

微小徑・深溝系列

MICRO

CATALOGUE

Micro Diameter & Long Neck Series



DESIGN ・HONESTY・FUTURE

版權聲明

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圖示說明 Guide Lines to Icons

★全系列均適用高速切削 All series good at high speed cutting.

鎢鋼種類 Carbide



超微粒。
Micro grain.



極超微粒。
Super micro grain.

被切削材硬度 Work Material Hardness



被切削工件硬度可達HRc 60 、65。
Work material hardness is up to HRc 60 、65.

顆粒大小 Grain Size



粉末顆粒是0.2μm
Grain size is 0.2 μm.



粉末顆粒是0.4μm
Grain size is 0.4 μm.



粉末顆粒是0.6μm
Grain size is 0.6 μm.

鍍層 Coating



適用於高速、高硬度加工。乾式、油霧、濕式切削（乾濕兩用）。
Good at high speed cutting & high hard cutting.
For Dry cutting, MQL and Wet cutting.



適用於難切削材和含碳量高之材料
（例：S45C/1.1210），油霧、濕式切削。
Good at difficult material and high carbon content
(e.g., S45C/1.1210) , for MQL & Wet cutting.



適用於高速、高硬度切削。乾式、油霧切削。
Good at high speed cutting & high hard cutting.
For Dry cutting and MQL.

螺旋角 Helix Angle



螺旋角度 15°、30°、35°。
Helix Angle is 15°, 30°, 35°.

圓隅角 Corner R



圓隅角。
Corner Radius.

刃數 Flute

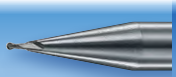
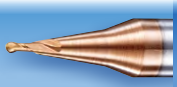
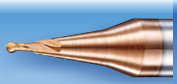
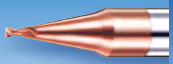
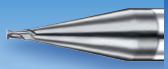


縮頸 Shrink Neck



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UMB Micro Diameter

Ball Nose End Mills 微小徑圓頭立銑刀



精銑 Finishing

中銑 Semi-finishing

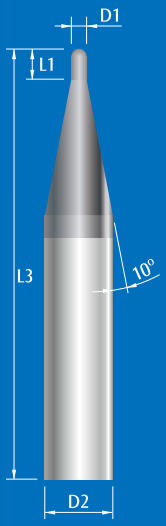
粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining



直徑 D1	R0.1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0		
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01		
柄徑 Shank(h6)	∅3	∅4					
柄徑公差值 D2 Tolerance	0 -0.006	0 -0.008					

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UMB0022	R 0.1	0.4	50	4
UMB0032	R 0.15	0.6	50	4
UMB0042	R 0.2	0.8	50	4
UMB0052	R 0.25	1.0	50	4
UMB0062	R 0.3	1.2	50	4
UMB0072	R 0.35	1.4	50	4
UMB0082	R 0.4	1.6	50	4
UMB0102S	R 0.5	2.0	50	3
UMB0102	R 0.5	2.0	50	4
UMB0152S	R 0.75	3.0	50	3
UMB0152	R 0.75	3.0	50	4
UMB0202S	R 1.0	4.0	50	3
UMB0202	R 1.0	4.0	50	4
UMB0302S	R 1.5	6.0	50	3
UMB0302	R 1.5	6.0	50	4
UMB0402	R 2.0	8.0	50	4

unit : mm

UMB

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UMB0022	10	15	18000~20000	250~400	0.008~0.012	0.2	溝銑 SLOTTING
UMB0022	10	15	18000~20000	400~500	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	18000~20000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UMB0022	10	15	18000~20000	700~900	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0032	10	20	18000~20000	300~500	0.01~0.015	0.3	溝銑 SLOTTING
UMB0032	10	20	18000~20000	500~600	0.005~0.01	0.3	溝銑 SLOTTING
UMB0032	10	20	18000~20000	600~800	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0032	10	20	18000~20000	800~1000	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0042	10	25	18000~20000	400~600	0.015~0.02	0.4	溝銑 SLOTTING
UMB0042	10	25	18000~20000	600~700	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	25	18000~20000	700~900	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0042	10	25	18000~20000	900~1100	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0052	12	30	18000~20000	600~800	0.015~0.02	0.5	溝銑 SLOTTING
UMB0052	12	30	18000~20000	800~900	0.005~0.01	0.5	溝銑 SLOTTING
UMB0052	12	30	18000~20000	800~900	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UMB0052	12	30	18000~20000	1000~1200	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0062	12	35	18000~20000	600~800	0.02~0.025	0.6	溝銑 SLOTTING
UMB0062	12	35	18000~20000	800~1000	0.005~0.01	0.6	溝銑 SLOTTING
UMB0062	12	35	18000~20000	800~1000	0.03~0.045	0.06~0.09	3D銑 3D MILLING
UMB0062	12	35	18000~20000	1200~1600	0.005~0.02	0.01~0.04	3D銑 3D MILLING
UMB0072	12	40	16000~18000	600~800	0.02~0.03	0.7	溝銑 SLOTTING
UMB0072	12	40	16000~18000	800~1000	0.005~0.015	0.7	溝銑 SLOTTING
UMB0072	12	40	16000~18000	800~1000	0.035~0.05	0.07~0.1	3D銑 3D MILLING
UMB0072	12	40	16000~18000	1200~1600	0.005~0.025	0.01~0.05	3D銑 3D MILLING
UMB0082	12	45	16000~18000	600~800	0.02~0.04	0.8	溝銑 SLOTTING
UMB0082	12	45	16000~18000	800~1000	0.005~0.015	0.8	溝銑 SLOTTING
UMB0082	12	45	16000~18000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UMB0082	12	45	16000~18000	1400~1800	0.005~0.025	0.01~0.05	3D銑 3D MILLING
UMB0102S	12	50	14000~16000	600~800	0.04~0.06	1	溝銑 SLOTTING
UMB0102S	12	50	14000~16000	1000~1200	0.015~0.03	1	溝銑 SLOTTING
UMB0102S	12	50	14000~16000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102S	12	50	14000~16000	1600~2000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0102	12	50	14000~16000	600~800	0.04~0.06	1	溝銑 SLOTTING
UMB0102	12	50	14000~16000	1000~1200	0.015~0.03	1	溝銑 SLOTTING
UMB0102	12	50	14000~16000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102	12	50	14000~16000	1600~2000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0152S	12	75	14000~16000	600~800	0.06~0.08	1.5	溝銑 SLOTTING
UMB0152S	12	75	14000~16000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
UMB0152S	12	75	14000~16000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152S	12	75	14000~16000	1800~2200	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0152	12	75	14000~16000	600~800	0.06~0.08	1.5	溝銑 SLOTTING
UMB0152	12	75	14000~16000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
UMB0152	12	75	14000~16000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152	12	75	14000~16000	1800~2200	0.02~0.05	0.04~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UMB0202S	12	90	13000~14000	800~1000	0.1~0.12	2	溝銑 SLOTTING
UMB0202S	12	90	13000~14000	1200~1400	0.02~0.06	2	溝銑 SLOTTING
UMB0202S	12	90	13000~14000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0202S	12	90	13000~14000	2200~2600	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0202	12	90	13000~14000	800~1000	0.1~0.12	2	溝銑 SLOTTING
UMB0202	12	90	13000~14000	1200~1400	0.02~0.06	2	溝銑 SLOTTING
UMB0202	12	90	13000~14000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0202	12	90	13000~14000	2200~2600	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0302S	12	125	12000~13000	1000~1200	0.14~0.16	3	溝銑 SLOTTING
UMB0302S	12	125	12000~13000	1400~1800	0.03~0.08	3	溝銑 SLOTTING
UMB0302S	12	125	12000~13000	2200~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0302S	12	125	12000~13000	2800~3200	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UMB0302	12	125	12000~13000	1000~1200	0.14~0.16	3	溝銑 SLOTTING
UMB0302	12	125	12000~13000	1400~1800	0.03~0.08	3	溝銑 SLOTTING
UMB0302	12	125	12000~13000	2200~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0302	12	125	12000~13000	2800~3200	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UMB0402	12	150	11000~12000	1200~1400	0.16~0.18	4	溝銑 SLOTTING
UMB0402	12	150	11000~12000	1800~2200	0.04~0.09	4	溝銑 SLOTTING
UMB0402	12	150	11000~12000	2600~2800	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UMB0402	12	150	11000~12000	3200~3600	0.035~0.1	0.07~0.2	3D銑 3D MILLING

UMB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :Hardened Steels SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

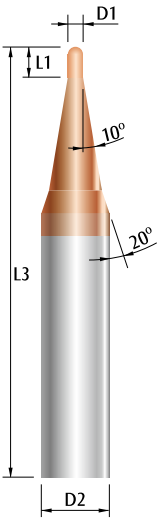
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UMB0022	10	15	16000~18000	100~200	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	16000~18000	100~200	0.005~0.008	0.2	溝銑 SLOTTING
UMB0022	10	15	16000~18000	200~300	0.008~0.01	0.016~0.02	3D銑 3D MILLING
UMB0022	10	15	16000~18000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0032	10	15	15000~16000	100~200	0.005~0.008	0.3	溝銑 SLOTTING
UMB0032	10	15	15000~16000	100~200	0.005~0.008	0.3	溝銑 SLOTTING
UMB0032	10	15	15000~16000	200~300	0.008~0.01	0.016~0.02	3D銑 3D MILLING
UMB0032	10	15	15000~16000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0042	10	20	15000~16000	150~250	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	20	15000~16000	150~250	0.005~0.01	0.4	溝銑 SLOTTING
UMB0042	10	20	15000~16000	200~300	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UMB0042	10	20	15000~16000	300~400	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UMB0052	12	25	14000~15000	200~300	0.005~0.015	0.5	溝銑 SLOTTING
UMB0052	12	25	14000~15000	200~300	0.005~0.015	0.5	溝銑 SLOTTING
UMB0052	12	25	14000~15000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0052	12	25	14000~15000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UMB0062	12	30	14000~15000	200~400	0.015~0.025	0.6	溝銑 SLOTTING
UMB0062	12	30	14000~15000	400~500	0.005~0.015	0.6	溝銑 SLOTTING
UMB0062	12	30	14000~15000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UMB0062	12	30	14000~15000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0072	12	30	13000~14000	300~500	0.02~0.03	0.7	溝銑 SLOTTING
UMB0072	12	30	13000~14000	500~700	0.005~0.015	0.7	溝銑 SLOTTING
UMB0072	12	30	13000~14000	400~600	0.025~0.035	0.05~0.07	3D銑 3D MILLING
UMB0072	12	30	13000~14000	800~1000	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UMB0082	12	35	13000~14000	300~500	0.02~0.03	0.8	溝銑 SLOTTING
UMB0082	12	35	13000~14000	500~700	0.005~0.015	0.8	溝銑 SLOTTING
UMB0082	12	35	13000~14000	400~600	0.03~0.04	0.06~0.08	3D銑 3D MILLING
UMB0082	12	35	13000~14000	800~1000	0.005~0.02	0.01~0.04	3D銑 3D MILLING
UMB0102S	12	40	12000~13000	400~600	0.03~0.04	1	溝銑 SLOTTING
UMB0102S	12	40	12000~13000	600~800	0.015~0.025	1	溝銑 SLOTTING
UMB0102S	12	40	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102S	12	40	12000~13000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0102	12	40	12000~13000	400~600	0.03~0.04	1	溝銑 SLOTTING
UMB0102	12	40	12000~13000	600~800	0.015~0.025	1	溝銑 SLOTTING
UMB0102	12	40	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UMB0102	12	40	12000~13000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UMB0152S	12	60	11000~12000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UMB0152S	12	60	11000~12000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
UMB0152S	12	60	11000~12000	400~600	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152S	12	60	11000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0152	12	60	11000~12000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UMB0152	12	60	11000~12000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
UMB0152	12	60	11000~12000	400~600	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UMB0152	12	60	11000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UMB0202S	12	70	10000~11000	600~800	0.06~0.08	2	溝銑 SLOTTING
UMB0202S	12	70	10000~11000	1000~1200	0.02~0.04	2	溝銑 SLOTTING
UMB0202S	12	70	10000~11000	800~1000	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UMB0202S	12	70	10000~11000	1400~1800	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UMB0202	12	70	10000~11000	600~800	0.06~0.08	2	溝銑 SLOTTING
UMB0202	12	70	10000~11000	1000~1200	0.02~0.04	2	溝銑 SLOTTING
UMB0202	12	70	10000~11000	800~1000	0.09~0.11	0.18~0.22	3D銑 3D MILLING
UMB0202	12	70	10000~11000	1400~1800	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UMB0302S	12	95	9000~10000	600~800	0.1~0.12	3	溝銑 SLOTTING
UMB0302S	12	95	9000~10000	1200~1400	0.02~0.06	3	溝銑 SLOTTING
UMB0302S	12	95	9000~10000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0302S	12	95	9000~10000	1400~1800	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0302	12	95	9000~10000	600~800	0.1~0.12	3	溝銑 SLOTTING
UMB0302	12	95	9000~10000	1200~1400	0.02~0.06	3	溝銑 SLOTTING
UMB0302	12	95	9000~10000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UMB0302	12	95	9000~10000	1400~1800	0.025~0.06	0.05~0.12	3D銑 3D MILLING
UMB0402	12	115	8000~9000	800~1000	0.14~0.16	4	溝銑 SLOTTING
UMB0402	12	115	8000~9000	1200~1400	0.03~0.08	4	溝銑 SLOTTING
UMB0402	12	115	8000~9000	1000~1200	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UMB0402	12	115	8000~9000	1600~2000	0.03~0.08	0.06~0.16	3D銑 3D MILLING

MBTA Micro Diameter

微小徑圓頭立銑刀 Ball Nose End Mills





直徑 D1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01

直徑 D1	R0.6	R0.7	R0.75	R0.8	R0.9	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01

柄徑 Shank(h6)	Ø4
柄徑公差值 D2 Tolerance	0 -0.008

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MBTA0032	R 0.15	0.6	50	4
MBTA0042	R 0.2	0.8	50	4
MBTA0052	R 0.25	1.0	50	4
MBTA0062	R 0.3	1.2	50	4
MBTA0072	R 0.35	1.4	50	4
MBTA0082	R 0.4	1.6	50	4
MBTA0102	R 0.5	2.0	50	4
MBTA0122	R 0.6	2.4	50	4
MBTA0142	R 0.7	2.8	50	4
MBTA0152	R 0.75	3.0	50	4
MBTA0162	R 0.8	3.2	50	4
MBTA0182	R 0.9	3.6	50	4
MBTA0202	R 1.0	4.0	50	4
MBTA0302	R 1.5	6.0	50	4
MBTA0402	R 2.0	8.0	50	4

unit : mm



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	24000~26000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0032	10	24000~26000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MBTA0042	10	23000~25000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MBTA0042	10	23000~25000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0052	10	23000~25000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	23000~25000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MBTA0062	10	22000~24000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0062	10	22000~24000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0072	10	22000~24000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0072	10	22000~24000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0082	10	21000~23000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	18000~20000	700~800	0.05~0.06	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	18000~20000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	18000~20000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0122	10	18000~20000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	18000~20000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0142	10	18000~20000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~18000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0162	10	16000~18000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0402	15	13000~15000	1300~1500	0.1~0.12	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	2200~2400	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	1400~1800	0.12~0.15	0.3	3D銑 3D MILLING
MBTA0402	15	13000~15000	2600~3000	0.05~0.07	0.14	3D銑 3D MILLING

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0032	10	17000~18000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MBTA0042	10	17000~18000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MBTA0042	10	17000~18000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MBTA0052	10	17000~18000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	17000~18000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MBTA0062	10	17000~18000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0062	10	17000~18000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0072	10	17000~18000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0072	10	17000~18000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	17000~18000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0082	10	17000~18000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	16000~17000	700~800	0.05~0.06	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	16000~17000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	16000~17000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0122	10	16000~17000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	16000~17000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0142	10	16000~17000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~17000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0162	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MBTA0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0402	15	12000~14000	1300~1500	0.1~0.12	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	2200~2400	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	1400~1800	0.12~0.15	0.3	3D銑 3D MILLING
MBTA0402	15	12000~14000	2600~3000	0.05~0.07	0.14	3D銑 3D MILLING

MBTA 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MBTA0032	10	24000~26000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	24000~26000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0032	10	24000~26000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MBTA0042	10	23000~25000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	23000~25000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MBTA0042	10	23000~25000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MBTA0052	10	23000~25000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MBTA0052	10	23000~25000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	23000~25000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0062	10	22000~24000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MBTA0062	10	22000~24000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MBTA0062	10	22000~24000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MBTA0072	10	22000~24000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	22000~24000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0072	10	22000~24000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	21000~23000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	21000~23000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0082	10	21000~23000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	18000~20000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	18000~20000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	18000~20000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	18000~20000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	18000~20000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0122	10	18000~20000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	18000~20000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	18000~20000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MBTA0142	10	18000~20000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~18000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~18000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MBTA0162	10	16000~18000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MBTA0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0402	15	13000~15000	1100~1400	0.15~0.18	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	2600~3000	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	13000~15000	1600~2000	0.14~0.16	0.32	3D銑 3D MILLING
MBTA0402	15	13000~15000	2800~3200	0.06~0.09	0.18	3D銑 3D MILLING

MBTA 切削條件表 MILLING CONDITIONS

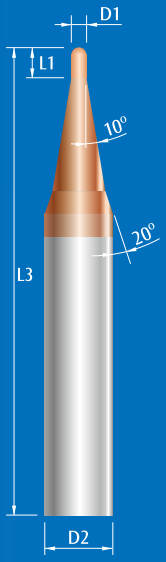
被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MBTA0032	10	17000~18000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MBTA0032	10	17000~18000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0032	10	17000~18000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MBTA0042	10	17000~18000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MBTA0042	10	17000~18000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MBTA0042	10	17000~18000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MBTA0052	10	17000~18000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MBTA0052	10	17000~18000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MBTA0052	10	17000~18000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MBTA0062	10	17000~18000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MBTA0062	10	17000~18000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MBTA0062	10	17000~18000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MBTA0072	10	17000~18000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MBTA0072	10	17000~18000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0072	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0082	10	17000~18000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MBTA0082	10	17000~18000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0082	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MBTA0102	10	16000~17000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MBTA0102	10	16000~17000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MBTA0102	10	16000~17000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0122	10	16000~17000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MBTA0122	10	16000~17000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0122	10	16000~17000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MBTA0142	10	16000~17000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MBTA0142	10	16000~17000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MBTA0142	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0162	10	16000~17000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MBTA0162	10	16000~17000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MBTA0162	10	16000~17000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MBTA0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MBTA0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MBTA0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MBTA0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MBTA0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MBTA0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MBTA0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MBTA0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING
MBTA0402	15	12000~14000	1100~1400	0.15~0.18	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	2600~3000	0.05~0.07	4	溝銑 SLOTTING
MBTA0402	15	12000~14000	1600~2000	0.14~0.16	0.32	3D銑 3D MILLING
MBTA0402	15	12000~14000	2800~3200	0.06~0.09	0.18	3D銑 3D MILLING



MSB Micro Diameter

Ball Nose End Mills 微小徑圓頭立銑刀

Super MG | 0.4 μm | 30° | 2 Flutes | HRc ▶60 | G12



直徑 D1	R0.15	R0.2	R0.25	R0.3	R0.35	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.6	R0.7	R0.75	R0.8	R0.9	R1.0	R1.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
柄徑 Shank(h6)	∅3						
柄徑公差值 D2 Tolerance	0 -0.006						

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MSB0032	R 0.15	0.6	50	3
MSB0042	R 0.2	0.8	50	3
MSB0052	R 0.25	1.0	50	3
MSB0062	R 0.3	1.2	50	3
MSB0072	R 0.35	1.4	50	3
MSB0082	R 0.4	1.6	50	3
MSB0102	R 0.5	2.0	50	3
MSB0122	R 0.6	2.4	50	3
MSB0142	R 0.7	2.8	50	3
MSB0152	R 0.75	3.0	50	3
MSB0162	R 0.8	3.2	50	3
MSB0182	R 0.9	3.6	50	3
MSB0202	R 1.0	4.0	50	3
MSB0302	R 1.5	6.0	50	3

unit : mm

精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MSB0032	10	24000~26000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MSB0032	10	24000~26000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MSB0042	10	23000~25000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MSB0042	10	23000~25000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MSB0052	10	23000~25000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	23000~25000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MSB0062	10	22000~24000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MSB0062	10	22000~24000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MSB0072	10	22000~24000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MSB0072	10	22000~24000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MSB0082	10	21000~23000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	18000~20000	700~800	0.05~0.06	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0102	10	18000~20000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MSB0122	10	18000~20000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0122	10	18000~20000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MSB0142	10	18000~20000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MSB0142	10	18000~20000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~18000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MSB0162	10	16000~18000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MSB0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MSB0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MSB0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	250~350	0.005~0.01	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	300~400	0.01~0.015	0.03	3D銑 3D MILLING
MSB0032	10	17000~18000	350~450	0.005~0.01	0.02	3D銑 3D MILLING
MSB0042	10	17000~18000	300~400	0.01~0.02	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	350~450	0.01~0.015	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	400~500	0.01~0.02	0.06	3D銑 3D MILLING
MSB0042	10	17000~18000	500~600	0.01~0.015	0.03	3D銑 3D MILLING
MSB0052	10	17000~18000	300~500	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	500~600	0.015~0.025	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	400~600	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	17000~18000	600~800	0.015~0.025	0.06	3D銑 3D MILLING
MSB0062	10	17000~18000	400~600	0.03~0.04	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	600~900	0.02~0.03	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	500~600	0.03~0.04	0.08	3D銑 3D MILLING
MSB0062	10	17000~18000	600~800	0.02~0.03	0.06	3D銑 3D MILLING
MSB0072	10	17000~18000	500~700	0.04~0.06	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	600~800	0.04~0.06	0.12	3D銑 3D MILLING
MSB0072	10	17000~18000	900~1200	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	17000~18000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1200	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	700~900	0.05~0.06	0.12	3D銑 3D MILLING
MSB0082	10	17000~18000	1000~1300	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	16000~17000	700~800	0.05~0.06	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1200~1400	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0102	10	16000~17000	1300~1500	0.04~0.05	0.1	3D銑 3D MILLING
MSB0122	10	16000~17000	700~800	0.05~0.06	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	900~1100	0.05~0.07	0.14	3D銑 3D MILLING
MSB0122	10	16000~17000	1400~1600	0.04~0.05	0.1	3D銑 3D MILLING
MSB0142	10	16000~17000	800~1000	0.05~0.06	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1600~1800	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1200~1400	0.05~0.07	0.14	3D銑 3D MILLING
MSB0142	10	16000~17000	1800~2000	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~17000	800~1000	0.05~0.06	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1800~2000	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1300~1500	0.05~0.07	0.14	3D銑 3D MILLING
MSB0162	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	900~1100	0.06~0.08	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1800~2000	0.04~0.06	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1400~1700	0.06~0.08	0.16	3D銑 3D MILLING
MSB0182	10	15000~17000	2200~2500	0.04~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2000~2200	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1400~1800	0.06~0.08	0.16	3D銑 3D MILLING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	0.12	3D銑 3D MILLING
MSB0302	13	13000~15000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2000~2200	0.04~0.06	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1400~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0302	13	13000~15000	2400~2800	0.05~0.07	0.14	3D銑 3D MILLING

MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MSB0032	10	24000~26000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	24000~26000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MSB0032	10	24000~26000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MSB0042	10	23000~25000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MSB0042	10	23000~25000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MSB0042	10	23000~25000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MSB0052	10	23000~25000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MSB0052	10	23000~25000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	23000~25000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MSB0062	10	22000~24000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MSB0062	10	22000~24000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MSB0062	10	22000~24000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MSB0072	10	22000~24000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	22000~24000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MSB0072	10	22000~24000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	21000~23000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	21000~23000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MSB0082	10	21000~23000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	18000~20000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	18000~20000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MSB0102	10	18000~20000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MSB0122	10	18000~20000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	18000~20000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MSB0122	10	18000~20000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MSB0142	10	18000~20000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	18000~20000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MSB0142	10	18000~20000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~18000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~18000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MSB0162	10	16000~18000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MSB0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MSB0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MSB0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING

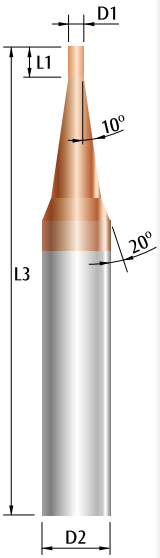
MSB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MSB0032	10	17000~18000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	500~700	0.01~0.015	0.3	溝銑 SLOTTING
MSB0032	10	17000~18000	500~600	0.015~0.02	0.04	3D銑 3D MILLING
MSB0032	10	17000~18000	600~700	0.01~0.015	0.02	3D銑 3D MILLING
MSB0042	10	17000~18000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	500~700	0.015~0.02	0.4	溝銑 SLOTTING
MSB0042	10	17000~18000	500~700	0.015~0.025	0.05	3D銑 3D MILLING
MSB0042	10	17000~18000	600~800	0.015~0.02	0.03	3D銑 3D MILLING
MSB0052	10	17000~18000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	650~850	0.015~0.02	0.5	溝銑 SLOTTING
MSB0052	10	17000~18000	650~850	0.02~0.03	0.06	3D銑 3D MILLING
MSB0052	10	17000~18000	700~800	0.015~0.02	0.04	3D銑 3D MILLING
MSB0062	10	17000~18000	550~750	0.04~0.06	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
MSB0062	10	17000~18000	700~900	0.03~0.04	0.1	3D銑 3D MILLING
MSB0062	10	17000~18000	800~1000	0.025~0.035	0.05	3D銑 3D MILLING
MSB0072	10	17000~18000	650~800	0.05~0.07	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	900~1200	0.03~0.04	0.7	溝銑 SLOTTING
MSB0072	10	17000~18000	800~1000	0.05~0.07	0.14	3D銑 3D MILLING
MSB0072	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0082	10	17000~18000	750~950	0.05~0.07	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1300	0.03~0.04	0.8	溝銑 SLOTTING
MSB0082	10	17000~18000	1000~1200	0.05~0.07	0.14	3D銑 3D MILLING
MSB0082	10	17000~18000	1200~1400	0.03~0.04	0.08	3D銑 3D MILLING
MSB0102	10	16000~17000	900~1100	0.06~0.07	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1300~1500	0.04~0.05	1	溝銑 SLOTTING
MSB0102	10	16000~17000	1300~1500	0.06~0.07	0.14	3D銑 3D MILLING
MSB0102	10	16000~17000	1600~1800	0.03~0.05	0.1	3D銑 3D MILLING
MSB0122	10	16000~17000	900~1100	0.06~0.08	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.04~0.05	1.2	溝銑 SLOTTING
MSB0122	10	16000~17000	1300~1500	0.06~0.08	0.16	3D銑 3D MILLING
MSB0122	10	16000~17000	1800~2200	0.03~0.05	0.1	3D銑 3D MILLING
MSB0142	10	16000~17000	1000~1200	0.06~0.08	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1400~1600	0.04~0.05	1.4	溝銑 SLOTTING
MSB0142	10	16000~17000	1400~1600	0.07~0.09	0.18	3D銑 3D MILLING
MSB0142	10	16000~17000	2000~2300	0.04~0.05	0.1	3D銑 3D MILLING
MSB0162	10	16000~17000	1000~1200	0.07~0.09	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1800~2200	0.04~0.05	1.6	溝銑 SLOTTING
MSB0162	10	16000~17000	1400~1600	0.08~0.1	0.2	3D銑 3D MILLING
MSB0162	10	16000~17000	2000~2400	0.04~0.05	0.1	3D銑 3D MILLING
MSB0182	10	15000~17000	1100~1300	0.08~0.1	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	2000~2400	0.04~0.05	1.8	溝銑 SLOTTING
MSB0182	10	15000~17000	1500~1700	0.1~0.12	0.24	3D銑 3D MILLING
MSB0182	10	15000~17000	2400~2600	0.05~0.06	0.12	3D銑 3D MILLING
MSB0202	11	14000~16000	1100~1400	0.08~0.1	2	溝銑 SLOTTING
MSB0202	11	14000~16000	2200~2600	0.04~0.06	2	溝銑 SLOTTING
MSB0202	11	14000~16000	1600~1800	0.1~0.12	0.24	3D銑 3D MILLING
MSB0202	11	14000~16000	2400~2700	0.05~0.07	0.14	3D銑 3D MILLING
MSB0302	13	13000~15000	1100~1400	0.12~0.15	3	溝銑 SLOTTING
MSB0302	13	13000~15000	2500~3000	0.05~0.07	3	溝銑 SLOTTING
MSB0302	13	13000~15000	1600~1800	0.13~0.15	0.3	3D銑 3D MILLING
MSB0302	13	13000~15000	2800~3000	0.06~0.08	0.16	3D銑 3D MILLING

MET Micro Diameter

微小徑立銑刀 End Mills

Super MG | 0.4 µm | 35° | 2 Flutes | HRc ▸60 | G12



直徑 D1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.02	0 -0.02
直徑 D1	1.4	1.5	1.6	1.8	2.0	2.5	3.0	
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	
柄徑 Shank(h6)	Ø3							
柄徑公差值 D2 Tolerance	0 -0.006							

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
MET0022	0.2	0.4	50	3
MET0032	0.3	0.6	50	3
MET0042	0.4	0.8	50	3
MET0052	0.5	1.0	50	3
MET0062	0.6	1.2	50	3
MET0082	0.8	1.6	50	3
MET0102	1.0	2.5	50	3
MET0122	1.2	3.0	50	3
MET0142	1.4	3.0	50	3
MET0152	1.5	4.0	50	3
MET0162	1.6	4.0	50	3
MET0182	1.8	5.0	50	3
MET0202	2.0	6.0	50	3
MET0252	2.5	8.0	50	3
MET0302	3.0	8.0	50	3

unit : mm



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

MET 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
MET0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
MET0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
MET0032	10	24000~26000	300~400	0.01~0.015	0.3	溝銑 SLOTTING
MET0032	10	24000~26000	400~500	0.005~0.01	0.3	溝銑 SLOTTING
MET0042	10	23000~25000	400~500	0.02~0.03	0.4	溝銑 SLOTTING
MET0042	10	23000~25000	500~600	0.01~0.02	0.4	溝銑 SLOTTING
MET0052	10	23000~25000	500~700	0.03~0.04	0.5	溝銑 SLOTTING
MET0052	10	23000~25000	800~900	0.01~0.02	0.5	溝銑 SLOTTING
MET0062	10	22000~24000	500~700	0.04~0.05	0.6	溝銑 SLOTTING
MET0062	10	22000~24000	800~900	0.03~0.04	0.6	溝銑 SLOTTING
MET0072	10	22000~24000	600~800	0.04~0.05	0.7	溝銑 SLOTTING
MET0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
MET0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
MET0082	10	21000~23000	800~1000	0.04~0.05	0.8	溝銑 SLOTTING
MET0092	10	21000~23000	650~850	0.05~0.06	0.9	溝銑 SLOTTING
MET0092	10	21000~23000	850~1050	0.04~0.05	0.9	溝銑 SLOTTING
MET0102	10	19000~21000	700~900	0.05~0.06	1	溝銑 SLOTTING
MET0102	10	19000~21000	900~1100	0.04~0.05	1	溝銑 SLOTTING
MET0122	10	19000~21000	700~900	0.06~0.08	1.2	溝銑 SLOTTING
MET0122	10	19000~21000	900~1100	0.04~0.05	1.2	溝銑 SLOTTING
MET0142	10	18000~20000	700~900	0.07~0.09	1.4	溝銑 SLOTTING
MET0142	10	18000~20000	900~1100	0.04~0.05	1.4	溝銑 SLOTTING
MET0152	10	18000~20000	750~950	0.08~0.1	1.5	溝銑 SLOTTING
MET0152	10	18000~20000	950~1150	0.05~0.06	1.5	溝銑 SLOTTING
MET0162	10	17000~19000	800~1000	0.09~0.11	1.6	溝銑 SLOTTING
MET0162	10	17000~19000	1000~1200	0.05~0.07	1.6	溝銑 SLOTTING
MET0182	10	15000~17000	900~1000	0.1~0.12	1.8	溝銑 SLOTTING
MET0182	10	15000~17000	1100~1200	0.06~0.08	1.8	溝銑 SLOTTING
MET0202	11	15000~17000	900~1100	0.1~0.12	2	溝銑 SLOTTING
MET0202	11	15000~17000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
MET0252	13	14000~16000	1300~1500	0.12~0.14	2.5	溝銑 SLOTTING
MET0252	13	14000~16000	1500~1700	0.07~0.12	2.5	溝銑 SLOTTING
MET0302	14	14000~16000	1500~1700	0.14~0.16	3	溝銑 SLOTTING
MET0302	14	14000~16000	1700~1900	0.08~0.13	3	溝銑 SLOTTING

MET 切削條件表 MILLING CONDITIONS

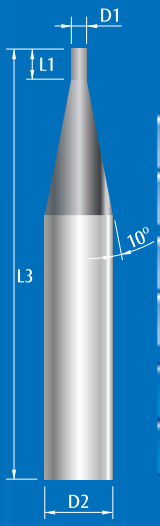
被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
MET0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
MET0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
MET0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
MET0032	10	17000~18000	300~400	0.005~0.01	0.3	溝銑 SLOTTING
MET0042	10	17000~18000	300~400	0.02~0.03	0.4	溝銑 SLOTTING
MET0042	10	17000~18000	400~500	0.01~0.02	0.4	溝銑 SLOTTING
MET0052	10	17000~18000	400~600	0.03~0.04	0.5	溝銑 SLOTTING
MET0052	10	17000~18000	700~800	0.01~0.02	0.5	溝銑 SLOTTING
MET0062	10	16000~17000	400~600	0.04~0.05	0.6	溝銑 SLOTTING
MET0062	10	16000~17000	700~800	0.03~0.04	0.6	溝銑 SLOTTING
MET0072	10	16000~17000	500~700	0.04~0.05	0.7	溝銑 SLOTTING
MET0072	10	16000~17000	700~900	0.03~0.04	0.7	溝銑 SLOTTING
MET0082	10	16000~17000	500~700	0.05~0.06	0.8	溝銑 SLOTTING
MET0082	10	16000~17000	700~900	0.04~0.05	0.8	溝銑 SLOTTING
MET0092	10	16000~17000	550~750	0.05~0.06	0.9	溝銑 SLOTTING
MET0092	10	16000~17000	750~950	0.04~0.05	0.9	溝銑 SLOTTING
MET0102	10	16000~17000	600~800	0.05~0.06	1	溝銑 SLOTTING
MET0102	10	16000~17000	800~1000	0.04~0.05	1	溝銑 SLOTTING
MET0122	10	15000~16000	600~800	0.06~0.08	1.2	溝銑 SLOTTING
MET0122	10	15000~16000	800~1000	0.04~0.05	1.2	溝銑 SLOTTING
MET0142	10	15000~16000	600~800	0.07~0.09	1.4	溝銑 SLOTTING
MET0142	10	15000~16000	800~1000	0.04~0.05	1.4	溝銑 SLOTTING
MET0152	10	15000~16000	650~850	0.08~0.1	1.5	溝銑 SLOTTING
MET0152	10	15000~16000	850~1050	0.05~0.06	1.5	溝銑 SLOTTING
MET0162	10	15000~16000	700~900	0.09~0.11	1.6	溝銑 SLOTTING
MET0162	10	15000~16000	900~1100	0.05~0.07	1.6	溝銑 SLOTTING
MET0182	10	14000~15000	800~900	0.1~0.12	1.8	溝銑 SLOTTING
MET0182	10	14000~15000	1000~1100	0.06~0.08	1.8	溝銑 SLOTTING
MET0202	11	14000~15000	800~1000	0.1~0.12	2	溝銑 SLOTTING
MET0202	11	14000~15000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
MET0252	13	11000~12000	1200~1400	0.12~0.14	2.5	溝銑 SLOTTING
MET0252	13	11000~12000	1400~1600	0.07~0.12	2.5	溝銑 SLOTTING
MET0302	14	10000~11000	1400~1600	0.14~0.16	3	溝銑 SLOTTING
MET0302	14	10000~11000	1600~1800	0.08~0.13	3	溝銑 SLOTTING

UME Micro Diameter

End Mills 微小徑立銑刀



精銑 Finishing
中銑 Semi-finishing
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining



直徑 D1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.02
直徑 D1	1.2	1.5	1.6	1.8	2.0	2.5	3.0	4.0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø4							
柄徑公差值 D2 Tolerance	0 -0.008							

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UME0022	0.2	0.4	50	4
UME0032	0.3	0.6	50	4
UME0042	0.4	0.8	50	4
UME0052	0.5	1.0	50	4
UME0062	0.6	1.2	50	4
UME0072	0.7	1.4	50	4
UME0082	0.8	1.6	50	4
UME0102	1.0	2.5	50	4
UME0122	1.2	3.0	50	4
UME0152	1.5	4.0	50	4
UME0162	1.6	4.0	50	4
UME0182	1.8	5.0	50	4
UME0202	2.0	6.0	50	4
UME0252	2.5	8.0	50	4
UME0302	3.0	8.0	50	4
UME0402	4.0	11.0	50	4

unit : mm

UME 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

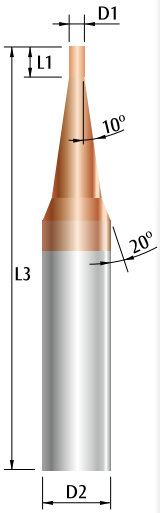
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UME0022	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UME0022	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UME0032	12	20	18000~20000	150~300	0.005~0.01	0.3	溝銑 SLOTTING
UME0032	12	20	18000~20000	150~300	0.005~0.01	0.3	溝銑 SLOTTING
UME0042	12	25	18000~20000	200~400	0.008~0.015	0.4	溝銑 SLOTTING
UME0042	12	25	18000~20000	200~400	0.008~0.015	0.4	溝銑 SLOTTING
UME0052	12	30	18000~20000	200~400	0.015~0.025	0.5	溝銑 SLOTTING
UME0052	12	30	18000~20000	400~600	0.01~0.015	0.5	溝銑 SLOTTING
UME0062	12	35	16000~18000	200~400	0.02~0.04	0.6	溝銑 SLOTTING
UME0062	12	35	16000~18000	400~600	0.015~0.025	0.6	溝銑 SLOTTING
UME0072	12	40	16000~18000	300~500	0.03~0.05	0.7	溝銑 SLOTTING
UME0072	12	40	16000~18000	600~800	0.015~0.025	0.7	溝銑 SLOTTING
UME0082	12	45	16000~18000	400~600	0.04~0.06	0.8	溝銑 SLOTTING
UME0082	12	45	16000~18000	800~1000	0.015~0.03	0.8	溝銑 SLOTTING
UME0102	12	50	16000~18000	400~600	0.04~0.06	1	溝銑 SLOTTING
UME0102	12	50	16000~18000	800~1000	0.015~0.03	1	溝銑 SLOTTING
UME0122	12	60	16000~18000	400~600	0.04~0.06	1.2	溝銑 SLOTTING
UME0122	12	60	16000~18000	800~1000	0.015~0.03	1.2	溝銑 SLOTTING
UME0152	12	75	15000~16000	600~800	0.05~0.07	1.5	溝銑 SLOTTING
UME0152	12	75	15000~16000	1000~1200	0.015~0.035	1.5	溝銑 SLOTTING
UME0162	13	80	15000~16000	600~800	0.06~0.08	1.6	溝銑 SLOTTING
UME0162	13	80	15000~16000	1000~1200	0.015~0.035	1.6	溝銑 SLOTTING
UME0182	13	90	15000~16000	600~800	0.07~0.09	1.8	溝銑 SLOTTING
UME0182	13	90	15000~16000	1200~1600	0.02~0.04	1.8	溝銑 SLOTTING
UME0202	15	95	13000~15000	600~800	0.08~0.1	2	溝銑 SLOTTING
UME0202	15	95	13000~15000	1200~1600	0.02~0.045	2	溝銑 SLOTTING
UME0252	15	105	11000~13000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
UME0252	15	105	11000~13000	1400~1800	0.02~0.05	2.5	溝銑 SLOTTING
UME0302	14	105	9000~11000	1000~1200	0.09~0.11	3	溝銑 SLOTTING
UME0302	14	105	9000~11000	1600~2000	0.025~0.06	3	溝銑 SLOTTING
UME0402	15	115	7000~9000	1400~1600	0.12~0.14	4	溝銑 SLOTTING
UME0402	15	115	7000~9000	2000~2400	0.03~0.08	4	溝銑 SLOTTING

附註 Note	**UME**不適用於**SKD11**(HRc62)溝銑或面銑，可用於清角 **UME** *is not good at slotting or surfacing on material* **SKD11** *(HRc62), it is suitable for Corner Finishing Milling.*

META Micro Diameter

微小徑立銑刀 End Mills





直徑 D1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
直徑公差值 D1 Tolerance	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015	0 -0.015
直徑 D1	1.0	1.2	1.4	1.5	1.6	1.8	2.0	3.0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø4							
柄徑公差值 D2 Tolerance	0 -0.008							

型號 Type No.	D1 直徑 Diameter	L1 刃長 Flute Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
META0022	0.2	0.4	50	4
META0032	0.3	0.6	50	4
META0042	0.4	0.8	50	4
META0052	0.5	1.0	50	4
META0062	0.6	1.2	50	4
META0072	0.7	1.4	50	4
META0082	0.8	1.6	50	4
META0092	0.9	1.8	50	4
META0102	1.0	2.5	50	4
META0122	1.2	3.0	50	4
META0142	1.4	3.0	50	4
META0152	1.5	4.0	50	4
META0162	1.6	4.0	50	4
META0182	1.8	5.0	50	4
META0202	2.0	6.0	50	4
META0252	2.5	8.0	50	4
META0302	3.0	8.0	50	4



精銑 Finishing

中銑 Semi-finishing

粗銑 Roughing

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

META 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
META0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
META0022	10	24000~26000	250~300	0.005~0.01	0.2	溝銑 SLOTTING
META0032	10	24000~26000	300~400	0.01~0.015	0.3	溝銑 SLOTTING
META0032	10	24000~26000	400~500	0.005~0.01	0.3	溝銑 SLOTTING
META0042	10	23000~25000	400~500	0.02~0.03	0.4	溝銑 SLOTTING
META0042	10	23000~25000	500~600	0.01~0.02	0.4	溝銑 SLOTTING
META0052	10	23000~25000	500~700	0.03~0.04	0.5	溝銑 SLOTTING
META0052	10	23000~25000	800~900	0.01~0.02	0.5	溝銑 SLOTTING
META0062	10	22000~24000	500~700	0.04~0.05	0.6	溝銑 SLOTTING
META0062	10	22000~24000	800~900	0.03~0.04	0.6	溝銑 SLOTTING
META0072	10	22000~24000	600~800	0.04~0.05	0.7	溝銑 SLOTTING
META0072	10	22000~24000	800~1000	0.03~0.04	0.7	溝銑 SLOTTING
META0082	10	21000~23000	600~800	0.05~0.06	0.8	溝銑 SLOTTING
META0082	10	21000~23000	800~1000	0.04~0.05	0.8	溝銑 SLOTTING
META0092	10	21000~23000	650~850	0.05~0.06	0.9	溝銑 SLOTTING
META0092	10	21000~23000	850~1050	0.04~0.05	0.9	溝銑 SLOTTING
META0102	10	19000~21000	700~900	0.05~0.06	1	溝銑 SLOTTING
META0102	10	19000~21000	900~1100	0.04~0.05	1	溝銑 SLOTTING
META0122	10	19000~21000	700~900	0.06~0.08	1.2	溝銑 SLOTTING
META0122	10	19000~21000	900~1100	0.04~0.05	1.2	溝銑 SLOTTING
META0142	10	18000~20000	700~900	0.07~0.09	1.4	溝銑 SLOTTING
META0142	10	18000~20000	900~1100	0.04~0.05	1.4	溝銑 SLOTTING
META0152	10	18000~20000	750~950	0.08~0.1	1.5	溝銑 SLOTTING
META0152	10	18000~20000	950~1150	0.05~0.06	1.5	溝銑 SLOTTING
META0162	10	17000~19000	800~1000	0.09~0.11	1.6	溝銑 SLOTTING
META0162	10	17000~19000	1000~1200	0.05~0.07	1.6	溝銑 SLOTTING
META0182	10	15000~17000	900~1000	0.1~0.12	1.8	溝銑 SLOTTING
META0182	10	15000~17000	1100~1200	0.06~0.08	1.8	溝銑 SLOTTING
META0202	11	15000~17000	900~1100	0.1~0.12	2	溝銑 SLOTTING
META0202	11	15000~17000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
META0252	13	14000~16000	1300~1500	0.12~0.14	2.5	溝銑 SLOTTING
META0252	13	14000~16000	1500~1700	0.07~0.12	2.5	溝銑 SLOTTING
META0302	14	14000~16000	1500~1700	0.14~0.16	3	溝銑 SLOTTING
META0302	14	14000~16000	1700~1900	0.08~0.13	3	溝銑 SLOTTING

META 切削條件表 MILLING CONDITIONS

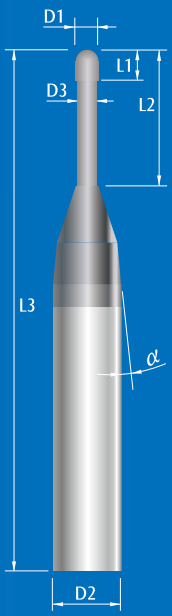
被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
META0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
META0022	10	17000~18000	150~200	0.005~0.01	0.2	溝銑 SLOTTING
META0032	10	17000~18000	200~300	0.01~0.015	0.3	溝銑 SLOTTING
META0032	10	17000~18000	300~400	0.005~0.01	0.3	溝銑 SLOTTING
META0042	10	17000~18000	300~400	0.02~0.03	0.4	溝銑 SLOTTING
META0042	10	17000~18000	400~500	0.01~0.02	0.4	溝銑 SLOTTING
META0052	10	17000~18000	400~600	0.03~0.04	0.5	溝銑 SLOTTING
META0052	10	17000~18000	700~800	0.01~0.02	0.5	溝銑 SLOTTING
META0062	10	16000~17000	400~600	0.04~0.05	0.6	溝銑 SLOTTING
META0062	10	16000~17000	700~800	0.03~0.04	0.6	溝銑 SLOTTING
META0072	10	16000~17000	500~700	0.04~0.05	0.7	溝銑 SLOTTING
META0072	10	16000~17000	700~900	0.03~0.04	0.7	溝銑 SLOTTING
META0082	10	16000~17000	500~700	0.05~0.06	0.8	溝銑 SLOTTING
META0082	10	16000~17000	700~900	0.04~0.05	0.8	溝銑 SLOTTING
META0092	10	16000~17000	550~750	0.05~0.06	0.9	溝銑 SLOTTING
META0092	10	16000~17000	750~950	0.04~0.05	0.9	溝銑 SLOTTING
META0102	10	16000~17000	600~800	0.05~0.06	1	溝銑 SLOTTING
META0102	10	16000~17000	800~1000	0.04~0.05	1	溝銑 SLOTTING
META0122	10	15000~16000	600~800	0.06~0.08	1.2	溝銑 SLOTTING
META0122	10	15000~16000	800~1000	0.04~0.05	1.2	溝銑 SLOTTING
META0142	10	15000~16000	600~800	0.07~0.09	1.4	溝銑 SLOTTING
META0142	10	15000~16000	800~1000	0.04~0.05	1.4	溝銑 SLOTTING
META0152	10	15000~16000	650~850	0.08~0.1	1.5	溝銑 SLOTTING
META0152	10	15000~16000	850~1050	0.05~0.06	1.5	溝銑 SLOTTING
META0162	10	15000~16000	700~900	0.09~0.11	1.6	溝銑 SLOTTING
META0162	10	15000~16000	900~1100	0.05~0.07	1.6	溝銑 SLOTTING
META0182	10	14000~15000	800~900	0.1~0.12	1.8	溝銑 SLOTTING
META0182	10	14000~15000	1000~1100	0.06~0.08	1.8	溝銑 SLOTTING
META0202	11	14000~15000	800~1000	0.1~0.12	2	溝銑 SLOTTING
META0202	11	14000~15000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
META0252	13	11000~12000	1200~1400	0.12~0.14	2.5	溝銑 SLOTTING
META0252	13	11000~12000	1400~1600	0.07~0.12	2.5	溝銑 SLOTTING
META0302	14	10000~11000	1400~1600	0.14~0.16	3	溝銑 SLOTTING
META0302	14	10000~11000	1600~1800	0.08~0.13	3	溝銑 SLOTTING

2 Flutes

UNBX Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀





直徑 D1	R0.1	R0.15	R0.2	R0.25	R0.3	R0.4	R0.5
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R0.6	R0.75	R0.8	R1.0	R1.5	R2.0	
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	
柄徑 Shank(h6)	Ø4	Ø6					
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008					

D1≦R0.25&L2≦4mm α=15°
D1>R0.25&L2<4mm α=15°
The Other α=12°

精銑 Finishing
中銑 Semi-finishing ------
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX0201	R0.1	0.18	0.3	1	50	4
UNBX0202	R0.1	0.18	0.3	2	50	4
UNBX0301	R0.15	0.26	0.4	1	50	4
UNBX0302	R0.15	0.26	0.4	2	50	4
UNBX0303	R0.15	0.26	0.4	3	50	4
UNBX0402	R0.2	0.36	0.6	2	50	4
UNBX0403	R0.2	0.36	0.6	3	50	4
UNBX0404	R0.2	0.36	0.6	4	50	4
UNBX0502	R0.25	0.46	0.8	2	50	4
UNBX0504	R0.25	0.46	0.8	4	50	4
UNBX0506	R0.25	0.46	0.8	6	50	4

unit : mm

2 Flutes

UNBX Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX0602	R 0.3	0.56	0.9	2	50	4
UNBX0604	R 0.3	0.56	0.9	4	50	4
UNBX0606	R 0.3	0.56	0.9	6	50	4
UNBX0804	R 0.4	0.76	1.2	4	50	4
UNBX0806	R 0.4	0.76	1.2	6	50	4
UNBX0808	R 0.4	0.76	1.2	8	50	4
UNBX1004	R 0.5	0.95	1.5	4	50	4
UNBX1006	R 0.5	0.95	1.5	6	50	4
UNBX1008	R 0.5	0.95	1.5	8	50	4
UNBX1010	R 0.5	0.95	1.5	10	50	4
UNBX1012	R 0.5	0.95	1.5	12	50	4
UNBX1208	R 0.6	1.15	2	8	50	4
UNBX1212	R 0.6	1.15	2	12	50	4
UNBX1506	R 0.75	1.45	2	6	50	4
UNBX1508	R 0.75	1.45	2	8	50	4
UNBX1510	R 0.75	1.45	2	10	50	4
UNBX1512	R 0.75	1.45	2	12	50	4
UNBX1516	R 0.75	1.45	2	16	50	4
UNBX1520	R 0.75	1.45	2	20	50	4
UNBX1608	R 0.8	1.54	2.5	8	50	4
UNBX1612	R 0.8	1.54	2.5	12	50	4
UNBX1616	R 0.8	1.54	2.5	16	50	4
UNBX2008	R 1.0	1.92	3	8	50	4
UNBX2010	R 1.0	1.92	3	10	50	4
UNBX2012	R 1.0	1.92	3	12	50	4
UNBX2016	R 1.0	1.92	3	16	50	4
UNBX2020	R 1.0	1.92	3	20	50	4
UNBX3008	R 1.5	2.90	4	8	50	6
UNBX3010	R 1.5	2.90	4	10	50	6
UNBX3012	R 1.5	2.90	4	12	50	6
UNBX3016	R 1.5	2.90	4	16	50	6
UNBX3020	R 1.5	2.90	4	20	60	6
UNBX3025	R 1.5	2.90	4	25	60	6
UNBX4010	R 2.0	3.88	5	10	75	6
UNBX4015	R 2.0	3.88	5	15	75	6
UNBX4020	R 2.0	3.88	5	20	75	6
UNBX4025	R 2.0	3.88	5	25	75	6
UNBX4030	R 2.0	3.88	5	30	75	6

UNBX 2 Flute

切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	24000~26000	250~400	0.008~0.012	0.2	溝銑 SLOTTING
UNBX0201	12	15	24000~26000	400~550	0.008~0.012	0.01~0.03	3D銑 3D MILLING
UNBX0202	13	15	24000~26000	200~350	0.006~0.01	0.2	溝銑 SLOTTING
UNBX0202	13	15	24000~26000	350~500	0.006~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0301	13	25	22000~24000	400~600	0.015~0.02	0.3	溝銑 SLOTTING
UNBX0301	13	25	22000~24000	600~700	0.015~0.02	0.02~0.04	3D銑 3D MILLING
UNBX0302	14	25	22000~24000	350~550	0.015~0.02	0.3	溝銑 SLOTTING
UNBX0302	14	25	22000~24000	500~600	0.015~0.02	0.02~0.04	3D銑 3D MILLING
UNBX0303	15	25	22000~24000	200~400	0.01~0.015	0.3	溝銑 SLOTTING
UNBX0303	15	25	22000~24000	300~500	0.01~0.015	0.02~0.03	3D銑 3D MILLING
UNBX0402	14	30	22000~24000	400~600	0.015~0.025	0.4	溝銑 SLOTTING
UNBX0402	14	30	22000~24000	500~700	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0403	15	30	22000~24000	300~500	0.01~0.015	0.4	溝銑 SLOTTING
UNBX0403	15	30	22000~24000	400~600	0.01~0.015	0.02~0.03	3D銑 3D MILLING
UNBX0404	16	30	22000~24000	200~400	0.008~0.012	0.4	溝銑 SLOTTING
UNBX0404	16	30	22000~24000	300~500	0.008~0.012	0.015~0.03	3D銑 3D MILLING
UNBX0502	15	35	20000~22000	500~700	0.02~0.03	0.5	溝銑 SLOTTING
UNBX0502	15	35	20000~22000	650~850	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX0504	17	35	20000~22000	350~550	0.015~0.02	0.5	溝銑 SLOTTING
UNBX0504	17	35	20000~22000	500~700	0.015~0.02	0.02~0.05	3D銑 3D MILLING
UNBX0506	19	35	20000~22000	300~500	0.01~0.015	0.5	溝銑 SLOTTING
UNBX0506	19	35	20000~22000	450~650	0.01~0.015	0.02~0.05	3D銑 3D MILLING
UNBX0602	16	40	20000~22000	700~900	0.025~0.035	0.6	溝銑 SLOTTING
UNBX0602	16	40	20000~22000	800~1000	0.025~0.035	0.05~0.08	3D銑 3D MILLING
UNBX0604	18	40	20000~22000	400~600	0.02~0.03	0.6	溝銑 SLOTTING
UNBX0604	18	40	20000~22000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX0606	20	40	20000~22000	300~500	0.015~0.025	0.6	溝銑 SLOTTING
UNBX0606	20	40	20000~22000	450~650	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX0804	15	50	18000~20000	800~1000	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0804	15	50	18000~20000	900~1100	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0804	15	50	18000~20000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX0806	17	50	18000~20000	700~900	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0806	17	50	18000~20000	800~1000	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0806	17	50	18000~20000	1100~1300	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX0808	19	50	18000~20000	600~800	0.02~0.04	0.8	溝銑 SLOTTING
UNBX0808	19	50	18000~20000	700~900	0.04~0.06	0.1~0.15	3D銑 3D MILLING
UNBX0808	19	50	18000~20000	1100~1300	0.01~0.03	0.04~0.08	3D銑 3D MILLING
UNBX1004	11	55	17000~18000	800~1000	0.02~0.04	1	溝銑 SLOTTING
UNBX1004	11	55	17000~18000	900~1100	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1004	11	55	17000~18000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1006	13	55	17000~18000	700~900	0.02~0.04	1	溝銑 SLOTTING
UNBX1006	13	55	17000~18000	800~1000	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1006	13	55	17000~18000	1300~1500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1008	15	55	17000~18000	600~800	0.02~0.04	1	溝銑 SLOTTING
UNBX1008	15	55	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1008	15	55	17000~18000	1200~1400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1010	17	55	17000~18000	500~700	0.02~0.04	1	溝銑 SLOTTING
UNBX1010	17	55	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1010	17	55	17000~18000	1000~1200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1012	19	55	17000~18000	400~600	0.02~0.04	1	溝銑 SLOTTING
UNBX1012	19	55	17000~18000	500~700	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1012	19	55	17000~18000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX1208	15	65	17000~18000	600~800	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1208	15	65	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1208	15	65	17000~18000	1200~1400	0.02~0.04	0.04~0.09	3D銑 3D MILLING
UNBX1212	19	65	17000~18000	500~700	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1212	19	65	17000~18000	700~900	0.05~0.07	0.1~0.15	3D銑 3D MILLING
UNBX1212	19	65	17000~18000	1000~1200	0.02~0.04	0.04~0.09	3D銑 3D MILLING
UNBX1506	13	70	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1506	13	70	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1506	13	70	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1506	13	70	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1508	14	70	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1508	14	70	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1508	14	70	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1508	14	70	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1510	16	70	16000~17000	900~1100	0.08~0.1	1.5	溝銑 SLOTTING
UNBX1510	16	70	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1510	16	70	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1510	16	70	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1512	18	70	16000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
UNBX1512	18	70	16000~17000	1000~1400	0.01~0.04	1.5	溝銑 SLOTTING
UNBX1512	18	70	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1512	18	70	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1516	22	70	16000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
UNBX1516	22	70	16000~17000	900~1100	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1516	22	70	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX1516	22	70	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX1520	26	70	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNBX1520	26	70	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1520	26	70	16000~17000	900~1100	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX1520	26	70	16000~17000	1300~1700	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX1608	14	85	16000~17000	1100~1300	0.08~0.1	1.6	溝銑 SLOTTING
UNBX1608	14	85	16000~17000	1300~1700	0.01~0.04	1.6	溝銑 SLOTTING
UNBX1608	14	85	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX1608	14	85	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
UNBX1612	16	85	16000~17000	700~900	0.06~0.08	1.6	溝銑 SLOTTING
UNBX1612	16	85	16000~17000	1000~1400	0.01~0.04	1.6	溝銑 SLOTTING
UNBX1612	16	85	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX1612	16	85	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1616	20	85	16000~17000	600~800	0.04~0.06	1.6	溝銑 SLOTTING
UNBX1616	20	85	16000~17000	900~1100	0.01~0.03	1.6	溝銑 SLOTTING
UNBX1616	20	85	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX1616	20	85	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX2008	14	100	15000~16000	1900~2100	0.12~0.14	2	溝銑 SLOTTING
UNBX2008	14	100	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
UNBX2008	14	100	15000~16000	2000~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX2008	14	100	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX2010	16	100	15000~16000	1800~2000	0.12~0.14	2	溝銑 SLOTTING
UNBX2010	16	100	15000~16000	2300~2700	0.02~0.07	2	溝銑 SLOTTING
UNBX2010	16	100	15000~16000	1900~2300	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX2010	16	100	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX2012	18	100	15000~16000	1700~1900	0.1~0.12	2	溝銑 SLOTTING
UNBX2012	18	100	15000~16000	2100~2500	0.015~0.05	2	溝銑 SLOTTING
UNBX2012	18	100	15000~16000	1900~2300	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX2012	18	100	15000~16000	2600~3000	0.015~0.05	0.03~0.1	3D銑 3D MILLING
UNBX2016	22	100	15000~16000	1400~1600	0.1~0.12	2	溝銑 SLOTTING
UNBX2016	22	100	15000~16000	1800~2200	0.015~0.05	2	溝銑 SLOTTING
UNBX2016	22	100	15000~16000	1700~1900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX2016	22	100	15000~16000	2200~2600	0.015~0.05	0.03~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	100	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1700~2100	0.015~0.05	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX2020	26	100	15000~16000	2000~2400	0.015~0.05	0.03~0.1	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2800~3200	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2800~3000	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	1800~2100	0.14~0.16	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2600~2800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	3000~3400	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	1700~1900	0.13~0.15	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	1900~2300	0.03~0.08	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	2000~2200	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	2600~3000	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	2300~2700	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	2000~2400	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	2000~2400	0.24~0.26	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	3000~3400	0.04~0.1	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	2100~2600	0.26~0.28	0.52~0.56	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	3200~3400	0.04~0.12	0.08~0.24	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	2000~2400	0.22~0.24	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	3000~3400	0.03~0.08	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	2100~2600	0.24~0.26	0.48~0.52	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	3200~3400	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2800~3200	0.03~0.08	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2100~2300	0.23~0.25	0.46~0.5	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	3200~3500	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	1900~2100	0.21~0.23	0.42~0.46	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	2600~3000	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	1500~1700	0.16~0.18	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1600~1800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	2200~2500	0.04~0.07	0.08~0.14	3D銑 3D MILLING

UNBX 2 Flute 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UNBX0201	12	15	18000~20000	150~300	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0202	13	15	18000~20000	150~300	0.005~0.008	0.2	溝銑 SLOTTING
UNBX0202	13	15	18000~20000	150~300	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0301	13	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0301	13	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0302	14	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0302	14	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0303	15	20	18000~20000	150~300	0.005~0.008	0.3	溝銑 SLOTTING
UNBX0303	15	20	18000~20000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0402	14	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0402	14	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0403	15	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0403	15	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0404	16	25	18000~20000	150~300	0.005~0.01	0.4	溝銑 SLOTTING
UNBX0404	16	25	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0502	15	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0502	15	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0504	17	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0504	17	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0506	19	35	18000~20000	150~300	0.005~0.013	0.5	溝銑 SLOTTING
UNBX0506	19	35	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0602	16	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0602	16	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0604	18	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0604	18	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0606	20	40	18000~20000	150~300	0.005~0.013	0.6	溝銑 SLOTTING
UNBX0606	20	40	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNBX0804	15	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0804	15	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0804	15	45	16000~18000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0806	17	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0806	17	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0806	17	45	16000~18000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	45	16000~18000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0808	19	45	16000~18000	200~400	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX0808	19	45	16000~18000	400~600	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX1004	11	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX1004	11	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1004	11	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1006	13	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX1006	13	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1006	13	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1008	15	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1008	15	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1008	15	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1010	17	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1010	17	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1010	17	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1012	19	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNBX1012	19	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1012	19	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	100	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1700~2100	0.015~0.05	2	溝銑 SLOTTING
UNBX2020	26	100	15000~16000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX2020	26	100	15000~16000	2000~2400	0.015~0.05	0.03~0.1	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3008	16	140	14000~15000	2800~3200	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3008	16	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	2000~2300	0.16~0.18	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
UNBX3010	18	140	14000~15000	2800~3000	0.2~0.22	0.4~0.44	3D銑 3D MILLING
UNBX3010	18	140	14000~15000	3200~3600	0.03~0.1	0.06~0.2	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	1800~2100	0.14~0.16	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
UNBX3012	20	140	14000~15000	2600~2800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX3012	20	140	14000~15000	3000~3400	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	1700~1900	0.13~0.15	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	1900~2300	0.03~0.08	3	溝銑 SLOTTING
UNBX3016	24	140	14000~15000	2000~2200	0.16~0.18	0.32~0.36	3D銑 3D MILLING
UNBX3016	24	140	14000~15000	2600~3000	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
UNBX3020	28	140	14000~15000	1800~2100	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX3020	28	140	14000~15000	2300~2700	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
UNBX3025	33	140	14000~15000	1500~1800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3025	33	140	14000~15000	2000~2400	0.015~0.04	0.03~0.08	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	2000~2400	0.24~0.26	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	3000~3400	0.04~0.1	4	溝銑 SLOTTING
UNBX4010	20	160	12000~13000	2100~2600	0.26~0.28	0.52~0.56	3D銑 3D MILLING
UNBX4010	20	160	12000~13000	3200~3400	0.04~0.12	0.08~0.24	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	2000~2400	0.22~0.24	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	3000~3400	0.03~0.08	4	溝銑 SLOTTING
UNBX4015	25	160	12000~13000	2100~2600	0.24~0.26	0.48~0.52	3D銑 3D MILLING
UNBX4015	25	160	12000~13000	3200~3400	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2800~3200	0.03~0.08	4	溝銑 SLOTTING
UNBX4020	30	160	12000~13000	2100~2300	0.23~0.25	0.46~0.5	3D銑 3D MILLING
UNBX4020	30	160	12000~13000	3200~3500	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
UNBX4025	35	160	12000~13000	1900~2100	0.21~0.23	0.42~0.46	3D銑 3D MILLING
UNBX4025	35	160	12000~13000	2600~3000	0.04~0.1	0.08~0.2	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	1500~1700	0.16~0.18	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
UNBX4030	40	160	12000~13000	1600~1800	0.18~0.2	0.36~0.4	3D銑 3D MILLING
UNBX4030	40	160	12000~13000	2200~2500	0.04~0.07	0.08~0.14	3D銑 3D MILLING
UNBX2010	16	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNBX2010	16	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX2010	16	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2012	18	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNBX2012	18	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNBX2012	18	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX2012	18	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2016	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2016	22	85	12000~13000	600~800	0.01~0.025	2	溝銑 SLOTTING
UNBX2016	22	85	12000~13000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2016	22	85	12000~13000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	85	12000~13000	200~400	0.03~0.05	2	溝銑 SLOTTING
UNBX2020	26	85	12000~13000	400~600	0.01~0.025	2	溝銑 SLOTTING
UNBX2020	26	85	12000~13000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX2020	26	85	12000~13000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX3008	16	105	10000~11000	700~900	0.08~0.1	3	溝銑 SLOTTING
UNBX3008	16	105	10000~11000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
UNBX3008	16	105	10000~11000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX3008	16	105	10000~11000	1400~1800	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX3010	18	105	10000~11000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNBX3010	18	105	10000~11000	1100~1500	0.02~0.05	3	溝銑 SLOTTING
UNBX3010	18	105	10000~11000	700~900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNBX3010	18	105	10000~11000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX3012	20	105	10000~11000	500~700	0.07~0.09	3	溝銑 SLOTTING
UNBX3012	20	105	10000~11000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNBX3012	20	105	10000~11000	700~900	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3012	20	105	10000~11000	1200~1600	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX3016	24	105	10000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNBX3016	24	105	10000~11000	800~1200	0.015~0.035	3	溝銑 SLOTTING
UNBX3016	24	105	10000~11000	600~800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX3016	24	105	10000~11000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX3020	28	105	10000~11000	300~500	0.04~0.06	3	溝銑 SLOTTING
UNBX3020	28	105	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
UNBX3020	28	105	10000~11000	400~600	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNBX3020	28	105	10000~11000	900~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX3025	33	105	10000~11000	200~400	0.04~0.06	3	溝銑 SLOTTING
UNBX3025	33	105	10000~11000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNBX3025	33	105	10000~11000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX3025	33	105	10000~11000	800~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX4010	20	115	8000~9000	800~1000	0.1~0.12	4	溝銑 SLOTTING
UNBX4010	20	115	8000~9000	1400~1800	0.03~0.07	4	溝銑 SLOTTING
UNBX4010	20	115	8000~9000	1000~1200	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNBX4010	20	115	8000~9000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX4015	25	115	8000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UNBX4015	25	115	8000~9000	1200~1600	0.025~0.06	4	溝銑 SLOTTING
UNBX4015	25	115	8000~9000	1000~1200	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNBX4015	25	115	8000~9000	1600~2000	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX4020	30	115	8000~9000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNBX4020	30	115	8000~9000	1000~1400	0.025~0.05	4	溝銑 SLOTTING
UNBX4020	30	115	8000~9000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNBX4020	30	115	8000~9000	1600~2000	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNBX4025	35	115	8000~9000	500~700	0.05~0.07	4	溝銑 SLOTTING
UNBX4025	35	115	8000~9000	800~1200	0.015~0.035	4	溝銑 SLOTTING
UNBX4025	35	115	8000~9000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNBX4025	35	115	8000~9000	1200~1600	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNBX4030	40	115	8000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNBX4030	40	115	8000~9000	700~1100	0.015~0.035	4	溝銑 SLOTTING
UNBX4030	40	115	8000~9000	600~800	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNBX4030	40	115	8000~9000	1000~1400	0.015~0.04	0.03~0.08	3D銑 3D MILLING

UNBX 2 Flute

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX0201	12	15	16000~18000	100~200	0.003~0.006	0.2	溝銑 SLOTTING
UNBX0201	12	15	16000~18000	100~200	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0202	13	15	16000~18000	100~200	0.003~0.006	0.2	溝銑 SLOTTING
UNBX0202	13	15	16000~18000	100~200	0.005~0.008	0.01~0.016	3D銑 3D MILLING
UNBX0301	13	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0301	13	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0302	14	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0302	14	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0303	15	15	15000~16000	100~200	0.003~0.006	0.3	溝銑 SLOTTING
UNBX0303	15	15	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0402	14	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0402	14	20	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0403	15	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0403	15	20	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0404	16	20	15000~16000	100~200	0.005~0.008	0.4	溝銑 SLOTTING
UNBX0404	16	20	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0502	15	25	15000~16000	150~300	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0502	15	25	15000~16000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0504	17	25	15000~16000	100~200	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0504	17	25	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0506	19	25	15000~16000	100~200	0.005~0.01	0.5	溝銑 SLOTTING
UNBX0506	19	25	15000~16000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0602	16	30	14000~15000	150~300	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0602	16	30	14000~15000	150~300	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0604	18	30	14000~15000	100~200	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0604	18	30	14000~15000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0606	20	30	14000~15000	100~200	0.005~0.01	0.6	溝銑 SLOTTING
UNBX0606	20	30	14000~15000	100~200	0.005~0.01	0.01~0.02	3D銑 3D MILLING
UNBX0804	15	40	14000~15000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0804	15	40	14000~15000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0804	15	40	14000~15000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX0806	17	40	14000~15000	150~300	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0806	17	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0806	17	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	40	14000~15000	150~300	0.01~0.02	0.8	溝銑 SLOTTING
UNBX0808	19	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX0808	19	40	14000~15000	150~300	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNBX1004	11	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1004	11	45	13000~14000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1004	11	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1006	13	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1006	13	45	13000~14000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1006	13	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1008	15	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1008	15	45	13000~14000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1008	15	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1010	17	45	13000~14000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX1010	17	45	13000~14000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1010	17	45	13000~14000	500~700	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1012	19	45	13000~14000	150~300	0.01~0.02	1	溝銑 SLOTTING
UNBX1012	19	45	13000~14000	150~300	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNBX1012	19	45	13000~14000	300~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX1208	15	50	12000~13000	200~400	0.02~0.04	1.2	溝銑 SLOTTING
UNBX1208	15	50	12000~13000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1208	15	50	12000~13000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1212	19	50	12000~13000	200~400	0.01~0.03	1.2	溝銑 SLOTTING
UNBX1212	19	50	12000~13000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1212	19	50	12000~13000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1506	13	60	11000~12000	400~600	0.03~0.05	1.5	溝銑 SLOTTING
UNBX1506	13	60	11000~12000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1506	13	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1506	13	60	11000~12000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1508	14	60	11000~12000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNBX1508	14	60	11000~12000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNBX1508	14	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1508	14	60	11000~12000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1510	16	60	11000~12000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNBX1510	16	60	11000~12000	500~700	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1510	16	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1510	16	60	11000~12000	500~700	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX1512	18	60	11000~12000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNBX1512	18	60	11000~12000	500~700	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1512	18	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1512	18	60	11000~12000	500~700	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX1516	22	60	11000~12000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1516	22	60	11000~12000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1516	22	60	11000~12000	300~500	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1516	22	60	11000~12000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX1520	26	60	11000~12000	150~300	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1520	26	60	11000~12000	150~300	0.01~0.02	1.5	溝銑 SLOTTING
UNBX1520	26	60	11000~12000	150~300	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX1520	26	60	11000~12000	300~500	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX1608	14	60	11000~12000	300~500	0.03~0.05	1.6	溝銑 SLOTTING
UNBX1608	14	60	11000~12000	500~700	0.01~0.03	1.6	溝銑 SLOTTING
UNBX1608	14	60	11000~12000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX1608	14	60	11000~12000	700~900	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNBX1612	16	60	11000~12000	200~400	0.02~0.04	1.6	溝銑 SLOTTING
UNBX1612	16	60	11000~12000	400~600	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1612	16	60	11000~12000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX1612	16	60	11000~12000	500~700	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1616	20	60	11000~12000	200~400	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1616	20	60	11000~12000	200~400	0.01~0.02	1.6	溝銑 SLOTTING
UNBX1616	20	60	11000~12000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX1616	20	60	11000~12000	200~400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2008	14	70	10000~11000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNBX2008	14	70	10000~11000	700~900	0.01~0.03	2	溝銑 SLOTTING
UNBX2008	14	70	10000~11000	400~600	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNBX2008	14	70	10000~11000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNBX2010	16	70	10000~11000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2010	16	70	10000~11000	500~700	0.01~0.03	2	溝銑 SLOTTING
UNBX2010	16	70	10000~11000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2010	16	70	10000~11000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2012	18	70	10000~11000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNBX2012	18	70	10000~11000	500~700	0.01~0.03	2	溝銑 SLOTTING
UNBX2012	18	70	10000~11000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNBX2012	18	70	10000~11000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX2016	22	70	10000~11000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNBX2016	22	70	10000~11000	400~600	0.01~0.02	2	溝銑 SLOTTING
UNBX2016	22	70	10000~11000	300~500	0.03~0.05	0.09~0.1	3D銑 3D MILLING
UNBX2016	22	70	10000~11000	500~700	0.01~0.03	0.02~0.06	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX2020	26	70	10000~11000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX2020	26	70	10000~11000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX2020	26	70	10000~11000	200~400	0.01~0.03	0.02~0.06	**3D**銑 3D MILLING
UNBX2020	26	70	10000~11000	200~400	0.01~0.03	0.02~0.06	**3D**銑 3D MILLING
UNBX3008	16	85	8000~9000	600~800	0.06~0.08	3	溝銑 SLOTTING
UNBX3008	16	85	8000~9000	1000~1200	0.02~0.04	3	溝銑 SLOTTING
UNBX3008	16	85	8000~9000	600~800	0.09~0.11	0.18~0.22	**3D**銑 3D MILLING
UNBX3008	16	85	8000~9000	1000~1400	0.03~0.065	0.06~0.13	**3D**銑 3D MILLING
UNBX3010	18	85	8000~9000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNBX3010	18	85	8000~9000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNBX3010	18	85	8000~9000	500~700	0.09~0.11	0.18~0.22	**3D**銑 3D MILLING
UNBX3010	18	85	8000~9000	900~1300	0.03~0.065	0.06~0.13	**3D**銑 3D MILLING
UNBX3012	20	85	8000~9000	500~700	0.05~0.07	3	溝銑 SLOTTING
UNBX3012	20	85	8000~9000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNBX3012	20	85	8000~9000	500~700	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
UNBX3012	20	85	8000~9000	900~1300	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
UNBX3016	24	85	8000~9000	400~600	0.05~0.07	3	溝銑 SLOTTING
UNBX3016	24	85	8000~9000	700~1100	0.015~0.035	3	溝銑 SLOTTING
UNBX3016	24	85	8000~9000	400~600	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
UNBX3016	24	85	8000~9000	800~1200	0.02~0.05	0.04~0.1	**3D**銑 3D MILLING
UNBX3020	28	85	8000~9000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNBX3020	28	85	8000~9000	500~700	0.01~0.03	3	溝銑 SLOTTING
UNBX3020	28	85	8000~9000	400~600	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
UNBX3020	28	85	8000~9000	800~1000	0.015~0.035	0.03~0.07	**3D**銑 3D MILLING
UNBX3025	33	85	8000~9000	200~400	0.02~0.04	3	溝銑 SLOTTING
UNBX3025	33	85	8000~9000	400~600	0.008~0.02	3	溝銑 SLOTTING
UNBX3025	33	85	8000~9000	300~500	0.04~0.06	0.08~0.12	**3D**銑 3D MILLING
UNBX3025	33	85	8000~9000	700~900	0.01~0.025	0.02~0.05	**3D**銑 3D MILLING
UNBX4010	20	100	6000~8000	600~800	0.07~0.09	4	溝銑 SLOTTING
UNBX4010	20	100	6000~8000	1000~1400	0.03~0.05	4	溝銑 SLOTTING
UNBX4010	20	100	6000~8000	800~1000	0.11~0.13	0.22~0.26	**3D**銑 3D MILLING
UNBX4010	20	100	6000~8000	1400~1800	0.035~0.07	0.07~0.14	**3D**銑 3D MILLING
UNBX4015	25	100	6000~8000	400~600	0.06~0.08	4	溝銑 SLOTTING
UNBX4015	25	100	6000~8000	800~1000	0.025~0.05	4	溝銑 SLOTTING
UNBX4015	25	100	6000~8000	600~800	0.07~0.09	0.14~0.18	**3D**銑 3D MILLING
UNBX4015	25	100	6000~8000	1200~1600	0.03~0.06	0.06~0.12	**3D**銑 3D MILLING
UNBX4020	30	100	6000~8000	400~600	0.05~0.07	4	溝銑 SLOTTING
UNBX4020	30	100	6000~8000	800~1000	0.015~0.03	4	溝銑 SLOTTING
UNBX4020	30	100	6000~8000	600~800	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
UNBX4020	30	100	6000~8000	1200~1600	0.025~0.05	0.05~0.1	**3D**銑 3D MILLING
UNBX4025	35	100	6000~8000	300~500	0.04~0.06	4	溝銑 SLOTTING
UNBX4025	35	100	6000~8000	700~900	0.015~0.03	4	溝銑 SLOTTING
UNBX4025	35	100	6000~8000	500~700	0.05~0.07	0.1~0.14	**3D**銑 3D MILLING
UNBX4025	35	100	6000~8000	900~1100	0.015~0.03	0.03~0.06	**3D**銑 3D MILLING
UNBX4030	40	100	6000~8000	200~400	0.04~0.06	4	溝銑 SLOTTING
UNBX4030	40	100	6000~8000	500~700	0.015~0.03	4	溝銑 SLOTTING
UNBX4030	40	100	6000~8000	400~600	0.04~0.06	0.08~0.12	**3D**銑 3D MILLING
UNBX4030	40	100	6000~8000	800~1000	0.01~0.03	0.02~0.06	**3D**銑 3D MILLING

4 Flutes

UNBX Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀



精銑 Finishing

中銑 Semi-finishing ------

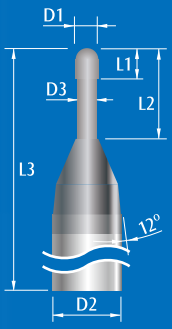
粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining



直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01
柄徑 Shank(h6)	Ø4	Ø6			
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008			

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNBX100404	R 0.5	0.95	1.5	4	50	4
UNBX100604	R 0.5	0.95	1.5	6	50	4
UNBX100804	R 0.5	0.95	1.5	8	50	4
UNBX101004	R 0.5	0.95	1.5	10	50	4
UNBX101204	R 0.5	0.95	1.5	12	50	4
UNBX150604	R 0.75	1.45	2	6	50	4
UNBX150804	R 0.75	1.45	2	8	50	4
UNBX151004	R 0.75	1.45	2	10	50	4
UNBX151204	R 0.75	1.45	2	12	50	4
UNBX151604	R 0.75	1.45	2	16	50	4
UNBX200804	R 1.0	1.92	3	8	50	4
UNBX201004	R 1.0	1.92	3	10	50	4
UNBX201204	R 1.0	1.92	3	12	50	4
UNBX201604	R 1.0	1.92	3	16	50	4
UNBX202004	R 1.0	1.92	3	20	50	4
UNBX300804	R 1.5	2.90	4	8	60	6
UNBX301004	R 1.5	2.90	4	10	60	6
UNBX301204	R 1.5	2.90	4	12	60	6
UNBX301604	R 1.5	2.90	4	16	60	6
UNBX302004	R 1.5	2.90	4	20	60	6
UNBX302504	R 1.5	2.90	4	25	60	6
UNBX401004	R 2.0	3.88	5	10	75	6
UNBX401204	R 2.0	3.88	5	12	75	6
UNBX401604	R 2.0	3.88	5	16	75	6
UNBX402004	R 2.0	3.88	5	20	75	6
UNBX402504	R 2.0	3.88	5	25	75	6

unit : mm

UNBX 4 Flute 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNBX100404	11	60	17000~18000	600~800	0.015~0.035	1	溝銑 SLOTTING
UNBX100404	11	60	17000~18000	900~1100	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX100604	13	60	17000~18000	500~700	0.015~0.035	1	溝銑 SLOTTING
UNBX100604	13	60	17000~18000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX100804	15	60	17000~18000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNBX100804	15	60	17000~18000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX101004	17	60	17000~18000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX101004	17	60	17000~18000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX101204	19	60	17000~18000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX101204	19	60	17000~18000	600~800	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNBX150604	13	80	16000~17000	600~800	0.02~0.04	1.5	溝銑 SLOTTING
UNBX150604	13	80	16000~17000	900~1100	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX150804	15	80	16000~17000	500~700	0.02~0.04	1.5	溝銑 SLOTTING
UNBX150804	15	80	16000~17000	800~1000	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNBX151004	17	80	16000~17000	400~600	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151004	17	80	16000~17000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151204	19	80	16000~17000	300~500	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151204	19	80	16000~17000	600~800	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151604	23	80	16000~17000	200~400	0.015~0.035	1.5	溝銑 SLOTTING
UNBX151604	23	80	16000~17000	500~700	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX200804	14	100	15000~16000	600~800	0.03~0.06	2	溝銑 SLOTTING
UNBX200804	14	100	15000~16000	1000~1400	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201004	16	100	15000~16000	600~800	0.03~0.06	2	溝銑 SLOTTING
UNBX201004	16	100	15000~16000	1000~1200	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201204	18	100	15000~16000	500~700	0.03~0.06	2	溝銑 SLOTTING
UNBX201204	18	100	15000~16000	900~1100	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNBX201604	22	100	15000~16000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX201604	22	100	15000~16000	900~1100	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX202004	26	100	15000~16000	400~600	0.02~0.05	2	溝銑 SLOTTING
UNBX202004	26	100	15000~16000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX300804	19	145	14000~15000	900~1100	0.04~0.08	3	溝銑 SLOTTING
UNBX300804	19	145	14000~15000	1400~1800	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301004	21	145	14000~15000	900~1100	0.04~0.08	3	溝銑 SLOTTING
UNBX301004	21	145	14000~15000	1400~1800	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301204	23	145	14000~15000	800~1000	0.04~0.08	3	溝銑 SLOTTING
UNBX301204	23	145	14000~15000	1300~1700	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX301604	27	145	14000~15000	700~900	0.03~0.06	3	溝銑 SLOTTING
UNBX301604	27	145	14000~15000	1200~1600	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX302004	31	145	14000~15000	700~900	0.02~0.05	3	溝銑 SLOTTING
UNBX302004	31	145	14000~15000	1200~1600	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX302504	36	145	14000~15000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNBX302504	36	145	14000~15000	1100~1500	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX401004	26	165	11000~13000	1100~1500	0.04~0.08	4	溝銑 SLOTTING
UNBX401004	26	165	11000~13000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX401204	28	165	11000~13000	1100~1500	0.04~0.08	4	溝銑 SLOTTING
UNBX401204	28	165	11000~13000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNBX401604	32	165	11000~13000	1000~1400	0.03~0.06	4	溝銑 SLOTTING
UNBX401604	32	165	11000~13000	1600~2000	0.03~0.08	0.06~0.16	3D銑 3D MILLING
UNBX402004	36	165	11000~13000	1000~1200	0.03~0.06	4	溝銑 SLOTTING
UNBX402004	36	165	11000~13000	1400~1800	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX402504	41	165	11000~13000	800~1000	0.03~0.06	4	溝銑 SLOTTING
UNBX402504	41	165	11000~13000	1200~1600	0.02~0.05	0.04~0.1	3D銑 3D MILLING

UNBX 4 Flute 切削條件表 MILLING CONDITIONS

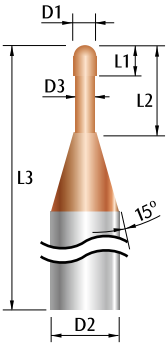
被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNBX100404	11	50	15000~16000	400~600	0.01~0.025	1	溝銑 SLOTTING
UNBX100404	11	50	15000~16000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX100604	13	50	15000~16000	400~600	0.01~0.025	1	溝銑 SLOTTING
UNBX100604	13	50	15000~16000	700~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX100804	15	50	15000~16000	300~500	0.01~0.025	1	溝銑 SLOTTING
UNBX100804	15	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX101004	17	50	15000~16000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX101004	17	50	15000~16000	400~600	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX101204	19	50	15000~16000	200~400	0.01~0.02	1	溝銑 SLOTTING
UNBX101204	19	50	15000~16000	400~600	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNBX150604	13	65	13000~14000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNBX150604	13	65	13000~14000	800~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX150804	15	65	13000~14000	400~600	0.01~0.03	1.5	溝銑 SLOTTING
UNBX150804	15	65	13000~14000	700~900	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX151004	17	65	13000~14000	300~500	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151004	17	65	13000~14000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX151204	19	65	13000~14000	300~500	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151204	19	65	13000~14000	600~800	0.02~0.03	0.04~0.06	3D銑 3D MILLING
UNBX151604	23	65	13000~14000	200~400	0.01~0.02	1.5	溝銑 SLOTTING
UNBX151604	23	65	13000~14000	500~700	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNBX200804	14	85	12000~13000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX200804	14	85	12000~13000	700~1100	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201004	16	85	12000~13000	500~700	0.02~0.05	2	溝銑 SLOTTING
UNBX201004	16	85	12000~13000	700~1100	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201204	18	85	12000~13000	400~600	0.02~0.04	2	溝銑 SLOTTING
UNBX201204	18	85	12000~13000	600~1000	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX201604	22	85	12000~13000	300~500	0.01~0.03	2	溝銑 SLOTTING
UNBX201604	22	85	12000~13000	500~900	0.01~0.04	0.02~0.08	3D銑 3D MILLING
UNBX202004	26	85	12000~13000	200~400	0.01~0.02	2	溝銑 SLOTTING
UNBX202004	26	85	12000~13000	400~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNBX300804	19	115	10000~12000	800~1000	0.03~0.06	3	溝銑 SLOTTING
UNBX300804	19	115	10000~12000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301004	21	115	10000~12000	800~1000	0.03~0.06	3	溝銑 SLOTTING
UNBX301004	21	115	10000~12000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301204	23	115	10000~12000	700~900	0.03~0.06	3	溝銑 SLOTTING
UNBX301204	23	115	10000~12000	1200~1600	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX301604	27	115	10000~12000	600~800	0.02~0.05	3	溝銑 SLOTTING
UNBX301604	27	115	10000~12000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNBX302004	31	115	10000~12000	500~700	0.02~0.04	3	溝銑 SLOTTING
UNBX302004	31	115	10000~12000	1000~1400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX302504	36	115	10000~12000	400~600	0.02~0.04	3	溝銑 SLOTTING
UNBX302504	36	115	10000~12000	600~1000	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNBX401004	26	115	7000~9000	800~1200	0.03~0.07	4	溝銑 SLOTTING
UNBX401004	26	115	7000~9000	1200~1600	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX401204	28	115	7000~9000	800~1200	0.03~0.07	4	溝銑 SLOTTING
UNBX401204	28	115	7000~9000	1200~1600	0.04~0.08	0.08~0.16	3D銑 3D MILLING
UNBX401604	32	115	7000~9000	600~1000	0.02~0.06	4	溝銑 SLOTTING
UNBX401604	32	115	7000~9000	1000~1400	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNBX402004	36	115	7000~9000	600~800	0.02~0.05	4	溝銑 SLOTTING
UNBX402004	36	115	7000~9000	800~1200	0.02~0.06	0.04~0.12	3D銑 3D MILLING
UNBX402504	41	115	7000~9000	500~700	0.02~0.05	4	溝銑 SLOTTING
UNBX402504	41	115	7000~9000	600~1000	0.02~0.06	0.04~0.12	3D銑 3D MILLING

LNB Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills





直徑 D1	R0.5	R0.75	R1.0	R1.5	R2.0
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNB1006	R0.5	0.95	1.5	6	50	4
LNB1008	R0.5	0.95	1.5	8	50	4
LNB1010	R0.5	0.95	1.5	10	50	4
LNB1012	R0.5	0.95	1.5	12	50	4
LNB1508	R0.75	1.45	2	8	50	4
LNB1510	R0.75	1.45	2	10	50	4
LNB1512	R0.75	1.45	2	12	50	4
LNB1516	R0.75	1.45	2	16	50	4
LNB1520	R0.75	1.45	2	20	50	4
LNB2008	R1.0	1.92	3	8	50	4
LNB2010	R1.0	1.92	3	10	50	4
LNB2012	R1.0	1.92	3	12	50	4
LNB2016	R1.0	1.92	3	16	50	4
LNB2020	R1.0	1.92	3	20	50	4
LNB3008	R1.5	2.90	4	8	50	6
LNB3010	R1.5	2.90	4	10	50	6
LNB3012	R1.5	2.90	4	12	50	6
LNB3016	R1.5	2.90	4	16	50	6
LNB3020	R1.5	2.90	4	20	60	6
LNB3025	R1.5	2.90	4	25	60	6
LNB4012	R2.0	3.88	5	12	60	6
LNB4016	R2.0	3.88	5	16	60	6
LNB4020	R2.0	3.88	5	20	60	6
LNB4025	R2.0	3.88	5	25	75	6
LNB4030	R2.0	3.88	5	30	75	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	13000~14000	600~800	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	13000~14000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	14000~15000	800~1000	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	14000~15000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	13000~14000	600~800	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	13000~14000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	14000~15000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1008	20	14000~15000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	13000~14000	400~600	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	13000~14000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	14000~15000	600~800	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	14000~15000	1000~1200	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	13000~14000	350~550	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	13000~14000	550~750	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	14000~15000	550~750	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	14000~15000	750~950	0.01~0.025	0.02~0.05	3D銑 3D MILLING
LNB1508	16	12000~13000	1000~1200	0.04~0.06	1.5	溝銑 SLOTTING
LNB1508	16	12000~13000	1200~1400	0.01~0.035	1.5	溝銑 SLOTTING
LNB1508	16	13000~14000	1400~1600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1508	16	13000~14000	1600~2000	0.01~0.045	0.02~0.09	3D銑 3D MILLING
LNB1510	18	12000~13000	800~1000	0.04~0.06	1.5	溝銑 SLOTTING
LNB1510	18	12000~13000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1510	18	13000~14000	1200~1400	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1510	18	13000~14000	1400~1800	0.01~0.04	0.02~0.08	3D銑 3D MILLING
LNB1512	20	12000~13000	800~1000	0.04~0.06	1.5	溝銑 SLOTTING
LNB1512	20	12000~13000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1512	20	13000~14000	1200~1400	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1512	20	13000~14000	1400~1800	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB1516	24	12000~13000	600~800	0.03~0.05	1.5	溝銑 SLOTTING
LNB1516	24	12000~13000	800~1000	0.01~0.02	1.5	溝銑 SLOTTING
LNB1516	24	13000~14000	1000~1200	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1516	24	13000~14000	1200~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1520	28	12000~13000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
LNB1520	28	12000~13000	600~800	0.01~0.015	1.5	溝銑 SLOTTING
LNB1520	28	13000~14000	800~1000	0.04~0.05	0.08~0.1	3D銑 3D MILLING
LNB1520	28	13000~14000	1000~1200	0.01~0.025	0.02~0.05	3D銑 3D MILLING
LNB2008	16	11000~12000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNB2008	16	11000~12000	1200~1600	0.015~0.04	2	溝銑 SLOTTING
LNB2008	16	12000~13000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB2008	16	12000~13000	2000~2400	0.01~0.04	0.02~0.08	3D銑 3D MILLING
LNB2010	18	11000~12000	800~1000	0.06~0.08	2	溝銑 SLOTTING
LNB2010	18	11000~12000	1200~1400	0.01~0.03	2	溝銑 SLOTTING
LNB2010	18	12000~13000	1200~1400	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB2010	18	12000~13000	1800~2000	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB2012	20	11000~12000	800~1000	0.05~0.07	2	溝銑 SLOTTING
LNB2012	20	11000~12000	1200~1400	0.01~0.025	2	溝銑 SLOTTING
LNB2012	20	12000~13000	800~1000	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB2012	20	12000~13000	1600~2000	0.01~0.035	0.02~0.07	3D銑 3D MILLING
LNB2016	24	11000~12000	600~800	0.03~0.05	2	溝銑 SLOTTING
LNB2016	24	11000~12000	1000~1200	0.01~0.02	2	溝銑 SLOTTING
LNB2016	24	12000~13000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB2016	24	12000~13000	1400~1600	0.01~0.035	0.02~0.07	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	11000~12000	600~800	0.02~0.04	2	溝銑 SLOTTING
LNB2020	26	11000~12000	800~1000	0.01~0.02	2	溝銑 SLOTTING
LNB2020	26	12000~13000	800~1000	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB2020	26	12000~13000	1200~1400	0.01~0.035	0.02~0.07	**3D**銑 3D MILLING
LNB3008	18	10000~11000	1200~1400	0.1~0.12	3	溝銑 SLOTTING
LNB3008	18	10000~11000	1600~1800	0.015~0.05	3	溝銑 SLOTTING
LNB3008	18	11000~12000	1800~2000	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3008	18	11000~12000	2200~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3010	20	10000~11000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNB3010	20	10000~11000	1600~1800	0.015~0.045	3	溝銑 SLOTTING
LNB3010	20	11000~12000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3010	20	11000~12000	2000~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3012	22	10000~11000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNB3012	22	10000~11000	1600~1800	0.015~0.045	3	溝銑 SLOTTING
LNB3012	22	11000~12000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3012	22	11000~12000	2000~2400	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB3016	26	10000~11000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNB3016	26	10000~11000	1200~1400	0.01~0.04	3	溝銑 SLOTTING
LNB3016	26	11000~12000	1000~1200	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
LNB3016	26	11000~12000	1400~1800	0.02~0.05	0.04~0.1	**3D**銑 3D MILLING
LNB3020	30	10000~11000	600~800	0.04~0.06	3	溝銑 SLOTTING
LNB3020	30	10000~11000	800~1000	0.01~0.04	3	溝銑 SLOTTING
LNB3020	30	11000~12000	800~1000	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB3020	30	11000~12000	1200~1600	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB3025	35	10000~11000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNB3025	35	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
LNB3025	35	11000~12000	600~800	0.04~0.06	0.08~0.12	**3D**銑 3D MILLING
LNB3025	35	11000~12000	1000~1400	0.015~0.03	0.03~0.06	**3D**銑 3D MILLING
LNB4012	23	9000~10000	1400~1600	0.1~0.12	4	溝銑 SLOTTING
LNB4012	23	9000~10000	1600~2000	0.025~0.06	4	溝銑 SLOTTING
LNB4012	23	10000~11000	1600~2000	0.12~0.14	0.24~0.28	**3D**銑 3D MILLING
LNB4012	23	10000~11000	2400~2600	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4016	27	9000~10000	1000~1200	0.08~0.1	4	溝銑 SLOTTING
LNB4016	27	9000~10000	1400~1600	0.025~0.05	4	溝銑 SLOTTING
LNB4016	27	10000~11000	1400~1600	0.12~0.14	0.24~0.28	**3D**銑 3D MILLING
LNB4016	27	10000~11000	1600~2000	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4020	31	9000~10000	1000~1200	0.08~0.1	4	溝銑 SLOTTING
LNB4020	31	9000~10000	1200~1500	0.025~0.05	4	溝銑 SLOTTING
LNB4020	31	10000~11000	1200~1400	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB4020	31	10000~11000	1600~2000	0.03~0.07	0.06~0.14	**3D**銑 3D MILLING
LNB4025	36	9000~10000	800~1000	0.06~0.08	4	溝銑 SLOTTING
LNB4025	36	9000~10000	1200~1500	0.02~0.045	4	溝銑 SLOTTING
LNB4025	36	10000~11000	1200~1400	0.08~0.1	0.16~0.2	**3D**銑 3D MILLING
LNB4025	36	10000~11000	1600~2000	0.025~0.06	0.05~0.12	**3D**銑 3D MILLING
LNB4030	40	9000~10000	800~1000	0.04~0.06	4	溝銑 SLOTTING
LNB4030	40	9000~10000	1200~1500	0.015~0.03	4	溝銑 SLOTTING
LNB4030	40	10000~11000	1200~1400	0.06~0.08	0.12~0.16	**3D**銑 3D MILLING
LNB4030	40	10000~11000	1600~2000	0.015~0.05	0.03~0.1	**3D**銑 3D MILLING

LNB 切削條件表 MILLING CONDITIONS

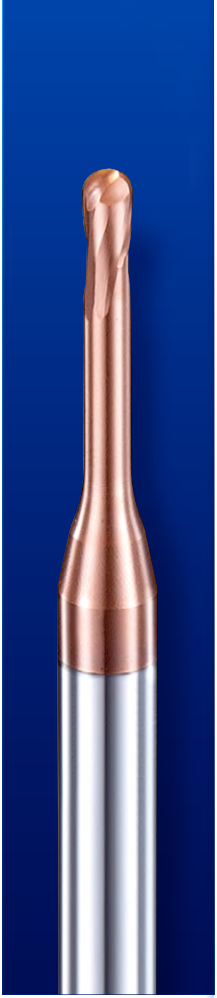
被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	17000~18000	700~900	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	17000~18000	1000~1400	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	17000~18000	1000~1200	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	17000~18000	1400~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	17000~18000	600~800	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	17000~18000	900~1100	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	17000~18000	1000~1200	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1008	20	17000~18000	1400~1600	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	17000~18000	900~1100	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	17000~18000	800~1000	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	17000~18000	1200~1400	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	17000~18000	400~600	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~800	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~800	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	17000~18000	800~1000	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1508	16	16000~17000	1000~1400	0.08~0.1	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1600~2000	0.01~0.04	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1600~1800	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB1508	16	16000~17000	2200~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
LNB1510	18	16000~17000	800~1200	0.08~0.1	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1800	0.01~0.04	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1510	18	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1512	20	16000~17000	600~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1512	20	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1516	24	16000~17000	500~800	0.04~0.06	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1000~1200	0.01~0.03	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1200~1400	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB1516	24	16000~17000	1800~2200	0.015~0.04	0.03~0.08	3D銑 3D MILLING
LNB1520	28	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	1000~1200	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1520	28	16000~17000	1400~1800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
LNB2008	16	15000~16000	1800~2200	0.12~0.14	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2600	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2008	16	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2010	18	15000~16000	1800~2200	0.12~0.14	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2400~2600	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2010	18	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2012	20	15000~16000	1600~2000	0.1~0.12	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2200~2600	0.015~0.05	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2200~2400	0.14~0.16	0.28~0.32	3D銑 3D MILLING
LNB2012	20	15000~16000	2600~3000	0.015~0.05	0.03~0.1	3D銑 3D MILLING
LNB2016	24	15000~16000	1400~1800	0.1~0.12	2	溝銑 SLOTTING
LNB2016	24	15000~16000	2000~2400	0.015~0.05	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1800~2000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB2016	24	15000~16000	2400~2800	0.015~0.05	0.03~0.1	3D銑 3D MILLING

型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	15000~16000	1200~1600	0.08~0.1	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1800~2200	0.015~0.05	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1600~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB2020	26	15000~16000	2200~2600	0.015~0.05	0.03~0.1	**3D**銑 3D MILLING
LNB3008	18	14000~15000	2000~2400	0.16~0.18	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2600~3000	0.03~0.1	3	溝銑 SLOTTING
LNB3008	18	14000~15000	3000~3200	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3008	18	14000~15000	3400~3800	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3010	20	14000~15000	2000~2400	0.16~0.18	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2800~3000	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3010	20	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3012	22	14000~15000	1800~2200	0.14~0.16	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2600~2800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB3012	22	14000~15000	3000~3400	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3016	26	14000~15000	1600~2000	0.13~0.15	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2000~2400	0.03~0.08	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2200~2400	0.16~0.18	0.32~0.36	**3D**銑 3D MILLING
LNB3016	26	14000~15000	2800~3200	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3020	30	14000~15000	1400~1800	0.1~0.12	3	溝銑 SLOTTING
LNB3020	30	14000~15000	2000~2400	0.02~0.06	3	溝銑 SLOTTING
LNB3020	30	14000~15000	2000~2200	0.14~0.16	0.28~0.32	**3D**銑 3D MILLING
LNB3020	30	14000~15000	2400~2800	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
LNB3025	35	14000~15000	1000~1400	0.08~0.1	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1600~2000	0.015~0.04	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1600~2000	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3025	35	14000~15000	2200~2600	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB4012	23	12000~13000	2400~2800	0.24~0.26	4	溝銑 SLOTTING
LNB4012	23	12000~13000	3500~3700	0.04~0.1	4	溝銑 SLOTTING
LNB4012	23	12000~13000	2400~2800	0.26~0.28	0.52~0.56	**3D**銑 3D MILLING
LNB4012	23	12000~13000	3500~3800	0.04~0.12	0.08~0.24	**3D**銑 3D MILLING
LNB4016	27	12000~13000	2200~2600	0.22~0.24	4	溝銑 SLOTTING
LNB4016	27	12000~13000	3300~3600	0.03~0.08	4	溝銑 SLOTTING
LNB4016	27	12000~13000	2400~2800	0.24~0.26	0.48~0.52	**3D**銑 3D MILLING
LNB4016	27	12000~13000	3500~3800	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4020	31	12000~13000	2000~2400	0.21~0.23	4	溝銑 SLOTTING
LNB4020	31	12000~13000	3200~3500	0.03~0.08	4	溝銑 SLOTTING
LNB4020	31	12000~13000	2300~2500	0.23~0.25	0.46~0.5	**3D**銑 3D MILLING
LNB4020	31	12000~13000	3400~3700	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4025	36	12000~13000	1800~2200	0.19~0.21	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2600~2800	0.04~0.08	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2100~2300	0.21~0.23	0.42~0.46	**3D**銑 3D MILLING
LNB4025	36	12000~13000	2800~3200	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4030	40	12000~13000	1600~1800	0.16~0.18	4	溝銑 SLOTTING
LNB4030	40	12000~13000	2000~2400	0.03~0.07	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1800~2000	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB4030	40	12000~13000	2500~2800	0.04~0.07	0.08~0.14	**3D**銑 3D MILLING

LNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNB1006	18	17000~18000	700~900	0.04~0.06	1	溝銑 SLOTTING
LNB1006	18	17000~18000	900~1300	0.01~0.03	1	溝銑 SLOTTING
LNB1006	18	17000~18000	900~1100	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1006	18	17000~18000	1300~1500	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1008	20	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1008	20	17000~18000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1008	20	17000~18000	900~1100	0.05~0.07	0.1~0.14	3D銑 3D MILLING
LNB1008	20	17000~18000	1300~1500	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1010	22	17000~18000	500~700	0.04~0.05	1	溝銑 SLOTTING
LNB1010	22	17000~18000	800~1000	0.01~0.03	1	溝銑 SLOTTING
LNB1010	22	17000~18000	700~900	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1010	22	17000~18000	1100~1300	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1012	24	17000~18000	400~500	0.02~0.04	1	溝銑 SLOTTING
LNB1012	24	17000~18000	600~700	0.01~0.02	1	溝銑 SLOTTING
LNB1012	24	17000~18000	500~700	0.04~0.06	0.08~0.12	3D銑 3D MILLING
LNB1012	24	17000~18000	800~900	0.01~0.03	0.02~0.06	3D銑 3D MILLING
LNB1508	16	16000~17000	1100~1300	0.08~0.1	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1300~1700	0.01~0.04	1.5	溝銑 SLOTTING
LNB1508	16	16000~17000	1500~1700	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB1508	16	16000~17000	2100~2600	0.02~0.045	0.04~0.09	3D銑 3D MILLING
LNB1510	18	16000~17000	900~1100	0.08~0.1	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1200~1600	0.01~0.04	1.5	溝銑 SLOTTING
LNB1510	18	16000~17000	1400~1600	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1510	18	16000~17000	2000~2400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1512	20	16000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1000~1400	0.01~0.04	1.5	溝銑 SLOTTING
LNB1512	20	16000~17000	1300~1500	0.1~0.12	0.2~0.24	3D銑 3D MILLING
LNB1512	20	16000~17000	1800~2200	0.02~0.04	0.04~0.08	3D銑 3D MILLING
LNB1516	24	16000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	900~1100	0.01~0.03	1.5	溝銑 SLOTTING
LNB1516	24	16000~17000	1100~1300	0.08~0.1	0.16~0.2	3D銑 3D MILLING
LNB1516	24	16000~17000	1700~2100	0.015~0.04	0.03~0.08	3D銑 3D MILLING
LNB1520	28	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	600~1000	0.01~0.03	1.5	溝銑 SLOTTING
LNB1520	28	16000~17000	900~1100	0.06~0.08	0.12~0.16	3D銑 3D MILLING
LNB1520	28	16000~17000	1300~1700	0.015~0.03	0.03~0.06	3D銑 3D MILLING
LNB2008	16	15000~16000	1900~2100	0.12~0.14	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2400~2800	0.02~0.07	2	溝銑 SLOTTING
LNB2008	16	15000~16000	2000~2400	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2008	16	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2010	18	15000~16000	1800~2000	0.12~0.14	2	溝銑 SLOTTING
LNB2010	18	15000~16000	2300~2700	0.02~0.07	2	溝銑 SLOTTING
LNB2010	18	15000~16000	1900~2300	0.16~0.18	0.32~0.36	3D銑 3D MILLING
LNB2010	18	15000~16000	3000~3400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
LNB2012	20	15000~16000	1700~1900	0.1~0.12	2	溝銑 SLOTTING
LNB2012	20	15000~16000	2100~2500	0.02~0.05	2	溝銑 SLOTTING
LNB2012	20	15000~16000	1900~2300	0.14~0.16	0.28~0.32	3D銑 3D MILLING
LNB2012	20	15000~16000	2600~3000	0.02~0.05	0.03~0.1	3D銑 3D MILLING
LNB2016	24	15000~16000	1400~1600	0.1~0.12	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1800~2200	0.02~0.05	2	溝銑 SLOTTING
LNB2016	24	15000~16000	1700~1900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
LNB2016	24	15000~16000	2200~2600	0.02~0.05	0.03~0.1	3D銑 3D MILLING

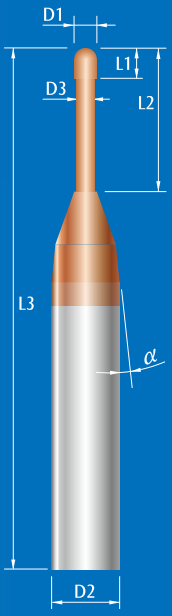
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNB2020	26	15000~16000	1300~1500	0.08~0.1	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1700~2100	0.02~0.05	2	溝銑 SLOTTING
LNB2020	26	15000~16000	1400~1600	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB2020	26	15000~16000	2000~2400	0.02~0.05	0.03~0.1	**3D**銑 3D MILLING
LNB3008	18	14000~15000	1800~2200	0.16~0.18	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3008	18	14000~15000	2800~3200	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3008	18	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3010	20	14000~15000	1800~2200	0.16~0.18	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2400~2800	0.03~0.1	3	溝銑 SLOTTING
LNB3010	20	14000~15000	2800~3000	0.2~0.22	0.4~0.44	**3D**銑 3D MILLING
LNB3010	20	14000~15000	3200~3600	0.03~0.1	0.06~0.2	**3D**銑 3D MILLING
LNB3012	22	14000~15000	1600~2000	0.14~0.16	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2200~2600	0.03~0.08	3	溝銑 SLOTTING
LNB3012	22	14000~15000	2600~2800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB3012	22	14000~15000	3000~3400	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3016	26	14000~15000	1400~1800	0.13~0.15	3	溝銑 SLOTTING
LNB3016	26	14000~15000	1800~2200	0.03~0.08	3	溝銑 SLOTTING
LNB3016	26	14000~15000	2000~2200	0.16~0.18	0.32~0.36	**3D**銑 3D MILLING
LNB3016	26	14000~15000	2600~3000	0.03~0.08	0.06~0.16	**3D**銑 3D MILLING
LNB3020	30	14000~15000	1200~1600	0.1~0.12	3	溝銑 SLOTTING
LNB3020	30	14000~15000	1800~2100	0.02~0.06	3	溝銑 SLOTTING
LNB3020	30	14000~15000	1800~2100	0.14~0.16	0.28~0.32	**3D**銑 3D MILLING
LNB3020	30	14000~15000	2300~2700	0.02~0.06	0.04~0.12	**3D**銑 3D MILLING
LNB3025	35	14000~15000	1000~1400	0.08~0.1	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1500~1900	0.015~0.04	3	溝銑 SLOTTING
LNB3025	35	14000~15000	1500~1800	0.1~0.12	0.2~0.24	**3D**銑 3D MILLING
LNB3025	35	14000~15000	2000~2400	0.015~0.04	0.03~0.08	**3D**銑 3D MILLING
LNB4012	23	12000~13000	2200~2600	0.24~0.26	4	溝銑 SLOTTING
LNB4012	23	12000~13000	3200~3400	0.04~0.1	4	溝銑 SLOTTING
LNB4012	23	12000~13000	2100~2600	0.26~0.28	0.52~0.56	**3D**銑 3D MILLING
LNB4012	23	12000~13000	3200~3400	0.04~0.12	0.08~0.24	**3D**銑 3D MILLING
LNB4016	27	12000~13000	2200~2600	0.22~0.24	4	溝銑 SLOTTING
LNB4016	27	12000~13000	3200~3400	0.03~0.08	4	溝銑 SLOTTING
LNB4016	27	12000~13000	2100~2600	0.24~0.26	0.48~0.52	**3D**銑 3D MILLING
LNB4016	27	12000~13000	3200~3400	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4020	31	12000~13000	1800~2200	0.21~0.23	4	溝銑 SLOTTING
LNB4020	31	12000~13000	3000~3300	0.03~0.08	4	溝銑 SLOTTING
LNB4020	31	12000~13000	2100~2300	0.23~0.25	0.46~0.5	**3D**銑 3D MILLING
LNB4020	31	12000~13000	3200~3500	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4025	36	12000~13000	1600~2000	0.19~0.21	4	溝銑 SLOTTING
LNB4025	36	12000~13000	2400~2600	0.04~0.08	4	溝銑 SLOTTING
LNB4025	36	12000~13000	1900~2100	0.21~0.23	0.42~0.46	**3D**銑 3D MILLING
LNB4025	36	12000~13000	2600~3000	0.04~0.1	0.08~0.2	**3D**銑 3D MILLING
LNB4030	40	12000~13000	1300~1700	0.16~0.18	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1800~2200	0.03~0.07	4	溝銑 SLOTTING
LNB4030	40	12000~13000	1600~1800	0.18~0.2	0.36~0.4	**3D**銑 3D MILLING
LNB4030	40	12000~13000	2200~2500	0.04~0.07	0.08~0.14	**3D**銑 3D MILLING



UNB Long Neck

Ball Nose End Mills 深溝用圓頭立銑刀

Super MG | 0.2 μm | 15° | 2 Flutes | HRc ▶65 | G12



直徑 D1	R0.25	R0.3	R0.4	R0.5	R0.6	R0.75	R0.8
球徑公差值 R Tolerance	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
直徑 D1	R1.0	R1.5	R2.0				
球徑公差值 R Tolerance	±0.01	±0.01	±0.01				
柄徑 Shank(h6)	Ø4	Ø6					
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008					

D1≦R0.25&L2≦4mm α=15°
The Other α=12°

- 精銑 Finishing
- 中銑 Semi-finishing ------
- 粗銑 Roughing ------
- 乾式切削 Dry Machining
- 油霧切削 MQL (Mist)
- 水溶性切削 Emulsion Machining
- 油性切削 Oil Machining

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNB0502	R 0.25	0.46	0.8	2	50	4
UNB0504	R 0.25	0.46	0.8	4	50	4
UNB0506	R 0.25	0.46	0.8	6	50	4
UNB0604	R 0.3	0.56	0.9	4	50	4
UNB0606	R 0.3	0.56	0.9	6	50	4
UNB0806	R 0.4	0.76	1.2	6	50	4
UNB0808	R 0.4	0.76	1.2	8	50	4
UNB1006	R 0.5	0.95	1.5	6	50	4

unit : mm

UNB Long Neck

深溝用圓頭立銑刀 Ball Nose End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNB1008	R0.5	0.95	1.5	8	50	4
UNB1010	R0.5	0.95	1.5	10	50	4
UNB1012	R0.5	0.95	1.5	12	50	4
UNB1208	R0.6	1.15	2	8	50	4
UNB1212	R0.6	1.15	2	12	50	4
UNB1508	R0.75	1.45	2	8	50	4
UNB1510	R0.75	1.45	2	10	50	4
UNB1512	R0.75	1.45	2	12	50	4
UNB1516	R0.75	1.45	2	16	50	4
UNB1520	R0.75	1.45	2	20	50	4
UNB1608	R0.8	1.54	2.5	8	50	4
UNB1612	R0.8	1.54	2.5	12	50	4
UNB1616	R0.8	1.54	2.5	16	50	4
UNB2008	R1.0	1.92	3	8	50	4
UNB2010	R1.0	1.92	3	10	50	4
UNB2012	R1.0	1.92	3	12	50	4
UNB2016	R1.0	1.92	3	16	50	4
UNB2020	R1.0	1.92	3	20	50	4
UNB3008	R1.5	2.90	4	8	50	6
UNB3010	R1.5	2.90	4	10	50	6
UNB3016	R1.5	2.90	4	16	50	6
UNB3020	R1.5	2.90	4	20	60	6
UNB3025	R1.5	2.90	4	25	60	6
UNB4010	R2.0	3.88	5	10	75	6
UNB4015	R2.0	3.88	5	15	75	6
UNB4020	R2.0	3.88	5	20	75	6
UNB4025	R2.0	3.88	5	25	75	6
UNB4030	R2.0	3.88	5	30	75	6

unit : mm

UNB 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

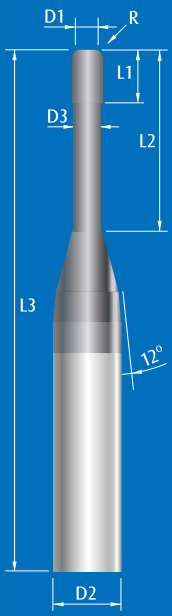
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
UNB0502	15	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNB0502	15	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0504	17	35	18000~20000	200~400	0.005~0.013	0.5	溝銑 SLOTTING
UNB0504	17	35	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0506	19	35	18000~20000	150~300	0.005~0.013	0.5	溝銑 SLOTTING
UNB0506	19	35	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNB0604	18	40	18000~20000	200~400	0.005~0.013	0.6	溝銑 SLOTTING
UNB0604	18	40	18000~20000	200~400	0.008~0.015	0.016~0.03	3D銑 3D MILLING
UNB0606	20	40	18000~20000	150~300	0.005~0.013	0.6	溝銑 SLOTTING
UNB0606	20	40	18000~20000	200~400	0.005~0.013	0.01~0.026	3D銑 3D MILLING
UNB0806	17	45	16000~18000	300~500	0.01~0.02	0.8	溝銑 SLOTTING
UNB0806	17	45	16000~18000	300~500	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNB0806	17	45	16000~18000	500~700	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNB0808	19	45	16000~18000	200~400	0.01~0.02	0.8	溝銑 SLOTTING
UNB0808	19	45	16000~18000	200~400	0.015~0.025	0.03~0.05	3D銑 3D MILLING
UNB0808	19	45	16000~18000	400~600	0.005~0.015	0.01~0.03	3D銑 3D MILLING
UNB1006	13	50	15000~16000	400~600	0.015~0.035	1	溝銑 SLOTTING
UNB1006	13	50	15000~16000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1006	13	50	15000~16000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNB1008	15	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1008	15	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1008	15	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1010	17	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1010	17	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1010	17	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1012	19	50	15000~16000	300~500	0.01~0.03	1	溝銑 SLOTTING
UNB1012	19	50	15000~16000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1012	19	50	15000~16000	600~800	0.01~0.02	0.02~0.04	3D銑 3D MILLING
UNB1208	15	60	15000~16000	400~600	0.02~0.04	1.2	溝銑 SLOTTING
UNB1208	15	60	15000~16000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1208	15	60	15000~16000	800~100	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1212	19	60	15000~16000	400~600	0.02~0.04	1.2	溝銑 SLOTTING
UNB1212	19	60	15000~16000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1212	19	60	15000~16000	800~100	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1508	14	70	14000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNB1508	14	70	14000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
UNB1508	14	70	14000~15000	400~600	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB1508	14	70	14000~15000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1510	16	70	14000~15000	400~600	0.03~0.05	1.5	溝銑 SLOTTING
UNB1510	16	70	14000~15000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
UNB1510	16	70	14000~15000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1510	16	70	14000~15000	700~900	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1512	18	70	14000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNB1512	18	70	14000~15000	500~700	0.01~0.03	1.5	溝銑 SLOTTING
UNB1512	18	70	14000~15000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1512	18	70	14000~15000	600~800	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB1516	22	70	14000~15000	300~500	0.02~0.04	1.5	溝銑 SLOTTING
UNB1516	22	70	14000~15000	500~600	0.008~0.02	1.5	溝銑 SLOTTING
UNB1516	22	70	14000~15000	300~500	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1516	22	70	14000~15000	600~800	0.01~0.025	0.02~0.05	3D銑 3D MILLING
UNB1520	26	70	14000~15000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNB1520	26	70	14000~15000	400~600	0.008~0.02	1.5	溝銑 SLOTTING
UNB1520	26	70	14000~15000	200~400	0.02~0.04	0.04~0.08	3D銑 3D MILLING
UNB1520	26	70	14000~15000	400~600	0.008~0.02	0.016~0.04	3D銑 3D MILLING
UNB1608	14	75	14000~15000	500~700	0.04~0.06	1.6	溝銑 SLOTTING
UNB1608	14	75	14000~15000	800~1000	0.01~0.03	1.6	溝銑 SLOTTING
UNB1608	14	75	14000~15000	500~700	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB1608	14	75	14000~15000	800~1000	0.015~0.035	0.03~0.07	3D銑 3D MILLING

UNB1612	16	75	14000~15000	400~600	0.03~0.05	1.6	溝銑 SLOTTING
UNB1612	16	75	14000~15000	600~800	0.01~0.03	1.6	溝銑 SLOTTING
UNB1612	16	75	14000~15000	500~700	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB1612	16	75	14000~15000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB1616	20	75	14000~15000	300~500	0.02~0.04	1.6	溝銑 SLOTTING
UNB1616	20	75	14000~15000	500~700	0.008~0.02	1.6	溝銑 SLOTTING
UNB1616	20	75	14000~15000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB1616	20	75	14000~15000	600~800	0.01~0.03	0.02~0.06	3D銑 3D MILLING
UNB2008	14	85	12000~13000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNB2008	14	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2008	14	85	12000~13000	500~700	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNB2008	14	85	12000~13000	1100~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2010	16	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNB2010	16	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2010	16	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB2010	16	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2012	18	85	12000~13000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNB2012	18	85	12000~13000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNB2012	18	85	12000~13000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB2012	18	85	12000~13000	1000~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB2016	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNB2016	22	85	12000~13000	600~800	0.01~0.025	2	溝銑 SLOTTING
UNB2016	22	85	12000~13000	400~600	0.04~0.06	0.08~0.12	3D銑 3D MILLING
UNB2016	22	85	12000~13000	800~1000	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB2020	26	85	12000~13000	200~400	0.03~0.05	2	溝銑 SLOTTING
UNB2020	26	85	12000~13000	400~600	0.01~0.025	2	溝銑 SLOTTING
UNB2020	26	85	12000~13000	400~600	0.03~0.05	0.06~0.1	3D銑 3D MILLING
UNB2020	26	85	12000~13000	600~800	0.015~0.03	0.03~0.06	3D銑 3D MILLING
UNB3008	16	105	10000~11000	700~900	0.08~0.1	3	溝銑 SLOTTING
UNB3008	16	105	10000~11000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
UNB3008	16	105	10000~11000	800~1000	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNB3008	16	105	10000~11000	1400~1800	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNB3010	18	105	10000~11000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNB3010	18	105	10000~11000	1100~1500	0.02~0.05	3	溝銑 SLOTTING
UNB3010	18	105	10000~11000	700~900	0.12~0.14	0.24~0.28	3D銑 3D MILLING
UNB3010	18	105	10000~11000	1300~1700	0.03~0.07	0.06~0.14	3D銑 3D MILLING
UNB3016	20	105	10000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNB3016	20	105	10000~11000	800~1200	0.015~0.035	3	溝銑 SLOTTING
UNB3016	20	105	10000~11000	600~800	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNB3016	20	105	10000~11000	1000~1400	0.02~0.05	0.04~0.1	3D銑 3D MILLING
UNB3020	24	105	10000~11000	300~500	0.04~0.06	3	溝銑 SLOTTING
UNB3020	24	105	10000~11000	700~900	0.01~0.03	3	溝銑 SLOTTING
UNB3020	24	105	10000~11000	400~600	0.07~0.09	0.14~0.18	3D銑 3D MILLING
UNB3020	24	105	10000~11000	900~1300	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB3025	28	105	10000~11000	200~400	0.04~0.06	3	溝銑 SLOTTING
UNB3025	28	105	10000~11000	600~800	0.01~0.03	3	溝銑 SLOTTING
UNB3025	28	105	10000~11000	400~600	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB3025	28	105	10000~11000	800~1200	0.015~0.035	0.03~0.07	3D銑 3D MILLING
UNB4010	20	115	8000~9000	800~1000	0.1~0.12	4	溝銑 SLOTTING
UNB4010	20	115	8000~9000	1400~1800	0.03~0.07	4	溝銑 SLOTTING
UNB4010	20	115	8000~9000	1000~1200	0.14~0.16	0.28~0.32	3D銑 3D MILLING
UNB4010	20	115	8000~9000	1600~2000	0.04~0.09	0.08~0.18	3D銑 3D MILLING
UNB4015	25	115	8000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UNB4015	25	115	8000~9000	1200~1600	0.025~0.06	4	溝銑 SLOTTING
UNB4015	25	115	8000~9000	1000~1200	0.1~0.12	0.2~0.24	3D銑 3D MILLING
UNB4015	25	115	8000~9000	1600~2000	0.03~0.06	0.06~0.12	3D銑 3D MILLING
UNB4020	30	115	8000~9000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNB4020	30	115	8000~9000	1000~1400	0.025~0.05	4	溝銑 SLOTTING
UNB4020	30	115	8000~9000	1000~1200	0.08~0.1	0.16~0.2	3D銑 3D MILLING
UNB4020	30	115	8000~9000	1600~2000	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNB4025	35	115	8000~9000	500~700	0.05~0.07	4	溝銑 SLOTTING
UNB4025	35	115	8000~9000	800~1200	0.015~0.035	4	溝銑 SLOTTING
UNB4025	35	115	8000~9000	800~1000	0.06~0.08	0.12~0.16	3D銑 3D MILLING
UNB4025	35	115	8000~9000	1200~1600	0.025~0.05	0.05~0.1	3D銑 3D MILLING
UNB4030	40	115	8000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNB4030	40	115	8000~9000	700~1100	0.015~0.035	4	溝銑 SLOTTING
UNB4030	40	115	8000~9000	600~800	0.05~0.07	0.1~0.14	3D銑 3D MILLING
UNB4030	40	115	8000~9000	1000~1400	0.015~0.04	0.03~0.08	3D銑 3D MILLING

UXE Long Neck, Corner Radius

End Mills 深溝用圓鼻立銑刀





直徑 D1	1.0	1.5	2.0	3.0	4.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02
柄徑 Shank(h6)	∅6				
柄徑公差值 D2 Tolerance	0 -0.008				

精銑 Finishing	◎
中銑 Semi-finishing	------
粗銑 Roughing	------
乾式切削 Dry Machining	◎
油霧切削 MQL (Mist)	◎
水溶性切削 Emulsion Machining	○
油性切削 Oil Machining	○

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UXE100401	1.0	0.95	0.1	1.5	4	50	6
UXE100601	1.0	0.95	0.1	1.5	6	50	6
UXE100801	1.0	0.95	0.1	1.5	8	50	6
UXE101001	1.0	0.95	0.1	1.5	10	50	6
UXE101201	1.0	0.95	0.1	1.5	12	50	6
UXE100402	1.0	0.95	0.2	1.5	4	50	6
UXE100602	1.0	0.95	0.2	1.5	6	50	6
UXE100802	1.0	0.95	0.2	1.5	8	50	6
UXE101002	1.0	0.95	0.2	1.5	10	50	6
UXE101202	1.0	0.95	0.2	1.5	12	50	6
UXE150401	1.5	1.44	0.1	1.5	4	50	6

unit : mm

UXE Long Neck, Corner Radius

深溝用圓鼻立銑刀 End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UXE150601	1.5	1.44	0.1	1.5	6	50	6
UXE150801	1.5	1.44	0.1	1.5	8	50	6
UXE151001	1.5	1.44	0.1	1.5	10	50	6
UXE151201	1.5	1.44	0.1	1.5	12	50	6
UXE150402	1.5	1.44	0.2	1.5	4	50	6
UXE150602	1.5	1.44	0.2	1.5	6	50	6
UXE150802	1.5	1.44	0.2	1.5	8	50	6
UXE151002	1.5	1.44	0.2	1.5	10	50	6
UXE151202	1.5	1.44	0.2	1.5	12	50	6
UXE200801	2.0	1.92	0.1	2	8	50	6
UXE201001	2.0	1.92	0.1	2	10	50	6
UXE201201	2.0	1.92	0.1	2	12	50	6
UXE201601	2.0	1.92	0.1	2	16	50	6
UXE202001	2.0	1.92	0.1	2	20	50	6
UXE200802	2.0	1.92	0.2	2	8	50	6
UXE201002	2.0	1.92	0.2	2	10	50	6
UXE201202	2.0	1.92	0.2	2	12	50	6
UXE201602	2.0	1.92	0.2	2	16	50	6
UXE202002	2.0	1.92	0.2	2	20	50	6
UXE300802	3.0	2.90	0.2	3	8	50	6
UXE301002	3.0	2.90	0.2	3	10	50	6
UXE301202	3.0	2.90	0.2	3	12	50	6
UXE301602	3.0	2.90	0.2	3	16	50	6
UXE302002	3.0	2.90	0.2	3	20	50	6
UXE300803	3.0	2.90	0.3	3	8	50	6
UXE301003	3.0	2.90	0.3	3	10	50	6
UXE301203	3.0	2.90	0.3	3	12	50	6
UXE301603	3.0	2.90	0.3	3	16	50	6
UXE302003	3.0	2.90	0.3	3	20	50	6
UXE401002	4.0	3.88	0.2	4	10	50	6
UXE401202	4.0	3.88	0.2	4	12	50	6
UXE401602	4.0	3.88	0.2	4	16	50	6
UXE402002	4.0	3.88	0.2	4	20	60	6
UXE401003	4.0	3.88	0.3	4	10	50	6
UXE401203	4.0	3.88	0.3	4	12	50	6
UXE401603	4.0	3.88	0.3	4	16	50	6
UXE402003	4.0	3.88	0.3	4	20	60	6

unit : mm

UXE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE100401	18	55	15000~17000	400~600	0.04~0.06	1	溝銑 SLOTTING
UXE100401	18	55	15000~17000	800~1200	0.01~0.025	1	溝銑 SLOTTING
UXE100601	20	55	15000~17000	400~600	0.03~0.05	1	溝銑 SLOTTING
UXE100601	20	55	15000~17000	800~1200	0.008~0.02	1	溝銑 SLOTTING
UXE100801	22	55	15000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UXE100801	22	55	15000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UXE101001	24	55	15000~17000	300~500	0.02~0.04	1	溝銑 SLOTTING
UXE101001	24	55	15000~17000	500~700	0.008~0.02	1	溝銑 SLOTTING
UXE101201	26	55	15000~17000	200~400	0.02~0.04	1	溝銑 SLOTTING
UXE101201	26	55	15000~17000	400~600	0.008~0.02	1	溝銑 SLOTTING
UXE100402	18	55	15000~17000	500~700	0.04~0.06	1	溝銑 SLOTTING
UXE100402	18	55	15000~17000	900~1300	0.01~0.025	1	溝銑 SLOTTING
UXE100602	20	55	15000~17000	500~700	0.03~0.05	1	溝銑 SLOTTING
UXE100602	20	55	15000~17000	900~1300	0.008~0.02	1	溝銑 SLOTTING
UXE100802	22	55	15000~17000	400~600	0.03~0.05	1	溝銑 SLOTTING
UXE100802	22	55	15000~17000	700~900	0.008~0.02	1	溝銑 SLOTTING
UXE101002	24	55	15000~17000	400~600	0.02~0.04	1	溝銑 SLOTTING
UXE101002	24	55	15000~17000	700~900	0.008~0.02	1	溝銑 SLOTTING
UXE101202	26	55	15000~17000	300~500	0.02~0.04	1	溝銑 SLOTTING
UXE101202	26	55	15000~17000	500~700	0.008~0.02	1	溝銑 SLOTTING
UXE150401	18	70	13000~15000	400~600	0.06~0.08	1.5	溝銑 SLOTTING
UXE150401	18	70	13000~15000	800~1200	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	70	13000~15000	400~600	0.05~0.07	1.5	溝銑 SLOTTING
UXE150601	20	70	13000~15000	800~1200	0.015~0.035	1.5	溝銑 SLOTTING
UXE150801	22	70	13000~15000	300~500	0.05~0.07	1.5	溝銑 SLOTTING
UXE150801	22	70	13000~15000	600~800	0.015~0.035	1.5	溝銑 SLOTTING
UXE151001	24	70	13000~15000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UXE151001	24	70	13000~15000	500~700	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	70	13000~15000	200~400	0.04~0.06	1.5	溝銑 SLOTTING
UXE151201	26	70	13000~15000	400~600	0.01~0.025	1.5	溝銑 SLOTTING
UXE150402	18	70	13000~15000	500~700	0.06~0.08	1.5	溝銑 SLOTTING
UXE150402	18	70	13000~15000	900~1300	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	70	13000~15000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UXE150602	20	70	13000~15000	900~1300	0.015~0.035	1.5	溝銑 SLOTTING
UXE150802	22	70	13000~15000	400~600	0.05~0.07	1.5	溝銑 SLOTTING
UXE150802	22	70	13000~15000	700~900	0.015~0.035	1.5	溝銑 SLOTTING
UXE151002	24	70	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UXE151002	24	70	13000~15000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	70	13000~15000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UXE151202	26	70	13000~15000	500~700	0.01~0.025	1.5	溝銑 SLOTTING
UXE200801	18	85	11000~13000	500~700	0.1~0.12	2	溝銑 SLOTTING
UXE200801	18	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201001	20	85	11000~13000	400~600	0.09~0.11	2	溝銑 SLOTTING
UXE201001	20	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201201	22	85	11000~13000	400~600	0.08~0.1	2	溝銑 SLOTTING
UXE201201	22	85	11000~13000	1000~1400	0.02~0.06	2	溝銑 SLOTTING
UXE201601	26	85	11000~13000	400~600	0.06~0.08	2	溝銑 SLOTTING
UXE201601	26	85	11000~13000	1000~1400	0.02~0.04	2	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE202001	30	85	11000~13000	300~500	0.05~0.07	2	溝銑 SLOTTING
UXE202001	30	85	11000~13000	800~1200	0.015~0.035	2	溝銑 SLOTTING
UXE200802	18	85	11000~13000	600~800	0.1~0.12	2	溝銑 SLOTTING
UXE200802	18	85	11000~13000	1200~1600	0.02~0.06	2	溝銑 SLOTTING
UXE201002	20	85	11000~13000	500~700	0.09~0.11	2	溝銑 SLOTTING
UXE201002	20	85	11000~13000	1100~1500	0.02~0.06	2	溝銑 SLOTTING
UXE201202	22	85	11000~13000	500~700	0.08~0.1	2	溝銑 SLOTTING
UXE201202	22	85	11000~13000	1100~1500	0.02~0.06	2	溝銑 SLOTTING
UXE201602	26	85	11000~13000	500~700	0.06~0.08	2	溝銑 SLOTTING
UXE201602	26	85	11000~13000	1100~1500	0.02~0.04	2	溝銑 SLOTTING
UXE202002	30	85	11000~13000	400~600	0.05~0.07	2	溝銑 SLOTTING
UXE202002	30	85	11000~13000	900~1300	0.015~0.035	2	溝銑 SLOTTING
UXE300802	18	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE300802	18	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301002	20	105	9000~11000	400~600	0.12~0.14	3	溝銑 SLOTTING
UXE301002	20	105	9000~11000	1000~1400	0.03~0.08	3	溝銑 SLOTTING
UXE301202	22	105	9000~11000	400~600	0.12~0.14	3	溝銑 SLOTTING
UXE301202	22	105	9000~11000	1000~1400	0.03~0.08	3	溝銑 SLOTTING
UXE301602	26	105	9000~11000	400~600	0.08~0.1	3	溝銑 SLOTTING
UXE301602	26	105	9000~11000	1000~1400	0.02~0.06	3	溝銑 SLOTTING
UXE302002	30	105	9000~11000	300~500	0.06~0.08	3	溝銑 SLOTTING
UXE302002	30	105	9000~11000	700~900	0.01~0.035	3	溝銑 SLOTTING
UXE300803	18	105	9000~11000	600~800	0.12~0.14	3	溝銑 SLOTTING
UXE300803	18	105	9000~11000	1200~1600	0.03~0.08	3	溝銑 SLOTTING
UXE301003	20	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE301003	20	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301203	22	105	9000~11000	500~700	0.12~0.14	3	溝銑 SLOTTING
UXE301203	22	105	9000~11000	1100~1500	0.03~0.08	3	溝銑 SLOTTING
UXE301603	26	105	9000~11000	500~700	0.08~0.1	3	溝銑 SLOTTING
UXE301603	26	105	9000~11000	1100~1500	0.02~0.06	3	溝銑 SLOTTING
UXE302003	30	105	9000~11000	400~600	0.06~0.08	3	溝銑 SLOTTING
UXE302003	30	105	9000~11000	800~1000	0.01~0.035	3	溝銑 SLOTTING
UXE401002	20	115	7000~9000	700~900	0.13~0.15	4	溝銑 SLOTTING
UXE401002	20	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE401202	22	115	7000~9000	700~900	0.12~0.14	4	溝銑 SLOTTING
UXE401202	22	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE401602	26	115	7000~9000	600~800	0.08~0.1	4	溝銑 SLOTTING
UXE401602	26	115	7000~9000	1200~1600	0.02~0.06	4	溝銑 SLOTTING
UXE402002	30	115	7000~9000	500~700	0.06~0.08	4	溝銑 SLOTTING
UXE402002	30	115	7000~9000	900~1100	0.015~0.04	4	溝銑 SLOTTING
UXE401003	20	115	7000~9000	800~1000	0.14~0.16	4	溝銑 SLOTTING
UXE401003	20	115	7000~9000	1400~1800	0.04~0.09	4	溝銑 SLOTTING
UXE401203	22	115	7000~9000	800~1000	0.13~0.15	4	溝銑 SLOTTING
UXE401203	22	115	7000~9000	1400~1800	0.04~0.09	4	溝銑 SLOTTING
UXE401603	26	115	7000~9000	700~900	0.09~0.11	4	溝銑 SLOTTING
UXE401603	26	115	7000~9000	1300~1700	0.03~0.08	4	溝銑 SLOTTING
UXE402003	30	115	7000~9000	600~800	0.07~0.09	4	溝銑 SLOTTING
UXE402003	30	115	7000~9000	1000~1200	0.02~0.05	4	溝銑 SLOTTING

UXE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)
冷卻方式 Coolant Type	油霧切削 MQL coolant

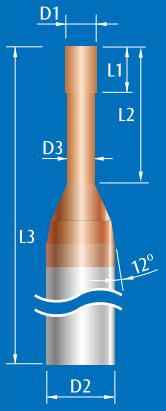
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE100401	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100401	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100601	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100601	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100801	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE100801	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101001	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101001	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101201	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE101201	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE100402	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100402	18	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100602	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100602	20	40	11000~13000	400~600	0.01~0.03	1	溝銑 SLOTTING
UXE100802	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE100802	22	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101002	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101002	24	40	11000~13000	300~500	0.01~0.03	1	溝銑 SLOTTING
UXE101202	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE101202	26	40	11000~13000	200~400	0.01~0.025	1	溝銑 SLOTTING
UXE150401	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150401	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150601	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150801	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150801	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE151001	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151001	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151201	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE150402	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150402	18	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150602	20	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150802	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE150802	22	55	9000~11000	400~600	0.02~0.04	1.5	溝銑 SLOTTING
UXE151002	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151002	24	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE151202	26	55	9000~11000	300~500	0.01~0.025	1.5	溝銑 SLOTTING
UXE200801	18	60	7000~9000	500~700	0.04~0.06	2	溝銑 SLOTTING
UXE200801	18	60	7000~9000	800~1000	0.01~0.025	2	溝銑 SLOTTING
UXE201001	20	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201001	20	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201201	22	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201201	22	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201601	26	60	7000~9000	400~600	0.02~0.04	2	溝銑 SLOTTING
UXE201601	26	60	7000~9000	800~1000	0.008~0.015	2	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UXE202001	30	60	7000~9000	300~500	0.02~0.04	2	溝銑 SLOTTING
UXE202001	30	60	7000~9000	600~800	0.008~0.013	2	溝銑 SLOTTING
UXE200802	18	60	7000~9000	500~700	0.04~0.06	2	溝銑 SLOTTING
UXE200802	18	60	7000~9000	800~1000	0.01~0.025	2	溝銑 SLOTTING
UXE201002	20	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201002	20	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201202	22	60	7000~9000	400~600	0.03~0.05	2	溝銑 SLOTTING
UXE201202	22	60	7000~9000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UXE201602	26	60	7000~9000	400~600	0.02~0.04	2	溝銑 SLOTTING
UXE201602	26	60	7000~9000	800~1000	0.008~0.015	2	溝銑 SLOTTING
UXE202002	30	60	7000~9000	300~500	0.02~0.04	2	溝銑 SLOTTING
UXE202002	30	60	7000~9000	600~800	0.008~0.013	2	溝銑 SLOTTING
UXE300802	18	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE300802	18	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301002	20	65	5000~7000	400~600	0.05~0.07	3	溝銑 SLOTTING
UXE301002	20	65	5000~7000	800~1000	0.01~0.03	3	溝銑 SLOTTING
UXE301202	22	65	5000~7000	400~600	0.05~0.07	3	溝銑 SLOTTING
UXE301202	22	65	5000~7000	800~1000	0.01~0.03	3	溝銑 SLOTTING
UXE301602	26	65	5000~7000	400~600	0.03~0.05	3	溝銑 SLOTTING
UXE301602	26	65	5000~7000	400~600	0.03~0.05	3	溝銑 SLOTTING
UXE302002	30	65	5000~7000	300~500	0.02~0.04	3	溝銑 SLOTTING
UXE302002	30	65	5000~7000	300~500	0.02~0.04	3	溝銑 SLOTTING
UXE300803	18	65	5000~7000	600~800	0.05~0.07	3	溝銑 SLOTTING
UXE300803	18	65	5000~7000	1000~1200	0.01~0.03	3	溝銑 SLOTTING
UXE301003	20	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE301003	20	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301203	22	65	5000~7000	500~700	0.05~0.07	3	溝銑 SLOTTING
UXE301203	22	65	5000~7000	900~1100	0.01~0.03	3	溝銑 SLOTTING
UXE301603	26	65	5000~7000	500~700	0.03~0.05	3	溝銑 SLOTTING
UXE301603	26	65	5000~7000	500~700	0.03~0.05	3	溝銑 SLOTTING
UXE302003	30	65	5000~7000	400~600	0.02~0.04	3	溝銑 SLOTTING
UXE302003	30	65	5000~7000	400~600	0.02~0.04	3	溝銑 SLOTTING
UXE401002	20	65	4000~5000	700~900	0.08~0.1	4	溝銑 SLOTTING
UXE401002	20	65	4000~5000	1100~1300	0.02~0.04	4	溝銑 SLOTTING
UXE401202	22	65	4000~5000	700~900	0.06~0.08	4	溝銑 SLOTTING
UXE401202	22	65	4000~5000	1000~1200	0.02~0.04	4	溝銑 SLOTTING
UXE401602	26	65	4000~5000	600~800	0.05~0.07	4	溝銑 SLOTTING
UXE401602	26	65	4000~5000	900~1100	0.01~0.03	4	溝銑 SLOTTING
UXE402002	30	65	4000~5000	500~700	0.04~0.06	4	溝銑 SLOTTING
UXE402002	30	65	4000~5000	800~1000	0.01~0.03	4	溝銑 SLOTTING
UXE401003	20	65	4000~5000	800~1000	0.08~0.1	4	溝銑 SLOTTING
UXE401003	20	65	4000~5000	1200~1400	0.02~0.04	4	溝銑 SLOTTING
UXE401203	22	65	4000~5000	800~1000	0.06~0.08	4	溝銑 SLOTTING
UXE401203	22	65	4000~5000	1100~1300	0.02~0.04	4	溝銑 SLOTTING
UXE401603	26	65	4000~5000	700~900	0.05~0.07	4	溝銑 SLOTTING
UXE401603	26	65	4000~5000	1000~1200	0.01~0.03	4	溝銑 SLOTTING
UXE402003	30	65	4000~5000	600~800	0.04~0.06	4	溝銑 SLOTTING
UXE402003	30	65	4000~5000	900~1100	0.01~0.03	4	溝銑 SLOTTING

UNE Long Neck, Corner Radius

End Mills 深溝用圓鼻立銑刀





直徑 D1	1.0	1.5	2.0	3.0	4.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02
柄徑 Shank(h6)	Ø6				
柄徑公差值 D2 Tolerance	0 -0.008				

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNE1004	1.0	0.95	0.1	1.5	4	50	6
UNE1006	1.0	0.95	0.1	1.5	6	50	6
UNE1008	1.0	0.95	0.1	1.5	8	50	6
UNE1010	1.0	0.95	0.1	1.5	10	50	6
UNE1012	1.0	0.95	0.1	1.5	12	50	6
UNE1504	1.5	1.44	0.1	1.5	4	50	6
UNE1508	1.5	1.44	0.1	1.5	8	50	6
UNE1510	1.5	1.44	0.1	1.5	10	50	6
UNE1512	1.5	1.44	0.1	1.5	12	50	6
UNE2008	2.0	1.92	0.2	2	8	50	6
UNE2010	2.0	1.92	0.2	2	10	50	6
UNE2012	2.0	1.92	0.2	2	12	50	6
UNE2016	2.0	1.92	0.2	2	16	50	6
UNE3008	3.0	2.90	0.2	3	8	50	6
UNE3012	3.0	2.90	0.2	3	12	50	6
UNE3016	3.0	2.90	0.2	3	16	50	6
UNE3020	3.0	2.90	0.2	3	20	50	6
UNE4010	4.0	3.88	0.2	4	10	50	6
UNE4016	4.0	3.88	0.2	4	16	50	6
UNE4020	4.0	3.88	0.2	4	20	60	6

unit : mm

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

UNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNE1004	16	60	17000~18000	300~500	0.04~0.06	1	溝銑 SLOTTING
UNE1004	16	60	17000~18000	700~900	0.01~0.025	1	溝銑 SLOTTING
UNE1006	18	60	17000~18000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNE1006	18	60	17000~18000	700~900	0.008~0.015	1	溝銑 SLOTTING
UNE1008	20	60	17000~18000	200~400	0.03~0.05	1	溝銑 SLOTTING
UNE1008	20	60	17000~18000	600~800	0.008~0.015	1	溝銑 SLOTTING
UNE1010	22	60	17000~18000	200~400	0.02~0.04	1	溝銑 SLOTTING
UNE1010	22	60	17000~18000	500~700	0.008~0.015	1	溝銑 SLOTTING
UNE1012	24	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1012	24	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1504	16	80	16000~17000	400~600	0.06~0.08	1.5	溝銑 SLOTTING
UNE1504	16	80	16000~17000	800~1000	0.015~0.035	1.5	溝銑 SLOTTING
UNE1508	18	80	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNE1508	18	80	16000~17000	800~1000	0.01~0.025	1.5	溝銑 SLOTTING
UNE1510	20	80	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNE1510	20	80	16000~17000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UNE1512	22	80	16000~17000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1512	22	80	16000~17000	700~900	0.008~0.015	1.5	溝銑 SLOTTING
UNE2008	20	100	14000~16000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNE2008	20	100	14000~16000	900~1100	0.02~0.04	2	溝銑 SLOTTING
UNE2010	22	100	14000~16000	500~700	0.04~0.06	2	溝銑 SLOTTING
UNE2010	22	100	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
UNE2012	24	100	14000~16000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNE2012	24	100	14000~16000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNE2016	28	100	14000~16000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNE2016	28	100	14000~16000	600~800	0.008~0.02	2	溝銑 SLOTTING
UNE3008	15	125	11000~13000	600~800	0.12~0.14	3	溝銑 SLOTTING
UNE3008	15	125	11000~13000	1200~1600	0.04~0.08	3	溝銑 SLOTTING
UNE3012	19	125	11000~13000	600~800	0.1~0.12	3	溝銑 SLOTTING
UNE3012	19	125	11000~13000	1200~1600	0.03~0.07	3	溝銑 SLOTTING
UNE3016	23	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNE3016	23	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNE3020	27	125	11000~13000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNE3020	27	125	11000~13000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNE4010	17	140	9000~11000	800~1000	0.12~0.14	4	溝銑 SLOTTING
UNE4010	17	140	9000~11000	1400~1800	0.04~0.08	4	溝銑 SLOTTING
UNE4016	23	140	9000~11000	600~800	0.1~0.12	4	溝銑 SLOTTING
UNE4016	23	140	9000~11000	1200~1600	0.03~0.07	4	溝銑 SLOTTING
UNE4020	27	140	9000~11000	600~800	0.06~0.08	4	溝銑 SLOTTING
UNE4020	27	140	9000~11000	1200~1600	0.02~0.04	4	溝銑 SLOTTING

UNE

切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNE1004	16	50	14000~15000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNE1004	16	50	14000~15000	500~700	0.01~0.03	1	溝銑 SLOTTING
UNE1006	18	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNE1006	18	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNE1008	20	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1008	20	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1010	22	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1010	22	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNE1012	24	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNE1012	24	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNE1504	16	65	13000~14000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNE1504	16	65	13000~14000	600~800	0.015~0.03	1.5	溝銑 SLOTTING
UNE1508	18	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1508	18	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNE1510	20	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNE1510	20	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNE1512	22	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNE1512	22	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNE2008	20	85	12000~13000	400~600	0.03~0.05	2	溝銑 SLOTTING
UNE2008	20	85	12000~13000	700~900	0.01~0.02	2	溝銑 SLOTTING
UNE2010	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNE2010	22	85	12000~13000	600~800	0.01~0.02	2	溝銑 SLOTTING
UNE2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNE2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNE2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNE2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNE3008	15	105	11000~12000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNE3008	15	105	11000~12000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNE3012	19	105	11000~12000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNE3012	19	105	11000~12000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNE3016	23	105	11000~12000	400~600	0.04~0.06	3	溝銑 SLOTTING
UNE3016	23	105	11000~12000	800~1000	0.01~0.025	3	溝銑 SLOTTING
UNE3020	27	105	11000~12000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNE3020	27	105	11000~12000	600~800	0.01~0.02	3	溝銑 SLOTTING
UNE4010	17	115	7000~9000	500~700	0.06~0.08	4	溝銑 SLOTTING
UNE4010	17	115	7000~9000	900~1100	0.02~0.04	4	溝銑 SLOTTING
UNE4016	23	115	7000~9000	400~600	0.04~0.06	4	溝銑 SLOTTING
UNE4016	23	115	7000~9000	800~1000	0.01~0.03	4	溝銑 SLOTTING
UNE4020	27	115	7000~9000	400~600	0.03~0.05	4	溝銑 SLOTTING
UNE4020	27	115	7000~9000	600~800	0.01~0.03	4	溝銑 SLOTTING

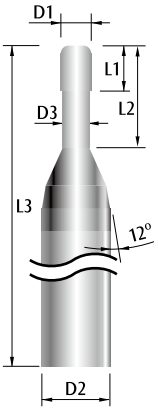
UNER Long Neck, Corner Radius

深溝用圓鼻立銑刀 End Mills



直徑 D1	1.0	1.5	2.0	2.5	3.0
R徑公差值 R Tolerance	+0.02 0	+0.02 0	+0.02 0	+0.02 0	+0.02 0
直徑公差值 D1 Tolerance	0 -0.02	0 -0.02	0 -0.02	0 -0.02	0 -0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008



型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	R R角 Conner R	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UNER1006	1.0	0.95	0.2	1.5	6	50	4
UNER1008	1.0	0.95	0.2	1.5	8	50	4
UNER1010	1.0	0.95	0.2	1.5	10	50	4
UNER1012	1.0	0.95	0.2	1.5	12	50	4
UNER1508	1.5	1.44	0.2	2	8	50	4
UNER1510	1.5	1.44	0.2	2	10	50	4
UNER1512	1.5	1.44	0.2	2	12	50	4
UNER1516	1.5	1.44	0.2	2	16	50	4
UNER2008	2.0	1.92	0.2	3	8	50	4
UNER2010	2.0	1.92	0.2	3	10	50	4
UNER2012	2.0	1.92	0.2	3	12	50	4
UNER2016	2.0	1.92	0.2	3	16	50	4
UNER2020	2.0	1.92	0.2	3	20	50	4
UNER2510	2.5	2.40	0.2	3	10	50	4
UNER2512	2.5	2.40	0.2	3	12	50	4
UNER2516	2.5	2.40	0.2	3	16	50	4
UNER2520	2.5	2.40	0.2	3	20	50	4
UNER3010	3.0	2.90	0.2	4	10	50	6
UNER3012	3.0	2.90	0.2	4	12	50	6
UNER3016	3.0	2.90	0.2	4	16	50	6
UNER3020	3.0	2.90	0.2	4	20	60	6
UNER3025	3.0	2.90	0.2	4	25	60	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

UNER 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)
冷卻方式 Coolant Type	濕式切削 Wet coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UNER1006	13	60	17000~18000	300~500	0.03~0.05	1	溝銑 SLOTTING
UNER1006	13	60	17000~18000	700~900	0.008~0.015	1	溝銑 SLOTTING
UNER1008	15	60	17000~18000	200~400	0.03~0.05	1	溝銑 SLOTTING
UNER1008	15	60	17000~18000	600~800	0.008~0.015	1	溝銑 SLOTTING
UNER1010	17	60	17000~18000	200~400	0.02~0.04	1	溝銑 SLOTTING
UNER1010	17	60	17000~18000	500~700	0.008~0.015	1	溝銑 SLOTTING
UNER1012	19	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1012	19	60	17000~18000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1508	17	80	16000~17000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UNER1508	17	80	16000~17000	800~1000	0.01~0.025	1.5	溝銑 SLOTTING
UNER1510	19	80	16000~17000	300~500	0.04~0.06	1.5	溝銑 SLOTTING
UNER1510	19	80	16000~17000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UNER1512	21	80	16000~17000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1512	21	80	16000~17000	700~900	0.008~0.015	1.5	溝銑 SLOTTING
UNER1516	25	80	16000~17000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1516	25	80	16000~17000	500~700	0.008~0.015	1.5	溝銑 SLOTTING
UNER2008	20	100	14000~16000	500~700	0.05~0.07	2	溝銑 SLOTTING
UNER2008	20	100	14000~16000	900~1100	0.02~0.04	2	溝銑 SLOTTING
UNER2010	22	100	14000~16000	500~700	0.04~0.06	2	溝銑 SLOTTING
UNER2010	22	100	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
UNER2012	24	100	14000~16000	400~600	0.04~0.06	2	溝銑 SLOTTING
UNER2012	24	100	14000~16000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UNER2016	28	100	14000~16000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNER2016	28	100	14000~16000	600~800	0.008~0.02	2	溝銑 SLOTTING
UNER2020	32	100	14000~16000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2020	32	100	14000~16000	500~700	0.008~0.02	2	溝銑 SLOTTING
UNER2510	20	110	13000~14000	600~800	0.06~0.08	2.5	溝銑 SLOTTING
UNER2510	20	110	13000~14000	1100~1400	0.02~0.05	2.5	溝銑 SLOTTING
UNER2512	22	110	13000~14000	500~700	0.06~0.08	2.5	溝銑 SLOTTING
UNER2512	22	110	13000~14000	1000~1300	0.02~0.05	2.5	溝銑 SLOTTING
UNER2516	26	110	13000~14000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
UNER2516	26	110	13000~14000	800~1000	0.01~0.025	2.5	溝銑 SLOTTING
UNER2520	30	110	13000~14000	300~500	0.03~0.05	2.5	溝銑 SLOTTING
UNER2520	30	110	13000~14000	600~800	0.01~0.02	2.5	溝銑 SLOTTING
UNER3010	18	125	11000~13000	700~900	0.1~0.12	3	溝銑 SLOTTING
UNER3010	18	125	11000~13000	1300~1700	0.03~0.07	3	溝銑 SLOTTING
UNER3012	20	125	11000~13000	600~800	0.1~0.12	3	溝銑 SLOTTING
UNER3012	20	125	11000~13000	1200~1600	0.03~0.07	3	溝銑 SLOTTING
UNER3016	24	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UNER3016	24	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UNER3020	28	125	11000~13000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNER3020	28	125	11000~13000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNER3025	33	125	11000~13000	400~600	0.05~0.07	3	溝銑 SLOTTING
UNER3025	33	125	11000~13000	800~1000	0.01~0.03	3	溝銑 SLOTTING

UNER 切削條件表 MILLING CONDITIONS

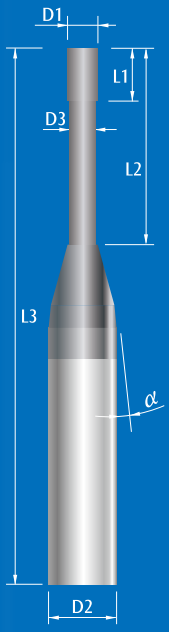
被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	乾式切削 Dry coolant

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UNER1006	13	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNER1006	13	50	14000~15000	300~500	0.02~0.04	1	溝銑 SLOTTING
UNER1008	15	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1008	15	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1010	17	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1010	17	50	14000~15000	200~400	0.01~0.03	1	溝銑 SLOTTING
UNER1012	19	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNER1012	19	50	14000~15000	200~400	0.008~0.015	1	溝銑 SLOTTING
UNER1508	17	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1508	17	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNER1510	19	65	13000~14000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UNER1510	19	65	13000~14000	600~800	0.01~0.02	1.5	溝銑 SLOTTING
UNER1512	21	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1512	21	65	13000~14000	200~400	0.02~0.04	1.5	溝銑 SLOTTING
UNER1516	25	65	13000~14000	200~400	0.01~0.03	1.5	溝銑 SLOTTING
UNER1516	25	65	13000~14000	200~400	0.01~0.03	1.5	溝銑 SLOTTING
UNER2008	20	85	12000~13000	400~600	0.03~0.05	2	溝銑 SLOTTING
UNER2008	20	85	12000~13000	700~900	0.01~0.02	2	溝銑 SLOTTING
UNER2010	22	85	12000~13000	300~500	0.03~0.05	2	溝銑 SLOTTING
UNER2010	22	85	12000~13000	600~800	0.01~0.02	2	溝銑 SLOTTING
UNER2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2012	24	85	12000~13000	300~500	0.02~0.04	2	溝銑 SLOTTING
UNER2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNER2016	28	85	12000~13000	200~400	0.02~0.04	2	溝銑 SLOTTING
UNER2020	32	85	12000~13000	200~400	0.01~0.03	2	溝銑 SLOTTING
UNER2020	32	85	12000~13000	200~400	0.01~0.03	2	溝銑 SLOTTING
UNER2510	20	95	11000~12000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
UNER2510	20	95	11000~12000	600~800	0.02~0.04	2.5	溝銑 SLOTTING
UNER2512	22	95	11000~12000	400~600	0.03~0.05	2.5	溝銑 SLOTTING
UNER2512	22	95	11000~12000	600~800	0.01~0.02	2.5	溝銑 SLOTTING
UNER2516	26	95	11000~12000	300~500	0.02~0.04	2.5	溝銑 SLOTTING
UNER2516	26	95	11000~12000	300~500	0.02~0.04	2.5	溝銑 SLOTTING
UNER2520	30	95	11000~12000	200~400	0.01~0.03	2.5	溝銑 SLOTTING
UNER2520	30	95	11000~12000	200~400	0.01~0.03	2.5	溝銑 SLOTTING
UNER3010	18	105	11000~12000	500~700	0.06~0.08	3	溝銑 SLOTTING
UNER3010	18	105	11000~12000	900~1100	0.02~0.04	3	溝銑 SLOTTING
UNER3012	20	105	11000~12000	400~600	0.06~0.08	3	溝銑 SLOTTING
UNER3012	20	105	11000~12000	800~1000	0.02~0.04	3	溝銑 SLOTTING
UNER3016	24	105	11000~12000	400~600	0.04~0.06	3	溝銑 SLOTTING
UNER3016	24	105	11000~12000	800~1000	0.01~0.025	3	溝銑 SLOTTING
UNER3020	28	105	11000~12000	300~500	0.03~0.05	3	溝銑 SLOTTING
UNER3020	28	105	11000~12000	600~800	0.01~0.02	3	溝銑 SLOTTING
UNER3025	33	105	11000~12000	200~400	0.02~0.04	3	溝銑 SLOTTING
UNER3025	33	105	11000~12000	200~400	0.02~0.04	3	溝銑 SLOTTING

UDE Long Neck

End Mills 深溝用立銑刀





直徑 D1	0.2	0.3	0.4	0.5	1.0	1.2	1.5
直徑公差值 D1 Tolerance	0 −0.015	0 −0.015	0 −0.015	0 −0.015	0 −0.02	0 −0.02	0 −0.02

直徑 D1	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

D1≦0. 5&L2≦4mm α=15°
D1>0. 5&L2<4mm α=15°
The Other α=12°

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UDE0201	0.2	0.18	0.3	1	50	4
UDE0202	0.2	0.18	0.3	2	50	4
UDE0301	0.3	0.26	0.4	1	50	4
UDE0302	0.3	0.26	0.4	2	50	4
UDE0303	0.3	0.26	0.4	3	50	4
UDE0402	0.4	0.36	0.6	2	50	4
UDE0403	0.4	0.36	0.6	3	50	4
UDE0404	0.4	0.36	0.6	4	50	4
UDE0502	0.5	0.46	0.8	2	50	4

unit : mm

精銑 Finishing
中銑 Semi-finishing ------
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

UDE Long Neck

深溝用立銑刀 End Mills

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
UDE0504	0.5	0.46	0.8	4	50	4
UDE0506	0.5	0.46	0.8	6	50	4
UDE0602	0.6	0.55	0.9	2	50	4
UDE0604	0.6	0.55	0.9	4	50	4
UDE0606	0.6	0.55	0.9	6	50	4
UDE0702	0.7	0.65	1	2	50	4
UDE0704	0.7	0.65	1	4	50	4
UDE0706	0.7	0.65	1	6	50	4
UDE0802	0.8	0.75	1.2	2	50	4
UDE0804	0.8	0.75	1.2	4	50	4
UDE0806	0.8	0.75	1.2	6	50	4
UDE0808	0.8	0.75	1.2	8	50	4
UDE1006	1.0	0.95	1.5	6	50	4
UDE1008	1.0	0.95	1.5	8	50	4
UDE1010	1.0	0.95	1.5	10	50	4
UDE1012	1.0	0.95	1.5	12	50	4
UDE1206	1.2	1.15	1.8	6	50	4
UDE1208	1.2	1.15	1.8	8	50	4
UDE1210	1.2	1.15	1.8	10	50	4
UDE1508	1.5	1.44	2	8	50	4
UDE1510	1.5	1.44	2	10	50	4
UDE1512	1.5	1.44	2	12	50	4
UDE1516	1.5	1.44	2	16	50	4
UDE2008	2.0	1.92	3	8	50	4
UDE2010	2.0	1.92	3	10	50	4
UDE2012	2.0	1.92	3	12	50	4
UDE2016	2.0	1.92	3	16	50	4
UDE2020	2.0	1.92	3	20	50	4
UDE2510	2.5	2.40	3	10	50	4
UDE2512	2.5	2.40	3	12	50	4
UDE2516	2.5	2.40	3	16	50	4
UDE2520	2.5	2.40	3	20	50	4
UDE3010	3.0	2.90	4	10	50	6
UDE3012	3.0	2.90	4	12	50	6
UDE3016	3.0	2.90	4	16	50	6
UDE3020	3.0	2.90	4	20	60	6
UDE3025	3.0	2.90	4	25	60	6

unit : mm

UDE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	熱處理鋼 :*Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)
冷卻方式 Coolant Type	油霧切削 MQL coolant

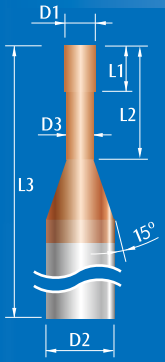
型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_P) Width of Cut	加工方式 Milling Type
UDE0201	10	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0201	10	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0202	11	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0202	11	15	18000~20000	100~150	0.003~0.006	0.2	溝銑 SLOTTING
UDE0301	10	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0301	10	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0302	12	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0302	12	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0303	13	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0303	13	20	18000~20000	100~150	0.005~0.008	0.3	溝銑 SLOTTING
UDE0402	12	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0402	12	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0403	13	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0403	13	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0404	14	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0404	14	25	18000~20000	100~200	0.008~0.012	0.4	溝銑 SLOTTING
UDE0502	11	30	17000~18000	150~250	0.008~0.015	0.5	溝銑 SLOTTING
UDE0502	11	30	17000~18000	150~250	0.008~0.015	0.5	溝銑 SLOTTING
UDE0504	13	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0504	13	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0506	15	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0506	15	30	17000~18000	100~200	0.008~0.015	0.5	溝銑 SLOTTING
UDE0602	11	35	17000~18000	200~300	0.01~0.018	0.6	溝銑 SLOTTING
UDE0602	11	35	17000~18000	200~300	0.01~0.018	0.6	溝銑 SLOTTING
UDE0604	13	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0604	13	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0606	15	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0606	15	35	17000~18000	150~250	0.008~0.015	0.6	溝銑 SLOTTING
UDE0702	11	40	17000~18000	200~300	0.01~0.02	0.7	溝銑 SLOTTING
UDE0702	11	40	17000~18000	200~300	0.01~0.02	0.7	溝銑 SLOTTING
UDE0704	13	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0704	13	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0706	15	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0706	15	40	17000~18000	150~250	0.01~0.02	0.7	溝銑 SLOTTING
UDE0802	12	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0802	12	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0804	14	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0804	14	45	16000~17000	250~350	0.015~0.025	0.8	溝銑 SLOTTING
UDE0806	16	45	16000~17000	200~300	0.015~0.025	0.8	溝銑 SLOTTING
UDE0806	16	45	16000~17000	200~300	0.015~0.025	0.8	溝銑 SLOTTING
UDE0808	18	45	16000~17000	150~250	0.01~0.02	0.8	溝銑 SLOTTING
UDE0808	18	45	16000~17000	150~250	0.01~0.02	0.8	溝銑 SLOTTING
UDE1006	13	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1006	13	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UDE1008	15	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1008	15	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING

型號 Type No.	刀具伸長量 Extension Length (mm)	切削速度 Cutting Speed (m/min)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
UDE1010	17	55	16000~17000	300~500	0.03~0.05	1	溝銑 SLOTTING
UDE1010	17	55	16000~17000	600~800	0.008~0.02	1	溝銑 SLOTTING
UDE1012	19	55	16000~17000	200~400	0.02~0.04	1	溝銑 SLOTTING
UDE1012	19	55	16000~17000	400~600	0.008~0.02	1	溝銑 SLOTTING
UDE1206	13	65	16000~17000	400~600	0.04~0.06	1.2	溝銑 SLOTTING
UDE1206	13	65	16000~17000	700~900	0.01~0.025	1.2	溝銑 SLOTTING
UDE1208	15	65	16000~17000	400~600	0.03~0.05	1.2	溝銑 SLOTTING
UDE1208	15	65	16000~17000	700~900	0.01~0.025	1.2	溝銑 SLOTTING
UDE1210	17	65	16000~17000	300~500	0.03~0.05	1.2	溝銑 SLOTTING
UDE1210	17	65	16000~17000	600~800	0.008~0.02	1.2	溝銑 SLOTTING
UDE1508	15	75	15000~16000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UDE1508	15	75	15000~16000	800~1000	0.01~0.03	1.5	溝銑 SLOTTING
UDE1510	17	75	15000~16000	500~700	0.05~0.07	1.5	溝銑 SLOTTING
UDE1510	17	75	15000~16000	800~1000	0.01~0.03	1.5	溝銑 SLOTTING
UDE1512	19	75	15000~16000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
UDE1512	19	75	15000~16000	700~900	0.01~0.025	1.5	溝銑 SLOTTING
UDE1516	23	75	15000~16000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
UDE1516	23	75	15000~16000	600~800	0.008~0.02	1.5	溝銑 SLOTTING
UDE2008	15	95	13000~15000	600~800	0.06~0.08	2	溝銑 SLOTTING
UDE2008	15	95	13000~15000	1000~1400	0.015~0.04	2	溝銑 SLOTTING
UDE2010	17	95	13000~15000	600~800	0.06~0.08	2	溝銑 SLOTTING
UDE2010	17	95	13000~15000	1000~1400	0.015~0.04	2	溝銑 SLOTTING
UDE2012	19	95	13000~15000	500~700	0.05~0.07	2	溝銑 SLOTTING
UDE2012	19	95	13000~15000	800~1000	0.01~0.03	2	溝銑 SLOTTING
UDE2016	23	95	13000~15000	400~600	0.04~0.06	2	溝銑 SLOTTING
UDE2016	23	95	13000~15000	800~1000	0.008~0.02	2	溝銑 SLOTTING
UDE2020	27	95	13000~15000	300~500	0.04~0.06	2	溝銑 SLOTTING
UDE2020	27	95	13000~15000	700~900	0.008~0.02	2	溝銑 SLOTTING
UDE2510	17	120	13000~15000	600~800	0.08~0.1	2.5	溝銑 SLOTTING
UDE2510	17	120	13000~15000	1200~1600	0.03~0.05	2.5	溝銑 SLOTTING
UDE2512	19	120	13000~15000	400~600	0.08~0.1	2.5	溝銑 SLOTTING
UDE2512	19	120	13000~15000	1000~1400	0.03~0.05	2.5	溝銑 SLOTTING
UDE2516	23	120	13000~15000	400~600	0.07~0.09	2.5	溝銑 SLOTTING
UDE2516	23	120	13000~15000	1000~1400	0.02~0.04	2.5	溝銑 SLOTTING
UDE2520	27	120	13000~15000	400~600	0.05~0.07	2.5	溝銑 SLOTTING
UDE2520	27	120	13000~15000	800~1200	0.015~0.035	2.5	溝銑 SLOTTING
UDE3010	17	125	11000~13000	800~1000	0.1~0.12	3	溝銑 SLOTTING
UDE3010	17	125	11000~13000	1300~1700	0.04~0.07	3	溝銑 SLOTTING
UDE3012	19	125	11000~13000	600~800	0.08~0.1	3	溝銑 SLOTTING
UDE3012	19	125	11000~13000	1100~1500	0.03~0.06	3	溝銑 SLOTTING
UDE3016	23	125	11000~13000	500~700	0.07~0.09	3	溝銑 SLOTTING
UDE3016	23	125	11000~13000	1000~1400	0.02~0.05	3	溝銑 SLOTTING
UDE3020	27	125	11000~13000	400~600	0.06~0.08	3	溝銑 SLOTTING
UDE3020	27	125	11000~13000	1000~1400	0.015~0.035	3	溝銑 SLOTTING
UDE3025	32	125	11000~13000	400~600	0.05~0.07	3	溝銑 SLOTTING
UDE3025	32	125	11000~13000	1000~1400	0.015~0.035	3	溝銑 SLOTTING

LNE Long Neck

End Mills 深溝用立銑刀





直徑 D1	0.5	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.015	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNE0502	0.5	0.46	0.8	2	50	4
LNE0504	0.5	0.46	0.8	4	50	4
LNE0506	0.5	0.46	0.8	6	50	4
LNE1006	1.0	0.95	1.5	6	50	4
LNE1008	1.0	0.95	1.5	8	50	4
LNE1010	1.0	0.95	1.5	10	50	4
LNE1012	1.0	0.95	1.5	12	50	4
LNE1508	1.5	1.45	2	8	50	4
LNE1510	1.5	1.45	2	10	50	4
LNE1512	1.5	1.45	2	12	50	4
LNE1516	1.5	1.45	2	16	50	4
LNE2008	2.0	1.92	3	8	50	4
LNE2010	2.0	1.92	3	10	50	4
LNE2012	2.0	1.92	3	12	50	4
LNE2016	2.0	1.92	3	16	50	4
LNE2020	2.0	1.92	3	20	50	4
LNE2510	2.5	2.42	3	10	50	4
LNE2512	2.5	2.42	3	12	50	4
LNE2516	2.5	2.42	3	16	50	4
LNE2520	2.5	2.42	3	20	50	4
LNE3010	3.0	2.90	4	10	50	6
LNE3012	3.0	2.90	4	12	50	6
LNE3016	3.0	2.90	4	16	50	6
LNE3020	3.0	2.90	4	20	60	6
LNE3025	3.0	2.90	4	25	60	6

unit : mm

精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~300	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	300~500	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNE1006	15	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNE1008	17	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNE1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1510	17	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNE1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNE1512	19	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNE1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNE1516	21	13000~15000	600~800	0.01~0.025	1.5	溝銑 SLOTTING
LNE2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNE2008	15	12000~14000	800~1200	0.015~0.045	2	溝銑 SLOTTING
LNE2010	17	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNE2010	17	12000~14000	800~1200	0.015~0.03	2	溝銑 SLOTTING
LNE2012	19	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNE2012	19	12000~14000	700~1000	0.01~0.03	2	溝銑 SLOTTING
LNE2016	23	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNE2016	23	12000~14000	700~1000	0.01~0.02	2	溝銑 SLOTTING
LNE2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNE2020	26	12000~14000	700~1000	0.01~0.02	2	溝銑 SLOTTING
LNE2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNE2510	17	12000~14000	1000~1400	0.025~0.06	2.5	溝銑 SLOTTING
LNE2512	19	12000~14000	800~1000	0.07~0.09	2.5	溝銑 SLOTTING
LNE2512	19	12000~14000	1000~1400	0.025~0.06	2.5	溝銑 SLOTTING
LNE2516	23	12000~14000	700~900	0.05~0.07	2.5	溝銑 SLOTTING
LNE2516	23	12000~14000	900~1200	0.01~0.035	2.5	溝銑 SLOTTING
LNE2520	26	12000~14000	400~600	0.03~0.05	2.5	溝銑 SLOTTING
LNE2520	26	12000~14000	800~1000	0.01~0.025	2.5	溝銑 SLOTTING
LNE3010	20	11000~13000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNE3010	20	11000~13000	1200~1400	0.015~0.04	3	溝銑 SLOTTING
LNE3012	22	11000~13000	600~800	0.06~0.08	3	溝銑 SLOTTING
LNE3012	22	11000~13000	1200~1400	0.015~0.04	3	溝銑 SLOTTING
LNE3016	26	11000~13000	400~600	0.06~0.08	3	溝銑 SLOTTING
LNE3016	26	11000~13000	1000~1200	0.015~0.04	3	溝銑 SLOTTING
LNE3020	30	11000~13000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNE3020	30	11000~13000	800~1200	0.01~0.03	3	溝銑 SLOTTING
LNE3025	34	11000~13000	400~600	0.02~0.04	3	溝銑 SLOTTING
LNE3025	34	11000~13000	600~800	0.01~0.015	3	溝銑 SLOTTING

LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~400	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	400~600	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~300	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	300~500	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNE1006	15	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNE1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNE1008	17	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNE1012	20	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNE1508	15	15000~17000	1200~1400	0.02~0.05	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	1000~1200	0.015~0.03	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNE2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNE2008	15	14000~16000	1600~1800	0.03~0.07	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1600~1800	0.025~0.05	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1200~1400	0.06~0.08	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1600~1800	0.02~0.04	2	溝銑 SLOTTING
LNE2016	23	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNE2016	23	14000~16000	1200~1400	0.015~0.03	2	溝銑 SLOTTING
LNE2020	26	14000~16000	600~800	0.03~0.05	2	溝銑 SLOTTING
LNE2020	26	14000~16000	1000~1200	0.01~0.025	2	溝銑 SLOTTING
LNE2510	17	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNE2510	17	13000~15000	1800~2000	0.03~0.06	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1400~1600	0.08~0.1	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1800~2000	0.03~0.06	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1500~1700	0.025~0.05	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	1200~1400	0.015~0.03	2.5	溝銑 SLOTTING
LNE3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNE3010	20	12000~14000	2100~2300	0.035~0.08	3	溝銑 SLOTTING
LNE3012	22	12000~14000	1800~2000	0.1~0.12	3	溝銑 SLOTTING
LNE3012	22	12000~14000	2100~2300	0.03~0.07	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1600~1800	0.08~0.1	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1900~2100	0.02~0.045	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1200~1400	0.06~0.08	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1500~1700	0.015~0.035	3	溝銑 SLOTTING
LNE3025	34	12000~14000	800~1000	0.04~0.06	3	溝銑 SLOTTING
LNE3025	34	12000~14000	1200~1400	0.015~0.03	3	溝銑 SLOTTING

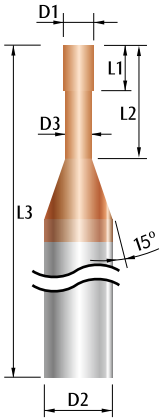
LNE 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNE0502	11	16000~18000	200~300	0.015~0.02	0.5	溝銑 SLOTTING
LNE0502	11	16000~18000	400~500	0.005~0.015	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	150~250	0.015~0.02	0.5	溝銑 SLOTTING
LNE0504	13	16000~18000	300~400	0.005~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	150~220	0.01~0.015	0.5	溝銑 SLOTTING
LNE0506	15	16000~18000	250~350	0.005~0.01	0.5	溝銑 SLOTTING
LNE1006	15	16000~18000	400~500	0.03~0.05	1	溝銑 SLOTTING
LNE1006	15	16000~18000	600~700	0.01~0.025	1	溝銑 SLOTTING
LNE1008	17	16000~18000	350~450	0.03~0.05	1	溝銑 SLOTTING
LNE1008	17	16000~18000	550~650	0.01~0.025	1	溝銑 SLOTTING
LNE1010	19	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNE1010	19	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNE1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNE1012	20	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNE1508	15	15000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNE1508	15	15000~17000	1100~1300	0.02~0.05	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	700~900	0.05~0.07	1.5	溝銑 SLOTTING
LNE1510	17	15000~17000	900~1100	0.015~0.04	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNE1512	19	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNE1516	21	15000~17000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
LNE2008	15	14000~16000	1100~1300	0.1~0.12	2	溝銑 SLOTTING
LNE2008	15	14000~16000	1500~1700	0.03~0.07	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNE2010	17	14000~16000	1500~1700	0.025~0.05	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
LNE2012	19	14000~16000	1500~1700	0.02~0.04	2	溝銑 SLOTTING
LNE2016	23	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNE2016	23	14000~16000	1100~1300	0.015~0.03	2	溝銑 SLOTTING
LNE2020	26	14000~16000	500~700	0.03~0.05	2	溝銑 SLOTTING
LNE2020	26	14000~16000	1000~1200	0.01~0.025	2	溝銑 SLOTTING
LNE2510	17	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNE2510	17	13000~15000	1700~1900	0.03~0.06	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1300~1500	0.08~0.1	2.5	溝銑 SLOTTING
LNE2512	19	13000~15000	1700~1900	0.03~0.06	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1100~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNE2516	23	13000~15000	1400~1600	0.025~0.05	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	700~900	0.04~0.06	2.5	溝銑 SLOTTING
LNE2520	26	13000~15000	1100~1300	0.015~0.03	2.5	溝銑 SLOTTING
LNE3010	20	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNE3010	20	12000~14000	2000~2200	0.035~0.08	3	溝銑 SLOTTING
LNE3012	22	12000~14000	1700~1900	0.1~0.12	3	溝銑 SLOTTING
LNE3012	22	12000~14000	2000~2200	0.03~0.07	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1400~1600	0.08~0.1	3	溝銑 SLOTTING
LNE3016	26	12000~14000	1800~2000	0.02~0.045	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1000~1200	0.06~0.08	3	溝銑 SLOTTING
LNE3020	30	12000~14000	1300~1500	0.015~0.035	3	溝銑 SLOTTING
LNE3025	34	12000~14000	700~900	0.04~0.06	3	溝銑 SLOTTING
LNE3025	34	12000~14000	1100~1300	0.015~0.03	3	溝銑 SLOTTING

LNH Long Neck

深溝用立銑刀 End Mills





直徑 D1	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02

柄徑 Shank(h6)	Ø4	Ø6
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNH1006	1.0	0.95	1.5	6	50	4
LNH1008	1.0	0.95	1.5	8	50	4
LNH1010	1.0	0.95	1.5	10	50	4
LNH1012	1.0	0.95	1.5	12	50	4
LNH1508	1.5	1.45	2	8	50	4
LNH1510	1.5	1.45	2	10	50	4
LNH1512	1.5	1.45	2	12	50	4
LNH1516	1.5	1.45	2	16	50	4
LNH2008	2.0	1.92	3	8	50	4
LNH2010	2.0	1.92	3	10	50	4
LNH2012	2.0	1.92	3	12	50	4
LNH2016	2.0	1.92	3	16	50	4
LNH2020	2.0	1.92	3	20	50	4
LNH2510	2.5	2.42	3	10	50	4
LNH2512	2.5	2.42	3	12	50	4
LNH2516	2.5	2.42	3	16	50	4
LNH2520	2.5	2.42	3	20	50	4
LNH3010	3.0	2.90	4	10	50	6
LNH3012	3.0	2.90	4	12	50	6
LNH3016	3.0	2.90	4	16	50	6
LNH3020	3.0	2.90	4	20	60	6
LNH3025	3.0	2.90	4	25	60	6

unit : mm



精銑 Finishing

中銑 Semi-finishing ------

粗銑 Roughing ------

乾式切削 Dry Machining

油霧切削 MQL (Mist)

水溶性切削 Emulsion Machining

油性切削 Oil Machining

LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNH1006	15	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNH1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNH1008	17	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNH1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNH1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1510	17	13000~15000	400~600	0.04~0.06	1.5	溝銑 SLOTTING
LNH1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNH1512	19	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNH1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNH1516	21	13000~15000	600~800	0.01~0.025	1.5	溝銑 SLOTTING
LNH2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNH2008	15	12000~14000	800~1200	0.015~0.045	2	溝銑 SLOTTING
LNH2010	17	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNH2010	17	12000~14000	800~1200	0.015~0.03	2	溝銑 SLOTTING
LNH2012	19	12000~14000	400~600	0.04~0.06	2	溝銑 SLOTTING
LNH2012	19	12000~14000	700~1100	0.01~0.03	2	溝銑 SLOTTING
LNH2016	23	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNH2016	23	12000~14000	700~900	0.01~0.02	2	溝銑 SLOTTING
LNH2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNH2020	26	12000~14000	600~800	0.01~0.02	2	溝銑 SLOTTING
LNH2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNH2510	17	12000~14000	1000~1400	0.025~0.05	2.5	溝銑 SLOTTING
LNH2512	19	12000~14000	600~800	0.06~0.08	2.5	溝銑 SLOTTING
LNH2512	19	12000~14000	1000~1400	0.025~0.05	2.5	溝銑 SLOTTING
LNH2516	23	12000~14000	500~700	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	12000~14000	900~1200	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	12000~14000	400~600	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	12000~14000	800~1000	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	11000~13000	1000~1200	0.08~0.1	3	溝銑 SLOTTING
LNH3010	20	11000~13000	1400~1800	0.02~0.06	3	溝銑 SLOTTING
LNH3012	22	11000~13000	800~1000	0.07~0.09	3	溝銑 SLOTTING
LNH3012	22	11000~13000	1200~1600	0.02~0.05	3	溝銑 SLOTTING
LNH3016	26	11000~13000	600~800	0.06~0.08	3	溝銑 SLOTTING
LNH3016	26	11000~13000	1000~1400	0.015~0.045	3	溝銑 SLOTTING
LNH3020	30	11000~13000	500~700	0.05~0.07	3	溝銑 SLOTTING
LNH3020	30	11000~13000	800~1200	0.01~0.035	3	溝銑 SLOTTING
LNH3025	34	11000~13000	400~600	0.04~0.06	3	溝銑 SLOTTING
LNH3025	34	11000~13000	600~800	0.01~0.025	3	溝銑 SLOTTING

LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNH1006	15	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNH1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNH1008	17	16000~18000	600~800	0.01~0.025	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1012	20	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNH1508	15	15000~17000	1200~1400	0.02~0.05	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	1000~1200	0.015~0.03	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNH2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNH2008	15	14000~16000	1600~1800	0.03~0.07	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1600~1800	0.025~0.05	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1200~1400	0.06~0.08	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1600~1800	0.02~0.04	2	溝銑 SLOTTING
LNH2016	23	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNH2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNH2020	26	14000~16000	600~800	0.04~0.05	2	溝銑 SLOTTING
LNH2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNH2510	17	13000~15000	1400~1600	0.11~0.13	2.5	溝銑 SLOTTING
LNH2510	17	13000~15000	1800~2000	0.025~0.06	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1800~2000	0.025~0.06	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1500~1700	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	1200~1400	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNH3010	20	12000~14000	2100~2300	0.035~0.1	3	溝銑 SLOTTING
LNH3012	22	12000~14000	1800~2000	0.11~0.13	3	溝銑 SLOTTING
LNH3012	22	12000~14000	2100~2300	0.03~0.09	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1900~2100	0.03~0.07	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1500~1700	0.02~0.06	3	溝銑 SLOTTING
LNH3025	34	12000~14000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNH3025	34	12000~14000	1200~1400	0.02~0.05	3	溝銑 SLOTTING

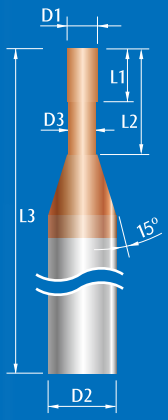
LNH 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)				
冷卻方式 Coolant Type	濕式切削 Wet coolant				
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNH1006	15	16000~18000	350~550	0.03~0.05	1	溝銑 SLOTTING
LNH1006	15	16000~18000	550~750	0.01~0.025	1	溝銑 SLOTTING
LNH1008	17	16000~18000	350~550	0.03~0.05	1	溝銑 SLOTTING
LNH1008	17	16000~18000	550~750	0.01~0.025	1	溝銑 SLOTTING
LNH1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNH1010	19	16000~18000	500~700	0.005~0.015	1	溝銑 SLOTTING
LNH1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNH1012	20	16000~18000	500~600	0.005~0.015	1	溝銑 SLOTTING
LNH1508	15	15000~17000	700~900	0.06~0.08	1.5	溝銑 SLOTTING
LNH1508	15	15000~17000	1100~1300	0.02~0.05	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	700~900	0.05~0.07	1.5	溝銑 SLOTTING
LNH1510	17	15000~17000	1000~1200	0.015~0.04	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNH1512	19	15000~17000	900~1100	0.015~0.03	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNH1516	21	15000~17000	800~1000	0.015~0.03	1.5	溝銑 SLOTTING
LNH2008	15	14000~16000	1100~1300	0.1~0.12	2	溝銑 SLOTTING
LNH2008	15	14000~16000	1500~1700	0.03~0.07	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNH2010	17	14000~16000	1500~1700	0.025~0.05	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNH2012	19	14000~16000	1400~1600	0.02~0.04	2	溝銑 SLOTTING
LNH2016	23	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNH2016	23	14000~16000	1100~1300	0.015~0.04	2	溝銑 SLOTTING
LNH2020	26	14000~16000	500~700	0.04~0.05	2	溝銑 SLOTTING
LNH2020	26	14000~16000	900~1100	0.01~0.03	2	溝銑 SLOTTING
LNH2510	17	13000~15000	1300~1500	0.11~0.13	2.5	溝銑 SLOTTING
LNH2510	17	13000~15000	1700~1900	0.025~0.06	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNH2512	19	13000~15000	1700~1900	0.025~0.06	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1100~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNH2516	23	13000~15000	1400~1600	0.02~0.05	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	700~900	0.04~0.06	2.5	溝銑 SLOTTING
LNH2520	26	13000~15000	1100~1300	0.015~0.03	2.5	溝銑 SLOTTING
LNH3010	20	12000~14000	1600~1800	0.12~0.14	3	溝銑 SLOTTING
LNH3010	20	12000~14000	2000~2200	0.035~0.1	3	溝銑 SLOTTING
LNH3012	22	12000~14000	1600~1800	0.11~0.13	3	溝銑 SLOTTING
LNH3012	22	12000~14000	2000~2200	0.03~0.09	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1500~1700	0.1~0.12	3	溝銑 SLOTTING
LNH3016	26	12000~14000	1800~2000	0.03~0.07	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
LNH3020	30	12000~14000	1500~1700	0.02~0.06	3	溝銑 SLOTTING
LNH3025	34	12000~14000	700~900	0.06~0.08	3	溝銑 SLOTTING
LNH3025	34	12000~14000	1200~1400	0.02~0.05	3	溝銑 SLOTTING

LNX Long Neck

End Mills 深溝用立銑刀





直徑 D1	1.0	1.5	2.0	2.5	3.0
直徑公差值 D1 Tolerance	0 −0.02	0 −0.02	0 −0.02	0 −0.02	0 −0.02
柄徑 Shank(h6)	∅4	∅6			
柄徑公差值 D2 Tolerance	0 -0.008	0 -0.008			

型號 Type No.	D1 直徑 Diameter	D3 頸徑 Neck Dia	L1 刃長 Flute Length	L2 有效長 Effective Length	L3 全長 O.A.L.	D2 柄徑 Shank Dia
LNX1006	1.0	0.95	1.5	6	50	4
LNX1008	1.0	0.95	1.5	8	50	4
LNX1010	1.0	0.95	1.5	10	50	4
LNX1012	1.0	0.95	1.5	12	50	4
LNX1508	1.5	1.45	2	8	50	4
LNX1510	1.5	1.45	2	10	50	4
LNX1512	1.5	1.45	2	12	50	4
LNX1516	1.5	1.45	2	16	50	4
LNX2008	2.0	1.92	3	8	50	4
LNX2010	2.0	1.92	3	10	50	4
LNX2012	2.0	1.92	3	12	50	4
LNX2016	2.0	1.92	3	16	50	4
LNX2020	2.0	1.92	3	20	50	4
LNX2510	2.5	2.42	3	10	50	4
LNX2512	2.5	2.42	3	12	50	4
LNX2516	2.5	2.42	3	16	50	4
LNX2520	2.5	2.42	3	20	50	4
LNX3010	3.0	2.90	4	10	50	6
LNX3012	3.0	2.90	4	12	50	6
LNX3016	3.0	2.90	4	16	50	6
LNX3020	3.0	2.90	4	20	60	6
LNX3025	3.0	2.90	4	25	60	6

unit : mm

精銑 Finishing
中銑 Semi-finishing ------
粗銑 Roughing ------
乾式切削 Dry Machining
油霧切削 MQL (Mist)
水溶性切削 Emulsion Machining
油性切削 Oil Machining

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	沃斯田鐵系不銹鋼 :*Stainless Steels* SUS304 : 1.4301 : AISI 304 (HRc28~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNX1006	15	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1008	17	16000~18000	200~300	0.02~0.04	1	溝銑 SLOTTING
LNX1008	17	16000~18000	300~500	0.01~0.015	1	溝銑 SLOTTING
LNX1010	19	16000~18000	200~300	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1012	20	16000~18000	200~300	0.015~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~500	0.005~0.015	1	溝銑 SLOTTING
LNX1508	15	13000~15000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1508	15	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNX1510	17	13000~15000	500~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1510	17	13000~15000	700~900	0.01~0.03	1.5	溝銑 SLOTTING
LNX1512	19	13000~15000	400~600	0.04~0.05	1.5	溝銑 SLOTTING
LNX1512	19	13000~15000	600~800	0.01~0.03	1.5	溝銑 SLOTTING
LNX1516	21	13000~15000	300~500	0.03~0.05	1.5	溝銑 SLOTTING
LNX1516	21	13000~15000	500~600	0.01~0.03	1.5	溝銑 SLOTTING
LNX2008	15	12000~14000	600~800	0.06~0.08	2	溝銑 SLOTTING
LNX2008	15	12000~14000	800~1000	0.03~0.06	2	溝銑 SLOTTING
LNX2010	17	12000~14000	600~800	0.05~0.07	2	溝銑 SLOTTING
LNX2010	17	12000~14000	800~1000	0.03~0.05	2	溝銑 SLOTTING
LNX2012	19	12000~14000	500~700	0.05~0.06	2	溝銑 SLOTTING
LNX2012	19	12000~14000	700~900	0.03~0.05	2	溝銑 SLOTTING
LNX2016	23	12000~14000	400~600	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	12000~14000	600~800	0.01~0.03	2	溝銑 SLOTTING
LNX2020	26	12000~14000	400~600	0.03~0.04	2	溝銑 SLOTTING
LNX2020	26	12000~14000	600~800	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNX2510	17	12000~14000	1000~1200	0.05~0.08	2.5	溝銑 SLOTTING
LNX2512	19	12000~14000	800~1000	0.08~0.1	2.5	溝銑 SLOTTING
LNX2512	19	12000~14000	1000~1200	0.05~0.08	2.5	溝銑 SLOTTING
LNX2516	23	12000~14000	700~900	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	12000~14000	900~1100	0.025~0.05	2.5	溝銑 SLOTTING
LNX2520	26	12000~14000	600~800	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	12000~14000	800~1000	0.015~0.03	2.5	溝銑 SLOTTING
LNX3010	20	11000~13000	1000~1200	0.1~0.12	3	溝銑 SLOTTING
LNX3010	20	11000~13000	1200~1400	0.06~0.1	3	溝銑 SLOTTING
LNX3012	22	11000~13000	1000~1200	0.09~0.11	3	溝銑 SLOTTING
LNX3012	22	11000~13000	1200~1400	0.05~0.09	3	溝銑 SLOTTING
LNX3016	26	11000~13000	800~1000	0.07~0.09	3	溝銑 SLOTTING
LNX3016	26	11000~13000	1000~1200	0.04~0.08	3	溝銑 SLOTTING
LNX3020	30	11000~13000	600~800	0.05~0.07	3	溝銑 SLOTTING
LNX3020	30	11000~13000	800~1000	0.03~0.06	3	溝銑 SLOTTING
LNX3025	34	11000~13000	600~800	0.04~0.06	3	溝銑 SLOTTING
LNX3025	34	11000~13000	700~900	0.02~0.04	3	溝銑 SLOTTING

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	合金工具鋼 / 碳工具鋼 :*Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc23~32)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (A_a) Depth of Cut	加工寬度 (A_p) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNX1006	15	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1008	17	16000~18000	400~600	0.03~0.05	1	溝銑 SLOTTING
LNX1008	17	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~500	0.02~0.03	1	溝銑 SLOTTING
LNX1012	20	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1508	15	15000~17000	800~1000	0.06~0.08	1.5	溝銑 SLOTTING
LNX1508	15	15000~17000	1000~1200	0.025~0.05	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	800~1000	0.05~0.07	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	1000~1200	0.02~0.05	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	700~900	0.04~0.06	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	900~1100	0.02~0.04	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	600~800	0.04~0.06	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	800~1000	0.02~0.04	1.5	溝銑 SLOTTING
LNX2008	15	14000~16000	1200~1400	0.1~0.12	2	溝銑 SLOTTING
LNX2008	15	14000~16000	1400~1600	0.04~0.08	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1200~1400	0.08~0.1	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1400~1600	0.03~0.07	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1100~1300	0.06~0.08	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1300~1500	0.02~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1000~1200	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNX2020	26	14000~16000	800~1000	0.04~0.05	2	溝銑 SLOTTING
LNX2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNX2510	17	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1400~1600	0.1~0.12	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1200~1400	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1400~1600	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	1200~1400	0.02~0.04	2.5	溝銑 SLOTTING
LNX3010	20	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNX3010	20	12000~14000	2000~2200	0.07~0.12	3	溝銑 SLOTTING
LNX3012	22	12000~14000	1800~2000	0.12~0.14	3	溝銑 SLOTTING
LNX3012	22	12000~14000	2000~2200	0.07~0.1	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1800~2000	0.05~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1200~1400	0.08~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1400~1600	0.05~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	800~1000	0.06~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	1000~1200	0.03~0.06	3	溝銑 SLOTTING

LNX 切削條件表 MILLING CONDITIONS

被切削材 Work Material	調質鋼 / 預硬鋼 :*Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)					
冷卻方式 Coolant Type	濕式切削 Wet coolant					
型號 Type No.	刀具伸長量 Extension Length (mm)	迴轉速度 Speed (min^{-1})	進給速度 Feed (mm/min)	加工深度 (Aa) Depth of Cut	加工寬度 (Ap) Width of Cut	加工方式 Milling Type
LNX1006	15	16000~18000	400~550	0.03~0.05	1	溝銑 SLOTTING
LNX1006	15	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1008	17	16000~18000	400~500	0.03~0.05	1	溝銑 SLOTTING
LNX1008	17	16000~18000	600~800	0.01~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	300~450	0.02~0.03	1	溝銑 SLOTTING
LNX1010	19	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1012	20	16000~18000	300~400	0.02~0.03	1	溝銑 SLOTTING
LNX1012	20	16000~18000	500~700	0.01~0.02	1	溝銑 SLOTTING
LNX1508	15	15000~17000	800~950	0.06~0.08	1.5	溝銑 SLOTTING
LNX1508	15	15000~17000	1000~1200	0.025~0.05	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	800~900	0.05~0.07	1.5	溝銑 SLOTTING
LNX1510	17	15000~17000	1000~1200	0.02~0.05	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	700~800	0.04~0.06	1.5	溝銑 SLOTTING
LNX1512	19	15000~17000	900~1100	0.02~0.04	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	600~700	0.04~0.06	1.5	溝銑 SLOTTING
LNX1516	21	15000~17000	800~1000	0.02~0.04	1.5	溝銑 SLOTTING
LNX2008	15	14000~16000	1200~1300	0.1~0.12	2	溝銑 SLOTTING
LNX2008	15	14000~16000	1400~1600	0.04~0.08	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1100~1300	0.08~0.1	2	溝銑 SLOTTING
LNX2010	17	14000~16000	1400~1600	0.03~0.07	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1000~1200	0.06~0.08	2	溝銑 SLOTTING
LNX2012	19	14000~16000	1300~1500	0.02~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	900~1100	0.04~0.05	2	溝銑 SLOTTING
LNX2016	23	14000~16000	1200~1400	0.015~0.04	2	溝銑 SLOTTING
LNX2020	26	14000~16000	700~900	0.04~0.05	2	溝銑 SLOTTING
LNX2020	26	14000~16000	1000~1200	0.01~0.03	2	溝銑 SLOTTING
LNX2510	17	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNX2510	17	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1300~1500	0.1~0.12	2.5	溝銑 SLOTTING
LNX2512	19	13000~15000	1600~1800	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1200~1300	0.06~0.08	2.5	溝銑 SLOTTING
LNX2516	23	13000~15000	1400~1600	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	800~1000	0.04~0.06	2.5	溝銑 SLOTTING
LNX2520	26	13000~15000	1200~1400	0.02~0.04	2.5	溝銑 SLOTTING
LNX3010	20	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNX3010	20	12000~14000	2000~2200	0.07~0.12	3	溝銑 SLOTTING
LNX3012	22	12000~14000	1700~1900	0.12~0.14	3	溝銑 SLOTTING
LNX3012	22	12000~14000	2000~2200	0.07~0.1	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1600~1800	0.1~0.12	3	溝銑 SLOTTING
LNX3016	26	12000~14000	1800~2000	0.05~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1100~1300	0.08~0.1	3	溝銑 SLOTTING
LNX3020	30	12000~14000	1400~1600	0.05~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	700~900	0.06~0.08	3	溝銑 SLOTTING
LNX3025	34	12000~14000	900~1100	0.03~0.06	3	溝銑 SLOTTING

DHF微小徑系列刀具推薦表

SELECTION OF DHF Micro Diameter & Long Neck Series

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
碳素鋼 *Carbon Steels* S50C / SS400 : 1.1210 / 1.0036 : 1050 / A570 Gr.45 (~HRc 22)	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
合金工具鋼/碳工具鋼 *Alloy Tool Steels / Carbon Tool Steels* P20 / P5 / SK3 / SKD61 / SKD11 : 1.2311 / 1.1545 / 1.2379 / 1.2344 : H13 / D2 (HRc 23~32)	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
調質鋼/預硬鋼 *Prehardened Steels* NAK80 : 1.2083 : AISI420 : M310 (HRc36~45)	UME LNE	META LNH	MET LNE	UNER	UNE	UXE	UMB UNBX	MBTA UNB	MSB LNB
熱處理鋼 *Hardened Steels* SKD61/ STAVAX / 17-4PH : 1.2083 / 1.2344 / 1.4542 : H13 / 420 (HRc48~54)	UME UDE	META LNX	LNE LNH	UXE	UNE	UNER	UMB UNBX	MBTA UNB	MSB LNB
熱處理鋼 *Hardened Steels* SKD11 / SKH9 : 1.2379 / 1.3342 : D2 / M2 (HRc55~62)	UME UDE	–	–	UXE	UNE	–	UMB UNBX	UNB	–

DHF微小徑系列刀具推薦表

SELECTION OF DHF Micro Diameter & Long Neck Series

被切削材 Work Material	平刀 End Mills			圓鼻刀 Corner Radius End Mills			球刀 Ball Nose End Mills		
	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection	第一推薦 First Selection	第二推薦 Second Selection	第三推薦 Third Selection
鋁合金 *Aluminum Alloy* **5052 / 6061 / 7075**	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
紅銅 *Copper* **C1100 / 2.0090 / B152C11000**	META LNE	MET LNH	LNX	UNER	UNE	–	MBTA LNB	MSB UNB	–
沃斯田鐵系不銹鋼 *Stainless Steels* **SUS304 : 1.4301 : AISI 304** (HRc 28~32)	META LNE	MET LNH	LNX	UNER	UNE	–	UMB UNB	MBTA LNB	MSB
(麻田散鐵, 析出硬化) 系不銹鋼 *Stainless Steels* **SUS420J2 / SUS630 : 1.2083 / 1.4542 : AISI 420 / 17-4PH** (HRc 28~32)	META LNE	MET LNH	LNX	UNER	UNE	–	UMB UNB	MBTA LNB	MSB
鈦合金/純鈦 *Titanium Alloy / Pure Titanium* **Ti-6Al-4V / Ti-2 : 3.7165 / 3.7035 : Gr5 / Gr2 : TC4 / TA1**	META LNE	LNH	–	UNER	UNE	–	MBTA LNB	MSB UNB	–