.4	14	57	4
RE 0250	2.5	14	57	4
RE 0260	2.6	14	57	4
RE 0270	2.7	15	61	4
RE 0280	2.8	15	61	4
RE 0290	2.9	15	61	4
RE 0300	3.0	15	61	4
RE 0310	3.1	16	65	4
RE 0320	3.2	16	65	4
RE 0330	3.3	16	65	4
RE 0340	3.4	18	70	4
RE 0350	3.5	18	70	4
RE 0360	3.6	18	70	4
RE 0370	3.7	19	70	4
RE 0380	3.8	19	75	4
RE 0390	3.9	19	75	4
RE 0400	4.0	19	75	4
RE 0410	4.1	19	75	4
RE 0420	4.2	19	75	4
RE 0430	4.3	21	80	4
RE 0440	4.4	21	80	4
RE 0450	4.5	21	80	4
RE 0460	4.6	21	80	6
RE 0470	4.7	21	80	6
RE 0480	4.8	23	86	6
RE 0490	4.9	23	86	6

Machine Reamers In Steps of 0.1mm



鎢鋼絞刀 超硬(0.1mm指定單位)

型號	直徑(D1)	刀長(L2)	全長(L1)	刀數	型號	直徑(D1)	刀長(L2)	全長(L1)	刀數
Type No.	Diameter	Flute Length	O.A.L	Flute	Type No.	Diameter	Flute Length	O.A.L	Flute
RE 0500	5.0	23	86	6	RE 0900	9.0	36	125	6
RE 0510	5.1	23	86	6	RE 0910	9.1	36	125	6
RE 0520	5.2	23	86	6	RE 0920	9.2	36	125	6
RE 0530	5.3	23	86	6	RE 0930	9.3	36	125	6
RE 0540	5.4	26	93	6	RE 0940	9.4	36	125	6
RE 0550	5.5	26	93	6	RE 0950	9.5	36	125	6
RE 0560	5.6	26	93	6	RE 0960	9.6	38	133	6
RE 0570	5.7	26	93	6	RE 0970	9.7	38	133	6
RE 0580	5.8	26	93	6	RE 0980	9.8	38	133	6
RE 0590	5.9	26	93	6	RE 0990	9.9	38	133	6
RE 0600	6.0	26	93	6	RE 1000	10.0	38	133	6
RE 0610	6.1	28	101	6	RE 1010	10.1	38	133	6
RE 0620	6.2	28	101	6	RE 1020	10.2	38	133	6
RE 0630	6.3	28	101	6	RE 1030	10.3	38	133	6
RE 0640	6.4	28	101	6	RE 1040	10.4	38	133	6
RE 0650	6.5	28	101	6	RE 1050	10.5	38	133	6
RE 0660	6.6	28	101	6	RE 1060	10.6	38	133	6
RE 0670	6.7	31	101	6	RE 1070	10.7	41	142	6
RE 0680	6.8	31	109	6	RE 1080	10.8	41	142	6
RE 0690	6.9	31	109	6	RE 1090	10.9	41	142	6
RE 0700	7.0	31	109	6	RE 1100	11.0	41	142	6
RE 0710	7.1	31	109	6	RE 1110	11.1	41	142	6
RE 0720	7.2	31	109	6	RE 1120	11.2	41	142	6
RE 0730	7.3	31	109	6	RE 1130	11.3	41	142	6
RE 0740	7.4	31	109	6	RE 1140	11.4	41	142	6
RE 0750	7.5	31	109	6	RE 1150	11.5	41	142	6
RE 0760	7.6	33	117	6	RE 1160	11.6	41	142	6
RE 0770	7.7	33	117	6	RE 1170	11.7	41	142	6
RE 0780	7.8	33	117	6	RE 1180	11.8	41	142	6
RE 0790	7.9	33	117	6	RE 1190	11.9	44	151	6
RE 0800	8.0	33	117	6	RE 1200	12.0	44	151	6
RE 0810	8.1	33	117	6					
RE 0820	8.2	33	117	6					
RE 0830	8.3	33	117	6					
RE 0840	8.4	33	117	6					
RE 0850	8.5	33	117	6					
RE 0860	8.6	36	125	6					
RE 0870	8.7	36	125	6					
RE 0880	8.8	36	125	6					
RE 0890	8.9	36	125	6					

NC Machine Reamers



超微粒鎢鋼NC機械鉋刀

型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(L1)	刃數(L1)	型號	直徑(D1)	刃長(L2)	全長(L1)	柄徑(L1)	刃數(L1)
Type No.	Diameter	Flute Length	O.A.L	Shank Dia	Flute	Type No.	Diameter	Flute Length	O.A.L	Shank Dia	Flute
REA0198	1.98	11	49	2	4	REA0803	8.03	33	117	8	6
REA0199	1.99	11	49	2	4	REA0997	9.97	38	133	10	6
REA0200	2.00	11	49	2	4	REA0998	9.98	38	133	10	6
REA0201	2.01	11	49	2	4	REA0999	9.99	38	133	10	6
REA0202	2.02	11	49	2	4	REA1000	10.00	38	133	10	6
REA0203	2.03	11	49	2	4	REA1001	10.01	38	133	10	6
REA0297	2.97	15	61	3	4	REA1002	10.02	38	133	10	6
REA0298	2.98	15	61	3	4	REA1003	10.03	38	133	10	6
REA0299	2.99	15	61	3	4	REA1197	11.97	44	151	12	6
REA0300	3.00	15	61	3	4	REA1198	11.98	44	151	12	6
REA0301	3.01	15	61	3	4	REA1199	11.99	44	151	12	6
REA0302	3.02	15	61	3	4	REA1200	12.00	44	151	12	6
REA0303	3.03	15	61	3	4	REA1201	12.01	44	151	12	6
REA0397	3.97	19	75	4	4	REA1202	12.02	44	151	12	6
REA0398	3.98	19	75	4	4	REA1203	12.03	44	151	12	6
REA0399	3.99	19	75	4	4						
REA0400	4.00	19	75	4	4						
REA0401	4.01	19	75	4	4						
REA0402	4.02	19	75	4	4						
REA0403	4.03	19	75	4	4						
REA0497	4.97	23	86	5	6						
REA0498	4.98	23	86	5	6						
REA0499	4.99	23	86	5	6						
REA0500	5.00	23	86	5	6						
REA0501	5.01	23	86	5	6						
REA0502	5.02	23	86	5	6						
REA0503	5.03	23	86	5	6						
REA0579	5.97	26	93	6	6						
REA0598	5.98	26	93	6	6						
REA0599	5.99	26	93	6	6						
REA0600	6.00	26	93	6	6						
REA0601	6.01	26	93	6	6						
REA0602	6.02	26	93	6	6						
REA0603	6.03	26	93	6	6						
REA0797	7.97	33	117	8	6						
REA0798	7.98	33	117	8	6						
REA0799	7.99	33	117	8	6						
REA0800	8.00	33	117	8	6						
REA0801	8.01	33	117	8	6						
REA0802	8.02	33	117	8	6						

