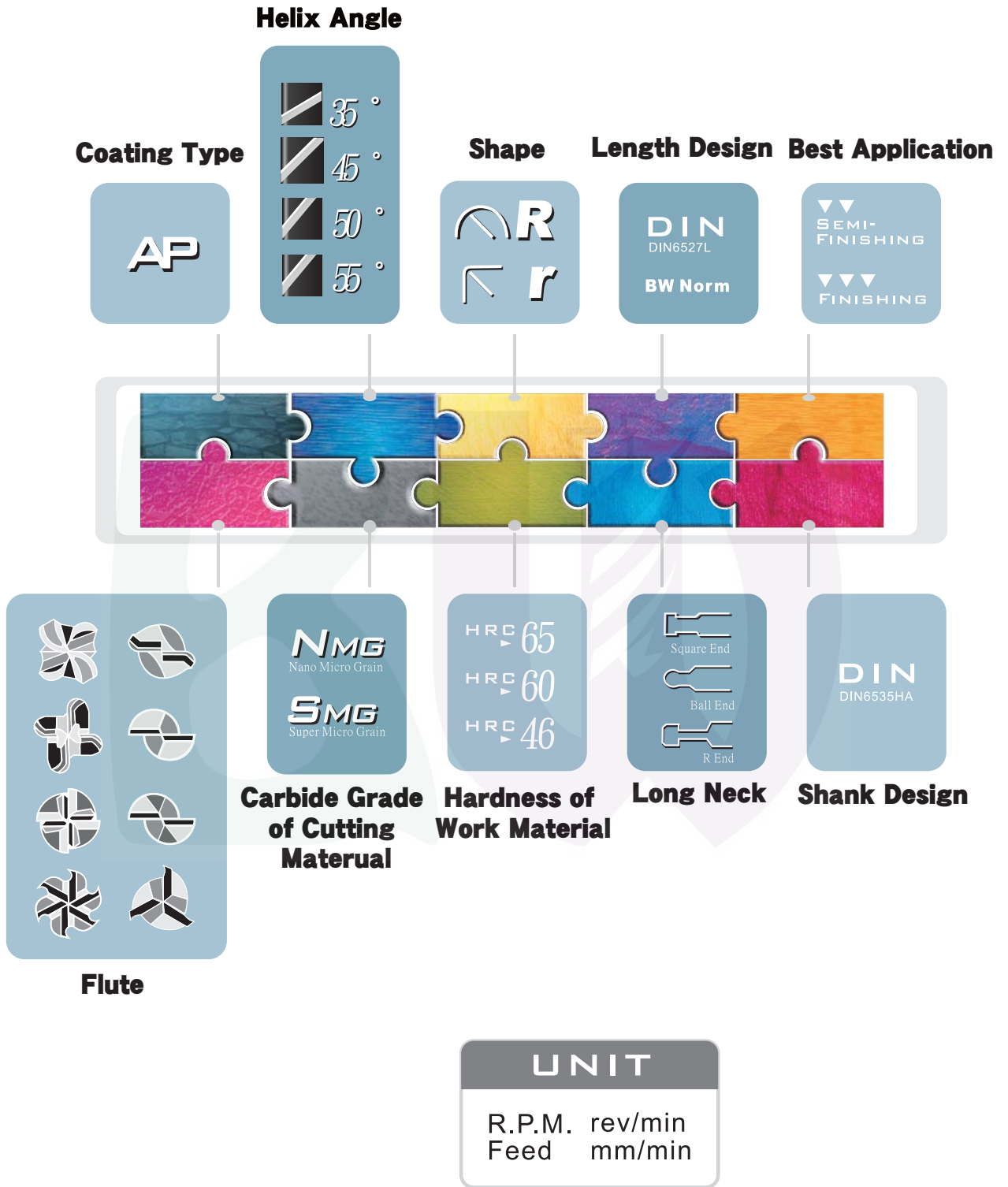


Description Of The Icon



SOLID CARBIDE END MILLS



Solid Carbide Square End Mills

錫鋼平銑刀



SOLID CARBIDE SQUARE END MILLS

P1 - 2Z



P2 - 3Z



P3 - 4Z



P4 - 4XZ



P5 - 4XZ



P6 - 6Z



P7 - 6XZ



P8 - 2CZ



P9 - 3CZ



End Mill

NMG

Nano Micro Grain Solid Carbide



Super Micro Grain Solid Carbide



SMG

P10 - 4Y



P11 - 3Y



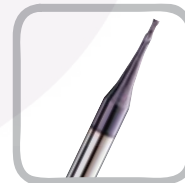
P12 - 2TW



P13 - 4TW



P14 - 2MTW



P15 - 6TW



P16 - 2DMOT



P17 - 2LT



P18 - 4LT



P19 - 2TX



P20 - 4TX



P21 - 3PT



P22 - 2GT



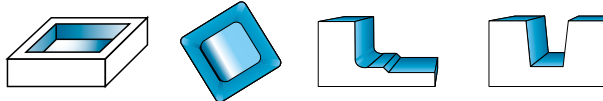
P24 - 2CTP



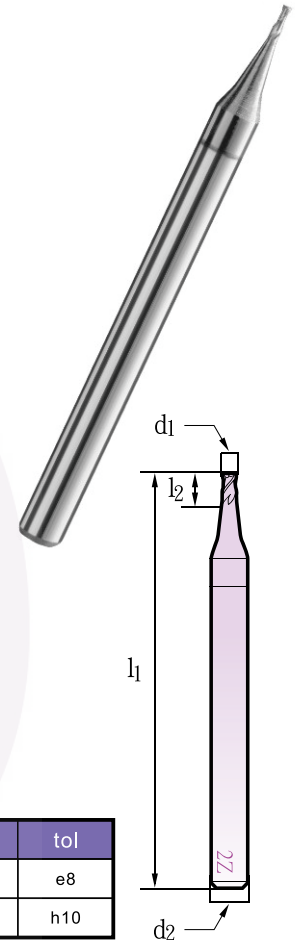
NMG Miniature End Mills

奈米微粒小徑立銑刀

- 2Z
- 3Z
- 4Z
- 2XZ
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ



Order Code	Ø d ₁ <small>(e8/h10)</small>	l ₂	l ₁	Ø d ₂ <small>(h6)</small>
2Z002	0.2	0.4	38	3.0
2Z003	0.3	0.6	38	3.0
2Z004	0.4	0.8	38	3.0
2Z005	0.5	1.0	38	3.0
2Z006	0.6	1.2	38	3.0
2Z007	0.7	1.4	38	3.0
2Z008	0.8	1.6	38	3.0
2Z009	0.9	1.8	38	3.0
2Z010	1.0	3.0	38	3.0
2Z012	1.2	3.0	38	3.0
2Z014	1.4	3.0	38	3.0
2Z015	1.5	4.0	38	3.0
2Z016	1.6	4.0	38	3.0
2Z018	1.8	5.0	38	3.0
2Z020	2.0	6.0	38	3.0
2Z025	2.5	7.0	38	3.0
2Z030	3.0	7.0	57	6.0
2Z040	4.0	8.0	57	6.0



d ₁	tol
0.2-2.0	e8
2.0-4.0	h10

2Z Recommendations for Cutting Conditions

WORK Material	S45C,SKS,YK30		SCr,SNC,SKD	
	<HRC30		<HRC30-45	
Order Code	R. P. M.	Feed	R. P. M.	Feed
2Z002	42000	760	40000	720
2Z003	41000	740	39000	710
2Z004	41500	750	39500	700
2Z005	40000	880	38000	840
2Z006	39000	860	37000	820
2Z007	38000	840	36000	800
2Z008	37000	820	35000	770
2Z009	36000	800	34000	750

Max Milling Volume

- d₂ < 3.0mm, l₂ < 0.01d₂
- l₂ < 0.10d₂, W < 0.05d₂
- d₂ < 3.0mm, l₂ < 0.02d₂
- l₂ < 0.01d₂, W < 0.02d₂

WORK Material	S45C,SKS,YK30		SCr,SNC,SKD		SCM,SUS403,NAK80		Ti-6Al-4V		PRE/HARDENED STEELS	
	<HRC30		<HRC30-35		<HRC35-40		<HRC40-45		<HRC45-65	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2Z010	34000	1360	33000	1320	32000	1280	31000	1240	30000	1200
2Z012	33000	1340	32000	1300	31000	1260	30000	1220	29000	1180
2Z014	33500	1370	32500	1330	31500	1290	29500	1210	28500	1170
2Z015	32000	2050	31000	1990	30000	1930	29000	1860	28000	1800
2Z016	31500	1610	30500	1560	29500	1900	28500	1830	27500	1770
2Z018	30500	1950	29500	1890	28500	1190	27500	1760	26500	1700
2Z020	30000	2300	29000	2230	28000	2150	27000	2070	26000	2000
2Z025	30000	2770	29000	2670	28000	2580	27000	2490	26000	2400
2Z030	28000	3260	27000	3150	26000	3030	25000	2910	24000	2800
2Z040	24000	3600	23000	3450	22000	3300	21000	3150	20000	3000

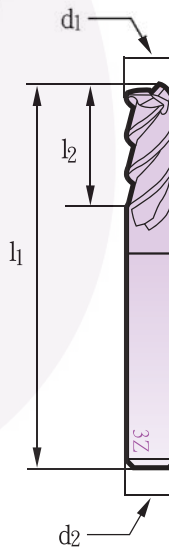
Max Milling Volume

- d₂ < 3.0mm, l₂ < 0.02d₂
- l₂ < 0.1d₂, W < 0.05d₂
- d₂ < 3.0mm, l₂ < 0.02d₂
- l₂ < 0.1d₂, W < 0.02d₂

NMG End Mills

奈米微粒立銑刀

3Z



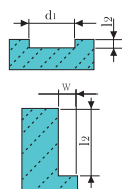
Order Code	$\varnothing d_1$ (h10)	l_2	l_1	$\varnothing d_2$ (h6)
3Z030	3.0	7.0	57	6.0
3Z040	4.0	8.0	57	6.0
3Z050	5.0	10.0	57	6.0
3Z060	6.0	10.0	57	6.0
3Z080	8.0	16.0	63	8.0
3Z100	10.0	19.0	72	10.0
3Z120	12.0	22.0	83	12.0
3Z160	16.0	26.0	92	16.0
3Z200	20.0	32.0	104	20.0

- 2Z
- 3Z**
- 4Z
- 2XZ
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ

3Z Recommendations for Cutting Conditions

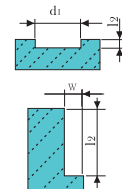
WORK Material	S45C,P20S,FCD		SUS403,SKD11,SCr		Ti-6Al-4V PRE/HARDENED STEELS	
	<HRC30		<HRC30-45		<HRC45-65	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
3Z030	26000	3030	25000	2910	24000	2800
3Z040	22000	3300	21000	3150	20000	3000
3Z050	21000	3150	20000	3000	19000	2850
3Z060	20000	3330	19000	3160	18000	3000
3Z080	18000	4500	17000	4250	16000	4000
3Z100	16000	4570	15000	4280	14000	4000
3Z120	15500	4420	14500	4140	13500	3850
3Z160	9300	2660	9100	2600	8500	2430
3Z200	9380	3130	8750	2910	6880	2290

Max
Milling
Volume



$d_2 < 3.0\text{mm}$
 $l_2 < 0.02d_2$

$l_2 < 0.05d_2$
 $W < 0.05d_2$

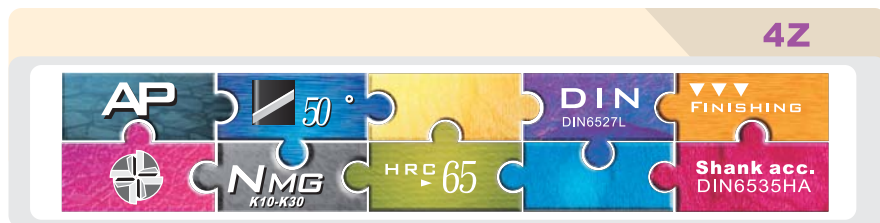


$d_2 < 3.0\text{mm}$
 $l_2 < 0.02d_2$

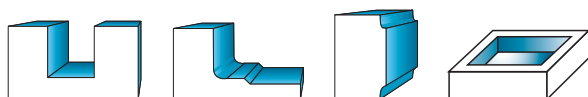
$l_2 < 0.05d_2$
 $W < 0.02d_2$

NMG End Mills

奈米微粒立銑刀



4Z



2Z

3Z

4Z

2XZ

4XZ

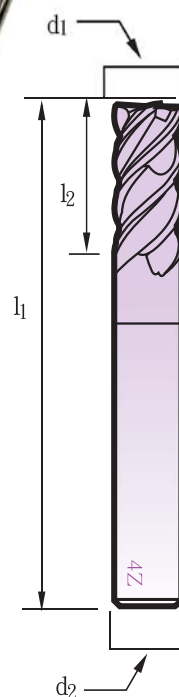
6Z

6XZ

2CZ

3CZ

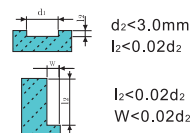
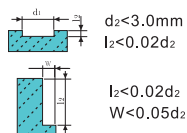
Order Code	Ø d ₁ (h10)	l ₂	l ₁	Ø d ₂ (h6)
4Z040	4.0	11.0	57	6.0
4Z050	5.0	13.0	57	6.0
4Z060	6.0	13.0	57	6.0
4Z060F	6.0	13.0	100	6.0
4Z080	8.0	19.0	63	8.0
4Z080F	8.0	19.0	100	8.0
4Z100	10.0	22.0	72	10.0
4Z100F	10.0	22.0	100	10.0
4Z120	12.0	26.0	83	12.0
4Z120F	12.0	26.0	100	12.0
4Z160	16.0	32.0	92	16.0
4Z160F	16.0	32.0	150	16.0
4Z200	20.0	38.0	104	20.0



4Z Recommendations for Cutting Conditions

WORK Material	S45C,SKS,YK30		SCr,SNC,SKD		SCM,SUS403,NAK80		Ti-6Al-4V		PRE/HARDENED STEELS	
	<HRC30		<HRC30-35		<HRC35-40		<HRC40-45		<HRC45-65	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4Z040	24000	3600	23000	3450	22000	3300	21000	3150	20000	3000
4Z050	23000	3450	22000	3300	21000	3150	20000	3000	19000	2850
4Z060	22000	4120	21000	3930	20000	3750	19000	3560	18000	3000
4Z060F	22000	4120	21000	3930	20000	3750	19000	3560	18000	3000
4Z080	20000	5000	19000	4750	18000	4500	17000	4250	16000	4000
4Z080F	20000	5000	19000	4750	18000	4500	17000	4250	16000	4000
4Z100	18000	5140	17000	4850	16000	4570	15000	4280	14000	4000
4Z100F	18000	5140	17000	4850	16000	4570	15000	4280	14000	4000
4Z120	17500	5000	16500	4710	15500	4420	14500	4140	13500	3850
4Z120F	17500	5000	16500	4710	15500	4420	14500	4140	13500	3850
4Z160	9300	2660	9100	2600	8900	2550	8700	2500	8500	2430
4Z160F	9300	2660	9100	2600	8900	2550	8700	2500	8500	2430
4Z200	9380	3130	8750	2910	8130	2710	7500	1880	6880	2290

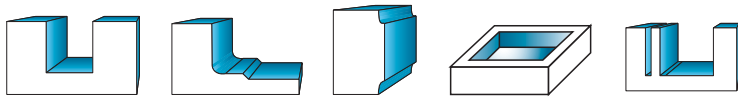
Max
Milling
Volume



NMG Long Flute End Mills

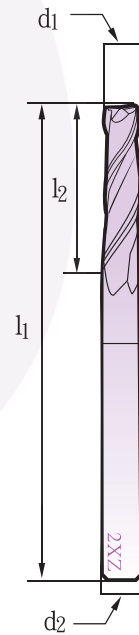
奈米微粒長刃立銑刀

2XZ



Order Code	$\varnothing d_1$ <small>(h10)</small>	l_2	l_1	$\varnothing d_2$ <small>(h6)</small>
2XZ020	2.0	15.0	75	6.0
2XZ030	3.0	20.0	75	6.0
2XZ040	4.0	25.0	75	6.0
2XZ050	5.0	30.0	75	6.0
2XZ060	6.0	30.0	75	6.0
2XZ080	8.0	40.0	100	8.0
2XZ100	10.0	40.0	100	10.0
2XZ120	12.0	45.0	100	12.0

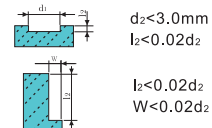
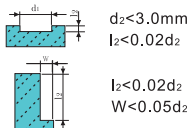
- 2Z
- 3Z
- 4Z
- 2XZ**
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ



2XZ Recommendations for Cutting Conditions

WORK Material	S45C,SKS,YK30		SCr,SNC,SKD		SCM,SUS403,NAK80		Ti-6Al-4V		PRE/HARDENED STEELS	
	<HRC30		<HRC30-35		<HRC35-40		<HRC40-45		<HRC45-65	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2XZ020	30000	2300	29000	2230	28000	2150	27000	2050	26000	2000
2XZ030	28000	3260	27000	3150	26000	3030	25000	2910	24000	2800
2XZ040	24000	3600	23000	3450	22000	3300	21000	3150	20000	3000
2XZ050	23000	3450	22000	3300	21000	3150	20000	3000	19000	2850
2XZ060	22000	4120	21000	3930	20000	3750	19000	3560	18000	3000
2XZ080	20000	5000	19000	4750	18000	4500	17000	4250	16000	4000
2XZ100	18000	5140	17000	4850	16000	4570	15000	4280	14000	4000
2XZ120	17500	5000	16500	4710	15500	4420	14500	4140	13500	3850

Max Milling Volume



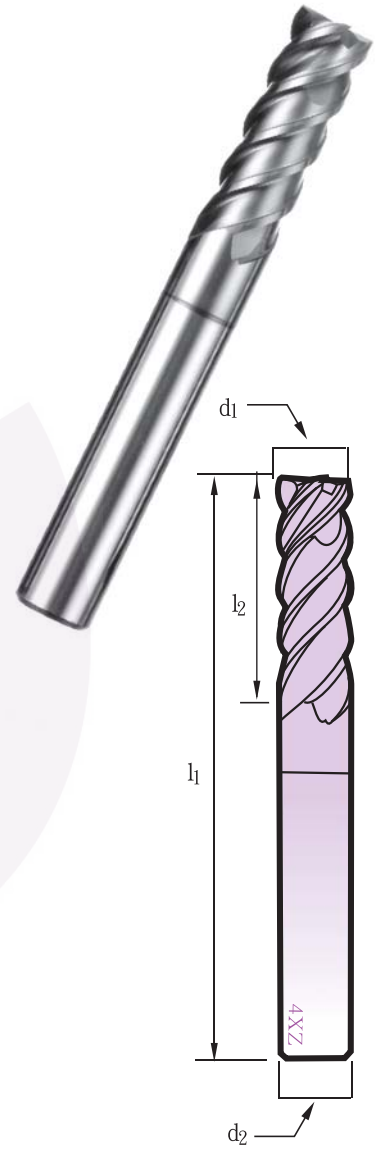
NMG Long Flute End Mills

奈米微粒長刃立銑刀

4XZ



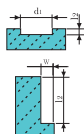
Order Code	Ø d ₁ (h10)	l ₂	l ₁	Ø d ₂ (h6)
4XZ040	4.0	25.0	75	6.0
4XZ050	5.0	30.0	75	6.0
4XZ060	6.0	30.0	75	6.0
4XZ080	8.0	40.0	100	8.0
4XZ100	10.0	40.0	100	10.0
4XZ120	12.0	45.0	100	12.0
4XZ160	16.0	60.0	150	16.0
4XZ200	20.0	60.0	150	20.0



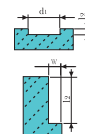
4XZ Recommendations for Cutting Conditions

WORK Material	S45C,SKS,YK30		SCr,SNC,SKD		SCM,SUS403,NAK80		Ti-6Al-4V		PRE/HARDENED STEELS	
	<HRC30		<HRC30-35		<HRC35-40		<HRC40-45		<HRC45-65	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4XZ040	24000	3600	23000	3450	22000	3300	21000	3150	20000	3000
4XZ050	23000	3450	22000	3300	21000	3150	20000	3000	19000	2850
4XZ060	22000	4120	21000	3930	20000	3750	19000	3560	18000	3000
4XZ080	20000	5000	19000	4750	18000	4500	17000	4250	16000	4000
4XZ100	18000	5140	17000	4850	16000	4570	15000	4280	14000	4000
4XZ120	17500	5000	16500	4710	15500	4420	14500	4140	13500	3850
4XZ160	9300	2660	9100	2600	8900	2550	8700	2500	8500	2430
4XZ200	6800	2270	6600	2200	6400	2130	6200	2070	6000	2000

Max Milling Volume



d₂ < 3.0mm
l₂ < 0.02d₂
l₂ < 0.02d₂
W < 0.05d₂

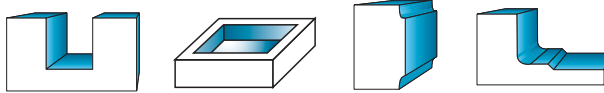


d₂ < 3.0mm
l₂ < 0.02d₂
l₂ < 0.05d₂
W < 0.02d₂

NMG End Mills

奈米微粒立銑刀

6Z



Order Code	Ø d1 (h10)	l2	l1	Ø d2 (h6)
6Z060	6.0	13.0	57	6.0
6Z080	8.0	19.0	63	8.0
6Z100	10.0	22.0	72	10.0
6Z120	12.0	26.0	83	12.0
6Z160	16.0	32.0	92	16.0
6Z200	20.0	38.0	104	20.0

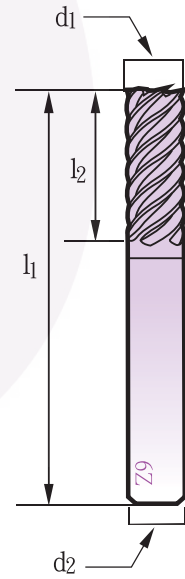
6Z Recommendations for Cutting Conditions

Order Code	SUS304,FDAC,NAK80		PRE/HARDENED STEELS	
	<HRC45-52		<HRC52-62	
	R. P. M.	Feed	R. P. M.	Feed
6Z060	22500	3460	19500	3000
6Z080	21000	4670	18000	4000
6Z100	19000	4750	16000	4000
6Z120	17840	2750	14840	3710
6Z160	8500	2430	8000	2290
6Z200	6500	2170	6000	2000

Max Milling Volume

$l_2 < 0.05d_2$
 $W < 0.01d_2$

$l_2 < 0.05d_2$
 $W < 0.005d_2$



- 2Z
- 3Z
- 4Z
- 2XZ
- 4XZ
- 6Z**
- 6XZ
- 2CZ
- 3CZ



NMG Long Flute End Mills

奈米微粒長刃立銑刀



- 2Z
- 3Z
- 4Z
- 2XZ
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ

AP

55°

NMG
K10-K30

HRC
65

BW Norm

FINISHING

Shank acc.
DIN6535HA

6XZ



Order Code	$\varnothing d_1$ <small>(h10)</small>	l_2	l_1	$\varnothing d_2$ <small>(h6)</small>
6XZ060	6.0	30.0	75	6.0
6XZ080	8.0	40.0	100	8.0
6XZ100	10.0	40.0	100	10.0
6XZ120	12.0	45.0	150	12.0
6XZ160	16.0	65.0	150	16.0
6XZ200	20.0	65.0	150	20.0

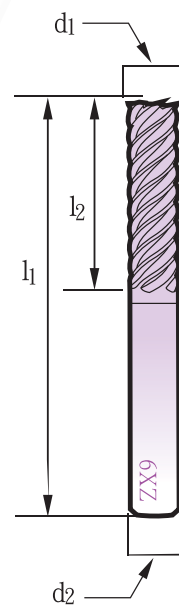
6XZ Recommendations for Cutting Conditions

WORK Material	SUS304,FDAC,NAK80		PRE/HARDENED STEELS	
	<HRC45-52		<HRC52-62	
	R. P. M.	Feed	R. P. M.	Feed
6XZ060	22500	3460	19500	3000
6XZ080	21000	4670	18000	4000
6XZ100	19000	4750	16000	4000
6XZ120	17840	2750	14840	3710
6XZ160	8500	2430	8000	2290
6XZ200	6500	2170	6000	2000

Max Milling Volume

$l_2 < 0.05d_2$
 $W < 0.01d_2$

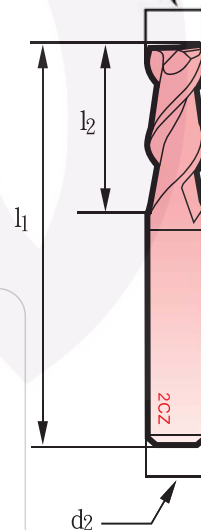
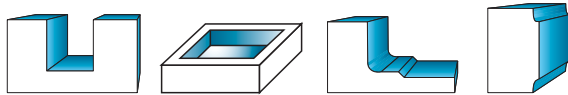
$l_2 < 0.05d_2$
 $W < 0.005d_2$



NMG High Helix End Mills

奈米微粒高螺旋立銑刀

2CZ



- 2Z
- 3Z
- 4Z
- 2XZ
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ

Order Code	$\varnothing d_1$ (h10)	l_2	l_1	$\varnothing d_2$ (h6)
2CZ005	0.5	1.5	38	3.0
2CZ010	1.0	3.0	38	3.0
2CZ015	1.5	4.0	38	3.0
2CZ020	2.0	6.0	38	3.0
2CZ030	3.0	7.0	57	6.0
2CZ040	4.0	8.0	57	6.0
2CZ050	5.0	10.0	57	6.0
2CZ060	6.0	10.0	57	6.0
2CZ080	8.0	16.0	63	8.0
2CZ100	10.0	19.0	72	10.0
2CZ120	12.0	22.0	83	12.0
2CZ160	16.0	26.0	92	16.0

2CZ Recommendations for Cutting Conditions

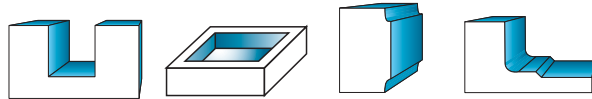
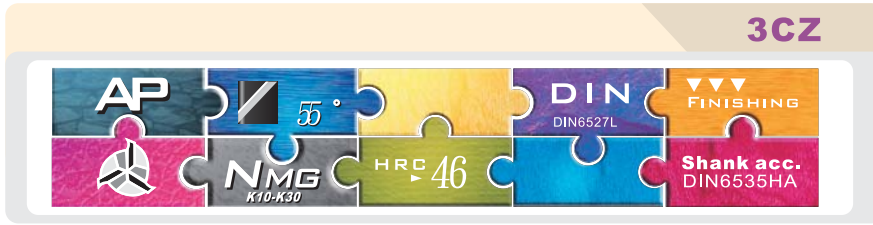
WORK Material Order Code	Al(1070)		Cu-Mg(2014)		Si(4032)	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2CZ005	36000	960	35000	933	34000	907
2CZ010	36000	1440	35000	1400	34000	1360
2CZ015	34000	3139	33000	3047	32000	2955
2CZ020	32000	2462	31000	2385	30000	2308
2CZ030	30000	3501	29000	3384	28000	3267
2CZ040	26000	3904	25000	3754	24000	3604
2CZ050	25000	3788	24000	3636	23000	3485
2CZ060	24000	4503	23000	4315	22000	4128
2CZ080	22000	5500	21000	5250	20000	5000
2CZ100	20000	5714	19000	5429	18000	5143
2CZ120	19000	5429	18000	5143	17000	4857
2CZ160	13850	920	13080	880	12310	820

WORK Material Order Code	Mg(5052)		Mg-Si(4032)		Zn-Mg(7075)		(AC85)	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2CZ005	33000	880	32000	853	31000	827	30000	800
2CZ010	33000	1320	32000	1280	31000	1240	30000	1200
2CZ015	31000	2862	30000	2770	29000	2678	28000	1600
2CZ020	29000	2231	28000	2154	27000	2077	26000	2000
2CZ030	27000	3151	26000	3034	25000	2917	24000	2400
2CZ040	23000	3453	22000	3303	21000	3153	20000	3000
2CZ050	22000	3333	21000	3182	20000	3030	19000	3000
2CZ060	21000	3940	20000	3752	19000	3565	18000	3000
2CZ080	19000	4750	18000	4500	17000	4250	16000	4000
2CZ100	17000	4857	16000	4571	15000	4286	14000	4000
2CZ120	16000	4571	15000	4286	14000	4000	13000	3000
2CZ160	8880	980	8280	910	7690	850	7100	780

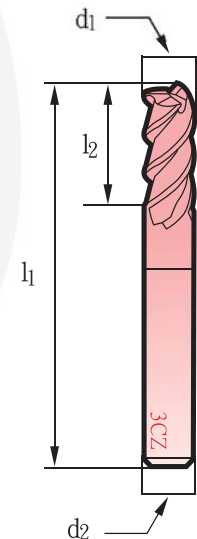


NMG High Helix End Mills

奈米微粒高螺旋立銑刀



Order Code	$\varnothing d_1$ (h10)	l_2	l_1	$\varnothing d_2$ (h6)
3CZ030	3.0	7.0	57	6.0
3CZ040	4.0	8.0	57	6.0
3CZ050	5.0	10.0	57	6.0
3CZ060	6.0	10.0	57	6.0
3CZ080	8.0	16.0	63	8.0
3CZ100	10.0	19.0	72	10.0
3CZ120	12.0	22.0	83	12.0
3CZ160	16.0	26.0	92	16.0
3CZ200	20.0	32.0	104	20.0



3CZ Recommendations for Cutting Conditions

WORK Material Order Code	Al(1070)		Cu-Mg(2014)		Si(4032)	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
3CZ030	3000	5380	2900	5200	2800	3260
3CZ040	2600	3900	2500	3750	2400	2800
3CZ050	2500	3780	2400	3630	2300	3480
3CZ060	2400	4500	2300	4310	2200	4120
3CZ080	2200	5500	2100	5250	2000	5000
3CZ100	2000	5710	1900	5420	1800	5140
3CZ120	1900	5420	1800	5140	1700	4850
3CZ160	10650	1170	10060	1100	9470	1040
3CZ200	8170	900	7690	850	7210	790

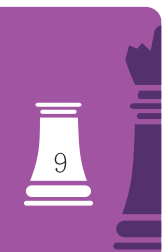
WORK Material Order Code	Mg(5052)		Mg-Si(4032)		Zn-Mg(7075)		(AC85)	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
3CZ030	2700	3150	2600	3030	2500	2910	2400	2800
3CZ040	2300	2680	2200	2560	2100	2450	2000	3000
3CZ050	2200	3330	2100	3180	2000	3030	1900	2870
3CZ060	2100	3930	2000	3750	1900	3560	1800	3000
3CZ080	1900	4750	1800	4500	1700	4250	1600	4000
3CZ100	1700	4850	1600	4570	1500	4280	1400	4000
3CZ120	1600	4570	1500	4280	1400	4000	1300	3710
3CZ160	8880	980	8280	910	7690	850	7100	780
3CZ200	6730	740	6250	690	5770	640	5290	570

Max Milling Volume

$d_2 < 3.0\text{mm}$ $l_2 < 0.02d_2$	$d_2 < 3.0\text{mm}$ $l_2 < 0.02d_2$
$l_2 < 0.02d_2$ $W < 0.05d_2$	$l_2 < 0.1d_2$ $W < 0.02d_2$



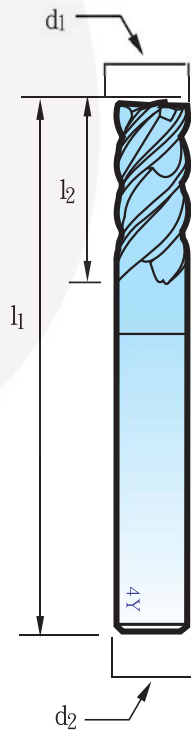
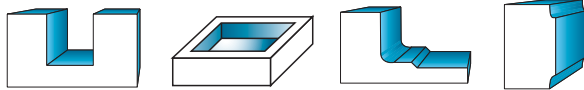
- 2Z
- 3Z
- 4Z
- 2XZ
- 4XZ
- 6Z
- 6XZ
- 2CZ
- 3CZ**



SMG End Mills

極細微粒立銑刀

4Y



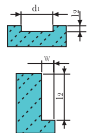
Order Code	Ø d ₁ (h10)	l ₂	l ₁	Ø d ₂ (h6)
4Y040	4.0	11.0	57	6.0
4Y050	5.0	13.0	57	6.0
4Y060	6.0	13.0	57	6.0
4Y080	8.0	19.0	63	8.0
4Y100	10.0	22.0	72	10.0
4Y120	12.0	26.0	83	12.0
4Y160	16.0	32.0	92	16.0
4Y200	20.0	38.0	104	20.0

4Y Recommendations for Cutting Conditions

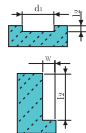
WORK Material	S45C,P20S,FCD		SCr SNC SKD		SCM SUS403 NAK80	
	<HRC30		<HRC30-35		<HRC35-40	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4Y040	23700	3537	22700	3388	21700	3239
4Y050	22700	3388	21700	3239	20700	3090
4Y060	21700	3617	20700	3450	19700	3283
4Y080	19700	4925	18700	4675	17700	4425
4Y100	17700	5057	16700	4771	15700	4486
4Y120	17200	4914	16200	4629	15200	4343
4Y160	9200	2630	8900	2540	8600	2460
4Y200	7200	2400	6900	2300	6600	2200

WORK Material	Ti6Al-4V		PRE HARDENED STEEL	
	<HRC40-45		<HRC45-60	
Order Code	R. P. M.	Feed	R. P. M.	Feed
4Y040	20700	3090	19700	2940
4Y050	19700	2940	18700	2791
4Y060	18700	3117	17700	2950
4Y080	16700	4250	15700	3925
4Y100	14700	4200	13700	3914
4Y120	14200	4057	13200	3771
4Y160	8300	2370	8000	2290
4Y200	6300	2100	6000	2000

Max Milling Volume



$l_2 < 0.25d_2$
 $l_2 < 0.05d_2$



$l_2 < 0.02d_2$
 $W < 0.05d_2$

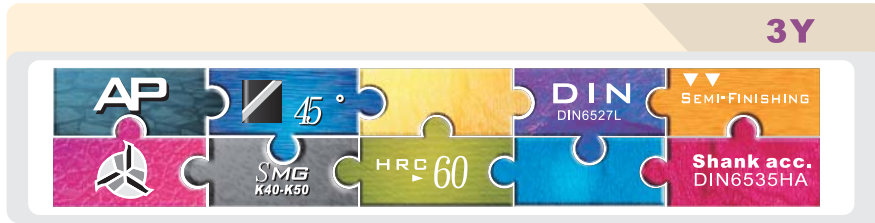
$l_2 < 0.02d_2 \cdot W = 0.1d_2$
 $l_2 < 0.02d_2 \cdot W = 0.05d_2$

$l_2 < 0.02d_2$

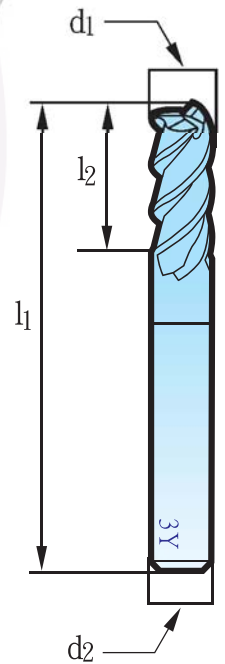
- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

SMG End Mills

極細微粒立銑刀

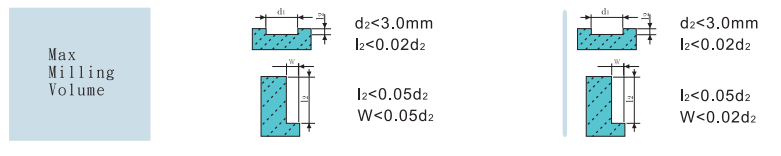


Order Code	Ø d ₁ (h10)	l ₂	l ₁	Ø d ₂ (h6)
3Y030	3.0	7.0	57	6.0
3Y040	4.0	8.0	57	6.0
3Y050	5.0	10.0	57	6.0
3Y060	6.0	10.0	57	6.0
3Y080	8.0	16.0	63	8.0
3Y100	10.0	19.0	72	10.0
3Y120	12.0	22.0	83	12.0
3Y160	16.0	26.0	92	16.0
3Y200	20.0	32.0	104	20.0



3Y Recommendations for Cutting Conditions

WORK Material	S45C,P20S,FCD		SUS403,SKD11,SCr		Ti-6Al-4V PRE/HARDENED STEELS	
	Order Code	<HRC30	<HRC30-45	<HRC45-65	R.P.M.	Feed
3Y030	25000	2920	24000	2800	23000	2680
3Y040	21000	3150	20000	3000	19000	2850
3Y050	20000	3000	19000	2850	18000	2700
3Y060	19000	3170	18000	3000	17000	2830
3Y080	17000	4250	16000	4000	15000	3750
3Y100	15000	4290	14000	4000	13000	3710
3Y120	14500	4140	13500	3850	12500	3570
3Y160	9000	2570	8500	2430	8000	2290
3Y200	7000	2330	6500	2170	6000	2000

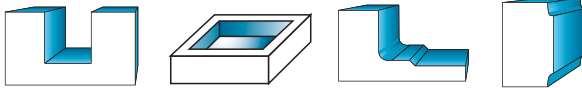


- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

SMG End Mills

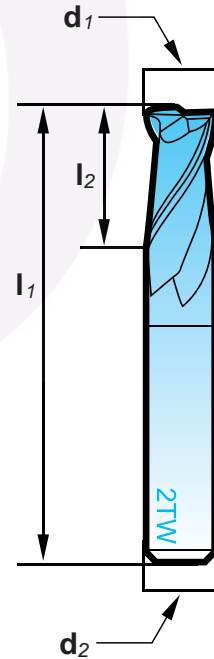
極細微粒立銑刀

2TW



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
2TW010	1.0	3	50	4
2TW015	1.5	4	50	4
2TW020	2.0	6	50	4
2TW030	3.0	8	50	6
2TW040	4.0	11	50	6
2TW050	5.0	13	50	6
2TW060	6.0	16	50	6
2TW080	8.0	20	60	8
2TW100	10.0	25	75	10
2TW120	12.0	30	75	12
2TW160	16.0	45	100	16
2TW200	20.0	45	100	20



2TW Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SK.SCM.SUS		Hardened Steels NAK.SKD		SKD11, 61, SKT
	100~225HB		225~325HB		30~45HRC		HRC45~55
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.
2TW010	12000	1200	12000	1100	11000	1000	10000
2TW015	12000	1150	12000	1000	10000	950	9500
2TW020	11000	1000	10000	950	9500	800	9000
2TW030	11000	1000	10000	950	9500	800	9000
2TW040	10000	960	9500	900	9000	750	8500
2TW050	9000	950	9000	900	8500	870	8300
2TW060	9000	950	9000	900	8500	870	8300
2TW080	8500	800	8300	800	8000	750	7500
2TW100	8000	750	7700	720	7000	650	7000
2TW120	7800	750	7500	720	6800	650	6700
2TW160	7000	670	6800	580	6500	550	6400
2TW200	6800	650	6700	650	6000	500	5500

D: Diameter Z ≤ 0.01D XY ≤ 0.02D

- 4Y
- 3Y
- 2TW**
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

SMG End Mills

極細微粒立銑刀

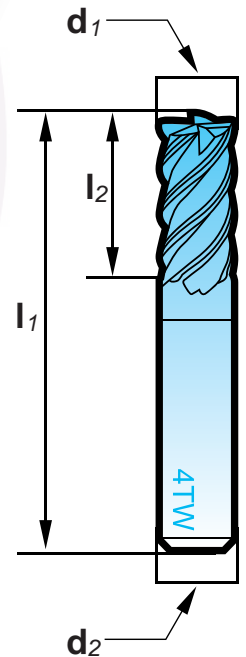


4TW



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
4TW010	1.0	3	50	4
4TW015	1.5	4	50	4
4TW020	2.0	6	50	4
4TW030	3.0	8	50	6
4TW040	4.0	11	50	6
4TW050	5.0	13	50	6
4TW060	6.0	16	50	6
4TW080	8.0	20	60	8
4TW100	10.0	25	75	10
4TW120	12.0	30	75	12
4TW160	16.0	45	100	16
4TW200	20.0	45	100	20



4TW Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SK.SCM.SUS		Hardened Steels NAK, SKD		SKD11, 61, SKT
	100~225HB		225~325HB		30~40HRC		HRC41~52
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.
4TW010	28000	1000	28000	1000	15000	800	10000
4TW015	27000	950	27000	950	14000	700	9500
4TW020	24000	1200	24000	1200	12000	1000	8000
4TW030	17500	1500	17500	1500	12000	1500	8000
4TW040	18000	1800	18000	1800	10000	1600	8000
4TW050	18000	2300	18000	2300	10000	2000	6000
4TW060	18000	2500	18000	2400	11000	1200	4500
4TW080	12000	2200	12000	2200	10000	1200	3200
4TW100	10000	2000	12000	2000	8000	1200	2500
4TW120	8000	2000	8000	2000	6800	1100	2100
4TW160	7500	1500	7300	1200	6500	1000	6000
4TW200	7000	1300	7000	1000	6000	900	5500

D: Diameter Z≦0.01D XY≦0.02D



4Y

3Y

2TW

4TW

2MTW

6TW

2DMOT

2LT

4LT

2TX

4TX

3PT

2GT

2CTP



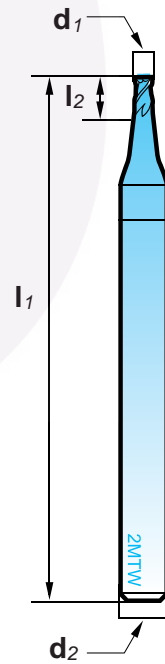
SMG Miniature End Mills

極細微粒小徑立銑刀



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
2MTW002	0.2	0.4	50	4
2MTW003	0.3	0.6	50	4
2MTW004	0.4	0.8	50	4
2MTW005	0.5	1.0	50	4
2MTW006	0.6	1.2	50	4
2MTW007	0.7	1.4	50	4
2MTW008	0.8	1.6	50	4
2MTW010	1.0	2.5	50	4
2MTW012	1.2	3.0	50	4
2MTW015	1.5	4.0	50	4
2MTW016	1.6	4.0	50	4
2MTW018	1.8	5.0	50	4
2MTW020	2.0	6.0	50	4
2MTW025	2.5	8.0	50	4
2MTW030	3.0	8.0	50	4



- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW**
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

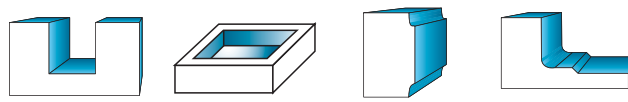
2MTW Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SK.SCM.SUS		Hardened Steels NAK. SKD		SKD61	
	HB150~250		225~325HB		30~40HRC		HRC45~55	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2MTW002	30000	90	30000	80	30000	40	20000	25
2MTW003	30000	100	30000	80	30000	60	16500	25
2MTW004	25000	110	25000	90	25000	65	12500	25
2MTW005	25000	110	25000	90	25000	65	10000	25
2MTW006	25000	110	25000	90	25000	65	8500	25
2MTW007	25000	110	25000	90	25000	65	6500	25
2MTW008	25000	110	25000	90	25000	65	6500	25
2MTW010	20000	1200	15000	1000	13000	700	6000	300
2MTW012	20000	1200	15000	1000	13000	700	5000	300
2MTW015	15000	1200	10000	1000	8500	700	4500	350
2MTW016	15000	1200	10000	1000	8500	700	4500	350
2MTW018	11000	1200	7500	1100	6800	800	4000	350
2MTW020	11000	1300	7500	1100	6800	800	4000	400
2MTW025	9000	1200	6500	1000	6000	800	3500	400
2MTW030	7500	1100	6000	1000	5500	800	2800	400

D : Diameter XY ≤ 0.01 Z ≤ 0.01D

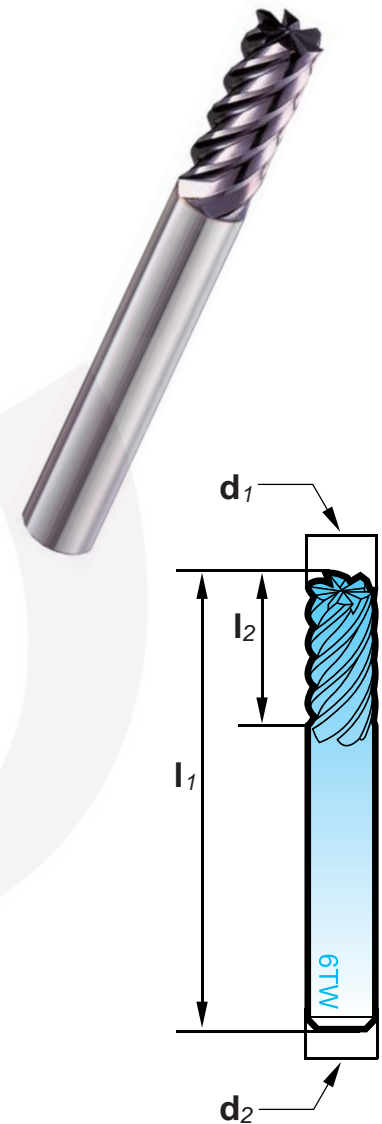
SMG End Mills

極細微粒立銑刀



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
6TW060	6.0	16	50	6
6TW080	8.0	20	60	8
6TW100	10.0	25	75	10
6TW120	12.0	30	75	12
6TW160	16.0	40	100	16
6TW200	20.0	45	100	20



6TW Recommendations for Cutting Conditions

WORK Material	NAK80		SKD61		SKD11	
	HRC40		HRC50		HRC60	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
6TW060	16000	5800	8000	2900	4000	1400
6TW080	12000	5800	6000	2900	3000	1400
6TW100	9500	5700	4800	2900	2400	1400
6TW120	8000	4800	4000	2400	2000	1200
6TW160	6000	3600	3000	1800	1500	900
6TW200	5800	1500	3000	950	1500	800

D: Diameter Z ≤ 0.01D XY ≤ 0.02D

- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW**
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

SMG Miniature End Mills

極細微粒小徑立銑刀

2DMOT



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
2DMOT002	0.2	0.4	50	3
2DMOT003	0.3	0.6	50	3
2DMOT004	0.4	0.8	50	3
2DMOT005	0.5	1.0	50	3
2DMOT006	0.6	1.2	50	3
2DMOT008	0.8	1.6	50	3
2DMOT010	1.0	2.5	50	3
2DMOT012	1.2	3.0	50	3
2DMOT014	1.4	3.0	50	3
2DMOT015	1.5	4.0	50	3
2DMOT016	1.6	4.0	50	3
2DMOT018	1.8	5.0	50	3
2DMOT020	2.0	6.0	50	3



- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT**
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

2DMOT Recommendations for Cutting Conditions

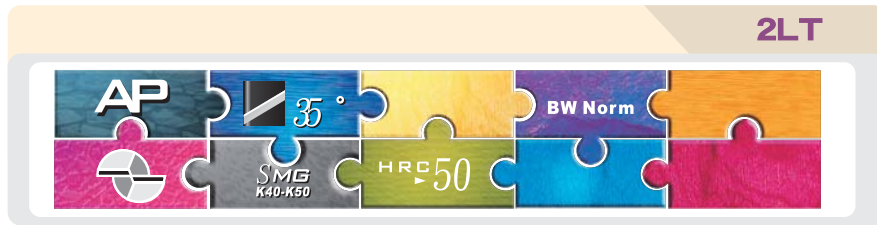
WORK Material	S45C.S50C		SCM.P20.PDS5. PDS3.SKD11		NAK80		SKD61	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
Order Code	HB150~250		HRC20~35		HRC35~45		HRC45~55	
2DMOT002	27000	90	27000	80	27000	40	18000	25
2DMOT003	27000	100	27000	80	27000	60	14850	25
2DMOT004	22500	110	22500	90	22500	65	11250	25
2DMOT005	22500	110	22500	90	22500	65	9000	25
2DMOT006	22500	110	22500	90	22500	65	7650	25
2DMOT007	22500	110	22500	90	22500	65	5850	25
2DMOT008	22500	110	22500	90	22500	65	5850	25
2DMOT010	18000	120	13500	100	11700	70	5400	30
2DMOT012	18000	120	13500	100	11700	70	4500	30
2DMOT015	13500	120	9000	100	7650	70	4050	35
2DMOT016	13500	120	9000	100	7650	70	4050	35
2DMOT018	9900	120	6750	110	6120	80	3600	35
2DMOT020	9900	130	6750	110	6120	80	3600	40
2DMOT025	8100	150	5850	110	5400	80	3150	40
2DMOT030	6750	195	5400	110	4950	80	2520	40

D : Diameter

XY ≤ 0.01 Z ≤ 0.01D

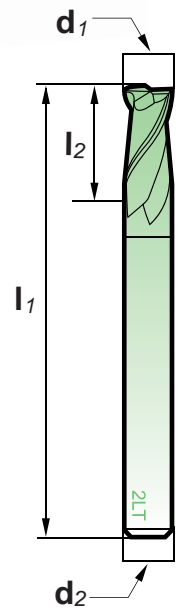
SMG Long Shank End Mills

極細微粒長柄立銑刀



Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
2LT060	6.0	18	100	6
2LT080	8.0	20	100	8
2LT100	10.0	25	100	10
2LT120	12.0	30	100	12

unit:mm



2LT Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SCM.SUS.(HPM)		NAK(HPM)		SKD61	
	HB150~250		HRC20~35		HRC40		HRC50	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2LT060	6000	650	5800	550	5700	550	5500	530
2LT080	5500	540	5300	510	5100	500	4900	430
2LT100	5000	460	4800	430	4500	430	4300	400
2LT120	4500	430	4400	410	4300	400	3100	370

D : Diameter Z ≤ 0.01D XY ≤ 0.02D Z ≤ 0.01D XY ≤ 0.02D

- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT**
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP



SMG Long Shank End Mills

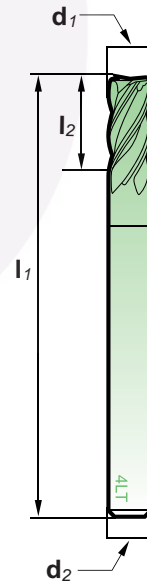
極細微粒長柄立銑刀

4LT



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
4LT030	3.0	8	100	3
4LT040	4.0	11	100	4
4LT050	5.0	13	100	5
4LT060	6.0	16	100	6
4LT080	8.0	20	100	8
4LT100	10.0	25	100	10
4LT120	12.0	30	100	12
4LT140	14.0	35	125	14
4LT160	16.0	40	150	16



4LT Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SCM.SUS.(HPM)		NAK(HPM)		SKD61	
	HB150~250		HRC20~35		HRC40		HRC50	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4LT030	7600	750	7600	700	7500	680	7400	690
4LT040	7550	730	7500	680	7400	640	7300	680
4LT050	7500	720	7500	650	7200	600	7350	675
4LT060	7500	710	7400	700	7100	670	7000	670
4LT080	7000	680	6900	650	6800	650	6500	630
4LT100	6500	630	6400	630	6000	560	5800	510
4LT120	6300	610	6100	600	5800	530	5500	500
4LT140	6300	600	6100	590	5800	520	5500	490
4LT160	6000	580	6000	550	5500	510	5000	460

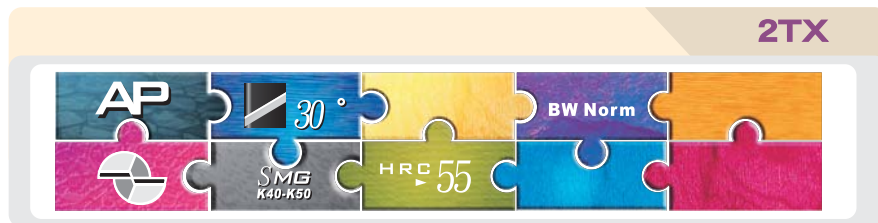
D : Diameter Z ≤ 0.01D XY ≤ 0.02D Z ≤ 0.01D XY ≤ 0.02D



- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT**
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP

SMG Long Flute End Mills

極細微粒長刃立銑刀

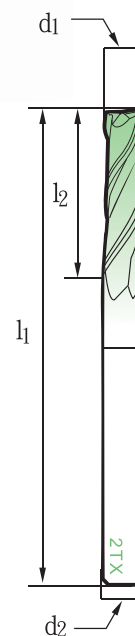


2TX



Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
2TX020	2.0	12	50	4
2TX030	3.0	20	50	4
2TX040	4.0	25	75	4
2TX050	5.0	30	75	6
2TX060	6.0	30	75	6
2TX080	8.0	40	100	8
2TX100	10.0	40	100	10
2TX120	12.0	45	100	12

unit:mm



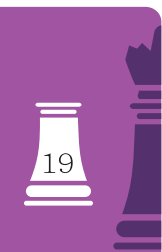
2XT Recommendations for Cutting Conditions

WORK Material	S45C-S50C		SCM.SUS.(HPM)		NAK(HPM)		SKD61	
	HB150~250		HRC20~35		HRC40		HRC50	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2TX020	8000	880	7800	750	7500	720	7400	710
2TX030	7500	700	7300	710	7000	690	6900	650
2TX040	7000	670	6900	650	6800	670	6600	620
2TX050	6500	680	6400	620	6300	620	6000	550
2TX060	6500	680	6400	620	6300	600	6100	500
2TX080	5000	520	4800	450	4500	430	4450	430
2TX100	5000	450	4800	430	4500	420	4300	400
2TX120	4800	400	4500	420	4400	410	4000	400

D : Diameter Z ≤ 0.01D XY ≤ 0.02D



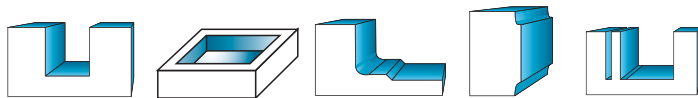
- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2CTP



SMG Long Shank End Mills

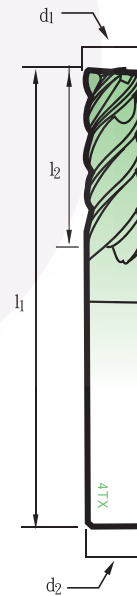
極細微粒長刃立銑刀

4TX



unit:mm

Order Code.	d ₁	l ₂	l ₁	d ₂
型號	直徑	刃長	全長	柄徑
4TX020	2.0	15	50	4
4TX030	3.0	20	50	4
4TX030-d3	3.0	20	50	3
4TX040	4.0	25	75	4
4TX050	5.0	30	75	6
4TX060	6.0	30	75	6
4TX080	8.0	40	100	8
4TX100	10.0	40	100	10
4TX120	12.0	45	100	12
4TX160	16.0	60	150	16
4TX200	20.0	60	150	20



4TX Recommendations for Cutting Conditions

WORK Material	S45C.S50C		SCM.SUS.(HPM)		NAK(HPM)		SKD61	
	HB150~250		HRC20~35		HRC40		HRC50	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4TX020	9000	890	8800	850	8500	840	8300	820
4TX030	8700	860	8600	840	8300	810	8000	790
4TX040	8500	820	8400	810	8100	800	7900	780
4TX050	8000	760	7700	740	7500	740	7400	730
4TX060	8000	750	7500	730	7400	700	7200	700
4TX080	7500	710	7500	720	7300	710	7100	690
4TX100	6500	630	6400	620	6200	610	6000	650
4TX120	6000	570	5800	560	5500	530	5300	510
4TX160	5000	470	4900	470	4800	460	4500	440
4TX200	5000	450	4800	450	4500	430	4400	410

D : Diameter Z ≤ 0.01D XY ≤ 0.02D

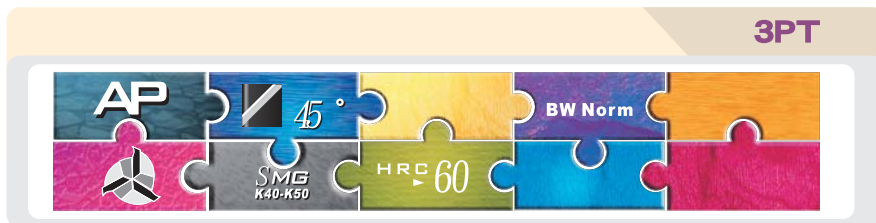


- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX**
- 3PT
- 2GT
- 2CTP



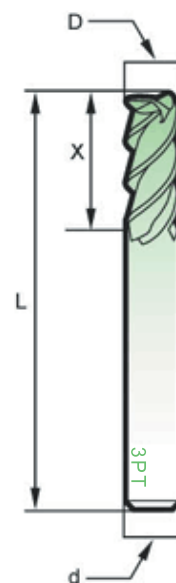
SMG High Helix End Mills

極細微粒高螺旋立銑刀



Order Code.	D	X	L	d
型號	直徑	刃長	全長	柄徑
3PT020	2.0	6	50	4
3PT030	3.0	8	50	4
3PT040	4.0	11	50	4
3PT050	5.0	13	50	6
3PT060	6.0	16	50	6
3PT080	8.0	20	60	8
3PT100	10.0	25	75	10
3PT120	12.0	30	75	12
3PT160	16.0	40	100	16

unit:mm



3PT Recommendations for Cutting Conditions

Order Code	S50C.SCM.SS		SUS304.SUS316		NAK80.SKD61		SKD61.SKD11	
	R.P.M.	Feed	R.P.M.	Feed	R.P.M.	Feed	R.P.M.	Feed
3PT020	9500	950	8500	830	8400	760	8000	750
3PT030	9300	910	8400	800	8300	750	7800	730
3PT040	9000	890	8100	790	8100	730	7500	700
3PT050	8700	850	8000	750	8000	700	7300	680
3PT060	8500	810	7900	730	7800	670	7000	650
3PT080	8400	750	7500	700	7500	630	6800	630
3PT100	8300	700	7200	680	7300	600	6500	600
3PT120	7800	670	7000	700	7000	560	6000	580
3PT160	7500	650	6800	620	6800	550	5800	550

D : Diameter Z ≤ 0.01D XY ≤ 0.02D



4Y

3Y

2TW

4TW

2MTW

6TW

2DMOT

2LT

4LT

2TX

4TX

3PT

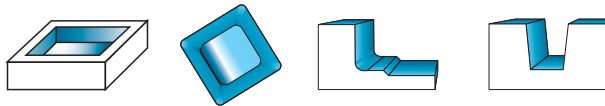
2GT

2CTP

SMG Tapered End Mills

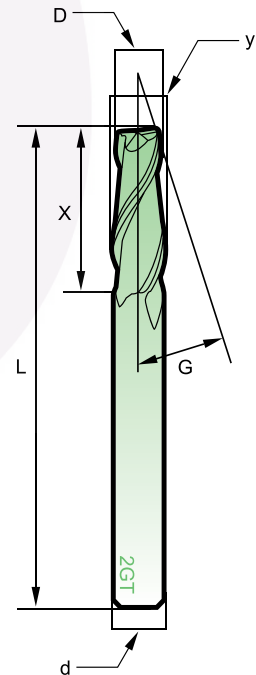
極細微粒斜度立銑刀

2GT



unit:mm

Order Code.	D	X	G	L	d
型號	先端徑	刃長	斜角	全長	柄徑
2GT005005	0.5	1	30°	50	4
2GT005010	0.5	1	1°	50	4
2GT005015	0.5	1	130°	50	4
2GT005020	0.5	1	2°	50	4
2GT005025	0.5	1	230°	50	4
2GT005030	0.5	1	3°	50	4
2GT005050	0.5	1	5°	50	4
2GT005070	0.5	1	7°	50	4
2GT005100	0.5	1	10°	50	4
2GT010005	1.0	2	30°	50	4
2GT010010	1.0	2	1°	50	4
2GT010015	1.0	2	130°	50	4
2GT010020	1.0	2	2°	50	4
2GT010025	1.0	2	230°	50	4
2GT010030	1.0	2	3°	50	4
2GT010050	1.0	2	5°	50	4
2GT010070	1.0	2	7°	50	4
2GT010100	1.0	2	10°	50	4
2GT015005	1.5	3	30°	50	4
2GT015010	1.5	3	1°	50	4
2GT015015	1.5	3	130°	50	4
2GT015020	1.5	3	2°	50	4
2GT015025	1.5	3	230°	50	4
2GT015030	1.5	3	3°	50	4
2GT015050	1.5	3	5°	50	4
2GT015070	1.5	3	7°	50	4
2GT015100	1.5	3	10°	50	4
2GT020005	2.0	4	30°	50	4
2GT020010	2.0	4	1°	50	4
2GT020015	2.0	4	130°	50	4
2GT020020	2.0	4	2°	50	4
2GT020025	2.0	4	230°	50	4
2GT020030	2.0	4	3°	50	4
2GT020050	2.0	4	5°	50	4
2GT020070	2.0	4	7°	50	4
2GT020100	2.0	4	10°	50	4
2GT025005	2.5	5	30°	50	4
2GT025010	2.5	5	1°	50	4
2GT025015	2.5	5	130°	50	4
2GT025020	2.5	5	2°	50	4
2GT025025	2.5	5	230°	50	4
2GT025030	2.5	5	3°	50	4
2GT025050	2.5	5	5°	50	4
2GT025070	2.5	5	7°	50	6
2GT025100	2.5	5	10°	50	6



- 4Y
- 3Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT**
- 2CTP

SMG Tapered End Mills

極細微粒斜度立銑刀

unit:mm

Order Code.	D	X	G	L	d
型號	先端徑	刃長	斜角	全長	柄徑
2GT030005	3.0	6	30°	50	6
2GT030010	3.0	6	1°	50	6
2GT030015	3.0	6	130°	50	6
2GT030020	3.0	6	2°	50	6
2GT030025	3.0	6	230°	50	6
2GT030030	3.0	6	3°	50	6
2GT030050	3.0	6	5°	50	6
2GT030070	3.0	6	7°	50	6
2GT030100	3.0	6	10°	50	6
2GT040005	4.0	8	30°	50	6
2GT040010	4.0	8	1°	50	6
2GT040015	4.0	8	130°	50	6
2GT040020	4.0	8	2°	50	6
2GT040025	4.0	8	230°	50	6
2GT040030	4.0	8	3°	50	6
2GT040050	4.0	8	5°	50	6
2GT040070	4.0	8	7°	60	6
2GT050005	5.0	10	30°	60	6
2GT050010	5.0	10	1°	60	6
2GT050015	5.0	10	130°	60	6
2GT050020	5.0	10	2°	60	6
2GT050025	5.0	10	230°	60	6
2GT050030	5.0	10	3°	60	6
2GT050050	5.0	10	5°	60	6
2GT050070	5.0	10	7°	75	6
2GT060005	6.0	12	30°	60	6
2GT060010	6.0	12	1°	60	6
2GT060015	6.0	12	130°	60	6
2GT060020	6.0	12	2°	60	6
2GT060025	6.0	12	230°	60	6
2GT060030	6.0	12	3°	60	8
2GT060050	6.0	12	5°	75	8
2GT080005	8.0	16	30°	75	8
2GT080010	8.0	16	1°	75	8
2GT080015	8.0	16	130°	75	8
2GT080020	8.0	16	2°	75	8
2GT080025	8.0	16	230°	75	10
2GT080030	8.0	16	3°	75	10
2GT080050	8.0	16	5°	100	10
2GT100005	10.0	20	30°	100	10
2GT100010	10.0	20	1°	100	10
2GT100015	10.0	20	130°	100	10
2GT100020	10.0	20	2°	100	12
2GT100025	10.0	20	230°	100	12
2GT100030	10.0	20	3°	100	12
2GT100050	10.0	20	5°	100	16

4Y

3Y

2TW

4TW

2MTW

6TW

2DMOT

2LT

4LT

2TX

4TX

3PT

2GT

2CTP

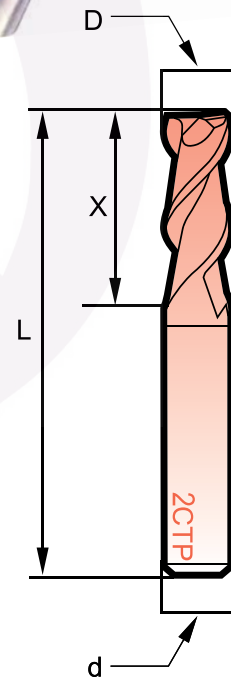
SMG End Mills

極細微粒銅鋁用立銑刀



unit:mm

Order Code.	D	X	L	d
型號	直徑	刃長	全長	柄徑
2CTP005	0.5	1.5	50	4
2CTP010	1.0	3	50	6
2CTP015	1.5	4	50	6
2CTP020	2.0	6	50	6
2CTP030	3.0	8	50	6
2CTP040	4.0	11	50	6
2CTP050	5.0	13	50	6
2CTP060	6.0	16	50	6
2CTP080	8.0	19	60	8
2CTP100	10.0	25	75	10
2CTP120	12.0	26	75	12



- 3Y
- 4Y
- 2TW
- 4TW
- 2MTW
- 6TW
- 2DMOT
- 2LT
- 4LT
- 2TX
- 4TX
- 3PT
- 2GT
- 2GTX
- 2CTP