

WinMill

series

鎢鋼銑刀系列

Carbide Endmill





In Taiwan, WINSTAR CUTTING TECHNOLOGIES CORP is the most Professional Solid Carbide Drill manufacturer. We export high quality of cutting tools with sales network for more than 35 countries. Our strength lies on our technical innovation and provides suitable production in connecting with different domains, such as Aerospace, Medical, Automotive, Mechanical, Mold & Die, Electronic Industries' customize tool. No matter what application or industry you are serving, we are sure that Winstar can offer you the most suitable tools and outstanding quality with competitive price.





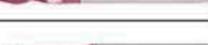







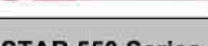





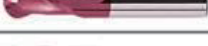
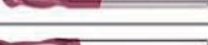






萬事達切削科技為台灣最專業鎢鋼鑽頭供應製造商。我們使用最精密加工設備、品質穩定、產品行銷全球多達35國以上。隨著科技與時代的進步，我們持續研發高品質、高效率及更穩定的新產品。並可根據客戶的特殊需求，訂做各種航天、醫療、汽車、機械、模具、電子加工業用等非標刀具。另備有優秀的專業人員回答客戶所遭遇的難題。

因此萬事達切削科技擁有值得信賴的切削工具品質及售後服務。本著「全球服務、技術創新」的服務宗旨，歡迎客戶提出任何需要改善的地方，我們將力求百分之百客戶滿意度，努力成為客戶最滿意的合作夥伴。

ICON

Helix Angle		UNICO Coated		Corner Radius-3F	
Work Material Hardness		DLC		Square Type-4F	
Micro Grain		Fire TiAlN		Ball Nosed-4F	
Ultra Micro Grain		CRN Coated		Corner Radius-4F	
Ultra Micro Grain 0.4µm		Square Type-2F		Square Type-6F	
Naco TiAlN Coated		Ball Nosed-2F		Sharp Corner Type	
Top TiAlN Coated		Corner Radius-2F		Flatland Type	
TiAlN Coated		Square Type-3F		Chamfer Type	
SICO Coated		Ball Nosed-3F		Corner Radius	

PRODUCT SELECTION TABLE

APPEARANCE	SERIES	CODE NO.	SERIES	DIA RANGE	WORKING MATERIALS	PAGE
GSTAR 450 Series CARBIDE ENDMILLS FOR STEEL 泛用系列 HRC<45						
	Square Type - Standard 2F	EPS-FA2, EPS-SA2	平刀-標準型	1.00mm~25.00mm	P、K、M	2
	Square Type - Standard 4F	EPS-FA4, EPS-SA4	平刀-標準型	1.00mm~25.00mm	P、K、M	3
	Square Type - Long Flute 4F	EPS-CA4	平刀-長刃型	3.00mm~25.00mm	P、K、M	4
	Square Type - Long Shank 2F	EPS-LA2	平刀-長柄型	3.00mm~12.00mm	P、K、M	5
	Square Type - Long Shank 4F	EPS-LA4	平刀-長柄型	3.00mm~20.00mm	P、K、M	6
	Square Type - Long Neck 2F	EPS-BA2, EPS-RA2	平刀-長頸型	1.00mm~4.00mm	P、K、M	7
	Ball Nosed Type - Standard 2F	EPB-FA2, EPB-SA2	球刀-標準型	0.5R ~ 10R	P、K、M	8
	Ball Nosed Type - Standard 4F	EPB-FA4, EPB-SA4	球刀-標準型	1R ~ 10R	P、K、M	9
	Ball Nosed Type - Long Shank 2F	EPB-LA2	球刀-長柄型	2R ~ 8R	P、K、M	10
	Ball Nosed Type - Long Shank 4F	EPB-LA4	球刀-長柄型	2R ~ 8R	P、K、M	11
	Ball Nosed Type - Long Neck 2F	EPB-BA2, EPB-RA2	球刀-長頸型	0.5R ~ 2R	P、K、M	12
	Corner Radius Type - Standard 2F	EPC-SA2	圓鼻刀-標準型	4.00mm~16.00mm	P、K、M	13
	Corner Radius Type - Standard 4F	EPC-SA4	圓鼻刀-標準型	3.00mm~16.00mm	P、K、M	14
	Corner Radius Type - Long Shank 4F	EPC-LA4	圓鼻刀-長柄型	3.00mm~16.00mm	P、K、M	15
GSTAR 550 Series CARBIDE ENDMILLS FOR GENERAL HARDENED STEEL 泛硬系列 HRC<55						
	Square Type - Standard 2F	EPS-FC2, EPS-SC2	平刀-標準型	1.00mm~25.00mm	P、K、H、M	17
	Square Type - Standard 4F	EPS-FC4, EPS-SC4	平刀-標準型	1.00mm~25.00mm	P、K、H、M	18
	Square Type - Long Flute 4F	EPS-CC4	平刀-長刃型	3.00mm~25.00mm	P、K、H、M	19
	Square Type - Long Shank 2F	EPS-LC2	平刀-長柄型	3.00mm~12.00mm	P、K、H、M	20
	Square Type - Long Shank 4F	EPS-LC4	平刀-長柄型	3.00mm~12.00mm	P、K、H、M	21
	Ball Nosed Type - Standard 2F	EPB-FC2, EPB-SC2	球刀-標準型	0.5R ~ 10R	P、K、H、M	22
	Ball Nosed Type - Standard 4F	EPB-FC4, EPB-SC4	球刀-標準型	0.5R ~ 10R	P、K、H、M	23
	Ball Nosed Type - Long Shank 2F	EPB-LC2	球刀-長柄型	2R ~ 8R	P、K、H、M	24
	Ball Nosed Type - Long Shank 4F	EPB-LC4	球刀-長柄型	2R ~ 8R	P、K、H、M	25
	Corner Radius Type - Standard 2F	EPC-SC2	圓鼻刀-標準型	4.00mm~16.00mm	P、K、H、M	26
	Corner Radius Type - Standard 4F	EPC-SC4	圓鼻刀-標準型	3.00mm~16.00mm	P、K、H、M	27
	Corner Radius Type - Long Shank 4F	EPC-LC4	圓鼻刀-長柄型	3.00mm~16.00mm	P、K、H、M	28

Gstar 450 series

泛用系列

FOR GENERAL PURPOSE

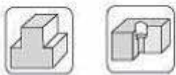
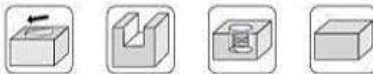
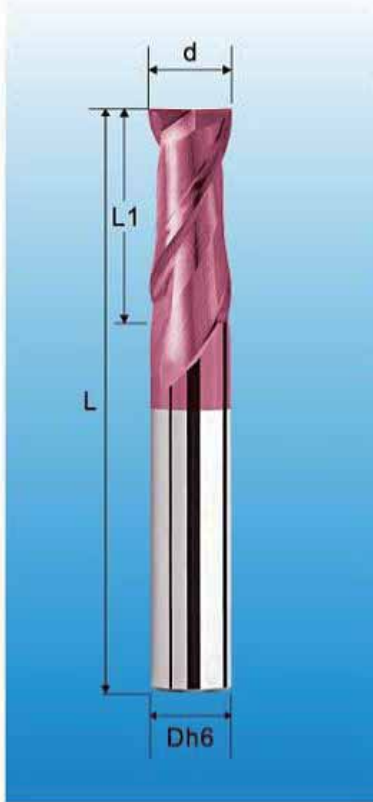


General milling operation

- 1** Including all types of standard cutting tool you need.
Wider application in work material.
完整的產品線,能廣泛使用於各種泛用的材料上
- 2** G450 series,General Purpose Milling for steel.(HRC < 45)
適用HRC45度以內的金屬加工

EPS-FA2

EPS-SA2



d (刃徑)	Tolerance (公差)
Ø < 3	0 ~ -0.02
3 ≤ Ø ≤ 10	0 ~ -0.03
Ø > 10	0 ~ -0.04

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	⊙

Order No.	Dia.	CL	OAL	Shank	Flutes
訂購編號	刃徑 (d)	刃長 (L1)	全長 (L)	柄徑 (D)	刃數 (F)
EPSFA201000U	1.0	3	50	4	2
EPSFA201500U	1.5	4	50	4	2
EPSFA202000U	2.0	5	50	4	2
EPSFA202500U	2.5	6	50	4	2
EPSFA203000U	3.0	8	50	4	2
EPSSA203000U	3.0	8	50	6	2
EPSSA203500U	3.5	9	50	6	2
EPSFA204000U	4.0	10	50	4	2
EPSSA204000U	4.0	10	50	6	2
EPSSA204500U	4.5	11	50	6	2
EPSSA205000U	5.0	13	50	6	2
EPSSA205500U	5.5	14	50	6	2
EPSSA206000U	6.0	15	50	6	2
EPSSA206500U	6.5	16	60	8	2
EPSSA207000U	7.0	18	60	8	2
EPSSA208000U	8.0	20	60	8	2
EPSSA209000U	9.0	22	75	10	2
EPSSA210000U	10.0	25	75	10	2
EPSSA212000U	12.0	30	75	12	2
EPSSA214000U	14.0	30	75	14	2
EPSSA216000U	16.0	35	100	16	2
EPSSA218000U	18.0	40	100	20	2
EPSSA220000U	20.0	45	100	20	2
EPSSA225000U	25.0	45	100	25	2

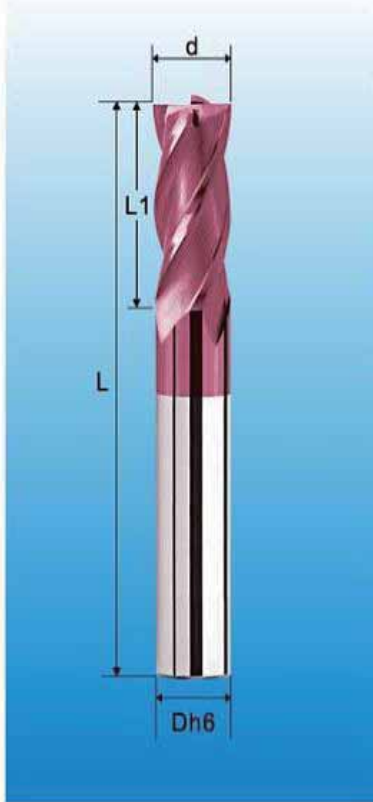
INCH SIZE						
EPSSA203X00U	1/8	3/8	1-1/2	1/8	2	
EPSSA204X00U	3/16	9/16	2	3/16	2	
EPSSA206X00U	1/4	3/4	2-1/2	1/4	2	
EPSSA209X00U	3/8	7/8	2-1/2	3/8	2	
EPSSA212X00U	1/2	1	3	1/2	2	
EPSSA215X00U	5/8	1-1/4	3-1/2	5/8	2	
EPSSA219X00U	3/4	1-1/2	4	3/4	2	
EPSSA225X00U	1	1-1/2	4	1	2	

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

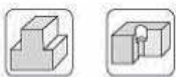
EPS-FA4

EPS-SA4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSFA401000U	1.0	3	50	4	4
EPSFA401500U	1.5	4	50	4	4
EPSFA402000U	2.0	5	50	4	4
EPSFA402500U	2.5	6	50	4	4
EPSFA403000U	3.0	8	50	4	4
EPSSA403000U	3.0	8	50	6	4
EPSFA404000U	4.0	10	50	4	4
EPSSA404000U	4.0	10	50	6	4
EPSSA405000U	5.0	13	50	6	4
EPSSA406000U	6.0	15	50	6	4
EPSSA408000U	8.0	20	60	8	4
EPSSA410000U	10.0	25	75	10	4
EPSSA412000U	12.0	30	75	12	4
EPSSA414000U	14.0	30	75	14	4
EPSSA416000U	16.0	35	100	16	4
EPSSA420000U	20.0	45	100	20	4
EPSSA425000U	25.0	45	100	25	4

INCH SIZE					
EPSSA403X00U	1/8	3/8	1-1/2	1/8	4
EPSSA404X00U	3/16	9/16	2	3/16	4
EPSSA406X00U	1/4	3/4	2-1/2	1/4	4
EPSSA409X00U	3/8	7/8	2-1/2	3/8	4
EPSSA412X00U	1/2	1	3	1/2	4
EPSSA415X00U	5/8	1-1/4	3-1/2	5/8	4
EPSSA419X00U	3/4	1-1/2	4	3/4	4
EPSSA425X00U	1	1-1/2	4	1	4



d (刃徑)	Tolerance (公差)
Ø < 3	0 ~ -0.02
3 ≤ Ø ≤ 10	0 ~ -0.03
Ø > 10	0 ~ -0.04

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

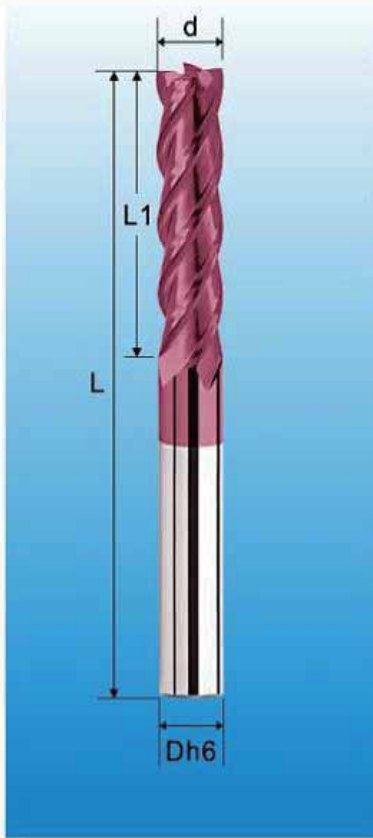
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICRO GRAIN CARBIDE END MILLS - Square Type & Long Flute - 4F

鎢鋼平銑刀-長刃型

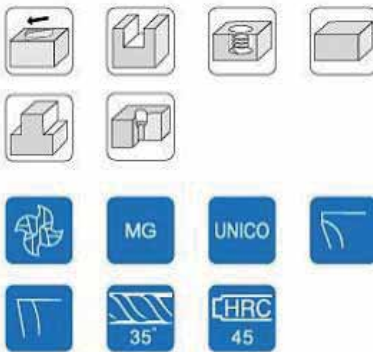
EPS-CA4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSCA403000U	3.0	15	60	6	4
EPSCA404000U	4.0	20	60	6	4
EPSCA405000U	5.0	25	75	6	4
EPSCA406000U	6.0	30	75	6	4
EPSCA408000U	8.0	35	100	8	4
EPSCA410000U	10.0	45	100	10	4
EPSCA412000U	12.0	45	100	12	4
EPSCA414000U	14.0	70	150	14	4
EPSCA416000U	16.0	70	150	16	4
EPSCA420000U	20.0	75	150	20	4
EPSCA425000U	25.0	75	150	25	4

INCH SIZE

EPSCA403X00U	1/8	3/4	2-1/4	1/8	4
EPSCA404X00U	3/16	3/4	2-1/2	3/16	4
EPSCA406X00U	1/4	1-1/8	3	1/4	4
EPSCA409X00U	3/8	1-1/8	3	3/8	4
EPSCA412X00U	1/2	2	4-1/2	1/2	4



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.03
3 ≦ ∅ ≦ 10	0 ~ -0.04
∅ > 10	0 ~ -0.05

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	×

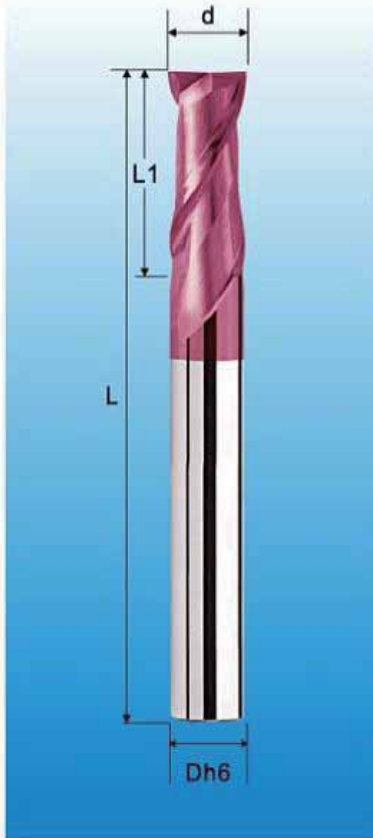
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

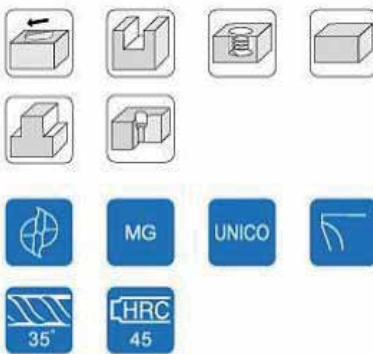
MICRO GRAIN CARBIDE END MILLS - Square Type & Long Shank - 2F

鎢鋼平銑刀-長柄型

EPS-LA2



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSLA203000U	3.0	8	75	6	2
EPSLA204000U	4.0	10	75	6	2
EPSLA205000U	5.0	13	75	6	2
EPSLA206000U	6.0	15	75	6	2
EPSLA208000U	8.0	20	100	8	2
EPSLA210000U	10.0	25	100	10	2
EPSLA212000U	12.0	30	100	12	2



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.03
3 ≦ ∅ ≦ 10	0 ~ -0.04
∅ > 10	0 ~ -0.05

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

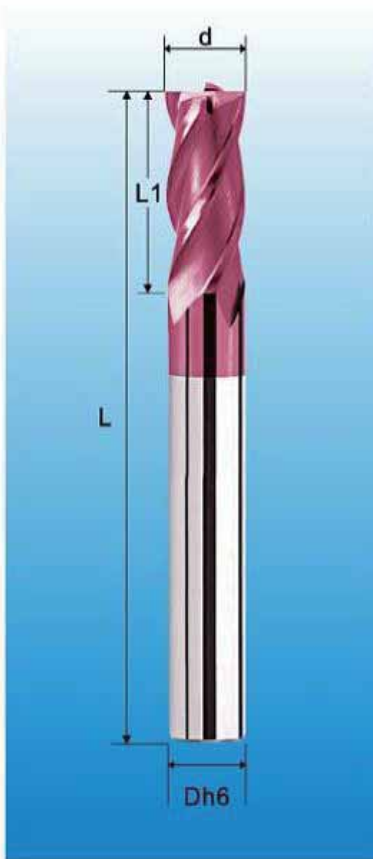


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

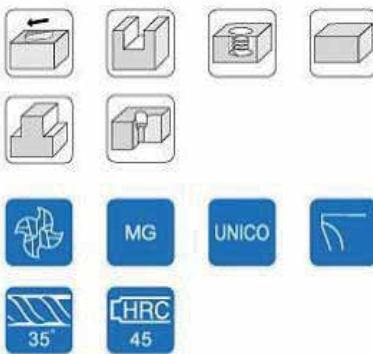
MICRO GRAIN CARBIDE END MILLS - Square Type & Long Shank - 4F

鎢鋼平銑刀-長柄型

EPS-LA4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSLA403000U	3.0	8	75	6	4
EPSLA404000U	4.0	10	75	6	4
EPSLA405000U	5.0	13	75	6	4
EPSLA406000U	6.0	15	75	6	4
EPSLA408000U	8.0	20	100	8	4
EPSLA410000U	10.0	25	100	10	4
EPSLA412000U	12.0	30	100	12	4
EPSLA416000U	16.0	40	150	16	4
EPSLA420000U	20.0	40	150	20	4



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.03
3 ≦ ∅ ≦ 10	0 ~ -0.04
∅ > 10	0 ~ -0.05

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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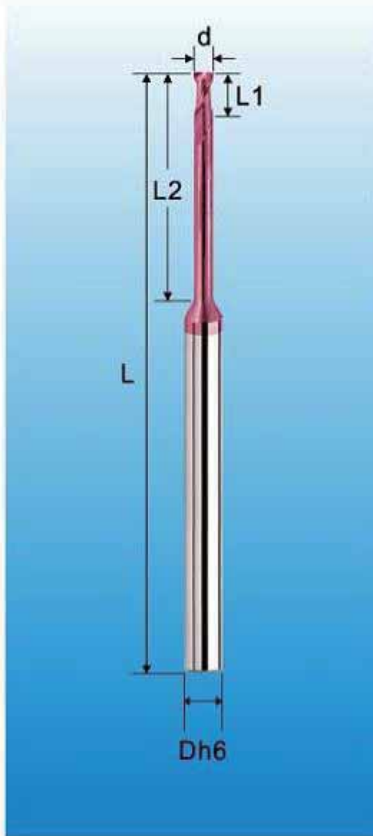
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICRO GRAIN CARBIDE END MILLS - Square Type & Long Neck - 2F

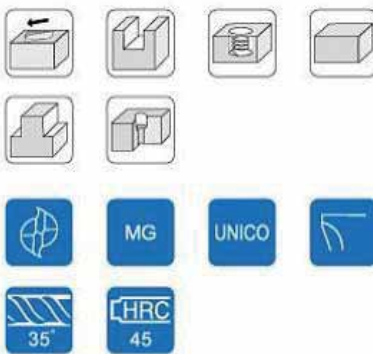
鎢鋼平銑刀-長頸型

EPS-BA2

EPS-RA2



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	EFF-L 有效長 (L2)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSBA201008U	1.0	1.5	8	50	4	2
EPSBA201010U	1.0	1.5	10	50	4	2
EPSBA201012U	1.0	1.5	12	50	4	2
EPSBA201208U	1.2	2.0	8	50	4	2
EPSBA201210U	1.2	2.0	10	50	4	2
EPSBA201212U	1.2	2.0	12	50	4	2
EPSBA201216U	1.2	2.0	16	50	4	2
EPSBA201508U	1.5	2.5	8	50	4	2
EPSBA201510U	1.5	2.5	10	50	4	2
EPSBA201514U	1.5	2.5	14	50	4	2
EPSBA201518U	1.5	2.5	18	50	4	2
EPSBA201811U	1.8	3.0	11	50	4	2
EPSBA201819U	1.8	3.0	19	50	4	2
EPSBA202010U	2.0	3.0	10	50	4	2
EPSBA202014U	2.0	3.0	14	50	4	2
EPSBA202018U	2.0	3.0	18	50	4	2
EPSBA202023U	2.0	3.0	23	60	4	2
EPSBA202030U	2.0	3.0	30	60	4	2
EPSBA202512U	2.5	3.5	12	50	4	2
EPSBA202516U	2.5	3.5	16	50	4	2
EPSBA202525U	2.5	3.5	25	60	4	2
EPSRA203012U	3.0	4.5	12	60	6	2
EPSRA203016U	3.0	4.5	16	60	6	2
EPSRA203025U	3.0	4.5	25	60	6	2
EPSRA203030U	3.0	4.5	30	75	6	2
EPSRA204016U	4.0	6.0	16	60	6	2
EPSRA204026U	4.0	6.0	26	75	6	2
EPSRA204036U	4.0	6.0	36	75	6	2



d (刃徑)	Tolerance (公差)
∅	0 ~ -0.02

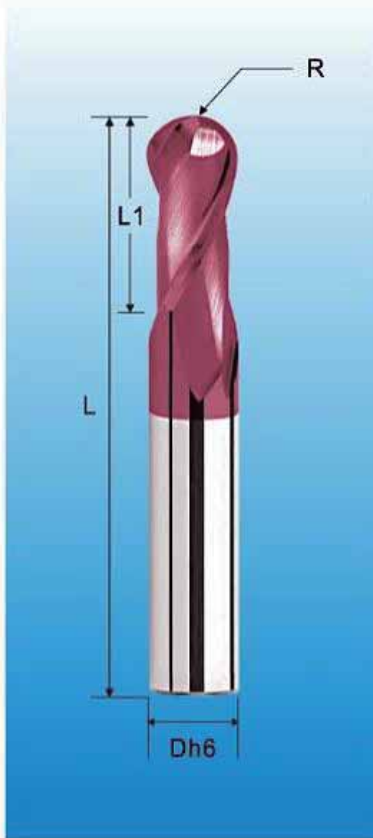
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-FA2

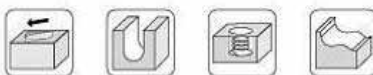
EPB-SA2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBFA201000U	0.5R	1.0	2	50	4	2
EPBFA201500U	0.75R	1.5	3	50	4	2
EPBFA202000U	1.0R	2.0	4	50	4	2
EPBFA203000U	1.5R	3.0	6	50	4	2
EPBFA204000U	2.0R	4.0	8	50	4	2
EPBSA204000U	2.0R	4.0	8	50	6	2
EPBSA205000U	2.5R	5.0	10	50	6	2
EPBSA206000U	3.0R	6.0	12	50	6	2
EPBSA208000U	4.0R	8.0	16	60	8	2
EPBSA210000U	5.0R	10.0	20	75	10	2
EPBSA212000U	6.0R	12.0	24	75	12	2
EPBSA216000U	8.0R	16.0	32	100	16	2
EPBSA220000U	10.0R	20.0	40	100	20	2

INCH SIZE

EPBSA203X00U	1/16R	1/8	3/8	1-1/2	1/8	2
EPBSA204X00U	3/32R	3/16	9/16	2	3/16	2
EPBSA206X00U	1/8R	1/4	3/4	2-1/2	1/4	2
EPBSA209X00U	3/16R	3/8	7/8	2-1/2	3/8	2
EPBSA212X00U	1/4R	1/2	1	3	1/2	2
EPBSA215X00U	5/16R	5/8	1-1/4	3-1/2	5/8	2
EPBSA219X00U	3/8R	3/4	1-1/2	4	3/4	2

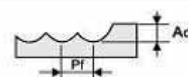


d (刃徑)	R Tol. (R公差)
∅	± 0.02

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	380	32,400	290	21,600	160	14,400	75	32,400	340	45,000	475
1.0R	20,520	485	16,200	325	11,700	195	8,200	95	16,200	385	22,860	545
2.0R	11,520	610	8,640	385	6,300	230	4,600	120	8,640	455	11,520	610
3.0R	7,560	600	5,760	385	3,780	210	3,020	120	5,760	455	7,560	600
4.0R	5,760	610	4,320	385	2,880	210	2,300	120	4,320	455	5,760	610
5.0R	4,590	605	3,420	385	2,160	200	1,830	120	3,420	450	4,590	605
6.0R	3,780	600	2,880	385	1,800	200	1,520	120	2,880	455	3,780	600
8.0R	3,200	675	2,400	430	1,560	210	1,280	135	2,400	505	3,200	675
10.0R	2,600	615	1,920	430	1,300	215	1,040	135	1,920	455	2,600	615

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

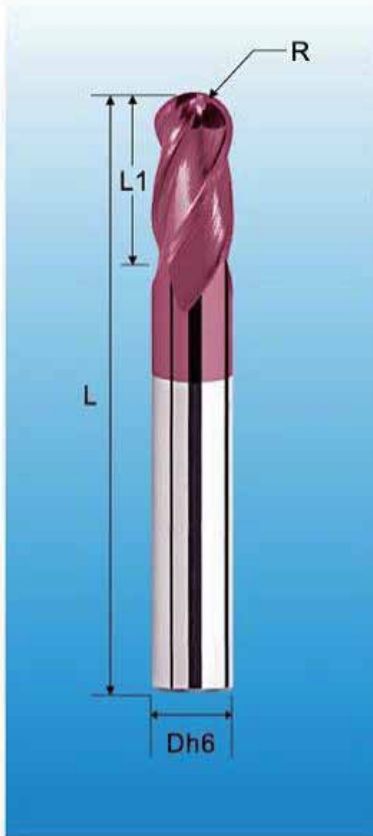
Milling Amount (mm) Ad=0.05D, Pf=0.1D



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-FA4

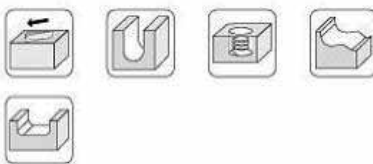
EPB-SA4



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBFA402000U	1.0R	2.0	4	50	4	4
EPBFA403000U	1.5R	3.0	6	50	4	4
EPBFA404000U	2.0R	4.0	8	50	4	4
EPBSA404000U	2.0R	4.0	8	50	6	4
EPBSA405000U	2.5R	5.0	10	50	6	4
EPBSA406000U	3.0R	6.0	12	50	6	4
EPBSA408000U	4.0R	8.0	16	60	8	4
EPBSA410000U	5.0R	10.0	20	75	10	4
EPBSA412000U	6.0R	12.0	24	75	12	4
EPBSA416000U	8.0R	16.0	32	100	16	4
EPBSA420000U	10.0R	20.0	40	100	20	4

INCH SIZE

EPBSA403X00U	1/16R	1/8	3/8	1-1/2	1/8	4
EPBSA404X00U	3/32R	3/16	9/16	2	3/16	4
EPBSA406X00U	1/8R	1/4	3/4	2-1/2	1/4	4
EPBSA409X00U	3/16R	3/8	7/8	2-1/2	3/8	4
EPBSA412X00U	1/4R	1/2	1	3	1/2	4
EPBSA415X00U	5/16R	5/8	1-1/4	3-1/2	5/8	4
EPBSA419X00U	3/8R	3/4	1-1/2	4	3/4	4

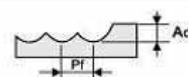


d (刃徑)	R Tol. (R公差)
∅	± 0.02

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm) Ad=0.05D, Pf=0.1D

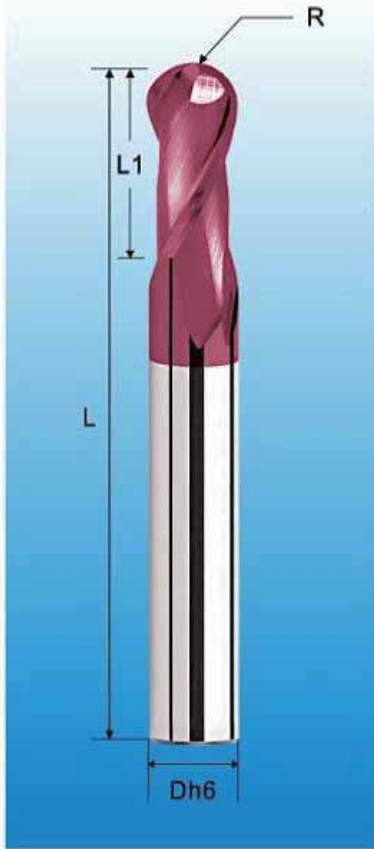


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

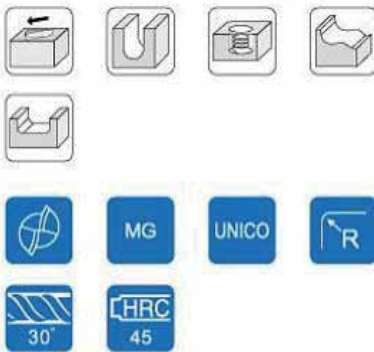
MICRO GRAIN CARBIDE END MILLS - Ball Nosed & Long Shank - 2F

鎢鋼球型銑刀-長柄型

EPB-LA2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBEA204000U	2R	4.0	8	75	4	2
EPBLA204000U	2R	4.0	8	75	6	2
EPBLA206000U	3R	6.0	12	75	6	2
EPBLA208000U	4R	8.0	16	100	8	2
EPBLA210000U	5R	10.0	20	100	10	2
EPBLA212000U	6R	12.0	24	100	12	2
EPBLA216000U	8R	16.0	32	150	16	2

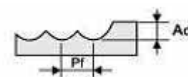


WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm) Ad=0.05D, Pf=0.1D

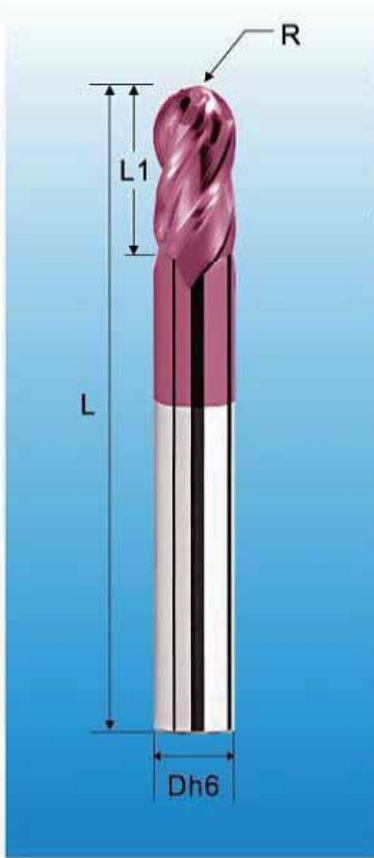


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

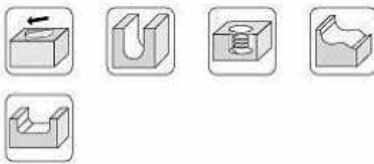
MICRO GRAIN CARBIDE END MILLS - Ball Nosed & Long Shank - 4F

鎢鋼球型銑刀-長柄型

EPB-LA4



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBLA406000U	3R	6.0	12	75	6	4
EPBLA408000U	4R	8.0	16	100	8	4
EPBLA410000U	5R	10.0	20	100	10	4
EPBLA412000U	6R	12.0	24	100	12	4
EPBLA416000U	8R	16.0	32	150	16	4

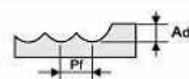


d (刃徑)	R Tol. (R公差)
∅	± 0.02

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm) Ad=0.05D, Pf=0.1D



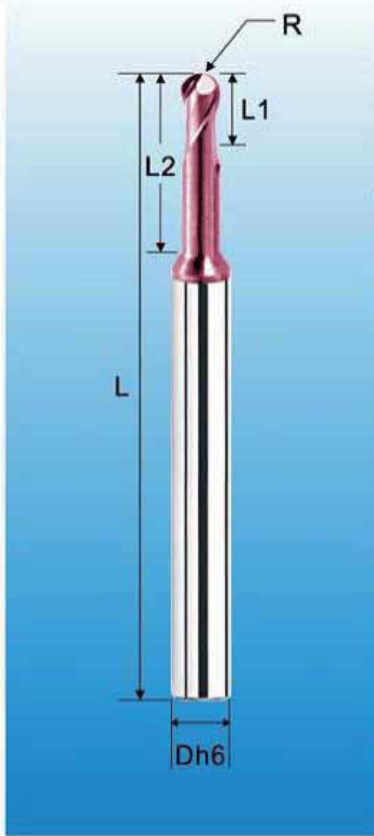
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICAO GRAIN CARBIDE END MILLS - Ball Nosed & Long Neck - 2F

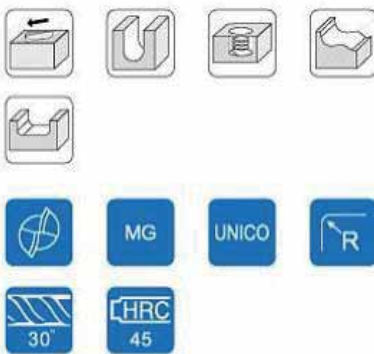
鎢鋼球型銑刀-長頸型

EPB-BA2

EPB-RA2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刀徑 (d)	CL 刃長 (L1)	EFF-L 有效長 (L2)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBBA201008U	0.50R	1.0	1.5	8	50	4	2
EPBBA201012U	0.50R	1.0	1.5	12	50	4	2
EPBBA201016U	0.50R	1.0	1.5	16	50	4	2
EPBBA201020U	0.50R	1.0	1.5	20	50	4	2
EPBBA201510U	0.75R	1.5	2.5	10	50	4	2
EPBBA201514U	0.75R	1.5	2.5	14	50	4	2
EPBBA201518U	0.75R	1.5	2.5	18	50	4	2
EPBBA202010U	1.00R	2.0	3.0	10	50	4	2
EPBBA202012U	1.00R	2.0	3.0	12	50	4	2
EPBBA202014U	1.00R	2.0	3.0	14	50	4	2
EPBBA202016U	1.00R	2.0	3.0	16	50	4	2
EPBBA202018U	1.00R	2.0	3.0	18	50	4	2
EPBBA202020U	1.00R	2.0	3.0	20	50	4	2
EPBBA202025U	1.00R	2.0	3.0	25	60	4	2
EPBBA202516U	1.25R	2.5	3.5	16	50	4	2
EPBBA202520U	1.25R	2.5	3.5	20	50	4	2
EPBBA202525U	1.25R	2.5	3.5	25	60	4	2
EPBRA203016U	1.50R	3.0	4.5	16	60	6	2
EPBRA203020U	1.50R	3.0	4.5	20	60	6	2
EPBRA203025U	1.50R	3.0	4.5	25	75	6	2
EPBRA204016U	2.00R	4.0	6.0	16	60	6	2
EPBRA204026U	2.00R	4.0	6.0	26	75	6	2
EPBRA204036U	2.00R	4.0	6.0	36	75	6	2
EPBRA205016U	2.50R	5.0	7.0	16	60	6	2
EPBRA205026U	2.50R	5.0	7.0	26	75	6	2



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875

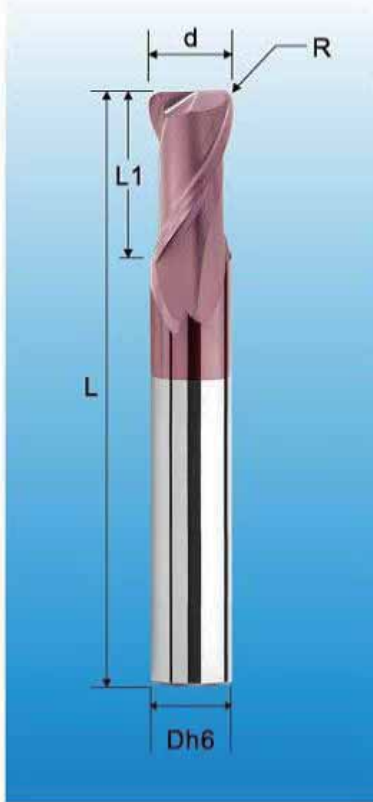
d (刀徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

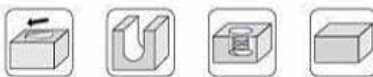
Milling Amount (mm) Ad=0.05D, Pf=0.1D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-SA2



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCSA204003U	4.0	0.3R	8	50	6	2
EPCSA204005U	4.0	0.5R	8	50	6	2
EPCSA204010U	4.0	1.0R	8	50	6	2
EPCSA205005U	5.0	0.5R	10	50	6	2
EPCSA205010U	5.0	1.0R	10	50	6	2
EPCSA206003U	6.0	0.3R	12	50	6	2
EPCSA206005U	6.0	0.5R	12	50	6	2
EPCSA206010U	6.0	1.0R	12	50	6	2
EPCSA208005U	8.0	0.5R	16	60	8	2
EPCSA208010U	8.0	1.0R	16	60	8	2
EPCSA208015U	8.0	1.5R	16	60	8	2
EPCSA210005U	10.0	0.5R	20	75	10	2
EPCSA210010U	10.0	1.0R	20	75	10	2
EPCSA210015U	10.0	1.5R	20	75	10	2
EPCSA210020U	10.0	2.0R	20	75	10	2
EPCSA212005U	12.0	0.5R	24	75	12	2
EPCSA212010U	12.0	1.0R	24	75	12	2
EPCSA212015U	12.0	1.5R	24	75	12	2
EPCSA212020U	12.0	2.0R	24	75	12	2
EPCSA216010U	16.0	1.0R	32	100	16	2
EPCSA216020U	16.0	2.0R	32	100	16	2
EPCSA216030U	16.0	3.0R	32	100	16	2



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

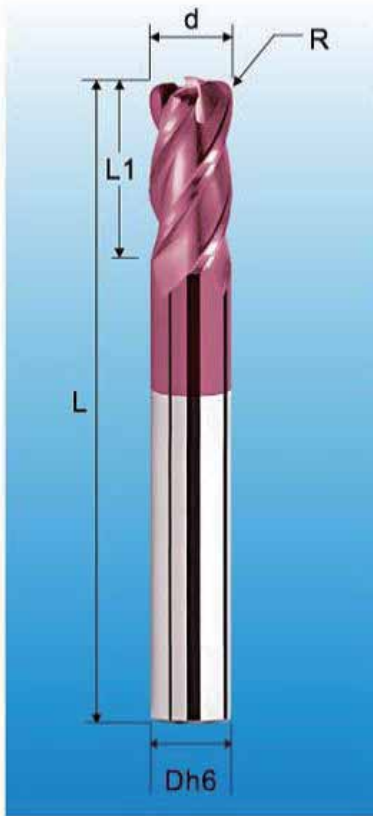
d (刃徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

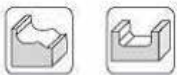
WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-SA4



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCSA403003U	3.0	0.3R	6	50	6	4
EPCSA403005U	3.0	0.5R	6	50	6	4
EPCSA403010U	3.0	1.0R	6	50	6	4
EPCSA404003U	4.0	0.3R	8	50	6	4
EPCSA404005U	4.0	0.5R	8	50	6	4
EPCSA404010U	4.0	1.0R	8	50	6	4
EPCSA405005U	5.0	0.5R	10	50	6	4
EPCSA405010U	5.0	1.0R	10	50	6	4
EPCSA406003U	6.0	0.3R	12	50	6	4
EPCSA406005U	6.0	0.5R	12	50	6	4
EPCSA406010U	6.0	1.0R	12	50	6	4
EPCSA408005U	8.0	0.5R	16	60	8	4
EPCSA408010U	8.0	1.0R	16	60	8	4
EPCSA408015U	8.0	1.5R	16	60	8	4
EPCSA410005U	10.0	0.5R	20	75	10	4
EPCSA410010U	10.0	1.0R	20	75	10	4
EPCSA410015U	10.0	1.5R	20	75	10	4
EPCSA410020U	10.0	2.0R	20	75	10	4
EPCSA412005U	12.0	0.5R	24	75	12	4
EPCSA412010U	12.0	1.0R	24	75	12	4
EPCSA412015U	12.0	1.5R	24	75	12	4
EPCSA412020U	12.0	2.0R	24	75	12	4
EPCSA412030U	12.0	3.0R	24	75	12	4
EPCSA416010U	16.0	1.0R	32	100	16	4
EPCSA416020U	16.0	2.0R	32	100	16	4
EPCSA416030U	16.0	3.0R	32	100	16	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

d (刃徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

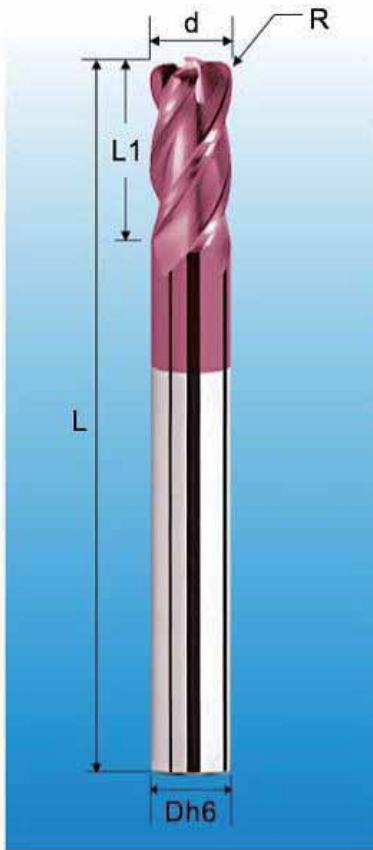
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

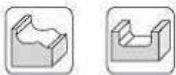
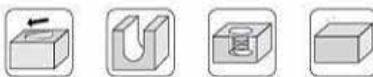
MICRO GRAIN CARBIDE END MILLS - Corner Radius & Long Shank - 4F

圓鼻刀-長柄型

EPC-LA4



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCLA403005U	3.0	0.5R	6	75	6	4
EPCLA403010U	3.0	1.0R	6	75	6	4
EPCLA404005U	4.0	0.5R	8	75	6	4
EPCLA404010U	4.0	1.0R	8	75	6	4
EPCLA405005U	5.0	0.5R	10	75	6	4
EPCLA405010U	5.0	1.0R	10	75	6	4
EPCLA406005U	6.0	0.5R	12	75	6	4
EPCLA406010U	6.0	1.0R	12	75	6	4
EPCLA408005U	8.0	0.5R	16	100	8	4
EPCLA408010U	8.0	1.0R	16	100	8	4
EPCLA408015U	8.0	1.5R	16	100	8	4
EPCLA410005U	10.0	0.5R	20	100	10	4
EPCLA410010U	10.0	1.0R	20	100	10	4
EPCLA410015U	10.0	1.5R	20	100	10	4
EPCLA410020U	10.0	2.0R	20	100	10	4
EPCLA412005U	12.0	0.5R	24	100	12	4
EPCLA412010U	12.0	1.0R	24	100	12	4
EPCLA412015U	12.0	1.5R	24	100	12	4
EPCLA412020U	12.0	2.0R	24	100	12	4
EPCLA416010U	16.0	1.0R	32	150	16	4
EPCLA416020U	16.0	2.0R	32	150	16	4
EPCLA416030U	16.0	3.0R	32	150	16	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

d (刃徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

Milling Amount (mm)	AD=1.5D, RD<=0.1D	AD	AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

Gstar 550 series

泛硬系列

FOR GENERAL HARDENED STEEL



General milling operation

- 1** Including all types of standard cutting tool you need.
Wider application in General hardened material.

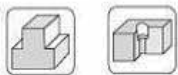
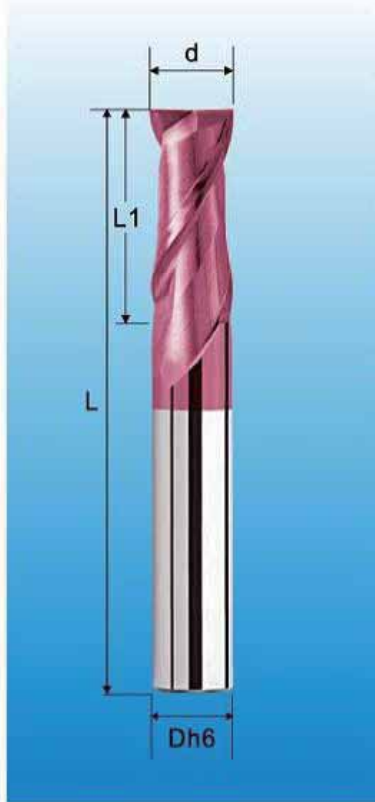
完整的產品線，能廣泛使用於各種泛用的材料上。

- 2** G550 series be used medium or finish cutting for ordinary steel, alloy steel, die steel and cast iron. (HRC < 55)

適用HRC55度以內的金屬加工。

EPS-FC2

EPS-SC2



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	⊙

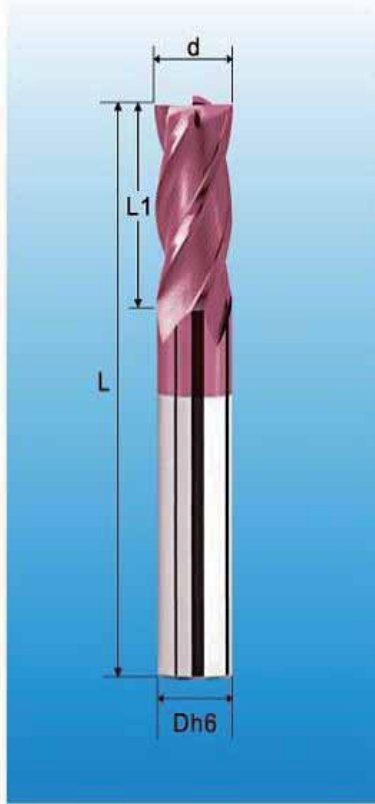
Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSTC201000U	1.0	3	50	3	2
EPSTC201500U	1.5	4	50	3	2
EPSTC202000U	2.0	5	50	3	2
EPSTC203000U	3.0	8	50	3	2
EPSFC201000U	1.0	3	50	4	2
EPSFC201500U	1.5	4	50	4	2
EPSFC202000U	2.0	5	50	4	2
EPSFC202500U	2.5	6	50	4	2
EPSFC203000U	3.0	8	50	4	2
EPSFC203500U	3.5	9	50	4	2
EPSFC204000U	4.0	10	50	4	2
EPSSC201000U	1.0	3	50	6	2
EPSSC202000U	2.0	5	50	6	2
EPSSC203000U	3.0	8	50	6	2
EPSSC203500U	3.5	9	50	6	2
EPSSC204000U	4.0	10	50	6	2
EPSSC204500U	4.5	11	50	6	2
EPSSC205000U	5.0	13	50	6	2
EPSSC205500U	5.5	14	50	6	2
EPSSC206000U	6.0	15	50	6	2
EPSSC206500U	6.5	16	60	8	2
EPSSC207000U	7.0	18	60	8	2
EPSSC208000U	8.0	20	60	8	2
EPSSC209000U	9.0	22	75	10	2
EPSSC210000U	10.0	25	75	10	2
EPSSC211000U	11.0	25	75	12	2
EPSSC212000U	12.0	30	75	12	2
EPSSC214000U	14.0	30	75	14	2
EPSSC216000U	16.0	35	100	16	2
EPSSC218000U	18.0	40	100	20	2
EPSSC220000U	20.0	45	100	20	2
EPSSC225000U	25.0	45	100	25	2

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPS-FC4

EPS-SC4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSTC401000U	1.0	3	50	3	4
EPSTC401500U	1.5	4	50	3	4
EPSTC402000U	2.0	5	50	3	4
EPSTC403000U	3.0	8	50	3	4
EPSFC401000U	1.0	3	50	4	4
EPSFC401500U	1.5	4	50	4	4
EPSFC402000U	2.0	5	50	4	4
EPSFC402500U	2.5	6	50	4	4
EPSFC403000U	3.0	8	50	4	4
EPSFC403500U	3.5	9	50	4	4
EPSFC404000U	4.0	10	50	4	4
EPSSC403000U	3.0	8	50	6	4
EPSSC403500U	3.5	9	50	6	4
EPSSC404000U	4.0	10	50	6	4
EPSSC404500U	4.5	11	50	6	4
EPSSC405000U	5.0	13	50	6	4
EPSSC405500U	5.5	14	50	6	4
EPSSC406000U	6.0	15	50	6	4
EPSSC406500U	6.5	16	60	8	4
EPSSC407000U	7.0	18	60	8	4
EPSSC408000U	8.0	20	60	8	4
EPSSC409000U	9.0	22	75	10	4
EPSSC410000U	10.0	25	75	10	4
EPSSC411000U	11.0	25	75	12	4
EPSSC412000U	12.0	30	75	12	4
EPSSC414000U	14.0	30	75	14	4
EPSSC416000U	16.0	35	100	16	4
EPSSC418000U	18.0	40	100	20	4
EPSSC420000U	20.0	45	100	20	4
EPSSC425000U	25.0	45	100	25	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

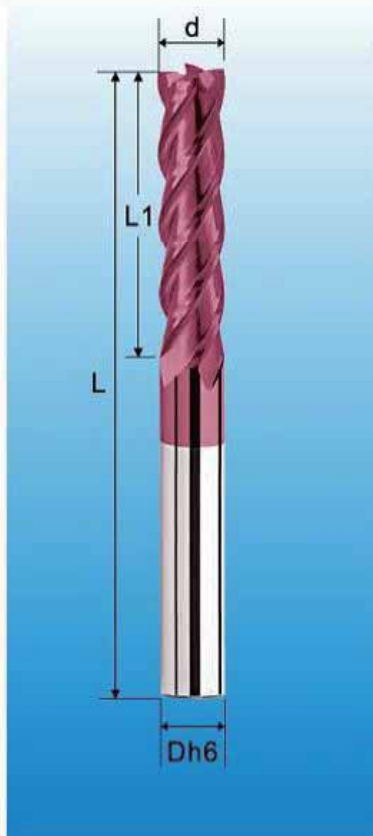
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICRO GRAIN CARBIDE END MILLS - Square Type & Long Flute - 4F

鎢鋼平銑刀-長刃型

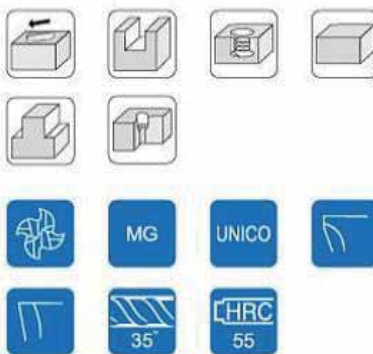
EPS-CC4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSCC403000U	3.0	15	60	6	4
EPSCC404000U	4.0	20	60	6	4
EPSCC405000U	5.0	25	75	6	4
EPSCC406000U	6.0	30	75	6	4
EPSCC408000U	8.0	35	100	8	4
EPSCC410000U	10.0	45	100	10	4
EPSCC412000U	12.0	45	100	12	4
EPSCC414000U	14.0	70	150	14	4
EPSCC416000U	16.0	70	150	16	4
EPSCC420000U	20.0	75	150	20	4
EPSCC425000U	25.0	75	150	25	4

INCH SIZE

EPSCC403X00U	1/8	3/4	2-1/4	1/8	4
EPSCC404X00U	3/16	3/4	2-1/2	3/16	4
EPSCC406X00U	1/4	1-1/8	3	1/4	4
EPSCC409X00U	3/8	1-1/8	3	3/8	4
EPSCC412X00U	1/2	2	4-1/2	1/2	4



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.03
3 ≤ ∅ ≤ 10	0 ~ -0.04
∅ > 10	0 ~ -0.05

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	×

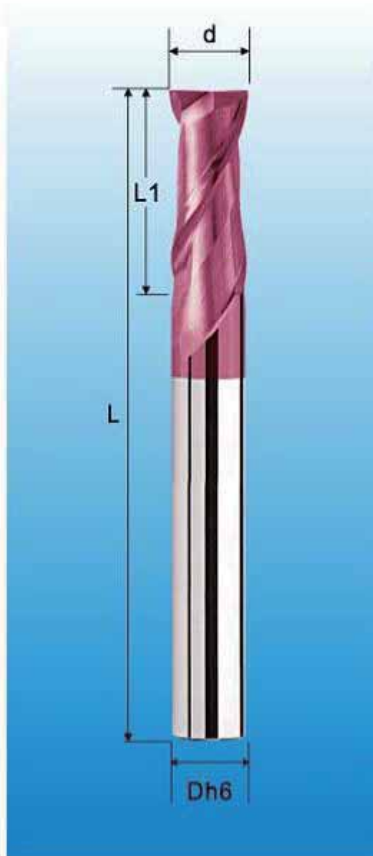
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICRO GRAIN CARBIDE END MILLS - Square Type & Long Shank - 2F

鎢鋼平銑刀-長柄型

EPS-LC2



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSLC203000U	3.0	8	75	6	2
EPSLC204000U	4.0	10	75	6	2
EPSLC205000U	5.0	13	75	6	2
EPSLC206000U	6.0	15	75	6	2
EPSLC208000U	8.0	20	100	8	2
EPSLC210000U	10.0	25	100	10	2
EPSLC212000U	12.0	30	100	12	2



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.03
$3 \leq \varnothing \leq 10$	0 ~ -0.04
$\varnothing > 10$	0 ~ -0.05

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

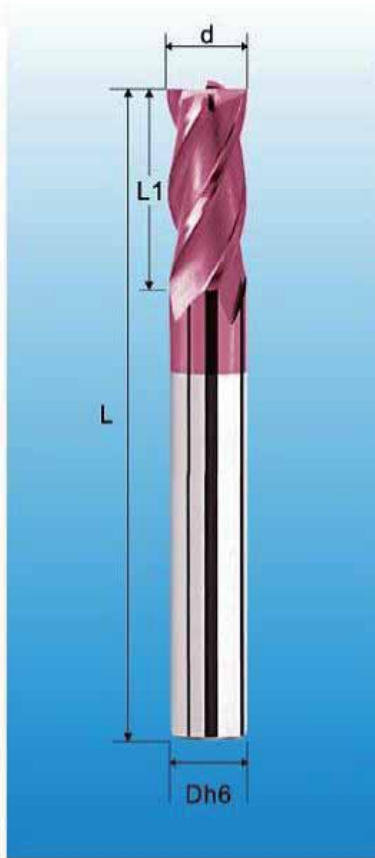
WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

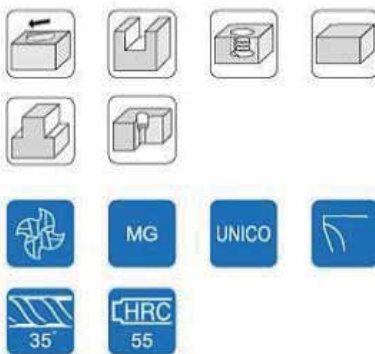
MICRO GRAIN CARBIDE END MILLS - Square Type & Long Shank - 4F

鎢鋼平銑刀-長柄型

EPS-LC4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPSLC403000U	3.0	8	75	6	4
EPSLC404000U	4.0	10	75	6	4
EPSLC405000U	5.0	13	75	6	4
EPSLC406000U	6.0	15	75	6	4
EPSLC408000U	8.0	20	100	8	4
EPSLC410000U	10.0	25	100	10	4
EPSLC412000U	12.0	30	100	12	4
EPSLC416000U	16.0	40	150	16	4
EPSLC420000U	20.0	40	150	20	4



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.03
3 ≦ ∅ ≦ 10	0 ~ -0.04
∅ > 10	0 ~ -0.05

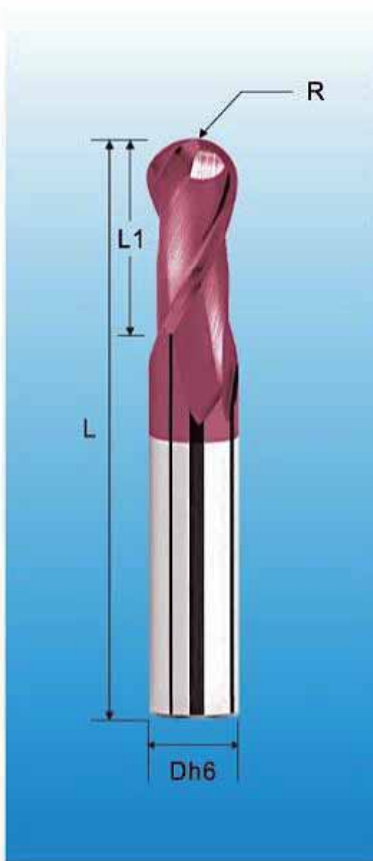
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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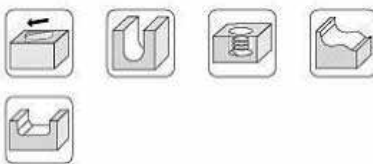
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-FC2

EPB-SC2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBFC201000U	0.50R	1.0	2	50	4	2
EPBFC201500U	0.75R	1.5	3	50	4	2
EPBFC202000U	1.00R	2.0	4	50	4	2
EPBFC203000U	1.50R	3.0	6	50	4	2
EPBFC204000U	2.00R	4.0	8	50	4	2
EPBSC203000U	1.50R	3.0	6	50	6	2
EPBSC204000U	2.00R	4.0	8	50	6	2
EPBSC205000U	2.50R	5.0	10	50	6	2
EPBSC206000U	3.00R	6.0	12	50	6	2
EPBSC207000U	3.50R	7.0	14	60	8	2
EPBSC208000U	4.00R	8.0	16	60	8	2
EPBSC210000U	5.00R	10.0	20	75	10	2
EPBSC212000U	6.00R	12.0	24	75	12	2
EPBSC216000U	8.00R	16.0	32	100	16	2
EPBSC220000U	10.00R	20.0	40	100	20	2



d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

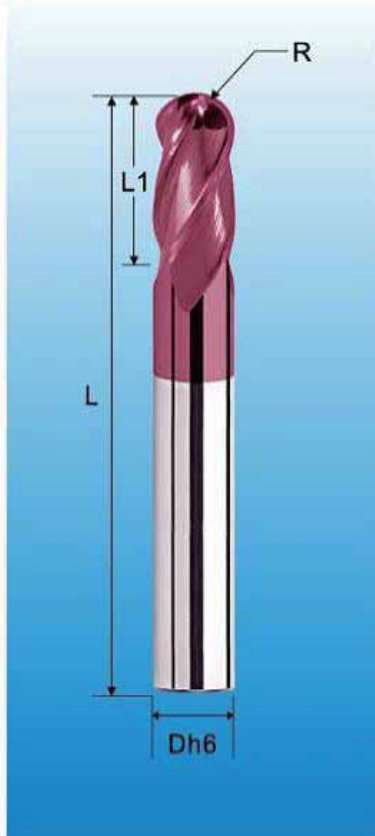
WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	380	32,400	290	21,600	160	14,400	75	32,400	340	45,000	475
1.0R	20,520	485	16,200	325	11,700	195	8,200	95	16,200	385	22,860	545
2.0R	11,520	610	8,640	385	6,300	230	4,600	120	8,640	455	11,520	610
3.0R	7,560	600	5,760	385	3,780	210	3,020	120	5,760	455	7,560	600
4.0R	5,760	610	4,320	385	2,880	210	2,300	120	4,320	455	5,760	610
5.0R	4,590	605	3,420	385	2,160	200	1,830	120	3,420	450	4,590	605
6.0R	3,780	600	2,880	385	1,800	200	1,520	120	2,880	455	3,780	600
8.0R	3,200	675	2,400	430	1,560	210	1,280	135	2,400	505	3,200	675
10.0R	2,600	615	1,920	430	1,300	215	1,040	135	1,920	455	2,600	615

Milling Amount (mm) Ad=0.05D, Pf=0.1D

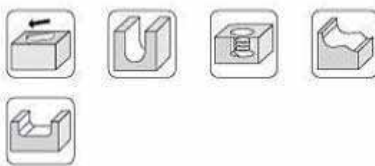
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-FC4

EPB-SC4



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBFC402000U	1.0R	2.0	4	50	4	4
EPBFC403000U	1.5R	3.0	6	50	4	4
EPBFC404000U	2.0R	4.0	8	50	4	4
EPBSC404000U	2.0R	4.0	8	50	6	4
EPBSC405000U	2.5R	5.0	10	50	6	4
EPBSC406000U	3.0R	6.0	12	50	6	4
EPBSC408000U	4.0R	8.0	16	60	8	4
EPBSC410000U	5.0R	10.0	20	75	10	4
EPBSC412000U	6.0R	12.0	24	75	12	4
EPBSC416000U	8.0R	16.0	32	100	16	4
EPBSC420000U	10.0R	20.0	40	100	20	4



d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

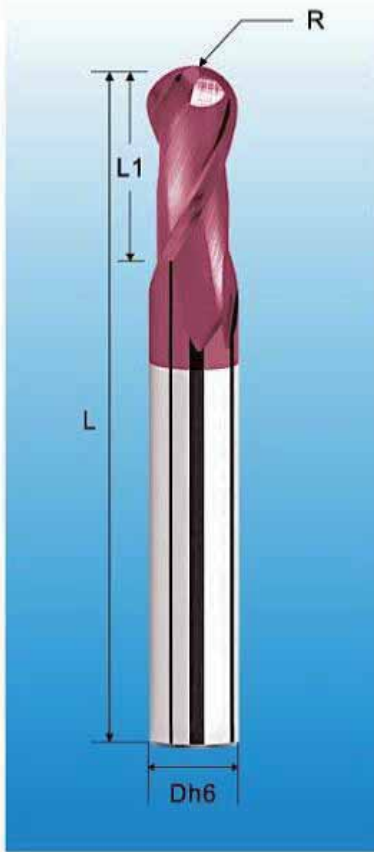
Milling Amount (mm)	Ad=0.05D, Pf=0.1D	
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

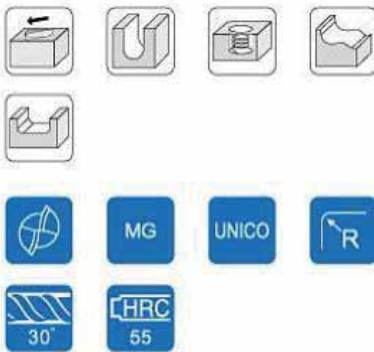
MICRO GRAIN CARBIDE END MILLS - Ball Nosed & Long Shank - 2F

鎢鋼球型銑刀-長柄型

EPB-LC2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBEC204000U	2R	4.0	8	75	4	2
EPBLC204000U	2R	4.0	8	75	6	2
EPBLC206000U	3R	6.0	12	75	6	2
EPBLC208000U	4R	8.0	16	100	8	2
EPBLC210000U	5R	10.0	20	100	10	2
EPBLC212000U	6R	12.0	24	100	12	2
EPBLC216000U	8R	16.0	32	150	16	2

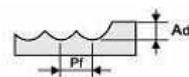


WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm) Ad=0.05D, Pf=0.1D

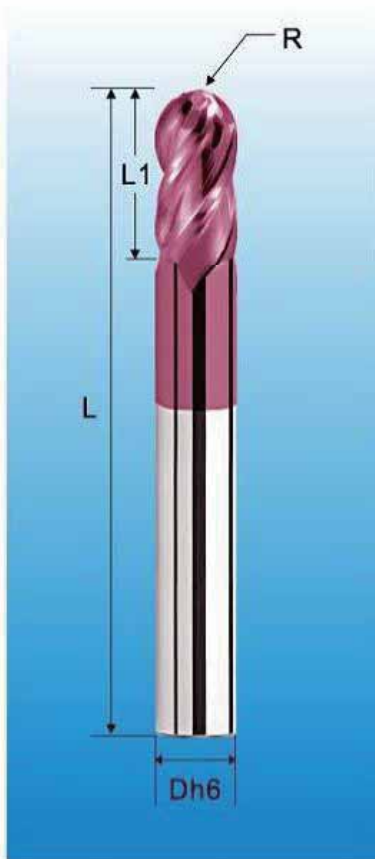


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

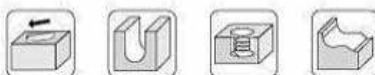
MICRO GRAIN CARBIDE END MILLS - Ball Nosed & Long Shank - 4F

鎢鋼球型銑刀-長柄型

EPB-LC4



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPBLC406000U	3R	6	12	75	6	4
EPBLC408000U	4R	8	16	100	8	4
EPBLC410000U	5R	10	20	100	10	4
EPBLC412000U	6R	12	24	100	12	4
EPBLC416000U	8R	16	32	150	16	4

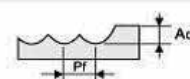


WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

d (刃徑)	R Tol. (R公差)
∅	± 0.02

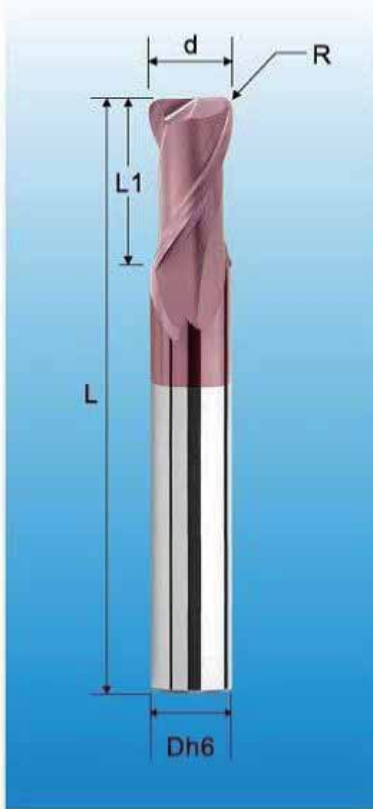
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

Milling Amount (mm) Ad=0.05D, Pf=0.1D

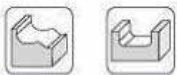
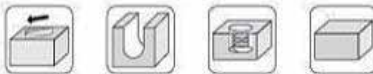


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-SC2



Order No. 訂購編號	Dia. 刀徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCSC204003U	4.0	0.3R	8	50	6	2
EPCSC204005U	4.0	0.5R	8	50	6	2
EPCSC204010U	4.0	1.0R	8	50	6	2
EPCSC205005U	5.0	0.5R	10	50	6	2
EPCSC205010U	5.0	1.0R	10	50	6	2
EPCSC206003U	6.0	0.3R	12	50	6	2
EPCSC206005U	6.0	0.5R	12	50	6	2
EPCSC206010U	6.0	1.0R	12	50	6	2
EPCSC208005U	8.0	0.5R	16	60	8	2
EPCSC208010U	8.0	1.0R	16	60	8	2
EPCSC208015U	8.0	1.5R	16	60	8	2
EPCSC210005U	10.0	0.5R	20	75	10	2
EPCSC210010U	10.0	1.0R	20	75	10	2
EPCSC210015U	10.0	1.5R	20	75	10	2
EPCSC210020U	10.0	2.0R	20	75	10	2
EPCSC212005U	12.0	0.5R	24	75	12	2
EPCSC212010U	12.0	1.0R	24	75	12	2
EPCSC212015U	12.0	1.5R	24	75	12	2
EPCSC212020U	12.0	2.0R	24	75	12	2
EPCSC216010U	16.0	1.0R	32	100	16	2
EPCSC216020U	16.0	2.0R	32	100	16	2
EPCSC216030U	16.0	3.0R	32	100	16	2



d (刀徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

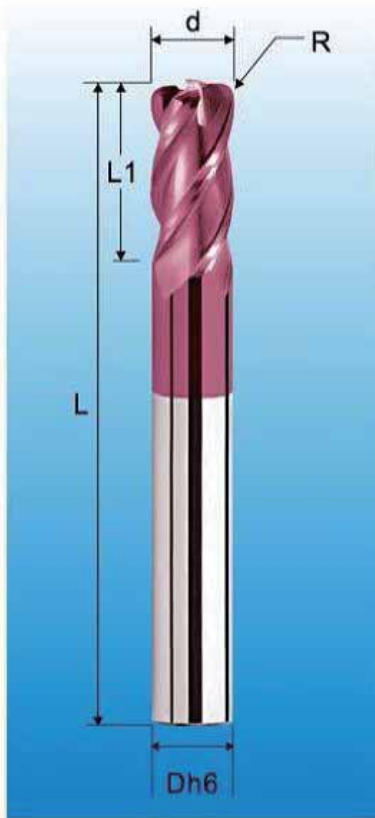
d (刀徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	○
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

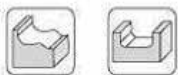
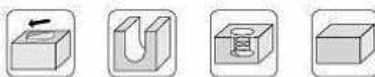
WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300
Milling Amount (mm)							Ad=0.1D (D,3,Ad<=0.05D)	Ad=0.5D(D<3, Ad<=0.25D)				

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-SC4



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCSC403003U	3.0	0.3R	6	50	6	4
EPCSC403005U	3.0	0.5R	6	50	6	4
EPCSC403010U	3.0	1.0R	6	50	6	4
EPCSC404003U	4.0	0.3R	8	50	6	4
EPCSC404005U	4.0	0.5R	8	50	6	4
EPCSC404010U	4.0	1.0R	8	50	6	4
EPCSC405005U	5.0	0.5R	10	50	6	4
EPCSC405010U	5.0	1.0R	10	50	6	4
EPCSC406003U	6.0	0.3R	12	50	6	4
EPCSC406005U	6.0	0.5R	12	50	6	4
EPCSC406010U	6.0	1.0R	12	50	6	4
EPCSC408005U	8.0	0.5R	16	60	8	4
EPCSC408010U	8.0	1.0R	16	60	8	4
EPCSC408015U	8.0	1.5R	16	60	8	4
EPCSC410005U	10.0	0.5R	20	75	10	4
EPCSC410010U	10.0	1.0R	20	75	10	4
EPCSC410015U	10.0	1.5R	20	75	10	4
EPCSC410020U	10.0	2.0R	20	75	10	4
EPCSC412005U	12.0	0.5R	24	75	12	4
EPCSC412010U	12.0	1.0R	24	75	12	4
EPCSC412015U	12.0	1.5R	24	75	12	4
EPCSC412020U	12.0	2.0R	24	75	12	4
EPCSC412030U	12.0	3.0R	24	75	12	4
EPCSC416010U	16.0	1.0R	32	100	16	4
EPCSC416020U	16.0	2.0R	32	100	16	4
EPCSC416030U	16.0	3.0R	32	100	16	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

d (刃徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

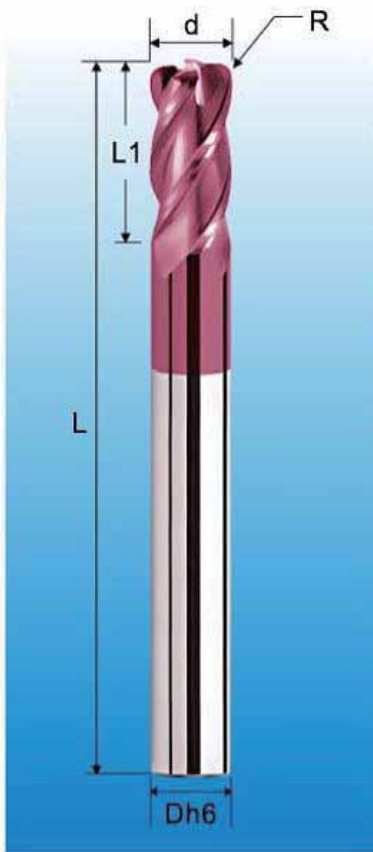
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

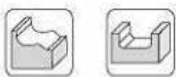
MICRO GRAIN CARBIDE END MILLS - Corner Radius & Long Shank - 4F

圓鼻刀-長柄型

EPC-LC4



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EPCLC403005U	3.0	0.5R	6	75	6	4
EPCLC403010U	3.0	1.0R	6	75	6	4
EPCLC404005U	4.0	0.5R	8	75	6	4
EPCLC404010U	4.0	1.0R	8	75	6	4
EPCLC405005U	5.0	0.5R	10	75	6	4
EPCLC405010U	5.0	1.0R	10	75	6	4
EPCLC406005U	6.0	0.5R	12	75	6	4
EPCLC406010U	6.0	1.0R	12	75	6	4
EPCLC408005U	8.0	0.5R	16	100	8	4
EPCLC408010U	8.0	1.0R	16	100	8	4
EPCLC408015U	8.0	1.5R	16	100	8	4
EPCLC410005U	10.0	0.5R	20	100	10	4
EPCLC410010U	10.0	1.0R	20	100	10	4
EPCLC410015U	10.0	1.5R	20	100	10	4
EPCLC410020U	10.0	2.0R	20	100	10	4
EPCLC412005U	12.0	0.5R	24	100	12	4
EPCLC412010U	12.0	1.0R	24	100	12	4
EPCLC412015U	12.0	1.5R	24	100	12	4
EPCLC412020U	12.0	2.0R	24	100	12	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

d (刃徑)	R Tol. (R公差)
\varnothing	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
3MM	7,560	455	5,760	295	4,680	195	3,020	90	5,760	345	8,640	520
4MM	5,400	430	4,320	295	3,600	200	2,160	85	4,320	345	6,480	520
5MM	4,500	450	3,420	290	2,880	200	1,800	90	3,420	345	5,040	505
6MM	3,600	430	2,880	295	2,340	195	1,440	85	2,880	345	4,320	520
8MM	2,700	430	2,160	295	1,800	200	1,080	85	2,160	345	3,240	520
10MM	2,160	430	1,710	290	1,440	200	860	85	1,710	340	2,520	505
12MM	1,800	430	1,440	295	1,200	200	720	85	1,440	345	2,160	520
14MM	1,800	500	1,360	325	1,140	225	720	100	1,360	380	2,000	560
16MM	1,560	500	1,200	325	1,000	225	620	100	1,200	385	1,800	575
18MM	1,400	455	1,060	290	880	200	560	90	1,060	345	1,600	520
20MM	1,200	430	960	295	800	200	480	85	960	345	1,400	505

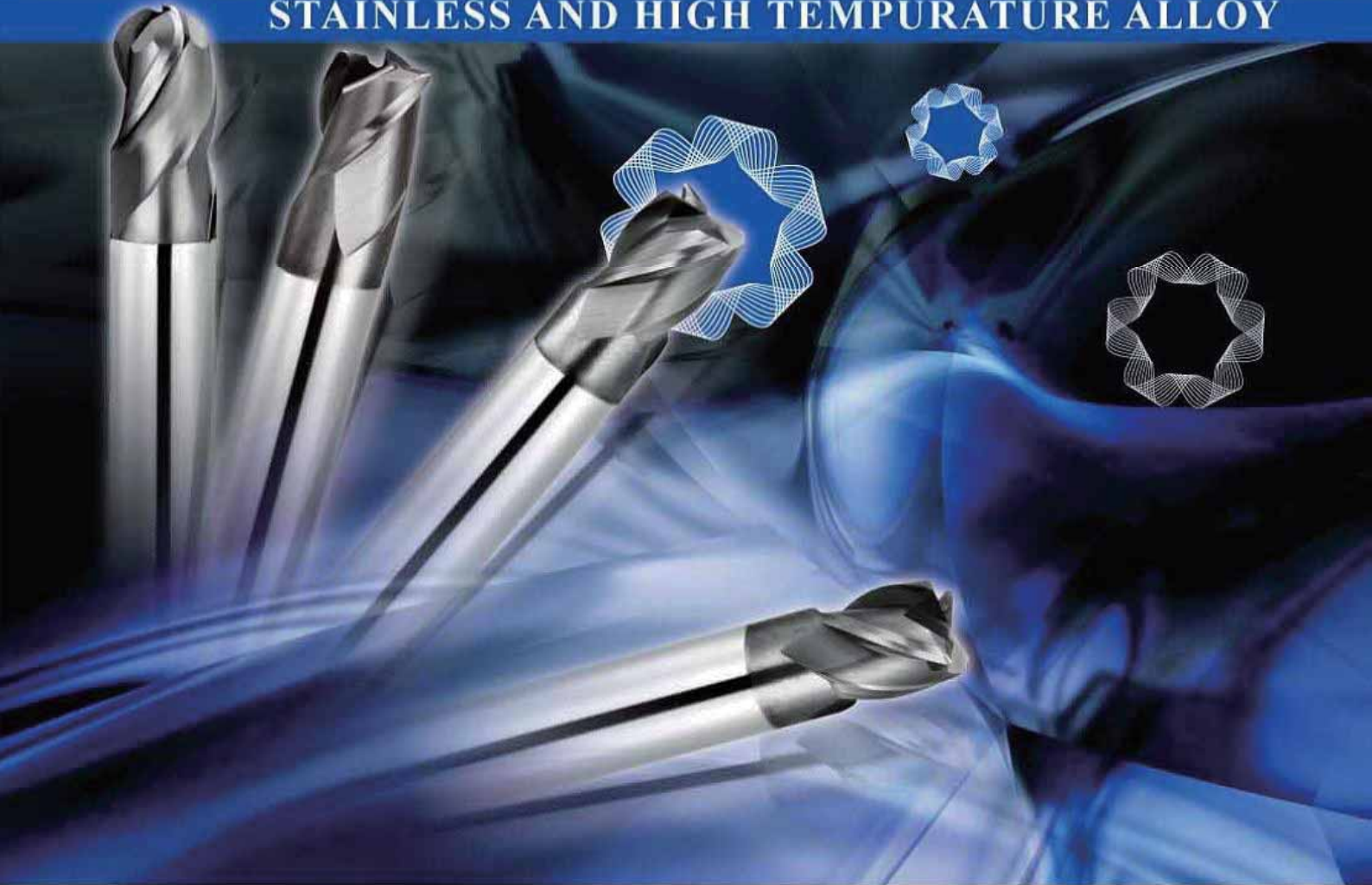
Milling Amount (mm)	AD=1.5D, RD<=0.1D		AD=1.5D RD<=0.05D	AD=1.5D, RD<=0.1D
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The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

Mstar 500 series

高溫合金系列

STAINLESS AND HIGH TEMPERATURE ALLOY

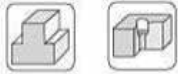
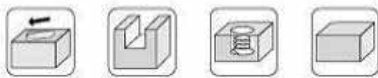


- 1** Used for cutting stainless and high temperature alloy.
ESSSV : Variable Helix and Uneven Division 變導程不等分割刃
ESSW: Wave Cutting 波浪銑刀
- 2** ARCO coating reduce friction coefficient and increase more toughness, hardness and tool life. Also suitable for wet machining.
- 3** Micro grain size $0.4\mu\text{m}$ are used for Mstar series.
- 4** It could be used for various materials, including difficult-to-cut material.

ESS□A2



Order No. 訂單編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESSOA203000A	3	3	50	4	2
ESSOA204000A	4	4	50	4	2
ESSHA204000A	4	4	50	6	2
ESSHA205000A	5	5	50	6	2
ESSHA206000A	6	7	50	6	2
ESSHA208000A	8	9	60	8	2
ESSHA210000A	10	11	75	10	2
ESSHA212000A	12	13	75	12	2
ESSHA214000A	14	15	75	14	2
ESSHA216000A	16	17	100	16	2
ESSFA203000A	3	8	50	4	2
ESSFA204000A	4	10	50	4	2
ESSSA204000A	4	10	50	6	2
ESSSA205000A	5	13	50	6	2
ESSSA206000A	6	15	50	6	2
ESSSA208000A	8	20	60	8	2
ESSSA210000A	10	25	75	10	2
ESSSA212000A	12	30	75	12	2
ESSSA214000A	14	30	75	14	2
ESSSA216000A	16	35	100	16	2



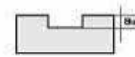
d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

Bright Finishing (超精銑)	×
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

WORKING MATERIAL	STAINLESS 304		Moderately Difficult SUS		STAINLESS 316 L		TITANIUM (ALLOYS)		SOFT STEEL		SG CAST IRON		High Temperature ALLOYS	
Vc	72~90 M/min		56~70 M/min		48~60 M/min		40~56 M/min		120~160M/min		96~120M/min		20~25 M/min	
DIAMETER	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min
4	5,732	458	4,459	286	3,822	183	3,185	122	9,554	764	7,643	611	1,592	56
5	4,586	440	3,567	286	3,057	245	2,548	122	7,643	734	6,115	587	1,274	45
6	3,822	489	2,972	333	2,548	245	2,123	136	6,369	815	5,096	652	1,062	58
8	2,866	458	2,229	321	1,911	245	1,592	153	4,777	917	3,822	734	796	69
10	2,293	440	1,783	286	1,529	220	1,274	124	3,822	734	3,057	587	637	55
12	1,911	398	1,486	262	1,274	204	1,062	136	3,185	714	2,548	570	531	65
14	1,638	351	1,274	232	1,092	185	910	126	2,730	637	2,184	510	455	65
16	1,433	321	1,115	214	955	168	796	114	2,389	574	1,911	458	398	62

Milling Amount (mm)

aa	
D ≤ ∅3	0.15D
∅3 < D	0.20D



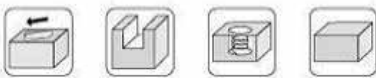
aa	
D ≤ ∅6	0.10D
∅6 < D	0.15D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESS□A3



Order No. 訂單編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESSOA303000A	3	3	50	4	3
ESSOA304000A	4	4	50	4	3
ESSHA304000A	4	4	50	6	3
ESSHA305000A	5	5	50	6	3
ESSHA306000A	6	7	50	6	3
ESSHA308000A	8	9	60	8	3
ESSHA310000A	10	11	75	10	3
ESSHA312000A	12	13	75	12	3
ESSHA314000A	14	15	75	14	3
ESSHA316000A	16	17	100	16	3
ESSFA303000A	3	8	50	4	3
ESSFA304000A	4	10	50	4	3
ESSSA304000A	4	10	50	6	3
ESSSA305000A	5	13	50	6	3
ESSSA306000A	6	15	50	6	3
ESSSA308000A	8	20	60	8	3
ESSSA310000A	10	25	75	10	3
ESSSA312000A	12	30	75	12	3
ESSSA314000A	14	30	75	14	3
ESSSA316000A	16	35	100	16	3



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

WORKING MATERIAL	STAINLESS 304	Moderately Difficult SUS	STAINLESS 316 L	TITANIUM (ALLOYS)	SOFT STEEL	SG CAST IRON	High Temperature ALLOYS							
Vc	72~90 M/min	56~70 M/min	48~60 M/min	40~56 M/min	120~160M/min	96~120M/min	20~25 M/min							
DIAMETER	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min	R.P.M rev/min	FEED mm/min
4	5,732	458	4,459	286	3,822	183	3,185	122	9,554	764	7,643	611	1,592	56
5	4,586	440	3,567	286	3,057	245	2,548	122	7,643	734	6,115	587	1,274	45
6	3,822	489	2,972	333	2,548	245	2,123	136	6,369	815	5,096	652	1,062	58
8	2,866	458	2,229	321	1,911	245	1,592	153	4,777	917	3,822	734	796	69
10	2,293	440	1,783	286	1,529	220	1,274	124	3,822	734	3,057	587	637	55
12	1,911	398	1,486	262	1,274	204	1,062	136	3,185	714	2,548	570	531	65
14	1,638	351	1,274	232	1,092	185	910	126	2,730	637	2,184	510	455	65
16	1,433	321	1,115	214	955	168	796	114	2,389	574	1,911	458	398	62

Milling Amount (mm)

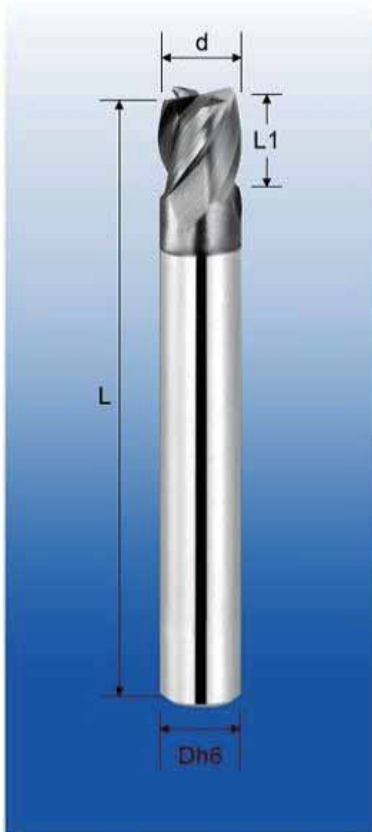
	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D



	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≤ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESS□A4



Order No. 訂單編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESSOA403000A	3	3	50	4	4
ESSOA404000A	4	4	50	4	4
ESSHA404000A	4	4	50	6	4
ESSHA405000A	5	5	50	6	4
ESSHA406000A	6	7	50	6	4
ESSHA408000A	8	9	60	8	4
ESSHA410000A	10	11	75	10	4
ESSHA412000A	12	13	75	12	4
ESSHA414000A	14	15	75	14	4
ESSHA416000A	16	17	100	16	4
ESSFA403000A	3	8	50	4	4
ESSFA404000A	4	10	50	4	4
ESSSA404000A	4	10	50	6	4
ESSSA405000A	5	13	50	6	4
ESSSA406000A	6	15	50	6	4
ESSSA408000A	8	20	60	8	4
ESSSA410000A	10	25	75	10	4
ESSSA412000A	12	30	75	12	4
ESSSA414000A	14	30	75	14	4
ESSSA416000A	16	35	100	16	4



d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	×

WORKING MATERIAL	STAINLESS 304	Moderately Difficult SUS	STAINLESS 316 L	TITANIUM (ALLOYS)	SOFT STEEL	SG CAST IRON	High Temperature ALLOYS							
Vc	72~90 M/min	56~70 M/min	48~60 M/min	40~56 M/min	120~160M/min	96~120M/min	20~25 M/min							
DIAMETER	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED		
4	5,732	458	4,459	286	3,822	183	3,185	122	9,554	764	7,643	611	1,592	56
5	4,586	440	3,567	286	3,057	245	2,548	122	7,643	734	6,115	587	1,274	45
6	3,822	489	2,972	333	2,548	245	2,123	136	6,369	815	5,096	652	1,062	58
8	2,866	458	2,229	321	1,911	245	1,592	153	4,777	917	3,822	734	796	69
10	2,293	440	1,783	286	1,529	220	1,274	124	3,822	734	3,057	587	637	55
12	1,911	398	1,486	262	1,274	204	1,062	136	3,185	714	2,548	570	531	65
14	1,638	351	1,274	232	1,092	185	910	126	2,730	637	2,184	510	455	65
16	1,433	321	1,115	214	955	168	796	114	2,389	574	1,911	458	398	62

Milling Amount (mm)

	aa	ar
D < \varnothing 6	1.0D	0.02D
\varnothing 6 \leq D	1.0D	0.05D



	aa	ar
D < \varnothing 6	1.0D	0.01D
\varnothing 6 \leq D	1.0D	0.02D

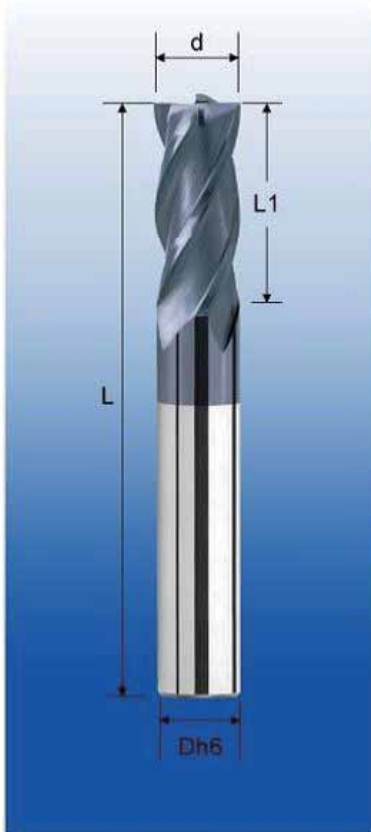
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ULTRA MICRO GRAIN CARBIDE END MILLS - Variable Helix Square Type - 4F

變導程平刀 (公制)

ESSFV4

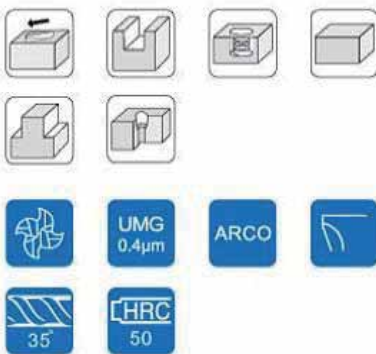
ESSSV4



Order No. 訂單編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESSFV404000A	4	10	50	4	4
ESSSV405000A	5	13	50	6	4
ESSSV406000A	6	13	50	6	4
ESSSV408000A	8	16	60	8	4
ESSSV410000A	10	20	75	10	4
ESSSV412000A	12	24	75	12	4
ESSSV414000A	14	28	75	14	4
ESSSV416000A	16	30	100	16	4

變導程平刀 (英制)

ESSSV403X01A	1/8	1/8	1-1/2	1/8	4
ESSSV403X00A	5/32	7/16	2	3/16	4
ESSSV404X00A	3/16	7/16	2	3/16	4
ESSSV405X00A	7/32	7/16	2-1/2	1/4	4
ESSSV406X00A	1/4	1/2	2-1/2	1/4	4
ESSSV407X00A	9/31	5/8	2-1/2	5/16	4
ESSSV407X00A	5/16	13/16	2-1/2	5/16	4
ESSSV408X00A	11/32	13/16	2-1/2	3/8	4
ESSSV409X00A	3/8	7/8	2-1/2	3/8	4
ESSSV410X00A	13/32	15/16	2-3/4	7/16	4
ESSSV411X00A	7/16	1	2-3/4	7/16	4
ESSSV411X00A	15/32	1	3	1/2	4
ESSSV412X00A	1/2	1	3	1/2	4
ESSSV414X00A	9/16	1-1/8	3-1/2	9/16	4
ESSSV415X00A	5/8	1-1/4	3-1/2	5/8	4



WORKING MATERIAL	STAINLESS 304	Moderately Difficult SUS	STAINLESS 316 L	TITANIUM (ALLOYS)	SOFT STEEL	SG CAST IRON	High Temperature ALLOYS							
Vc	72~90 M/min	56~70 M/min	48~60 M/min	40~56 M/min	120~160M/min	96~120M/min	20~25 M/min							
DIAMETER	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED
4	5,732	573	4,459	357	3,822	229	3,185	153	9,554	955	7,643	764	1,592	70
5	4,586	550	3,567	357	3,057	306	2,548	153	7,643	917	6,115	734	1,274	56
6	3,822	611	2,972	416	2,548	306	2,123	170	6,369	1,019	5,096	815	1,062	72
8	2,866	573	2,229	401	1,911	306	1,592	191	4,777	1,146	3,822	917	796	86
10	2,293	550	1,783	357	1,529	275	1,274	155	3,822	917	3,057	734	637	69
12	1,911	497	1,486	327	1,274	255	1,062	170	3,185	892	2,548	713	531	81
14	1,638	439	1,274	290	1,092	231	910	157	2,730	797	2,184	638	455	82
16	1,433	401	1,115	268	955	210	796	143	2,389	717	1,911	573	398	78

d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	×

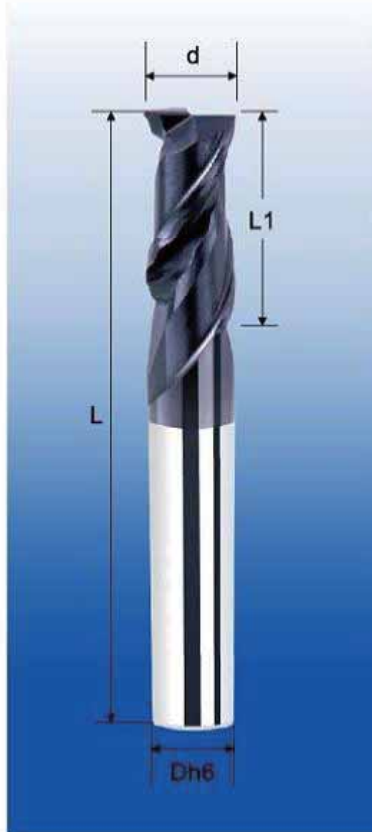
Milling Amount (mm)	$aa = 1.0D$ $ar = 0.5D$	$aa = 1.0D$ $ar = 0.2D$
	$ad = 1.0D$	$ad = 0.3D$

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ULTRA MICRO GRAIN CARBIDE END MILLS - Sinus Edge (Wave) Type - 2F/3F/4F

極細鎢鋼平銑刀-波浪型

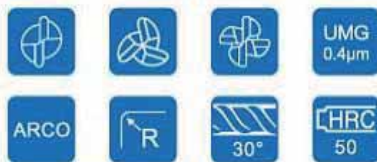
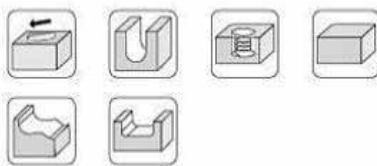
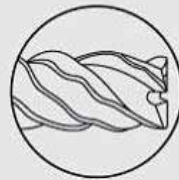
ESSSW2 ESSSW3 ESSSW4



Order No. 訂單編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
Sinus Edge (Wave) Type - 2F					
ESSSW206000A	6	15	50	6	2
ESSSW208000A	8	20	60	8	2
ESSSW210000A	10	25	75	10	2
ESSSW212000A	12	30	75	12	2

Sinus Edge (Wave) Type - 3F					
ESSSW306000A	6	15	50	6	3
ESSSW308000A	8	20	60	8	3
ESSSW310000A	10	25	75	10	3
ESSSW312000A	12	30	75	12	3
ESSSW316000A	16	40	100	16	3
ESSSW320000A	20	45	100	20	3

Sinus Edge (Wave) Type - 4F					
ESSSW406000A	6	15	50	6	4
ESSSW408000A	8	20	60	8	4
ESSSW410000A	10	25	75	10	4
ESSSW412000A	12	30	75	12	4
ESSSW416000A	16	40	100	16	4
ESSSW420000A	20	45	100	20	4



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Bright Finishing (超精銑)	
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300

Milling Amount (mm)

	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D



	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≤ D	1.0D	0.02D

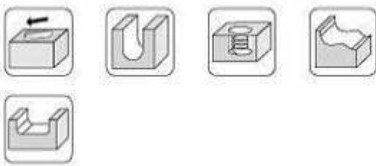
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESB□A2



Order No. 訂單編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESBOA202000A	1.0R	2	2	50	4	2
ESBOA203000A	1.5R	3	3	50	4	2
ESBOA204000A	2.0R	4	4	50	4	2
ESBHA204000A	2.0R	4	4	50	6	2
ESBHA205000A	2.5R	5	5	50	6	2
ESBHA206000A	3.0R	6	6	50	6	2
ESBHA208000A	4.0R	8	8	60	8	2
ESBHA210000A	5.0R	10	10	75	10	2
ESBHA212000A	6.0R	12	12	75	12	2
ESBHA214000A	7.0R	14	14	75	14	2
ESBHA216000A	8.0R	16	16	100	16	2

ESBFA202000A	1.0R	2	4	50	4	2
ESBFA203000A	1.5R	3	6	50	4	2
ESBFA204000A	2.0R	4	8	50	4	2
ESBSA204000A	2.0R	4	8	50	6	2
ESBSA205000A	2.5R	5	10	50	6	2
ESBSA206000A	3.0R	6	12	50	6	2
ESBSA208000A	4.0R	8	16	60	8	2
ESBSA210000A	5.0R	10	20	75	10	2
ESBSA212000A	6.0R	12	24	75	12	2
ESBSA214000A	7.0R	14	28	75	14	2
ESBSA216000A	8.0R	16	32	100	16	2



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

d	R Tol.
∅ ≤ 12	R ± 0.01
∅ > 12	R ± 0.015

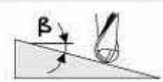
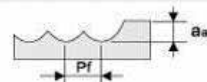
Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

When β is less than 15° milling speed and feed speed in the table can be increased 1.0~1.2 times.

Milling Amount (mm)

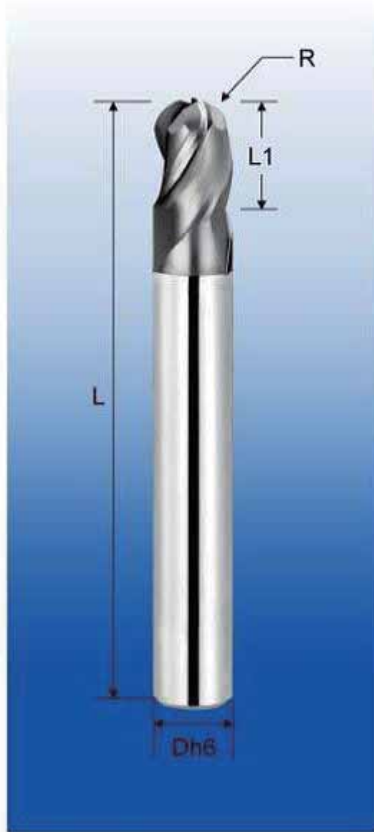
$$a_a = 0.02D$$

$$P_f = 0.05D$$



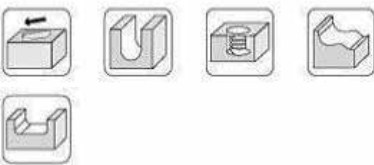
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESB□A3



Order No. 訂單編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESBOA302000A	1.0R	2	2	50	4	3
ESBOA303000A	1.5R	3	3	50	4	3
ESBOA304000A	2.0R	4	4	50	4	3
ESBHA304000A	2.0R	4	4	50	6	3
ESBHA305000A	2.5R	5	5	50	6	3
ESBHA306000A	3.0R	6	6	50	6	3
ESBHA308000A	4.0R	8	8	60	8	3
ESBHA310000A	5.0R	10	10	75	10	3
ESBHA312000A	6.0R	12	12	75	12	3
ESBHA314000A	7.0R	14	14	75	14	3
ESBHA316000A	8.0R	16	16	100	15	3

ESBFA302000A	1.0R	2	4	50	4	3
ESBFA303000A	1.5R	3	6	50	4	3
ESBFA304000A	2.0R	4	8	50	4	3
ESBSA304000A	2.0R	4	8	50	6	3
ESBSA305000A	2.5R	5	10	50	6	3
ESBSA306000A	3.0R	6	12	50	6	3
ESBSA308000A	4.0R	8	16	60	8	3
ESBSA310000A	5.0R	10	20	75	10	3
ESBSA312000A	6.0R	12	24	75	12	3
ESBSA314000A	7.0R	14	28	75	14	3
ESBSA316000A	8.0R	16	32	100	16	3



d	R Tol.
∅ ≤ 12	R ± 0.01
∅ > 12	R ± 0.015

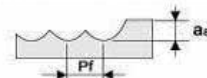
Bright Finishing (超精銑)	◎
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	72M/min	54M/min	34M/min	29M/min	54M/min	72M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
0.5R	36,000	545	32,400	420	21,600	230	14,400	110	32,400	490	45,000	685
1.0R	20,520	700	16,200	470	11,700	280	8,200	140	16,200	555	22,860	780
2.0R	11,520	875	8,640	560	6,300	335	4,600	175	8,640	655	11,520	875
3.0R	7,560	860	5,760	560	3,780	300	3,020	170	5,760	655	7,560	860
4.0R	5,760	875	4,320	560	2,880	305	2,300	175	4,320	655	5,760	875
5.0R	4,590	870	3,420	550	2,160	285	1,830	175	3,420	650	4,590	870
6.0R	3,780	860	2,880	560	1,800	285	1,520	175	2,880	655	3,780	860
8.0R	3,200	970	2,400	620	1,560	330	1,280	195	2,400	730	3,200	970
10.0R	2,600	890	1,920	560	1,300	310	1,040	175	1,920	655	2,600	890

When β is less than 15° milling speed and feed speed in the table can be increased 1.0~1.2 times.

Milling Amount (mm)

aa = 0.02D
Pf = 0.05D



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

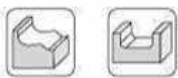
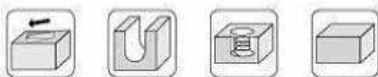
ULTRA MICRO GRAIN CARBIDE END MILLS - Corner Radius - 3F

鎢鋼圓鼻刀-標準型

ESCSA3



Order No. 訂單編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESCSA303003A	3	0.3R	6	50	6	3
ESCSA303005A	3	0.5R	6	50	6	3
ESCSA303010A	3	1.0R	6	50	6	3
ESCSA304003A	4	0.3R	8	50	6	3
ESCSA304005A	4	0.5R	8	50	6	3
ESCSA304010A	4	1.0R	8	50	6	3
ESCSA305005A	5	0.5R	10	50	6	3
ESCSA305010A	5	1.0R	10	50	6	3
ESCSA306003A	6	0.3R	12	50	6	3
ESCSA306005A	6	0.5R	12	50	6	3
ESCSA306010A	6	1.0R	12	50	6	3
ESCSA308005A	8	0.5R	16	60	8	3
ESCSA308010A	8	1.0R	16	60	8	3
ESCSA308015A	8	1.5R	16	60	8	3
ESCSA310005A	10	0.5R	20	75	10	3
ESCSA310010A	10	1.0R	20	75	10	3
ESCSA310015A	10	1.5R	20	75	10	3
ESCSA310020A	10	2.0R	20	75	10	3
ESCSA312005A	12	0.5R	24	75	12	3
ESCSA312010A	12	1.0R	24	75	12	3
ESCSA312015A	12	1.5R	24	75	12	3
ESCSA312020A	12	2.0R	24	75	12	3
ESCSA312030A	12	3.0R	24	75	12	3



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300

Milling Amount (mm)

	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D



	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≤ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

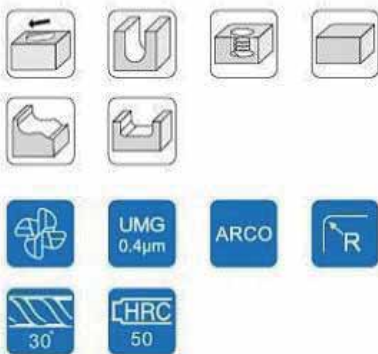
ULTRA MICRO GRAIN CARBIDE END MILLS - Corner Radius - 4F

鎢鋼圓鼻刀-標準型

ESCSA4



Order No. 訂單編號	Dia. 刀徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESCSA403003A	3	0.3R	6	50	6	4
ESCSA403005A	3	0.5R	6	50	6	4
ESCSA403010A	3	1.0R	6	50	6	4
ESCSA404003A	4	0.3R	8	50	6	4
ESCSA404005A	4	0.5R	8	50	6	4
ESCSA404010A	4	1.0R	8	50	6	4
ESCSA405003A	5	0.3R	10	50	6	4
ESCSA405005A	5	0.5R	10	50	6	4
ESCSA406003A	6	0.3R	12	50	6	4
ESCSA406005A	6	0.5R	12	50	6	4
ESCSA406010A	6	1.0R	12	50	6	4
ESCSA408005A	8	0.5R	16	60	8	4
ESCSA408010A	8	1.0R	16	60	8	4
ESCSA408015A	8	1.5R	16	60	8	4
ESCSA410005A	10	0.5R	20	75	10	4
ESCSA410010A	10	1.0R	20	75	10	4
ESCSA410015A	10	1.5R	20	75	10	4
ESCSA410020A	10	2.0R	20	75	10	4
ESCSA412005A	12	0.5R	24	75	12	4
ESCSA412010A	12	1.0R	24	75	12	4
ESCSA412015A	12	1.5R	24	75	12	4
ESCSA412020A	12	2.0R	24	75	12	4
ESCSA412030A	12	3.0R	24	75	12	4



WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300

d	Tolerance
∅ ≦ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

Milling Amount (mm)

	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≦ D	1.0D	0.05D



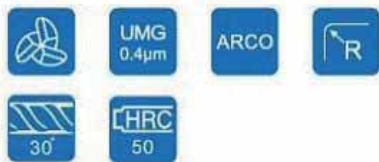
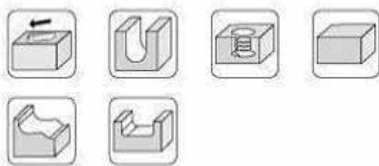
	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≦ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESCHA3



Order No. 訂單編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESCHA303003A	3	0.3R	3	50	6	3
ESCHA303005A	3	0.5R	3	50	6	3
ESCHA303010A	3	1.0R	3	50	6	3
ESCHA304003A	4	0.3R	4	50	6	3
ESCHA304005A	4	0.5R	4	50	6	3
ESCHA304010A	4	1.0R	4	50	6	3
ESCHA305005A	5	0.5R	5	50	6	3
ESCHA305010A	5	1.0R	5	50	6	3
ESCHA306003A	6	0.3R	6	50	6	3
ESCHA306005A	6	0.5R	6	50	6	3
ESCHA306010A	6	1.0R	6	50	6	3
ESCHA308005A	8	0.5R	8	60	8	3
ESCHA308010A	8	1.0R	8	60	8	3
ESCHA308015A	8	1.5R	8	60	8	3
ESCHA310005A	10	0.5R	10	75	10	3
ESCHA310010A	10	1.0R	10	75	10	3
ESCHA310015A	10	1.5R	10	75	10	3
ESCHA310020A	10	2.0R	10	75	10	3
ESCHA312005A	12	0.5R	12	75	12	3
ESCHA312010A	12	1.0R	12	75	12	3
ESCHA312015A	12	1.5R	12	75	12	3
ESCHA312020A	12	2.0R	12	75	12	3
ESCHA312030A	12	3.0R	12	75	12	3



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	⊙
Roughing (粗銑)	○

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	228	17,100	168	14,400	120	8,000	48	17,100	198	25,200	288
2MM	10,800	282	8,640	192	7,200	132	4,320	54	8,640	222	12,600	324
3MM	7,560	324	5,760	210	4,680	144	3,000	66	5,760	246	8,640	252
4MM	5,400	312	4,320	210	3,600	144	2,160	60	4,320	246	6,480	372
5MM	4,500	324	3,420	210	2,880	144	1,800	66	3,420	246	5,040	360
6MM	3,600	312	2,880	210	2,340	144	1,440	60	2,880	246	4,320	372
8MM	2,700	312	2,160	210	1,800	144	1,080	60	2,160	246	3,240	372
10MM	2,160	312	1,710	210	1,440	144	870	60	1,710	246	2,520	360
12MM	1,800	312	1,440	210	1,200	144	720	60	1,440	246	2,160	372
14MM	1,800	360	1,360	234	1,140	162	720	72	1,360	276	2,000	402
16MM	1,560	360	2,100	414	1,000	162	630	72	2,100	480	1,800	414
18MM	1,560	366	1,060	210	880	144	630	72	1,060	246	1,600	372
20MM	1,200	312	960	210	800	144	480	60	960	246	1,400	360

Milling Amount (mm)

	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D



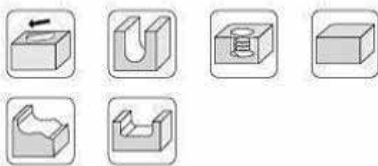
	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≤ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ESCHA4



Order No. 訂單編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESCHA403003A	3	0.3R	3	50	6	4
ESCHA403005A	3	0.5R	3	50	6	4
ESCHA403010A	3	1.0R	3	50	6	4
ESCHA404003A	4	0.3R	4	50	6	4
ESCHA404005A	4	0.5R	4	50	6	4
ESCHA404010A	4	1.0R	4	50	6	4
ESCHA405005A	5	0.5R	5	50	6	4
ESCHA405010A	5	1.0R	5	50	6	4
ESCHA406003A	6	0.3R	6	50	6	4
ESCHA406005A	6	0.5R	6	50	6	4
ESCHA406010A	6	1.0R	6	50	6	4
ESCHA408005A	8	0.5R	8	60	8	4
ESCHA408010A	8	1.0R	8	60	8	4
ESCHA408015A	8	1.5R	8	60	8	4
ESCHA410005A	10	0.5R	10	75	10	4
ESCHA410010A	10	1.0R	10	75	10	4
ESCHA410015A	10	1.5R	10	75	10	4
ESCHA410020A	10	2.0R	10	75	10	4
ESCHA412005A	12	0.5R	12	75	12	4
ESCHA412010A	12	1.0R	12	75	12	4
ESCHA412015A	12	1.5R	12	75	12	4
ESCHA412020A	12	2.0R	12	75	12	4
ESCHA412030A	12	3.0R	12	75	12	4



d	Tolerance
∅ ≦ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

WORKING MATERIAL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	ALLOY STEEL /TOOL STEEL	HARDENED STEEL	STAINLESS STEEL	CAST IRON						
MATERIAL CODE	45C,S50C,SCM	SCM,SKT,SKD	SCM,SKT,SKD	SKT,SKD	SUS304	FC/FCD						
HARDNESS GRADE	HRC <20	HRC 20~30	HRC 30~40	HRC 45~55	—	—						
Vc	68M/min	54M/min	45M/min	27M/min	54M/min	79M/min						
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
1MM	20,000	190	17,100	140	14,400	100	8,000	40	17,100	165	25,200	240
2MM	10,800	235	8,640	160	7,200	110	4,320	45	8,640	185	12,600	270
3MM	7,560	270	5,760	175	4,680	120	3,000	55	5,760	205	8,640	310
4MM	5,400	260	4,320	175	3,600	120	2,160	50	4,320	205	6,480	310
5MM	4,500	270	3,420	175	2,880	120	1,800	55	3,420	205	5,040	300
6MM	3,600	260	2,880	175	2,340	120	1,440	50	2,880	205	4,320	310
8MM	2,700	260	2,160	175	1,800	120	1,080	50	2,160	205	3,240	310
10MM	2,160	260	1,710	175	1,440	120	870	50	1,710	205	2,520	300
12MM	1,800	260	1,440	175	1,200	120	720	50	1,440	205	2,160	310
14MM	1,800	300	1,360	195	1,140	135	720	60	1,360	230	2,000	335
16MM	1,560	300	2,100	345	1,000	135	630	60	2,100	400	1,800	345
18MM	1,560	305	1,060	175	880	120	630	60	1,060	205	1,600	310
20MM	1,200	260	960	175	800	120	480	50	960	205	1,400	300

Milling Amount (mm)

	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≦ D	1.0D	0.05D

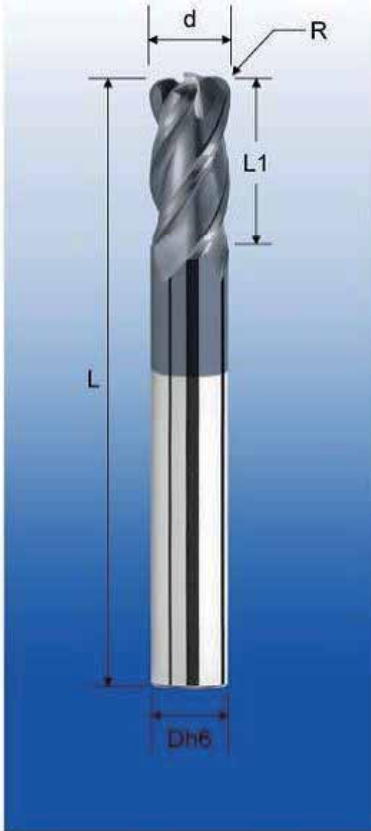


	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≦ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

變導程圓鼻刀 (公制)

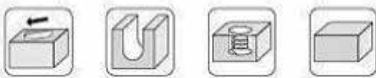
ESCSV4



Order No. 訂單編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ESCSV404003A	4	0.3R	8	50	4	4
ESCSV405003A	5	0.3R	10	50	6	4
ESCSV406005A	6	0.5R	12	50	6	4
ESCSV408005A	8	0.5R	16	60	8	4
ESCSV410005A	10	0.5R	20	75	10	4
ESCSV412005A	12	0.5R	24	75	12	4
ESCSV412010A	12	1.0R	24	75	12	4
ESCSV414005A	14	0.5R	28	75	14	4
ESCSV414010A	14	1.0R	28	75	14	4
ESCSV416010A	16	1.0R	32	100	16	4

變導程圓鼻刀 (英制)

ESCSV403X10A	1/8	0.010R	1/4	1-1/2	1/8	4
ESCSV404X10A	3/16	0.010R	5/16	2	3/16	4
ESCSV406X10A	1/4	0.015R	3/8	2-1/2	1/4	4
ESCSV407X15A	5/16	0.015R	13/16	2-1/2	5/16	4
ESCSV409X15A	3/8	0.015R	1/2	2-1/2	3/8	4
ESCSV411X15A	7/16	0.015R	1	2-3/4	7/16	4
ESCSV412X25A	1/2	0.025R	5/8	3	1/2	4
ESCSV415X35A	5/8	0.035R	3/4	3	5/8	4



d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

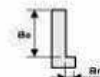
R	Tolerance
R	$R \pm 0.015$

Bright Finishing (超精銑)	○
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

WORKING MATERIAL	STAINLESS 304	Moderately Difficult SUS	STAINLESS 316 L	TITANIUM (ALLOYS)	SOFT STEEL	SG CAST IRON	High Temperature ALLOYS							
Vc	72~90 M/min	56~70 M/min	48~60 M/min	40~56 M/min	120~160M/min	96~120M/min	20~25 M/min							
DIAMETER	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED	R.P.M	FEED
4	5,732	573	4,459	357	3,822	229	3,185	153	9,554	955	7,643	764	1,592	70
5	4,586	550	3,567	357	3,057	306	2,548	153	7,643	917	6,115	734	1,274	56
6	3,822	611	2,972	416	2,548	306	2,123	170	6,369	1,019	5,096	815	1,062	72
8	2,866	573	2,229	401	1,911	306	1,592	191	4,777	1,146	3,822	917	796	86
10	2,293	550	1,783	357	1,529	275	1,274	155	3,822	917	3,057	734	637	69
12	1,911	497	1,486	327	1,274	255	1,062	170	3,185	892	2,548	713	531	81
14	1,638	439	1,274	290	1,092	231	910	157	2,730	797	2,184	638	455	82
16	1,433	401	1,115	268	955	210	796	143	2,389	717	1,911	573	398	78

Milling Amount (mm)

	aa	ar
D < \varnothing 6	1.0D	0.02D
$\varnothing 6 \leq D$	1.0D	0.05D



	aa	ar
D < \varnothing 6	1.0D	0.01D
$\varnothing 6 \leq D$	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

HardStar

series

高硬系列

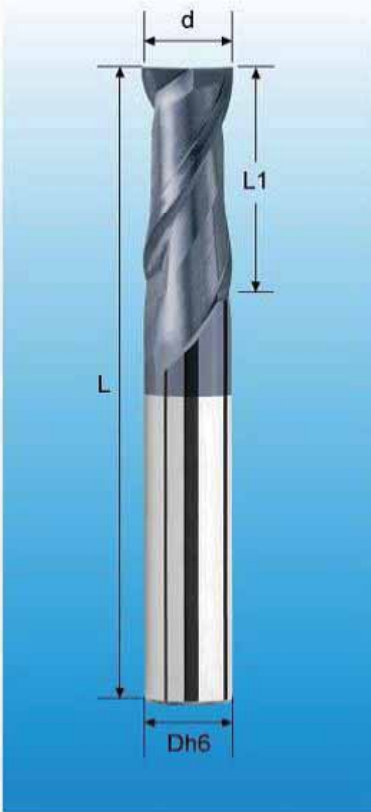
For Hardened Steel



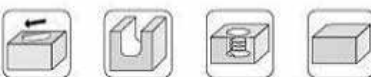
- 1** H650, HRC < 60 , EHSSH 45° , High Helix Agle.
EHSSA 30° , Normal Helix Agle.
- 2** Long tool-life and good performance in hardened steel material.
在加工高硬材質下仍可保持較長的刀具壽命及良好的加工表面
- 3** ARCO coating shows outstanding performance in high speed cutting and high efficient machining of hardened steels in the water coolant or dry environment.
ARCO 鍍層適合用於水冷的環境且在高速加工下有高效率的表現
- 4** NACO coating is suit for air coolant environment or dry cutting.
NACO 鍍層適用於乾式切削或氣冷的環境

EHS-□A2

(A Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHSTA201000A	1	3	50	3	2
EHSTA202000A	2	5	50	3	2
EHSTA203000A	3	8	50	3	2
EHSFA202000A	2	5	50	4	2
EHSFA203000A	3	8	50	4	2
EHSFA204000A	4	10	50	4	2
EHSSA203000A	3	8	50	6	2
EHSSA204000A	4	10	50	6	2
EHSSA205000A	5	13	50	6	2
EHSSA206000A	6	15	50	6	2
EHSSA208000A	8	20	60	8	2
EHSSA210000A	10	25	75	10	2
EHSSA212000A	12	30	75	12	2
EHSSA216000A	16	35	100	16	2
EHSSA220000A	20	45	100	20	2



d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

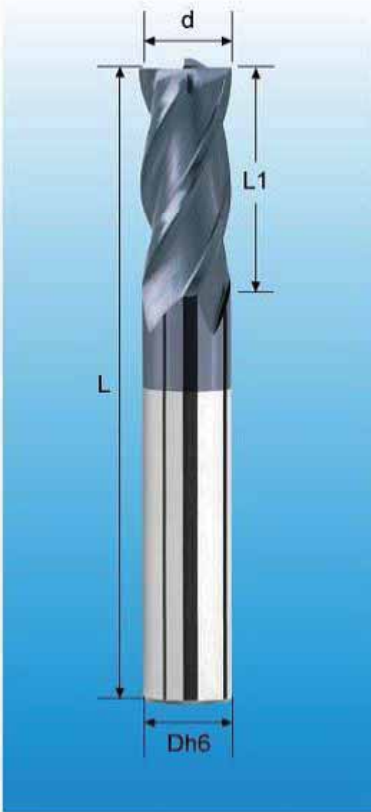
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

Milling Amount (mm)	a_a	a_r
$D < \varnothing 6$	0.9D	0.01D
$\varnothing 6 \leq D$	0.9D	0.02D

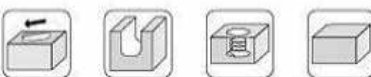
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EHS-□A4

(A Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHSTA401000A	1	3	50	3	4
EHSTA402000A	2	5	50	3	4
EHSTA403000A	3	8	50	3	4
EHSFA401000A	1	3	50	4	4
EHSFA402000A	2	5	50	4	4
EHSFA403000A	3	8	50	4	4
EHSFA404000A	4	10	50	4	4
EHSSA403000A	3	8	50	6	4
EHSSA404000A	4	10	50	6	4
EHSSA405000A	5	13	50	6	4
EHSSA406000A	6	15	50	6	4
EHSSA408000A	8	20	60	8	4
EHSSA410000A	10	25	75	10	4
EHSSA412000A	12	30	75	12	4
EHSSA416000A	16	35	100	16	4
EHSSA420000A	20	45	100	20	4



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

Milling Amount (mm)



	aa	ar
D < ∅6	0.9D	0.01D
∅6 ≤ D	0.9D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

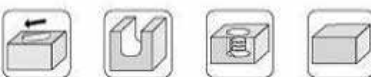
EHS-□H3

(H Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHSOH303000A	3	3	50	4	3
EHSOH304000A	4	4	50	4	3
EHSHH304000A	4	4	50	6	3
EHSHH305000A	5	5	50	6	3
EHSHH306000A	6	7	50	6	3
EHSHH308000A	8	9	60	8	3
EHSHH310000A	10	11	75	10	3
EHSHH312000A	12	13	75	12	3

EHSFH303000A	3	8	50	4	3
EHSFH304000A	4	10	50	4	3
EHSSH304000A	4	10	50	6	3
EHSSH305000A	5	13	50	6	3
EHSSH306000A	6	15	50	6	3
EHSSH308000A	8	20	60	8	3
EHSSH310000A	10	25	75	10	3
EHSSH312000A	12	30	75	12	3
EHSSH316000A	16	35	100	16	3

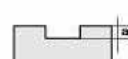


d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	79 M / min	55 M / min	39 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	6,700	240	5,000	150	3,800	80
4MM	5,650	270	4,100	165	3,000	85
5MM	4,200	300	2,900	175	2,100	90
6MM	3,200	310	2,200	175	1,600	90
8MM	2,550	310	1,800	180	1,300	90
10MM	2,100	300	1,500	180	1,100	90

Milling Amount (mm)



aa	
$D \leq \varnothing 6$	0.10D
$\varnothing 6 < D$	0.15D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

HardStar 650 Series



ULTRA MICRO GRAIN CARBIDE END MILLS - Square Type & Long Neck - 2F

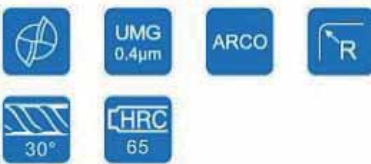
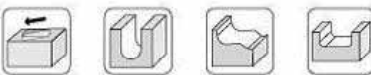
EHB-□H2

(H Type) 高硬



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHBHH202000A	1.0R	2	2	50	6	2
EHBHH203000A	1.5R	3	3	50	6	2
EHBHH204000A	2.0R	4	4	50	6	2
EHBHH205000A	2.5R	5	5	50	6	2
EHBHH206000A	3.0R	6	6	50	6	2
EHBHH208000A	4.0R	8	8	60	8	2
EHBHH210000A	5.0R	10	10	75	10	2
EHBHH212000A	6.0R	12	12	75	12	2
EHBHH216000A	8.0R	16	16	100	16	2

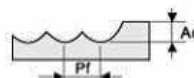
EHBFH202000A	1.0R	2	4	50	4	2
EHBFH203000A	1.5R	3	6	50	4	2
EHBFH204000A	2.0R	4	8	50	4	2
EHBSH205000A	2.5R	5	10	50	6	2
EHBSH206000A	3.0R	6	12	50	6	2
EHBSH208000A	4.0R	8	16	60	8	2
EHBSH210000A	5.0R	10	20	75	10	2
EHBSH212000A	6.0R	12	24	75	12	2
EHBSH216000A	8.0R	16	32	100	16	2



d	Tolerance
$\varnothing \leq 12$	R ± 0.01
$\varnothing > 12$	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL	
MATERIAL CODE	SKT,SKD		SKT,SKD		SKT,SKD	
HARDNESS GRADE	HRC 35~45		HRC 45~55		HRC 55~60	
Vc	200 M / min		150 M / min		99 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
1.0R	32,000	1,920	24,000	1,440	16,000	960
2.0R	16,000	1,920	12,000	1,440	7,950	955
3.0R	10,500	1,890	7,950	1,430	5,300	955
4.0R	7,950	1,910	5,950	1,430	4,000	960
5.0R	6,350	1,905	4,800	1,440	3,200	960
6.0R	5,300	1,910	4,000	1,440	2,650	955
8.0R	4,000	1,920	3,000	1,440	2,000	960
10.0R	3,200	1,920	2,400	1,440	1,600	960



Milling Amount (mm)

Ad	Pf
0.05D	0.1D
apMax=0.6mm以下	

Ad	Pf
0.03D	0.1D
apMax=0.5mm以下	

Ad	Pf
0.02D	0.05D
apMax=0.3mm以下	

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

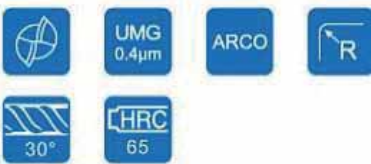
- Ball Nosed & Short Type for Hardened Steel

EHB-UH2

(H Type) 高硬



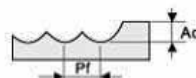
Order No.	Radius	Dia.	CL	EFF-L	OAL	Shank	Flutes
訂購編號	半徑 (R)	刃徑 (d)	刃長 (L1)	有效長 (L2)	全長 (L)	柄徑 (D)	刃數 (F)
EHBUH202000A	1.0R	2	2	4	50	6	2
EHBUH203000A	1.5R	3	3	6	50	6	2
EHBUH204000A	2.0R	4	4	8	50	6	2
EHBUH205000A	2.5R	5	5	10	50	6	2
EHBUH206000A	3.0R	6	6	12	50	6	2
EHBUH208000A	4.0R	8	8	16	60	8	2
EHBUH210000A	5.0R	10	10	20	75	10	2
EHBUH212000A	6.0R	12	12	24	75	12	2
EHBUH216000A	8.0R	16	16	32	100	16	2



d	Tolerance
$\varnothing \leq 12$	R ± 0.01
$\varnothing > 12$	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	SKT,SKD	SKT,SKD	SKT,SKD			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	200 M / min	150 M / min	99 M / min			
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
1.0R	32,000	1,920	24,000	1,440	16,000	960
2.0R	16,000	1,920	12,000	1,440	7,950	955
3.0R	10,500	1,890	7,950	1,430	5,300	955
4.0R	7,950	1,910	5,950	1,430	4,000	960
5.0R	6,350	1,905	4,800	1,440	3,200	960
6.0R	5,300	1,910	4,000	1,440	2,650	955
8.0R	4,000	1,920	3,000	1,440	2,000	960
10.0R	3,200	1,920	2,400	1,440	1,600	960



Milling Amount (mm)

Ad	Pf
0.05D	0.1D
apMax=0.6mm以下	

Ad	Pf
0.03D	0.1D
apMax=0.5mm以下	

Ad	Pf
0.02D	0.05D
apMax=0.3mm以下	

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

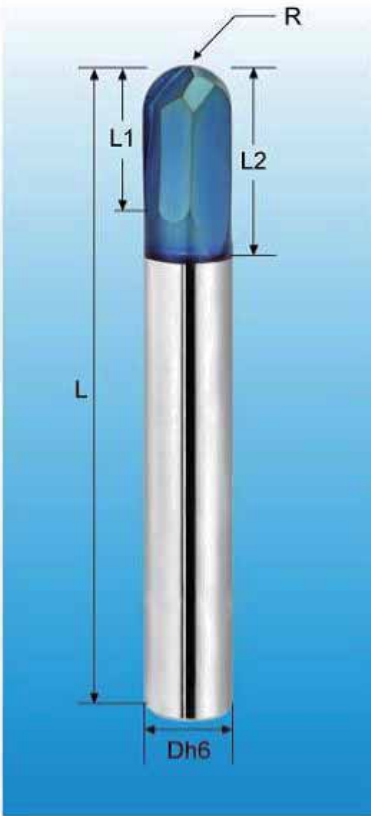
ULTRA MICRO GRAIN CARBIDE END MILLS - 2F

極細鎢鋼球型銑刀-低導短刃型

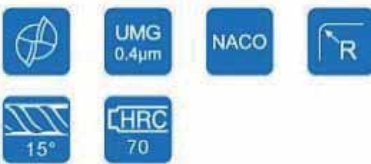
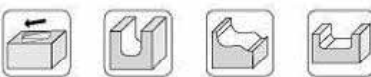
- Ball Nosed Type - Low Helix & Short

EHB-□S2

(SH Type) 超高硬



Order No.	Radius	Dia.	CL	EFF-L	OAL	Shank	Flutes
訂購編號	半徑 (R)	刃徑 (d)	刃長 (L1)	有效長 (L2)	全長 (L)	柄徑 (D)	刃數 (F)
EHBPS201000N	0.50R	1.0	1.0	2	50	4	2
EHBPS201500N	0.75R	1.5	1.5	3	50	4	2
EHBUS202000N	1.00R	2.0	2.0	4	50	6	2
EHBUS203000N	1.50R	3.0	3.0	6	50	6	2
EHBUS204000N	2.00R	4.0	4.0	8	50	6	2
EHBUS205000N	2.50R	5.0	5.0	10	50	6	2
EHBUS206000N	3.00R	6.0	6.0	12	50	6	2
EHBUS208000N	4.00R	8.0	8.0	16	60	8	2
EHBUS210000N	5.00R	10.0	10.0	20	75	10	2
EHBUS212000N	6.00R	12.0	12.0	24	75	12	2
EHBUS216000N	8.00R	16.0	16.0	32	100	16	2



d	Tolerance
$\varnothing \leq 12$	R ± 0.01
$\varnothing > 12$	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL	
MATERIAL CODE	SKT,SKD		SKT,SKD		SKT,SKD	
HARDNESS GRADE	HRC 45~55		HRC 55~60		HRC 60~70	
Vc	190 M / min		175 M / min		95 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
0.5R	32,000	960	30,000	850	25,500	500
1.0R	31,500	1,900	28,500	1,880	15,500	600
1.5R	21,000	2,080	19,000	1,880	10,500	625
2.0R	15,500	2,050	14,000	1,850	7,950	630
2.5R	12,500	2,060	11,000	1,815	6,350	630
3.0R	10,500	2,080	9,500	1,880	5,300	630
4.0R	7,950	1,550	7,150	1,400	3,950	470
5.0R	6,350	1,250	5,700	1,100	3,150	375
6.0R	5,300	1,050	4,750	950	2,650	315
8.0R	3,950	790	3,550	710	1,950	230

Milling Amount (mm)	ap		Pf
	$R \leq 8$	0.02D	0.1D
	$R > 8$	0.32mm	0.1D

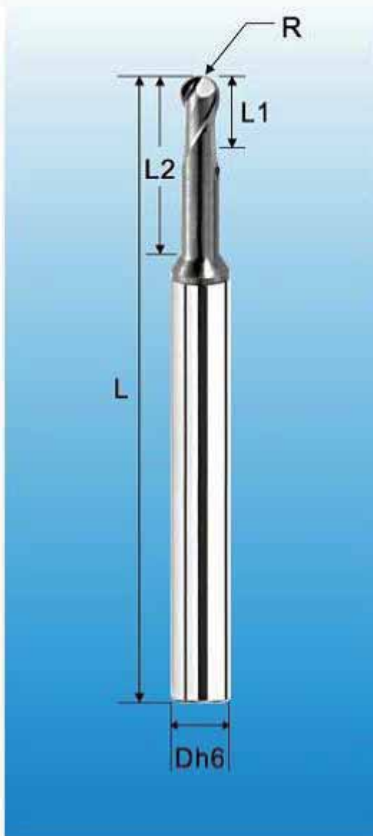
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ULTRA MICAO GRAIN CARBIDE END MILLS - Ball Nosed & Long Neck - 2F

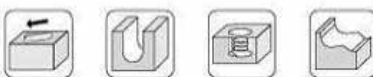
極細鎢鋼球型銑刀-長頸高硬型

EHB-BA2

EHB-RA2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	EFF-L 有效長 (L2)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHBBA201007A	0.50R	1.0	1.5	7.5	50	4	2
EHBBA201011A	0.50R	1.0	1.5	11.5	50	4	2
EHBBA201510A	0.75R	1.5	2.5	10.5	50	4	2
EHBBA201518A	0.75R	1.5	2.5	18.5	50	4	2
EHBBA202011A	1.00R	2.0	3.0	11.0	50	4	2
EHBBA202019A	1.00R	2.0	3.0	19.0	50	4	2
EHBBA202023A	1.00R	2.0	3.0	23.0	60	4	2
EHBBA202515A	1.25R	2.5	3.5	15.5	50	4	2
EHBBA202523A	1.25R	2.5	3.5	23.5	60	4	2
EHBRA203016A	1.50R	3.0	4.5	16.5	60	6	2
EHBRA203024A	1.50R	3.0	4.5	24.5	75	6	2
EHBRA204026A	2.00R	4.0	6.0	26.0	75	6	2
EHBRA204036A	2.00R	4.0	6.0	36.0	75	6	2



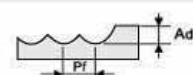
d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL	
MATERIAL CODE	SKT,SKD		SKT,SKD		SKT,SKD	
HARDNESS GRADE	HRC 35~45		HRC 45~55		HRC 55~60	
Vc	200 M / min		150 M / min		99 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
1.0R	32,000	1,920	24,000	1,440	16,000	960
2.0R	16,000	1,920	12,000	1,440	7,950	955
3.0R	10,500	1,890	7,950	1,430	5,300	955
4.0R	7,950	1,910	5,950	1,430	4,000	960
5.0R	6,350	1,905	4,800	1,440	3,200	960
6.0R	5,300	1,910	4,000	1,440	2,650	955
8.0R	4,000	1,920	3,000	1,440	2,000	960
10.0R	3,200	1,920	2,400	1,440	1,600	960

Milling Amount (mm)

Ad=0.05D, Pf=0.1D

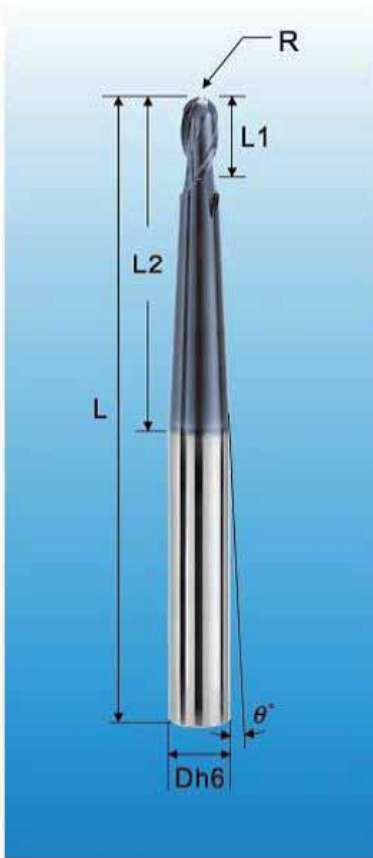


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

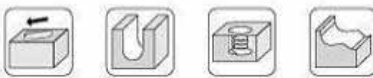
ULTRA MICRO GRAIN CARBIDE END MILLS - Ball Nosed & Taper Neck - 2F

極細鎢鋼球型銑刀-斜頸高硬型

EHB-RT2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	θ° 柄斜角	CL 刃長 (L1)	EFF-L 有效長 (L2)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHBRT202042A	1.0R	2	3°	4	42	100	8	2
EHBRT203047A	1.5R	3	3°	6	47	100	8	2
EHBRT204038A	2.0R	4	3°	8	38	100	8	2
EHBRT205028A	2.5R	5	3°	10	28	100	8	2
EHBRT206038A	3.0R	6	3°	12	38	100	10	2
EHBRT208038A	4.0R	8	3°	16	38	150	12	2
EHBRT210027A	5.0R	10	3°	20	27	150	16	2
EHBRT212038A	6.0R	12	3°	24	38	150	16	2



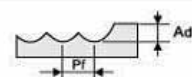
d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL	
MATERIAL CODE	SKT,SKD		SKT,SKD		SKT,SKD	
HARDNESS GRADE	HRC 35~45		HRC 45~55		HRC 55~60	
Vc	200 M / min		150 M / min		99 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
1.0R	32,000	1,920	24,000	1,440	16,000	960
2.0R	16,000	1,920	12,000	1,440	7,950	955
3.0R	10,500	1,890	7,950	1,430	5,300	955
4.0R	7,950	1,910	5,950	1,430	4,000	960
5.0R	6,350	1,905	4,800	1,440	3,200	960
6.0R	5,300	1,910	4,000	1,440	2,650	955
8.0R	4,000	1,920	3,000	1,440	2,000	960
10.0R	3,200	1,920	2,400	1,440	1,600	960

Milling Amount (mm)

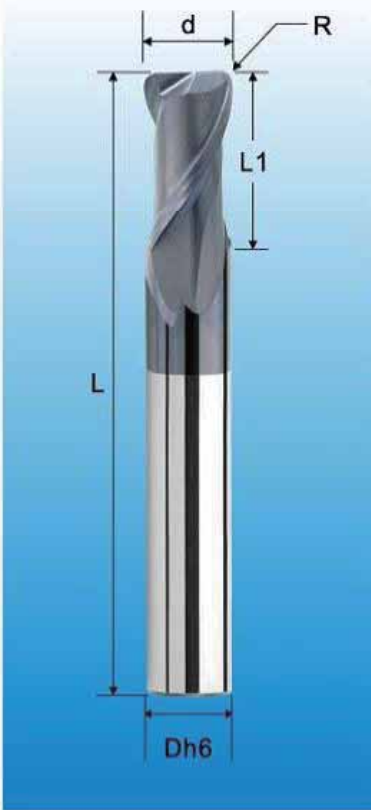
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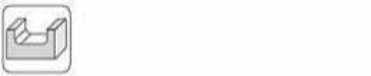
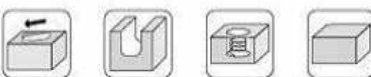
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EHC-□A2

(A Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHCFA204003A	4	0.3R	8	50	4	2
EHCFA204005A	4	0.5R	8	50	4	2
EHCFA204010A	4	1.0R	8	50	4	2
EHCSA204003A	4	0.3R	8	50	6	2
EHCSA204005A	4	0.5R	8	50	6	2
EHCSA204010A	4	1.0R	8	50	6	2
EHCSA205005A	5	0.5R	10	50	6	2
EHCSA205010A	5	1.0R	10	50	6	2
EHCSA206003A	6	0.3R	12	50	6	2
EHCSA206005A	6	0.5R	12	50	6	2
EHCSA206010A	6	1.0R	12	50	6	2
EHCSA208005A	8	0.5R	16	60	8	2
EHCSA208010A	8	1.0R	16	60	8	2
EHCSA208015A	8	1.5R	16	60	8	2
EHCSA210005A	10	0.5R	20	75	10	2
EHCSA210010A	10	1.0R	20	75	10	2
EHCSA210015A	10	1.5R	20	75	10	2
EHCSA210020A	10	2.0R	20	75	10	2
EHCSA212005A	12	0.5R	20	75	12	2
EHCSA212010A	12	1.0R	20	75	12	2
EHCSA212015A	12	1.5R	20	75	12	2
EHCSA212020A	12	2.0R	20	75	12	2



d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

Milling Amount (mm)



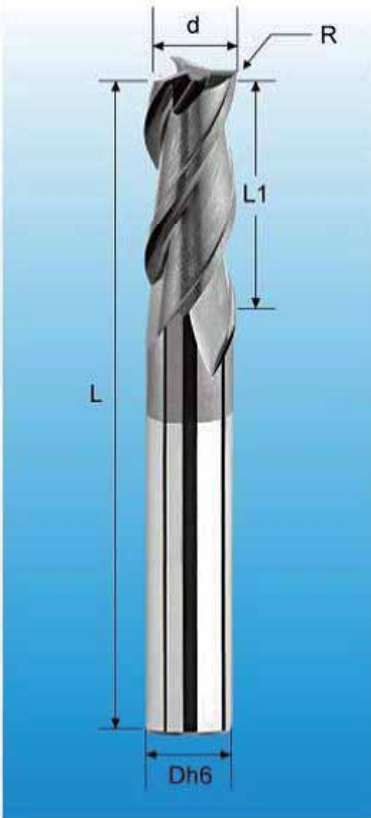
	aa	ar
D < ∅ 6	0.9D	0.01D
∅ 6 ≤ D	0.9D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

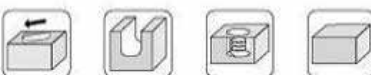
- Corner Radius for Hardened Steel

EHC-SA3

(H Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHCSA303003A	3	0.3R	6	50	6	3
EHCSA303005A	3	0.5R	6	50	6	3
EHCSA303010A	3	1.0R	6	50	6	3
EHCSA304003A	4	0.3R	8	50	6	3
EHCSA304005A	4	0.5R	8	50	6	3
EHCSA304010A	4	1.0R	8	50	6	3
EHCSA305005A	5	0.5R	10	50	6	3
EHCSA305010A	5	1.0R	10	50	6	3
EHCSA306003A	6	0.3R	12	50	6	3
EHCSA306005A	6	0.5R	12	50	6	3
EHCSA306010A	6	1.0R	12	50	6	3
EHCSA308005A	8	0.5R	16	60	8	3
EHCSA308010A	8	1.0R	16	60	8	3
EHCSA308015A	8	1.5R	16	60	8	3
EHCSA310005A	10	0.5R	20	75	10	3
EHCSA310010A	10	1.0R	20	75	10	3
EHCSA310015A	10	1.5R	20	75	10	3
EHCSA310020A	10	2.0R	20	75	10	3
EHCSA312005A	12	0.5R	24	75	12	3
EHCSA312010A	12	1.0R	24	75	12	3
EHCSA312015A	12	1.5R	24	75	12	3
EHCSA312020A	12	2.0R	24	75	12	3



d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

R	Tolerance
R	$R \pm 0.015$

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

Milling Amount (mm)



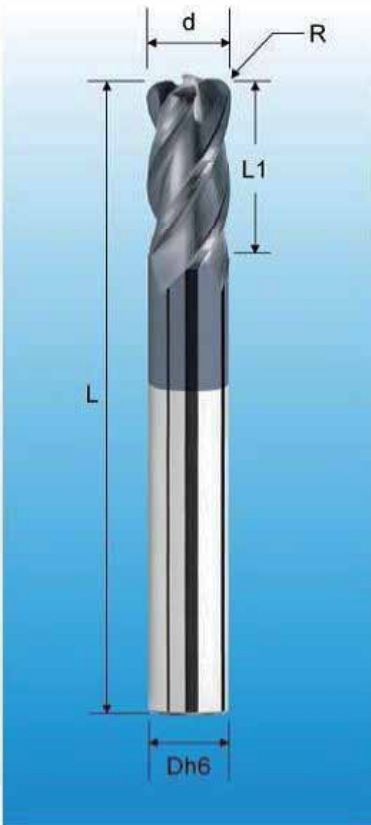
	aa	ar
$D < \varnothing 6$	0.9D	0.01D
$\varnothing 6 \leq D$	0.9D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

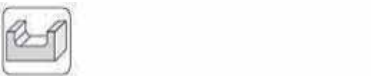
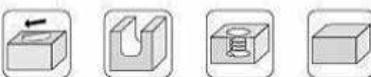
- Corner Radius for Hardened Steel

EHC-□A4

(A Type) 高硬



Order No. 訂購編號	Dia. 刃徑 (d)	Corner Radius R 角 (R)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
EHCFA404003A	4	0.3R	8	50	4	4
EHCFA404005A	4	0.5R	8	50	4	4
EHCFA404010A	4	1.0R	8	50	4	4
EHCSA404003A	4	0.3R	8	50	6	4
EHCSA404005A	4	0.5R	8	50	6	4
EHCSA404010A	4	1.0R	8	50	6	4
EHCSA405005A	5	0.5R	10	50	6	4
EHCSA405010A	5	1.0R	10	50	6	4
EHCSA406003A	6	0.3R	12	50	6	4
EHCSA406005A	6	0.5R	12	50	6	4
EHCSA406010A	6	1.0R	12	50	6	4
EHCSA408005A	8	0.5R	16	60	8	4
EHCSA408010A	8	1.0R	16	60	8	4
EHCSA408015A	8	1.5R	16	60	8	4
EHCSA410005A	10	0.5R	20	75	10	4
EHCSA410010A	10	1.0R	20	75	10	4
EHCSA410015A	10	1.5R	20	75	10	4
EHCSA410020A	10	2.0R	20	75	10	4
EHCSA412005A	12	0.5R	20	75	12	4
EHCSA412010A	12	1.0R	20	75	12	4
EHCSA412015A	12	1.5R	20	75	12	4
EHCSA412020A	12	2.0R	20	75	12	4



d	Tolerance
∅ ≦ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

Milling Amount (mm)



	aa	ar
D < ∅ 6	0.9D	0.01D
∅ 6 ≦ D	0.9D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

- Corner Radius & Short Type for Hardened Steel

EHC-UH3

(H Type) 高硬



Order No.	Dia.	Corner Radius	CL	EFF-L	OAL	Shank	Flutes
訂購編號	刃徑 (d)	R 角 (R)	刃長 (L1)	有效長 (L2)	全長 (L)	柄徑 (D)	刃數 (F)
EHCUH303001A	3	0.1R	3	7.5	50	6	3
EHCUH303005A	3	0.5R	3	7.5	50	6	3
EHCUH304002A	4	0.2R	4	10.0	50	6	3
EHCUH304005A	4	0.5R	4	10.0	50	6	3
EHCUH305002A	5	0.2R	5	12.5	50	6	3
EHCUH305005A	5	0.5R	5	12.5	50	6	3
EHCUH306002A	6	0.2R	6	15.0	50	6	3
EHCUH306005A	6	0.5R	6	15.0	50	6	3
EHCUH306010A	6	1.0R	6	15.0	50	6	3
EHCUH308003A	8	0.3R	8	20.0	60	8	3
EHCUH308005A	8	0.5R	8	20.0	60	8	3
EHCUH308010A	8	1.0R	8	20.0	60	8	3
EHCUH308015A	8	1.5R	8	20.0	60	8	3
EHCUH310003A	10	0.3R	10	25.0	75	10	3
EHCUH310005A	10	0.5R	10	25.0	75	10	3
EHCUH310010A	10	1.0R	10	25.0	75	10	3
EHCUH310015A	10	1.5R	10	25.0	75	10	3
EHCUH310020A	10	2.0R	10	25.0	75	10	3
EHCUH312003A	12	0.3R	12	30.0	75	12	3
EHCUH312005A	12	0.5R	12	30.0	75	12	3
EHCUH312010A	12	1.0R	12	30.0	75	12	3
EHCUH312015A	12	1.5R	12	30.0	75	12	3
EHCUH312020A	12	2.0R	12	30.0	75	12	3



d	Tolerance
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

R	Tolerance
R	$R \pm 0.015$

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

Milling Amount (mm)



	aa	ar
$D < \varnothing 6$	0.9D	0.01D
$\varnothing 6 \leq D$	0.9D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

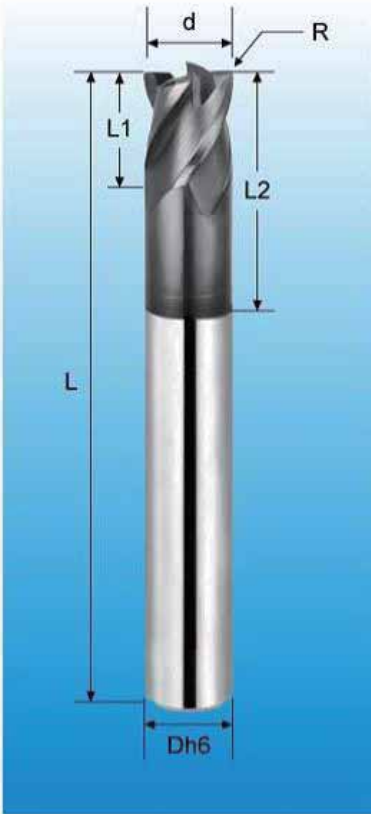
ULTRA MICRO GRAIN CARBIDE END MILLS - 4F

極細錫鉬圓鼻銑刀-高硬短刀型

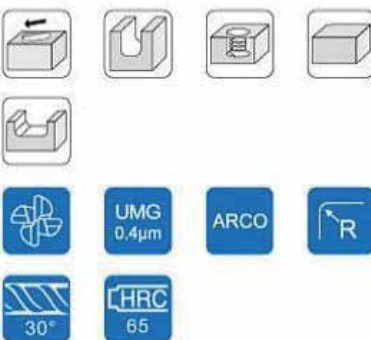
- Corner Radius & Short Type for Hardened Steel

EHC-UH4

(H Type) 高硬



Order No.	Dia.	Corner Radius	CL	EFF-L	OAL	Shank	Flutes
訂購編號	刀徑 (d)	R 角 (R)	刃長 (L1)	有效長 (L2)	全長 (L)	柄徑 (D)	刃數 (F)
EHCUH403001A	3	0.1R	3	7.5	50	6	4
EHCUH403005A	3	0.5R	3	7.5	50	6	4
EHCUH404002A	4	0.2R	4	10.0	50	6	4
EHCUH404005A	4	0.5R	4	10.0	50	6	4
EHCUH405002A	5	0.2R	5	12.5	50	6	4
EHCUH405005A	5	0.5R	5	12.5	50	6	4
EHCUH406002A	6	0.2R	6	15.0	50	6	4
EHCUH406005A	6	0.5R	6	15.0	50	6	4
EHCUH406010A	6	1.0R	6	15.0	50	6	4
EHCUH408003A	8	0.3R	8	20.0	60	8	4
EHCUH408005A	8	0.5R	8	20.0	60	8	4
EHCUH408010A	8	1.0R	8	20.0	60	8	4
EHCUH408015A	8	1.5R	8	20.0	60	8	4
EHCUH410003A	10	0.3R	10	25.0	75	10	4
EHCUH410005A	10	0.5R	10	25.0	75	10	4
EHCUH410010A	10	1.0R	10	25.0	75	10	4
EHCUH410015A	10	1.5R	10	25.0	75	10	4
EHCUH410020A	10	2.0R	10	25.0	75	10	4
EHCUH412003A	12	0.3R	12	30.0	75	12	4
EHCUH412005A	12	0.5R	12	30.0	75	12	4
EHCUH412010A	12	1.0R	12	30.0	75	12	4
EHCUH412015A	12	1.5R	12	30.0	75	12	4
EHCUH412020A	12	2.0R	12	30.0	75	12	4



WORKING MATERIAL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL			
MATERIAL CODE	(SKT , SKD)	(SKT , SKD)	(SKT , SKD)			
HARDNESS GRADE	HRC 35~45	HRC 45~55	HRC 55~60			
Vc	110 M / min	95 M / min	79 M / min			
DIAMETER	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)	R.P.M rev/min	FEED (mm/min)
3MM	11,800	1,150	10,000	830	8,400	500
4MM	8,800	1,070	7,600	780	6,300	460
5MM	7,000	990	6,000	730	5,000	420
6MM	5,900	910	5,000	660	4,200	400
8MM	4,400	830	3,800	610	3,200	400
10MM	3,500	830	3,000	610	2,550	400
12MM	2,900	830	2,500	610	2,100	400

d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

Milling Amount (mm)



	aa	ar
D < ∅ 6	0.9D	0.01D
∅ 6 ≤ D	0.9D	0.02D

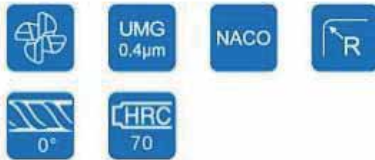
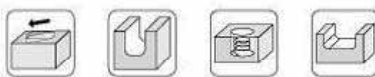
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EHC-□S4

(SH Type) 超高硬



Order No.	Dia.	Corner Radius	CL	EFF-L	OAL	Shank	Flutes
訂購編號	刃徑 (d)	R 角 (R)	刃長 (L1)	有效長 (L2)	全長 (L)	柄徑 (D)	刃數 (F)
EHCPS401002N	1	0.20R	1	2.5	50	4	4
EHCPS402002N	2	0.25R	2	6.5	50	4	4
EHCUS403005N	3	0.50R	3	7.5	50	6	4
EHCUS404005N	4	0.50R	4	10.0	50	6	4
EHCUS404010N	4	1.00R	4	10.0	50	6	4
EHCUS405010N	5	1.00R	5	12.5	50	6	4
EHCUS406010N	6	1.00R	6	15.0	50	6	4
EHCUS406015N	6	1.50R	6	15.0	50	6	4
EHCUS408010N	8	1.00R	8	20.0	60	8	4
EHCUS408015N	8	1.50R	8	20.0	60	8	4
EHCUS408020N	8	2.00R	8	20.0	60	8	4
EHCUS410010N	10	1.00R	10	25.0	75	10	4
EHCUS410020N	10	2.00R	10	25.0	75	10	4
EHCUS412010N	12	1.00R	12	30.0	75	12	4
EHCUS412020N	12	2.00R	12	30.0	75	12	4
EHCUS412030N	12	3.00R	12	30.0	75	12	4

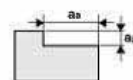


d	Tolerance
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R	Tolerance
R	R ± 0.015

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL	
MATERIAL CODE	SKT,SKD		SKT,SKD		SKT,SKD	
HARDNESS GRADE	HRC 45~55		HRC 55~60		HRC 60~70	
Vc	50 M / min		30 M / min		20 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
1MM	15,900	2,150	9,500	980	6,370	500
2MM	7,950	2,145	4,750	980	3,180	500
3MM	5,300	2,150	3,200	990	2,120	500
4MM	4,000	2,160	2,400	990	1,590	500
6MM	2,650	2,150	1,600	990	1,060	500
8MM	2,000	2,160	1,200	990	795	500
10MM	1,600	2,160	955	980	635	500
12MM	1,350	2,190	795	980	530	500



Milling Amount (mm)

	aa	ap
R ≤ 2	0.2 x R	0.5D
R > 2	0.4mm	0.5D

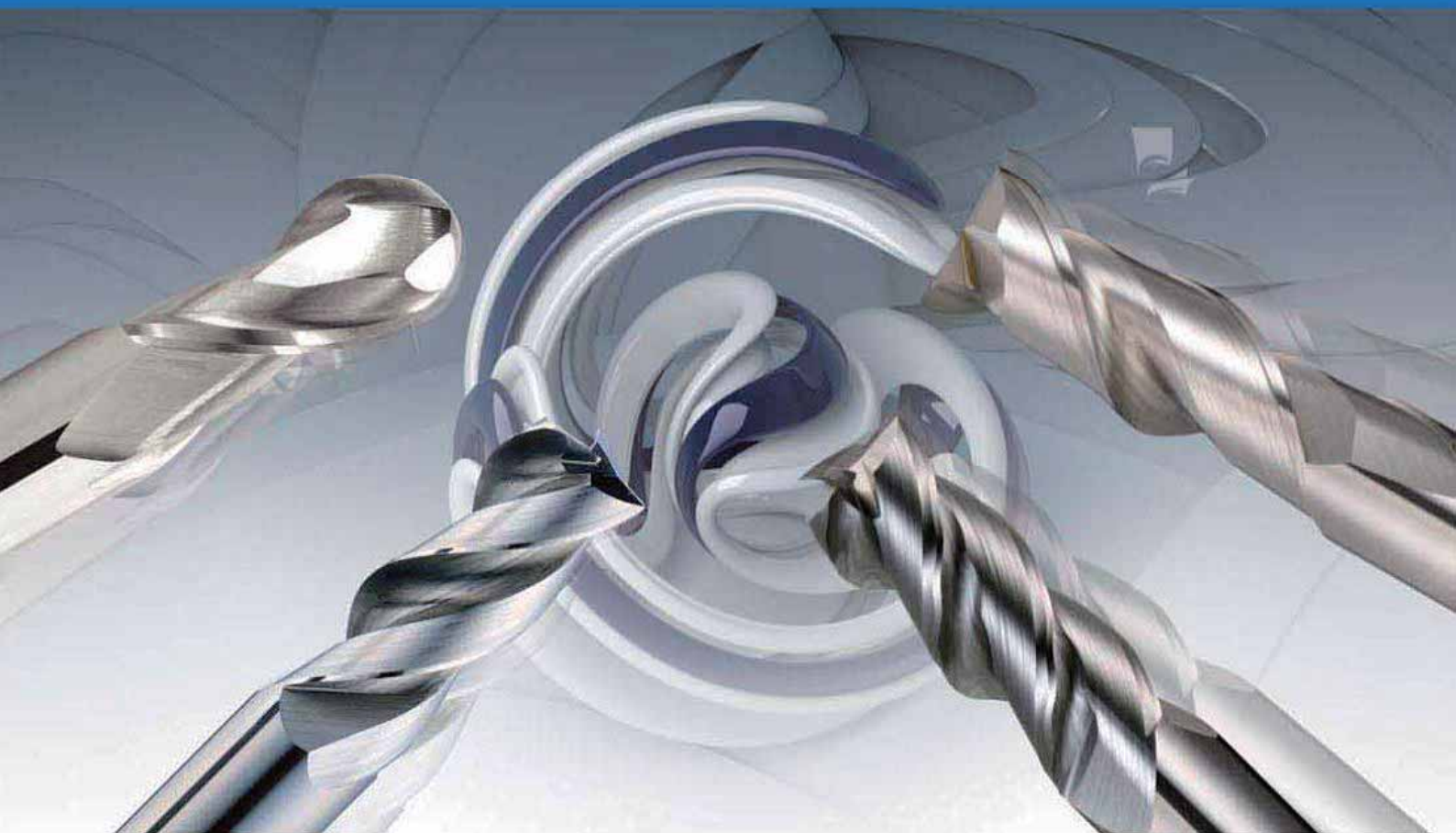
	aa	ap
R ≤ 2	0.1 x R	0.5D
R > 2	0.2mm	0.5D

	aa	ap
R ≤ 2	0.1 x R	0.5D
R > 2	0.2mm	0.5D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

AlStar series 鋁合金加工系列

For Aluminum Alloy



1 High efficient processing can be achieved by great chip evacuation.

良好的排屑性使加工更有效率

2 High helix angle offers stable and excellent finished surface in high speed.

高螺旋角設計在高速加工下仍能保持完美光亮的銑削表面

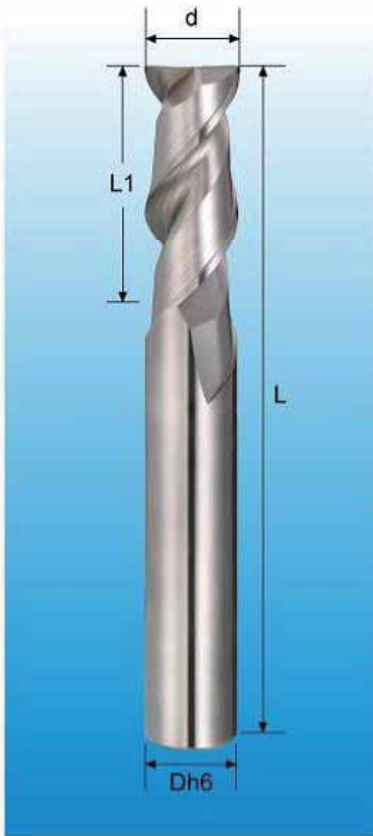
3 Radial flute geometry design is better for chip evacuation and easy of machining.

圓弧溝槽設計使排屑性更優異

4 CrN coating for copper electrode and high Si (>12%) content Aluminum Alloy.

若要用於銅及含矽鋁合金的加工則可加鍍CrN鍍層

ENS-FA2 ENS-SA2



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ENSFA201000	1	3	50	4	2
ENSFA202000	2	6	50	4	2
ENSFA203000	3	9	50	4	2
ENSFA204000	4	12	50	4	2
ENSSA204000	4	12	50	6	2
ENSSA205000	5	15	50	6	2
ENSSA206000	6	15	50	6	2
ENSSA208000	8	20	60	8	2
ENSSA210000	10	30	75	10	2
ENSSA212000	12	30	75	12	2
ENSSA216000	16	40	100	16	2
ENSSA220000	20	45	100	20	2

INCH SIZE					
ENSSA203X00	1/8	3/8	1-1/2	1/8	2
ENSSA204X00	3/16	9/16	2	3/16	2
ENSSA206X00	1/4	3/4	2-1/2	1/4	2
ENSSA209X00	3/8	7/8	2-1/2	3/8	2
ENSSA212X00	1/2	1	3	1/2	2
ENSSA215X00	5/8	1-1/4	3-1/2	5/8	2
ENSSA219X00	3/4	1-1/2	4	3/4	2

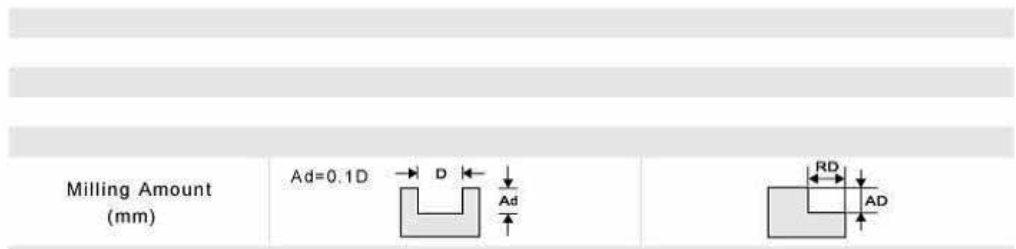


∅ < 3 採尖角型式 ∅ ≥ 3 以上採平面型式
∅ < 3 has sharp corner type. ∅ ≥ 3 has flatland type.

d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.02
3 ≤ ∅ ≤ 10	0 ~ -0.03
∅ > 10	0 ~ -0.04

Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

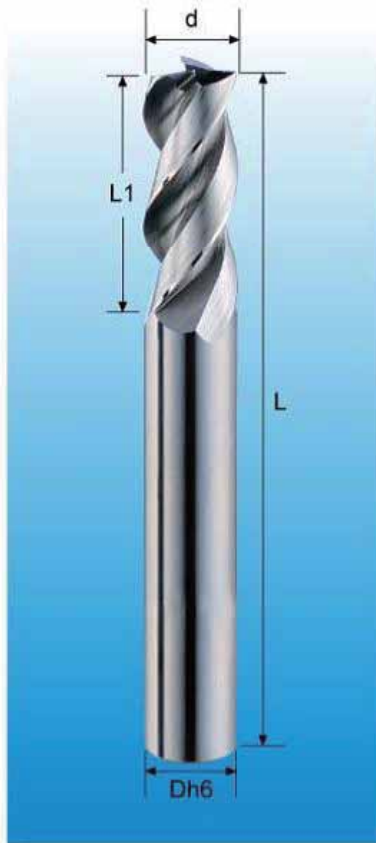
WORKING MATERIAL	ALUMINUM Alloy			
MATERIAL CODE	A5052			
Vc	Slotting (2F,3F)		Side Milling (3F)	
	150 M / min		250 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
3MM	16,000	1,200	26,600	1,350
4MM	12,000	1,000	20,000	1,360
5MM	9,600	900	15,900	1,350
6MM	8,000	820	13,300	1,350
8MM	6,000	750	10,000	1,360
10MM	4,800	680	7,900	1,350
12MM	4,000	620	6,600	1,350



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ENS-FA3

ENS-SA3



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ENSFA302000	2	6	50	4	3
ENSFA303000	3	9	50	4	3
ENSFA304000	4	12	50	4	3
ENSSA304000	4	12	50	6	3
ENSSA305000	5	15	50	6	3
ENSSA306000	6	15	50	6	3
ENSSA308000	8	20	60	8	3
ENSSA310000	10	30	75	10	3
ENSSA312000	12	30	75	12	3
ENSSA316000	16	40	100	16	3
ENSSA320000	20	45	100	20	3

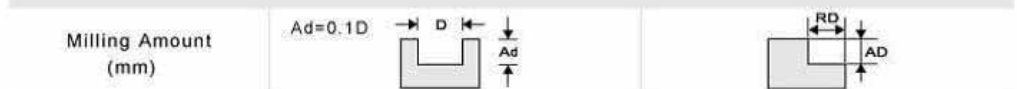
INCH SIZE					
ENSSA303100	1/8	3/8	1-1/2	1/8	3
ENSSA304700	3/16	9/16	2	3/16	3
ENSSA306300	1/4	3/4	2-1/2	1/4	3
ENSSA309500	3/8	7/8	2-1/2	3/8	3
ENSSA312700	1/2	1	3	1/2	3
ENSSA315800	5/8	1-1/4	3-1/2	5/8	3
ENSSA319000	3/4	1-1/2	4	3/4	3
ENSSA325400	1	1-1/2	4	1	3



d (刃徑)	Tolerance (公差)
∅ < 3	0 ~ -0.02
3 ≤ ∅ ≤ 10	0 ~ -0.03
∅ > 10	0 ~ -0.04

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALLUMINUM Alloy			
MATERIAL CODE	A5052			
Vc	Slotting (2F,3F)		Side Milling (3F)	
	150 M / min		250 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
3MM	16,000	1,200	26,600	1,350
4MM	12,000	1,000	20,000	1,360
5MM	9,600	900	15,900	1,350
6MM	8,000	820	13,300	1,350
8MM	6,000	750	10,000	1,360
10MM	4,800	680	7,900	1,350
12MM	4,000	620	6,600	1,350

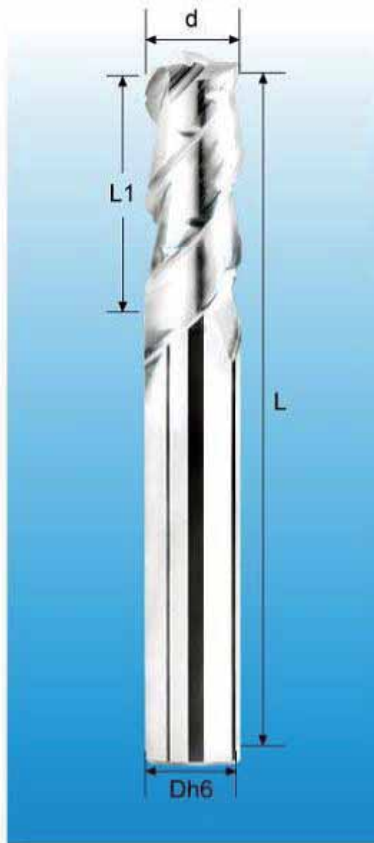


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

MICRO GRAIN CARBIDE END MILLS - High Helix - Semi - Finishing - 3F / 4F

錫鋼平銑刀-高導粗精型

ENS-SR3 ENS-SR3



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
High Helix - Semi - Finishing - 3F					
ENSSR306000	6	15	50	6	3
ENSSR308000	8	20	60	8	3
ENSSR310000	10	25	75	10	3
ENSSR312000	12	30	75	12	3
ENSSR316000	16	40	100	16	3
ENSSR320000	20	45	100	20	3

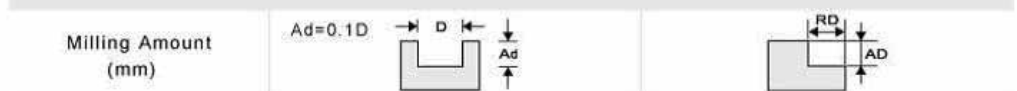
High Helix - Semi - Finishing - 4F					
ENSSR406000	6	15	50	6	4
ENSSR408000	8	20	60	8	4
ENSSR410000	10	25	75	10	4
ENSSR412000	12	30	75	12	4
ENSSR416000	16	40	100	16	4
ENSSR420000	20	45	100	20	4



d (刃徑)	Tolerance (公差)
$\varnothing < 3$	0 ~ -0.02
$3 \leq \varnothing \leq 10$	0 ~ -0.03
$\varnothing > 10$	0 ~ -0.04

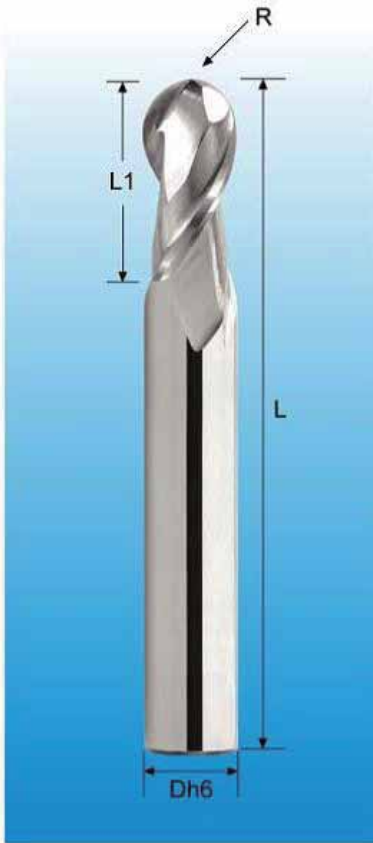
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

WORKING MATERIAL	ALUMINUM Alloy			
MATERIAL CODE	A5052			
Vc	Slotting (2F,3F)		Side Milling (3F)	
	150 M / min		250 M / min	
DIAMETER	R.P.M	FEED (mm / min)	R.P.M	FEED (mm / min)
3MM	16,000	1,200	26,600	1,350
4MM	12,000	1,000	20,000	1,360
5MM	9,600	900	15,900	1,350
6MM	8,000	820	13,300	1,350
8MM	6,000	750	10,000	1,360
10MM	4,800	680	7,900	1,350
12MM	4,000	620	6,600	1,350



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

ENB-FA2
ENB-SA2



Order No. 訂購編號	Radius 半徑 (R)	Dia. 刃徑 (d)	CL 刃長 (L1)	OAL 全長 (L)	Shank 柄徑 (D)	Flutes 刃數 (F)
ENBFA201000	0.5R	1	2	50	4	2
ENBFA202000	1.0R	2	4	50	4	2
ENBFA203000	1.5R	3	6	50	4	2
ENBFA204000	2.0R	4	8	50	4	2
ENBSA204000	2.0R	4	8	50	6	2
ENBSA205000	2.5R	5	10	50	6	2
ENBSA206000	3.0R	6	12	50	6	2
ENBSA208000	4.0R	8	16	60	8	2
ENBSA210000	5.0R	10	20	75	10	2
ENBSA212000	6.0R	12	24	75	12	2
ENBSA216000	8.0R	16	32	100	16	2

INCH SIZE						
ENBSA203X00	1/16R	1/8	3/8	1-1/2	1/8	2
ENBSA204X00	3/32R	3/16	9/16	2	3/16	2
ENBSA206X00	1/8R	1/4	3/4	2-1/2	1/4	2
ENBSA209X00	3/16R	3/8	7/8	2-1/2	3/8	2
ENBSA212X00	1/4R	1/2	1	3	1/2	2
ENBSA215X00	5/16R	5/8	1-1/4	3-1/2	5/8	2



WORKING MATERIAL	ALLUMINUM Alloy	
MATERIAL CODE	A5052	
Vc	250 M / min	
DIAMETER	R.P.M	FEED (mm / min)
2MM	39,000	2,000
3MM	26,000	2,000
4MM	20,000	2,000
5MM	16,000	2,000
6MM	13,000	2,000
8MM	10,000	2,000
10MM	8,000	2,000
12MM	6,000	2,000
16MM	5,000	2,000

d (刃徑)	R Tol. (R公差)
∅	± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

WinMaster

series

鎖牙式鎢鋼系列

High Performance Replaceable End Mills



Plus



1 High efficiency machining

高效能加工

2 Excellent compatibility

出色的兼容性

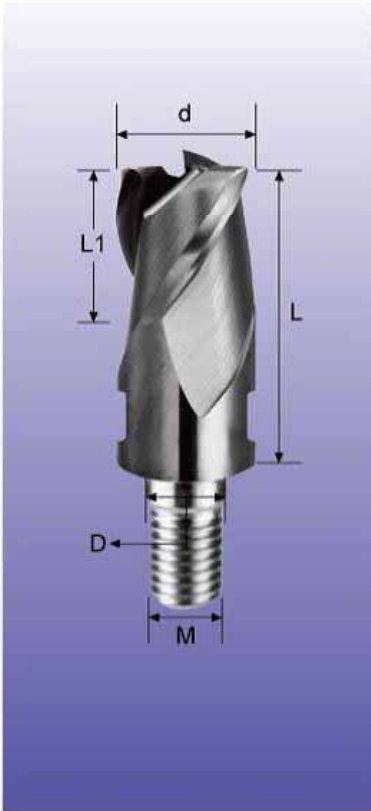
3 Unique coating

與歐洲同步特殊塗層

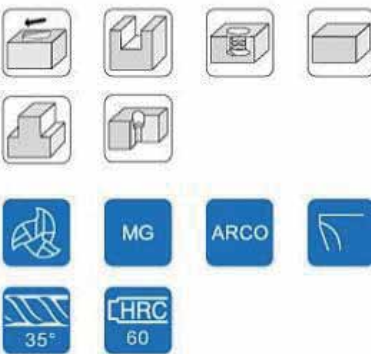
4 Flexible adapter

可靈活性使用不同柄部

EPS-WA3



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)	Flutes 刃數 (F)
EPSWA310000A	10	10	5.5	M5	16	3
EPSWA312000A	12	12	6.5	M6	20	3
EPSWA316000A	16	16	8.5	M8	26	3
EPSWA318000A	18	18	8.5	M8	31	3
EPSWA320000A	20	20	10.5	M10	37	3
EPSWA325000A	25	25	12.5	M12	46	3



WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	Tolerance (公差)
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

Milling Amount (mm)

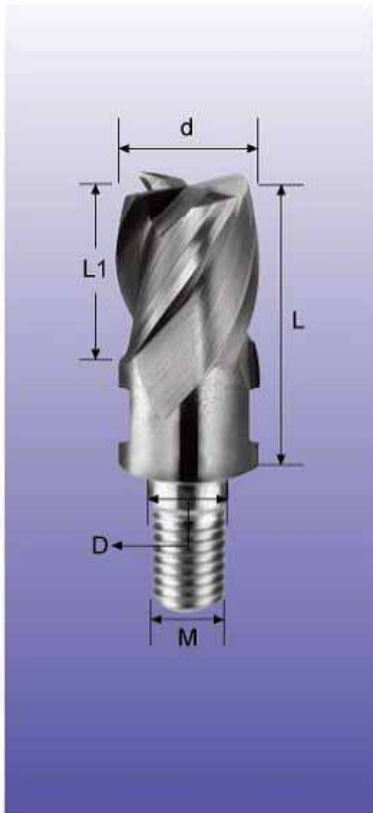
	aa	ar
D < $\varnothing 6$	1.0D	0.02D
$\varnothing 6 \leq D$	1.0D	0.05D



	aa	ar
D < $\varnothing 6$	1.0D	0.01D
$\varnothing 6 \leq D$	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPS-WA4



Order No. 訂購編號	Dia. 刃徑 (d)	CL 刃長 (L1)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)	Flutes 刃數 (F)
EPSWA410000A	10	10	5.5	M5	16	4
EPSWA412000A	12	12	6.5	M6	20	4
EPSWA416000A	16	16	8.5	M8	26	4
EPSWA418000A	18	18	8.5	M8	31	4
EPSWA420000A	20	20	10.5	M10	37	4
EPSWA425000A	25	25	12.5	M12	46	4



WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	Tolerance (公差)
$\varnothing \leq 12$	0 ~ -0.02
$\varnothing > 12$	0 ~ -0.03

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

Milling Amount (mm)

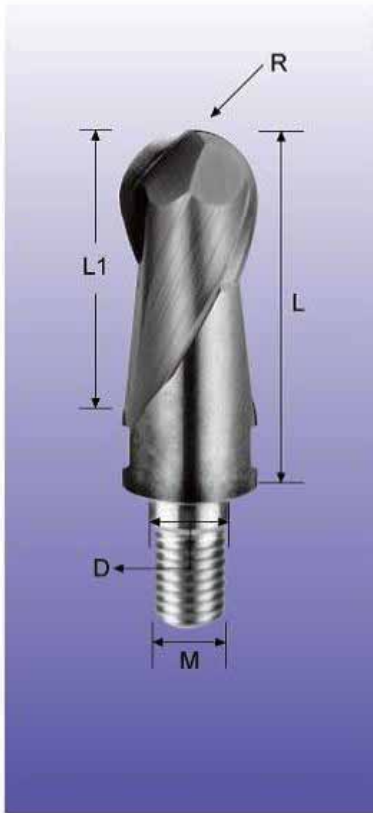
	aa	ar
D < $\varnothing 6$	1.0D	0.02D
$\varnothing 6 \leq D$	1.0D	0.05D



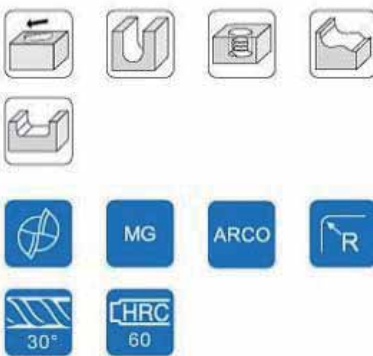
	aa	ar
D < $\varnothing 6$	1.0D	0.01D
$\varnothing 6 \leq D$	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-WA2



Order No.	Dia.	Radius	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	半徑 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPBWA210000A	10	5.0R	10	5.5	M5	16	2
EPBWA212000A	12	6.0R	12	6.5	M6	20	2
EPBWA216000A	16	8.0R	16	8.5	M8	26	2
EPBWA218000A	18	9.0R	18	8.5	M8	31	2
EPBWA220000A	20	10.0R	20	10.5	M10	37	2
EPBWA225000A	25	12.5R	25	12.5	M12	46	2



WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	R Tol. (R公差)
$\varnothing \leq 12$	$R \pm 0.01$
$\varnothing > 12$	$R \pm 0.015$

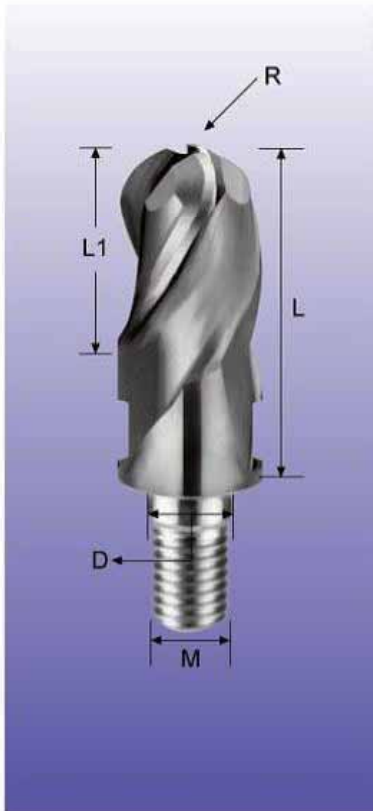
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

When β is less than 15° milling speed and feed speed in the table can be increased 1.0~1.2 times.

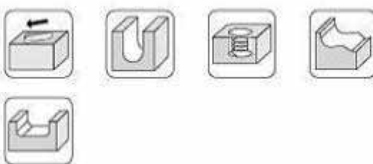


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-WA3



Order No.	Dia.	Radius	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	半徑 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPBWA310000A	10	5R	10	5.5	M5	16	3
EPBWA312000A	12	6R	12	6.5	M6	20	3
EPBWA316000A	16	8R	16	8.5	M8	26	3
EPBWA318000A	18	9R	18	8.5	M8	31	3
EPBWA320000A	20	10R	20	10.5	M10	37	3
EPBWA325000A	25	12.5R	25	12.5	M12	46	3



d (刃徑)	R Tol. (R公差)
$\varnothing \leq 12$	$R \pm 0.01$
$\varnothing > 12$	$R \pm 0.015$

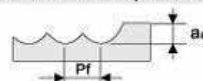
Finishing (精銑)	◎
Semi-Finishing (中銑)	○
Roughing (粗銑)	○

WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

When β is less than 15° milling speed and feed speed in the table can be increased 1.0~1.2 times.

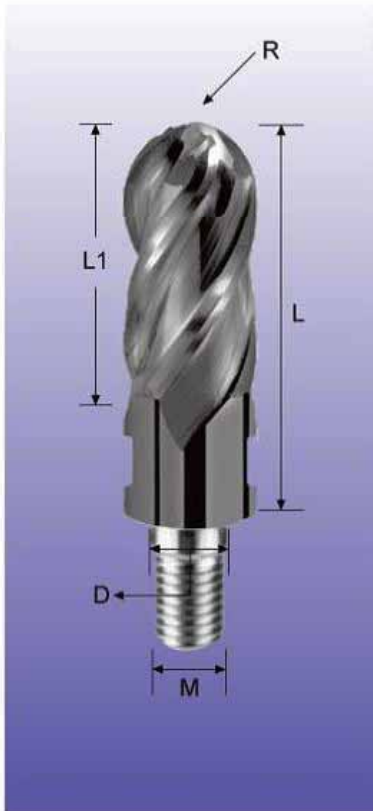
Milling Amount (mm)

$a_a = 0.02D$
 $Pf = 0.05D$

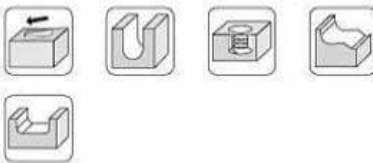


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPB-WA4



Order No.	Dia.	Radius	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	半徑 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPBWA410000A	10	5.0R	10	5.5	M5	16	4
EPBWA412000A	12	6.0R	12	6.5	M6	20	4
EPBWA416000A	16	8.0R	16	8.5	M8	26	4
EPBWA418000A	18	9.0R	18	8.5	M8	31	4
EPBWA420000A	20	10.0R	20	10.5	M10	37	4
EPBWA425000A	25	12.5R	25	12.5	M12	46	4



d (刃徑)	R Tol. (R公差)
$\varnothing \leq 12$	$R \pm 0.01$
$\varnothing > 12$	$R \pm 0.015$

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	○

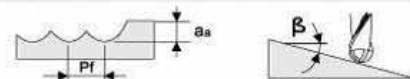
WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

When β is less than 15° milling speed and feed speed in the table can be increased 1.0~1.2 times.

Milling Amount (mm)

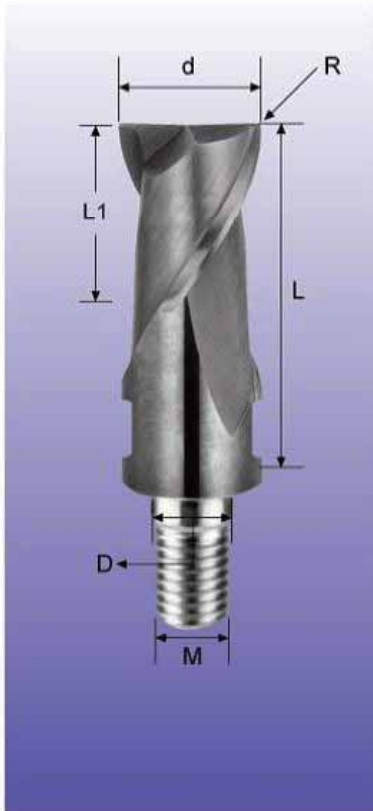
$$a_a = 0.02D$$

$$P_f = 0.05D$$

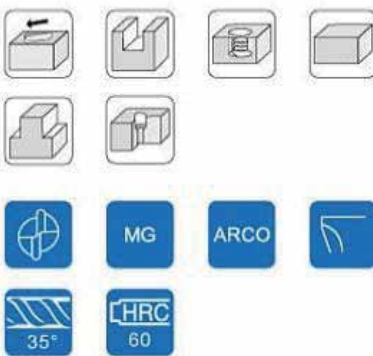


The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-WA2



Order No.	Dia.	CR	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	R 角 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPCWA210005A	10	0.5R	10	5.5	M5	16	2
EPCWA210010A	10	1.0R	10	5.5	M5	16	2
EPCWA210020A	10	2.0R	10	5.5	M5	16	2
EPCWA212005A	12	0.5R	12	6.5	M6	20	2
EPCWA212010A	12	1.0R	12	6.5	M6	20	2
EPCWA212020A	12	2.0R	12	6.5	M6	20	2
EPCWA212030A	12	3.0R	12	6.5	M6	20	2
EPCWA216010A	16	1.0R	16	8.5	M8	26	2
EPCWA216020A	16	2.0R	16	8.5	M8	26	2
EPCWA216030A	16	3.0R	16	8.5	M8	26	2
EPCWA220010A	20	1.0R	20	10.5	M10	37	2
EPCWA220020A	20	2.0R	20	10.5	M10	37	2
EPCWA220030A	20	3.0R	20	10.5	M10	37	2
EPCWA225010A	25	1.0R	25	12.5	M12	46	2
EPCWA225030A	25	3.0R	25	12.5	M12	46	2



WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	Tolerance (公差)
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R (R角)	Tolerance (公差)
R	R ± 0.02

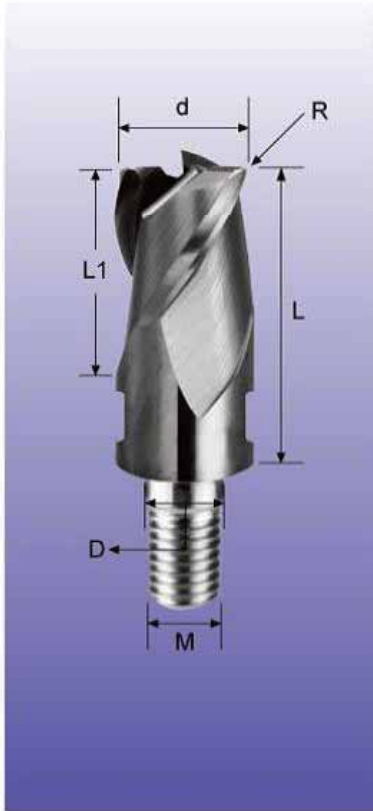
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

Milling Amount (mm)	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D

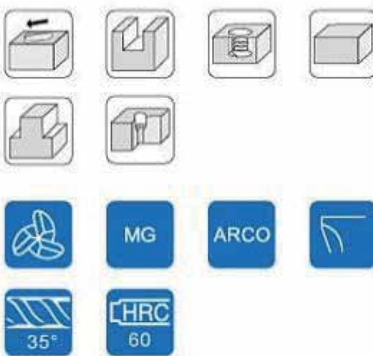
Milling Amount (mm)	aa	ar
D < ∅ 6	1.0D	0.01D
∅ 6 ≤ D	1.0D	0.02D

The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-WA3



Order No.	Dia.	CR	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	R 角 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPCWA310005A	10	0.5R	10	5.5	M5	16	3
EPCWA310010A	10	1.0R	10	5.5	M5	16	3
EPCWA310020A	10	2.0R	10	5.5	M5	16	3
EPCWA312005A	12	0.5R	12	6.5	M6	20	3
EPCWA312010A	12	1.0R	12	6.5	M6	20	3
EPCWA312020A	12	2.0R	12	6.5	M6	20	3
EPCWA312030A	12	3.0R	12	6.5	M6	20	3
EPCWA316010A	16	1.0R	16	8.5	M8	26	3
EPCWA316020A	16	2.0R	16	8.5	M8	26	3
EPCWA316030A	16	3.0R	16	8.5	M8	26	3
EPCWA320010A	20	1.0R	20	10.5	M10	37	3
EPCWA320020A	20	2.0R	20	10.5	M10	37	3
EPCWA320030A	20	3.0R	20	10.5	M10	37	3
EPCWA325010A	25	1.0R	25	12.5	M12	46	3
EPCWA325030A	25	3.0R	25	12.5	M12	46	3



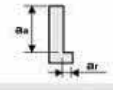
WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	Tolerance (公差)
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

R (R角)	Tolerance (公差)
R	R ± 0.02

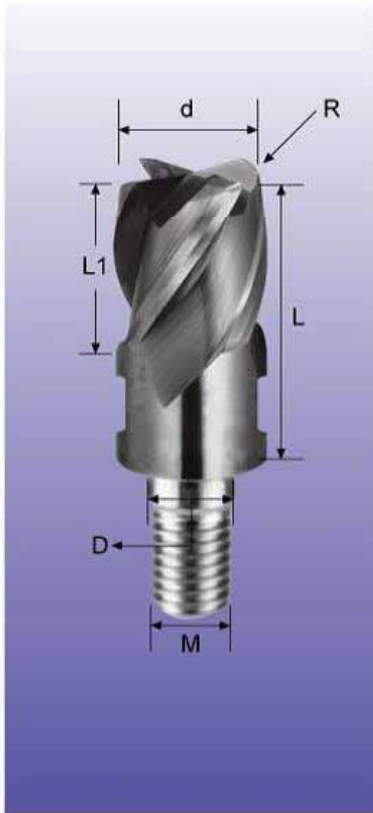
Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

Milling Amount (mm)	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D



The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

EPC-WA4



Order No.	Dia.	CR	CL	ND	SD	OAL	Flutes
訂購編號	刃徑 (d)	R 角 (R)	刃長 (L1)	頸徑 (D)	牙徑 (M)	全長 (L)	刃數 (F)
EPCWA410005A	10	0.5R	10	5.5	M5	16	4
EPCWA410010A	10	1.0R	10	5.5	M5	16	4
EPCWA410020A	10	2.0R	10	5.5	M5	16	4
EPCWA412005A	12	0.5R	12	6.5	M6	20	4
EPCWA412010A	12	1.0R	12	6.5	M6	20	4
EPCWA412020A	12	2.0R	12	6.5	M6	20	4
EPCWA412030A	12	3.0R	12	6.5	M6	20	4
EPCWA416010A	16	1.0R	16	8.5	M8	26	4
EPCWA416020A	16	2.0R	16	8.5	M8	26	4
EPCWA416030A	16	3.0R	16	8.5	M8	26	4
EPCWA420010A	20	1.0R	20	10.5	M10	37	4
EPCWA420020A	20	2.0R	20	10.5	M10	37	4
EPCWA420030A	20	3.0R	20	10.5	M10	37	4
EPCWA450100A	25	1.0R	25	12.5	M12	46	4
EPCWA425030A	25	3.0R	25	12.5	M12	46	4



WORKING MATERIAL	CAST IRON	ALLOY STEEL / TOOL STEEL	HARDENED STEEL	HARDENED STEEL	HARDENED STEEL					
MATERIAL CODE	FC / FCD	SCM, SKT, SKD	SKT, SKD	SKT, SKD	SKT, SKD					
HARDNESS GRADE	~ HRC 20	HRC 20~30	HRC 30~40	HRC 45~55	HRC 55~60					
Vc	126 M / min	110 M / min	110 M / min	95 M / min	79 M / min					
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
10MM	4,000	1,150	3,500	990	3,500	830	3,000	610	2,550	400
12MM	3,400	1,150	2,900	990	2,900	830	2,500	610	2,100	400
16MM	2,500	1,150	2,100	950	2,100	830	1,800	610	1,500	390
18MM	2,200	1,150	1,900	960	1,900	830	1,600	610	1,300	390
20MM	2,000	1,150	1,700	960	1,700	830	1,500	610	1,200	390
25MM	1,600	1,150	1,400	990	1,400	830	1,200	610	1,000	390

d (刃徑)	Tolerance (公差)
∅ ≤ 12	0 ~ -0.02
∅ > 12	0 ~ -0.03

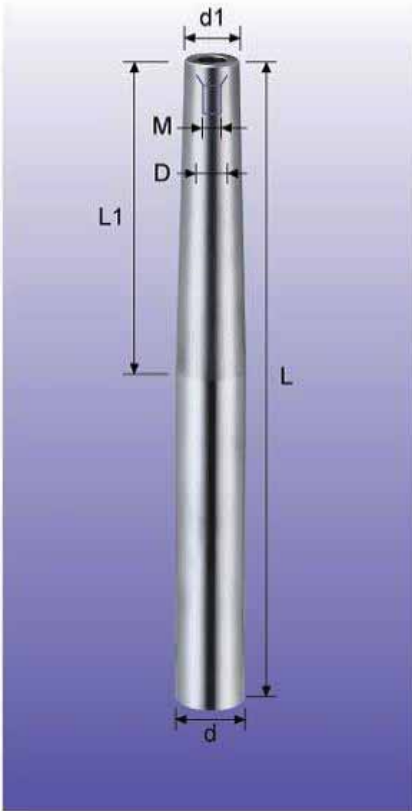
R (R角)	Tolerance (公差)
R	R ± 0.02

Finishing (精銑)	◎
Semi-Finishing (中銑)	◎
Roughing (粗銑)	◎

Milling Amount (mm)	aa	ar
D < ∅ 6	1.0D	0.02D
∅ 6 ≤ D	1.0D	0.05D

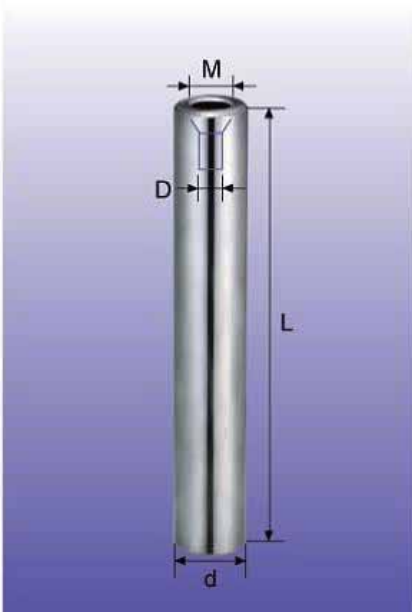
The Feed & RPM may be changed depending on the M/C Conditions, Lubricating & Cooling systems.

SWT-EA



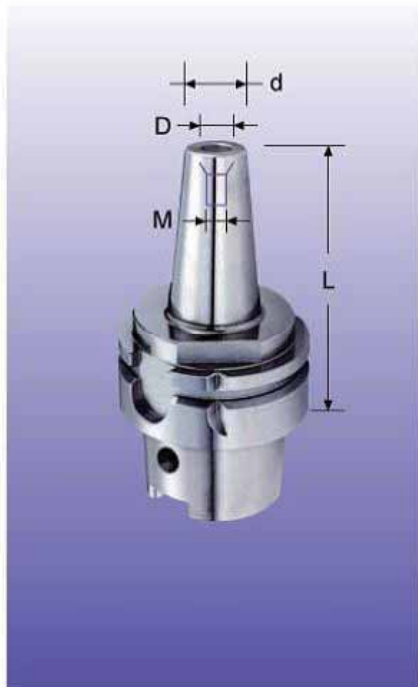
Order No. 訂購編號	Dia. 柄徑 (d)	SL 斜度長 (L1)	TD 轉接柄徑(d1)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)
SWTEA051500	12	60	9.8	5.5	M5	150
SWTEA061500	16	70	11.8	6.5	M6	150
SWTEA082000	20	90	15.5	8.5	M8	200
SWTEA102000	25	90	19.8	10.5	M10	200
SWTEA122000	32	90	24.5	12.5	M12	200

SWS-EA



Order No. 訂購編號	Dia. 柄徑 (d)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)
SWSEA050750	10	5.5	M5	75
SWSEA051000	10	5.5	M5	100
SWSEA051500	10	5.5	M5	150
SWSEA060750	12	6.5	M6	75
SWSEA061000	12	6.5	M6	100
SWSEA061500	12	6.5	M6	150
SWSEA062000	12	6.5	M6	200
SWSEA081000	16	8.5	M8	100
SWSEA081500	16	8.5	M8	150
SWSEA082000	16	8.5	M8	200
SWSEA101000	20	10.5	M10	100
SWSEA101500	20	10.5	M10	150
SWSEA102000	20	10.5	M10	200
SWSEA121000	25	12.5	M12	100
SWSEA121500	25	12.5	M12	150
SWSEA122000	25	12.5	M12	200

SGH-AA



Order No. 訂購編號	Dia. 柄徑 (d)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)
SGHAA080250	15	8.5	M8	25
SGHAA100250	19	10.5	M10	25
SGHAA120250	21	12.5	M12	31

SGB-AA



Order No. 訂購編號	Dia. 柄徑 (d)	SL 斜度長 (L1)	ND 頸徑 (D)	SD 牙徑 (M)	OAL 全長 (L)
SGBAA080400	15	50	8.5	M8	40
SGBAA100400	19	50	10.5	M10	40
SGBAA120400	21	50	12.5	M12	40



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