

## **ALOSTAR**

無橫向拉痕超高光面鋁刀

*Mirror polished aluminum end mills suitable for all kinds of special high-finish aluminum processing*

## **EDELSTAR**

高進給不鏽鋼專用銑刀

*High feed milling cutter for stainless steel suitable for 304 kinds of stainless steel*

## **ULTRASTAR**

超高效率無敵銑刀

*Ultra-efficient invincible cutter suitable for HRC25-50 special steel*

## **TX-STAR**

不鏽鋼/鈦合金專用銑刀

*Suitable for 304 kinds of stainless steel / titanium alloy special*





**TX-STAR 不等距導程不鏽鋼**  
**鈦合金銑刀系列** TX-STAR variable leads  
 design End mill series

# TX-STAR



## 特點

### SPECIAL FEATURES

採用不等距導程設計，  
實現高效率且穩定的切削。

"Variable -Lead" flute design leads stable and higher efficient performance.

獨特的刃口與螺旋角溝槽設計，  
加工去屑快速俐落。

Special flute and helix angle design for deeply depth milling and remove chips more smooth.

專為難切削的不鏽鋼304與4字頭的工件所設計。

Perfect for milling all types 304 and 4 digit number stainless work piece.

## LIFE TIME Test

### 不鏽鋼刀-壽命破壞性測試

## 實績測試

### Benchmark test:

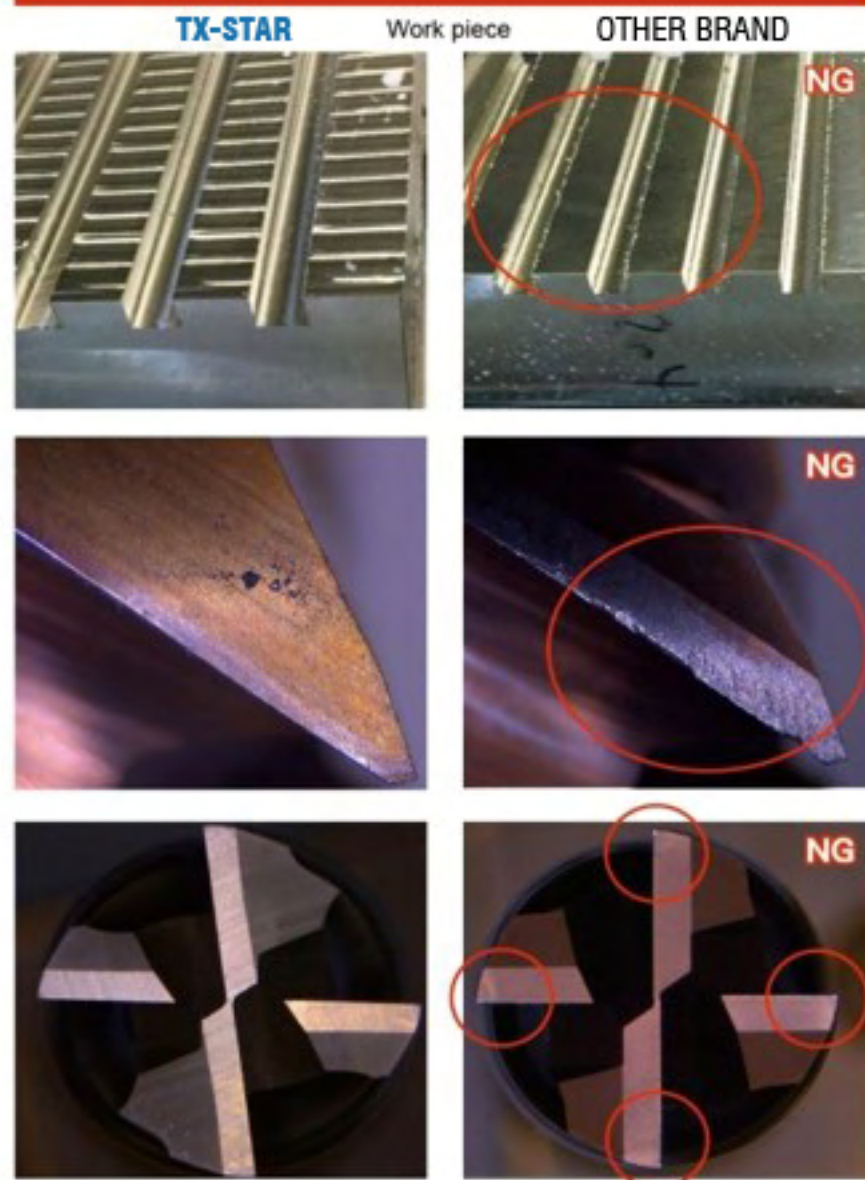
### TX10-SEM4100

機台 Machine: CAMPRO- By Coolant  
 工件 Work Piece: STAINLESS 304  
 轉速 Spindle Speed: 3600 RPM  
 進給 Feed rate: 550 mm/min  
 單刃切削量 Feed Rate per Tooth: 0.05mm  
 深度 Depth: 1D  
 寬度 Width: 10mm  
 切削方式 Milling Method: 溝銑Slot milling

TX-STAR

他社

### TX10-SEM4100



# TX-STAR 不等距導程不鏽鋼銑刀 -4刃

TX-STAR variable leads design End mill series- for all types Stainless / Titanium work piece.



## 規格表

編號(Number)	外徑(D)	刃長(H)	刃數(T)	柄徑(d)	全長(L)	編號(Number)	外徑(D)	刃長(H)	R角(R)	刃數(T)	柄徑(d)	全長(L)
TX04-SEM 4020	2	5	4	4	50	TX04-SEM 4030-r02	3	7.5	0.2R	4	4	50
TX04-SEM 4030	3	7.5	4	4	50	TX04-SEM 4030-r05	3	7.5	0.5R	4	4	50
TX04-SEM 4040	4	10	4	4	50	TX04-SEM 4040-r05	4	10	0.5R	4	4	50
TX06-SEM 4020	2	5	4	6	50	TX04-SEM 4040-r10	4	10	1R	4	4	50
TX06-SEM 4030	3	7.5	4	6	50	TX06-SEM 4050-r05	5	13	0.5R	4	6	50
TX06-SEM 4040	4	10	4	6	50	TX06-SEM 4050-r10	5	13	1R	4	6	50
TX06-SEM 4050	5	13	4	6	50	TX06-SEM 4060-r05	6	15	0.5R	4	6	50
TX06-SEM 4060	6	15	4	6	50	TX06-SEM 4060-r10	6	15	1R	4	6	50
TX08-SEM 4080	8	20	4	8	60	TX08-SEM 4080-r05	8	20	0.5R	4	8	60
TX10-SEM 4100	10	30	4	10	75	TX08-SEM 4080-r10	8	20	1R	4	8	60
TX12-SEM 4120	12	32	4	12	75	TX10-SEM 4100-r05	10	25	0.5R	4	10	75
TX16-SEM 4160	16	45	4	16	100	TX10-SEM 4100-r10	10	25	1R	4	10	75
TX20-SEM 4200	20	50	4	20	100	TX12-SEM 4120-r05	12	32	0.5R	4	12	75
						TX12-SEM 4120-r10	12	32	1R	4	12	75

## 切削條件表

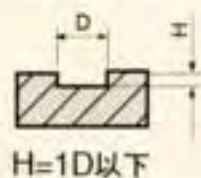
### Recommended Milling Conditions

<b>Cutting Conditions</b> 切削條件	ULTRA micro grain carbide used for TX-STAR End mills 粉末微粒碳化鎢 不鏽鋼刀-TX-STAR / SUS	<b>Cutting Materials</b> 被切削材	STAINLESS 304 / 316 / 4字頭 熱處理鋼 鈦合金 Ti-6Al-4V	The hardness of the material cut 被切削材 硬度	HRC30-45
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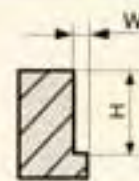
立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min	立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min
D3.0	10000	400	D3.0	10000	400
D4.0	8000	500	D4.0	8000	500
D5.0	6500	500	D5.0	6500	500
D6.0	5400	600	D6.0	5400	600
D8.0	4000	600	D8.0	4000	600
D10.0	3200	440	D10.0	3200	440
D12.0	2800	600	D12.0	2800	600
D16.0	2100	400	D16.0	2100	400
D20.0	1700	350	D20.0	1700	350

最大切削量 / Max Cutting Range.

Slot Milling- below 1D depth.



最大切削量 / Max Cutting Range.



Depth=H is within 2D  
W=0.2D



## EDELSTAR 不等距不鏽鋼銑刀系列

EDELSTAR variable leads design End mill series- for all types Stainless work piece.

# EDELSTAR



### 特點

### SPECIAL FEATURES

採用高進給及不等距設計，實現高效率且穩定的切削。

"variable-lead" shape, providing highly efficient milling!

獨特的刃口與螺旋角溝槽設計，加工去屑快速俐落。

Special flute and helix angle design for deeply depth milling and remove chips more smooth.

G1複合式鍍層專為難切削的不鏽鋼304與4字頭的工件所設計。

Special multilayer coating for milling all types 304 and 4 digit number stainless work piece.

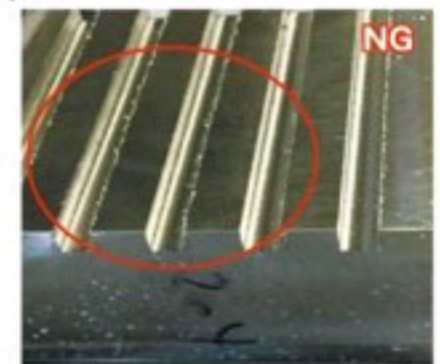
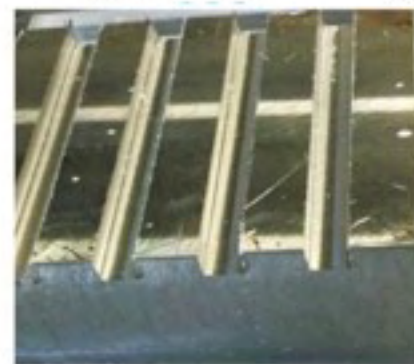
### LIFE TIME Test

### 不鏽鋼刀-壽命破壞性測試

EDELSTAR

Work piece

OTHER BRAND



### 實績測試

### Benchmark test:

## ED10 - SEM4100

機台 Machine: CAMPRO- By Coolant

工件 Work Piece: STAINLESS 304

轉速 Spindle Speed: 3600 RPM

進給 Feed rate: 550 mm/min

單刃切削量 Feed Rate per Tooth: 0.05mm

深度 Depth: 1D

寬度 Width: 10mm

切削方式 Milling Method: 溝銑Slot milling

EDELSTAR

他社

## ED10 - SEM4100



# EDELSTAR 不等距不鏽鋼銑刀 -4刃

EDELSTAR variable leads design End mill series- for all types Stainless work piece.



## 規格表

編號 (Number)	外徑 (D)	刃長 (H)	刃數 (T)	柄徑 (d)	全長 (L)
ED04-SEM 4020	2	5	4	4	50
ED04-SEM 4030	3	8	4	4	50
ED04-SEM 4040	4	10	4	4	50
ED06-SEM 4020	2	5	4	6	50
ED06-SEM 4030	3	8	4	6	50
ED06-SEM 4040	4	10	4	6	50
ED06-SEM 4050	5	12.5	4	6	50
ED06-SEM 4060	6	15	4	6	50
ED08-SEM 4080	8	20	4	8	60
ED10-SEM 4100	10	25	4	10	75
ED12-SEM 4120	12	30	4	12	75
ED16-SEM 4160	16	45	4	16	100
ED20-SEM 4200	20	50	4	20	100

## 切削條件表

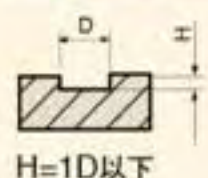
### Recommended Milling Conditions

Cutting Conditions 切削條件	ULTRA micro grain carbide used for EDELSTAR End mills 粉末微粒碳化鎢 不鏽鋼刀- EDELSTAR	Cutting Materials 被切削材	STAINLESS 304 / 316 / 4字頭 熱處理鋼 鈦合金 Ti-6Al-4V	The hardness of the material cut 被切削材 硬度	HRC30-45
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立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min	立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min
D3.0	10000	400	D3.0	10000	400
D4.0	8000	500	D4.0	8000	500
D5.0	6500	500	D5.0	6500	500
D6.0	5400	600	D6.0	5400	600
D8.0	4000	600	D8.0	4000	600
D10.0	3200	440	D10.0	3200	440
D12.0	2800	600	D12.0	2800	600
D16.0	2100	400	D16.0	2100	400
D20.0	1700	350	D20.0	1700	350

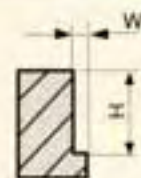
最大切削量 / Max Cutting Range.

Slot Milling- below 1D depth.



H=1D以下

最大切削量 / Max Cutting Range.



Depth= H is within 2D  
W= 0.2D

# ALOSTAR



## 特點

## SPECIAL FEATURES

採用雙刀刃設計，去屑快，加工鋁件更俐落!!

Dual blades shape design, remove aluminum chips faster than normal type.

獨有的拋光刃口與平整的刀刃，完全實現加工無橫向拉痕。

Unique polished process leads the work piece with no lateral marks milling result.

專為表面要求高光亮的鋁件加工所設計。

Designed for all aluminum work piece with better surface demand.

粗精加工

皆可

## 實績測試

## Benchmark test:

### AL10 - SEM3100

機台 Machine: CAMPRO- By Coolant

工件 Work Piece: ALUMINUM -6061  
(HRC 25)

轉速 Spindle Speed: 7600 RPM

進給 Feed Rate: 1000 mm/min

單刃切削量 Feed Rate Per tooth: 0.05mm

深度 Depth: 1.5D

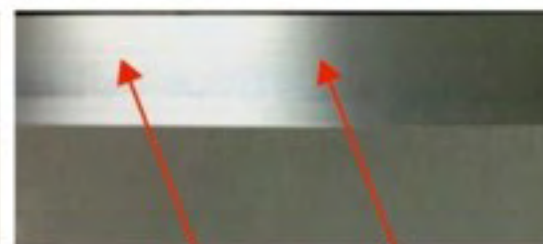
寬度 Width: 0.1mm

切削方式 Milling Method: 側銑 Side milling

## Lateral scratch Testing result

### 橫向拉痕測試

ALOSTAR - NO SCRATCH Work piece OTHER BRAND - WITH SCRATCH



### AL10 - SEM3100

機台 Machine: CAMPRO- By Coolant

工件 Work Piece: ALUMINUM -6061 (HRC 25)

轉速 Spindle Speed: 9000 RPM

進給 Feed Rate: 3500 mm/min

單刃切削量 Feed Rate Per tooth: 0.05mm

深度 Depth: 2D

寬度 Width: 4mm

切削方式 Milling Method: 溝側銑 Slot / Side milling

## LIFE TIME Test

ALOSTAR

OTHER BRAND

### AL10 - SEM3100



# ALOSTAR 無橫向拉紋鋁用銑刀

ALOSTAR series-End mill for Aluminum ( For high glossy and no lateral scratch surface demand)



## 規格表

編號 (Number)	外徑 (D)	刃長 (H)	刃數 (T)	柄徑 (d)	全長 (L)
AL04-SEM 3020	2	6	3	4	50
AL04-SEM 3030	3	9	3	4	50
AL04-SEM 3040	4	12	3	4	50
AL06-SEM 3020	2	6	3	6	50
AL06-SEM 3030	3	9	3	6	50
AL06-SEM 3040	4	12	3	6	50
AL06-SEM 3050	5	15	3	6	50
AL06-SEM 3060	6	18	3	6	50
AL08-SEM 3080	8	24	3	8	60
AL10-SEM 3100	10	30	3	10	75
AL12-SEM 3120	12	36	3	12	75
AL16-SEM 3160	16	50	3	16	100
AL20-SEM 3200	20	55	3	20	110

## 切削條件表

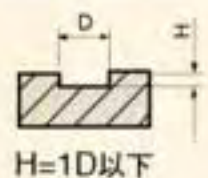
### Recommended Milling Conditions

Cutting Conditions 切削條件 ULTRA micro grain carbide used for ALOSTAR End mills 粉末微粒碳化鎢 3刃立銑刀 ALOSTAR	Cutting Materials 被切削材 Aluminum 鋁合金 -all the Aluminum type	The hardness of the material cut 被切削材 硬度 HRC20-30
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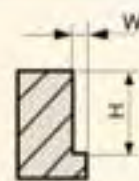
立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min	立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min
D3.0	10500	1200	D3.0	10500	1200
D4.0	8000	1100	D4.0	8000	1100
D5.0	9500	1700	D5.0	9500	1700
D6.0	9500	1700	D6.0	9500	1700
D8.0	8000	2300	D8.0	8000	2300
D10.0	8000	2800	D10.0	8000	2800
D12.0	6600	2400	D12.0	6600	2400
D16.0	5000	1800	D16.0	5000	1800
D20.0	4000	1400	D20.0	4000	1400

最大切削量 / Max Cutting Range.

Slot Milling- below 1D depth.



最大切削量 / Max Cutting Range.



Depth= H is within 2D  
W= 0.2D



# ULTRASTAR 無敵銑刀系列

ULTRASTAR -Super fine for steel alloy End mill series

# ULTRASTAR



## 特點

## SPECIAL FEATURES

採用特殊刀刃設計，  
剛性表現優於一般銑刀!!

With special blade design, the rigidity performance is better than the normal type !!

獨有Tix-H鍍層，提升刀具壽命。

Unique Tix-H coating leads the longer cutting life time.

專為HRC50以下工件加工所設計，保證效率加倍。

Design for milling work piece (lower than HRC 50), and help users to save over 50% labor time.

## 實績測試

## Benchmark test:

### UL10-SEM4100

機台Machine: CAMPRO- No Air blow

工件Work Piece: P1 (HRC 28)

轉速Spindle Speed: 3600 RPM

進給Feed rate: 1400 mm/min

單刃切削量Feed Rate per Tooth: 0.1mm

深度Depth: 1D

寬度Width: 10mm

切削方式Milling Method: 溝銑Slot milling

### P1-HRC 28 Test-Life time

### 一般鋼材銑刀測試

ULTRASTAR OTHER BRANDS



### 加工真實參數:

S: 3600 / F: 1400-10mm深度一無Air氣冷

N120	G00	Z60.000			
N130	X-20.000	Y-00.000			
	絕對座標	機移動量	G01	G04	G00
X	0.000	0.000	G17	G21	G00
Y	30.100	00.000	G00	G40	G50
Z	-10.000	0.000	G22	G43	G07
A	0.000	0.000	DRN F		070
			H	10M	3
DD.V	100X.V	2.0			
S	1400	3600			
ACT.F	1400MM/MIN	EXACT		3500/分	
				05001.40%	
RMT	STRT	MTN ***		16:35:50	

Ultrastar endmills give no Burr on the component



# ULTRASTAR 無敵銑刀

ULTRASTAR -Super fine for steel alloy End mill series- (Super High feed rate performance)



## 規格表

編號 (Number)	外徑 (D)	刃長 (H)	刃數 (T)	柄徑 (d)	全長 (L)
UL04-SEM 4030	3	8	4	4	50
UL04-SEM 4040	4	10	4	4	50
UL06-SEM 4020	2	5	4	6	50
UL06-SEM 4040	4	10	4	6	50
UL06-SEM 4050	5	13	4	6	50
UL06-SEM 4060	6	15	4	6	50
UL08-SEM 4070	7	18	4	8	60
UL08-SEM 4080	8	20	4	8	60
UL10-SEM 4100	10	30	4	10	75
UL12-SEM 4120	12	32	4	12	75
UL16-SEM 4160	16	50	4	16	100
UL20-SEM 4200	20	50	4	20	100

## 切削條件表

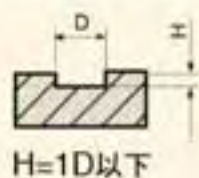
### Recommended Milling Conditions

Cutting Conditions 切削條件	ULTRA micro grain carbide used for ULTRASTAR End mills 粉末微粒碳化鎢 ULTRASTAR 鋼件刀	Cutting Materials 被切削材	合金鋼, 工具鋼 模具鋼, 熱處理鋼 SCr, SCM, SNC, SNCM SKD, NAK101	The hardness of the material cut 被切削材 硬度	HRC30-45
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立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min	立銑刀刃徑 mm	轉速-spindle speed RPM	進給-feed rate mm/min
D3.0	10600	2100	D3.0	10600	2100
D4.0	8000	1600	D4.0	8000	1600
D5.0	6300	1200	D5.0	6300	1200
D6.0	5300	1000	D6.0	5300	1000
D8.0	4400	1400	D8.0	4400	1400
D10.0	3800	1200	D10.0	3800	1200
D12.0	3200	1000	D12.0	3200	1000
D16.0	2400	700	D16.0	2400	700
D20.0	1900	600	D20.0	1900	600

最大切削量 / Max Cutting Range.

Slot Milling- below 1D depth.



H=1D以下

最大切削量 / Max Cutting Range.



Depth= H is within 2D  
W= 0.2D