



**HD.**  
Hwe Der & Ho Dung

**HWE DER**

specialized cutting tool factory 專業刀具製造廠

The Three Mold Making Treasures

Hwe Der Machinery and Hardware Pty Ltd.  
Ho Dung Hardware Co.,Ltd.

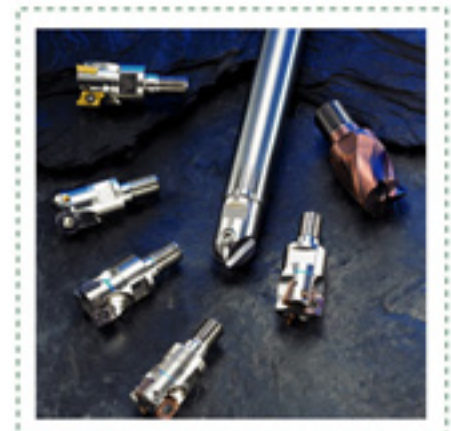
**模具三寶**

638 鎢鋼銑刀 / 鎢鋼抗震刀柄 / 鎢鋼後拉刀桿

Carbide Milling Cutter 638 / GL Holder / HDC Chuck & HUC Chuck

- A** 鎢鋼抗震刀柄系列
- B** 捨棄式銑刀. 銑刀頭系列
- C** 捨棄式鑽頭. 搪孔刀系列
- D** 鎢鋼銑刀系列
- E** 鎢鋼銑刀切削數據
- F** 尋邊器. Z軸設定器

## The Three Mold



**Making Treasures**

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## 鎢鋼抗震刀柄

1. 使用全碳化鎢材質製成，剛性優異、吸震性佳、不會因橫向靖力過大，而扭曲變形。
2. 延長加工深度，提升加工面精度，實現超長、超深、超高精度加工之可行性。
3. 沒有焊接斷裂之虞慮，強調刀頭之多變化性。縱使刀頭損壞，立即更換即可上線。

### GL HOLDER

### Tungsten Carbide Anti-Vibration Holder

Made by high density Tungsten Carbide.  
It's outstanding hardness dramatically reduce operating vibration.

Significant extends depth on high cavity operation.

No weld broke issues.

Emphasis on cutter exchange variability.

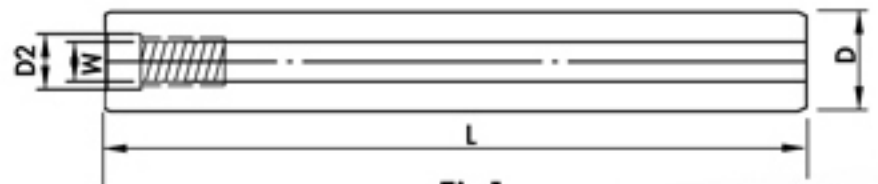


Fig1



Fig2



©刀頭規格請參考 B1 頁

Ordering code 訂購編號	Flg	L	M	D2	D	D1	L1	a°	Note/備註
GL06-06-060-M03	1	60	M3*0.5	3.5	6	6			
GL06-06-120-M03		120							
GL08-08-060-M04	1	60	M4*0.7	4.5	8	8			
GL08-08-100-M04		100				8			
GL08-08-120-M04		120				8			
GL08-10-150-M04-DT60*	2	150			10	7.8	60	1°	
GL10-10-075-M05	1	75	M5*0.8	5.5	10	10			
GL10-10-100-M05		100			10	10			
GL10-10-150-M05		150			10	10			
GL10-12-150-M05-DT60*	2	150			12	9.8	60	1°	
GL10-20-300-M05-DT135*		300			20	9.8	135	2.15°	
GL12-12-075-M06	1	75	M6*1.0	6.5	12	12			
GL12-12-100-M06		100			12	12			
GL12-12-150-M06		150			12	12			
GL12-12-200-M06		200			12	12			
GL12-16-150-M06-DT70*	2	150			16	11.8	70	1.65°	
GL12-16-200-M06-DT90*		200			16	11.8	90	1.3°	
GL12-16-250-M06-DT115*		250			16	11.8	115	1°	
GL12-20-300-M06-DT135*		300			20	11.8	135	1.7°	
GL16-16-100-M08	1	100	M8*1.25	8.5	16	16			
GL16-16-150-M08		150			16	16			
GL16-16-200-M08		200			16	16			
GL16-16-250-M08		250			16	16			
GL16-20-200-M08-DT90*	2	200			20	15.5	90	1.3°	
GL16-20-250-M08-DT115*		250			20	15.5	115	1°	
GL16-20-300-M08-DT135*		300			20	15.5	135	0.85°	
GL20-20-100-M10	1	100	M10*1.5	10.5	20	20			
GL20-20-150-M10		150			20	20			
GL20-20-200-M10		200			20	20			
GL20-20-250-M10		250			20	20			
GL20-20-300-M10		300			20	20			
GL20-20-400-M10		400			20	20			
GL20-25-200-M10-DT90*	2	200			25	19.8	90	1.6°	
GL20-25-250-M10-DT115*		250			25	19.8	115	1.25°	
GL20-25-300-M10-DT135*		300			25	19.8	135	1.1°	
GL25-25-100-M12	1	100	M12*1.75	12.5	25	25			
GL25-25-150-M12		150			25	25			
GL25-25-200-M12		200			25	25			
GL25-25-250-M12		250			25	25			
GL25-25-300-M12		300			25	25			
GL25-25-350-M12		350			25	25			
GL25-32-200-M12-DT90*	2	200			32	24.5	90	2.3°	
GL25-32-250-M12-DT115*		250			32	24.5	115	1.75°	
GL25-32-300-M12-DT135*		300			32	24.5	135	1.5°	
GL32-32-150-M16	1	150	M16*2.0	17	32	32			
GL32-32-200-M16		200			32	32			
GL32-32-250-M16		250			32	32			
GL32-32-300-M16		300			32	32			
GL32-32-400-M16		400			32	32			
GL42-42-250-M20*	1	250	M20*2.5	21	42	42			
GL42-42-300-M20*		300			42	42			
GL42-42-400-M20*		400			42	42			
GL42-42-500-M20*		500			42	42			

PS: \* 不是常備庫存品，訂購前請先查詢。

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## 鎢鋼後拉刀桿

1. 使用高級碳化鎢材質製成，剛性優異、吸震性佳。
2. 延長加工深度、提升加工面精度，實現超長、超深、超高精度加工之可行性。
3. 降低刀具成本，延長刀具壽命。

### HDC CHUCK & HUC CHUCK

#### Tungsten Draw-Out Extension Holder

Make by high density Tungsten Carbide.

It's outstanding hardness is advantageous to minimal wearing on tools.

Significant extends the depth on high cavity operation.

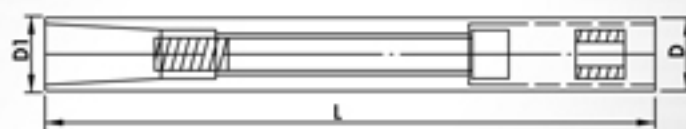
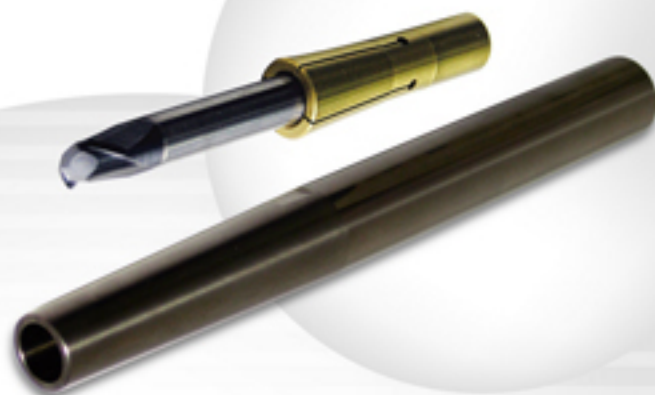


Fig1



Fig2

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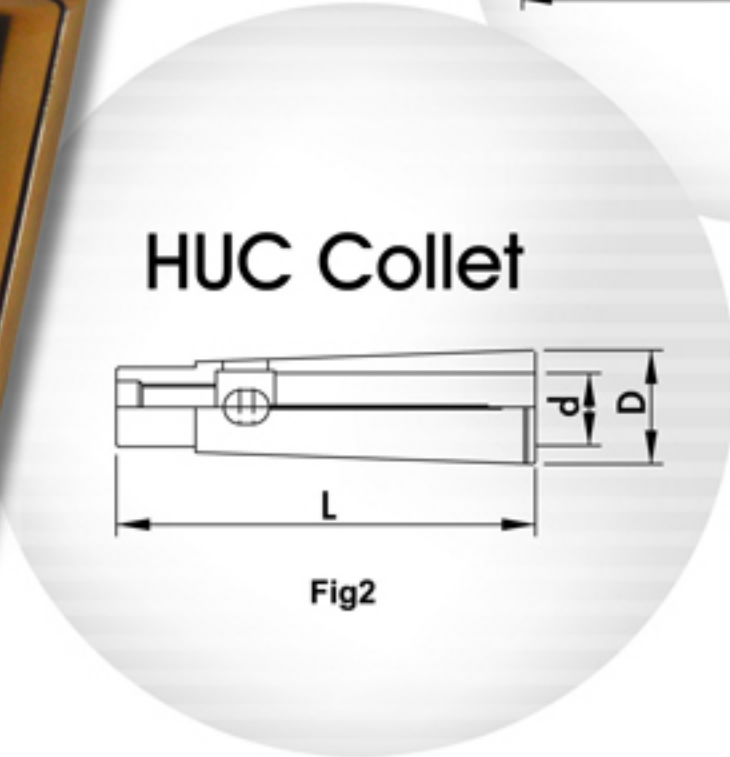
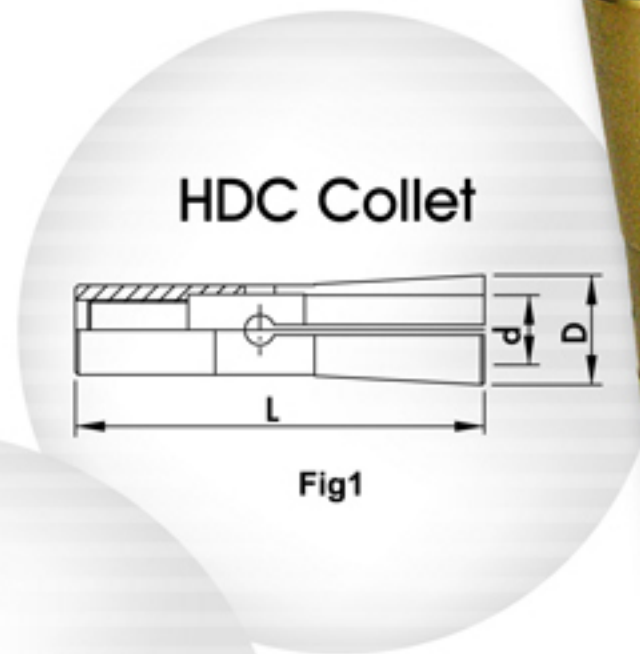
Ordering code 訂購編號	L	L1	D	D1	a°	Fig	Note/備註
HDC4-08-C08-100L	100		8	8		1	
HDC4-10-C10-100L	100		10	10		1	
HDC4-10-C10-150L	150		10	10		1	
HDC4-10-C12-150L-DT60	150	60	12	10	1°	2	
HDC4-10-C16-200L-DT100	200	100	16	10	1.8°	2	
HDC6-12-C12-100L	100		12	12		1	
HDC6-12-C12-150L	150		12	12		1	
HDC6-12.8-C16-150L-DT60	150	60	16	12.8	1.7°	2	
HDC6-12.8-C16-200L-DT90	200	90	16	12.8	1.2°	2	
HDC6-12.8-C20-250L-DT110	250	110	20	12.8	1.9°	2	
HUC10-20-C20-150L	150		20	20		1	
HUC10-20-C20-200L	200		20	20		1	
HUC10-23-C25-250L-DT120	250	120	25	23	0.5°	2	
HUC10-23-C25-300L-DT120	300	120	25	23	0.5°	2	

PS: \* 不是常備庫存品，訂購前請先查詢。

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Codice訂購編號	Collet	L	D	Ød		Fig	Note/備註
HDC4-3	HDC4	31	7	Ø 3,4		2	
HDC4-4						2	
HDC6-3	HDC6	36	9.6	Ø 3, 4, 6		2	
HDC6-4						2	
HDC6-6						2	
HUC10-3*	HUC10	56.5	15	Ø 3, 4, 6, 8, 10		1	
HUC10-4*						1	
HUC10-6						1	
HUC10-8						1	
HUC10-10						1	

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## GLCK鎢鋼抗震搪刀柄

1. 使用全碳化鎢材質製成，沒有焊接斷裂之處處，剛性優異、吸震性佳。
2. 延長加工深度，提升搪孔加工面精度，實現超長、超深、超高精度加工之可行性。

### GLCK HOLDER

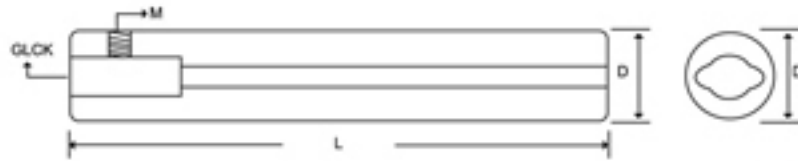
#### Tungsten Carbide Anti-Vibration GLCK Holder

Make by high density Tungsten Carbide.

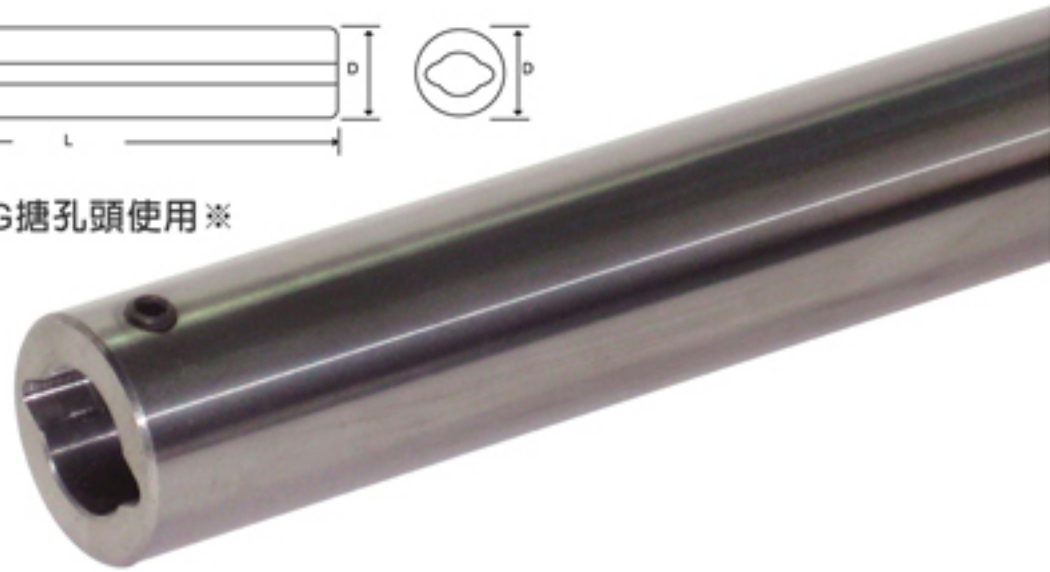
No weld broke issue.

It's outstanding hardness dramatically reduce operating vibration.

Significant extends the depth on high cavity operation.



※請搭配BIG搪孔頭使用※



Ordering code訂購編號	L	D	GLCK	M	Note/備註
GLCK1-19-150L	150	19	GLCK 1	4	
GLCK1-19-200L	200	19	GLCK 1	4	
GLCK1-19-250L	250	19	GLCK 1	4	
GLCK2-24-200L	200	24	GLCK 2	5	
GLCK2-24-250L	250	24	GLCK 2	5	
GLCK2-24-300L	300	24	GLCK 2	5	
GLCK3-31-250L	250	31	GLCK 3	6	
GLCK3-31-300L	300	31	GLCK 3	6	
GLCK3-31-400L	400	31	GLCK 3	6	
GLCK4-42-250L*	250	42	GLCK 4	8	
GLCK4-42-300L*	300	42	GLCK 4	8	
GLCK4-42-400L*	400	42	GLCK 4	8	
GLCK4-42-500L*	500	42	GLCK 4	8	

PS: \* 不是常備庫存品，訂購前請先查詢。



鎢鋼抗震刀柄



鎖牙式刀把



B46

SE90AP10銑刀頭



B39

TE90AX06銑刀頭



B39

TE90AX09銑刀頭



B28

RT0702銑刀頭



B28

RT1003銑刀頭



B36

XO0602銑刀頭



B34

三菱APMT1135銑刀頭



B32

三菱APMT1604銑刀頭



B23

三菱AOMT1236銑刀頭



B21

三菱AQXR鑽銑刀頭



B24

日立AJU鑽銑刀頭



日立ASJ鑽銑刀頭



B29

C905T1 銑刀頭



B22

CC0602銑刀頭



B45

SE90AX12銑刀頭



B43

UEX精銑刀頭



B13

EP0603銑刀頭



外牙鎢鋼刀頭



B10

RD0501 銑刀頭



B10

RD0702銑刀頭



B10

RD1003銑刀頭



B6

RP1003銑刀頭



B6

日立RD10T3銑刀頭



內牙鎢鋼刀頭+萬用連接螺桿



B16

SR銑刀頭



B19

WGR精修刀頭



B17

PPH精修刀頭

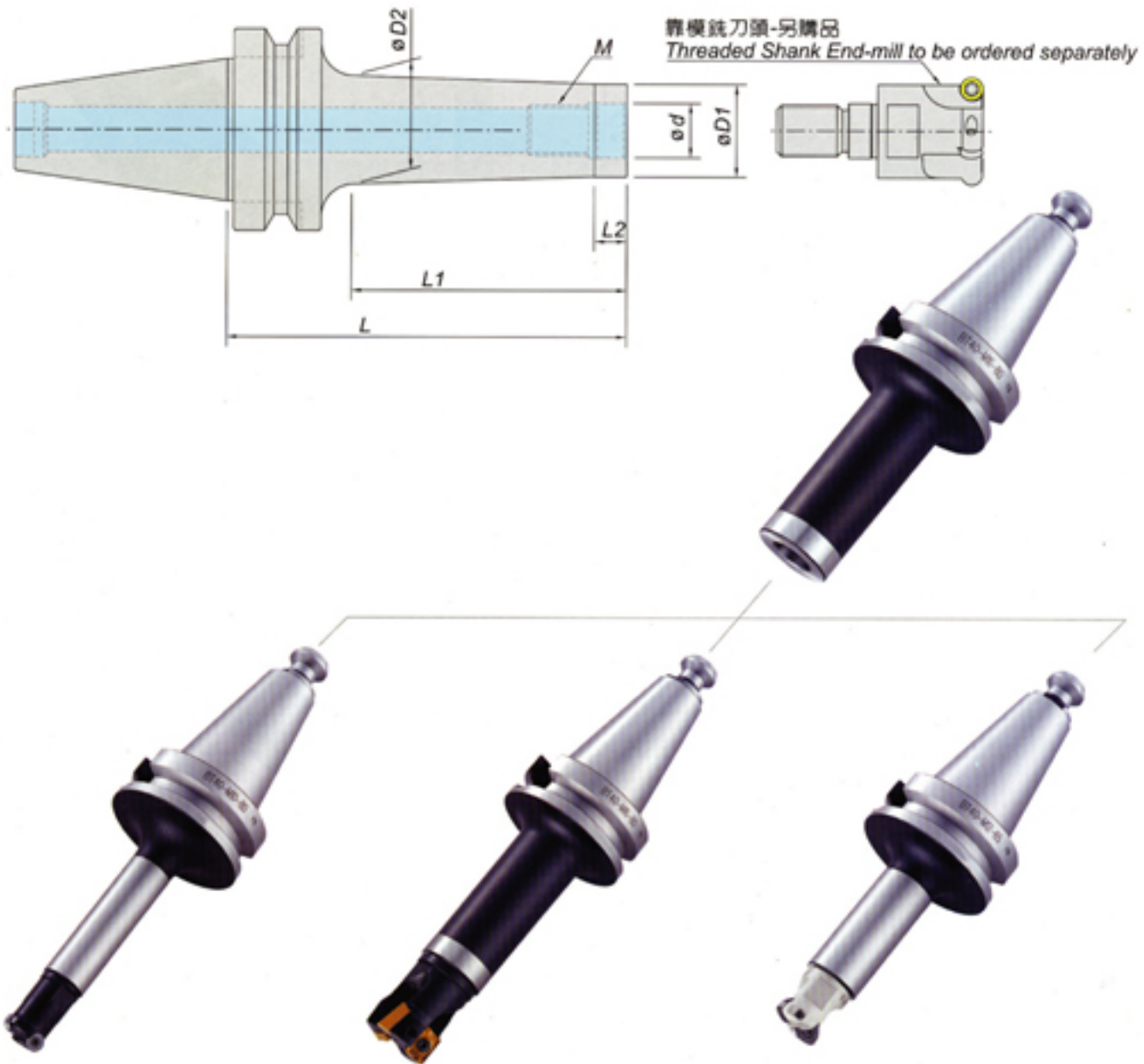


GLCK連接桿



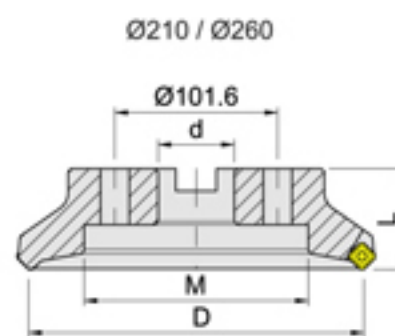
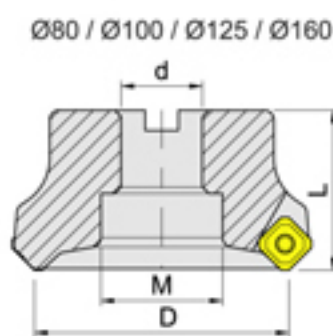
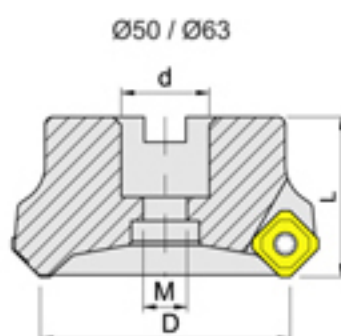
搪孔頭+萬用連接螺桿

◎ 詳細規格請參考圖片旁標示頁次



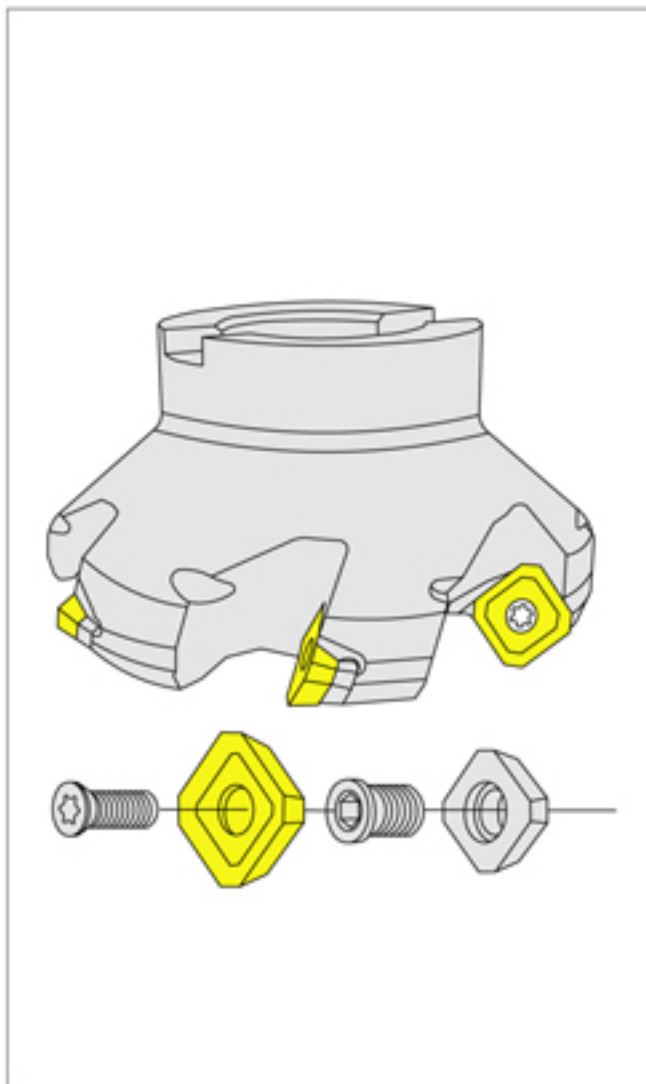
訂購編號 Ordering code	L	L1	L2	$\phi D2$	$\phi D1$	$\phi d$	M
BT40-M06-087	87	50	10	20	9.8	6.50	M6
BT40-M08-087	87	50	10	23	13.0	8.50	M8
BT40-M10-087	87	50	10	25	18.0	10.50	M10
BT40-M12-087	87	50	10	24	21.0	12.50	M12
BT40-M16-087	87	50	10	34	29.0	17.00	M16
BT40-M16-127	127	90	10	39	29.0	17.00	M16
BT50-M12-125	125	75	10	35	21.0	12.50	M12
BT50-M16-125	125	75	10	34	29.0	17.00	M16
BT50-M16-200	200	150	10	48	29.0	17.00	M16

Threaded Shank End-mill has to be order separately.  
鎖牙式銑刀頭為另購品。



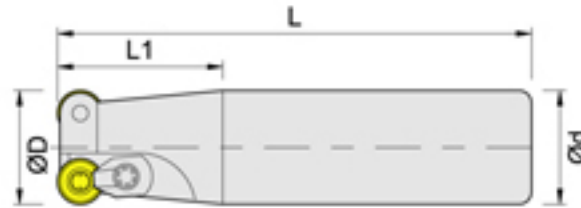
Ordering code		Dimensions,mm				Teeth	Insert	
Right hand	Left hand	D	d	L	M			
<b>ASX445-050A03R-22.0</b>	<b>ASX445-050A03L-22.0</b>	50	22.0	40	11	3	疏齒	SE..13T3.. WE..13T3..
-063A04R-22.0	-063A04L-22.0	63	22.0	40	11	4		
R05003C-25.4	L05003C-25.4	50	25.4	50	13	3		
R06304C-25.4	L06304C-25.4	63	25.4	50	13	4		
R08004C-25.4	L08004C-25.4	80	25.4	50	38	4		
R10005D-31.75	L10005D-31.75	100	31.75	50	45	5		
R12506E-38.1	L12506E-38.1	125	38.1	63	60	6		
R16007F-50.8	L16007F-50.8	160	50.8	63	80	7		
R21008K-47.625	L21008K-47.625	210	47.625	63	140	8		
R26010K-47.625	L26010K-47.625	260	47.625	63	180	10		
<b>ASX445-050A04R-22.0</b>	<b>ASX445-050A04L-22.0</b>	50	22.0	40	11	4	密齒	SE..13T3.. WE..13T3..
-063A05R-22.0	-063A05L-22.0	63	22.0	40	11	5		
R05004C-25.4	L05004C-25.4	50	25.4	50	13	4		
R06305C-25.4	L06305C-25.4	63	25.4	50	13	5		
R08006C-25.4	L08006C-25.4	80	25.4	50	38	6		
R10007D-31.75	L10007D-31.75	100	31.75	50	45	7		
R12508E-38.1	L12508E-38.1	125	38.1	63	60	8		
R16010F-50.8	L16010F-50.8	160	50.8	63	80	10		
R21012K-47.625	L21012K-47.625	210	47.625	63	140	12		
R26014K-47.625	L26014K-47.625	260	47.625	63	180	14		
<b>ASX445-050A05R-22.0</b>	<b>ASX445-050A05L-22.0</b>	50	22.0	40	11	5	超密齒	SE..13T3.. WE..13T3..
-063A06R-22.0	-063A06L-22.0	63	22.0	40	11	6		
R05005C-25.4	L05005C-25.4	50	25.4	50	13	5		
R06306C-25.4	L06306C-25.4	63	25.4	50	13	6		
R08008C-25.4	L08008C-25.4	80	25.4	50	38	8		
R10010D-31.75	L10010D-31.75	100	31.75	50	45	10		
R12512E-38.1	L12512E-38.1	125	38.1	63	60	12		
R16016F-50.8	L16016F-50.8	160	50.8	63	80	16		

# ASX 45°面銑刀 45°Face Milling Cutters(ASX)



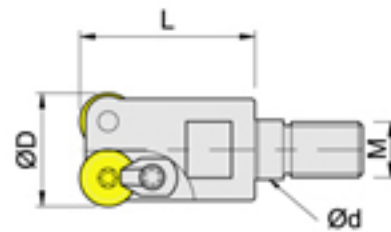
Shim	Screw	Wrench	Screw	Wrench
SSS445N	MDS5035	PL35	MS3512B	TF15

Ordering code	GRADE 材質					Insert Shape	Dimensions,mm			
	NX2525	VP15TF	F5020	HTI10	HTI05T		D	S	F	r
SEMT13T3AGSN-JM		●					13.4	3.97	1.9	1.5
SEMT13T3AGSN-JH		●	●				13.4	3.97	2.2	-
SEGT13T3AGFN-JP				●			13.4	3.97	2.2	-
WEEW13T3AGER8C					●		16.6	3.97	8.2	1.5
WEEW13T3AGTR8C	●								8.1	



Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	L	d	L1							
RD0802-12-1T-130	12	130	12	30	1	RD..0802	MS3006B	TF9	MS3509A	MC35-141	TF15
RD0802-16-1T-150	16	150	16	35	1	RD..0802	MS3006B	TF9	MS3509A	MC35-141	TF15
RD0802-16-1T-200		200									
RD0802-17-2T-150	17	150	16	25	2	RD..0802	MS3006B	TF9	--	--	--
RD0802-20-2T-150	20	150	20	40	2	RD..0802	MS3008B	TF9	MS3509A	MC35-141	TF15
RD0802-20-2T-200		200									
RD0802-20-2T-250		250									
RD0802-21-2T-150	21	150	20	25	2	RD..0802	MS3008B	TF9	MS3509A	MC35-141	TF15
RD0802-21-2T-200		200									
RD10T3-25-2T-150	25	150	25	45	2	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-25-2T-200		200									
RD10T3-25-2T-250		250									
RD10T3-25-2T-300		300									
RD10T3-26-2T-150	26	150	25	30	2	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-26-2T-200		200									
RD10T3-26-2T-250		250									
RD10T3-26-2T-300		300									
RD10T3-30-2T-150	30	150	25	35	2	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-30-2T-200		200									
RD10T3-30-2T-250		250									
RD10T3-30-3T-150	30	150	25	35	3	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-30-3T-200		200									
RD10T3-30-3T-250		250									
RD10T3-32-3T-150	32	150	32	45	3	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-32-3T-200		200									
RD10T3-32-3T-250		250									
RD10T3-32-3T-300		300									
RD10T3-35-3T-150	35	150	32	50	3	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-32-3T-200		200									
RD10T3-32-3T-250		250									
RD10T3-32-3T-300		300									
RD10T3-32-3T-350		350									
RD10T3-32-3T-400	400										
RD10T3-40-3T-150	40	150	32	50	3	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-40-3T-200		200									
RD10T3-40-3T-250		250									
RD10T3-40-3T-300		300									
RD10T3-40-3T-350		350									
RP1003-50-4T-180	50	180	32	40	4	RP..1003	MS4011A	TF15	MS3509A	MC35-141	TF15
RP1204-25-2T-150	25	150	25	45	2	RP..1204	MS4011A	TF15	MS3509A	MC35-141	TF15
RP1204-25-2T-200		200									
RP1204-25-2T-250		250									

# HAR 圓刃銑刀 Corner Rounding End Mills(HAR)

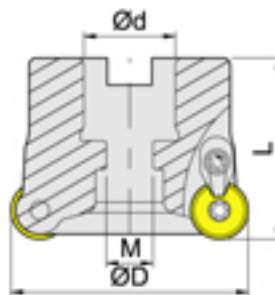


Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	M	d	L							
RD0802-16-2T-M08	16	M8	8.5	23	2	RD..0802	MS3006B	TF9	--	--	--
RD0802-17-2T-M08	17										
RD0802-20-2T-M10	20	M10	10.5	30							
RD0802-21-2T-M10	21										
RD10T3-25-2T-M12	25	M12	12.5	35	2	RD..10T3	MS4009B	TF15	MS3509A	MC35-141	TF15
RD10T3-26-2T-M12	26										
RD10T3-30-2T-M16	30	M16	17	43							
RD10T3-32-3T-M16	32	M16	17	43							
RD10T3-35-3T-M16	35										
RP1003-20-2T-M10	20	M10	10.5	30	2	RP..1003	MS4009A	TF15	--	--	--
RP1003-21-2T-M10	21										
RP1003-25-2T-M12	25	M12	12.5	35	2	RP..1003	MS4009A	TF15	MS3509A	MC35-141	TF15
RP1003-26-2T-M12	26										
RP1003-30-3T-M12	30										
RP1003-35-3T-M16	35	M16	17	43	3		MS4011A				

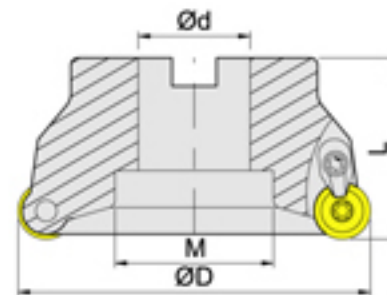
Ordering code	GRADE 材質			Insert Shape	Dimensions,mm		
	CY250	HD20	NX2525		lc	S	d1
RDMT0802MOTN	●				8.0	2.38	3.4
RDMT10T3MOTN	●	●			10.0	3.97	4.5
RDMX1204MOTN		●			12.0	4.76	4.5
RDMX1604MOTN	●	●			16.0	4.76	5.5
RPMW1003MO		●			10.0	3.18	4.5
RPMT1204MOSN		●			12.0	4.76	4.5



Ø50 / Ø63 / Ø66 / Ø80

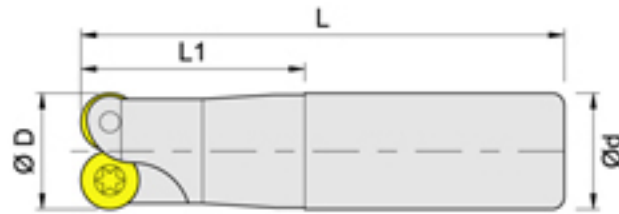


Ø100



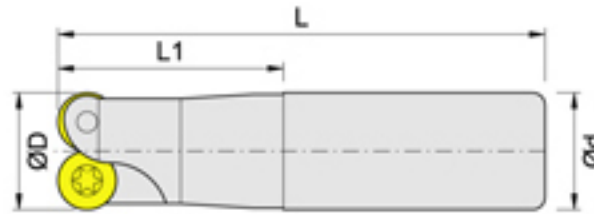
Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Clamp	Screw	Wrench
	D	d	L	M							
RD10T3-50-4T-22R	50	22.0	50	11	4	RD..10T3	MS4009B	TF15	MC35-141	MS3509A	TF15
RD10T3-50-4T-25.4R		25.4		13							
RD10T3-63-5T-25.4R	63	25.4	13	5							
RD1204-50-4T-22R	50	22.0	50	11	4	RD..1204	MS4011A	TF15	MC35-141	MS3509A	TF15
RD1204-50-4T-25.4R		25.4		13							
RD1204-63-5T-25.4R	63	25.4	13	5							
RD1204-66-5T-25.4R	66	25.4	13	5							
RD1204-80-6T-25.4R	80	25.4	50	13	6						
RD1204-80-5T-27R		27.0		13	5						
RD1204-80-6T-27R		27.0		13	6						
RD1604-63-3T-25.4R	63	25.4	50	13	3	RD..1604	MS5011A	TF20	MC50-147	MS5011A	TF20
RD1604-63-4T-25.4R		25.4		13	4						
RD1604-63-5T-25.4R		25.4		13	5						
RD1604-63-5T-27R		27.0		13	5						
RD1604-66-4T-25.4R	66	25.4	50	13	4						
RD1604-66-5T-25.4R		25.4		13	5						
RD1604-66-4T-27R		27.0		13	4						
RD1604-80-5T-25.4R	80	25.4	55	13	5						
RD1604-80-5T-27R		27.0		13	5						
RD1604-80-6T-27R		27.0		13	6						
RD1604-100-6T-31.75R	100	31.75	60	45	6						
RP1204-50-4T-22R	50	22.0	50	11	4	RP..1204	MS4011A	TF15	MC35-141	MS3509A	TF15
RP1204-50-4T-25.4R	50	25.4	13	4							
RP1204-63-5T-25.4R	63	25.4	13	5							
RP1204-66-5T-25.4R	66	25.4	13	5							
RP1204-80-6T-25.4R	80	25.4	55	13	6						

# RD 圓刃銑刀 Corner Rounding End Mills(RD)



Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
RD0501-09-2T-100	9	100	8	12	2	RD..0501..	MS2004A	TF6
RD0501-10-2T-100	10	100	10	18	2			
RD0501-11-2T-100	11	100	10	15	2			
RD0501-12-2T-100	12	100	12	22	2			
RD0501-12-3T-100					3			
RD0501-13-2T-100	13	100	12	18	2			
RD0501-13-3T-100					3			
RD0501-16-4T-150	16	150	16	30	4			
RD0501-16-4T-200		200						
RD0501-17-4T-150	17	150	16	20	4			
RD0501-17-4T-200		200						
RD07T1-12-2T-120	12	120	12	35	2	RD..07T1..	MS2206C	TF7
RD07T1-12-2T-S16-120		120	16	35	2			
RD0702-16-2T-150	16	150	16	35	2	RD..0702..	MS2506B	TF9
RD0702-16-2T-200		200						
RD0702-17-2T-150	17	150	16	20	2			
RD0702-17-2T-200		200						
RD0702-20-3T-150	20	150	20	35	3			
RD0702-20-3T-200		200						
RD0702-21-3T-150	21	150	20	25	3			
RD0702-21-3T-200		200						
RD0702-25-4T-150	25	150	25	40	4			
RD0702-25-4T-200		200						
RD0702-25-4T-250		250						
RD0702-25-4T-300		300						
RD0702-25-5T-150	25	150	25	40	5			
RD0702-25-5T-200		200						
RD0702-25-5T-250		250						
RD0702-25-5T-300		300						
RD0702-26-4T-150	26	150	25	25	4			
RD0702-26-4T-200		200						
RD0702-26-4T-250		250						
RD0702-26-4T-300		300						
RD0702-26-5T-150	26	150	25	25	5			
RD0702-26-5T-200		200						
RD0702-26-5T-250		250						
RD0702-26-5T-300		300						





Ordering code	Dimensions,mm				Teeth	Insert	Screw	Clamp	Screw	Wrench
	D	L	d	L1						
RD1003-20-2T-150	20	150	20	40	2	RD..1003..	MS3507A	--	--	TF15
RD1003-20-2T-200		200								
RD1003-21-2T-150	21	150	20	25	2	RD..1003..	MS3507A	--	--	TF15
RD1003-21-2T-200		200								
RD1003-25-3T-150	25	150	25	40	3	RD..1003..	MS3507A	--	--	TF15
RD1003-25-3T-200		200								
RD1003-25-3T-250		250								
RD1003-26-3T-150	26	150	25	25	3	RD..1003..	MS3507A	--	--	TF15
RD1003-26-3T-200		200								
RD1003-26-3T-250		250								
RD1003-26-3T-300		300								
RD1003-30-3T-150	30	150	25	25	3	RD..1003..	MS3509B	--	--	TF15
RD1003-30-3T-200		200								
RD1003-30-3T-250		250								
RD1003-35-3T-150	35	150	32	40	3	RD..1003..	MS3509B	MC35141	MS3509A	TF15
RD1003-35-3T-200		200								
RD1003-35-3T-250		250								
RD1003-35-3T-300		300								
RD1003-35-4T-150	35	150	32	40	4	RD..1003..	MS3509B	MC35141	MS3509A	TF15
RD1003-35-4T-200		200								
RD1003-35-4T-250		250								
RD1003-35-4T-300		300								

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm	
	KR15	HD20		lc	S
RDHW 0501 MO E	●	●		5.0	1.50
RDHW 07T1 MO E	●	●		7.0	1.99
RDHW 0702 MO E	●	●		7.0	2.38
RDMW 0702 MO E	●	●		10.0	3.18
RDMW 0702 MO EN	●	●			
RDMW 1003 MO E	●	●			

# RD 圓刃銑刀 Corner Rounding End Mills(RD)



FIG-1

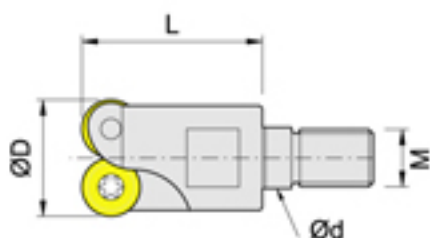


FIG-2

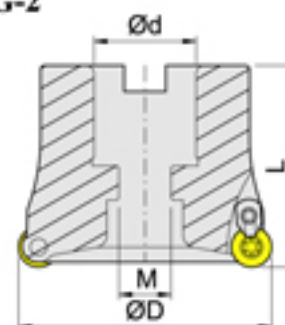






FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Clamp 	Screw 	Wrench 									
	D	M	d	L															
RD0501-09-2T-M04	9	M4	4.5	15	2	RD..0501..	MS2004A	--	--	TF6									
RD0501-10-2T-M05	10	M5	5.5	16	2		MS2005A	--	--	TF6									
RD0501-11-2T-M05	11	M5	5.5	18	2			--	--	TF6									
RD0501-12-2T-M06	12	M6	6.5	18	2			--	--	TF6									
RD0501-12-3T-M06					3			--	--	TF6									
RD0501-13-2T-M06	13	M6	6.5	18	2			--	--	TF6									
RD0501-13-3T-M06					3			--	--	TF6									
RD0501-16-4T-M08	16	M8	8.5	23	4			RD..07T1..	MS2206C	--	--	TF7							
RD0501-17-4T-M08	17	M8	8.5	23	4								RD..0702..	MS2506B	--	--	TF9		
RD07T1-12-2T-M08	12	M8	8.5	23	2													--	--
RD0702-16-2T-M08	16	M8	8.5	23	2	--												--	TF9
RD0702-17-2T-M08	17	M8	8.5	23	2	--	--											TF9	
RD0702-17-3T-M08					3	--	--											TF9	
RD0702-20-3T-M10	20	M10	10.5	30	3	--	--											TF9	
RD0702-21-3T-M10	21	M10	10.5	30	3	--	--											TF9	
RD0702-25-4T-M12	25	M12	12.5	35	4	--	--											TF9	
RD0702-25-5T-M12					5	--	--											TF9	
RD0702-26-4T-M12	26	M12	12.5	35	4	--	--	TF9											
RD0702-26-5T-M12					5	--	--	TF9											
RD0702-35-5T-M16	35	M16	17	43	5	RD..1003..	MS3507A	--	--	TF15									
RD0702-35-6T-M16					6						RD..1003..	MS3507A	MC35141	MS3509A	TF15				
RD1003-20-2T-M10	20	M10	10.5	30	2											--	--	TF15	
RD1003-21-2T-M10	21															--	--	TF15	
RD1003-25-3T-M12	25	M12	12.5	35	3											--	--	TF15	
RD1003-26-3T-M12	26															--	--	TF15	
RD1003-35-3T-M16	35	M16	17	43	3											--	--	TF15	
RD1003-35-4T-M16					4											--	--	TF15	





FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Clamp 	Screw 	Wrench 			
	D	d	M	L									
RD1003-50-4T-22R	50	22.0	11	40	4	RD..1003..	MS3509B	MC35141	MS3509A	TF15			
RD1003-50-5T-22R	50				5						--	--	TF15
RD1003-63-5T-25.4R	63	25.4	13	50	5						--	--	TF15
RD1003-63-6T-25.4R	63				6						--	--	TF15



FIG-1

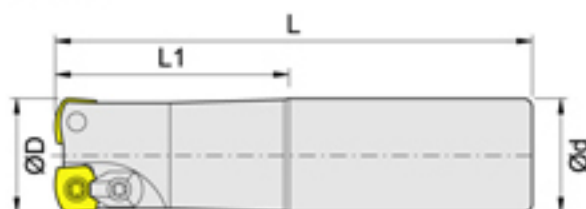


FIG-2

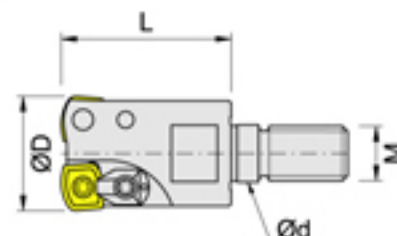
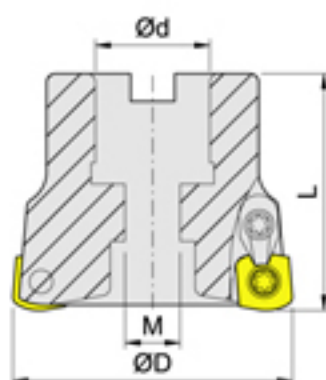


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	L	d	L1							
EP0803-20-2T-150	20	150	20	40	2	EPNW0803TN-10	MS3507A	TF15	MS3509A	MC35-141	TF15
EP0803-20-2T-200		200									
EP0803-20-2T-250		250									
ED10T3-25-2T-150	25	150	25	50	2	EDNW10T3TN-10	MS4009B	TF15	MS3509A	MC35-141	TF15
ED10T3-25-2T-200		200									
ED10T3-25-2T-250		250									
ED10T3-35-3T-150	35	150	32	40	3						
ED10T3-35-3T-200		200									
ED10T3-35-3T-250		250									
ED10T3-35-3T-300		300									
ED13T4-35-2T-150	35	150	32	40	2	EDNW13T4TN-10	MS5011A	TF20	MS5011A	MC50-147	TF20
ED13T4-35-2T-200		200									
ED13T4-35-2T-250		250									
ED13T4-35-2T-300		300									

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	M	d	L							
ED10T3-25-2T-M12	25	M12	8.5	35	2	EDNW10T3TN-10	MS4009B	TF15	MS3509A	MC35-141	TF15
ED13T4-35-2T-M16	35	M16	17	43	2	EDNW13T4TN-10	MS5011A	TF20	MS5011A	MC50-147	TF20

# ASR 圓角銑刀 Radius Mills(ASR)



Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	d	L	M							
ED13T4-50-4T-22R	50	22.0	50	11	4	EDNW13T4TN-10	MS5011A	TF20	MS5011A	MC50-147	TF20
ED13T4-63-4T-25.4R	63	25.4	50	13	4						
ED13T4-66-4T-25.4R	66	25.4	50	13	4						
ED13T4-66-4T-27R		27.0	50	13	4						
ED13T4-80-5T-25.4R	80	25.4	50	13	5						
ED13T4-80-4T-27R		27.0	50	13	4						
ED13T4-80-5T-27R		27.0	50	13	5						
ED15T4-63-3T-22R	63	22.0	50	11	3	EDNW15T4TN-10	MS5011A	TF20	MS5011A	MC50-147	TF20
ED15T4-63-4T-22R		22.0	50	11	4						
ED15T4-63-4T-25.4R		25.4	50	13	4						
ED15T4-66-4T-25.4R	66	25.4	50	13	4						
ED15T4-80-5T-25.4R	80	25.4	50	13	5						
ED15T4-80-5T-27R		27.0	50	13	5						
ED15T4-100-6T-31.75R	100	31.75	55	45	6						

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	CY250		A	B	S	R
EPNW0803TN-10	●		8.1	7.94	3.18	10
EDNW10T3TN-10	●		10.0	10.0	3.97	10
EDNW13T4TN-10	●		13.5	12.7	5.56	10
EDNW15T4TN-10	●		15.0	14.0	5.56	10
EDNW13T4TN-15			13.5	12.7	5.56	15
EDNW15T4TN-15			15.0	14.0	5.56	15



FIG-1

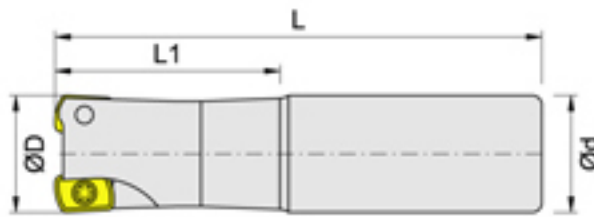


FIG-2

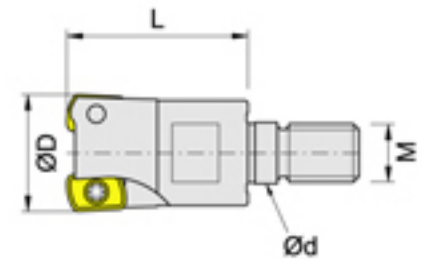






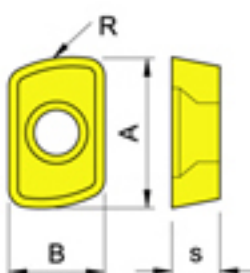
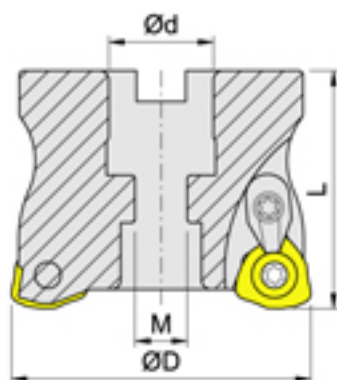
FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
EP0603-20-3T-150	20	150	20	40	3	EPMT0603TN-8 EPNW06037N-8	MS2506A	TF9
EP0603-20-3T-200		200						
EP0603-21-3T-150	21	150	20	30	3			
EP0603-21-3T-200		200						
EP0603-25-4T-150	25	150	25	40	4			
EP0603-25-4T-200		200						
EP0603-26-4T-150	26	150	25	35	4			
EP0603-26-4T-200		200						
EP0603-32-4T-150	32	150	32	45	4			
EP0603-32-4T-200		200						
EP0603-32-4T-250		250						
EP0603-35-5T-150	35	150	32	30	5			
EP0603-35-5T-200		200						
EP0603-35-5T-250		250						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
EP0603-20-3T-M10	20	M10	10.5	30	3	EPMT0603TN-8 EPNW06037N-8	MS2506A	TF9
EP0603-21-3T-M10	21							
EP0603-25-4T-M12	25	M12	12.5	35	4			
EP0603-26-4T-M12	26							
EP0603-32-4T-M16	32	M16	17	43	4			
EP0603-35-5T-M16	35				5			

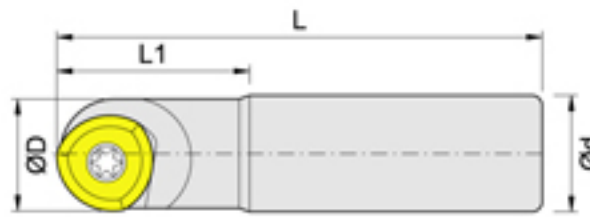
Ordering code	GRADE 材質		Insert Shape 	Dimensions,mm			
	PC250X	JX1015		A	B	S	R
EPMT0603TN-8	●	●		10	6.35	3.18	8
EPNW0603TN-8	●	●					



# JD1405 圓角銑刀 Radius Mills(JD1405)

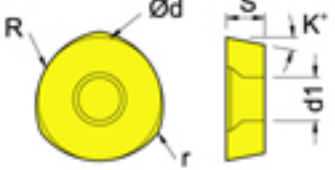
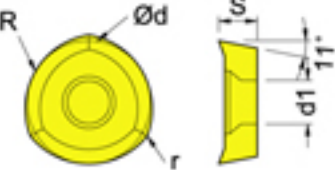


Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench	Screw	Clamp	Wrench
	D	d	L	M							
JD1405-63-4T-22R	63	22.0	50	11	4	JDMW1405..	MS5011A	TF20	MS5011A	MC50-147	TF20
JD1405-80-4T-31.75R	80	31.75	50	13	4						
JD1405-100-4T-31.75R	100	31.75	50	13	4						

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	VP15TF		A	B	S	R
JDMW140520ZDSR-FT	●		2.8	14.0	5.56	2.0



Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
SE08-S10-130	8	130	10	25	1	QC..08/06T1	MS2206A	TF7
SE08-S10-150		150	10					
SE08-S12-150		150	12	25	1			
SE10-S12-150	10	150	12	30	1	QC..10/0702	MS2206A	TF7
SE12-S12-150	12	150	12	35	1	QP..12/0903	MS3008A	TF9
SE12-S12-160		160						
SE12-S16-170		170	16	35	1			
SE12-S16-200		200						
SE16-S16-170	16	170	16	35	1	QP..16/12T3	MS4009A	TF15
SE16-S16-180		180						
SE16-S20-170		170	20	35	1			
SE16-S20-200		200						
SE16-S20-250		250						
SE20-S20-170	20	170	20	40	1	QP..20/1504	M4011A	TF15
SE20-S20-180		180						
SE20-S25-250		250	25	40	1			
SE25-S25-200	25	200	25	40	1	QP..25/1904	MS5011A	TF20
SE25-S32-250		250	32	50	1			

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm				
	PX25	HD30		d	s	d1	R	r
QCHW 08/06 T1-FN			 <p>QC.. K=7° QP.. K=11°</p>	6.2	1.98	2.5	3.86	0.4
QCHW 10/07 02-FN				7.5	2.38	2.5	4.83	0.4
QPHW 12/09 03-EN				9.52	3.18	3.4	5.796	0.4
QPHW 16/12 T3-EN				12.7	3.97	4.4	7.727	0.4
QPHW 20/15 04-EN				15.87	4.76	4.4	9.659	0.4
QPHW 25/19 04-EN				19.05	4.76	5.5	12.074	0.4
QPMT 12/09 03-EN21		●		9.52	3.18	3.4	5.796	0.8
QPMT 16/12 T3-SN21		●		12.7	3.97	4.4	7.727	0.8
QPMT 20/15 04-SN21		●		15.87	4.76	4.4	9.659	0.8

# SR 球型銑刀 Ball End Mills(SR)



FIG-1

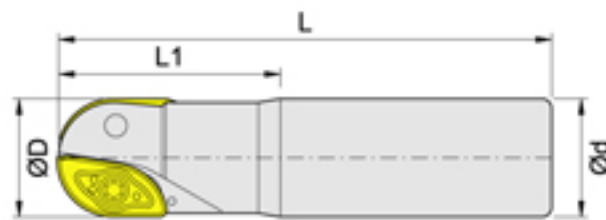


FIG-2

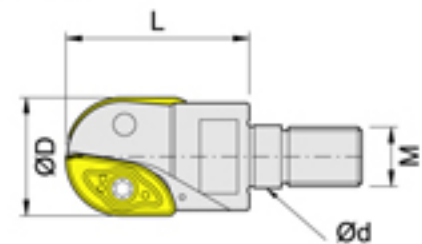
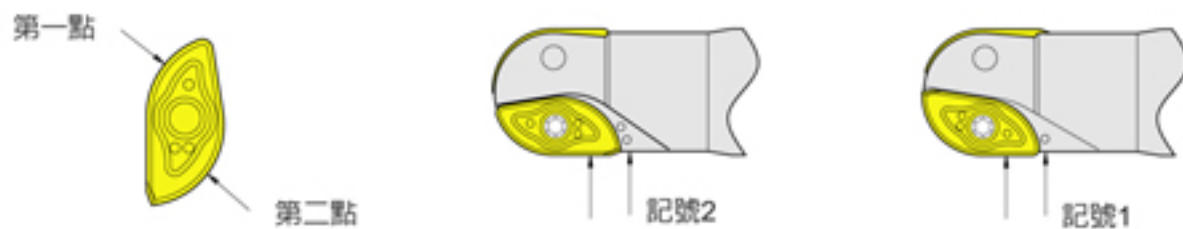


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
SR12-S12-150	12	150	12	25	2	ZP 1200 ER-..	MS2506A	TF9
SR12-S12-200		200						
SR16-S16-150	16	150	16	30	2	ZP 1600 ER-..	MS2506A	TF9
SR16-S16-200		200						
SR20-S20-150	20	150	20	35	2	ZP 2000 ER-..	MS3509A	TF15
SR20-S20-200		200						
SR25-S25-150	25	150	25	40	2	ZP 2500 ER-..	MS4011A	TF15
SR25-S25-200		200						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
SR12-2T-M06	12	M6	6.5	23	2	ZP 1200 ER-..	MS2506A	TF9
SR16-2T-M08	16	M8	8.5	30		ZP 1600 ER-..	MS2506A	TF9
SR20-2T-M10	20	M10	10.5	35		ZP 2000 ER-..	MS3509A	TF15
SR25-2T-M12	25	M12	12.5	40		ZP 2500 ER-..	MS4011A	TF15

## 刀片裝置方式



Ordering code	GRADE 材質		Insert Shape	Dimensions,mm	
	PX40	5020		S	d1
ZP 12 00 ER-51		●		2.38	2.9
ZP 16 00 ER-51		●		3.18	2.9
ZP 20 00 ER-51		●		3.97	4.0
ZP 25 00 ER-51		●		4.76	4.7





**NEW**

FIG-1



FIG-2

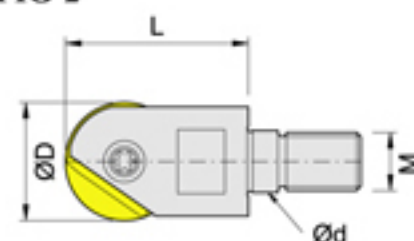


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
PPH08-S08-100	8	100	8	20	1	PPH-0800-..	DVF6240	TF7
PPH08-S10-100		100	10	35				
PPH10-S10-100	10	100	10	25	1	PPH-1000-..	DVF6241	TF8
PPH10-S12-100		100	12	36				
PPH12-S12-150	12	150	12	32	1	PPH-1200-..	DVF6242	TF10
PPH12-S16-200		200	16	58				
PPH16-S16-150	16	150	16	36	1	PPH-1600-..	DVF6244	TF15
PPH16-S16-200		200						
PPH16-S20-200		200	20	65				
PPH16-S20-250		250						
PPH20-S20-150	20	150	20	35	1	PPH-2000-..	DVF6246	TF20
PPH20-S20-200		200						
PPH20-S20-250		250						
PPH20-S25-200		200	25	76				
PPH20-S25-250		250						
PPH25-S25-200	25	200	25	40	1	PPH-2500-..	DVF6247	TT30
PPH25-S25-250		250						
PPH25-S32-200		200	32	98				
PPH25-S32-250		250						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
PPH08-M04	8	M4	4.5	18	1	PPH-0800-..	DVF6240	TF7
PPH10-M05	10	M5	5.5	20	1	PPH-1000-..	DVF6241	TF8
PPH12-M06	12	M6	6.5	22	1	PPH-1200-..	DVF6242	TF10
PPH16-M08	16	M8	8.5	28	1	PPH-1600-..	DVF6244	TF15
PPH20-M10	20	M10	10.5	30	1	PPH-2000-..	DVF6246	TF20
PPH25-M12	25	M12	12.5	35	1	PPH-2500-..	DVF6247	TT30

P.S 此規格與SAFETY.DIJET規格相符 This specification tallied with SAFETY.DIJET specification.

# PPHT R角精銑刀 Radius Precision Cutters(PPHT)



**NEW**

FIG-1

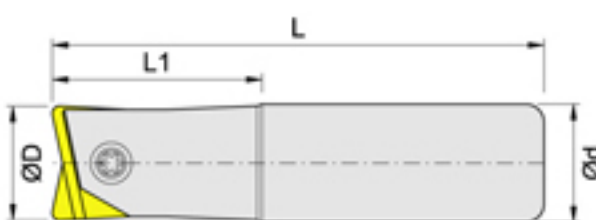


FIG-2

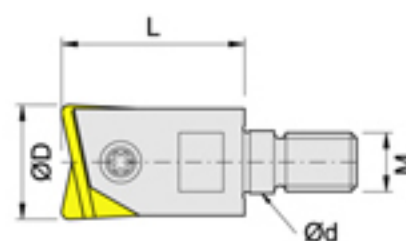


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
PPHT12-S12-150	12	150	12	30	1	PPHT-1200-..	DVF6242	TF10
PPHT16-S16-150	16	150	16	36	1	PPHT-1600-..	DVF6244	TF15
PPHT16-S16-200		200						
PPHT20-S20-150	20	150	20	45	1	PPHT-2000-..	DVF6246	TF20
PPHT20-S20-200		200						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
PPHT12-M06	12	M6	6.5	22	1	PPHT-1200-..	DVF6242	TF10
PPHT16-M08	16	M8	8.5	28	1	PPHT-1600-..	DVF6244	TF15
PPHT20-M10	20	M10	10.5	30	1	PPHT-2000-..	DVF6246	TF20

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm		
	KX05	KL05		D	S	R
PPH-0800-CL4				8	2.4	
PPH-1000-CL4				10	2.6	
PPH-1200-CL4				12	3.0	
PPH-1400-CL4				14	3.5	
PPH-1600-CL4				16	4.0	
PPH-2000-CL4				20	5.0	
PPH-2500-CL4				25	6.0	
PPH-3000-CL4				30	7.0	
PPH-3200-CL4				32	7.0	
PPH-4000-CL4				40	8.0	
PPHT-1200-08/A1				12	3.0	0.8
PPHT-1600-10/A1				16	4.0	1.0
PPHT-2000-16/A1				20	5.0	1.6

P.S 此規格與DIJET規格相符 This specification tallied with DIJET specification.



FIG-1

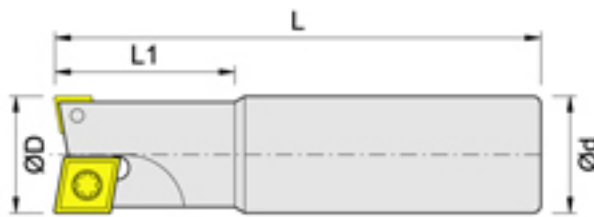


FIG-2

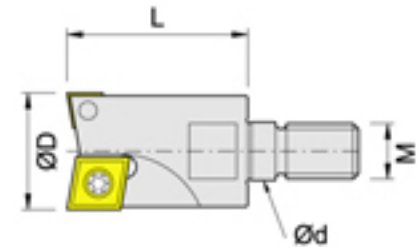


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert		Screw		Wrench	
	D	L	d	L1							
AJU10-130	10	130	10	25	1	CCMT060204	--	MS2506A	--	TF9	--
AJU11-150	11	150	10	16	1						
AJU12-150	12	150	12	30	1	CPMT080204Z	--	MS2506A	--	TF9	--
AJU13-150	13	150	12	20	1						
AJU16-150	16	150	16	30	2	CPMT080204Z	CCMT060204	MS2506A	MS2506A	TF9	--
AJU16-200		200									
AJU17-150	17	150	16	25	2						
AJU17-200		200									
AJU20-150	20	150	20	30	2	CPMT090204Z	CCMT060204	MS3509A	MS2506A	TF15	TF9
AJU20-200		200									
AJU20-250		250									
AJU21-150	21	150	20	25	2						
AJU21-200		200									
AJU21-250		250									
AJU25-150	25	150	25	40	2	CPMT120308Z	CPMT090308	MS4009A	MS4009A	TF15	--
AJU25-200		200									
AJU25-250		250									
AJU25-300		300									
AJU26-150	26	150	25	30	2						
AJU26-200		200									
AJU26-250		250									
AJU32-150	32	150	32	40	2	CPMT160408Z	CPMT120408	MS5011A	MS5011A	TF20	--
AJU32-200		200									
AJU32-250		250									
AJU32-300		300									
AJU33-150	33	150	32	30	2						
AJU33-200		200									
AJU33-250		250									
AJU33-300		300									
AJU33-350		350									
AJU33-400	400										

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert		Screw		Wrench	
	D	M	d	L							
AJU16-M08	16	M8	8.5	28	2	CPMT080204Z	CCMT060204	MS2506A	MS2506A	TF9	
AJU17-M08	17										
AJU20-M10	20	M10	10.5	32	2	CPMT090204Z	CCMT060204	MS3509A	MS2506A	TF15	TF9
AJU21-M10	21										
AJU25-M12	25	M12	12.5	38	2	CPMT120308Z	CPMT090308	MS4009A	MS4009A	TF15	
AJU26-M12	26										
AJU32-M16	32	M16	17	43	2	CPMT160408Z	CPMT120408	MS5011A	MS5011A	TF20	
AJU33-M16	33										



FIG-1

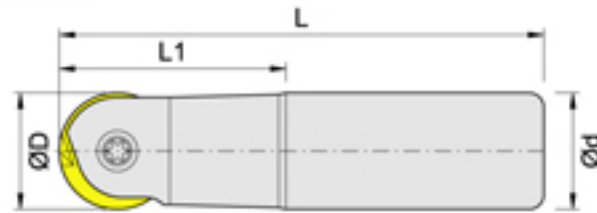


FIG-2

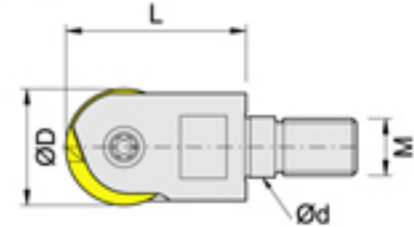
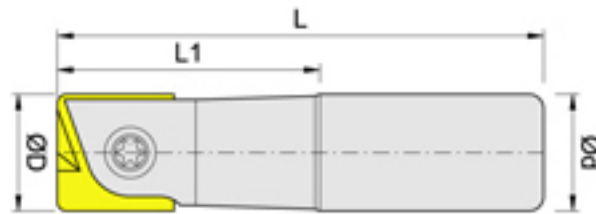


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
WGR08-S08-100	8	100	8	20	1	P3201-D08	MGR3008	TF8
WGR08-S10-100		100	10	35				
WGR10-S10-100	10	100	10	25	1	P3201-D10	MGR4010	TF15
WGR10-S12-150		150	12	36				
WGR12-S12-150	12	150	12	32	1	P3201-D12	MGR5012	TF20
WGR12-S16-200		200	16	58				
WGR16-S16-150	16	150	16	36	1	P3201-D16	MGR5016	TF20
WGR16-S16-200		200						
WGR16-S20-200		200	20	65				
WGR16-S20-250		250						
WGR20-S20-150	20	150	20	45	1	P3201-D20	MGR5020	TF20
WGR20-S20-200		200						
WGR20-S25-200		200	25	76				
WGR20-S25-250		250						
WGR25-S25-200	25	200	25	45	1	P3201-D25	MGR6025	TT30
WGR25-S25-250		250						
WGR25-S32-200		200	32	98				
WGR25-S32-250		250						
WGR25-S32-300	30 (32)	300			1	P3201-D30 (P3201-D32)	MGR8030	TT30
WGR30(32)-S32-200		200	32	50				
WGR30(32)-S32-250		250						
WGR30(32)-S32-300		300						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
WGR08-M04	8	M4	8.5	16	1	P3201-D08	MGR3008	TF8
WGR10-M05	10	M5	8.5	20	1	P3201-D10	MGR4010	TF15
WGR12-M06	12	M6	8.5	22	1	P3201-D12	MGR5012	TF20
WGR12-M08		M8	8.5	30	1			
WGR16-M08	16	M8	8.5	28	1	P3201-D16	MGR5016	TF20
WGR20-M10	20	M10	10.5	30	1	P3201-D20	MGR5020	TF20
WGR25-M12	25	M12	12.5	40	1	P3201-D25	MGR6025	TT30
WGR30(32)-M16	30(32)	M16	17.0	43	1	P3201-D30(32)	MGR8030	TT30

P.S 此規格與CKC.WATER規格相符 This specification tallied with CKC.WATER specification.

# GWV R角精銑刀 Radius Precision Cutter(GWV)



Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
<b>GWV12-S12-150</b>	12	150	12	30	1	WPV 12-N-Slst	MGR5012	TF20
<b>GWV16-S16-150</b>	16	150	16	35	1	WPV 16-N-Slst	MGR5016	TF20
<b>GWV20-S20-200</b>	20	200	20	40	1	WPV 20-N-Slst	MGR5020	TF20

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	WAP35		D +0 -0.03	S	d1	L
<b>P3201-D08</b>			8	2.0	3	9.5
<b>P3201-D10</b>			10	2.5	4	11.5
<b>P3201-D12</b>	●		12	2.5	5	12
<b>P3201-D16</b>	●		16	3.0	5	14
<b>P3201-D20</b>	●		20	3.0	5	16
<b>P3201-D25</b>	●		25	4.0	6	21.5
<b>P3201-D30</b>			30	5.0	8	25.5
<b>P3201-D32</b>			32	5.0	8	26.5

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	CKC128		D +0 -0.03	S	d1	r
<b>WPV 08-N-Slst</b>			8	2.0	3	0.6
<b>WPV 10-N-Slst</b>			10	2.5	4	0.8
<b>WPV 12-N-Slst</b>			12	2.5	5	1.0
<b>WPV 16-N-Slst</b>			16	3.0	5	1.3
<b>WPV 20-N-Slst</b>			20	3.0	5	1.6
<b>WPV 25-N-Slst</b>			25	4.0	6	2.0

# HCP 直角端銑刀 Shoulder/Cutting End Mills(HCP)

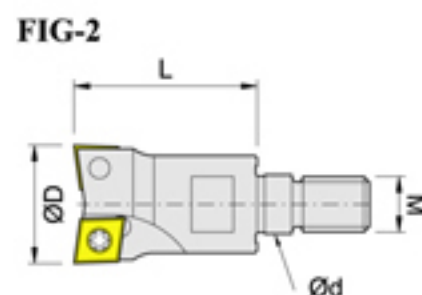


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
CP0903-16-1T-150	16	150	16	30	1	CPMT090308	MS4009A	TF15
CP0903-16-1T-200		200						
CP0903-17-1T-150	17	150	16	30	1			
CP0903-17-1T-200		200						
CP0903-21-2T-150	21	150	20	30	2			
CP0903-21-2T-200		200						
CP0903-21-2T-250		250						
CP0903-25-2T-150	25	150	25	40	2			
CP0903-25-2T-200		200						
CP0903-26-2T-150	26	150	25	40	2			
CP0903-26-2T-200		200						
CP0903-26-2T-250		250						
CP0903-33-2T-150	33	150	32	40	2	CPMT090308	MS4011A	
CP0903-33-2T-200		200						
CP0903-33-2T-250		250						
CP0903-33-2T-300		300						
CP0903-33-3T-150	33	150	32	40	3			
CP0903-33-3T-200		200						
CP0903-33-3T-250		250						
CP0903-33-3T-300		300						
CP1204-33-2T-150	33	150	32	40	2	CPMT120408	MS5011A	TF20
CP1204-33-2T-200		200						
CP1204-33-2T-250		250						
CP1204-33-2T-300		300						
CP1204-33-2T-350		350						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
AJC17-3T-M08	17	M8	8.5	23	3	CCMT0602..	MS2506A	TF9
AJC21-4T-M10	21	M10	10.5	30	4			
AJC26-5T-M12	26	M12	12.5	35	5			

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm				
	CY250		lc	s	r	d1	θ°
CCMT060204	●		6.35	2.38	0.4	2.8	7
CPMT090308	●		9.525	3.18	0.8	4.4	11
CPMT120408	●		12.7	4.76	0.8	5.5	11
CPMT080204Z	●		6.35	2.38	0.4	2.8	11
CPMT090204Z	●		9.525	2.38	0.4	4.0	11
CPMT120308Z	●		12.7	3.18	0.8	4.5	11
CPMT160408Z	●		15.875	4.76	0.8	5.5	11



FIG-1

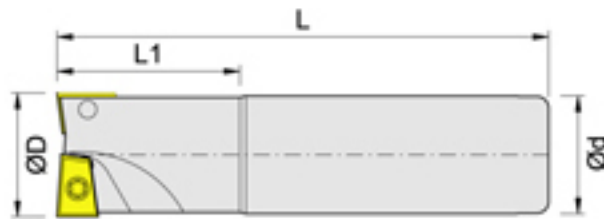


FIG-2

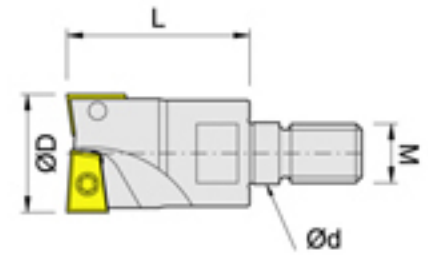






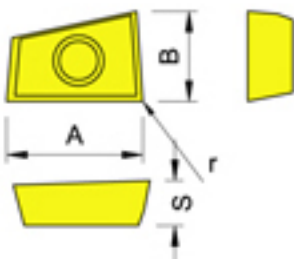
FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
AQXR16-2T-150	16	150	16	30	2	QOG/MT0830R-G1/M2	MS2206A	TF7
AQXR16-2T-200		200						
AQXR17-2T-150	17	150	16	26	2			
AQXR17-2T-200		200						
AQXR20-2T-150	20	150	20	35	2	QOG/MT1035R-G1/M2	MS2506A	TF9
AQXR20-2T-200		200						
AQXR21-2T-150	21	150	20	32	2			
AQXR21-2T-200		200						
AQXR25-2T-150	25	150	25	40	2	QOG/MT1342R-G1/M2	MS3008A	TF9
AQXR25-2T-200		200						
AQXR26-2T-150	26	150	25	38	2			
AQXR26-2T-200		200						
AQXR32-2T-150	32	150	32	45	2	QOG/MT1651R-G1/M2	MS4011A	TF15
AQXR32-2T-200		200						
AQXR33-2T-150	33	150	32	38	2			
AQXR33-2T-200		200						
AQXR33-2T-250		250						
AQXR33-2T-300		300						
AQXR33-2T-350		350						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
AQXR16-2T-M08	16	M8	8.5	25	2	QOG/MT0830R-G1/M2	MS2206A	TF7
AQXR17-2T-M08	17							
AQXR20-2T-M10	20	M10	10.5	32	2	QOG/MT1035R-G1/M2	MS2506A	TF9
AQXR21-2T-M10	21							
AQXR25-2T-M12	25	M12	12.5	35	2	QOG/MT1342R-G1/M2	MS3008A	TF9
AQXR26-2T-M12	26							
AQXR32-2T-M16	32	M16	17	43	2	QOG/MT1651R-G1/M2	MS4011A	TF15
AQXR33-2T-M16	33							

Ordering code	GRADE 材質		Insert Shape 	Dimensions,mm			
	VP15TF	HT110		A	B	S	r
QOMT0830R-M2	●			8.4	5.5	3	0.8
1035R-M2	●			10.6	7	3.5	0.8
1342R-M2	●			13.1	8.7	4.2	0.8
1651R-M2	●			16.5	11	5.1	0.8
QOGT0830R-G1	●	●		8.4	5.5	3	0.8
1035R-G1	●	●		10.6	7	3.5	0.8
1342R-G1	●	●		13.1	8.7	4.2	0.8
1651R-G1	●	●		16.5	11	5.1	0.8

# ASJ 鑽銑刀 Boring&Milling End Mills(ASJ)



FIG-1

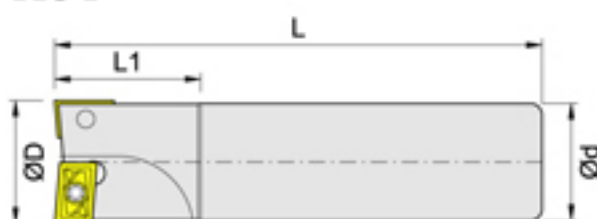


FIG-2

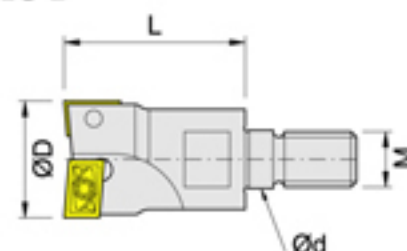


FIG-1 Ordering code	Dimensions,mm				No of Flute		Insert		Screw	Wrench
	D	L	d	L1	End	Periphery	On End	On Periphery		
ASJ20-2T-150	20	150	20	35	1	1	ADMT1003..L	ACMT1003..R	MS2506A	TF9
ASJ20-2T-200		200								
ASJ21-2T-150	21	150	20	25	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ21-2T-200		200								
ASJ25-2T-150	25	150	25	40	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ25-2T-200		200								
ASJ26-2T-150	26	150	25	30	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ26-2T-200		200								
ASJ32-2T-150	32	150	32	50	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ32-2T-200		200								
ASJ32-2T-250		250								
ASJ33-2T-150	33	150	32	30	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ33-2T-200		200								
ASJ33-2T-250		250								
ASJ35-2T-150	35	150	32	28	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ35-2T-200		200								
ASJ35-2T-250		250								

FIG-2 Ordering code	Dimensions,mm				No of Flute		Insert		Screw	Wrench
	D	M	d	L	End	Periphery	On End	On Periphery		
ASJ20-2T-M10	20	M10	10.5	30	1	1	ADMT1003..L	ACMT1003..R	MS2506A	TF9
ASJ21-2T-M10										
ASJ25-2T-M12	25	M12	12.5	35	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ26-2T-M12										
ASJ32-2T-M16	32	M16	17	43	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ33-2T-M16	33									
ASJ35-2T-M16	35	M16	17	43	1	1	ADMT12T3..L	APMT12T3..R	MS3008A	TF9



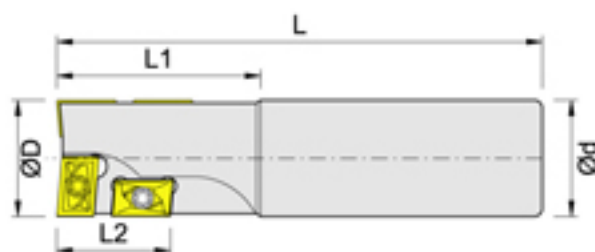
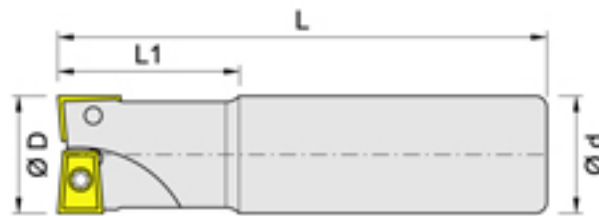


FIG-1 Ordering code	Dimensions, mm					No of Flute		Insert		Screw	Wrench
	D	L	d	L1	L2	End	Periphery	On End	On Periphery		
ASJ20-4T-150	20	150	20	35	20	1	3	ADMT1003..L	ACMT1003..R	MS2506A	TF9
ASJ20-4T-200		200									
ASJ21-4T-150	21	150	20	35	20	1	3	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ21-4T-200		200									
ASJ25-4T-150	25	150	25	40	25	1	3	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ25-4T-200		200									
ASJ26-4T-150	26	150	25	40	25	1	3	ADMT12T3..L	APMT12T3..R	MS3008A	TF9
ASJ26-4T-200		200									
ASJ32-4T-150	32	150	32	50	32	1	3	APMT1604..L	APMT1504..R	MS4011A	TF15
ASJ32-4T-200		200									
ASJ32-4T-250		250									

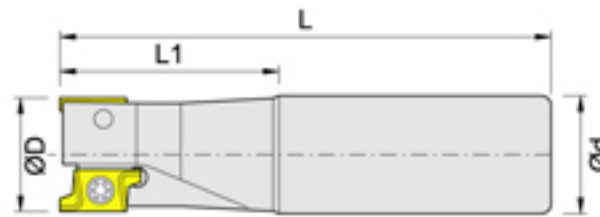
Ordering code	GRADE 材質	Insert Shape	Dimensions, mm				
	CY250		A	B	S	r	$\theta^\circ$
ACMT100308R	●	<p>外刃 Periphery</p>	10.1	6.35	3.4	0.8	7
APMT12T308R	●		13.14	7.93	3.9		11
APMT150408R	●		15.88	9.53	4.76		11
ADMT100308L	●	<p>底刃 On End</p>	10.4	6.35	3.18	0.8	15
ADMT12T308L	●		12.6	7.93	3.9		11
APMT160408L	●		16.45	9.53	4.76		11
APMT170408L	●		17.6	9.53	4.76		11



# PG 鑽銑刀 Boring&Milling End Mills(PG)



Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
PG20-150	20	150	20	30	2	PG100308 N-81	MS2506A	TF9
PG20-200		200						
PG21-150	21	150	20	25	2	PG130408 N-81	MS3008A	TF9
PG21-200		200						
PG25-150	25	150	25	40	2	PG130408 N-81	MS3008A	TF9
PG25-200		200						
PG26-150	26	150	25	30	2	PG160408 N-81	MS4011A	TF15
PG26-200		200						
PG32-150	32	150	32	45	2	PG160408 N-81	MS4011A	TF15
PG32-200		200						
PG32-250		250						
PG33-150	33	150	32	35	2	PG160408 N-81	MS4011A	TF15
PG33-200		200						
PG33-250		250						

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm			
	5020			A	B	S	r
PG100308 N-81	●			10.5	7.5	3.4	0.8
PG130408 N-81	●			13.0	9.4	4.5	0.8
PG160408 N-81	●			16.52	11.4	4.76	0.8



Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
RT07-06-1T-100	6	100	10	30	1	RT 07 02 04 R81	MS2004A	TF6
RT07-08-1T-100	8	100	10	30	1			
RT07-10-2T-150	10	150	10	25	2			
RT07-11-2T-150	11	150	10	20	2			
RT07-12-2T-150	12	150	12	30	2			
RT07-13-2T-150	13	150	12	20	2			
RT07-16-3T-150	16	150	16	30	3			
RT07-16-3T-200		200						
RT07-17-3T-150	17	150	16	25	3			
RT07-17-3T-200		200						
RT07-20-4T-150	20	150	20	30	4			
RT07-20-4T-200		200						
RT10-16-2T-150	16	150	16	30	2	RT 10 03 .....	MS2506B	TF9
RT10-16-2T-200		200						
RT10-17-2T-150	17	150	16	25	2			
RT10-17-2T-200		200						
RT10-20-2T-150	20	150	20	30	2			
RT10-20-2T-200		200						
RT10-20-3T-150		150	20	30	3			
RT10-20-3T-200		200						
RT10-21-2T-150	21	150	20	25	2			
RT10-21-2T-200		200						
RT10-21-3T-150		150	20	25	3			
RT10-21-3T-200		200						
RT10-25-2T-150	25	150	25	40	2			
RT10-25-2T-200		200						
RT10-25-3T-150		150	25	40	3			
RT10-25-3T-200		200						
RT10-26-2T-150	26	150	25	25	2			
RT10-26-2T-200		200						
RT10-26-3T-150		150	25	25	3			
RT10-26-3T-200		200						
RT10-32-4T-150	32	150	32	40	4			
RT10-32-4T-200		200						
RT10-32-5T-150		150	32	40	5			
RT10-32-5T-200		200						
RT10-33-4T-150	33	150	32	35	4			
RT10-33-4T-200		200						
RT10-33-5T-150		150	32	35	5			
RT10-33-5T-200		200						
RT10-35-4T-150	35	150	32	35	4			
RT10-35-4T-200		200						
RT10-35-5T-150		150	32	35	5			
RT10-35-5T-200		200						

# RT 直角端銑刀 Shoulder/Cutting End Mills(RT)

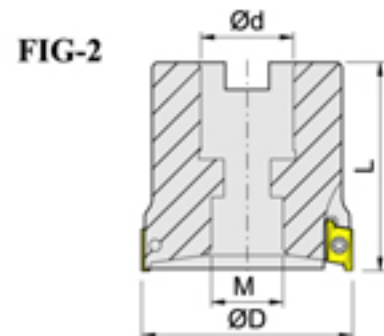
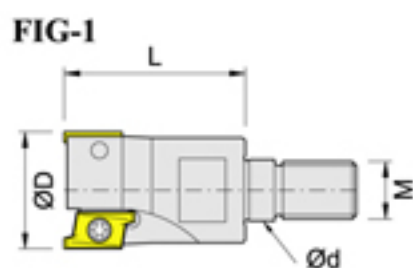
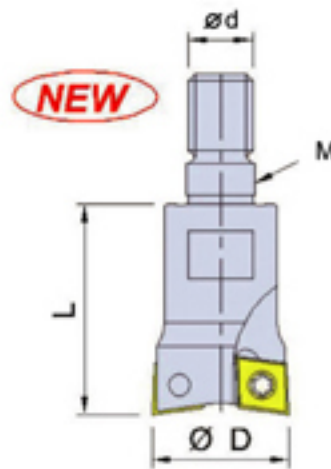




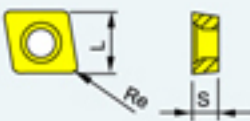
FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
RT07-10-2T-M05	10	M5	5.5	18	2	RT 07 02 04 R81	MS2004A	TF6
RT07-11-2T-M05	11							
RT07-12-2T-M06	12	M6	6.5	20	2			
RT07-13-2T-M06	13					RT 10 03 .....	MS2506B	TF9
RT10-16-2T-M08	16	M8	8.5	30	2			
RT10-17-2T-M08	17							
RT10-20-3T-M10	20	M10	10.5	30	3			
RT10-21-2T-M10	21	M10	10.5	30	2			
RT10-21-3T-M10					3			
RT10-25-3T-M12	25	M12	12.5	35	3			
RT10-26-3T-M12	26							
RT10-32-4T-M16	32	M16	17	43	4			
RT10-32-5T-M16					5			
RT10-33-4T-M16	33	M16	17	43	4			
RT10-35-4T-M16	35	M16	17	43	4			
RT10-35-5T-M16					5			

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	d	L	M				
RT10-50-4T-22R	50	22.0	50	11	4	RT 10 03 .....	MS2508B	TF9
RT10-50-6T-22R					6			

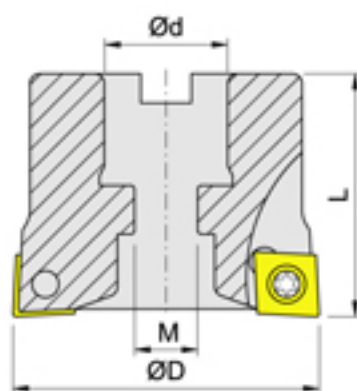
Ordering code	GRADE 材質		Insert Shape	Dimensions,mm				
	5020	KX15		D	S	M	E	W
RT070204 R-81	●	●		4.3	2.38	2.64	1.5	1.3
RT100304 R-81	●	●		6.35	3.4	3.94	2.1	1.8
RT100304 R-31				6.35	3.4	3.94	2.1	1.8
RT100308 R-31		●		6.35	3.4	3.94	2.1	1.8





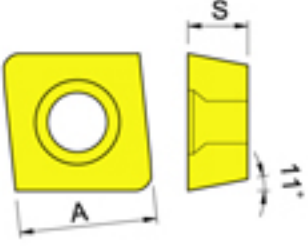
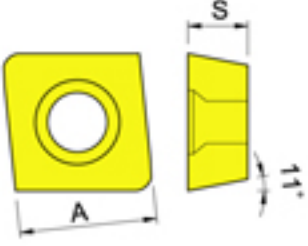
D	Ordering code	Dimensions,mm			Teeth	Insert	Screw 	Wrench 
		M	d	L				
13	C905T1-13-2T-M06	M6	6.5	25	2	C9MT05T1..	MS2005B	TF6
17	C905T1-17-3T-M08	M8	8.5	25	3			
21	C905T1-21-3T-M10	M10	10.5	30	3			
26	C905T1-26-4T-M12	M12	12.5	35	4			
33	C905T1-33-5T-M16	M16	17	40	5			

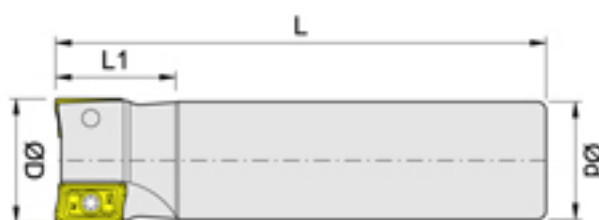
Insert Shape 	Ordering code	GRADE 材質 HD-30	Dimensions,mm		
			L	S	Re
	C9MT05T110		5	2.0	1
	C9MT05T105		5	2.0	0.5

# MP1205 直角端銑刀 Shoulder/Cutting End Mills(MP1205)



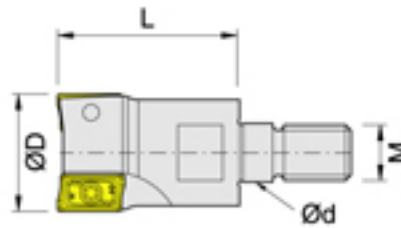
Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	d	L	M				
MP1205-50-3T-22R	50	22.0	50	11	3	MPHW120516ZEL	MS5011A	TF20
MP1205-63-3T-25.4R	63	25.4	50	13	3			
MP1205-63-4T-25.4R					4			



Ordering code	GRADE 材質	Insert Shape 	Dimensions,mm	
	CY100H		A	S
MPHW120516ZEL	CY100H		12.7	5.56
MPHW120516ZFL				
MPMT120508ZEL				
MPMT120516ZEL				

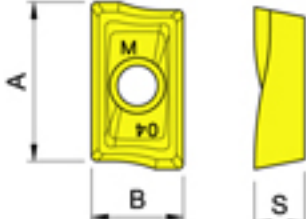


Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 																											
	D	L	d	L1																															
AO1236-16-2T-150	16	150	16	28	2	AOMT-1236..	MS2506B	TF9																											
AO1236-16-2T-200		200																																	
AO1236-17-2T-150	17	150	16	20	2				AOMT-1236..	MS2506B	TF9																								
AO1236-17-2T-200		200																																	
AO1236-18-2T-150	18	150	20	25	2							AOMT-1236..	MS2506B	TF9																					
AO1236-18-2T-200		200																																	
AO1236-19-2T-150	19	150	20	25	2										AOMT-1236..	MS2506B	TF9																		
AO1236-19-2T-200		200																																	
AO1236-20-2T-150	20	150	20	30	2													AOMT-1236..	MS2506B	TF9															
AO1236-20-2T-200		200																																	
AO1236-21-2T-150	21	150	20	20	2																AOMT-1236..	MS2506B	TF9												
AO1236-21-2T-200		200																																	
AO1236-22-2T-150	22	150	20	30	2																			AOMT-1236..	MS2506B	TF9									
AO1236-22-2T-200		200																																	
AO1236-23-2T-150	23	150	25	30	2																						AOMT-1236..	MS2506B	TF9						
AO1236-23-2T-200		200																																	
AO1236-24-3T-150	24	150	25	35	3																									AOMT-1236..	MS2506B	TF9			
AO1236-24-3T-200		200																																	
AO1236-25-3T-150	25	150	25	35	3																												AOMT-1236..	MS2506B	TF9
AO1236-25-3T-200		200																																	
AO1236-26-3T-150	26	150	25	25	3	AOMT-1236..	MS2506B	TF9																											
AO1236-26-3T-200		200																																	
AO1236-32-4T-150	32	150	32	40	4				AOMT-1236..	MS2506B	TF9																								
AO1236-32-4T-200		200																																	
AO1236-33-4T-150	33	150	32	32	4							AOMT-1236..	MS2506B	TF9																					
AO1236-33-4T-200		200																																	
AO1236-35-4T-150	35	150	32	32	4										AOMT-1236..	MS2506B	TF9																		
AO1236-35-4T-200		200																																	

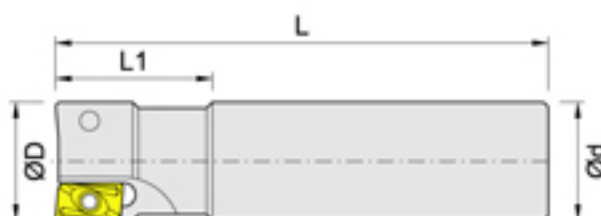
# AO1236 直角端銑刀 *Shoulder/Cutting End Mills(AO1236)*





Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
AO1236-16-2T-M08	16	M8	8.5	25	2	AOMT-1236..	MS2506B	TF9
AO1236-17-2T-M08	17							
AO1236-20-2T-M10	20	M10	10.5	30	2	AOMT-1236..	MS2506B	TF9
AO1236-21-2T-M10	21							
AO1236-25-3T-M12	25	M12	12.5	35	3	AOMT-1236..	MS2506B	TF9
AO1236-26-3T-M12	26							
AO1236-32-3T-M16	32	M16	17	43	3	AOMT-1236..	MS2506B	TF9
AO1236-32-4T-M16					4			
AO1236-33-3T-M16	33	M16	17	43	3	AOMT-1236..	MS2506B	TF9
AO1236-33-4T-M16					4			
AO1236-35-3T-M16	35	M16	17	43	3	AOMT-1236..	MS2506B	TF9
AO1236-35-4T-M16					4			

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	VP15TF		A	B	S	r
AOMT123604PEER-M	●		12	6.6	3.6	0.4
AOMT123608PEER-M	●					0.8





Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 																											
	D	L	d	L1																															
BAP3-16-2T-100	16	100	16	28	2	APMT1135....	MS2506A	TF9																											
BAP3-16-2T-150		150																																	
BAP3-17-2T-150	17	150	16	20	2				APMT1135....	MS2506A	TF9																								
BAP3-17-2T-200		200																																	
BAP3-18-2T-100	18	100	20	28	2							APMT1135....	MS2506A	TF9																					
BAP3-18-2T-150		150																																	
BAP3-20-2T-100	20	100	20	28	2										APMT1135....	MS2506A	TF9																		
BAP3-20-2T-150		150																																	
BAP3-21-2T-150	21	150	20	25	2													APMT1135....	MS2506A	TF9															
BAP3-21-2T-200		200																																	
BAP3-24-3T-125	24	125	25	35	3																APMT1135....	MS2506A	TF9												
BAP3-25-3T-150	25	150	25	35	3																			APMT1135....	MS2506A	TF9									
BAP3-25-3T-200		200																																	
BAP3-25-4T-150	25	150	25	35	4																						APMT1135....	MS2506A	TF9						
BAP3-25-4T-200		200																																	
BAP3-26-4T-150	26	150	25	35	4																									APMT1135....	MS2506A	TF9			
BAP3-26-4T-200		200																																	
BAP3-32-4T-150	32	150	32	35	4																												APMT1135....	MS2506A	TF9
BAP3-32-4T-200		200																																	
BAP4-25-2T-125	25	125	25	40	2																														
BAP4-25-2T-150		150																																	
BAP4-25-2T-200		200																																	
BAP4-32-2T-150	32	150	32	45	2	APMT1604....	MS4011A	TF15																											
BAP4-32-2T-200		200																																	
BAP4-32-3T-150		150	32	45	3		APMT1604....		MS4011A	TF15																									
BAP4-32-3T-200		200																																	

# BAP 直角端銑刀 Shoulder/Cutting End Mills(BAP)

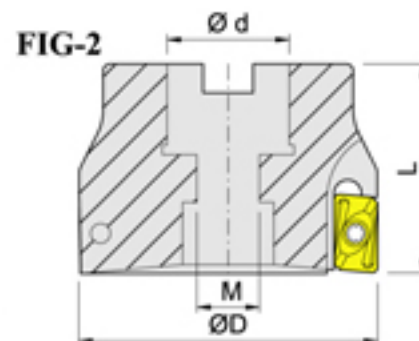
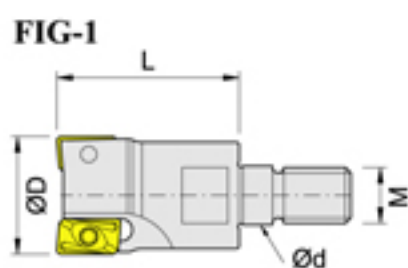






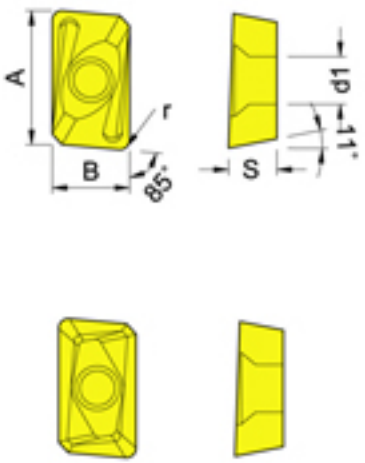
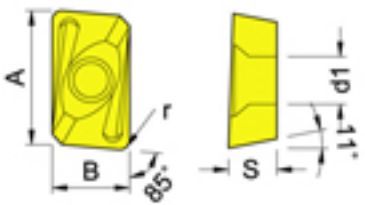
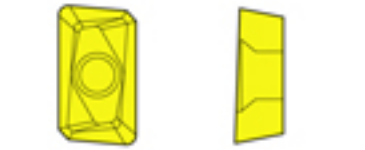
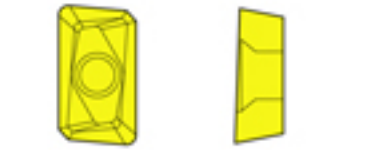
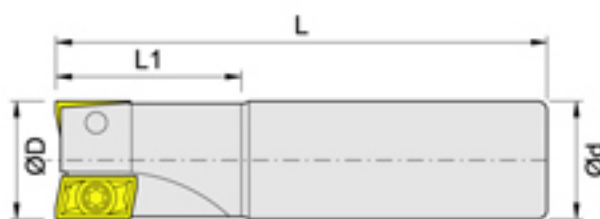
FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
BAP3-16-2T-M08	16	M8	8.5	25	2	APMT1135....	MS2506A	TF9
BAP3-17-2T-M08	17							
BAP3-20-2T-M10	20	M10	10.5	30	2			
BAP3-21-2T-M10	21							
BAP3-25-3T-M12	25	M12	12.5	35	3			
BAP3-26-3T-M12	26							

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	d	L	M				
BAP4-50-4T-22R	50	22.0	50	10	4	APMT1604....	MS4011A	TF15
BAP4-50-4T-25.4R		25.4	50	13				
BAP4-63-5T-25.4R	63	25.4	50	13	5			
BAP4-66-5T-25.4R	66	25.4	50	13	5			
BAP4-80-6T-25.4R	80	25.4	60	13	6			
BAP4-100-8T-31.75R	100	31.75	50	45	8			

Ordering code	GRADE 材質			Insert Shape 	Dimensions,mm				
	HD20	VP15TF	HTI10		A	B	S	d1	r
APMT1135PDER-H2	●				11	6.35	3.5	2.85	0.8
APMT1604PDER-H2	●				16.5	9.525	4.76	4.4	
APMT1135PDER-M2	●	●			11	6.35	3.5	2.85	0.8
APMT1604PDER-M2	●	●			16.5	9.525	4.76	4.4	
APMT1135PDFR-G2			●		11	6.35	3.5	2.85	0.8
APMT1604PDFR-G2			●		16.5	9.525	4.76	4.4	



Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 			
	D	L	d	L1							
AHU10-16-2T-100	16	100	16	30	2	JDMT1003..R	MS2506A	TF9			
AHU10-16-2T-150		150									
AHU10-20-3T-110	20	110	20	30	3						
AHU10-20-3T-150		150									
AHU10-25-4T-125	25	125	25	35	4						
AHU10-25-4T-150		150									
AHU10-25-2T-125	25	125	25	40	2						
AHU10-25-2T-150		150									
AHU15-30-2T-125	30	125	25	35	2				JDMT1505..R	MS4011A	TF15
AHU15-30-2T-150		150									
AHU15-32-3T-150	32	150	32	45	3						
AHU15-32-3T-200		200									
AHU15-35-3T-150	35	150	32	45	3						
AHU15-35-3T-200		200									

Ordering code	GRADE 材質	Insert Shape	Dimensions,mm			
	PTH30E		A	B	S	r
JDMT100308R	●		10.8	6.1	3.5	0.4
JDMT150508R	●		15.8	9.1	5.0	0.4

# XO0602 直角端銑刀 Shoulder/Cutting End Mills(XO0602)



FIG-1

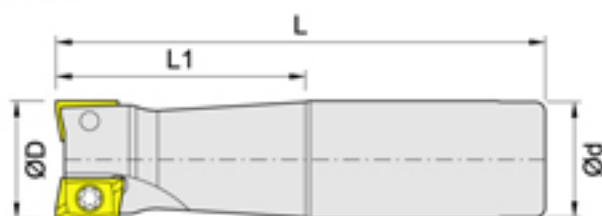


FIG-2

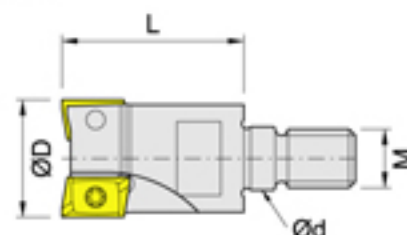






FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
XO0602-10-2T-120	10	120	10	20	2	XOMX0602..	MS1804A	TF6
XO0602-11-2T-110	11	110	10	16	2			
XO0602-12-2T-100	12	100	12	25	2			
XO0602-12-2T-150		150						
XO0602-12-3T-100	12	100	12	25	3			
XO0602-12-3T-150		150						
XO0602-13-2T-110	13	110	12	18	2			

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
XO0602-10-2T-M05	10	M5	5.5	16	2	XOMX0602..	MS1804A	TF6
XO0602-11-2T-M05	11	M5	5.5	16	2			
XO0602-12-2T-M06	12	M6	6.5	18	2			
XO0602-12-3T-M06	12	M6	6.5	18	3			
XO0602-13-2T-M06	13	M6	6.5	18	2			
XO0602-13-3T-M06	13	M6	6.5	18	3			

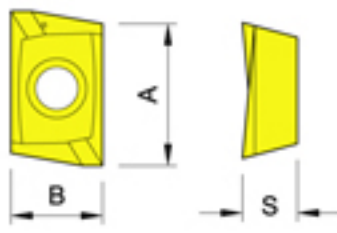
Ordering code	GRADE 材質		Insert Shape 	Dimensions,mm			
	F40M	F30M		A	B	S	r
XOMX060202R-M05	●			6.91~6.94	4.09	2.45	0.2
XOMX060204R-M05							
XOMX060208R-M05							
XOMX060216R-M05							



FIG-1



FIG-2

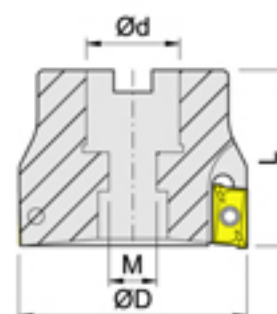






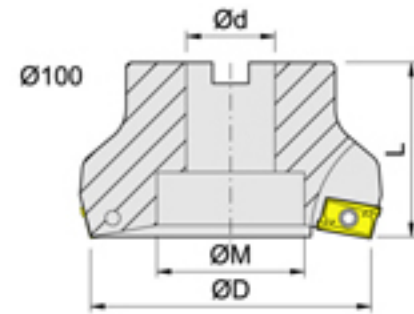
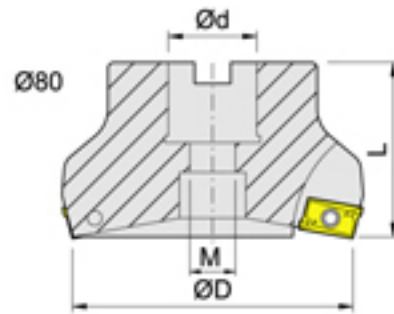


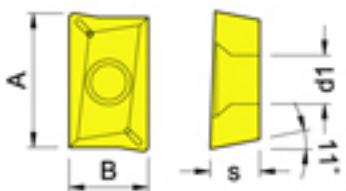
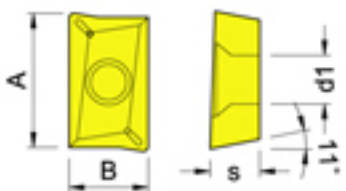
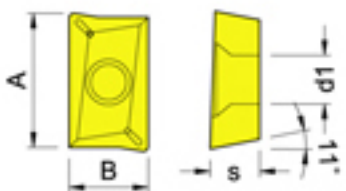
FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
CAP3-16-2T-100	16	100	16	28	2	APKT1003..	MS2506A	TF9
CAP3-16-2T-150		150						
CAP3-18-2T-150	18	150	20	30	2	APKT1003..	MS2506A	TF9
CAP3-18-2T-200		200						
CAP3-20-2T-100	20	100	20	30	2	APKT1003..	MS2506A	TF9
CAP3-20-2T-150		150						
CAP3-25-2T-125	25	125	25	40	2	APKT1604..	MS4009A	TF15
CAP3-25-2T-150		150						
CAP3-32-3T-150	32	150	32	45	3	APKT1604..	MS4011A	TF15
CAP3-32-3T-200		200						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	d	L	M				
CAP4-40-3T-25.4R	40	25.4	50	13	3	APKT1604..	MS4011A	TF15
CAP4-50-4T-25.4R	50	25.4	50	13	4	APKT1604..	MS4011A	TF15
CAP4-63-5T-25.4R	63	25.4	55	13	5	APKT1604..	MS4011A	TF15
CAP4-66-5T-25.4R	66	25.4	55	13	5	APKT1604..	MS4011A	TF15
CAP4-80-6T-25.4R	80	25.4	60	13	6	APKT1604..	MS4011A	TF15
CAP4-100-8T-31.75R	100	31.75	50	45	8	APKT1604..	MS4011A	TF15

# CAP 銑刀 Milling Cutter(CAP)



Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	d	L	M				
CAPW4-80-6T-25.4R	80	25.4	50	13	6	APKT1604..	MS4011A	TF15
CAPW4-100-7T-31.75R	100	31.75	50	45	7			

Ordering code	GRADE 材質			Insert Shape 	Dimensions,mm				
	LCM20	IC656	ASC550		A	B	S	d1	
APKT1003PDTR	●				10.5	6.7	3.5	2.85	
APKT100308PDTR-RM		●				16.5	9.52	5.3	4.4
APKT1604PDER			●						



**FIG-1**



**FIG-2**

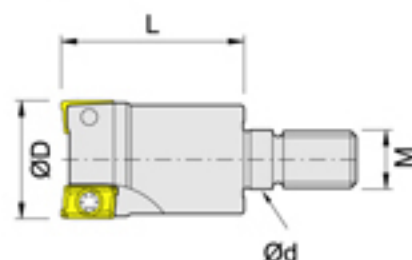






FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
TE90AX06-08-1T-120L	8	10	120	20	2	AXMT0602..	MS1804A	TF6
TE90AX06-10-2T-75L	10		75	16				
TE90AX06-10-2T-120L	10		120	16				
TE90AX06-11-2T-120L	11		120	12				
TE90AX06-12-2T-150L	12	12	150	16				
TE90AX06-13-3T-150L	13		16	3				
TE90AX06-16-3T-150L	16	16	25					
TE90AX06-16-4T-150L	16		25	4				
TE90AX06-17-3T-150L	17		20	3				
TE90AX06-17-4T-150L	17		20	4				
TE90AX09-12-1T-150L	12	12	150	20	2	AXMT0903..	MS2506B	TF9
TE90AX09-14-1T-150L	14	16	24					
TE90AX09-16-2T-150L	16		24					
TE90AX09-17-2T-150L	17		20					
TE90AX09-18-2T-150L	18	20	30					
TE90AX09-20-3T-150L	20		30	3				
TE90AX09-21-3T-150L	21		20					
TE90AX09-25-3T-150L	25	25	35					
TE90AX09-25-4T-150L	25		35	4				
TE90AX09-26-3T-150L	26		25	3				
TE90AX09-35-4T-150L	35	32	32	4				

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
TE90AX06-09-1T-M04	9	4.5	14	M4	1	AXMT0602..	MS1804A	TF6
TE90AX06-11-2T-M05	11	5.5	16	M5	2			
TE90AX06-13-3T-M06	13	6.5	18	M6	3			
TE90AX06-17-4T-M08	17	8.5	23	M8	4			
TE90AX09-17-2T-M08	17	8.5	23	M8	2	AXMT0903..	MS2506B	TF9
TE90AX09-21-3T-M10	21	10.5	30	M10	3			
TE90AX09-26-3T-M12	26	12.5	35	M12	3			
TE90AX09-35-3T-M16	35	17	43	M16	3			

# TE90 直角端銑刀 Shoulder/Cutting End Mills

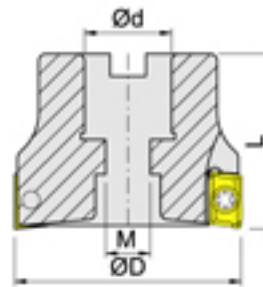




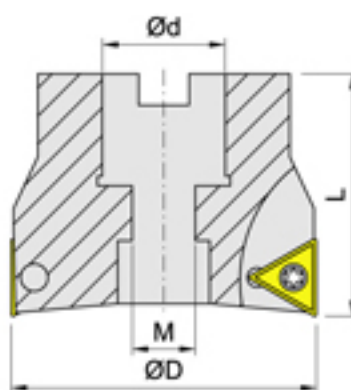




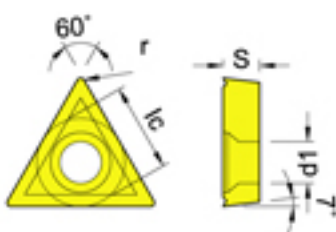
FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
TE90AX09-50-5T-22R	50	50	22.0	11	5	AXMT0903..	MS2506A	TF9
TE90AX09-63-6T-25.4R	63	50	25.4	13	6			
TE90AX09-80-8T-25.4R	80				8			

Insert Shape	Ordering code	GRADE 材質	Dimensions,mm			
			A	B	S	R'
	AXMT0602..	TT9030	6.1	4.1	2.6	0.2
		TT9080				0.4
		TT6030				0.8
	AXMT0903..	TT6080	9.5	6.2	3.6	0.5
						0.8
						1.6

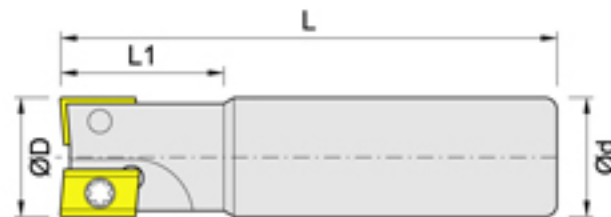






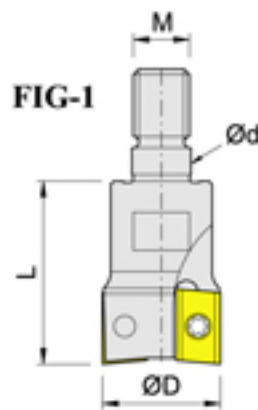
Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	d	L	M				
<b>MTC16-63-4T-25.4R</b>	63	25.4	50	13	4	TC..16T3..	MS4011A	TF15

Ordering code	GRADE 材質	Insert Shape 	Dimensions,mm		
	CD10		lc	s	r
<b>TCGT16T304</b>	●		9.525	3.97	0.4
<b>TCGT16T308</b>	●		9.525	3.97	0.8

# UEX 直角端銑刀 Shoulder/Cutting End Mills(UEX)



Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
UEX12-1T-150	12	150	12	25	1	APET-120204	MS3507A	TF15
UEX13-1T-150	13	150	12	20	1			
UEX16-1T-150	16	150	16	30	1			
UEX16-1T-200		200						
UEX17-1T-150	17	150	16	30	1			
UEX17-1T-200		200						
UEX20-2T-150	20	150	20	35	2			
UEX20-2T-200		200						
UEX20-2T-250		250						
UEX21-2T-150	21	150	20	30	2			
UEX21-2T-200		200						
UEX21-2T-250		250						
UEX25-2T-150	25	150	25	40	2	ADET160308	MS4009A	TF15
UEX25-2T-200		200						
UEX25-2T-250		250						
UEX26-2T-150	26	150	25	30	2			
UEX26-2T-200		200						
UEX26-2T-250		250						
UEX32-2T-150	32	150	32	45	2			
UEX32-2T-200		200						
UEX32-2T-250		250						
UEX32-3T-150	32	150	32	45	3			
UEX32-3T-200		200						
UEX32-3T-250		250						
UEX32-3T-300		300						
UEX33-2T-200	33	200	32	30	2			
UEX33-2T-250		250						
UEX33-2T-300		300						
UEX33-3T-200	33	200	32	30	3			
UEX33-3T-250		250						
UEX33-3T-300		300						
UEX33-3T-350		350						
UEX33-3T-400		400						



**FIG-2**

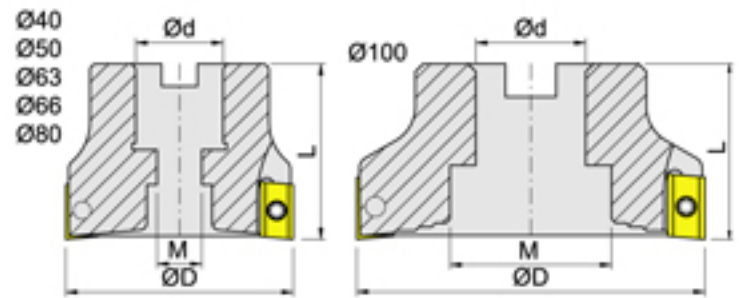


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	M	d	L				
UEX16-1T-M08	16	M8	8.5	28	1	APET-120204	MS3507A	TF15
UEX17-1T-M08	17	M8	8.5	28	1			
UEX17-2T-M08	17	M8	8.5	28	2			
UEX20-2T-M10	20	M10	10.5	30	2			
UEX21-2T-M10	21							
UEX25-3TS-M12	25	M12	12.5	35	3			
UEX26-3TS-M12	26							
UEX32-4TS-M16	32	M16	17	43	4			
UEX33-4TS-M16	33							
UEX25-2T-M12	25	M12	12.5	35	2			
UEX26-2T-M12	26							
UEX32-3T-M16	32	M16	17	43	3			
UEX33-3T-M16	33							

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	d	L	M				
UEX40-3T-22R	40	22	40	11	3	ADET160308	MS4009A	TF15
UEX50-4T-22R	50	22	50	11	4			
UEX50-4T-25.4R	50	25.4	50	13	4			
UEX66-5T-25.4R	66	25.4	50	13	5			
UEX80-6T-25.4R	80	25.4	50	13	6			
UEX100-7T-31.75R	100	31.75	50	45	7			

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm					
	CH550	HC844		A	B	S	r	d1	θ°
APNT120208SR	●			12.7	7.938	2.5	0.4	3.8	11
APET120208SR	●			15.875	9.525	3.18	0.4	4.4	15
APNT160308SR	●								
APET160308SR	●								

# MEA 直角端銑刀 Shoulder/Cutting End Mills(MEA)

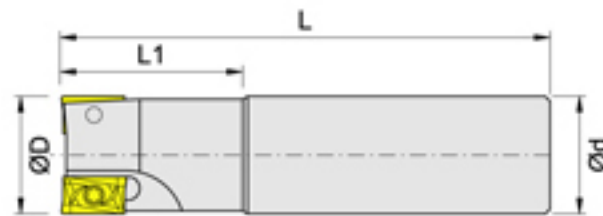


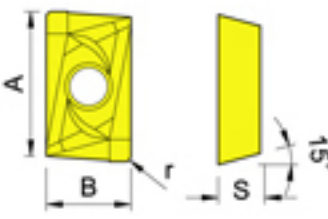


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
MEA3-12-1T-120	12	120	12	25	1	NDKW090304ER	MS2506A	TF9
MEA3-14-1T-120	14	120	16	28				
MEA3-16-2T-150	16	150	16	30	2			
MEA3-16-2T-200		200						
MEA3-17-2T-150	17	150	16	20	2			
MEA3-17-2T-200		200						
MEA3-18-2T-150	18	150	20	30	2			
MEA3-18-2T-200		200						
MEA3-20-2T-150	20	150	20	30	2			
MEA3-20-2T-200		200						
MEA3-21-2T-150	21	150	20	20	2			
MEA3-21-2T-200		200						
MEA3-25-2T-150	25	150	25	40	3			
MEA3-25-2T-200		200						

Ordering code	GRADE 材質	Insert Shape 	Dimensions,mm			
	PR660		A	B	S	r
NDKT090304ER-V	●		9.5	6.35	3.18	0.4

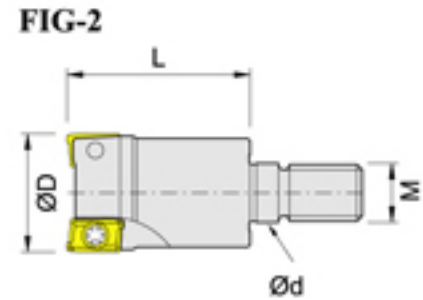
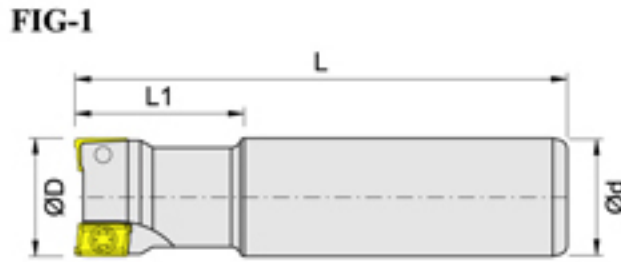






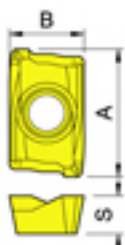

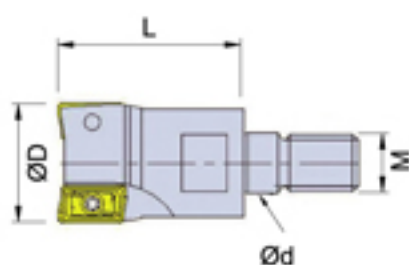


FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
AX1235-16-2T-150	16	150	16	25	2	AXMT1235....	MS3008A	TF9
AX1235-17-2T-150	17	150						
AX1235-20-3T-150	20	150	20	30	3			
AX1235-21-3T-150	21	150						
AX1235-25-4T-150	25	150	25	35	4			
AX1235-26-4T-150	26	150						
AX1235-32-5T-150	32	150	32	40	5			
AX1235-33-5T-150	33	150						

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	M	d	L				
AX1235-16-2T-M08	16	M8	8.5	23	2	AXMT1235....	MS3008A	TF9
AX1235-17-2T-M08	17							
AX1235-20-3T-M10	20	M10	10.5	30	3			
AX1235-21-3T-M10	21							
AX1235-25-4T-M12	25	M12	12.5	35	4			
AX1235-26-4T-M12	26							
AX1235-32-5T-M16	32	M16	17	43	5			
AX1235-33-5T-M16	33							

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm			
	ACP200	ACK200		A	B	S	r
AXMT123504PEER-G				12	7	3.58	0.4
AXMT123508PEER-G	●						0.8
AXMT123512PEER-G							1.2
AXMT123504PEER-H							0.4
AXMT123508PEER-H	●	●					0.8
AXMT123512PEER-H							1.2
AXMT170508PEER-G	●			17.54	10.2	5.59	0.8
AXMT170512PEER-G							1.2
AXMT170516PEER-G							1.6
AXMT170520PEER-G							2.0
AXMT170530PEER-G							3.0
AXMT170508PEER-H	●	●					0.8
AXMT170512PEER-H			1.2				

# SE90 直角端銑刀 *Shoulder/Cutting End Mills(SE90)*



D	Ordering code	Dimensions,mm			Teeth	Insert	Screw 	Wrench 
		M	d	L				
16	SE90AP10-16-2T-M08	M8	8.5	25	2	APMT103508PDER-H	MS2506A	TF8
17	SE90AP10-17-2T-M08							
20	SE90AP10-20-3T-M10	M10	10.5	30	3			
21	SE90AP10-21-3T-M10							
25	SE90AP10-25-3T-M12	M12	12.5	35	3			
26	SE90AP10-26-3T-M12							
32	SE90AP10-32-5T-M16	M16	17	43	5			
33	SE90AP10-33-5T-M16							
35	SE90AP10-35-5T-M16							

Insert Shape 	Ordering code	GRADE 材質 ACZ310 330	Dimensions,mm			
			A	B	S	r
	APMT 103508 PDER-H					0.8
	APMT 160508 PDER-H					0.8

FIG-1



FIG-2



FIG-3



FIG-1 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
C20-VMSP22-120	22	120	20	25	1	SP..0903..	MS4011A	TF15
C16-VMSP26.5-120	26.5	120	16	17	2			
C20-VMSP35-120	35	120	20	17	2			

FIG-2 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
C20-TPR90-120	4	120	20	35	1	TP..1603..	MSR63	PL4

FIG-3 Ordering code	Dimensions,mm				Teeth	Insert	Screw	Wrench
	D	L	d	L1				
C12-TCR90-22-120	25	120	12	30	1	TC..16T3..	MS4011A	TF15

Ordering code	GRADE 材質			Insert Shape	Dimensions,mm			
	GM25	UT120T	SJN01		lc	s	r	d1
SPMT090304-JE	●				9.525	3.18	0.4	4.4
SPMT090308-JE	●				9.525	3.18	0.8	4.4
TPMN160308		●			9.525	3.18	0.8	--
TCGT16T304SR31			●		9.525	3.97	0.4	4.4

# T 型銑刀 T-Slot End Milling Cutter



FIG-1

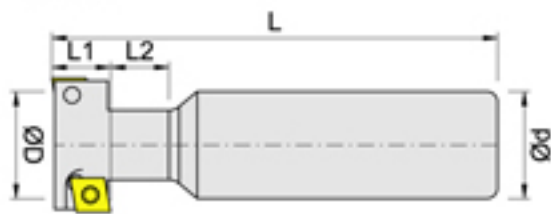


FIG-2

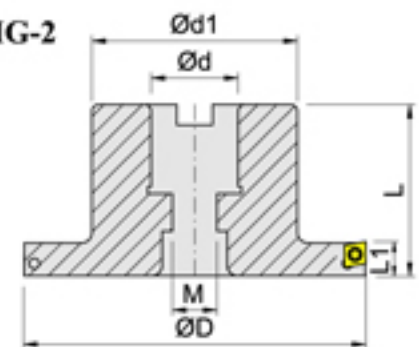
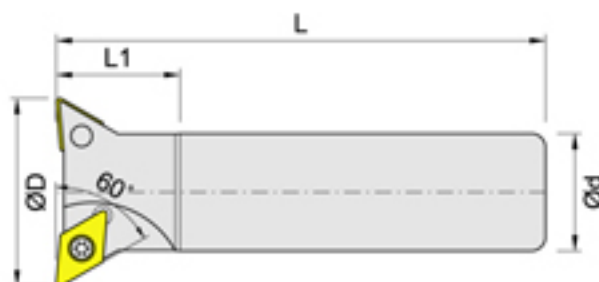




FIG-1 Ordering code	Dimensions,mm					Teeth	Insert	Screw	Wrench
	D	L	d	L1	L2				
CCT11-25-4T-90	25	90	20	11	11	4	CCMT060204	MS2506A	TF9

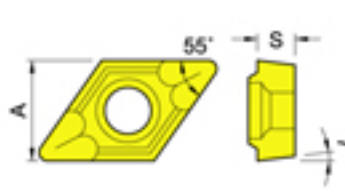
FIG-2 Ordering code	Dimensions,mm						Teeth	Insert	Screw	Wrench
	D	d	d1	L	L1	M				
CCT08-100-8T-25.4R	100	25.4	60	50	8	13	8	CCMT060204	MS2506A	TF9

Ordering code	GRADE 材質		Insert Shape	Dimensions,mm	
	VP15TF	HT110		A	s
CCMT060204				6.35	2.38

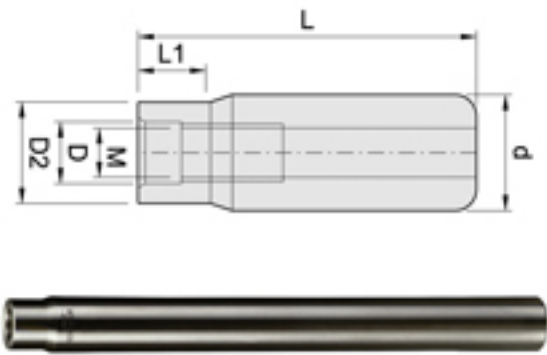
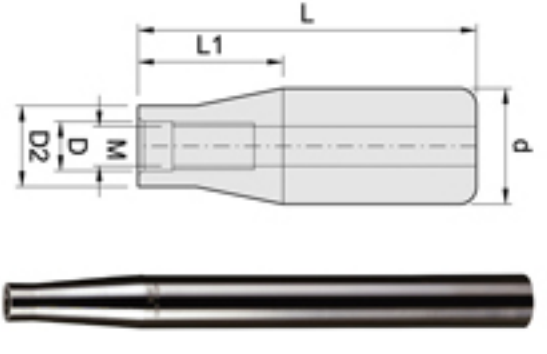
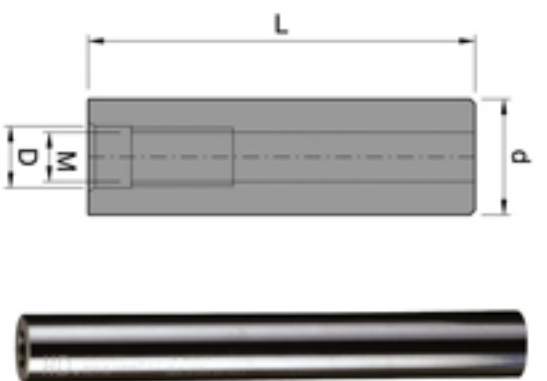




Ordering code	Dimensions,mm				Teeth	Insert	Screw 	Wrench 
	D	L	d	L1				
<b>DCWR60-50-3T-150L</b>	50	150	32	30	3	DCMT11T3..	MS4011A	TF15

Ordering code	GRADE 材質		Insert Shape 	Dimensions,mm	
	VP15TF	HT10		A	s
<b>DCMT070204</b>				6.35	2.38
<b>DCMT11T304</b>				9.525	3.97

# 連接式刀桿 *Extension Adapter*

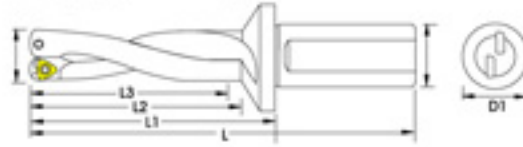
SHAPE	Ordering code	Dimensions,mm					
		L	d	M	D	D2	L1
	MD11-A12-120K	120	12	M6	6.5	11	10
	MD14-A16-150K	150	16	M8	8.5	14	10
	MD14-A16-200K	200					
	MD18-A20-150K	150	20	M10	10.5	18	12
	MD18-A20-250K	250					
	MD23-A25-200K	200	25	M12	12.5	23	15
	MD23-A25-300K	300					
	MD29-A32-200K	200	32	M16	17	29	18
	MD29-A32-350K	350					
	MD11-A16-150K	150	16	M6	6.5	11	32
	MD11-A16-200K	200					
	MD14-A20-200K	200	20	M8	8.5	14	50
	MD14-A20-250K	250					
	MD18-A25-200K	200	25	M10	10.5	18	60
	MD18-A25-250K	250					
	MD23-A32-250K	250	32	M12	12.5	23	70
	MD23-A32-350K	350					
	MD29-A42-250K	250	42	M16	17	29	100
	MD29-A42-350K	350					
	GL06-06-060-M03	60	6	M3	3.5	6	--
	GL06-06-120-M03	120					
	GL08-08-060-M04	60	8	M4	4.5	8	
	GL08-08-100-M04	100					
	GL08-08-120-M04	120					
	GL10-10-075-M05	75	10	M5	5.5	10	
	GL10-10-100-M05	100					
	GL10-10-150-M05	150					
	GL12-12-100-M06	100	12	M6	6.5	12	
	GL12-12-150-M06	150					
	GL12-12-200-M06	200					
	GL16-16-100-M08	100	16	M8	8.5	16	
	GL16-16-150-M08	150					
	GL16-16-200-M08	200					
	GL20-20-100-M10	100	20	M10	10.5	20	
	GL20-20-150-M10	150					
	GL20-20-200-M10	200					
	GL20-20-300-M10	300					
	GL25-25-100-M12	100	25	M12	12.5	25	
	GL25-25-150-M12	150					
GL25-25-200-M12	200						
GL25-25-300-M12	300						
GL32-32-150-M16	150	32	M16	17	32		
GL32-32-200-M16	200						
GL32-32-300-M16	300						
GL32-32-400-M16	400						

Carbide  
鎢鋼柄



**DX3**

◎ 表示圖 Drawing Chart



◆捨棄式快速鑽頭 · 有效鑽深是直徑的3倍長(3xD) ·  
Insertable High Speed Drills. Drilling Depth Is In 3 Times To Diameter(D). unit:mm

訂購參考 Order Reference	D	總長 L	參考長 L1	參考長 L2	參考長 L3	固定徑 φd	刀片規格 Insert Size	螺絲Screw	扳手Wrench
SD12/3D-C25-36L	12	122	66	41	36	25	SAFETY LCMT 04 02 05 EN-57	M2.2x5.0	T 7
SD12.5/3D-C25-37.5L	12.5	123.5	67.5	42.5	37.5				
SD13/3D-C25-39L	13	125	69	44	39				
SD13.5/3D-C25-40.5L	13.5	126.5	70.5	45.5	40.5				
SD14/3D-C25-42L	14	128	72	47	42				
SD14.5/3D-C25-43.5L	14.5	129.5	73.5	48.5	43.5				
SD15/3D-C25-45L	15	131	75	50	45				
SD15.5/3D-C25-46.5L	15.5	132.5	76.5	51.5	46.5				
SD16/3D-C25-48L	16	134	78	53	48				
SD16.5/3D-C25-49.5L	16.5	135.5	79.5	54.5	49.5				
SD17/3D-C25-51L	17	137	81	56	51				
SD17.5/3D-C25-52.5L	17.5	138.5	82.5	57.5	52.5				
SD18/3D-C25-54L	18	140	84	59	54				
SD18.5/3D-C25-55.5L	18.5	141.5	85.5	60.5	55.5				
SD19/3D-C25-57L	19	143	87	62	57				
SD19.5/3D-C25-58.5L	19.5	144.5	88.5	63.5	58.5				
SD20/3D-C25-60L	20	146	90	65	60				
SD20.5/3D-C25-61.5L	20.5	147.5	91.5	66.5	61.5				
SD21/3D-C32-63L	21	158	98	68	63				
SD21.5/3D-C32-64.5L	21.5	159.5	99.5	69.5	64.5				
SD22/3D-C32-66L	22	161	101	71	66				
SD22.5/3D-C32-67.5L	22.5	162.5	102.5	72.5	67.5				
SD23/3D-C32-69L	23	164	104	74	69				
SD23.5/3D-C32-70.5L	23.5	165.5	105.5	75.5	70.5				
SD24/3D-C32-72L	24	167	107	77	72				
SD24.5/3D-C32-73.5L	24.5	168.5	108.5	78.5	73.5				
SD25/3D-C32-75L	25	170	110	80	75				
SD25.5/3D-C32-76.5L	25.5	171.5	111.5	81.5	76.5				
SD26/3D-C32-78L	26	173	113	83	78				
SD26.5/3D-C32-79.5L	26.5	174.5	114.5	84.5	79.5				
SD27/3D-C32-81L	27	176	116	86	81				
SD27.5/3D-C32-82.5L	27.5	177.5	117.5	87.5	82.5				
SD28/3D-C32-84L	28	179	119	89	84				
SD28.5/3D-C32-85.5L	28.5	180.5	120.5	90.5	85.5				
SD29/3D-C32-87L	29	182	122	92	87				
SD29.5/3D-C32-88.5L	29.5	183.5	123.5	93.5	88.5				
SD30/3D-C32-90L	30	185	125	95	90				
SD30.5/3D-C32-91.5L	30.5	186.5	126.5	96.5	91.5				
SD31/3D-C32-93L	31	188	128	98	93				
SD31.5/3D-C32-94.5L	31.5	189.5	129.5	99.5	94.5				
SD32/3D-C32-96L	32	191	131	101	96				
SD32.5/3D-C32-97.5L	32.5	192.5	132.5	102.5	97.5				
SD33/3D-C32-99L	33	194	134	104	99				
SD33.5/3D-C32-100.5L	33.5	195.5	135.5	105.5	100.5				
SD34/3D-C32-102L	34	197	137	107	102				
SD34.5/3D-C32-103.5L	34.5	198.5	138.5	108.5	103.5				
SD35/3D-C32-105L	35	200	140	110	105				
SD35.5/3D-C32-106.5L	35.5	201.5	141.5	111.5	106.5				
SD36/3D-C32-108L	36	203	143	113	108				
SD36.5/3D-C32-109.5L	36.5	204.5	144.5	114.5	109.5				
SD37/3D-C32-111L	37	206	146	116	111				
SD37.5/3D-C32-112.5L	37.5	207.5	147.5	117.5	112.5				
SD38/3D-C32-114L	38	209	149	119	114				
SD38.5/3D-C32-115.5L	38.5	210.5	150.5	120.5	115.5				
SD39/3D-C32-117L	39	212	152	122	117				
SD39.5/3D-C32-118.5L	39.5	213.5	153.5	123.5	118.5				
SD40/3D-C32-120L	40	215	155	125	120				
SD40.5/3D-C32-121.5L	40.5	216.5	156.5	126.5	121.5				
SD41/3D-C32-123L	41	218	158	128	123				
SD41.5/3D-C32-124.5L	41.5	219.5	159.5	129.5	124.5				
SD42/3D-C32-126L	42	221	161	131	126				

【另有Dx2,Dx4,Dx5,Dx6可供選擇(There are another choice "Dx2,Dx4,Dx5,Dx6" )】

# 捨棄式快速鑽頭 Insertable High Speed Drills



**DX3**

◎ 表示圖 Drawing Chart

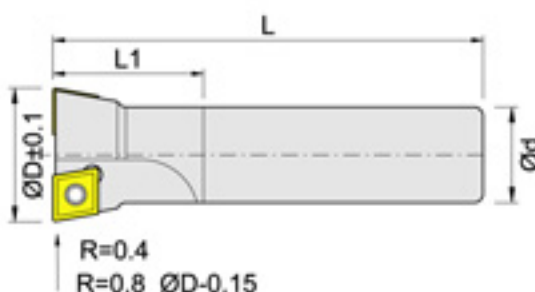


◆捨棄式快速鑽頭，有效鑽深是直徑的3倍長(3xD)。  
Insertable High Speed Drills. Drilling Depth Is In 3 Times To Diameter(D).

unit:mm

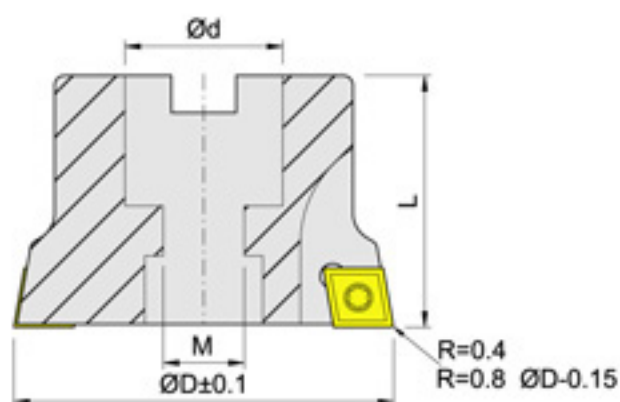
訂購參考 Order Reference	D	總長 L	參考長 L1	參考長 L2	參考長 L3	固定徑 φd	刀片規格 Insert Size	螺絲 Screw	扳手 Wrench
SD43/3D-C40-129L	43	239	169	134	129	40	WCMT 08 04 12	M4x10.0	T15
SD44/3D-C40-132L	44	242	172	137	132				
SD45/3D-C40-135L	45	245	175	140	135				
SD46/3D-C40-138L	46	248	178	143	138				
SD47/3D-C40-141L	47	251	181	146	141				
SD48/3D-C40-144L	48	254	184	149	144				
SD49/3D-C40-147L	49	257	187	152	147				
SD50/3D-C40-150L	50	260	190	155	150				
SD51/3D-C40-153L	51	263	193	158	153				
SD52/3D-C40-156L	52	266	196	161	156				
SD53/3D-C40-159L	53	269	199	164	159				
SD54/3D-C40-162L	54	272	202	167	162				
SD55/3D-C40-165L	55	275	205	170	165				
SD56/3D-C40-168L	56	278	208	173	168				
SD57/3D-C40-171L	57	281	211	176	171				
SD58/3D-C40-174L	58	284	214	179	174				
SD59/3D-C40-177L	59	287	217	182	177				
SD60/3D-C40-180L	60	290	220	185	180				
SD61/3D-C40-183L	61	293	223	188	183				
SD62/3D-C40-186L	62	296	226	191	186				
SD63/3D-C40-189L	63	299	229	194	189				
SD64/3D-C40-192L	64	302	232	197	192				
SD65/3D-C40-195L	65	305	235	200	195				
SD66/3D-C40-198L	66	308	238	203	198				
SD67/3D-C40-201L	67	311	241	206	201				
SD68/3D-C40-204L	68	314	244	209	204				
SD69/3D-C40-207L	69	317	247	212	207				
SD70/3D-C40-210L	70	320	250	215	210				
SD71/3D-C40-213L	71	323	253	218	213				
SD72/3D-C40-216L	72	326	256	221	216				
SD73/3D-C40-219L	73	329	259	224	219				
SD74/3D-C40-222L	74	332	262	227	222				
SD75/3D-C40-225L	75	335	265	230	225				
SD76/3D-C40-228L	76	338	268	233	228				
SD77/3D-C40-231L	77	341	271	236	231				
SD78/3D-C40-234L	78	344	274	239	234				
SD79/3D-C40-237L	79	347	277	242	237				
SD80/3D-C40-240L	80	350	280	245	240				
SD81/3D-C40-243L	81	353	283	248	243				
SD82/3D-C40-246L	82	356	286	251	246				
SD83/3D-C40-249L	83	359	289	254	249				
SD84/3D-C40-252L	84	362	292	257	252				
SD85/3D-C40-255L	85	365	295	260	255				
						40	WCMT 06 T3 08	M3.5x9.0	

【另有Dx2,Dx4,Dx5,Dx6可供選擇(There are another choice "Dx2,Dx4,Dx5,Dx6" )】



Ordering code	L	Ordering code	L	Ordering code	L	Dimensions,mm			Insert	Teeth
						D R=0.4	d	L1		
TB12-S16-120	120	TB12-S16-160	160	TB12-S16-200	200	11.8	16	30	CC..060204	1
TB13-S16-120		TB13-S16-160		TB13-S16-200		12.8				
TB14-S16-120		TB14-S16-160		TB14-S16-200		13.8				
TB15-S16-120		TB15-S16-160		TB15-S16-200		14.8				
TB16-S16-120-T2	120	TB16-S16-160-T2	160	TB16-S16-200-T2	200	15.8	16	30	CC..060204	2
TB17-S16-120-T2		TB17-S16-160-T2		TB17-S16-200-T2		16.8				
TB18-S16-120		TB18-S16-160		TB18-S16-200		17.8				
TB19-S16-120		TB19-S16-160		TB19-S16-200		18.8				
TB20-S16-120		TB20-S16-160		TB20-S16-200		19.8				
TB21-S16-120	120	TB21-S16-160	160	TB21-S16-200	200	20.8	16	30		2
TB22-S16-120		TB22-S16-160		TB22-S16-200		21.8				
TB23-S20-130	130	TB23-S16-160	160	TB23-S16-200	200	22.8	20	30	CC..060204	2
TB24-S20-130		TB24-S20-160		TB24-S20-200		23.8				
TB25-S20-130		TB25-S20-160		TB25-S20-200		24.8				
TB26-S20-130	130	TB26-S20-160	160	TB26-S20-200	200	25.8	20	30	CC..09T304	2
TB27-S20-130		TB27-S20-160		TB27-S20-200		26.8				
TB28-S20-130		TB28-S20-160		TB28-S20-200		27.8				
TB29-S20-130		TB29-S20-160		TB29-S20-200		28.8				
TB30-S25-160	160	TB30-S25-200	200	TB30-S25-250	250	29.8	25	40	CC..09T304	2
TB31-S25-160	160	TB31-S25-200	200	TB31-S25-250	250	30.8	25	40	CC..09T304	2
TB32-S25-160		TB32-S25-200		TB32-S25-250		31.8				
TB33-S25-160		TB33-S25-200		TB33-S25-250		32.8				
TB34-S25-160		TB34-S25-200		TB34-S25-250		33.8				
TB35-S25-160		TB35-S25-200		TB35-S25-250		34.8				
TB36-S25-160	160	TB36-S25-200	200	TB36-S25-250	250	35.8	25	40	CC..09T304	2
TB37-S25-160		TB37-S25-200		TB37-S25-250		36.8				
TB38-S25-160		TB38-S25-200		TB38-S25-250		37.8				
TB39-S25-160		TB39-S25-200		TB39-S25-250		38.8				
TB40-S25-160		TB40-S25-200		TB40-S25-250		39.8				
TB41-S32-200	200	TB41-S32-250	250	TB41-S32-300	300	40.8	32	45		2
TB42-S32-200		TB42-S32-250		TB42-S32-300		41.8				
TB43-S32-200		TB43-S32-250		TB43-S32-300		42.8				
TB44-S32-200		TB44-S32-250		TB44-S32-300		43.8				
TB45-S32-200		TB45-S32-250		TB45-S32-300		44.8				
TB46-S32-200	200	TB46-S32-250	250	TB46-S32-300	300	45.8	32	45		2
TB47-S32-200		TB47-S32-250		TB47-S32-300		46.8				
TB48-S32-200		TB48-S32-250		TB48-S32-300		47.8				
TB49-S32-200		TB49-S32-250		TB49-S32-300		48.8				
TB50-S32-200		TB50-S32-250		TB50-S32-300		49.8				
TB51-S32-200	200	TB51-S32-250	250	TB51-S32-300	300	50.8	32	45		2
TB52-S32-200		TB52-S32-250		TB52-S32-300		51.8				
TB53-S32-200		TB53-S32-250		TB53-S32-300		52.8				
TB54-S32-200		TB54-S32-250		TB54-S32-300		53.8				
TB55-S32-200		TB55-S32-250		TB55-S32-300		54.8				
TB56-S32-200	200	TB56-S32-250	250	TB56-S32-300	300	55.8	32	45		2
TB57-S32-200		TB57-S32-250		TB57-S32-300		56.8				

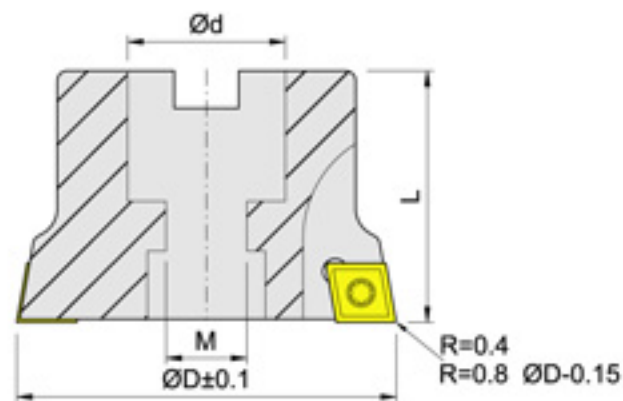
# 固定式粗搪刀 Fixed Rough Boring Bars





Ordering code (d=22.0)	Ordering code (d=25.4)	Insert 	Ordering code (d=22.0,25.4)	Insert 	D R=0.4	Teeth	
TB45-22.0-CC09		CC..09T304		CC..120404	44.8	2	
TB46-22.0-CC09					45.8		
TB47-22.0-CC09					46.8		
TB48-22.0-CC09					47.8		
TB50-22.0-CC09					49.8		
TB51-22.0-CC09		CC..09T304		CC..120404	50.8	2	
TB52-22.0-CC09					51.8		
TB55-22.0-CC09					54.8		
TB57-22.0-CC09		CC..09T304	<b>TB57-22.0-CC12</b>	CC..120404	56.8	2	
TB59-22.0-CC09	<b>TB59-25.4-CC09</b>				58.8		
TB60-22.0-CC09	<b>TB60-25.4-CC09</b>		<b>TB60-22.0-CC12</b>		59.8		
TB62-22.0-CC09	<b>TB62-25.4-CC09</b>	CC..09T304	<b>TB62-25.4-CC12</b>	CC..120404	61.8	2	
					<b>TB63-25.4-CC12</b>		62.8
					<b>TB65-25.4-CC12</b>		64.8
TB65-22.0-CC09	<b>TB65-25.4-CC09</b>	CC..09T304	<b>TB66-25.4-CC12</b>	CC..120404	65.8	2	
	<b>TB66-25.4-CC09</b>				67.8		
TB68-22.0-CC09	<b>TB68-25.4-CC09</b>				68.8		
	<b>TB69-25.4-CC09</b>				69.8		
	<b>TB70-25.4-CC09</b>		<b>TB70-25.4-CC12</b>		71.8	2	
TB72-22.0-CC09	<b>TB72-25.4-CC09</b>	CC..09T304	<b>TB72-25.4-CC12</b>	CC..120404	73.8		
	<b>TB74-25.4-CC09</b>				74.8		
	<b>TB75-25.4-CC09</b>		<b>TB75-25.4-CC12</b>		75.8	2	
	<b>TB76-25.4-CC09</b>	CC..09T304	<b>TB76-25.4-CC12</b>	CC..120404	77.8		
	<b>TB78-25.4-CC09</b>				79.8		
	<b>TB80-25.4-CC09</b>				81.8		
	<b>TB82-25.4-CC09</b>	CC..09T304	<b>TB82-25.4-CC12</b>	CC..120404	83.8	2	
	<b>TB84-25.4-CC09</b>				84.8		
	<b>TB85-25.4-CC09</b>				87.8		
		CC..09T304	<b>TB88-25.4-CC12</b>	CC..120404	89.8	2	
	<b>TB90-25.4-CC09</b>				94.8		
	<b>TB95-25.4-CC09</b>	CC..09T304	<b>TB95-25.4-CC12</b>	CC..120404		2	

Insert	Screw	Wrench
CC..060204	MS2506A	TF9
CC..09T304	MS4011A	TF15
CC..120404	MS5011A	TF20

Dimensions,mm	d	M	L
<b>TB...-22.0-...</b>	22.0	11	50
<b>TB...-25.4-...</b>	25.4	13	50
<b>TB...-31.75-...</b>	31.75	13	50

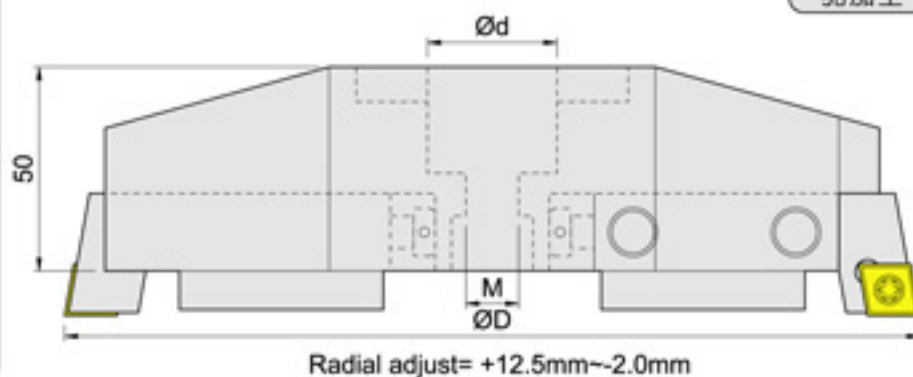


Ordering code (d=25.4)	Insert 	Ordering code (d=25.4)	Ordering code (d=31.75)	Insert 	D R=0.4	Teeth	
TB100-25.4-CC09	CC..09T304	TB100-25.4-CC12	TB100-31.75-CC12	CC..120404	99.8	2	
		TB101-25.4-CC12			100.8	2	
		TB102-25.4-CC12			101.8		
TB104-25.4-CC09	CC..09T304	TB105-25.4-CC12	TB105-31.75-CC12	CC..120404	103.8		
		TB108-31.75-CC12	TB110-31.75-CC12		104.8	2	
TB110-25.4-CC12	CC..09T304	TB112-25.4-CC12	TB115-31.75-CC12	CC..120404	107.8	2	
		TB115-25.4-CC12			TB120-31.75-CC12	109.8	
		TB120-25.4-CC12			TB122-31.75-CC12	111.8	2
TB122-31.75-CC12	CC..09T304		TB125-31.75-CC12	CC..120404	114.8		
			TB127-31.75-CC12		119.8		
			TB130-31.75-CC12		121.8	2	
			TB135-31.75-CC12		124.8		
TB137-31.75-CC12	CC..09T304		TB140-31.75-CC12	CC..120404	126.8		
			TB145-31.75-CC12		129.8		
			TB148-31.75-CC12		134.8	2	
TB149-31.75-CC12	CC..09T304		TB151-31.75-CC12	CC..120404	136.8		
			TB155-31.75-CC12		139.8		
			TB156-31.75-CC12		144.8	2	
			TB160-31.75-CC12		147.8		
TB165-31.75-CC12	CC..09T304		TB165-31.75-CC12	CC..120404	148.8		
			TB170-31.75-CC12		149.8		
			TB175-31.75-CC12		150.8	2	
TB180-31.75-CC12	CC..09T304		TB187-31.75-CC12	CC..120404	154.8		
			TB190-31.75-CC12		155.8		
			TB200-31.75-CC12		159.8	2	
TB187-31.75-CC12	CC..09T304			CC..120404	164.8	2	
					169.8		
TB190-31.75-CC12	CC..09T304			CC..120404	174.8	2	
					179.8		
TB199-31.75-CC12	CC..09T304			CC..120404	186.8	2	
					189.8		
TB200-31.75-CC12	CC..09T304			CC..120404	199.8	2	

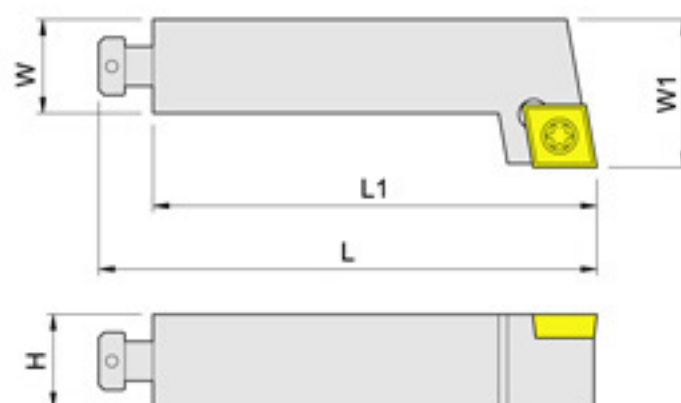
Insert	Screw 	Wrench 
CC..060204	MS2506A	TF9
CC..09T304	MS4011A	TF15
CC..120404	MS5011A	TF20

Dimensions,mm	d	M	L
TB...-22.0-...	22.0	11	50
TB...-25.4-...	25.4	13	50
TB...-31.75-...	31.75	13	50

# 可調式粗搪刀柄 Adjustable Rough Boring Bars

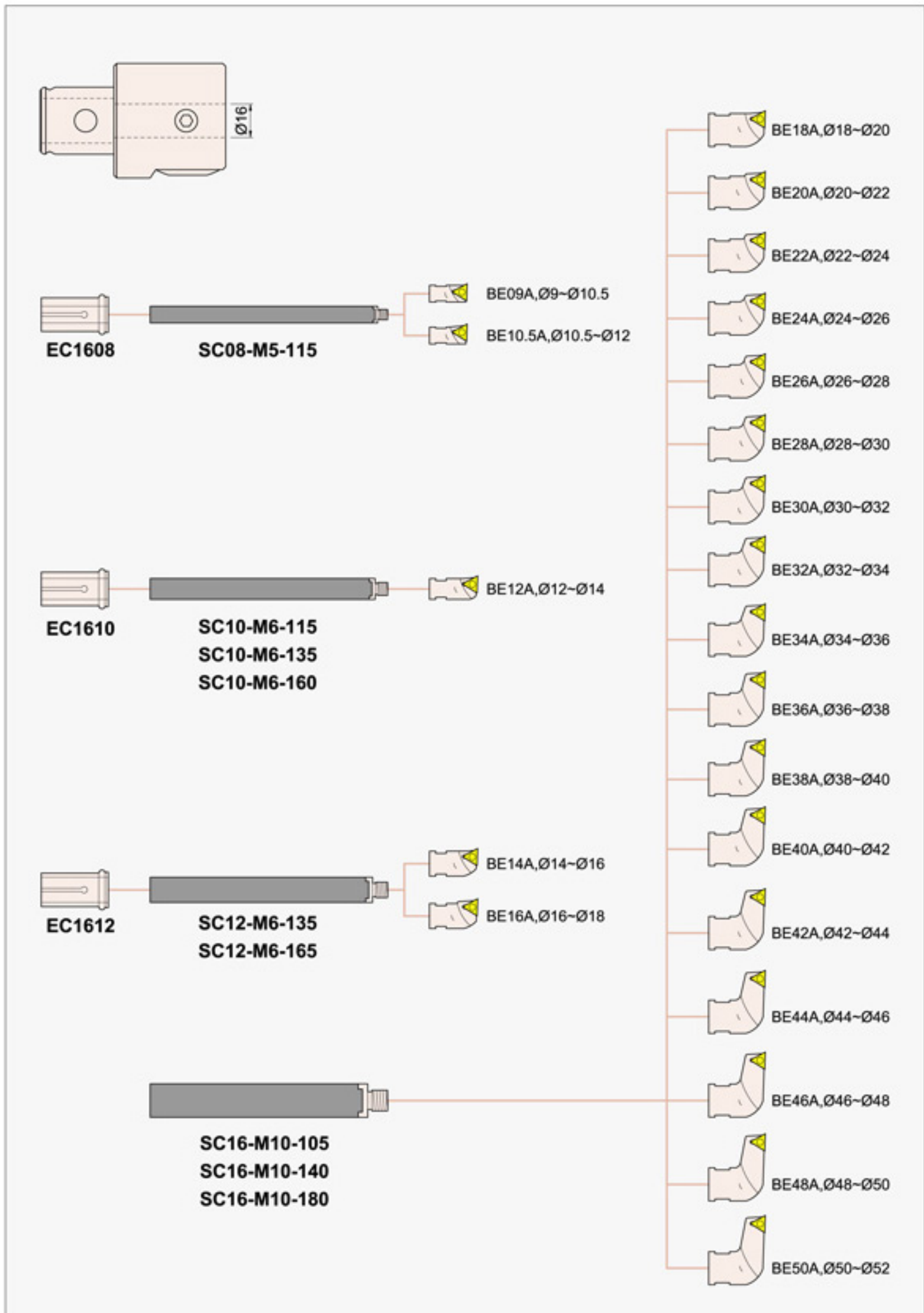


Ordering code	Dimensions,mm				Teeth	CARTRIDGES	RANGE	
	Dmin	d	M	L			MIN	MAX
TBF200-19-31.75	200	31.75	13	190	2	TBSF919-50	Dmin+0	Dmin+25
TBF250-19-31.75	250	31.75	13	240		TBSF919-62.5	Dmin+25	Dmin+50
TBF300-19-31.75	300	31.75	13	290		TBSF919-75	Dmin+50	Dmin+75
						TBSF919-87.5	Dmin+75	Dmin+100
						TBSF919-100	Dmin+100	Dmin+125



Ordering code	Dimensions,mm					Insert	Screw	Screw	Wrench
	H	W	W1	L1	L				
TBSF919-50	19	19	30	50	60	CC..1204..	RTM830	MS5011A	TF20
TBSF919-62.5				62.5	72.5				
TBSF919-75				75	85				
TBSF919-87.5				87.5	97.5				
TBSF919-100				100	110				

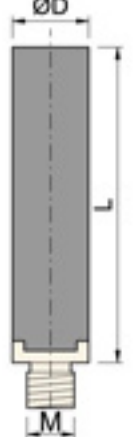



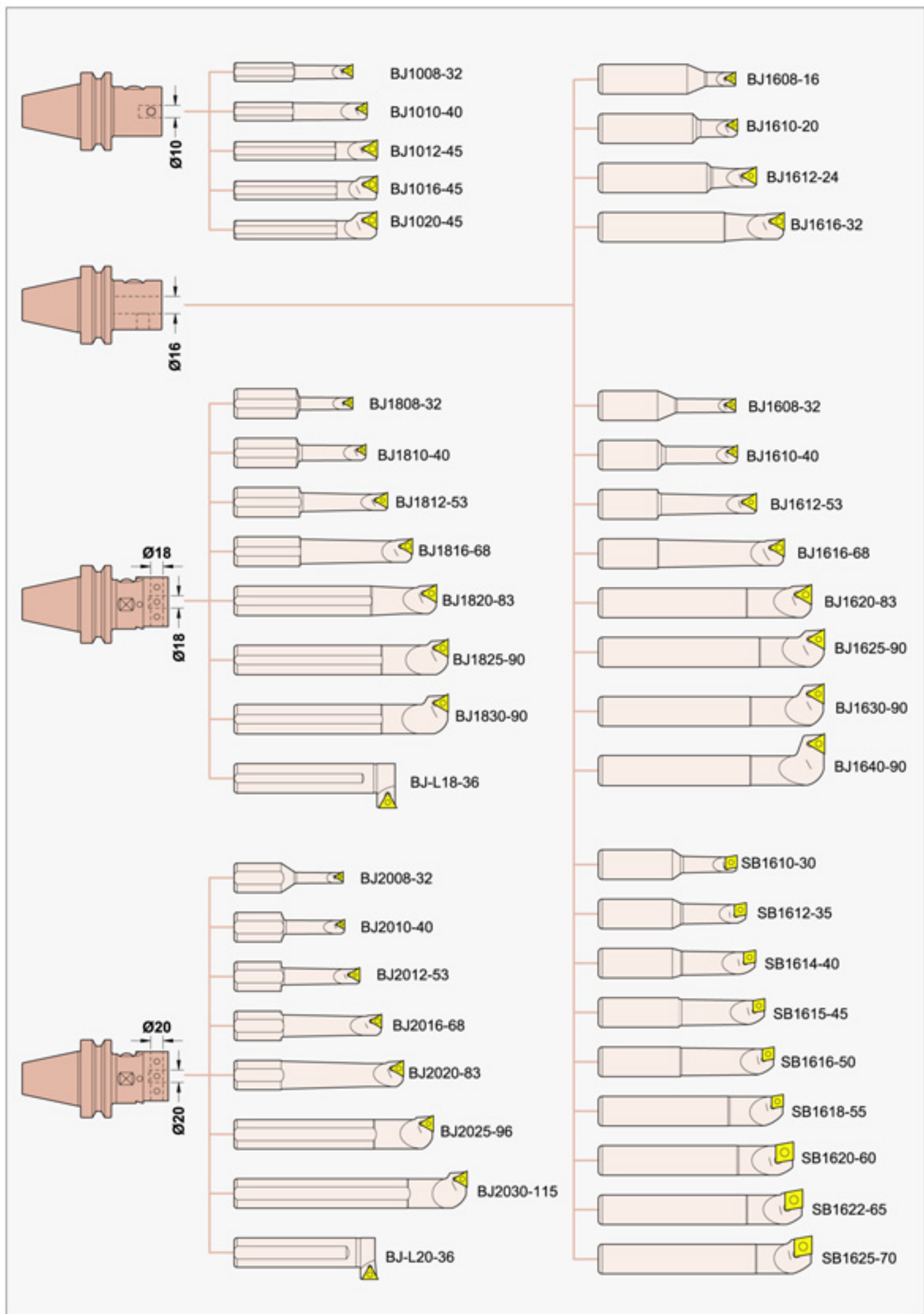


# 搪孔刀頭 & 配件 Boring Head & Part

Ordering code	Dimensions,mm					Shape	Insert	Screw	Wrench
	d	H	L	M	Range				
BE09A	9	7	18	M5	9~10.5	搪孔頭 BORING CUTTER HEAD    	TP..0802..	MS2206A	TF7
BE10.5A	10.5	7			10.5~12				
BE12A	12	8	23	M6	12~14				
BE14A	14	10	23	M6	14~16				
BE16A	16	14	27	M10	16~18				
BE18A	18				18~20				
BE20A	20				20~22				
BE22A	22	14	27	M10	22~24				
BE24A	24	14	27	M10	24~26				
BE26A	26				26~28				
BE28A	28				28~30				
BE30A	30				30~32				
BE32A	32				32~34				
BE34A	34				34~36				
BE36A	36				36~38				
BE38A	38	38~40							
BE40A	40	40~42							
BE42A	42	14	27	M10	42~44				
BE44A	44	14	27	M10	44~46				
BE46A	46				46~48				
BE48A	48				48~50				
BE50A	50				50~52				

Ordering code	Dimensions,mm		Shape	適用錫鋼柄
	D	D1		
EC1606	16	6	套筒 COLLET ADAPTERS   	--
EC1608	16	8		SC08-M5-...
EC1610	16	10		SC10-M6-...
EC1612	16	12		SC12-M6-...

Ordering code	Dimensions,mm			Shape	適用搪刀頭	適用套筒
	D	M	L			
SC08-M5-115	8	M5	115	錫鋼柄搪刀桿 CARBIDE   	BE09A, BE10.5A	EC1608
SC10-M6-115	10	M6	115		BE12A	EC1610
SC10-M6-135			135		BE14A, BE16A	EC1612
SC10-M6-160			160			
SC12-M6-135	12	M6	135		BE18A, BE20A, BE22A, BE24A BE26A, BE28A, BE30A, BE32A BE34A, BE36A, BE38A, BE40A BE42A, BE44A, BE46A, BE48A BE50	--
SC12-M6-165			165			
SC16-M10-105	16	M10	105			
SC16-M10-140			140			
SC16-M10-180			180			



# 小徑搪刀 Boring Shank

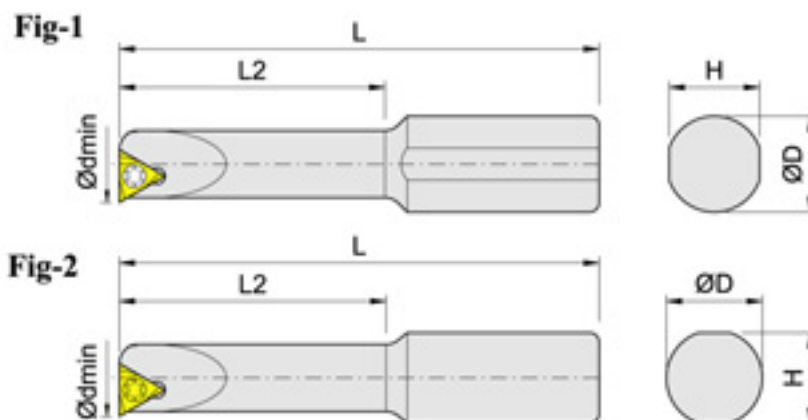
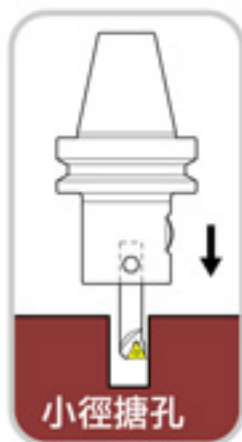


FIG-1 Ordering code	Dimensions,mm					Insert	Screw	Wrench	
	D	Range	L	L2	H				
BH1008-32	10	8-10	64	32	9		WC..0201..	MS2005A	TF6
BH1010-40		10-12	72	40					
BJ1008-32		8-10	64	32					
BJ1010-40		10-12	72	40			TB..0601..	MS2005A	TF6
BJ1012-45		12-16	77	27					
BJ1016-45		16-20	77	27					
BJ1020-45		20-25	77	27					
BJ1020-45						TP..0902..	MS2506A	TF9	
BJ1020-45									TP..1103..
※ BH10-5PCS	BH1008-32 BH1010-40 BJ1012-45 BJ1016-45 BJ1020-45								
※ BJ10-5PCS	BJ1008-32 BJ1010-40 BJ1012-45 BJ1016-45 BJ1020-45								

FIG-2 Ordering code	Dimensions,mm					Insert	Screw	Wrench	
	D	Range	L	L2	H				
BH1608-32	16	8-10	74	32	15		WC..0201..	MS2005A	TF6
BH1610-40		10-12	75	40					
BJ1608-32		8-10	74	32					
BJ1610-40		10-12	75	40			TB..0601..	MS2005A	TF6
BJ1612-53		12-16	85	53					
BJ1616-68		16-20	100	68					
BJ1620-83		20-25	115	35					
BJ1625-90		25-30	122	35			TP..0902..	MS2506A	TF9
BJ1630-90		30-40	122	40					
BJ1640-90		40-50	122	40					
BJ1640-90				TP..1103..	MS3008A				
※ BH16-8PCS	BH1608-32 BH1610-40 BJ1612-53 BJ1616-68 BJ1620-83 BJ1625-90 BJ1630-90 BJ1640-90								
※ BJ16-8PCS	BJ1608-32 BJ1610-40 BJ1612-53 BJ1616-68 BJ1620-83 BJ1625-90 BJ1630-90 BJ1640-90								

※ 表盒裝

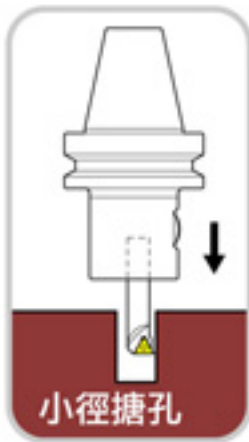


Fig-1



Fig-2

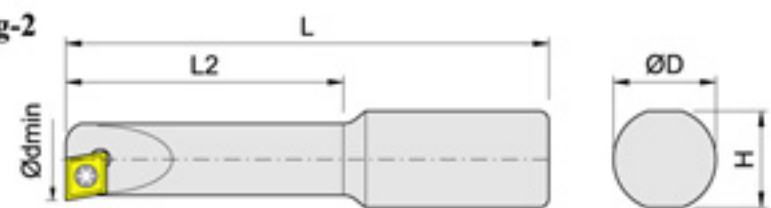
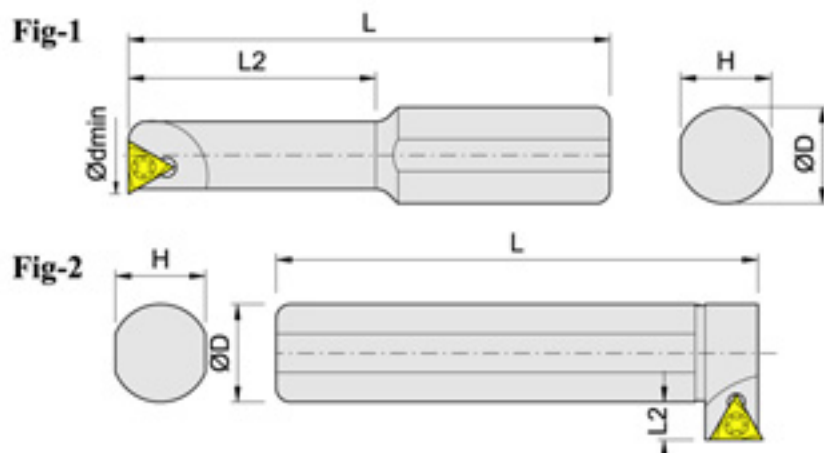
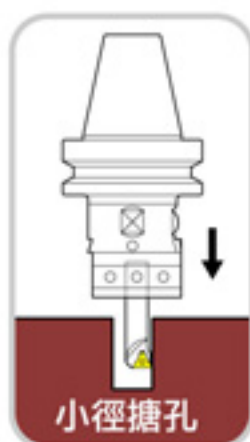


FIG-1 Ordering code	Dimensions,mm					Insert	Screw	Wrench
	D	Range	L	L2	H			
<b>BJ1608-16</b>	16	8-10	74	16	15		MS2005A	TF6
<b>BJ1610-20</b>		10-12	75	20				
<b>BJ1612-24</b>		12-16	85	24				
<b>BJ1616-32</b>		16-20	100	32				
※ <b>BJ16-2D-8P</b>	BJ1608-16 BJ1610-20 BJ1612-24 BJ1616-32 BJ1620-83 BJ1625-90 BJ1630-90 BJ1640-90							

※ 表盒裝

FIG-2 Ordering code	Dimensions,mm					Insert	Screw	Wrench
	D	Range	L	L2	H			
<b>SB1610-30</b>	16	10-12	75	30	15		MS2506A	TF9
<b>SB1612-35</b>		12-14	80	35				
<b>SB1614-40</b>		14-16	85	40				
<b>SB1615-45</b>		15-17	90	45				
<b>SB1616-50</b>		16-18	95	50				
<b>SB1618-55</b>		18-20	100	35				
<b>SB1620-60</b>		20-22	105	35				
<b>SB1622-65</b>		22-25	110	35				
<b>SB1625-70</b>	25-28	115	35					
							MS4011A	TF15

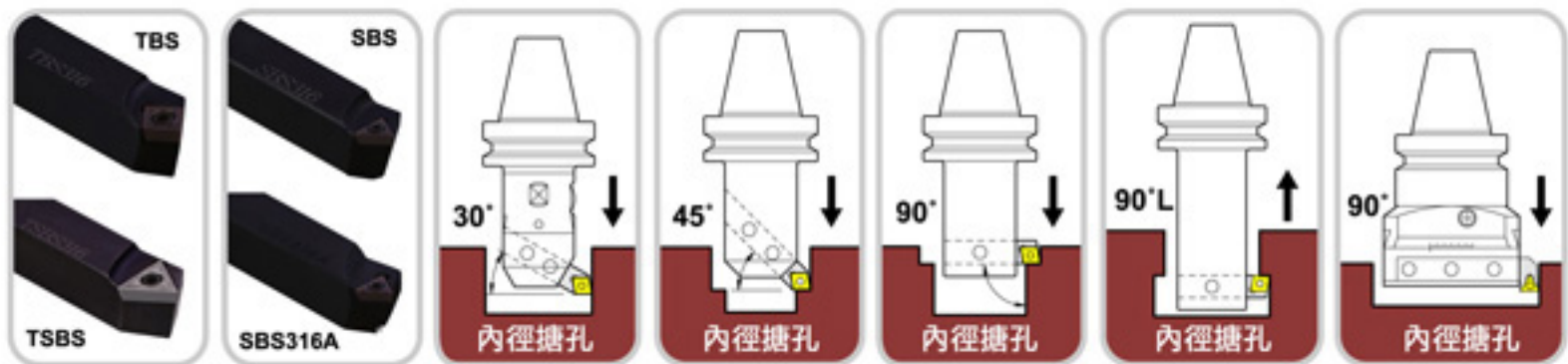
# 小徑搪刀 Boring Shank



Ordering code	Dimensions,mm						Insert	Screw	Wrench		
	D	Range	L	L2	H	FIG					
BH1808-32	18	8-10	72	32	17	1		WC..0201..	MS2005A	TF6	
BH1810-40		10-12	80	40					TB..0601..	MS2005A	TF6
BJ1808-32		8-10	72	32						TP..0902..	MS2506A
BJ1810-40		10-12	80	40			TP..1103..	MS3008A		TF9	
BJ1812-53		12-16	93	53							
BJ1816-68		16-20	108	68							
BJ1820-83		20-25	123	40							
BJ1825-90		25-30	130	40							
BJ1830-90		30-35	130	40							
BJ-L18-36	18	--	97	8	2						
※ BH18-8PCS	BH1808-32 BH1810-40 BJ1812-53 BJ1816-68 BJ1820-83 BJ1825-90 BJ1830-90 BJ-L18-36										
※ BJ18-8PCS	BJ1808-32 BJ1810-40 BJ1812-53 BJ1816-68 BJ1820-83 BJ1825-90 BJ1830-90 BJ-L18-36										

Ordering code	Dimensions,mm						Insert	Screw	Wrench		
	D	Range	L	L2	H	FIG					
BH2008-32	20	8-10	74	32	19	1		WC..0201..	MS2005A	TF6	
BH2010-40		10-12	75	40					TB..0601..	MS2005A	TF6
BJ2008-32		8-10	74	32						TP..0902..	MS2506A
BJ2010-40		10-12	75	40			TP..1103..	MS3008A		TF9	
BJ2012-53		12-16	85	53							
BJ2016-68		16-20	100	68							
BJ2020-83		20-25	115	83							
BJ2025-96		25-30	135	40							
BJ2030-115		30-35	158	40							
BJ-L20-36	20	--	97	8	2						
※ BH20-8PCS	BH2008-32 BH2010-40 BJ2012-53 BJ2016-68 BJ2020-83 BJ2025-96 BJ2030-115 BJ-L20-36										
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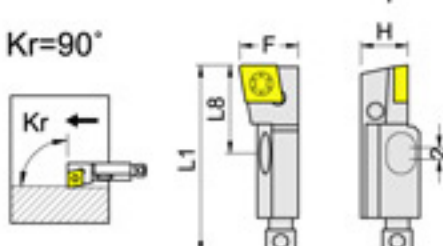

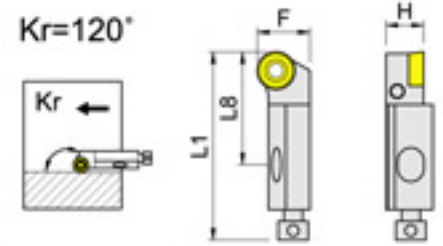

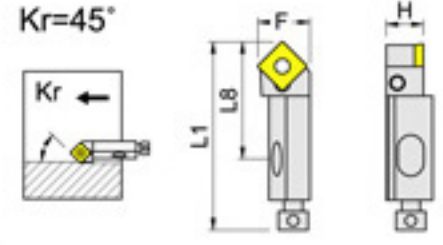

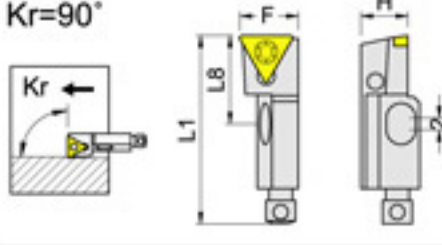
※ 表盒裝



Insert Shape	Fig-1 Ordering code	Insert 	Fig-2 Ordering code	Insert 	Fig-2 Ordering code	Insert 	Fig-3 Ordering code	Insert 	Dimensions,mm		
									H	W	L
 1  2  3	TBS306	CC..0602..	TSBS306	TC..0902..	SBS306	TP..0902..			6	6	55
	TBS308	CC..0602..	TSBS308	TC..0902..	SBS308	TP..0902..	SBS308A	TP..0902..	8	8	55
	TBS310	CC..0602..	TSBS310	TC..0902..	SBS310	TP..0902..	SBS310A	TP..0902..	10	10	65
	TBS313	CC..09T3..	TSBS313	TC..1102..	SBS313	TP..1103..	SBS313A	TP..1103..	13	13	80
	TBS316	CC..09T3..	TSBS316	TC..16T3..	SBS316	TP..1103..	SBS316A	TP..1103..	16	16	120
	TBS319	CC..1204..	TSBS319	TC..16T3..	SBS319	TP..1603..	SBS319A	TP..1603..	19	19	140
TBS325	CC..1204..	TSBS325	TC..16T3..	SBS325	TP..1603..			25	25	150	
 1  2  3	TBS406	CC..0602..	TSBS406	TC..0902..	SBS406	TP..0902..			6	6	55
	TBS408	CC..0602..	TSBS408	TC..0902..	SBS408	TP..0902..	SBS408A	TP..0902..	8	8	55
	TBS410	CC..0602..	TSBS410	TC..0902..	SBS410	TP..0902..	SBS410A	TP..0902..	10	10	65
	TBS413	CC..09T3..	TSBS413	TC..1102..	SBS413	TP..1103..	SBS413A	TP..1103..	13	13	80
	TBS416	CC..09T3..	TSBS416	TC..16T3..	SBS416	TP..1103..	SBS416A	TP..1103..	16	16	120
	TBS419	CC..1204..	TSBS419	TC..16T3..	SBS419	TP..1603..	SBS419A	TP..1603..	19	19	140
TBS425	CC..1204..	TSBS425	TC..16T3..	SBS425	TP..1603..			25	25	150	
 1  2  3	TBS906	CC..0602..	TSBS906	TC..0902..	SBS906	TP..0902..			6	6	55
	TBS908	CC..0602..	TSBS908	TC..0902..	SBS908	TP..0902..	SBS908A	TP..0902..	8	8	55
	TBS910	CC..0602..	TSBS910	TC..0902..	SBS910	TP..0902..	SBS910A	TP..0902..	10	10	65
	TBS913	CC..09T3..	TSBS913	TC..1102..	SBS913	TP..1103..	SBS913A	TP..1103..	13	13	80
	TBS916	CC..09T3..	TSBS916	TC..16T3..	SBS916	TP..1103..	SBS916A	TP..1103..	16	16	120
	TBS919	CC..1204..	TSBS919	TC..16T3..	SBS919	TP..1603..	SBS919A	TP..1603..	19	19	140
TBS925	CC..1204..	TSBS925	TC..16T3..	SBS925	TP..1603..			25	25	150	
 1  2	TBS908L	CC..0602..							8	8	55
	TBS910L	CC..0602..							10	10	65
	TBS913L	CC..09T3..							13	13	80
	TBS916L	CC..09T3..							16	16	120
	TBS919L	CC..1204..							19	19	140
					BSB916	TP..1103..			16	16	150
					BSB920	TP..1103..			20	20	150

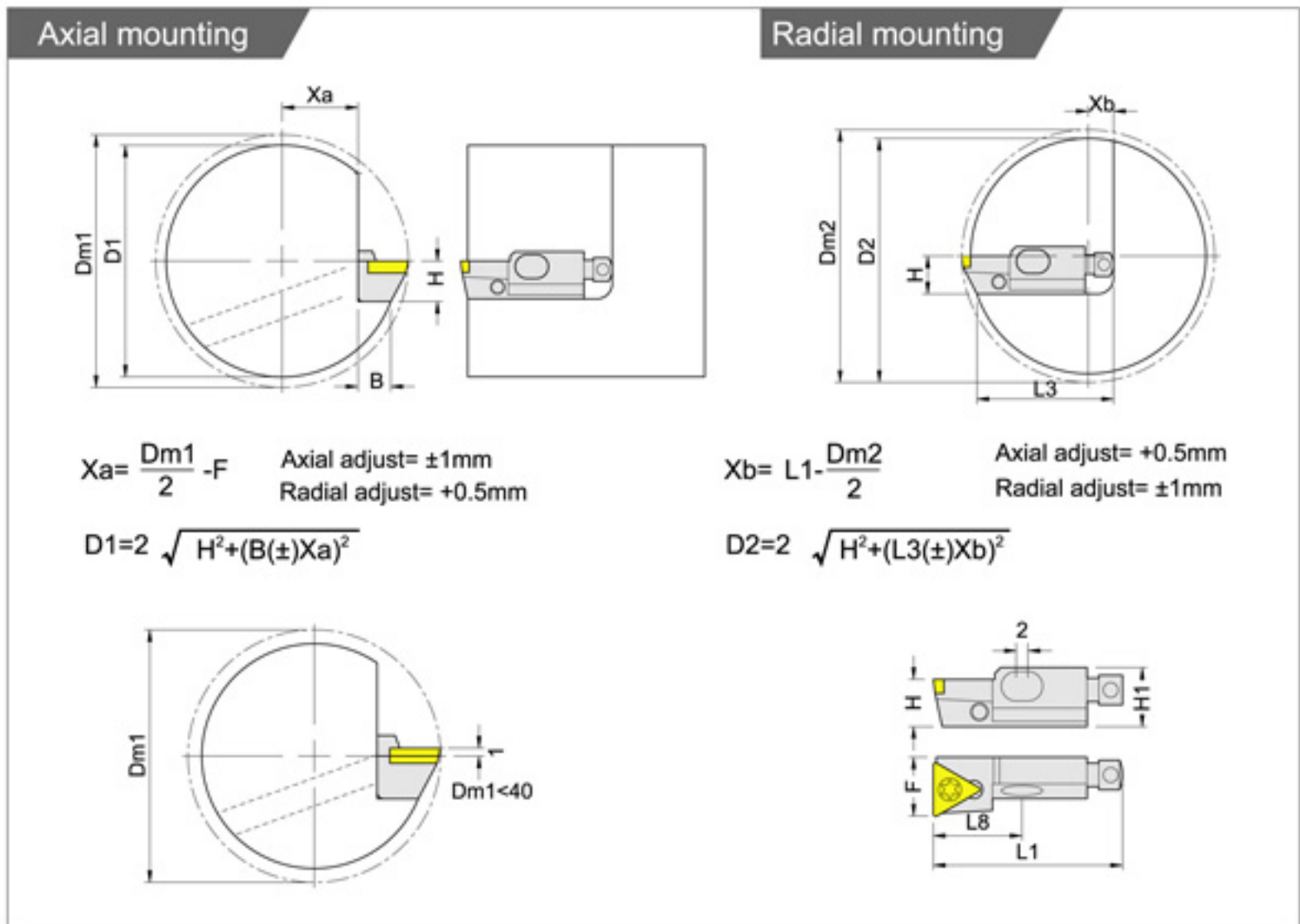
Insert 	Screw 	Wrench 	Insert 	Screw 	Wrench 	Insert 	Screw 	Wrench 
CC..0602..	MS2506A	TF9	TC..0902..	MS2206A	TF7	TP..0902..	MS2506A	TF9
CC..09T3..	MS4011A	TF15	TC..1102..	MS2506A	TF9	TP..1103..	MS3008A	TF9
CC..1204..	MS5011A	TF20	TC..16T3..	MS4011A	TF15	TP..1603..	MS4011A	TF15

# 卡式刀座 (符合ISO規格) Cartridges Meet With ISO STD.

Cartridges shape	Ordering code	Dimensions,mm							Insert
		L1	L2	L8	F	H	D <sub>min</sub>	R	
<b>SCFCR</b>  Screw clamp Kr=90° 	<b>SCFCR-08CA-06</b>	32		15	10	8	25	0.4	CC..0602..
	<b>SCFCR-10CA-09</b>	50		30	14	10	40	0.4	CC..09T3..
<b>SRSCR</b>  Screw clamp Kr=120° 	<b>SRSCR/L-10CA-10</b>	50		30	14	10	40		RC..10T3..
<b>SSSPR</b>  Screw clamp Kr=45° 	<b>SSSPR-10CA-09</b>	50		30	14	10	40	0.4	SP..0903..
<b>STFCR</b>  Screw clamp Kr=90° 	<b>STFCR-08CA-09</b>	32		15	10	8	25	0.4	TC..0902..
	<b>STFCR-10CA-11</b>	50		30	14	10	40	0.4	TC..1102..
	<b>STFCR-12CA-16</b>	55		35	20	12	50	0.8	TC..16T3..



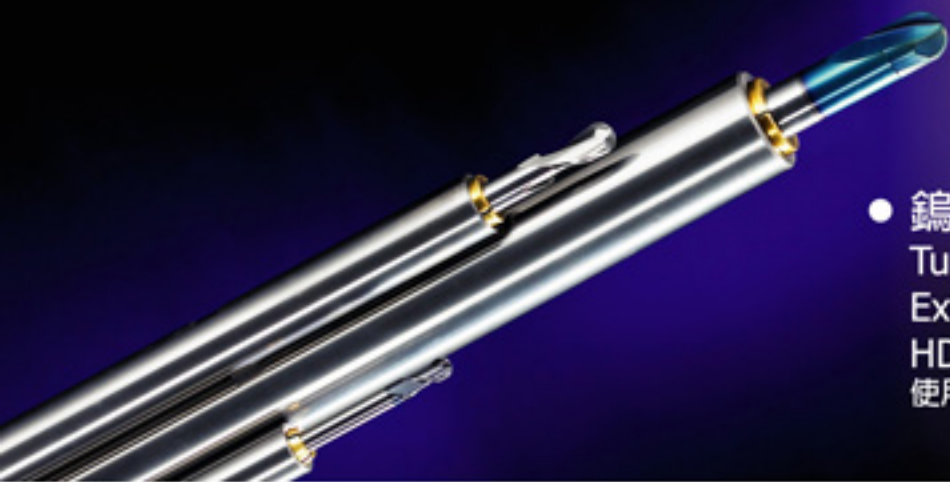
Cartridges shape	Ordering code	Dimensions,mm							Insert
		L1	L2	L8	F	H	D <sub>min</sub>	R	
<b>STFPR</b>  Screw clamp Kr=90° 	<b>STFPR-08CA-09</b>	32		15	10	8	25	0.4	TP..0902..
	<b>STFPR-10CA-11</b>	50		30	14	10	40	0.4	TP..1103..
	<b>STFPR-12CA-16</b>	55		35	20	12	50	0.8	TP..1603..
<b>STGCL</b>  Screw clamp Kr=90° 	<b>STGCL-12CA-16</b>	55		35	20	12	75	0.8	TC..16T3..
<b>STSPR</b>  Screw clamp Kr=45° 	<b>STSPR-08CA-09</b>	28	34.1	11	10	8	25	0.4	TP..0902..
	<b>STSPR-10CA-11</b>	44	51.0	24	14	10	40	0.4	TP..1103..
	<b>STSPR-12CA-16</b>	47	57.0	27	20	12	50	0.8	TP..1603..
<b>STSCR</b>  Screw clamp Kr=45° 	<b>STSCR-08CA-09</b>	28	34.1	11	10	8	25	0.4	TC..0902..
	<b>STSCR-10CA-11</b>	44	51.0	24	14	10	40	0.4	TC..1102..
	<b>STSCR-12CA-16</b>	47	57.0	27	20	12	50	0.8	TC..16T3..



Cartridge size	Ordering code	Screw 	Wrench 	Screw 	Wrench 	Screw 	Screw 	Wrench 
<b>08CA</b> 	SCFCR-08CA-06	HM408	PL20	HTR414	PL25	RTM412	MS2506A	TF9
	STFCR-08CA-09							
	STFPR-08CA-09							
	STSCR-08CA-09							
	STSPR-08CA-09							
<b>10CA</b> 	SCFCR-10CA-09	HM410	PL20	HTR623	PL40	RTM515	MS4011A	TF15
	SRSCR/L-10CA-10						MS3509A	TF15
	SSSPR-10CA-09						MS4011A	TF15
	STFCR-10CA-11						MS2506A	TF9
	STFPR-10CA-11						MS3008A	TF9
	STSCR-10CA-11						MS2506A	TF9
	STSPR-10CA-11						MS3008A	TF9
<b>12CA</b> 	STGCL-12CA-16	HM412	PL20	HTR623	PL40	RTM515	MS4011A	TF15
	STFCR-12CA-16							
	STFPR-12CA-16							
	STSCR-12CA-16							
	STSPR-12CA-16							

# 模具三寶

The Three Mold Making Treasures



- 鎢鋼後拉刀桿  
Tungsten Carbide Draw-Out  
Extension Holder  
HDC Chuck & HUC Chuck  
使用碳化鎢材質製成，剛性強、降低刀具成本，有效延伸加工深度。

- 鎢鋼抗震刀柄  
Tungsten Carbide Anti-Vibration Holder  
GL Holder  
使用全碳化鎢材質製成，剛性優異、吸震性佳、  
延長加工深度，沒有焊接斷裂之處處，  
強調刀頭之多變化性。



- 鎢鋼銑刀  
Carbide End Mills

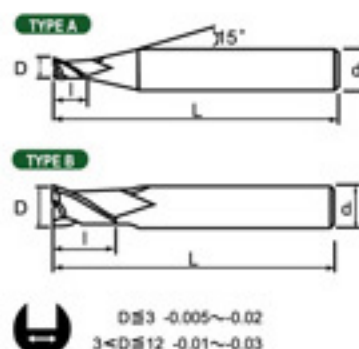
The  
Three Mold  
Making  
Treasures

**HD.**  
Hwe Der & Ho Dung

慧德刀具五金有限公司 / 和東五金商行  
Hwe Der Machinery and Hardware Pty Ltd. Ho Dung Hardware Co.,Ltd.

# SE2 高硬度專用二刃鎢鋼銑刀

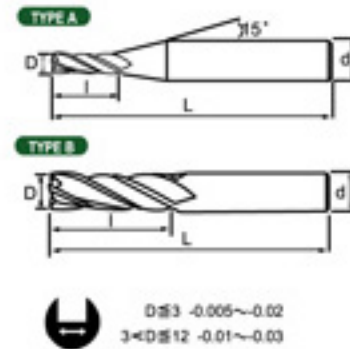
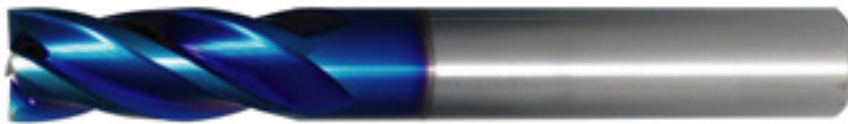
Regular Length,  
For Hardend Material, 2 Flute



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSE0022	0.2	0.4	50	4	A
MSE0032	0.3	0.6	50	4	A
MSE0042	0.4	0.8	50	4	A
MSE0052	0.5	1	50	4	A
MSE0062	0.6	1.2	50	4	A
MSE0072	0.7	1.4	50	4	A
MSE0082	0.8	1.6	50	4	A
MSE0092	0.9	2	50	4	A
MSE0102	1	2.5	50	4	A
MSE0152	1.5	4	50	4	A
MSE0202	2	6	50	4	A
MSE0252	2.5	8	50	4	A
MSE0302	3	8	50	4	A
MSE0352	3.5	10	50	4	A
MSE0402	4	11	50	4	B
SE0452	4.5	11	50	6	A
SE0502	5	13	50	6	A
SE0602	6	15	50	6	B
SE0702	7	18	60	8	A
SE0802	8	20	60	8	B
SE0902	9	23	75	10	A
SE1002	10	25	75	10	B
SE1102	11	28	75	12	A
SE1202	12	30	75	12	B
SE1302	13	35	75	16	A
SE1402	14	40	100	16	A
SE1502	15	40	100	16	A
SE1602	16	45	100	16	B

《切削條件：E8,E9》



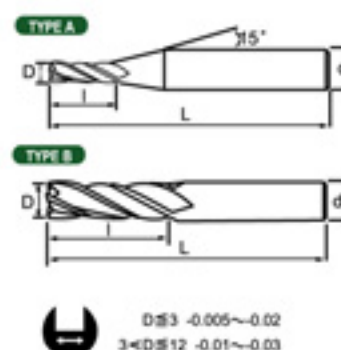
單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSE0104	1	2.5	50	4	A
MSE0154	1.5	4	50	4	A
MSE0204	2	6	50	4	A
MSE0254	2.5	8	50	4	A
MSE0304	3	8	50	4	A
MSE0354	3.5	10	50	4	A
MSE0404	4	11	50	4	B
SE0404	4	11	50	6	A
SE0454	4.5	11	50	6	A
SE0504	5	13	50	6	A
SE0604	6	15	50	6	B
SE0704	7	18	60	8	A
SE0804	8	20	60	8	B
SE0904	9	23	75	10	A
SE1004	10	25	75	10	B
SE1104	11	28	75	12	A
SE1204	12	30	75	12	B
SE1304	13	35	100	16	A
SE1404	14	40	100	16	A
SE1504	15	40	100	16	A
SE1604	16	45	100	16	B
SE1804	18	45	100	20	A
SE2004	20	45	100	20	B

《切削條件：E10》

# SLE4/MLE4/LLE4 高硬度專用四刃長柄鎢鋼立銑刀

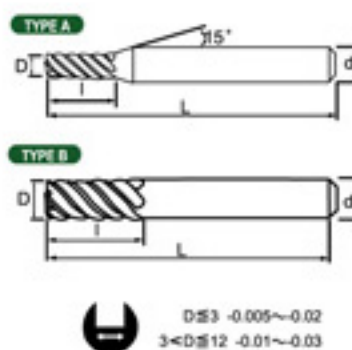
Long Regular Length, For Hardened Material, 4 Flute



單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLE0104	1	2.5	75	6	A
SLE0204	2	6	75	6	A
SLE0304	3	8	75	6	A
SLE0404	4	11	75	6	A
MLE0404	4	11	100	6	A
SLE0504	5	13	75	6	A
MLE0504	5	13	100	6	A
SLE0604	6	15	75	6	B
MLE0604	6	15	100	6	B
MLE0804	8	20	100	8	B
MLE1004	10	25	100	10	B
LLE1004	10	25	150	10	B
MLE1204	12	30	100	12	B
LLE1204	12	30	150	12	B
MLE1604	16	45	150	16	B

《切削條件：E10》



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSP0306	3	8	50	6	A
MSP0406	4	11	50	6	A
MSP0506	5	13	50	6	A
MSP0606	6	15	50	6	B
MSP0806	8	20	60	8	B
MSP1006	10	25	75	10	B
MSP1206	12	30	75	12	B
MSP1606	16	45	100	16	B
MSP2006	20	45	100	16	B

《切削條件：E11》

## ● 高硬度專用長刃六刃鎢鋼立銑刀

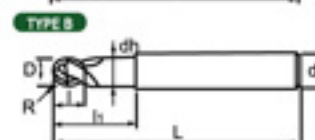
單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MLP0606	6	30	75	6	B
MLP0806	8	40	100	8	B
MLP1006	10	45	100	10	B
MLP1206	12	45	100	12	B
MLP1606	16	70	150	16	B
MLP2006	20	70	150	20	B

《切削條件：E11》

# SBH 快削型二刃鎢鋼球刀

Ball Nose(High Power),  
For Hardened Material, 2 Flute



D <math>\le 6</math> 0 ~ -0.028  
 $\phi$ SD 0 ~ -0.038

R  $\pm 0.01$

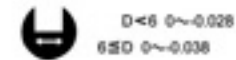
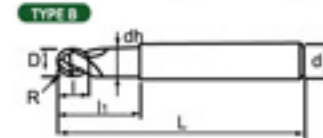
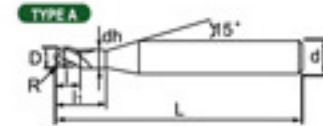
- 奈米極細微粒鎢鋼母材，適合HRC65以下之高硬度材進行高能率切削。
- 因為刀刃為高剛性及有避空位之設計，可於高速M/C進行高速銑削。

單位：mm (Unit : mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	頸長 l1 Neck Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Dia.	型式 Type
SBH0102	0.5	1	1	2.2	0.96	50	6	A
SBH0152	0.75	1.5	1.5	3	1.46	50	6	A
SBH0202	1	2	2	4	1.96	50	6	A
SBH0252	1.25	2.5	2.5	5	2.46	50	6	A
SBH0302	1.5	3	3	6	2.96	50	6	A
SBH0352	1.75	3.5	3.5	7	3.46	50	6	A
SBH0402	2	4	4	8	3.96	50	6	A
SBH0502	2.5	5	5	10	4.96	50	6	A
SBH0602	3	6	6	12	5.96	50	6	B
SBH0802	4	8	8	16	7.9	60	8	B
SBH1002	5	10	10	20	9.9	75	10	B
SBH1202	6	12	12	24	11.9	75	12	B

《切削條件：E3,E4,E5》





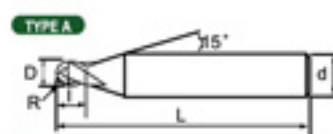
單位：mm (Unit：mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	有效長 l <sub>1</sub> Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SBP0032	0.15R	0.3	0.3	0.6	0.27	50	6	A
SBP0042	0.2R	0.4	0.4	0.8	0.37	50	6	A
SBP0052	0.25R	0.5	0.5	1.0	0.47	50	6	A
SBP0062	0.3R	0.6	0.6	1.2	0.57	50	6	A
SBP0082	0.4R	0.8	0.8	1.6	0.77	50	6	A
SBP0102	0.5R	1	1	2.5	0.96	50	6	A
SBP0152	0.75R	1.5	1.5	4	1.46	50	6	A
SBP0202	1R	2	2	6	1.96	60	6	A
SBP0252	1.25R	2.5	2.5	6	2.46	60	6	A
SBP0302	1.5R	3	3	8	2.96	60	6	A
SBP0352	1.75R	3.5	3.5	8	3.46	60	6	A
SBP0402	2R	4	4	8	3.96	60	6	A
SBP0502	2.5R	5	5	12	4.96	60	6	A
SBP0602	3R	6	6	13	5.96	60	6	B
SBP0802	4R	8	8	14	7.85	60	8	B
SBP1002	5R	10	10	18	9.85	75	10	B
SBP1202	6R	12	12	22	11.85	75	12	B

《切削條件：E14,E15》

# SL2B/ML2B/LL2B 高硬度專用二刃長柄鎢鋼球刀

Ball Nose, Long, For Hardened Material, 2 Flute



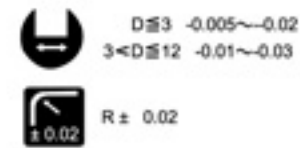
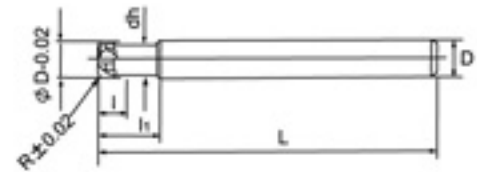
$D \leq 6 \quad 0 \sim -0.028$   
 $6 \leq D \quad 0 \sim -0.038$

$R \pm 0.01$

單位：mm (Unit : mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLB0102	0.5R	1	2	75	6	A
MLB0102		1	2	100	6	A
SLB0152	0.75R	1.5	3	75	6	A
MLB0152		1.5	3	100	6	A
SLB0202	1R	2	4	75	6	A
MLB0202		2	4	100	6	A
SLB0302	1.5R	3	6	75	6	A
MLB0302		3	6	100	6	A
SLB0402	2R	4	8	75	6	A
MLB0402		4	8	100	6	A
SLB0502	2.5R	5	10	75	6	A
MLB0502		5	10	100	6	A
SLB0602	3R	6	12	75	6	B
MLB0602		6	12	100	6	B
MLB0802	4R	8	16	100	8	B
MLB1002	5R	10	20	100	10	B
LLB1002		10	20	150	10	B
MLB1202	6R	12	24	100	12	B
LLB1202		12	24	150	12	B
MLB1602	8R	16	32	150	16	B
LLB1602		16	32	200	16	B
MLB2002	10R	20	40	150	20	B
LLB2002		20	40	200	20	B

《切削條件：E14,E15》



- 奈米極細微粒鎢鋼母材，適合HRC 65以下之高硬度材於高速M/C進行高能率切削。
- 因為特短刃長之高剛性及有避空位設計，所以垂直面及隅部同時加工；不會因此發生顫抖。
- 可使用低轉數高進給之條件，縮短加工時間進而降低成本；適合於高速M/C進行等高線之銑削。

單位：mm (Unit : mm) 《切削條件：E6,E7》

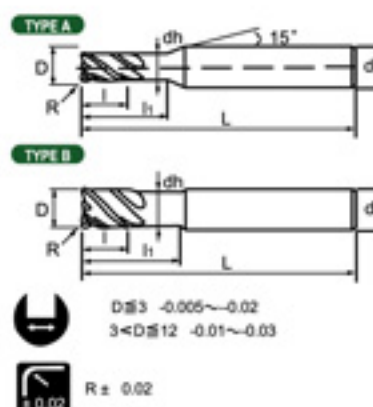
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RTH02005	2	R0.5	0.8	5	1.8	50	6	4
RTH03005	3	R0.5	1.2	7.5	2.7	50	6	4
RTH04010	4	R1	1.6	10	3.6	50	6	4
RTH05010	5	R1	2	12.5	4.5	50	6	4
RTH06010	6	R1	2.5	12	5.4	60	6	4
RTH06015	6	R1.5	2.5	12	5.4	60	6	4
RTH08010	8	R1	3.5	16	7.2	75	8	4
RTH08020	8	R2	3.5	16	7.2	75	8	4
RTH10005	10	R0.5	4	20	9	75	10	4
RTH10010	10	R1	4	20	9	75	10	4
RTH10020	10	R2	4	20	9	75	10	4
RTH12005	12	R0.5	5	24	11	75	12	4
RTH12010	12	R1	5	24	11	75	12	4
RTH12020	12	R2	5	24	11	75	12	4
RTH12030	12	R3	5	24	11	75	12	4

- 可從炭素鋼至熱處理~HRC 65之模具鋼廣泛使用。
- 刃部採用特殊設計，所以大面積平坦部位及隅部加工更顯威力。
- 在一般M/C加工時，可使用低轉數高進給；縮短加工時間進而降低成本。

單位：mm (Unit : mm) 《切削條件：E6,E7》

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	頸長 l <sub>1</sub> Neck Length	頸徑 d <sub>h</sub> Neck dia	全長 L Overall Length	柄徑 d Shank Diameter	刃數 Number of Flute
LRTH02005	2	R0.5	0.8	5	1.8	60	6	4
LRTH03005	3	R0.5	1.2	7.5	2.7	60	6	4
LRTH04010	4	R1	1.6	10	3.6	75	6	4
LRTH05010	5	R1	2	12.5	4.5	75	6	4
LRTH06010	6	R1	2.5	12	5.4	75	6	4
LRTH06015	6	R1.5	2.5	12	5.4	100	6	4
LRTH08010	8	R1	3.5	16	7.2	100	8	4
LRTH08020	8	R2	3.5	16	7.2	100	8	4
LRTH10005	10	R0.5	4	20	9	100	10	4
LRTH10010	10	R1	4	20	9	100	10	4
LRTH10020	10	R2	4	20	9	100	10	4
LRTH12005	12	R0.5	5	24	11	100	12	4
LRTH12010	12	R1	5	24	11	100	12	4
LRTH12020	12	R2	5	24	11	100	12	4
LRTH12030	12	R3	5	24	11	100	12	4

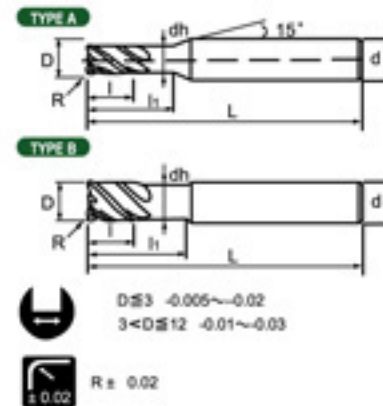
# RTA4 四刃鎢鋼R角銑刀 *Corner Radius, Short, For Hardened Material, 4 Flute*



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	有效長 l <sub>1</sub> Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
RTA010024	1	R0.2	1	3	0.9	50	4	A
RTA015024	1.5	R0.2	1.5	5	1.4	50	4	A
RTA015054	1.5	R0.5	1.5	5	1.4	50	4	A
RTA020024	2	R0.2	2	6	1.9	50	4	A
RTA020054	2	R0.5	2	6	1.9	50	4	A
RTA030024	3	R0.2	3	10	2.9	50	6	A
RTA030054	3	R0.5	3	10	2.9	50	6	A
RTA040024	4	R0.2	4	12	3.9	50	6	A
RTA040054	4	R0.5	4	12	3.9	50	6	A
RTA050054	5	R0.5	5	15	4.8	50	6	A
RTA050104	5	R1	5	15	4.8	50	6	A
RTA060054	6	R0.5	6	18	5.8	60	6	B
RTA060104	6	R1	6	18	5.8	60	6	B
RTA080054	8	R0.5	8	24	7.8	75	8	B
RTA080104	8	R1	8	24	7.8	75	8	B
RTA100054	10	R0.5	10	30	9.7	75	10	B
RTA100104	10	R1	10	30	9.7	75	10	B
RTA100204	10	R2	10	30	9.7	75	10	B
RTA120054	12	R0.5	12	36	11.7	75	12	B
RTA120104	12	R1	12	36	11.7	75	12	B
RTA120204	12	R2	12	36	11.7	75	12	B

《切削條件：E18》



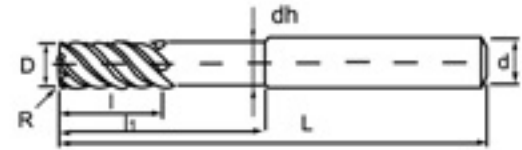
單位 : mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	有效長 l <sub>1</sub> Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLR010024	1	R0.2	1	3	0.92	75	6	A
SLR015024	1.5	R0.2	1.5	5	1.4	75	6	A
SLR015054	1.5	R0.5	1.5	5	1.4	75	6	A
SLR020024	2	R0.2	2	6	1.9	75	6	A
SLR020054	2	R0.5	2	6	1.9	75	6	A
SLR030024	3	R0.2	3	10	2.9	75	6	A
SLR030054	3	R0.5	3	10	2.9	75	6	A
SLR040024	4	R0.2	4	12	3.9	75	6	A
SLR040054	4	R0.5	4	12	3.9	75	6	A
MLR060054	6	R0.5	6	18	5.8	100	6	B
MLR060104	6	R1	6	18	5.8	100	6	B
MLR080054	8	R0.5	8	24	7.8	100	8	B
MLR080104	8	R1	8	24	7.8	100	8	B
MLR100054	10	R0.5	10	30	9.7	100	10	B
MLR100104	10	R1	10	30	9.7	100	10	B
MLR120054	12	R0.5	12	36	11.7	100	12	B
MLR120104	12	R1	12	36	11.7	100	12	B

《切削條件 : E18》

# RTA6 高硬度專用六刃鎢鋼R角銑刀

Corner Radius, Short,  
For Hardened Material, 6 Flute



$3 < D \leq 12 \quad -0.01 \sim -0.03$

$R \pm 0.02$

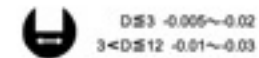
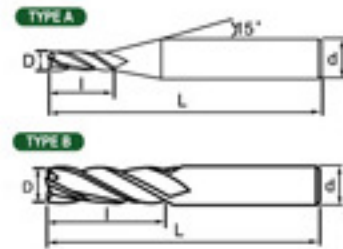
單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	有效長 l <sub>1</sub> Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter
RTA060056	6	R0.5	6	18	5.8	50	6
RTA080056	8	R0.5	8	24	7.8	60	8
RTA100106	10	R1	10	30	9.7	75	10
RTA120106	12	R1	12	36	11.7	75	12

《切削條件：E19》



● **MHD四刃重切削鎢鋼立銑刀** *Medium(Heavy-Duty Operation Type), 4 Flute*



- 可從炭素鋼至熱處理~HRC 55之模具鋼廣泛使用
- 採用高鋼性斷面及45° 強力螺旋角之設計，使得排屑性順暢；所以可作溝加工及側面加工之重切削。

單位：mm (Unit：mm) 《切削條件：E1,E2》

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MHD0204	2	6	50	6	A
MHD0304	3	8	50	6	A
MHD0404	4	11	50	6	A
MHD0504	5	13	50	6	A
MHD0604	6	15	50	6	B
MHD0804	8	20	60	8	B
MHD1004	10	25	75	10	B
MHD1204	12	30	100	12	B
MHD1604	16	45	100	16	B
MHD2004	20	45	100	20	B

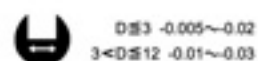
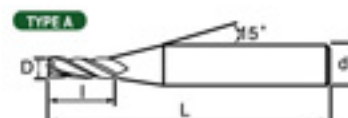
● **SHD四刃短刃重切削鎢鋼立銑刀** *Short(Heavy-Duty Operation Type), 4 Flute*

- 可從炭素鋼至熱處理~HRC 55之模具鋼廣泛使用
- 採用高鋼性斷面及45° 強力螺旋角之設計，使得排屑性順暢；所以可作溝加工及側面加工之重切削。

單位：mm (Unit：mm) 《切削條件：E1,E2》

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SHD0204	2	3	50	6	A
SHD0254	2.5	3.8	50	6	A
SHD0304	3	4.5	50	6	A
SHD0354	3.5	5.3	50	6	A
SHD0404	4	6	50	6	A
SHD0454	4.5	6.8	50	6	A
SHD0504	5	7.5	50	6	A
SHD0604	6	9	50	6	B
SHD0804	8	12	60	8	B
SHD1004	10	15	75	10	B
SHD1204	12	18	75	12	B
SHD1604	16	24	100	16	B
SHD2004	20	30	100	20	B

# PE3 三刃高螺旋鎢鋼立銑刀 Regular Length, 3 Flute



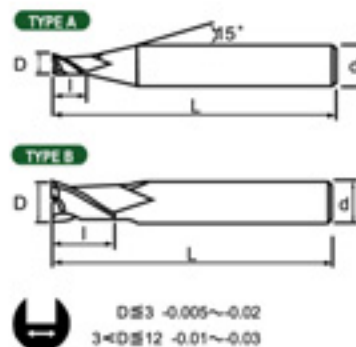
單位：mm (Unit : mm) 《切削條件：E1,E2》

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
PE0103	1	2.5	50	4	A
PE0153	1.5	4	50	4	A
PE0203	2	6	50	6	A
PE0303	3	8	50	6	A
PE0403	4	11	50	6	A
PE0503	5	13	50	6	A
PE0603	6	15	50	6	B
PE0703	7	18	60	8	A
PE0803	8	20	60	8	B
PE0903	9	23	75	10	A
PE1003	10	25	75	10	B
PE1103	11	28	75	12	B
PE1203	12	30	75	12	B

PE系列用於加工不鏽鋼、鈦合金效果特別優異。

The PE series uses in to process the stainless steel, the titanium alloy effect is specially outstanding.



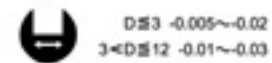
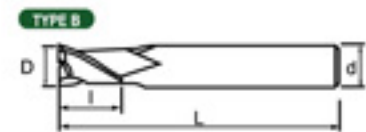
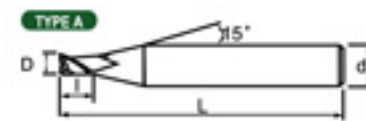


單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSE0022	0.2	0.4	50	4	A
MSE0032	0.3	0.6	50	4	A
MSE0042	0.4	0.8	50	4	A
MSE0052	0.5	1	50	4	A
MSE0062	0.6	1.2	50	4	A
MSE0072	0.7	1.4	50	4	A
MSE0082	0.8	1.6	50	4	A
MSE0092	0.9	2	50	4	A
MSE0102	1	2.5	50	4	A
MSE0152	1.5	4	50	4	A
MSE0202	2	6	50	4	A
MSE0252	2.5	8	50	4	A
MSE0302	3	8	50	4	A
MSE0352	3.5	10	50	4	A
MSE0402	4	11	50	4	B
SE0452	4.5	11	50	6	A
SE0502	5	13	50	6	A
SE0602	6	15	50	6	B
SE0702	7	18	60	8	A
SE0802	8	20	60	8	B
SE0902	9	23	75	10	A
SE1002	10	25	75	10	B
SE1102	11	28	75	12	A
SE1202	12	30	75	12	B
SE1302	13	35	75	16	A
SE1402	14	40	100	16	A
SE1502	15	40	100	16	A
SE1602	16	45	100	16	B

《切削條件：E8,E9》

# SE2 二刃點數鎢鋼立銑刀 Regular Length, 2 Flute



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSE0112	1.1	3	50	4	A
MSE0122	1.2	3	50	4	A
MSE0132	1.3	3	50	4	A
MSE0142	1.4	3	50	4	A
MSE0162	1.6	4	50	4	A
MSE0172	1.7	4	50	4	A
MSE0182	1.8	4	50	4	A
MSE0192	1.9	4	50	4	A
MSE0212	2.1	6	50	4	A
MSE0222	2.2	6	50	4	A
MSE0232	2.3	6	50	4	A
MSE0242	2.4	6	50	4	A
MSE0262	2.6	8	50	4	A
MSE0272	2.7	8	50	4	A
MSE0282	2.8	8	50	4	A
MSE0292	2.9	8	50	4	A
MSE0312	3.1	9	50	4	A
MSE0322	3.2	9	50	4	A
MSE0332	3.3	9	50	4	A
MSE0342	3.4	9	50	4	A
MSE0362	3.6	10	50	4	A
MSE0372	3.7	10	50	4	A
MSE0382	3.8	10	50	4	A
MSE0392	3.9	10	50	4	A
SE0412	4.1	11	50	4	A
SE0422	4.2	11	50	4	A
SE0432	4.3	11	50	6	A
SE0442	4.4	11	50	6	A
SE0462	4.6	13	50	6	A
SE0472	4.7	13	50	6	A
SE0482	4.8	13	50	6	A
SE0492	4.9	13	50	6	A

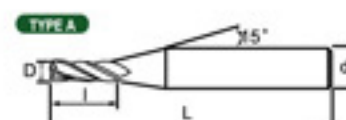
《切削條件：E8,E9》

單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SE0512	5.1	14	50	6	A
SE0522	5.2	14	50	6	A
SE0532	5.3	14	50	6	A
SE0542	5.4	14	50	6	A
SE0552	5.5	15	50	6	A
SE0562	5.6	15	50	6	A
SE0572	5.7	15	50	6	A
SE0582	5.8	15	50	6	A
SE0592	5.9	15	50	6	A
SE0612	6.1	17	60	8	A
SE0622	6.2	17	60	8	A
SE0632	6.3	17	60	8	A
SE0642	6.4	17	60	8	A
SE0652	6.5	18	60	8	A
SE0662	6.6	18	60	8	A
SE0672	6.7	18	60	8	A
SE0682	6.8	18	60	8	A
SE0692	6.9	18	60	8	A
SE0712	7.1	19	60	8	A
SE0722	7.2	19	60	8	A
SE0732	7.3	19	60	8	A
SE0742	7.4	19	60	8	A
SE0752	7.5	20	60	8	A
SE0762	7.6	20	60	8	A
SE0772	7.7	20	60	8	A
SE0782	7.8	20	60	8	A
SE0792	7.9	20	60	8	A
SE0812	8.1	21	75	10	A
SE0822	8.2	21	75	10	A
SE0832	8.3	21	75	10	A
SE0842	8.4	21	75	10	A
SE0852	8.5	23	75	10	A
SE0862	8.6	23	75	10	A
SE0872	8.7	23	75	10	A
SE0882	8.8	23	75	10	A
SE0892	8.9	23	75	10	A
SE0912	9.1	25	75	10	A
SE0922	9.2	25	75	10	A
SE0932	9.3	25	75	10	A
SE0942	9.4	25	75	10	A
SE0952	9.5	25	75	10	A
SE0962	9.6	25	75	10	A
SE0972	9.7	25	75	10	A
SE0982	9.8	25	75	10	A
SE0992	9.9	25	75	10	A

《切削條件：E8,E9》

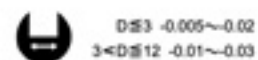
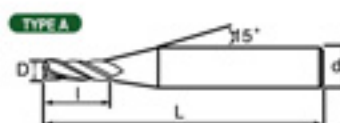
# SE4 四刃鎢鋼立銑刀 Regular Length, 4 Flute



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSE0104	1	2.5	50	4	A
MSE0154	1.5	4	50	4	A
MSE0204	2	6	50	4	A
MSE0254	2.5	8	50	4	A
MSE0304	3	8	50	4	A
MSE0354	3.5	10	50	4	A
MSE0404	4	11	50	4	B
SE0404	4	11	50	6	A
SE0454	4.5	11	50	6	A
SE0504	5	13	50	6	A
SE0604	6	15	50	6	B
SE0704	7	18	60	8	A
SE0804	8	20	60	8	B
SE0904	9	23	75	10	A
SE1004	10	25	75	10	B
SE1104	11	28	75	12	A
SE1204	12	30	75	12	B
SE1304	13	35	100	16	A
SE1404	14	40	100	16	A
SE1504	15	40	100	16	A
SE1604	16	45	100	16	B
SE1804	18	45	100	20	A
SE2004	20	45	100	20	B

《切削條件：E10》



單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLE0104	1	2.5	75	6	A
SLE0204	2	6	75	6	A
SLE0304	3	8	75	6	A
SLE0404	4	11	75	6	A
MLE0404	4	11	100	6	A
SLE0504	5	13	75	6	A
MLE0504	5	13	100	6	A
SLE0604	6	15	75	6	B
MLE0604	6	15	100	6	B
MLE0804	8	20	100	8	B
MLE1004	10	25	100	10	B
LLE1004	10	25	150	10	B
MLE1204	12	30	100	12	B
LLE1204	12	30	150	12	B
MLE1604	16	45	150	16	B

《切削條件：E10》

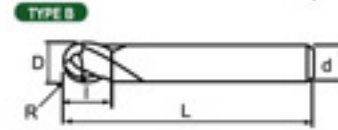
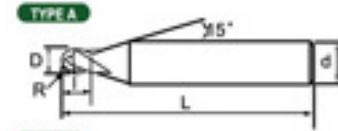
# LET4 四刃長刃鎢鋼立銑刀 Regular Length, 4 Flute



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
LET0104	1	5	50	4	B
LET0154	1.5	8	50	4	B
LET0204	2	10	50	4	B
LET0304	3	15	75	6	B
LET0404	4	20	75	6	B
LET0504	5	25	75	6	B
LET0604	6	30	75	6	A
LET0704	7	35	100	8	B
LET0804	8	40	100	8	A
LET0904	9	45	100	10	B
LET1004	10	45	100	10	A
LET1204	12	45	100	12	A
LET1604	16	70	150	16	A
LET2004	20	80	150	20	A

《切削條件：E10》



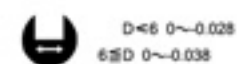
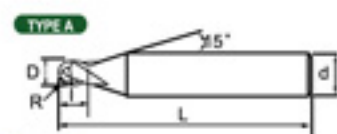
單位：mm (Unit：mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MSB0022	0.1R	0.2	0.3	50	4	A
MSB0032	0.15R	0.3	0.5	50	4	A
MSB0042	0.2R	0.4	0.6	50	4	A
MSB0052	0.25R	0.5	0.8	50	4	A
MSB0062	0.3R	0.6	0.9	50	4	A
MSB0082	0.4R	0.8	1.2	50	4	A
MSB0102	0.5R	1	2	50	4	A
MSB0152	0.75R	1.5	3	50	4	A
MSB0202	1R	2	4	50	4	A
MSB0252	1.25R	2.5	5	50	4	A
SSB0302	1.5R	3	6	50	3	B
MSB0302	1.5R	3	6	50	4	A
MSB0352	1.75R	3.5	7	50	4	A
MSB0402	2R	4	8	50	4	B
SB0502	2.5R	5	10	50	6	A
SB0602	3R	6	12	50	6	B
SB0702	3.5R	7	14	60	8	A
SB0802	4R	8	16	60	8	B
SB0902	4.5R	9	18	75	10	A
SB1002	5R	10	20	75	10	B
SB1102	5.5R	11	22	75	12	A
SB1202	6R	12	24	75	12	B
SB1602	8R	16	32	100	16	B
SB2002	10R	20	40	100	20	B

《切削條件：E12,E13》

www.hdtools.com.tw

# SLB2/MLB2/LLB2 二刃長柄鎢鋼球刀 Ball Nose, Long, 2 Flute

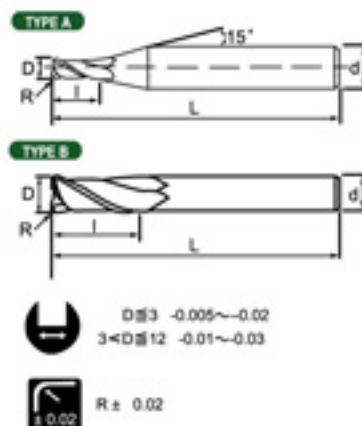


單位：mm (Unit : mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLB0102	0.5R	1	2	75	6	A
MLB0102		1	2	100	6	A
SLB0152	0.75R	1.5	3	75	6	A
MLB0152		1.5	3	100	6	A
SLB0202	1R	2	4	75	6	A
MLB0202		2	4	100	6	A
SLB0302	1.5R	3	6	75	6	A
MLB0302		3	6	100	6	A
SLB0402	2R	4	8	75	6	A
MLB0402		4	8	100	6	A
SLB0502	2.5R	5	10	75	6	A
MLB0502		5	10	100	6	A
SLB0602	3R	6	12	75	6	B
MLB0602		6	12	100	6	B
MLB0802	4R	8	16	100	8	B
MLB1002	5R	10	20	100	10	B
LLB1002		10	20	150	10	B
MLB1202	6R	12	24	100	12	B
LLB1202		12	24	150	12	B
MLB1602	8R	16	32	150	16	B
LLB1602		16	32	200	16	B
MLB2002	10R	20	40	150	20	B
LLB2002		20	40	200	20	B

《切削條件：E16》



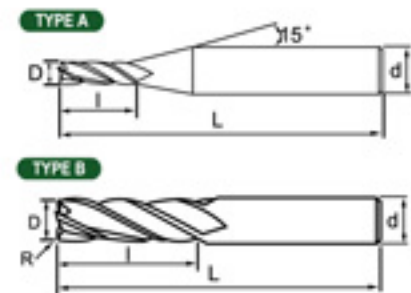


單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
MRTA010022	1	R0.2	2	50	4	A
MRTA015022	1.5	R0.2	3	50	4	A
MRTA015052	1.5	R0.5	3	50	4	A
MRTA020022	2	R0.2	4	50	4	A
MRTA020052	2	R0.5	4	50	4	A
MRTA030022	3	R0.2	6	50	4	A
MRTA030052	3	R0.5	6	50	4	A
MRTA040022	4	R0.2	8	50	4	B
MRTA040052	4	R0.5	8	50	4	B
MRTA040102	4	R1	8	50	4	B
RTA060022	6	R0.2	12	50	6	B
RTA060052	6	R0.5	12	50	6	B
RTA060102	6	R1	12	50	6	B
RTA080052	8	R0.5	16	60	8	B
RTA080102	8	R1	16	60	8	B
RTA080202	8	R2	16	60	8	B
RTA100052	10	R0.5	20	75	10	B
RTA100102	10	R1	20	75	10	B
RTA100202	10	R2	20	75	10	B
RTA120052	12	R0.5	24	75	12	B
RTA120102	12	R1	24	75	12	B
RTA120202	12	R2	24	75	12	B

《切削條件：E17》

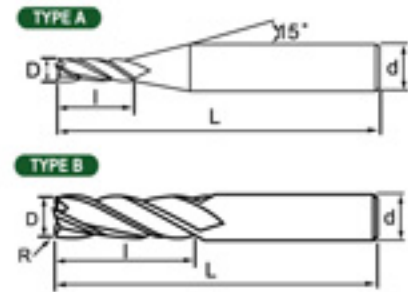
# RTA4 四刃鎢鋼R角銑刀 *Conner Radius, Short, 4 Flute*



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
RTA010024	1	0.2R	2	50	4	A
RTA015024	1.5	0.2R	3	50	4	A
RTA015054	1.5	0.5R	3	50	4	A
RTA020024	2	0.2R	4	50	4	A
RTA020054	2	0.5R	4	50	4	A
RTA030024	3	0.2R	6	50	4	A
RTA030054	3	0.5R	6	50	4	A
RTA040024	4	0.2R	8	50	4	B
RTA040054	4	0.5R	8	50	4	B
RTA050054	5	0.5R	10	50	6	A
RTA050104	5	1R	10	50	6	A
RTA060024	6	0.2R	12	50	6	B
RTA060054	6	0.5R	12	50	6	B
RTA060104	6	1R	12	50	6	B
RTA080054	8	0.5R	16	60	8	B
RTA080104	8	1R	16	60	8	B
RTA100054	10	0.5R	20	75	10	B
RTA100104	10	1R	20	75	10	B
RTA100204	10	2R	20	75	10	B
RTA120054	12	0.5R	24	75	12	B
RTA120104	12	1R	24	75	12	B
RTA120204	12	2R	24	75	12	B

《切削條件：E18》



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
SLR010024	1	0.2R	2	75	6	A
SLR015024	1.5	0.2R	3	75	6	A
SLR015054	1.5	0.5R	3	75	6	A
SLR020024	2	0.2R	4	75	6	A
SLR020054	2	0.5R	4	75	6	A
SLR030024	3	0.2R	6	75	6	A
SLR030054	3	0.5R	6	75	6	A
SLR040024	4	0.2R	8	75	6	A
SLR040054	4	0.5R	8	75	6	A
MLR060054	6	0.5R	12	100	6	B
MLR060104	6	1R	12	100	6	B
MLR080054	8	0.5R	16	100	8	B
MLR080104	8	1R	16	100	8	B
MLR100054	10	0.5R	20	100	10	B
MLR100104	10	1R	20	100	10	B
MLR120054	12	0.5R	24	100	12	B
MLR120104	12	1R	24	100	12	B

《切削條件：E18》

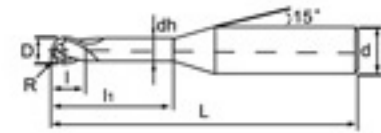
# LNT 二刃深溝加工用鎢鋼立銑刀 For Deep Rib Processing, Long Neck, 2 Flute



單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	有效長 l1 Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter
LNT02012	0.2	0.3	1	0.18	50	4
LNT02022	0.2	0.3	2	0.18	50	4
LNT03012	0.3	0.4	1	0.27	50	4
LNT03022	0.3	0.4	2	0.27	50	4
LNT04022	0.4	0.6	2	0.36	50	4
LNT04042	0.4	0.6	4	0.36	50	4
LNT05022	0.5	0.7	2	0.46	50	4
LNT05042	0.5	0.7	4	0.46	50	4
LNT05062	0.5	0.7	6	0.46	50	4
LNT06042	0.6	0.9	4	0.55	50	4
LNT06062	0.6	0.9	6	0.55	50	4
LNT06082	0.6	0.9	8	0.55	50	4
LNT08042	0.8	1.2	4	0.75	50	4
LNT08062	0.8	1.2	6	0.75	50	4
LNT08082	0.8	1.2	8	0.75	50	4
LNT08122	0.8	1.2	12	0.75	50	4
LNT10062	1	1.5	6	0.96	50	4
LNT10082	1	1.5	8	0.96	50	4
LNT10102	1	1.5	10	0.96	50	4
LNT10122	1	1.5	12	0.96	50	4
LNT15082	1.5	2.3	8	1.46	50	4
LNT15102	1.5	2.3	10	1.46	50	4
LNT15122	1.5	2.3	12	1.46	50	4
LNT15162	1.5	2.3	16	1.46	50	4
LNT20082	2	3	8	1.96	50	4
LNT20102	2	3	10	1.96	50	4
LNT20122	2	3	12	1.96	50	4
LNT20162	2	3	16	1.96	50	4
LNT20202	2	3	20	1.96	50	4
LNT25102	2.5	3.7	10	2.46	50	4
LNT25122	2.5	3.7	12	2.46	50	4
LNT25162	2.5	3.7	16	2.46	50	4
LNT25202	2.5	3.7	20	2.46	50	4
LNT30102	3	4.5	10	2.96	50	6
LNT30122	3	4.5	12	2.96	50	6
LNT30162	3	4.5	16	2.96	50	6
LNT30202	3	4.5	20	2.96	50	6
LNT30252	3	4.5	25	2.96	50	6

《切削條件：E20》



$D < 6 \quad \phi \sim -0.028$

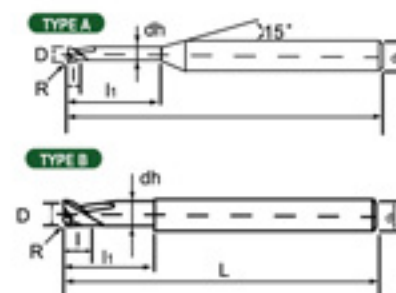
$R \pm 0.01$

單位 : mm (Unit : mm)

產品編號 Model No.	球頭半徑 R Radius(R)	刃徑 D Diameter	刃長 l Flute Length	有效長 l <sub>1</sub> Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter
LNB04022	0.2R	0.4	0.4	2	0.37	50	4
LNB04042	0.2R	0.4	0.4	4	0.37	50	4
LNB05042	0.25R	0.5	0.5	4	0.46	50	4
LNB05062	0.25R	0.5	0.5	6	0.46	50	4
LNB06042	0.3R	0.6	0.6	4	0.56	50	4
LNB06062	0.3R	0.6	0.6	6	0.56	50	4
LNB06082	0.3R	0.6	0.6	8	0.56	50	4
LNB08042	0.4R	0.8	0.8	4	0.76	50	4
LNB08062	0.4R	0.8	0.8	6	0.76	50	4
LNB08082	0.4R	0.8	0.8	8	0.76	50	4
LNB10042	0.5R	1	1	4	0.96	50	4
LNB10062	0.5R	1	1	6	0.96	50	4
LNB10082	0.5R	1	1	8	0.96	50	4
LNB10102	0.5R	1	1	10	0.96	50	4
LNB10122	0.5R	1	1	12	0.96	50	4
LNB15082	0.75R	1.5	1.5	8	1.46	50	4
LNB15102	0.75R	1.5	1.5	10	1.46	50	4
LNB15122	0.75R	1.5	1.5	12	1.46	50	4
LNB15162	0.75	1.5	1.5	16	1.46	50	4
LNB20082	1R	2	2	8	1.96	50	4
LNB20102	1R	2	2	10	1.96	50	4
LNB20122	1R	2	2	12	1.96	50	4
LNB20162	1R	2	2	16	1.96	50	4
LNB20202	1R	2	2	20	1.96	50	4
LNB30162	1.5R	3	3	16	2.96	50	6
LNB30202	1.5R	3	3	20	2.96	50	6
LNB30252	1.5R	3	3	25	2.96	75	6
LNB40162	2R	4	4	16	3.96	50	6
LNB40202	2R	4	4	20	3.96	50	6
LNB40252	2R	4	4	25	3.96	75	6
LNB40302	2R	4	4	30	3.96	75	6

《切削條件 : E20》

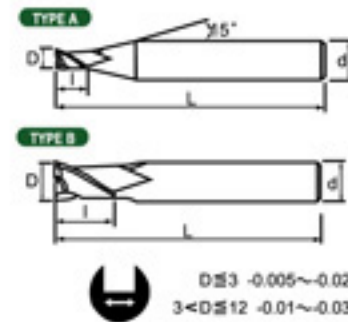
# LNR 二刃深溝加工用鎢鋼R角銑刀 *Corner Radius, For Deep Rib, Long Neck, 2 Flute*



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	R角 R Corner Radius	刃長 l Flute Length	有效長 l1 Effective Length	頸徑 dh Neck dia	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
LNR1002042	1	R0.2	1	4	0.96	50	4	A
LNR1002062	1	R0.2	1	6	0.96	50	4	A
LNR1502082	1.5	R0.2	1.5	8	1.45	50	4	A
LNR1502122	1.5	R0.2	1.5	12	1.45	50	4	A
LNR2002083	2	R0.2	2	8	1.96	50	4	A
LNR2002102	2	R0.2	2	10	1.96	50	4	A
LNR2002122	2	R0.2	2	12	1.96	50	4	A
LNR2002162	2	R0.2	2	16	1.96	50	4	A
LNR2005082	2	R0.5	2	8	1.96	50	4	A
LNR2005102	2	R0.5	2	10	1.96	50	4	A
LNR2005122	2	R0.5	2	12	1.96	50	4	A
LNR2005162	2	R0.5	2	16	1.96	50	4	A
LNR3002162	3	R0.2	3	16	2.96	50	6	A
LNR3002202	3	R0.2	3	20	2.96	50	6	A
LNR3005162	3	R0.5	3	16	2.96	50	6	A
LNR3005202	3	R0.5	3	20	2.96	50	6	A
LNR4002202	4	R0.2	4	20	3.96	50	6	A
LNR4002252	4	R0.2	4	25	3.96	75	6	A
LNR4005202	4	R0.5	4	20	3.96	50	6	A
LNR4005252	4	R0.5	4	25	3.96	75	6	A

《切削條件：E20》



■ 大切深. 高進給. 加工面精細

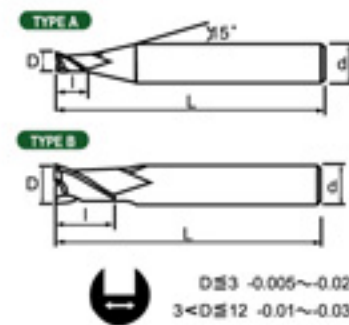
單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
AE0103	1	3	50	4	A
AE0153	1.5	5	50	4	A
AE0203	2	6	50	6	A
AE0303	3	9	50	6	A
AE0403	4	12	50	6	A
AE0503	5	13	50	6	A
AE0603	6	15	50	6	B
AE0703	7	18	60	8	A
AE0803	8	20	60	8	B
AE0903	9	25	75	10	A
AE1003	10	25	75	10	B
AE1103	11	30	75	12	A
AE1203	12	30	75	12	B
AE1603	16	50	100	16	B
AE2003	20	50	100	20	B

※ 另有鋁用R角銑刀



# AEL3 龍捲風鋁合金專用三刃鎢鋼立銑刀 *Long, For Aluminum Alloy, 3 Flute*

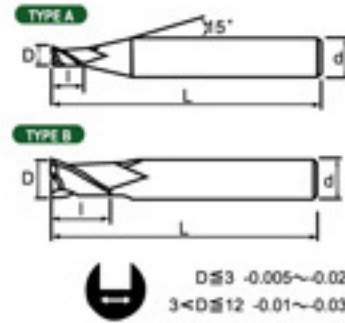


單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
AEL0203	2	10	75	6	A
AEL0303	3	15	75	6	A
AEL0403	4	20	75	6	A
AEL0503	5	25	75	6	A
AEL0603	6	30	75	6	B
AEL0803	8	40	100	8	B
AEL1003	10	50	100	10	B
AEL1203	12	50	100	12	B
AEL1603	16	70	150	16	B
AEL2003	20	80	150	20	B



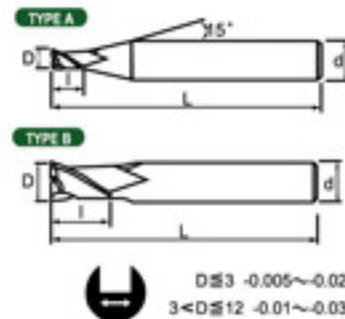
● **AE52 鋁合金專用二刃鎢鋼立銑刀** *Medium, For Aluminum Alloy, 2 Flute*



單位：mm (Unit : mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
AE5 0102	1	3	50	4	A
AE5 0152	1.5	4.5	50	4	A
AE5 0202	2	6	50	6	A
AE5 0302	3	9	50	6	A
AE5 0402	4	12	50	6	A
AE5 0502	5	15	50	6	A
AE5 0602	6	18	50	6	B
AE5 0802	8	24	60	8	B
AE5 1002	10	30	75	10	B
AE5 1202	12	30	75	12	B

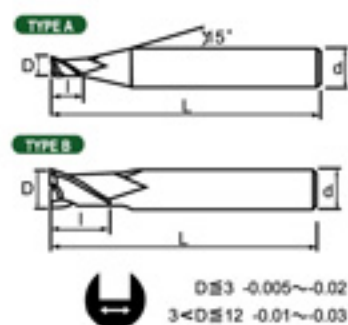
● **AE53 鋁合金專用三刃鎢鋼立銑刀** *Medium, For Aluminum Alloy, 3 Flute*



單位：mm (Unit : mm)

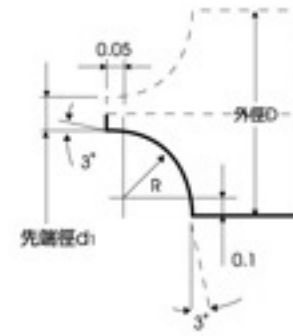
產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
AE5 0203	2	6	50	4	A
AE5 0303	3	9	50	4	A
AE5 0403	4	12	50	4	B
AE5 0503	5	15	50	6	A
AE5 0603	6	18	50	6	B
AE5 0803	8	24	60	8	B
AE5 1003	10	30	75	10	B
AE5 1203	12	30	75	12	B
AE5 1403	14	45	100	16	A
AE5 1603	16	50	100	16	B

# AEL53 鋁合金專用三刃長刃鎢鋼立銑刀 Long, For Aluminum Alloy, 3 Flute



單位：mm (Unit : mm)

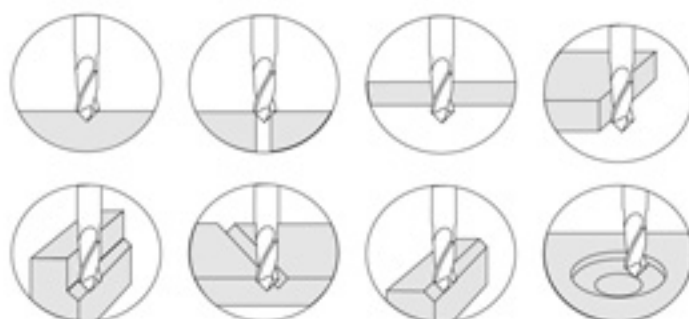
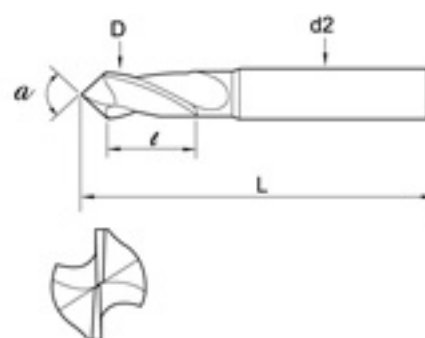
產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	全長 L Overall Length	柄徑 d Shank Diameter	型式 Type
AEL5 0203	2	10	75	6	A
AEL5 0303	3	15	75	6	A
AEL5 0403	4	20	75	6	A
AEL5 0503	5	25	75	6	A
AEL5 0603	6	30	75	6	B
AEL5 0803	8	40	100	8	B
AEL5 1003	10	50	100	10	B
AEL5 1203	12	50	100	12	B
AEL5 1603	16	70	150	16	B
AEL5 2003	20	80	150	20	B



單位：mm (Unit : mm)

產品編號 Model No.	外R角 R Radius	先端徑 $d_1$ First Diameter	外徑 D Outside Diameter	全長 L Overall Length	柄徑 d Shank Diameter
RC010	0.5R	1.5	2.7	50	4
RC015	0.75R	1.5	3.2	50	4
RC020	1R	1.5	3.7	50	4
RC030	1.5R	1.5	4.7	50	6
RC040	2R	1.5	5.7	50	6
RC050	2.5R	1.5	6.7	50	8
RC060	3R	1.5	7.7	60	8
RC080	4R	2.0	10.2	75	12
RC100	5R	3.0	13.2	100	16
RC120	6R	3.0	15.2	100	16

# V2SD 鎢鋼鑽銑刀 Boring&Milling, 2 Flute



單位：mm (Unit：mm)

產品編號 Model No.	刃徑 D Diameter	刃長 l Flute Length	角度 a Top Degree	全長 L Overall Length	柄徑 d Shank Diameter
V2SD0302	3	8	90°	50	3
V2SDL0302	3	8	90°	75	3
V2SD0402	4	11	90°	50	4
V2SDL0402	4	11	90°	75	4
V2SD0602	6	15	90°	50	6
V2SDL0602	6	15	90°	100	6
V2SD0802	8	20	90°	60	8
V2SDL0802	8	20	90°	100	8
V2SD1002	10	25	90°	75	10
V2SDL1002	10	25	90°	100	10
V2SD1202	12	30	90°	75	12
V2SDL1202	12	30	90°	100	12
V2SD1602	16	45	90°	100	16
V2SDL1602	16	45	90°	150	16

※ 角度60°、120°請另洽詢

## ■ MHD/SHD/PE3側面切削 MHD/SHD/PE3 Side Milling

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250(~750N/mm)		合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (~30HRC)		調質鋼(30~38HRC) 預硬鋼(快削)Hardened Steel Pre-hardened Steel(Free Cutting)SKT, SKD, NAK, HPM1		調質鋼, 不銹鋼 (38~45HRC)Hardened Steel Stainless Steel SUS304, NAK, SKD		熱處理鋼(45~55HRC) 鈦合金, 耐熱合金Hardened Steel, Titanium Alloy SKD61, SKD11, STAVAX等		熱處理鋼(55~60HRC) Hardened steel SKD11, SKH, SKS等 AISI H13, AISI D2 etc													
削材速度 Cutting Speed	100m/min		78m/min		66m/min		62m/min		60m/min		30m/min													
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate												
3	10,600	975	8,300	760	7,000	560	6,600	555	6,350	485	3,200	190												
4	8,000	1,000	6,200	820	5,300	570	4,950	590	4,750	515	2,400	190												
5	6,400	1,050	5,000	850	4,200	590	3,950	630	3,800	535	1,900	190												
6	5,300	1,250	4,200	950	3,500	700	3,300	660	3,200	545	1,600	190												
8	4,000	1,250	3,100	895	2,650	660	2,450	640	2,400	555	1,200	175												
10	3,200	1,100	2,500	855	2,100	605	1,950	590	1,900	525	955	160												
12	2,650	1,100	2,050	850	1,750	565	1,650	535	1,600	475	795	160												
16	2,000	955	1,550	745	1,300	500	1,250	445	1,200	400	595	160												
20	1,600	765	1,250	595	1,050	455	985	395	955	355	475	160												
切削量基準 Depth of cut (D:直徑 Dia.)	<table border="1"> <tr><td>Ad</td><td>Rd</td></tr> <tr><td>1.5D</td><td>0.2D</td></tr> </table>						Ad	Rd	1.5D	0.2D	<table border="1"> <tr><td>Ad</td><td>Rd</td></tr> <tr><td>1.5D</td><td>0.1D</td></tr> </table>		Ad	Rd	1.5D	0.1D	<table border="1"> <tr><td>Ad</td><td>Rd</td></tr> <tr><td>1D</td><td>0.05D</td></tr> </table>				Ad	Rd	1D	0.05D
Ad	Rd																							
1.5D	0.2D																							
Ad	Rd																							
1.5D	0.1D																							
Ad	Rd																							
1D	0.05D																							

## ■ MHD/SHD/PE3溝切削 MHD/SHD/PE3 Slotting

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250(~750N/mm)		合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (~30HRC)		調質鋼(30~38HRC) 預硬鋼(快削)Hardened Steel Pre-hardened Steel(Free Cutting)SKT, SKD, NAK, HPM1		調質鋼, 不銹鋼 (38~45HRC)Hardened Steel Stainless Steel SUS304, NAK, SKD		熱處理鋼(45~55HRC) 鈦合金, 耐熱合金Hardened Steel, Titanium Alloy SKD61, SKD11, STAVAX等		熱處理鋼(55~60HRC) Hardened steel SKD11, SKH, SKS等 AISI H13, AISI D2 etc				
削材速度 Cutting Speed	80m/min		60m/min		55m/min		52m/min		42m/min		20m/min				
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate			
3	8,500	705	6,350	595	5,850	455	5,500	400	4,450	320	2,100	110			
4	6,350	705	4,750	675	4,400	455	4,150	450	3,350	360	1,600	120			
5	5,100	715	3,800	660	3,500	475	3,300	475	2,650	385	1,250	125			
6	4,250	715	3,200	560	2,900	500	2,750	495	2,250	400	1,050	125			
8	3,200	660	2,400	550	2,200	545	2,050	515	1,650	415	795	125			
10	2,550	610	1,900	535	1,750	475	1,650	470	1,350	380	635	115			
12	2,100	610	1,600	475	1,450	450	1,400	440	1,100	355	530	115			
16	1,600	610	1,200	430	1,100	370	1,050	370	835	300	400	88			
20	1,250	510	955	380	875	350	830	330	670	265	320	89			
切削量基準 Depth of cut (D:直徑 Dia.)	<table border="1"> <tr><td>Ad</td></tr> <tr><td>Ad = 0.5D</td></tr> </table>						Ad	Ad = 0.5D	<table border="1"> <tr><td>Ad = 0.05D</td></tr> </table>						Ad = 0.05D
Ad															
Ad = 0.5D															
Ad = 0.05D															

- 1)請使用剛性及精準度較佳之機械與夾頭。
- 2)當切削量過大或機械剛性不足時,請降低回轉數及進給速度。
- 3)請使用不易產生煙霧之切削液。
- 4)在乾式切削時,請用空氣將切屑吹離加工範圍。

- 1)Use a rigid and precise machine and holder.
- 2)Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
- 3)Please use a suitable fluid with high smoke rstartant properties.
- 4)During DRY(no fluid) milling , please use air blow to remove disposable chips from the moilling area and to eliminate chip packing

# MHD/SHD/PE3 高速側面切削/高速溝切削



**注意：**  
加工時產生的火花及破損引起的發熱，可能導致燃燒或  
火災；請務必要有防火措施



**Caution:**  
Sparks generated during operation or heat caused by tool breakage  
can cause fire. Be sure to use all proper fire-prevention measures.

## ■ MHD/SHD/PE3 高速側面切削 MHD/SHD/PE3 High Speed Side Milling

The conditions below are for high speed / high precision machining centers

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250 (~750N/mm <sup>2</sup> )	合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (~30HRC)	調質鋼(30~38HRC) 預硬鋼(快削)/Hardened Steel Pre-hardened Steel(Free Cutting)SKT, SKD, NAK, HPM1	調質鋼, 不銹鋼 (38~45HRC)/Hardened Steel Stainless Steel SUS304, NAK, SKD	熱處理鋼(45~55HRC) 鈦合金, 耐熱合金/Hardened Steel, Titanium Alloy SKD61, SKD11, STAVAX等	熱處理鋼(55~60HRC) Hardened steel SKD11, SKH, SKS等 AISI H13, AISI D2 etc																																	
削材速度 Cutting Speed	200m/min	200m/min	200m/min	150m/min	100m/min	80m/min																																	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate																											
3	21,200	2,150	21,200	2,400	21,200	1,300	15,900	1,150	10,600	680	8,500	440																											
4	15,900	2,050	15,900	2,300	15,900	1,300	11,900	1,250	7,950	795	6,350	460																											
5	12,700	1,900	12,700	2,150	12,700	1,250	9,550	1,350	6,350	840	5,100	510																											
6	10,600	3,050	10,600	2,650	10,600	2,000	7,950	1,450	5,300	910	4,250	610																											
8	7,950	2,800	7,950	2,400	7,950	1,900	5,950	1,400	4,000	860	3,200	575																											
10	6,350	2,550	6,350	2,200	6,350	1,850	4,750	1,350	3,200	830	2,550	510																											
12	5,300	2,550	5,300	2,200	5,300	1,800	4,000	1,350	2,650	830	2,100	510																											
16	4,000	1,900	4,000	1,900	4,000	1,700	3,000	1,350	2,000	830	1,600	510																											
20	3,200	1,550	3,200	1,550	3,200	1,550	2,400	1,150	1,600	730	1,250	510																											
切削量基準 Depth of cut (D-直徑 Dia.)	<table border="1"> <thead> <tr> <th></th> <th>Ad</th> <th>Rd</th> </tr> </thead> <tbody> <tr> <td>D &lt; φ6</td> <td>1.50</td> <td>0.020</td> </tr> <tr> <td>φ6 ≤ D</td> <td>1.50</td> <td>0.050</td> </tr> </tbody> </table> <p>Rd Max=0.5mm</p> <table border="1"> <thead> <tr> <th></th> <th>Ad</th> <th>Rd</th> </tr> </thead> <tbody> <tr> <td>D &lt; φ6</td> <td>1.50</td> <td>0.010</td> </tr> <tr> <td>φ6 ≤ D</td> <td>1.50</td> <td>0.020</td> </tr> </tbody> </table> <p>Rd Max=0.5mm</p> <table border="1"> <thead> <tr> <th></th> <th>Ad</th> <th>Rd</th> </tr> </thead> <tbody> <tr> <td>D &lt; φ6</td> <td>1.50</td> <td>0.010</td> </tr> <tr> <td>φ6 ≤ D</td> <td>1.50</td> <td>0.020</td> </tr> </tbody> </table> <p>Rd Max=0.5mm</p>													Ad	Rd	D < φ6	1.50	0.020	φ6 ≤ D	1.50	0.050		Ad	Rd	D < φ6	1.50	0.010	φ6 ≤ D	1.50	0.020		Ad	Rd	D < φ6	1.50	0.010	φ6 ≤ D	1.50	0.020
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## ■ MHD/SHD/PE3 高速溝切削 MHD/SHD/PE3 High Speed Slotting

The conditions below are for high speed / high precision machining centers

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250 (~750N/mm <sup>2</sup> )	合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (~30HRC)	調質鋼(30~38HRC) 預硬鋼(快削)/Hardened Steel Pre-hardened Steel(Free Cutting)SKT, SKD, NAK, HPM1	調質鋼, 不銹鋼 (38~45HRC)/Hardened Steel Stainless Steel SUS304, NAK, SKD				
削材速度 Cutting Speed	120m/min	110m/min	90~100m/min	60~70m/min				
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
3	12,700	1,050	10,600	935	9,550	745	6,350	460
4	9,550	1,150	7,950	1,000	7,150	745	5,150	560
5	7,650	1,200	7,000	1,100	6,350	865	4,150	595
6	6,350	1,550	5,850	1,150	5,300	910	3,700	670
8	4,750	1,450	4,400	1,300	4,000	985	2,800	690
10	3,800	1,400	3,500	1,200	3,200	865	2,250	635
12	3,200	1,250	2,900	1,150	2,650	815	1,850	595
16	2,400	1,050	2,200	965	2,000	675	1,400	500
20	1,900	840	1,750	770	1,600	635	1,100	445
切削量基準 Depth of cut (D-直徑 Dia.)	<p>Ad=0.20 Ad Max=3mm</p>							

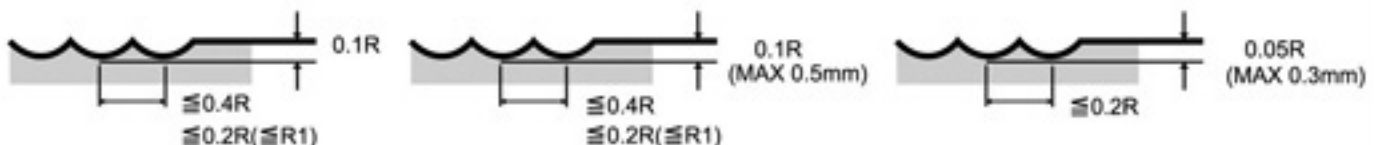
- 1)請使用剛性及精準度較佳之機械與夾頭。
- 2)當切削量過大或機械剛性不足時,請降低回轉數及進給速度。
- 3)請使用不易產生煙霧之切削液。
- 4)在乾式切削時,請用空氣將切屑吹離加工範圍。

- 1)Use a rigid and precise machine and holder.
- 2)Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.
- 3)Please use a suitable fluid with high smoke rstandant properties.
- 4)During DRY(no fluid) milling , please use air blow to remove disposable chips from the moilling area and to eliminate chip packing

■ SBH切削條件表 SBH Standard Cutting Conditions

被削材 Work Material	合金鋼,工具鋼,預硬鋼(~45HRC) Alloy steel, Tool steel,Prehardned Steel,SCM,SKD61,SKD11,NAK等 AISI H13 ,AISI D2 etc.				熱處理鋼(45~55HRC) Hardened steel SKD61,SKD11,STAVAX等 AISI H13 etc.				熱處理鋼(55~62HRC) Hardened steel SKD11,SKH,SKS, ASP23等 AISI D2 etc.				
切削速度 Cutting Speed	100~300m/min				100~250m/min				30~100m/min				
球頭半徑 R	加工面 傾斜角 $\alpha$	回轉數 ( $\text{min}^{-1}$ ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 ( $\text{min}^{-1}$ ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 ( $\text{min}^{-1}$ ) Speed	進給速度 mm/min Feed Rate	切削量(mm)	
				Pf Pick feed	Ad MillingAmount			Pf Pick feed	Ad MillingAmount			Pf Pick feed	Ad MillingAmount
0.5	$\alpha \leq 15^\circ$	40,000	3,000	$\leq 0.2R$	$\leq 0.1R$	35,000	2,300	$\leq 0.2R$	$\leq 0.1R$	21,000	1,300	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	35,000	2,000			30,000	1,400			15,000	740		
0.75	$\alpha \leq 15^\circ$	40,000	3,900	$\leq 0.2R$	$\leq 0.1R$	30,000	2,300	$\leq 0.2R$	$\leq 0.1R$	14,000	1,150	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	30,000	2,200			25,000	1,400			10,000	610		
1	$\alpha \leq 15^\circ$	35,000	3,900	$\leq 0.2R$	$\leq 0.1R$	25,000	2,300	$\leq 0.2R$	$\leq 0.1R$	11,000	1,040	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	25,000	2,200			20,000	1,400			8,000	550		
1.25	$\alpha \leq 15^\circ$	33,000	3,900	$\leq 0.4R$	$\leq 0.1R$	22,000	2,200	$\leq 0.4R$	$\leq 0.1R$	9,300	920	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	24,000	2,200			17,000	1,300			6,500	480		
1.5	$\alpha \leq 15^\circ$	30,000	3,900	$\leq 0.4R$	$\leq 0.1R$	20,000	2,200	$\leq 0.4R$	$\leq 0.1R$	8,000	870	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	23,000	2,200			15,000	1,300			5,600	450		
2	$\alpha \leq 15^\circ$	25,000	3,900	$\leq 0.4R$	$\leq 0.1R$	17,000	2,200	$\leq 0.4R$	$\leq 0.1R$	6,400	830	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	20,000	2,200			13,000	1,300			4,500	440		
2.5	$\alpha \leq 15^\circ$	23,000	3,900	$\leq 0.4R$	$\leq 0.1R$	15,000	2,200	$\leq 0.4R$	$\leq 0.1R$	5,000	710	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	17,000	2,200			11,000	1,300			3,500	370		
3	$\alpha \leq 15^\circ$	20,000	3,900	$\leq 0.4R$	$\leq 0.1R$	13,000	2,200	$\leq 0.4R$	$\leq 0.1R$	4,200	680	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	15,000	2,200			10,000	1,300			2,900	350		
4	$\alpha \leq 15^\circ$	15,000	3,900	$\leq 0.4R$	$\leq 0.1R$	10,000	2,200	$\leq 0.4R$	$\leq 0.1R$	3,200	700	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	11,000	2,200			7,500	1,300			2,200	360		
5	$\alpha \leq 15^\circ$	12,000	3,700	$\leq 0.4R$	$\leq 0.1R$	8,000	2,000	$\leq 0.4R$	$\leq 0.1R$	2,500	660	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	9,000	2,000			6,000	1,100			1,800	350		
6	$\alpha \leq 15^\circ$	10,000	3,200	$\leq 0.4R$	$\leq 0.1R$	6,600	1,800	$\leq 0.4R$	$\leq 0.1R$	2,100	570	$\leq 0.2R$	$\leq 0.05R$
	$\alpha > 15^\circ$	7,500	1,800			5,000	1,000			1,500	300		

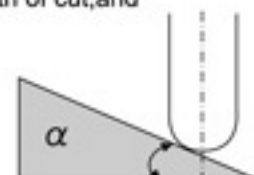
切削量基準  
Depth of cut  
(R: 球頭半徑)



注意事項 NOTE

- 1)  $\alpha$ 為加工面的傾斜角。
- 2) 機械設備或工件的夾持剛性不足、出現震動或異常聲音時，請以相同比例按上表降低回轉數及進給速度。此外，重視加工精度時，建議降低進給速度。
- 3) 有時候切削條件會因為刀具伸出長度、材料、機械設備的差異性而需要做調整，上表僅供一般情況參考用。
- 4) 切削深度較小時，可以提高回轉數及進給速度。
- 5) 請使用油霧(Oil-mist)冷卻或吹氣方式(air blow)切削。

- 1)  $\alpha$  is the inclination of machining surface.
- 2) If the rigidity of the machine or the work material installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
- 3) Cutting condition may be considerably different due to the overhang (milling depth and neck length), depth of cut, and machine tools.
- 4) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 5) Recommend Oil-mist coolant or Air blow

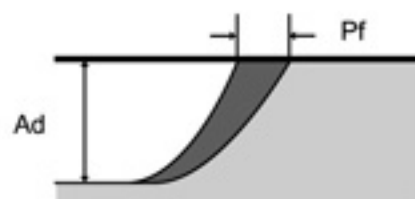
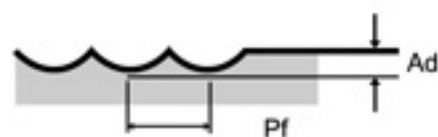


# SBH 高速切削條件表

■ SBH高速切削條件表 SBH For High-Speed Milling Conditions

被削材 Work Material	合金鋼,工具鋼,預硬鋼(~45HRC) Alloy steel, Tool steel, Prehardned Steel, SKD11, SKD61, NAK等 AISI H13, AISI D2 etc.					熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, STAVAX等 AISI H13 etc.				熱處理鋼(55~62HRC) Hardened steel SKD11, SKH, SKS, ASP23等 AISI D2 etc.			
切削速度 Cutting Speed	~500m/min					~300m/min				~150m/min			
球頭半徑 R	Roughing Finishing	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)	
				Pf Pick feed	Ad Milling Amount			Pf Pick feed	Ad Milling Amount			Pf Pick feed	Ad Milling Amount
0.5	粗 (R)	40,000	3,100	0.2	0.05	40,000	2,400	0.15	0.04	30,000	1,500	0.1	0.03
	精 (F)	40,000	3,900	0.1	0.05	40,000	3,100	0.08	0.04	30,000	1,900	0.06	0.03
1	粗 (R)	40,000	6,200	0.2	0.2	40,000	4,900	0.2	0.15	20,000	2,000	0.15	0.12
	精 (F)	40,000	7,800	0.2	0.1	40,000	6,200	0.1	0.1	20,000	2,600	0.1	0.06
2	粗 (R)	30,000	6,200	0.4	0.3	30,000	4,900	0.3	0.2	20,000	2,400	0.25	0.15
	精 (F)	30,000	7,800	0.2	0.15	30,000	6,200	0.2	0.1	20,000	3,100	0.2	0.1
3	粗 (R)	20,000	5,200	0.6	0.4	20,000	4,100	0.5	0.3	16,000	2,400	0.3	0.2
	精 (F)	20,000	6,500	0.2	0.2	20,000	5,200	0.2	0.2	16,000	3,100	0.2	0.2
4	粗 (R)	16,000	4,900	1	0.8	16,000	3,900	0.8	0.6	10,000	1,800	0.7	0.5
	精 (F)	16,000	6,200	0.2	0.2	16,000	4,900	0.2	0.2	10,000	3,200	0.2	0.2
5	粗 (R)	12,000	4,600	2	1	12,000	3,600	1	0.8	8,000	1,500	1	0.7
	精 (F)	12,000	5,800	0.3	0.3	12,000	4,600	0.2	0.2	8,000	2,000	0.2	0.2
6	粗 (R)	10,000	3,900	3	1.2	10,000	3,100	1.5	1.2	6,400	1,200	1.5	1
	精 (F)	10,000	4,800	0.3	0.3	10,000	3,900	0.2	0.2	6,400	1,500	0.2	0.2

切削量基準  
Depth of cut  
(R: 球頭半徑)



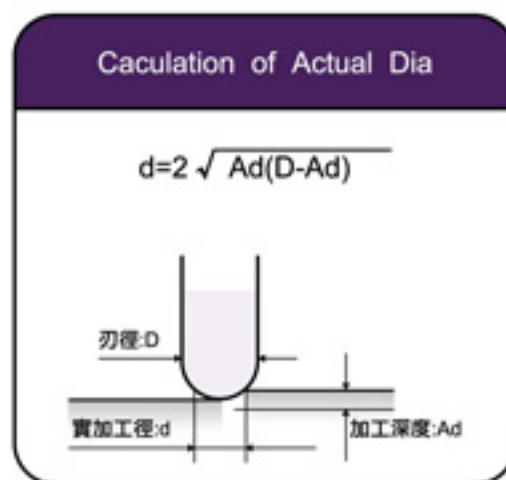
- 1)請使用剛性及精準度較佳之機械與夾頭。
- 2)建議使用下銑法(順銑法)進行切削。
- 3)請使用油霧(Oil-mist)冷卻或吹氣方式(Air blow)進行切削。

- 1) Use a rigid and precise machine and holder.
- 2) We recommended a down-cut.
- 3) Recommend Oil-mist coolant or Air blow.



■ SBH球型銑刀實際加工直徑速查表 SBH Ball End Milling Actual Diameter

R半徑 R	刃徑 D	加工深度Depth of cut(mm)														
Radius	Dia	0.01	0.02	0.03	0.04	0.05	0.08	0.1	0.15	0.2	0.3	0.5	0.8	1	2	3
0.1	0.2	0.087	0.12	0.143	0.16	0.173	0.196	0.2								
0.2	0.4	0.125	0.174	0.211	0.24	0.265	0.32	0.35	0.39	0.4						
0.3	0.6	0.154	0.215	0.262	0.299	0.332	0.41	0.45	0.52	0.57	0.6					
0.4	0.8	0.178	0.25	0.304	0.349	0.387	0.48	0.53	0.62	0.69	0.77					
0.5	1	0.199	0.28	0.341	0.392	0.436	0.54	0.6	0.71	0.8	0.92	1				
1	2	0.282	0.398	0.486	0.56	0.624	0.78	0.87	1.05	1.2	1.43	1.73	1.96	2		
1.5	3	0.346	0.488	0.597	0.688	0.768	0.97	1.08	1.31	1.5	1.8	2.24	2.65	2.83		
2	4	0.399	0.564	0.69	0.796	0.889	1.12	1.25	1.52	1.74	2.11	2.65	3.2	3.46	4	
2.5	5	0.447	0.631	0.722	0.891	0.995	1.25	1.4	1.71	1.96	2.37	3	3.67	4	4.9	
3	6	0.489	0.692	0.846	0.977	1.091	1.38	1.54	1.87	2.15	2.62	3.32	4.08	4.47	5.66	6
4	8	0.565	0.799	0.978	1.129	1.261	1.59	1.78	2.17	2.5	3.04	3.87	4.8	5.29	6.93	7.75
5	10	0.632	0.894	1.094	1.262	1.411	1.78	1.99	2.43	2.8	3.41	4.36	5.43	6	8	9.17
6	12	0.693	0.979	1.198	1.383	1.546	1.95	2.18	2.67	3.07	3.75	4.8	5.99	6.63	8.94	10.39
7	14	0.748	1.058	1.295	1.495	1.67	2.11	2.36	2.88	3.32	4.05	5.2	6.5	7.21	9.8	11.49
8	16	0.8	1.131	1.384	1.598	1.786	2.26	2.52	3.08	3.56	4.34	5.57	6.97	7.75	10.58	12.49
9	18	0.848	1.199	1.468	1.695	1.895	2.39	2.68	3.27	3.77	4.61	5.92	7.42	8.25	11.31	13.42
10	20	0.894	1.264	1.548	1.787	1.997	2.52	2.82	3.45	3.98	4.86	6.24	7.84	8.72	12	14.28



## ■ RTH高速切削條件表 RTH High Speed Milling

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250(-750N/mm <sup>2</sup> )		合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (-30HRC)		調質鋼(30~38HRC) 預硬鋼(快削)Hardened Steel Pre-hardned Steel(Free Cutting)SKT, SKD, NAK, HPM1		調質鋼・不銹鋼 (38~45HRC)Hardened Steel Stainless Steel SUS304, NAK, SKD		熱處理鋼(45~55HRC) 鈦合金・耐熱合金Hardened Steel, Titanium Alloy SKD61, SKD11, STAWAX等		熱處理鋼(55~60HRC) Hardened steel SKD11, SKH, SKS等 AISI H13, AISI D2 etc	
削材速度 Cutting Speed	200m/min		200m/min		200m/min		150m/min		150m/min		150m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
2XR0.5	31,850	10,500	32,000	9,550	32,000	9,550	24,000	7,150	24,000	6,450	16,000	2,850
3XR0.5	21,000	12,500	21,000	11,000	21,000	12,000	16,000	8,400	16,000	7,850	10,500	3,300
4XR1	16,000	13,000	16,000	12,000	16,000	12,000	12,000	9,000	12,000	8,200	7,950	3,350
5XR1	12,500	14,000	12,500	12,500	12,500	12,500	9,550	9,550	9,550	8,600	6,350	3,800
6XR1.5	10,600	14,000	10,600	12,700	10,600	12,700	7,950	9,550	7,950	8,600	5,300	3,800
8XR2	7,950	14,000	7,950	12,700	7,950	12,700	5,950	9,550	5,950	8,600	4,000	3,800
10XR2	6,350	14,000	6,350	12,700	6,350	12,700	4,750	9,550	4,750	8,600	3,200	3,800
12XR3	5,300	14,000	5,300	12,700	5,300	12,700	4,000	9,550	4,000	8,600	2,650	3,800

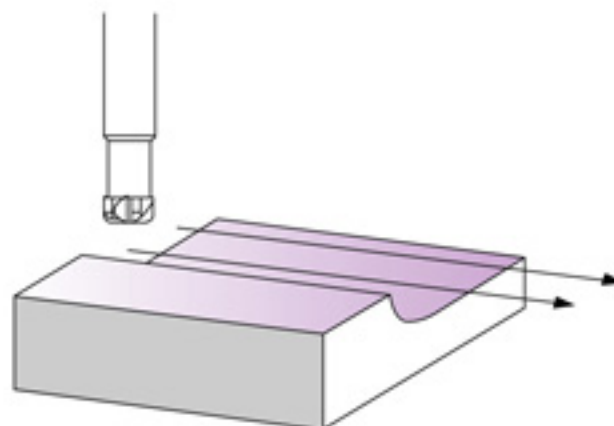
切削量基準 Depth of cut (D:直徑 Dia.)	Ad		Rd	
	R ≤ 2	2 < R	0.1xR	0.3D
	0.1xR	0.3D		

## ■ RTH工具突出量係數 (%) RTH Tool extension coefficients

工具突出量 Overhand Length	標準條件 (低速高進給) Standard Conditions			高速切削條件表 High-Speed Milling		
	削材速度 Cutting Speed	軸方向切深 Ad	進給速度 Feed Rate	削材速度 Cutting Speed	軸方向切深 Ad	進給速度 Feed Rate
L/D ≤ 4	100	100	100	100	100	100
L/D ≤ 5	80~100	70~90	80~90	60~80	60~80	70~90
L/D ≤ 6	60~80	50~70	60~80	40~60	40~60	60~80

## ■ RTH超高速條件 RTH Ultra-High Speed Conditions

- 1)在切削負荷安定下，加工如圖示之平坦區域；回轉速度、進給速度能提高為高速條件之150~200%。
  - 2)超高速條件適用於刀具夾持突出量4D(刃徑X4倍之下)之場合使用，若刀具夾持突出量 > 4D時，則請勿參照該條件
- 
- 1)When milling flat areas with a stable load, the speed and the feed rate of the High-Speed Conditions can be further increased to 150~200%.
  - 2)The Ultra-High Speed Conditions for a tool extension length : less than 4 X D. if the tool extension length is over 4 X D, do not refer to it.



# SE2 切削條件表

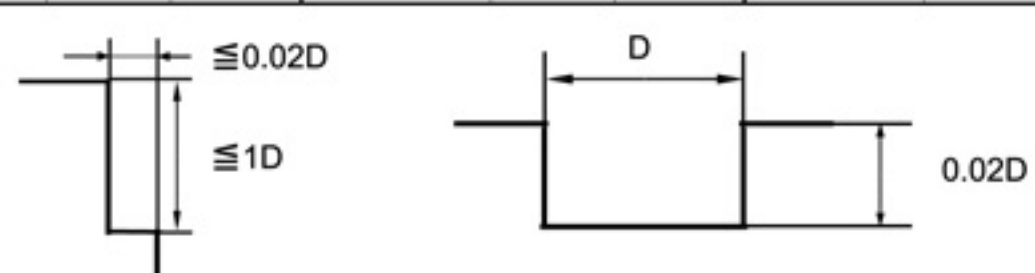
SE2 切削條件表 SE2 Standard Cutting Conditions

被削材 Work Material	炭素鋼 合金鋼(30~45HRC) Carbon steel, Alloy steel S50C, SCM, 鑄鐵 FC250等 AISI 1049, Cast iron			合金鋼 工具鋼(30~45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13			沃斯田鐵系列不鏽鋼 Austenitic stainless steel SUS304, SUS316等 AISI 304, AISI 316			熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13			銅 Copper					
削材速度 Cutting Speed	50~100m/min			50~70m/min			30~60m/min			20~40m/min			80~150m/min					
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate				
		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting			
0.2	40,000	—	120	40,000	—	100	28,000	—	60	32,000	—	25	40,000	90	30			
0.3	40,000	—	160	40,000	—	120	28,000	—	70	32,000	—	35	40,000	130	40			
0.4	40,000	—	200	40,000	—	160	28,000	—	90	24,000	—	35	40,000	170	55			
0.5	40,000	320	250	40,000	240	190	25,000	200	120	19,000	75	60	40,000	210	70			
0.6	38,000	380	300	33,000	270	210	21,000	220	130	16,000	75	60	40,000	245	85			
0.7	36,000	420	330	28,000	300	240	18,000	240	140	14,000	75	60	40,000	285	95			
0.8	34,000	480	380	25,000	340	270	16,000	260	150	12,000	75	60	40,000	330	110			
0.9	32,000	540	430	22,000	370	290	14,000	280	160	10,600	75	60	40,000	375	125			
1	30,000	600	480	20,000	400	320	12,600	300	180	9,600	75	60	40,000	420	140			
1.5	20,000	600	480	14,000	400	320	8,400	300	180	6,400	75	60	32,000	800	270			
2	15,000	600	480	10,000	400	320	6,300	300	180	4,800	75	60	24,000	1,000	330			
2.5	12,000	600	480	8,200	400	320	5,100	300	180	3,800	75	60	19,000	1,000	330			
3	10,000	600	480	7,000	400	320	4,200	300	180	3,200	75	60	16,000	1,000	330			
4	7,500	600	480	5,200	400	320	3,100	300	180	2,400	75	60	12,000	1,000	330			
5	6,000	600	480	4,200	400	320	2,500	300	180	1,900	75	60	9,600	1,000	330			
6	5,000	600	480	3,500	400	320	2,100	300	180	1,600	75	60	8,000	1,000	330			
8	4,000	520	410	2,800	350	280	1,600	260	150	1,200	65	50	6,000	1,000	330			
10	3,200	450	360	2,200	300	240	1,300	230	130	1,000	65	50	4,800	1,000	330			
12	2,700	410	320	1,900	270	210	1,100	210	120	800	65	50	4,000	1,000	330			
切削量基準 Depth of cut  (D:直徑 Dia.)	$\leq 0.1D (D \leq \phi 3)$ $\leq 0.2D (D > \phi 3)$						$\leq 1.5D$						$\leq 0.02D$ $\leq 1D$					

## 注意事項 NOTE


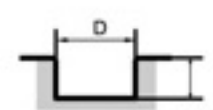
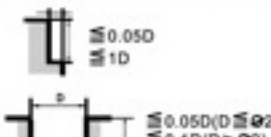
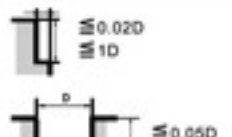
- 1) 切削 55~60 HRC 的材料時，請使用4刃或6刃（SE4或MS6P等）銑刀。  
Please Use SE4 or MS6P for work materials of 55~60 HRC.
- 2) 切削沃斯田鐵系列不鏽鋼時，請使用非水溶性切削油效果較好。  
In Cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.
- 3) 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。  
If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
- 4) 縱向進給時，進給速度請設定為上表之1/3以下。  
When drilling, please set feed rate at 1/3 or below of the above value.

SE2高速切削條件表 SE2 High-Speed Milling Conditions


被削材 Work Material	炭素鋼, 合金鋼(~30HRC) Carbon steel, Alloy steel S50C, SCM, 鑄鐵 FC250等 AISI 1049, Cast iron			合金鋼, 工具鋼(30~45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardned steel, AISI H13			熱處理鋼(45~55HRC) Haydened steel SKD61, SKD11, NAK, STAVAX等 AISI H13		
削材速度 Cutting Speed	300m/min			200m/min			100m/min		
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	
		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting
1	40,000	800	640	30,000	600	480	30,000	240	190
2	40,000	1,600	1,280	30,000	1,200	960	15,900	240	190
3	30,000	1,800	1,440	21,200	1,200	960	10,600	240	190
4	28,000	1,900	1,520	15,900	1,200	960	7,900	240	190
5	19,000	1,900	1,520	12,700	1,200	960	6,300	240	190
6	15,000	1,900	1,520	10,600	1,200	960	5,300	240	190
8	11,000	1,550	1,240	7,900	990	790	4,000	220	175
10	9,500	1,330	1,060	6,300	860	680	3,200	200	160
12	7,900	1,200	960	5,300	750	600	2,600	200	160
切削量基準 Depth of cut (D:直徑 Dia.)									

# SE4/LE4 切削條件表/高速切削條件表

## SE4/LE4 切削條件表 SE4/LE4 Standard Cutting Conditions

被削材 Work Material	炭素鋼 合金鋼(30HRC) Carbon Steel, Alloy Steel S50C, SCM, 鑄鐵 FC250等 AISI 1049, Cast iron			合金鋼, 工具鋼(30-45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13			沃斯田鐵系不銹鋼 Austenitic stainless steel SUS304, SUS316等 AISI 304, AISI 316			熱處理鋼(45-55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13			熱處理鋼(55-60HRC) Hardened steel SKD11等 AISI D2					
削材速度 Cutting Speed	50~100m/min			50~70m/min			30~60m/min			30~50m/min			15~30m/min					
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate				
		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting			
1	30,000	900	720	20,000	600	480	12,600	450	270	15,000	180	140	4,800	30	24			
1.5	20,000	900	720	14,000	600	480	8,400	450	270	10,000	180	140	3,200	35	28			
2	15,000	900	720	10,000	600	480	6,300	450	270	8,000	180	140	2,400	40	32			
2.5	12,000	900	720	8,200	600	480	5,100	450	270	6,100	180	140	2,100	45	36			
3	10,000	900	720	7,000	600	480	4,200	450	270	5,000	180	140	1,800	55	44			
4	7,500	900	720	5,200	600	480	3,100	450	270	4,000	180	140	1,400	75	60			
5	6,000	900	720	4,200	600	480	2,500	450	270	3,200	180	140	1,200	75	60			
6	5,000	900	430	3,500	600	480	2,100	450	270	2,700	180	140	1,000	75	60			
8	4,000	780	620	2,800	520	410	1,600	390	230	2,000	160	125	800	70	56			
10	3,200	680	540	2,200	450	360	1,300	340	200	1,600	140	110	650	65	52			
12	2,700	620	490	1,900	410	320	1,100	310	180	1,300	120	95	530	55	44			
切削量基準 Depth of cut (D:直徑 Dia.)	$\leq 0.1D (D \leq \phi 3)$ $\leq 0.2D (D > \phi 3)$  $\leq 1.5D$						$\leq 0.1D (D < \phi 2)$ $\leq 0.2D (D \geq \phi 2)$ 						$\leq 0.05D$ $\leq 1D$  $\leq 0.05D (D \leq \phi 2)$ $\leq 0.1D (D > \phi 2)$			$\leq 0.02D$ $\leq 1D$  $\leq 0.05D$		
注意事項 NOTE																		
1) 切削 60 HRC 的材料時，請使用MS6P銑刀。 Please Use MS6P for work materials of 60 HRC or above.																		
2) 切削沃斯田鐵系不銹鋼系列及耐熱合金時，請使用非水溶性切削油效果較好。 In Cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.																		
3) 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。 If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.																		
4) 縱向進給時，進給速度請設定為上表之1/3以下。 When drilling, please set feed rate at 1/3 or below of the above value.																		

## SE4/LE4 高速切削條件表 SE4/LE4 High-Speed Milling Conditions

被削材 Work Material	炭素鋼, 合金鋼(30HRC) Carbon Steel, Alloy Steel S50C, SCM, 鑄鐵 FC250等 AISI 1049, Cast iron		合金鋼, 工具鋼(30-45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13		熱處理鋼(45-55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13		熱處理鋼(55-60HRC) Hardened steel SKD11等 AISI D2	
削材速度 Cutting Speed	300m/min		200m/min		150m/min		50m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
2	40,000	2,400	30,000	1,800	23,800	530	7,900	130
3	30,000	2,700	21,200	1,800	15,900	530	5,300	160
4	23,800	2,850	15,900	1,800	11,900	530	4,000	210
5	19,000	2,850	12,700	1,800	9,500	530	3,200	200
6	15,900	2,850	10,600	1,800	7,900	530	2,650	200
8	11,900	2,325	7,900	1,485	5,900	470	2,000	175
10	9,500	2,000	6,300	1,290	4,700	410	1,600	160
12	7,900	1,800	5,300	1,125	3,900	360	1,300	135
切削量基準 Depth of cut (D:直徑 Dia.)	 $\leq 0.02D$ $\leq 1D$							

## ■MSP6/MLP6切削條件表 MSP6/MLP6 Standard Cutting Conditions

被削材 Work Material	合金鋼, 工具鋼, 預硬鋼(30~45HRC) Alloy steel, Tool steel, Pre-hardened steel, SKD11, SKD61, NAK等 AISI H13, AISI D2 etc.		熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13, AISI D2 etc.		熱處理鋼(55~60HRC) Hardened steel SKD11, SKH, SKH, 等 AISI H13, AISI D2 etc.		熱處理鋼(60~65HRC) Hardened steel SKD11, 等 AISI D2 etc.		熱處理鋼(65~70HRC) Hardened steel SKH等 High speed tool steel(HSS)etc.			
削材速度 Cutting Speed	50~80m/min		20~40m/min		20~30m/min		15~20m/min		10~15m/min			
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	
		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting
3	6,400	650		2,300	110		2,200	110		1,900	110	
	5,300		250			110					110	
4	5,200	930		1,900	110		1,800	110		1,500	100	
	4,400		260			110					110	
5	4,300	1,000		1,600	140		1,500	130		1,200	110	
	3,700		310			140					130	
6	3,700	1,300		1,500	200		1,350	150		1,050	120	
	3,200		350			200					150	
8	2,800	1,300		1,100	200		1,000	150		1,000	120	
	2,400		350			200					150	
10	2,200	1,300		960	200		800	150		800	120	
	1,900		340			200					150	
12	1,900	1,100		800	170		650	120		650	100	
	1,600		290			170					120	
切削量基準 Depth of cut (D直徑 Dia.)												

## ■MSP6/MLP6高速切削條件表 MSP6/MLP6 High-Speed Milling Conditions


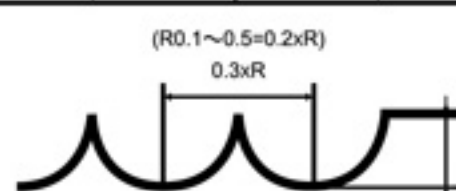
被削材 Work Material	合金鋼, 工具鋼, 預硬鋼(~50HRC) Alloy steel, Tool steel, Pre-hardened steel, SKD11, SKD61, NAK等 AISI H13, AISI D2 etc.		熱處理鋼(55~60HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13, AISI D2 etc.		熱處理鋼(60~65HRC) Hardened steel SKD11, SKH, SKH, 等 AISI H13, AISI D2 etc.	
削材速度 Cutting Speed	250~300m/min		100~150m/min		50~75m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
4	21,000	3,800	10,000	1,800	5,600	1,000
5	18,000	4,300	8,900	2,100	4,500	1,100
6	16,000	5,800	8,000	2,900	4,000	1,400
8	12,000	5,800	6,000	2,900	3,000	1,400
10	9,500	5,700	4,800	2,900	2,400	1,400
12	8,000	4,800	4,000	2,400	2,000	1,200
切削量基準 Depth of cut (D直徑 Dia.)						
<b>注意事項 NOTE</b> 1)機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。 If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately. 2)側面加工時，請以下銼法（順銼法）進行。 Climb cut is recommended for side milling. 3)請使用油霧（Oil-mist）冷卻或吹氣方式（Air blow）進行切削。 Use Oil-mist coolant or Air blow.						

# SB2 切削條件表

■ SB2切削條件表 SB2 Standard Cutting Conditions

被削材 Work Material	炭素鋼 Carbon steels S50C		合金鋼,調質鋼 Alloy steels Pre-hardned steels,SCM, SKD,SUS,HPM,NAK		熱處理鋼 Hardened steels SKD61(~55HRC)		鋁 Aluminum		銅 Copper	
	150m/min		120~150m/min		80~100m/min		150~m/min		100~150m/min	
R	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
0.15	40,000	400	40,000	360	40,000	330	40,000	440	40,000	400
0.2	40,000	500	40,000	480	40,000	500	40,000	480	40,000	480
0.25	40,000	620	40,000	610	40,000	620	40,000	540	40,000	540
0.3	40,000	750	40,000	1,000	40,000	750	40,000	600	40,000	600
0.4	40,000	960	40,000	1,200	36,000	900	40,000	800	40,000	800
0.5	40,000	1,200	38,000	1,100	29,000	900	40,000	1,000	40,000	830
0.75	30,000	1,270	25,500	800	19,000	700	40,000	1,360	30,000	1,160
1	24,000	1,160	19,000	670	14,000	600	40,000	2,000	24,000	1,200
1.25	19,000	1,000	15,300	600	11,500	510	38,000	2,400	19,000	1,200
1.5	16,000	930	13,000	580	9,600	460	32,000	2,400	16,000	1,200
1.75	13,700	930	11,400	570	8,200	450	27,300	2,400	13,000	1,200
2	12,000	930	10,000	560	7,200	450	24,000	2,400	12,000	1,200
2.5	9,600	930	8,000	540	5,700	450	19,000	2,400	9,600	1,200
3	8,000	930	6,400	540	4,800	450	16,000	2,400	8,000	1,200
4	6,000	900	4,800	540	3,600	450	12,000	2,400	6,000	1,200
5	4,800	900	3,800	540	2,900	450	9,600	2,300	4,800	1,150
6	4,000	900	3,200	540	2,400	450	8,000	2,100	4,000	1,050

切削量基準 Depth of cut (R: 球頭半徑)			~0.16xR R≤0.3(~45HRC) ~0.25xR R≤3 (~45HRC) ~0.17xR R≤4 (~45HRC) ~0.05xR (~45HRC)
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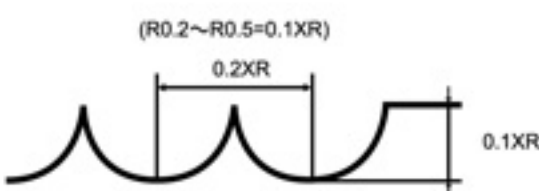
## 注意事項 NOTE

- 1)滿加工時之進給速度，請設定為上數值之60%。  
When slotting, reduce the feed by 60% from above values.
- 2)刀具夾持突出量，以4D為標準，超出上述場合時；請將切削條件作適度之調整。  
Length of overhang is 4 times dia. as standard. When it is longer than 4 times dia., flow figures of above table.
- 3)請使用油霧 (Oil-mist) 冷卻或吹氣方式 (Air blow) 進行切削。  
Use Oil-mist coolant or Air blow.
- 4)主軸回轉數及床台進給速度，請以相同比例作適度調整。  
Adjust both spindle speed and feed according to milling conditions and machine rigidity.

■ SB2高速切削條件表 SB2 High-Speed Milling Conditions

被削材 Work Material	炭素鋼 Carbon steels S50C		合金鋼 Alloy steels SCM,SKD,SUS		調質鋼 Pre-hardned steels HPM,NAK		熱處理鋼 Hardened steels SKD61(~55HRC)	
削材速度 Cutting Speed	250m/min		200m/min		180m/min		100~m/min	
R	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
0.15	~40,000	~1,200	~40,000	~960	~40,000	~800	~40,000	350
0.2	~40,000	~1,200	~40,000	~960	~40,000	~800	~40,000	480
0.25	~40,000	~1,200	~40,000	~960	~40,000	~800	~40,000	520
0.3	~40,000	~1,200	~40,000	~960	~40,000	~800	~40,000	560
0.4	~40,000	~2,400	~40,000	~2,000	~40,000	~1,760	40,000	1,000
0.5	~40,000	~2,400	~40,000	~2,000	~40,000	~1,760	32,000	1,500
0.75	~40,000	~3,700	~40,000	~3,000	38,000	2,700	21,300	1,500
1	40,000	5,000	32,000	3,200	29,000	2,900	16,000	1,500
1.25	32,000	5,000	25,000	3,200	23,000	2,900	12,800	1,500
1.5	27,000	5,000	21,000	3,200	19,000	2,900	10,600	1,500
1.75	23,000	5,000	18,000	3,200	16,400	2,900	9,100	1,500
2	20,000	4,000	16,000	3,200	14,000	2,900	8,000	1,500
2.5	16,000	3,500	12,800	2,500	11,500	2,300	6,400	1,300
3	13,500	3,000	10,600	2,000	9,500	1,800	5,300	1,200
4	10,000	3,000	8,000	2,000	7,200	1,800	4,000	1,200
5	8,000	3,000	6,400	2,000	5,700	1,800	3,200	1,200
6	6,700	2,500	5,300	1,800	4,800	1,800	2,700	1,200

切削量基準 Depth of cut (R: 球頭半徑)		
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注意事項 NOTE

- 1) 溝加工時之進給速度，請設定為上數值之60%。  
When slotting, reduce the feed by 60% from above values.
- 2) 請使用油霧 (Oil-mist) 冷卻或吹氣方式 (Air blow) 進行切削。  
Use Oil-mist coolant or Air blow.
- 3) 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。  
If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
- 4) 請使用較具有剛性之機械設備及夾頭。  
Use a rigid machine and holder.



# SBP2 切削條件表

■ SBP2切削條件表 SBP2 Standard Cutting Conditions

被削材 Work Material	合金鋼,工具鋼,預硬鋼(~45HRC) Alloy steel, Tool steel, Prehardned Steel, SKD11, SKD61, NAK等 AISI H13, AISI D2 etc.					熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, STAVAX等 AISI H13 etc.					熱處理鋼(55~62HRC) Hardened steel SKD11, SKH, SKS, ASP23等 AISI D2 etc.				
	球頭半徑 R	加工面 傾斜角 Inclination of Machining Surface	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		
					Pf Pick feed	Ad Milling Amount			Pf Pick feed	Ad Milling Amount			Pf Pick feed	Ad Milling Amount	
0.15	$\alpha \leq 15^\circ$	40,000	600	$\leq 0.2R$	$\leq 0.1R$	40,000	510	$\leq 0.2R$	$\leq 0.1R$	40,000	510	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	40,000	450	$\leq 0.2R$	$\leq 0.1R$	40,000	380	$\leq 0.2R$	$\leq 0.1R$	32,000	380	$\leq 0.2R$	$\leq 0.05R$		
0.2	$\alpha \leq 15^\circ$	40,000	800	$\leq 0.2R$	$\leq 0.1R$	40,000	680	$\leq 0.2R$	$\leq 0.1R$	40,000	680	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	40,000	600	$\leq 0.2R$	$\leq 0.1R$	40,000	510	$\leq 0.2R$	$\leq 0.1R$	32,000	400	$\leq 0.2R$	$\leq 0.05R$		
0.3	$\alpha \leq 15^\circ$	40,000	1,300	$\leq 0.2R$	$\leq 0.1R$	40,000	1,100	$\leq 0.2R$	$\leq 0.1R$	32,000	880	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	40,000	980	$\leq 0.2R$	$\leq 0.1R$	40,000	830	$\leq 0.2R$	$\leq 0.1R$	22,000	450	$\leq 0.2R$	$\leq 0.05R$		
0.4	$\alpha \leq 15^\circ$	40,000	1,900	$\leq 0.2R$	$\leq 0.1R$	40,000	1,600	$\leq 0.2R$	$\leq 0.1R$	25,000	1,000	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	40,000	1,400	$\leq 0.2R$	$\leq 0.1R$	35,000	1,100	$\leq 0.2R$	$\leq 0.1R$	18,000	540	$\leq 0.2R$	$\leq 0.05R$		
0.5	$\alpha \leq 15^\circ$	40,000	2,400	$\leq 0.2R$	$\leq 0.1R$	35,000	1,800	$\leq 0.2R$	$\leq 0.1R$	21,000	1,000	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	35,000	1,600	$\leq 0.2R$	$\leq 0.1R$	30,000	1,100	$\leq 0.2R$	$\leq 0.1R$	15,000	570	$\leq 0.2R$	$\leq 0.05R$		
0.75	$\alpha \leq 15^\circ$	40,000	3,000	$\leq 0.2R$	$\leq 0.1R$	30,000	1,900	$\leq 0.2R$	$\leq 0.1R$	14,000	890	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	30,000	1,700	$\leq 0.2R$	$\leq 0.1R$	25,000	1,200	$\leq 0.2R$	$\leq 0.1R$	10,000	470	$\leq 0.2R$	$\leq 0.05R$		
1	$\alpha \leq 15^\circ$	35,000	3,000	$\leq 0.2R$	$\leq 0.1R$	25,000	1,800	$\leq 0.2R$	$\leq 0.1R$	11,000	800	$\leq 0.2R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	30,000	1,700	$\leq 0.2R$	$\leq 0.1R$	20,000	1,100	$\leq 0.2R$	$\leq 0.1R$	8,000	430	$\leq 0.2R$	$\leq 0.05R$		
1.25	$\alpha \leq 15^\circ$	33,000	3,000	$\leq 0.4R$	$\leq 0.1R$	22,000	1,700	$\leq 0.4R$	$\leq 0.1R$	9,300	710	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	24,000	1,700	$\leq 0.4R$	$\leq 0.1R$	17,000	1,000	$\leq 0.4R$	$\leq 0.1R$	6,500	370	$\leq 0.4R$	$\leq 0.05R$		
1.5	$\alpha \leq 15^\circ$	30,000	3,000	$\leq 0.4R$	$\leq 0.1R$	20,000	1,700	$\leq 0.4R$	$\leq 0.1R$	8,000	670	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	23,000	1,700	$\leq 0.4R$	$\leq 0.1R$	15,000	1,700	$\leq 0.4R$	$\leq 0.1R$	5,600	350	$\leq 0.4R$	$\leq 0.05R$		
2	$\alpha \leq 15^\circ$	25,000	3,000	$\leq 0.4R$	$\leq 0.1R$	17,000	1,700	$\leq 0.4R$	$\leq 0.1R$	6,400	640	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	20,000	1,700	$\leq 0.4R$	$\leq 0.1R$	13,000	1,000	$\leq 0.4R$	$\leq 0.1R$	4,500	340	$\leq 0.4R$	$\leq 0.05R$		
2.5	$\alpha \leq 15^\circ$	23,000	3,000	$\leq 0.4R$	$\leq 0.1R$	15,000	1,700	$\leq 0.4R$	$\leq 0.1R$	5,000	550	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	17,000	1,700	$\leq 0.4R$	$\leq 0.1R$	11,000	1,000	$\leq 0.4R$	$\leq 0.1R$	3,500	290	$\leq 0.4R$	$\leq 0.05R$		
3	$\alpha \leq 15^\circ$	20,000	3,000	$\leq 0.4R$	$\leq 0.1R$	13,000	1,700	$\leq 0.4R$	$\leq 0.1R$	4,200	530	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	15,000	1,700	$\leq 0.4R$	$\leq 0.1R$	10,000	1,000	$\leq 0.4R$	$\leq 0.1R$	2,900	270	$\leq 0.4R$	$\leq 0.05R$		
4	$\alpha \leq 15^\circ$	15,000	3,000	$\leq 0.4R$	$\leq 0.1R$	10,000	1,700	$\leq 0.4R$	$\leq 0.1R$	3,200	540	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	11,000	1,700	$\leq 0.4R$	$\leq 0.1R$	7,500	1,000	$\leq 0.4R$	$\leq 0.1R$	2,200	280	$\leq 0.4R$	$\leq 0.05R$		
5	$\alpha \leq 15^\circ$	12,000	2,900	$\leq 0.4R$	$\leq 0.1R$	8,000	1,600	$\leq 0.4R$	$\leq 0.1R$	2,500	510	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	9,000	1,600	$\leq 0.4R$	$\leq 0.1R$	6,000	900	$\leq 0.4R$	$\leq 0.1R$	1,800	270	$\leq 0.4R$	$\leq 0.05R$		
6	$\alpha \leq 15^\circ$	10,000	2,500	$\leq 0.4R$	$\leq 0.1R$	6,600	1,400	$\leq 0.4R$	$\leq 0.1R$	2,100	440	$\leq 0.4R$	$\leq 0.05R$		
	$\alpha > 15^\circ$	7,000	1,400	$\leq 0.4R$	$\leq 0.1R$	5,000	800	$\leq 0.4R$	$\leq 0.1R$	1,500	230	$\leq 0.4R$	$\leq 0.05R$		

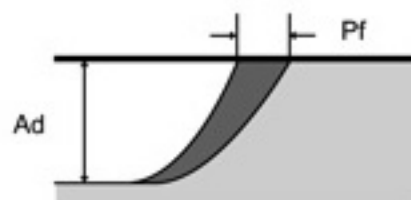
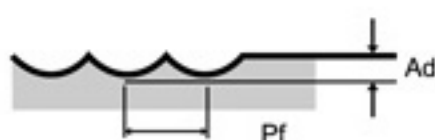
## 注意事項 NOTE

- 1)  $\alpha$  為加工面的傾斜角。  
 $\alpha$  is the inclination of machining surface.
- 2) 機械設備或工件的夾持剛性不足、出現震動或異常聲音時，請以相同比例按上表降低迴轉數及進給速度。  
此外，重視加工精度時，建議降低進給速度。  
If the rigidity of the machine or the work material installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
- 3) 有時候切削條件會因為刀具伸出長度、材料、機械設備的差異性而需要做調整，上表僅供一般情況參考用。  
Cutting condition may be considerably different due to the overhang (milling depth and neck length), depth of cut, and machine tools.
- 4) 切削深度較小時，可以提高迴轉數及進給速度。  
If the depth of cut is shallow, the revolution and feed rate can be increased.

■ SBP2高速切削條件表 SBP2 High-Speed Milling Conditions

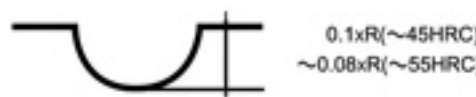

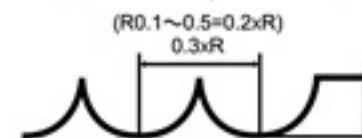
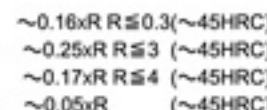
被削材 Work Material	合金鋼,工具鋼,預硬鋼(~45HRC) Alloy steel, Tool steel,Prehardned Steel,SKD11,SKD61,NAK等 AISI H13 ,AISI D2 etc.					熱處理鋼(45~55HRC) Hardened steel SKD61,SKD11,STAVAX等 AISI H13 etc.					熱處理鋼(55~62HRC) Hardened steel SKD11,SKH,SKS, ASP23等 AISI D2 etc.				
	球頭半徑 R	加工面 傾斜角 Inclination of Machining Surface	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	切削量(mm)		
				Pf	Ad			Pf	Ad			Pf	Ad		
				Pick feed	Milling Amount			Pick feed	Milling Amount			Pick feed	Milling Amount		
0.2	粗 (R)	40,000	800	0.1	0.02	40,000	640	0.08	0.02	30,000	480	0.06	0.01		
	精 (F)	40,000	1,000	0.05	0.02	40,000	800	0.04	0.02	30,000	600	0.03	0.01		
0.3	粗 (R)	40,000	1,600	0.15	0.03	40,000	1,300	0.12	0.03	30,000	800	0.08	0.02		
	精 (F)	40,000	2,000	0.07	0.03	40,000	1,600	0.06	0.03	30,000	1,000	0.04	0.02		
0.4	粗 (R)	40,000	1,900	0.2	0.04	40,000	1,500	0.15	0.04	30,000	960	0.10	0.03		
	精 (F)	40,000	2,400	0.1	0.04	40,000	1,900	0.08	0.04	30,000	1,200	0.06	0.03		
0.5	粗 (R)	40,000	2,400	0.2	0.05	40,000	1,900	0.15	0.04	30,000	1,200	0.10	0.03		
	精 (F)	40,000	3,000	0.1	0.05	40,000	2,400	0.08	0.04	30,000	1,500	0.06	0.03		
1	粗 (R)	40,000	4,800	0.2	0.2	40,000	3,800	0.2	0.15	20,000	1,600	0.15	0.12		
	精 (F)	40,000	6,000	0.2	0.1	40,000	4,800	0.1	0.1	20,000	2,000	0.1	0.06		
2	粗 (R)	30,000	4,800	0.4	0.3	30,000	3,800	0.3	0.2	20,000	1,900	0.25	0.15		
	精 (F)	30,000	6,000	0.2	0.15	30,000	4,800	0.2	0.1	20,000	2,400	0.2	0.1		
3	粗 (R)	20,000	4,000	0.6	0.4	20,000	3,200	0.5	0.3	16,000	1,900	0.3	0.2		
	精 (F)	20,000	5,000	0.2	0.2	20,000	4,000	0.2	0.2	16,000	2,400	0.2	0.2		
4	粗 (R)	16,000	3,800	1	0.8	16,000	3,000	0.8	0.6	10,000	1,400	0.7	0.5		
	精 (F)	16,000	4,800	0.2	0.2	16,000	3,800	0.2	0.2	10,000	1,800	0.2	0.2		
5	粗 (R)	12,000	3,600	2	1	12,000	2,800	1	0.8	8,000	1,200	1	0.7		
	精 (F)	12,000	4,500	0.3	0.3	12,000	3,600	0.2	0.2	8,000	1,600	0.2	0.2		
6	粗 (R)	10,000	3,000	3	1.2	10,000	2,400	1.5	1.2	6,400	960	1.5	1		
	精 (F)	10,000	3,750	0.3	0.3	10,000	3,000	0.2	0.2	6,400	1,200	0.2	0.2		

切削量基準  
Depth of cut  
(R: 球頭半徑)



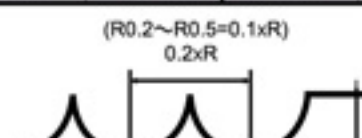



# LB 切削條件表/高速切削條件表

## ■ LB切削條件表 LB Standard Cutting Conditions

被削材 Work Material	炭素鋼 Carbon steels S50C		合金鋼·調質鋼 Alloy steels Pre-hardened steels,SCM, SKD,SUS,HPM,NAK		熱處理鋼 Hardened steels SKD61(~52HRC)		鋁 Aluminum		銅 Copper	
	120m/min		100~120m/min		70~80m/min		120m/min		90~130m/min	
R	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)
1	19,200	930	15,200	2,800	11,440	480	32,000	1,600	19,200	960
2	9,600	750	8,000	3,400	5,760	360	19,200	1,920	9,600	960
3	6,400	750	5,120	4,300	3,840	360	12,800	1,920	6,400	960
4	4,800	720	3,840	3,200	2,880	360	9,600	1,920	3,600	960
5	3,850	720	3,050	2,600	2,320	360	7,680	1,840	3,840	920
6	3,200	720	2,560	2,150	1,920	360	6,400	1,680	3,200	840
切削量基準 Depth of cut (R: 球頭半徑)										
<b>注意事項 NOTE</b> 1) 溝加工時之進給速度，請設定為上數值之60%。 When slotting, reduce the feed by 60% from above values. 2) 刀具夾持突出量，以4D為基準，超出上述場合時；請將切削條件作適度之調整。 Length of overhang is 4 times dia. as standard. When it is longer than 4 times dia., flow figures of above table. 3) 請使用油霧 (Oil-mist) 冷卻或吹氣方式 (Air blow) 進行切削。 Use Oil-mist coolant or Air blow. 4) 主軸回轉數及床台進給速度，請以相同比例作適度調整。 Adjust both spindle speed and feed according to milling conditions and machine rigidity.										

## ■ LB高速切削條件表 LB High-Speed Milling Conditions

被削材 Work Material	炭素鋼 Carbon steels S50C		合金鋼 Alloy steels SCM,SKD,SUS		合金鋼·調質鋼 Alloy steels Pre-hardened steels,SCM, SKD,SUS,HPM,NAK		熱處理鋼 Hardened steels SKD61(~52HRC)	
	200m/min		160m/min		150m/min		80m/min	
R	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)	回轉速度 SPEED (min <sup>-1</sup> )	進給速度 FEED (mm/min)
1	32,000	4,000	25,600	2,560	23,000	2,300	12,800	1,200
2	16,000	3,200	12,800	2,560	11,000	2,300	6,400	1,200
3	10,800	2,400	8,500	1,600	7,600	1,450	4,250	960
4	8,000	2,400	6,400	1,600	5,800	1,450	3,200	960
5	6,400	2,400	5,100	1,600	4,550	1,450	2,550	960
6	5,400	2,400	4,250	1,440	3,850	1,300	2,150	960
切削量基準 Depth of cut (R: 球頭半徑)								

## RTA2 切削條件表 RTA2 Standard Cutting Conditions

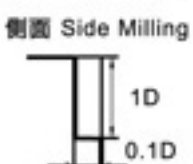
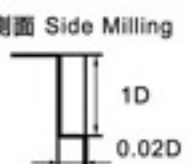
被削材 Work Material	炭素鋼 合金鋼(~30HRC) Carbon steel, Alloy steel S50C, SCM, 鑄鐵 FC250等 AISI 1049, Cast iron			合金鋼 工具鋼(30~45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13			沃斯田鐵系不銹鋼 Austenitic stainless steel SUS304, SUS316等 AISI 304, AISI 316			熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13		
削材速度 Cutting Speed	50~100m/min			50~70m/min			30~60m/min			20~40m/min		
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate		回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	
		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting		側面 Side Milling	溝 Slotting
1	20,000	120	120	12,000	70	70	10,000	60	60	8,900	30	30
2	11,000	180	180	7,200	110	110	6,000	90	90	4,800	45	45
3	8,500	200	160	5,300	130	100	4,400	110	66	3,200	55	44
4	7,200	360	290	4,400	220	180	3,000	180	110	2,400	67	54
5	6,000	380	300	3,600	230	180	2,400	190	110	1,900	70	56
6	5,300	420	340	3,200	240	190	2,200	210	130	1,600	75	60
8	4,000	450	360	2,400	240	190	1,600	220	130	1,200	65	50
10	3,200	390	310	1,900	190	150	1,300	190	110	1,000	65	50
12	2,700	330	260	1,600	160	130	1,000	150	90	800	65	50
切削量基準 Depth of cut (D:直徑 Dia.)												
注意事項 NOTE	<p>1) 切削 55~60 HRC 的材料時，請使用4刃或6刃 (RTA4或RTA6或等) 銑刀。 Please Use RTA4 or RTA6 for work materials of 55~60 HRC.</p> <p>2) 切削沃斯田鐵系不銹鋼時，請使用非水溶性切削油效果較好。 In Cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective.</p> <p>3) 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。 If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.</p> <p>4) 縱向進給時，進給速度請設定為上表之1/3以下。 When drilling, please set feed rate at 1/3 or below of the above value.</p>											

## RTA2 高速切削條件表 RTA2 High-Speed Milling Conditions

被削材 Work Material	炭素鋼 合金鋼(~30HRC) Carbon steel, Alloy steel S50C, SCM 鑄鐵 FC250等, AISI 1049, Cast iron		合金鋼 工具鋼(30~45HRC) Alloy steel, Tool steel 預硬鋼 SKD61, NAK等, Pre-hardened steel, AISI H13		熱處理鋼(45~55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等 AISI H13	
削材速度 Cutting Speed	250m/min		150m/min		100m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
2	40,000	1,600	23,800	950	15,900	240
3	26,500	1,590	15,900	900	10,600	240
4	23,800	1,590	11,900	900	7,900	240
5	15,900	1,590	9,600	900	6,300	240
6	13,200	1,590	8,000	900	5,300	240
8	9,900	1,290	6,000	750	4,000	220
10	7,900	1,100	4,800	650	3,200	200
12	6,600	1,000	4,000	560	2,600	200
軸方向切削量 Ad Milling Amount (mm)	Ad=0.05D		Ad=0.03D		Ad=0.02D	

# RTA4/LR4 切削條件表/等高高速切削條件表




## RTA4/LR4 切削條件表 RTA4/LR4 Standard Cutting Conditions

被削材 Work Material	炭素鋼 合金鋼(30HRC) Carbon Steel, Alloy Steel S50C, SCM, 鐵鍍 FC250等 AISI 1049, Cast Iron		合金鋼, 工具鋼(30-45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13		沃斯田鐵系列不鏽鋼 Austenitic stainless steel SUS304, SUS316等 AISI 304, AISI 316		熱處理鋼(45-55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等AISI H13		熱處理鋼(55-60HRC) Hardened steel SKD11等AISI D2	
削材速度 Cutting Speed	50~100m/min		50~70m/min		30~60m/min		20~40m/min		15~30m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
3	8,500	300	5,300	200	4,400	170	3,200	85	1,800	55
4	7,200	540	4,400	330	3,700	270	2,700	110	1,400	75
5	6,000	570	3,600	350	3,000	290	2,200	120	1,200	75
6	5,300	630	3,200	360	2,700	320	2,000	130	1,000	75
8	4,000	680	2,400	360	2,000	330	1,600	130	800	70
10	3,200	590	1,900	290	1,600	290	1,300	120	650	65
12	2,700	500	1,600	240	1,300	230	1,100	100	530	55
切削量基準 Depth of cut (D:直徑 Dia.)			側面 Side Milling 				側面 Side Milling 			
<b>注意事項 NOTE</b> 1) 切削 60 HRC 的材料時，請使用 RTA6 銼刀。 Please Use RTA6 for work materials of 60 HRC or above. 2) 切削沃斯田鐵系列不鏽鋼系列及耐熱合金時，請使用非水溶性切削油效果較好。 In Cutting Austenitic stainless steels, the use of non-water-soluble cutting fluid is especially effective. 3) 機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。 If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.										

## RTA4/LR4 等高高速切削條件表 RTA4/LR4 High-Speed Milling Conditions

被削材 Work Material	炭素鋼 合金鋼(30HRC) Carbon Steel, Alloy Steel S50C, SCM, 鐵鍍 FC250等 AISI 1049, Cast Iron		合金鋼, 工具鋼(30-45HRC) Alloy steel, Tool steel 預硬鋼, SKD61, NAK等 Pre-hardened steel, AISI H13		熱處理鋼(45-55HRC) Hardened steel SKD61, SKD11, NAK, STAVAX等AISI H13		熱處理鋼(55-60HRC) Hardened steel SKD11等AISI D2	
削材速度 Cutting Speed	50~100m/min		50~70m/min		20~40m/min		15~30m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
3	8,500	300	5,300	200	3,200	85	1,800	55
4	7,200	540	4,400	330	2,700	110	1,400	75
5	6,000	570	3,600	350	2,200	120	1,200	75
6	5,300	630	3,200	360	2,000	130	1,000	75
8	4,000	680	2,400	360	1,600	130	800	70
10	3,200	590	1,900	290	1,300	120	650	65
12	2,700	500	1,600	240	1,100	100	530	55
切削量基準 Depth of cut (D:直徑 Dia.)	Ad=0.05D		Ad=0.03D		Ad=0.02D		Ad=0.02D	

■RTA6高速切削條件表 RTA6 High-Speed Milling Conditions

被削材 Work Material	合金鋼,工具鋼,預硬鋼(~50HRC) Alloy steel, Tool steel,Prehardned steel,SKD11,SKD61,NAK等 AISI H13 ,AISI D2 etc.		熱處理鋼(55~60HRC) Hardened steel SKD61,SKD11,NAK,STAVAX等 AISI H13,AISI D2 etc		熱處理鋼(60~65HRC) Hardened steel SKD11,SKH,SKH,等 AISI H13,AISI D2 etc	
削材速度 Cutting Speed	250~300m/min		100~150m/min		50~75m/min	
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate
3	27,000	3,200	13,900	1,600	6,900	830
4	21,000	3,800	10,000	1,800	5,600	1,000
5	18,000	4,300	8,900	2,100	4,500	1,100
6	16,000	5,800	8,000	2,900	4,000	1,400
8	12,000	5,800	6,000	2,900	3,000	1,400
10	9,500	5,700	4,800	2,900	2,400	1,400
12	8,000	4,800	4,000	2,400	2,000	1,200
切削量基準 Depth of cut (D:直徑 Dia.)	 $\leq 0.05D$ $\leq 1D$		 $\leq 0.05D$ (MAX.0.5mm)		 $\leq 0.02D$ (MAX.0.2mm)	

注意事項 NOTE


- 1)機械設備或工件的夾持剛性不足、出現震動時，請以相同比例按上表降低回轉數及進給速度。  
If the rigidity of the machine or the work material installation is very low, or chattering is generated, please reduce the revolution and the feed rate proportionately.
- 2)側面加工時，請以下圖法（順進法）進行。  
Climb cut is recommended for side milling.
- 3)請使用油霧（Oil-mist）冷卻或吹氣方式（Air blow）進行切削。  
Use Oil-mist coolant or Air blow.

# LNT/LNR 切削條件表 · LNB 切削條件表

■ LNT/LNR 切削條件表 LNT/LNR Standard Cutting Conditions

被削材 Work Material	炭素鋼,合金鋼,調質鋼 Carbon Steels, Alloy Steels Prehardned Steels, S50C SCM, SKD, SUS, HPM, NAK		鋁 Aluminum		銅 Copper		塑膠 Plastics		
削材速度 Cutting Speed	30~80m/min		100~200m/min		50~150m/min		50~80m/min		
直徑 (mm) Diameter	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	Ad Depth of cut (mm)
0.2	47,800~	200~400	50,000~	200~400	50,000~	200~400	50,000~	200~400	0,002~0,01
0.3	31,800~	200~600	50,000~	200~400	50,000~	300~600	50,000~	200~600	0,002~0,02
0.4	23,900~	200~800	50,000~	200~800	39,800~	300~800	39,800~	200~800	0,002~0,02
0.5	19,100~	200~1,000	50,000~	200~1,000	31,800~	300~1,000	31,800~	200~1,000	0,001~0,04
1	9,600~25,500	300~1,300	31,800~	300~2,600	15,900~47,800	450~1,950	15,900~25,500	300~1,300	0,002~0,05
1.5	6,400~17,000	250~900	21,200~42,500	250~1,800	10,600~31,800	375~1,350	10,600~17,000	250~900	0,002~0,1
2	4,800~12,700	250~700	15,900~31,800	250~1,400	8,000~23,900	375~1,350	8,000~12,700	250~700	0,003~0,2
2.5	3,800~10,200	200~500	12,700~25,500	200~1,000	6,400~19,100	300~750	6,400~10,200	200~500	0,01~0,4
3	3,200~8,500	200~500	10,600~21,200	200~1,000	5,300~15,900	300~750	5,300~8,500	200~500	0,012~0,6

■ LNB 切削條件表 LNB Standard Cutting Conditions

被削材 Work Material	炭素鋼, Carbon Steels S50C (~225HB)		合金鋼, Alloy Steels SCM·SK·SUS (225~325HB)		プリハドン鋼 / 熱處理鋼, Prehardened Steels / Hardened Steels NAK·SKD(30~45HRC)		熱處理鋼, Hardened Steels SKD11·61·SKT (45~55HRC)		
削材速度 Cutting Speed	50~65m/min		40~55m/min		30~50m/min		30~40m/min		Ad
R	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	Depth of cut (mm)
0.25	32,000	640	32,000	640	26,000	300	20,000	240	0,003~0,01
0.3	32,000	830	27,000	700	21,000	340	16,000	260	0,006~0,03
0.5	19,000	870	16,000	740	13,000	420	10,000	320	0,005~0,08
0.75	13,000	940	10,500	760	8,500	440	6,500	340	0,06~0,12
1	10,000	1,000	8,000	800	6,000	420	5,000	350	0,03~0,21
1.5	6,600	730	5,300	580	4,000	310	3,300	260	0,03~0,23
2	5,000	660	4,000	530	3,000	260	2,500	230	0,01~0,28
切削量基準 Depth of cut (R: 球頭半徑)	$\leq 0.1R (R \leq 1)$ $\leq 0.2R (R > 1)$ 								

注意事項 NOTE

- 1) 請參考刀具之有效長,來調整切削量及回轉數·台床進給速度。  
Adjust depth of cut according to effective length.
- 2) 上述條件,為  $l_1$  (有效長) /  $D$  (刃徑)  $\leq 20$  為基準,超出上述場合時請:大幅調整切削條件。  
When under 20 (effective length / diameter), refer to the conditions listed above.
- 3) 請使用不容易冒煙之切削油濟。  
Use cutting fluid with retardant.
- 4) 請使用往複方式進行切削。  
Use bi-directional traveling milling.

# RTH 切削條件表 (低轉速高進給)

## ■ RTH切削條件表 (低轉速高進給) RTH Cutting Conditions (Low-Speed, High-Feed Milling)



**注意：**  
加工時產生的火花及破損引起的發熱，可能導致燃燒或火災；請務必要有防火措施。  
以下條件適用於高速精密綜合加工中心



**Caution:**  
Sparks generated during operation or heat caused by tool breakage can cause fire. Be sure to use all proper fire-prevention measures.  
The Conditions below are for high speed / high precision machining centers.

被削材 Work Material	一般構造用鋼, 碳素鋼, 鑄鐵 Mild steels, Carbon Steel, Cast Iron SS400, S55c, FC250 (~750N/mm)		合金鋼, 工具鋼 Alloy Steel, Tool Steel SCM, SKT, SKS, SKD (~30HRC)		調質鋼(30-38HRC) 預硬鋼(快削)Hardened Steel Pre-hardened Steel/Free Cutting(SKT,SKD,NAK,HPM1)		調質鋼, 不銹鋼 (38-45HRC)Hardened Steel Stainless Steel SUS304,NAK,SKD		熱處理鋼(45-55HRC) 鈦合金, 耐熱合金Hardened Steel, Titanium Alloy SKD61,SKD11,STAVALX等		熱處理鋼(55-60HRC) Hardened steel SKD11,SKH,SKS等 AISI H13,AISI D2 etc																																
	100m/min		100m/min		80m/min		70m/min		50m/min		30m/min																																
切削速度 Cutting Speed	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate	回轉數 (min <sup>-1</sup> ) Speed	進給速度 mm/min Feed Rate																															
2XR0.5	16,000	5,250	16,000	4,750	12,500	3,800	11,000	3,350	7,950	2,150	4,750	860																															
3XR0.5	10,500	6,250	10,500	5,600	8,500	4,500	7,450	3,900	5,300	2,600	3,200	995																															
4XR1	7,950	6,600	7,950	6,000	6,350	4,800	5,550	4,200	4,000	2,750	2,400	1,050																															
5XR1	6,350	7,000	6,350	6,350	5,100	5,100	4,450	4,450	3,200	2,850	1,900	1,150																															
6XR1.5	5,300	7,000	5,300	6,350	4,250	5,100	3,700	4,450	2,650	2,850	1,600	1,150																															
8XR2	4,000	7,000	4,000	6,350	3,200	5,100	2,800	4,450	2,000	2,850	1,200	1,150																															
10XR2	3,200	7,000	3,200	6,350	2,550	5,100	2,250	4,450	1,600	2,850	955	1,150																															
12XR3	2,650	7,000	2,650	6,350	2,100	5,100	1,850	4,450	1,350	2,850	795	1,150																															
切削量基準 Depth of cut (D直徑 Dia.)					<table border="1"> <tr> <td></td> <td>Ad</td> <td>Rd</td> </tr> <tr> <td>R ≤ 2</td> <td>0.2xR</td> <td>0.5D</td> </tr> <tr> <td>2 &lt; R</td> <td>0.5mm</td> <td>0.5D</td> </tr> </table>					Ad	Rd	R ≤ 2	0.2xR	0.5D	2 < R	0.5mm	0.5D	<table border="1"> <tr> <td></td> <td>Ad</td> <td>Rd</td> </tr> <tr> <td>R ≤ 2</td> <td>0.2xR</td> <td>0.5D</td> </tr> <tr> <td>2 &lt; R</td> <td>0.4mm</td> <td>0.5D</td> </tr> </table>					Ad	Rd	R ≤ 2	0.2xR	0.5D	2 < R	0.4mm	0.5D	<table border="1"> <tr> <td></td> <td>Ad</td> <td>Rd</td> </tr> <tr> <td>R ≤ 2</td> <td>0.1xR</td> <td>0.5D</td> </tr> <tr> <td>2 &lt; R</td> <td>0.2mm</td> <td>0.5D</td> </tr> </table>					Ad	Rd	R ≤ 2	0.1xR	0.5D	2 < R	0.2mm	0.5D
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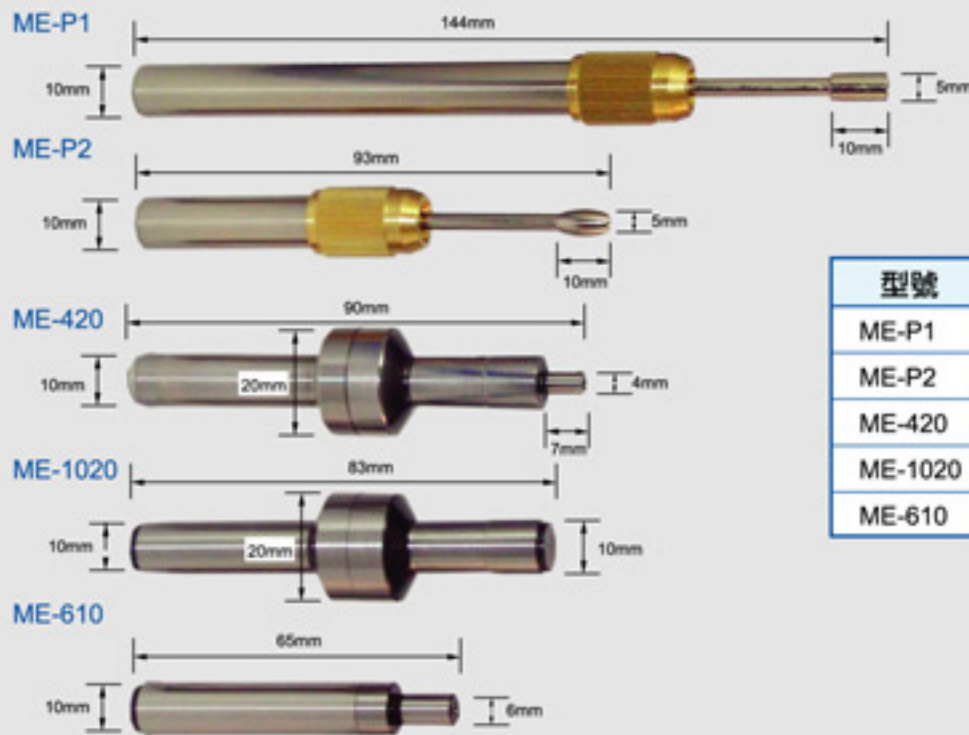
- 1)請使用剛性及精準度較佳之機械與刀桿。
- 2)這些切削條件是以在轉角處可作圓形插入銑削的前提下，如果是轉角為90度直角時；則須要將轉速降低為上表之50~70%，切削量為上表之50~80%。
- 3)請使用吹氣方式(Air blow)或油霧(Oil-mist)冷卻進行切削。
- 4)請依據加工形狀、切削量、機械剛性、工件夾持等使用狀況，來調整回轉速度、進給速度及切削量。
- 5)當4HSR或SHPR進入Z軸，而加工傾斜角度 $\beta \leq 2^\circ$ 時，請將進給速度降低30~60%。
- 6)上述切削條件適合於等高線加工、刀具夾持突出量4D(刃徑x4倍以下)之場合使用，若刀具夾持 > 4D突出量時，請根據各別的係數來調整回轉速度、進給速度及切削量；以防止發生顫動。

- 1)Use a rigid and precise machine and holder.
- 2)These milling conditions are based on milling with circular interpolation at corners. For milling without circular interpolation (such as right angle corners), reduce the speed to 50~70% and the cutting depth to 50~80% of the above conditions.
- 3)Recommend Oil-mist coolant or Air blow
- 4)Please adjust the speed, feed and cutting depth according to actual cutting conditions.
- 5)When 4HSR or SHPR enters in Z axis, reduce the feed rate to 30~60% of the above conditions with machining incline angle ( $\beta$ )  $\leq 2^\circ$
- 6)These millig conditions are for a tool extension length: less than 4 X D. for longer tool extension, reduce the speed, feed, and cutting depth in accordance with the respective coefficients, to prevent chattering.





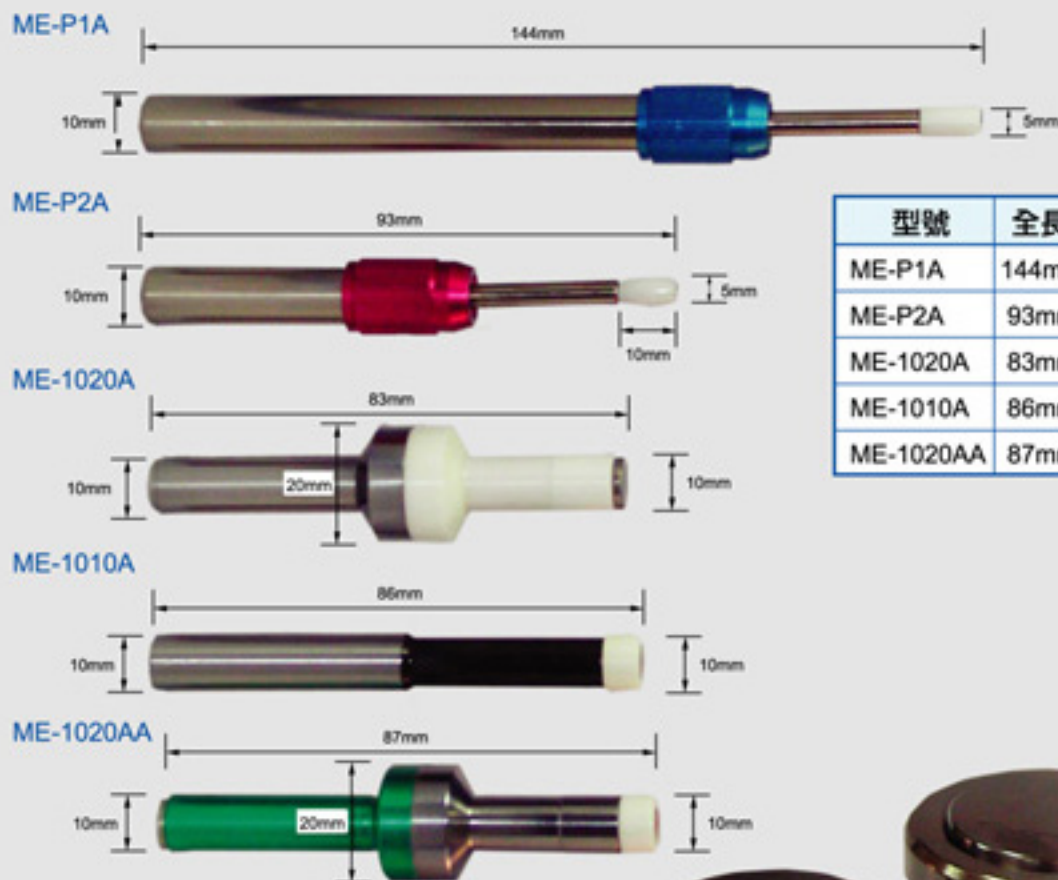
### 尋邊器



型號	全長	測頭直徑	柄徑
ME-P1	144mm	5mm	10mm
ME-P2	93mm	5mm	10mm
ME-420	90mm	4mm	10mm
ME-1020	83mm	10mm	10mm
ME-610	65mm	6mm	10mm



### 陶瓷尋邊器



型號	全長	測頭直徑	柄徑
ME-P1A	144mm	5mm	10mm
ME-P2A	93mm	5mm	10mm
ME-1020A	83mm	10mm	10mm
ME-1010A	86mm	10mm	10mm
ME-1020AA	87mm	10mm	10mm



### Z軸設定器

型號	有.無 磁	直徑	高度
ZM-50	無磁	45mm	50mm
ZH-50	有磁/無磁	63mm	50mm
ZP-100	無磁	50mm	100mm



ZP-100  
三合一Z軸—有專利

ZH-50

ZM-50

**HD.**

Hwe Der & Ho Dung

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