



ENDMILLS

NiTiCo 30





















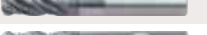
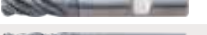
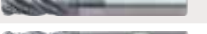
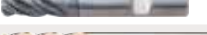

Manufacture to the highest standards

For material application ≤ 45 HRC

Index - NiTiCo 30, For ≤ 45 HRC

Suitable for Material Groups
 Adapté pour les matériaux
 适用于材料
 Geeignet für die Materialgruppen
 Adatto per il materiale

P
M
K

EDP Number	Type	No. Z	Helix Angle	Coating	Performance	Page Number
C30	 NiTiCo 30	2	30°	G6110	G	112
C31	 NiTiCo 30	3	30°	G6110	G	113
C42	 NiTiCo 30, Weldon	2	30°	G6110	G	114
C43	 NiTiCo 30, Weldon	3	30°	G6110	G	115
C44	 NiTiCo 30, Weldon	4	30°	G6110	G	116
951	 NiTiCo 30 DP	4	40°	G6110	P	119
972	 NiTiCo 30 DP, Weldon	4	40°	G6110	P	119
C46	 NiTiCo 30 DP Torus	4	40°	G6110	P	120
C52	 NiTiCo 30 DP Torus, Weldon	4	40°	G6110	P	120
J89	 NiTiCo 30 DH	5	$a^\circ = b^\circ$	G6110	P	122
J90	 NiTiCo 30 DH, Weldon	5	$a^\circ = b^\circ$	G6110	P	122
J92	 NiTiCo 30 DH Long	5	$a^\circ = b^\circ$	G6110	P	123
J93	 NiTiCo 30 DH Long, Weldon	5	$a^\circ = b^\circ$	G6110	P	123
NEW K65	 NiTiCo 30 DH Internal Oil Hole, Weldon, Recess	5	$a^\circ = b^\circ$	G6110	P	126
NEW K67	 NiTiCo 30 DH Long Internal Oil Hole, Weldon, Recess	5	$a^\circ = b^\circ$	G6110	P	127
NEW 949	 NiTiCo 30 DP/DH	4	$a^\circ = b^\circ$	G6110	P	130
NEW C49	 NiTiCo 30 DP/DH, Weldon	4	$a^\circ = b^\circ$	G6110	P	130
NEW K78	 NiTiCo 30 DP/DH, Weldon, Recess	4	$a^\circ = b^\circ$	G6110	P	131
NEW K70	 NiTiCo 30 DP/DH Internal Oil Hole, Weldon, Recess	4	$a^\circ = b^\circ$	G6110	P	131
C48	 NiTiCo 30 DP/DH	4	$a^\circ = b^\circ$	G6110	P	132
C50	 NiTiCo 30 DP/DH, Weldon	4	$a^\circ = b^\circ$	G6110	P	133
NEW J01	 NiTiCo 30 DP/DH, Recess	4	$a^\circ = b^\circ$	G6110	P	134
NEW H98	 NiTiCo 30 DP/DH, Recess, Weldon	4	$a^\circ = b^\circ$	G6110	P	134
A1R	 NiTiCo 30 DP/DH	4	$a^\circ = b^\circ$	B0909	P	132
A1T	 NiTiCo 30 DP/DH, Weldon	4	$a^\circ = b^\circ$	B0909	P	133


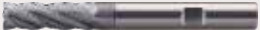

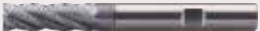





G - General P - Performance

cont'd ►

Index - NiTiCo 30, For ≤ 45 HRC

Suitable for Material Groups
 Adapté pour les matériaux
 适用于材料
 Geeignet für die Materialgruppen
 Adatto per il materiale

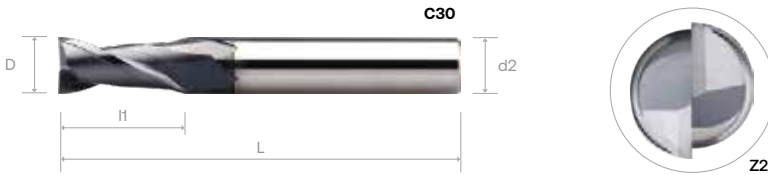
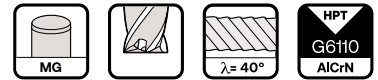
P
M
K

EDP Number	Type	No. Z	Helix Angle	Coating	Performance	Page Number
H38 	NiTiCo 30 DP/DH Long, Recess	4	$a^\circ \neq b^\circ$	G6110	P	135
H39 	NiTiCo 30 DP/DH Long, Recess, Weldon	4	$a^\circ \neq b^\circ$	G6110	P	135
J97 	NiTiCo 30 DP/DH Long	4	$a^\circ \neq b^\circ$	G6110	P	135
J98 	NiTiCo 30 DP/DH Long, Weldon	4	$a^\circ \neq b^\circ$	G6110	P	135
C47 	NiTiCo 30 Roughing	4	40°	G6110	P	136
C64 	NiTiCo 30 Roughing, Weldon	4	40°	G6110	P	136
G87 	NiTiCo 30 Miniature Long Neck	2	40°	G6110	G	137
G88 	NiTiCo 30 Miniature Long Neck	2	30°	G6110	G	141
H56 	NiTiCo 30 Miniature Long Neck	2	40°	G6110	G	139

G - General P - Performance

NITICO 30 ENDMILLS, 2 FLUTES

- VHM NiTiCo 30 Fräser , 2 Zähne
- Frese NiTiCo 30, 2 taglienti
- Fraises NiTiCo 30 - 2 dents
- 整体硬质合金 NiTiCo 30 系列 2/3/4刃平底铣刀



Order Number	Dimension (mm)					G6110
	D	l1	l2	L	d2 (h6)	
C30 0100 040 03	1	3		40	3	°
C30 0100 050 04				50	4	•
C30 0150 040 03	1.5	4.5		40	3	°
C30 0150 050 04				50	4	°
C30 0200 040 03 *	2	6.5		40	3	°
C30 0200 050 04				50	4	°
C30 0250 040 03	2.5	6.5		40	3	°
C30 0250 050 04				50	4	°
C30 0300	3	9		40	3	°
C30 0300 050 06				50	6	°
C30 0400	4	12		50	4	°
C30 0400 050 06				50	6	°
C30 0500	5	15		50	5	°
C30 0500 050 06				50	6	°
C30 0600 050	6	16		50	6	°
C30 0600 060				60	6	°
C30 0800	8	20		64	8	°
C30 1000 070	10		22		70	10
C30 1000 075				75	10	°
C30 1200	12	25		75	12	°
C30 1400	14		32		90	14
C30 1600	16	38			90	16
C30 1800	18		38		100	18
C30 2000	20				100	20

* - DIN 6535

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

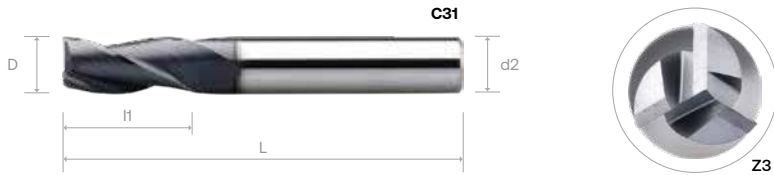
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	142
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NITICO 30 ENDMILLS, 3 FLUTES

- VHM NiTiCo 30 Fräser , 3 Zähne
- Frese NiTiCo 30, 3 taglienti
- Fraises NiTiCo 30 - 3 dents
- 整体硬质合金 NiTiCo 30 系列 2/3/4刀平底铣刀



Order Number	Dimension (mm)					G6110
	D	l1	l2	L	d2 (h6)	
C31 0100 040 03	1	3		40	3	°
C31 0100 050 04				50	4	°
C31 0150 040 03	15	4.5		40	3	°
C31 0150 050 04				50	4	°
C31 0200 040 03 *	2	6.5		40	3	°
C31 0200 050 04				50	4	°
C31 0250 040 03	2.5	6.5		40	3	°
C31 0250 050 04				50	4	°
C31 0300	3	9		40	3	°
C31 0300 050 06				50	6	°
C31 0400	4	12		50	4	°
C31 0400 050 06				50	6	°
C31 0500	5	15		50	5	°
C31 0500 050 06				50	6	°
C31 0600 050	6	16		50	6	°
C31 0600 060			20		60	6
C31 0800	8			64	8	°
C31 1000 070	10	22		70	10	°
C31 1000 075				75	10	°
C31 1200	12	25		75	12	°
C31 1400	14	32		90	14	°
C31 1600	16			90	16	°
C31 1800	18	38		100	18	°
C31 2000	20			100	20	°

* - DIN 6535

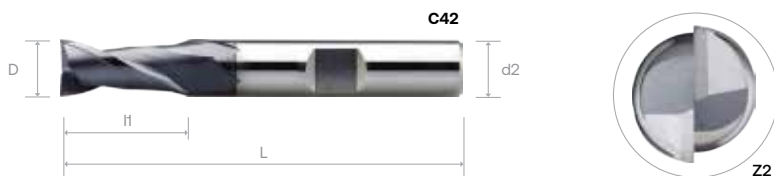
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	143
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NITICO 30 ENDMILLS WITH WELDON, 2 FLUTES

- VHM NiTiCo 30 Fräser, mit Weldon, 2 Zähne
- Frese NiTiCo 30, con weldon, 2 taglianti
- Fraises NiTiCo 30 avec queue Weldon - 2 dents
- 整体硬质合金 NiTiCo 30 系列 4刃平底铣刀(侧固柄)



Order Number	Dimension (mm)					G6110
	D	l1	l2	L	d2 (h6)	
C42 0300 050 06	3	9		50	6	•
C42 0400 050 06	4	12		50	6	•
C42 0500 050 06	5	15		50	6	◦
C42 0600 050	6	16		50	6	◦
C42 0800	8	20		64	8	◦
C42 1000 070	10	22		70	10	◦
C42 1200	12	25		75	12	◦
C42 1400	14	32		90	14	◦
C42 1600	16			90	16	◦
C42 1800	18	38		100	18	◦
C42 2000	20			100	20	◦

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

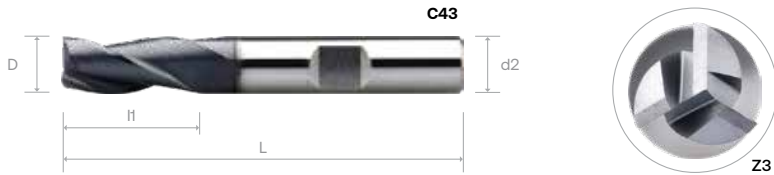


Cutting Parameter

142

NITICO 30 ENDMILLS WITH WELDON, 3 FLUTES

- VHM NiTiCo 30 Fräser, mit Weldon, 3 Zähne
- Frese NiTiCo 30, con weldon, 3 taglienti
- Fraises NiTiCo 30 av ec queue Weldon -3 dents
- 整体硬质合金 NiTiCo 30 系列 2/3/4刀平底铣刀(侧固柄)



Order Number	Dimension (mm)					G6110
	D	l1	l2	L	d2 (h6)	
C43 0300 050 06	3	9		50	6	•
C43 0400 050 06	4	12		50	6	•
C43 0500 050 06	5	15		50	6	•
C43 0600 050	6	16		50	6	•
C43 0800	8	20		64	8	•
C43 1000 070	10	22		70	10	•
C43 1200	12	25		75	12	•
C43 1400	14	32		90	14	◦
C43 1600	16			90	16	•
C43 1800	18	38		100	18	◦
C43 2000	20			100	20	•

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

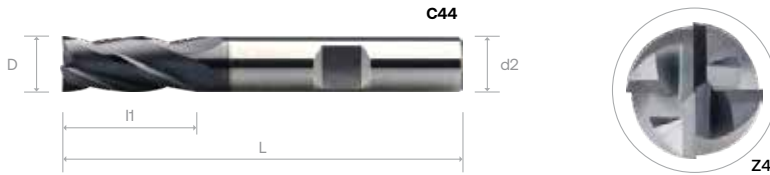
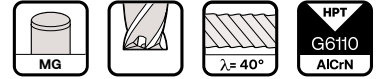
Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	143
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
 NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DM70 -
 SE70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

NITICO 30 ENDMILLS WITH WELDON, 4 FLUTES

- VHM NiTiCo 30 Fräser, mit Weldon, 4 Zähne
- Frese NiTiCo 30, con weldon, 4 taglianti
- Fraises NiTiCo 30 av ec queue Weldon - 4 dents
- 整体硬质合金 NiTiCo 30 系列 2/3/4刃平底铣刀(侧固柄)



Order Number	Dimension (mm)					G6110
	D	l1	l2	L	d2 (h6)	
C44 0300 050 06	3	9		50	6	•
C44 0400 050 06	4	12		50	6	•
C44 0500 050 06	5	15		50	6	◦
C44 0600 050	6	16		50	6	◦
C44 0800	8	20		64	8	◦
C44 1000 070	10	22		70	10	◦
C44 1200	12	25		75	12	◦
C44 1400	14	32		90	14	◦
C44 1600	16			90	16	◦
C44 1800	18	38		100	18	◦
C44 2000	20			100	20	◦

- ALU LINE
- EZ LINE - ENDMILL
- SE 30
- NITICO 30
- OPTIMUM
- SE 45
- SE 45X
- NITICO 45
- SE 60
- SE 60X
- DM70 - SE 70
- SE GR
- TE 45
- PLUNGE -MILL
- THREAD MILL

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	144	
●	○	●	●	●	●	●	●	●	●	●	○	●						

FEATURES & BENEFITS

NiTiCo DP



Top View

1 4 Flutes Design

- Significantly increased feedrate (25% over 3 flute)
- Optimised for slotting, side milling

2 Optimised Tool Geometry

Allows for improved shearing and decreased spindle loads

3 Positive Rake Angle

Enables smooth chip evacuation due to small size chips generated



4 Differential Pitch (DP)



- Provides excellent surface finishing while eliminating chatter

5 Stable Cutting Edge

Allows for high speeds and feed rates, greatly improving productivity

6 The Perfect Edge Design



- Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life
- High CNC repeatability within 0.010mm

7 Suitable for Materials





1. 4-Schneiden-Design
Das 4-Schnitt-Design bietet gegenüber 3-Schnitt-Werkzeugen erhöhte Vorschubgeschwindigkeiten von bis zu 25 %
Für Nuten- und Umfangsfräsen
2. Optimierte Geometrie
Ermöglicht bessere Spanbildung und verringert die Spindelbelastungen
3. Positiver Spanwinkel
Ermöglicht eine gute Spanabfuhr durch kleine Späne
4. Ungleiche Teilung (DP)
Per una lavorazione senza vibrazione e finiture superficiali eccellenti
5. Stabile Schneide
Ermöglicht hohe Geschwindigkeiten und Vorschubgeschwindigkeiten, wodurch die Produktivität erheblich verbessert wird
6. Kleinstfase entlang der Schneiden
Eine optimale Schneidkantenpräparation ermöglicht eine stabile Schneidkante und sorgt für einen gleichmäßigen und kontrollierten Verschleiß. Dadurch wird ebenfalls die Standzeit optimiert und Ermöglicht hohe Geschwindigkeiten und Vorschübe und verbessert die Produktivität.
Ermöglicht hohe CNC-Wiederholbarkeit innerhalb 0,01mm
7. Geeignet für die Materialgruppen P, M, K, S



1. 4刃设计
4个设计大师, 进给率提高到25%超过3种工具。
可以用于开槽和侧铣。
2. 优化的刀具几何形状
允许改善剪切并减少主轴负载。
3. 正前角
尺寸小, 排屑顺畅 产生的筹码。
4. 不等分割设计 (DP)
有效降低加工时的振动从而, 达到更好的工件表面光洁度。
5. 稳定的切削刃
允许高速和进给率, 大大提高生产率。
6. 发线边刃
提供稳定的切削刃, 大大降低崩刃的可能性, 同时延长刀具寿命。
7. 适用于材料 P、M、K、S







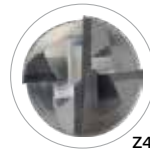
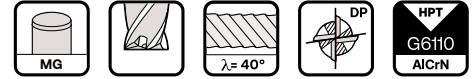
1. Design a 4 flauti
Il design a 4 taglienti garantisce un avanzamento del 25% superiore rispetto alle frese Z3 e può essere usato
2. Geometria utensile ottimizzata
Consente di migliorare la cesoiatura e di ridurre i carichi sul mandrino
3. Angolo di spoglia positivo
Consente un'evacuazione del truciolo senza intoppi grazie alle piccole dimensioni dei trucioli generati
4. Design del passo differenziale (DP)
Design del passo differenziale (DP) Riduce le vibrazioni, massimizza la produttività e la durata dell'utensile.
5. Boardo di taglio stabile
Consente velocità e velocità di avanzamento elevate, migliorando notevolmente la produttività
6. Il design del bordo prefetto
Fornisce un bordo di taglio stabile con molto ridotta possibilità di scheggiatura mentre prolungare la vita dell'utensile
ridotta possibilità di scheggiatura mentre prolungare la vita dell'utensile
7. Adatto per materiali P, M, K, S



1. Conception à 4 Goujures
La conception à 4 dents offre des vitesses d'avance accrues jusqu'à 25 % par rapport aux outils à 3 dents et peut être utilisée dans
Pour le rainurage et le contourage
2. Géométrie de L'outil Optimisée
Permet un cisaillement amélioré et des charges diminuées sur l'allonge
3. Angle de coupe Positif
Permet une évacuation des copeaux fluide en raison de la petite taille des copeaux générés
4. Conception à pas différentiel (DP)
Pour un usinage sans vibrations et un très bon état de surface
5. Bord de coupe stable
Permet des vitesses et des vitesses d'avance élevées améliorant considérablement la productivité
6. Marge de craquelure
Fournit un tranchant stable avec beaucoup possibilité réduite d'écaillage en prolongeant la durée de vie de l'outil
Très bonne répétabilité de l'usinage sur cnc à moins de 0,010 mm
7. Adapté aux matériaux P, M, K, S

NITICO 30 DP ENDMILLS / WITH WELDON, 4 FLUTES

-  VHM NiTiCo 30 DP Fräser, 4 Zähne
-  Frese NiTiCo 30, con passo differenziale, 4 taglienti
-  Fraises NiTiCo 30 DP à pas décalés, 4 dents
-  整体硬质合金 NiTiCo 30 DP 系列 4 刀平底铣刀



Order Number	Dimension (mm)						HA	Order Number	Dimension (mm)						HB
	D	I1	I2	L	d2 (h6)	G6f10			D	I1	I2	L	d2 (h6)	G6f10	
951 0300 040 03	3	9		40	3	•	972 0300 040 03	3	9		40	3	•		
951 0300 040 04				40	4	•	972 0300 040 04				40	4	•		
951 0300 050 06				50	6	•	972 0300 050 06				50	6	◦		
951 0300 057 06	4	12		57	6	•	972 0300 057 06	4	12		57	6	◦		
951 0400 050 04				50	4	•	972 0400 050 04				50	4	•		
951 0400 050 06				50	6	•	972 0400 050 06				50	6	◦		
951 0400 057 06	5	13		57	6	•	972 0400 057 06	5	13		57	6	◦		
951 0500 050 05				50	5	•	972 0500 050 05				50	5	•		
951 0500 050 06				50	6	•	972 0500 050 06				50	6	◦		
951 0500 057 06	6	13		57	6	•	972 0500 057 06	6	13		57	6	◦		
951 0600 050				50	6	•	972 0600 050				50	6	◦		
951 0600 057				57	6	•	972 0600 057				57	6	•		
951 0800 064	8	20		64	8	•	972 0800 064	8	20		64	8	•		
951 1000 070				70	10	•	972 1000 070				70	10	◦		
951 1000 072				72	10	•	972 1000 072				72	10	•		
951 1000 075	12	26		75	10	•	972 1000 075	12	26		75	10	◦		
951 1200 075				75	12	•	972 1200 075				75	12	•		
951 1200 083				83	12	•	972 1200 083				83	12	•		
951 1400 083	14	32		83	14	•	972 1400 083	14	32		83	14	•		
951 1400 090				90	14	•	972 1400 090				90	14	◦		
951 1600 090				90	16	•	972 1600 090				90	16	◦		
951 1600 092	16	38		92	16	•	972 1600 092	16	38		92	16	•		
951 1800 092				92	18	•	972 1800 092				92	18	◦		
951 1800 100				100	18	•	972 1800 100				100	18	◦		
951 2000 100	20	38		100	20	•	972 2000 100	20	38		100	20	•		
951 2000 104				104	20	•	972 2000 104				104	20	◦		

* - DIN 6535

CNC Repeatability

Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

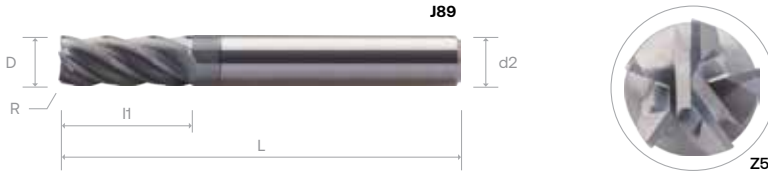
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	145 - 146
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NITICO 30 DH ENDMILLS / WITH WELDON, 5 FLUTES

- VHM NiTiCo 30 DH Fräser, lang, 5 Zähne
- Frese NiTiCo 30, con elica v ariabile, 5 taglienti
- Fraises NiTiCo 30 DH à pas décalés, 5 dents
- 整体硬质合金 NiTiCo 30 DH 系列 5刃长型平底铣刀



* A small radius similar to torus



Order Number	Dimension (mm)							HA	Order Number	Dimension (mm)							HB
	D	I1	I2	L	d2 (h6)	R	G6110			D	I1	I2	L	d2 (h6)	R	G6110	
J89 0400 057 06	4	12		57	6	0.1	•	J90 0400 057 06	4	12		57	6	0.1	◦		
J89 0500 057 06	5	13		57	6	0.1	•	J90 0500 057 06	5	13		57	6	0.1	•		
J89 0600 057	6			57	6	0.1	•	J90 0600 057	6			57	6	0.1	•		
J89 0800 064	8	20		64	8	0.2	•	J90 0800 064	8	20		64	8	0.2	•		
J89 1000 072	10	22		72	10	0.2	•	J90 1000 072	10	22		72	10	0.2	•		
J89 1200 083	12	26		83	12	0.3	•	J90 1200 083	12	26		83	12	0.3	◦		
J89 1600 092	16	32		92	16	0.3	•	J90 1600 092	16	32		92	16	0.3	◦		
J89 2000 104	20	38		104	20	0.3	•	J90 2000 104	20	38		104	20	0.3	◦		

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm





Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类



Cutting Parameter

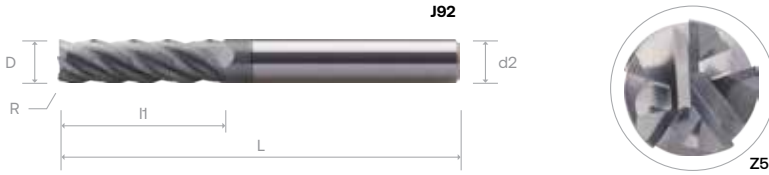
146 - 147

NITICO 30 DH LONG ENDMILLS / WITH WELDON, 5 FLUTES

-  VHM NiTiCo 30 DH Fräser, lang, 5 Zähne
-  Frese lunghe NiTiCo 30, con elica v variabile, 5 taglienti
-  Fraises NiTiCo 30 DH Long à pas décalés, 5 dents
-  整体硬质合金 NiTiCo 30 DH 系列 5刃长型平底铣刀



* A small radius similar to torus



Order Number	Dimension (mm)							HA	Order Number	Dimension (mm)							HB
	D	I1	I2	L	d2 (h6)	R	G6110			D	I1	I2	L	d2 (h6)	R	G6110	
J92 0600 075	6	25		75	6	0.1	•	J93 0600 075	6	25		75	6	0.1	•		
J92 0800 075	8			75	8	0.2	•	J93 0800 075	8			75	8	0.2	•		
J92 1000 100	10	38		100	10	0.2	•	J93 1000 100	10	38		100	10	0.2	•		
J92 1200 100	12	45		100	12	0.3	•	J93 1200 100	12	45		100	12	0.3	•		
J92 1600 125	16	55		125	16	0.3	•	J93 1600 125	16	55		125	16	0.3	•		
J92 2000 125	20	65		125	20	0.3	•	J93 2000 125	20	65		125	20	0.3	•		

CNC Repeatability

- Ø1 - Ø3 within 10µm
- Ø4 - Ø8 within 15µm
- ≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	147
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FEATURES & BENEFITS

NiTiCo DH 5F



Top View

1 5 Flutes Design

The 5 flute design offers increased feed rates up to 25% over 4 flute tools and can be used in slotting, profiling and semi-finishing applications.

3 Differential Helix (DH)

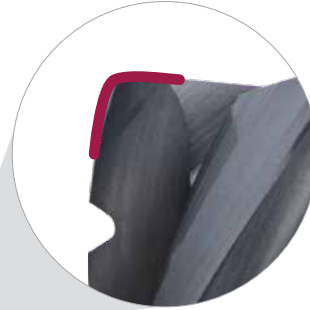


- Reduces machining vibrations allowing for high speed machining and increased productivity
- For chatter free machining and excellent surface finishing

5 Oil Hole for High Performance Milling



- Improves welding resistance
- Enables a wide range of machining processes
- Especially beneficial for difficult to cut materials, offering stable machining



2 Small Corner Radius

For less chipping of the cutting edges and longer tool life.

4 Ideal Cutting Edge



Provide edge protection to prolong tool life

6 Optimized Geometry with Chipbreakers

Efficiently shears work materials and shortens chips for improved chips removal.





1. 5 Flöten-Design
Das 5-Schnitt-Design bietet gegenüber 4-Schnitt-Werkzeugen erhöhte Vorschubgeschwindigkeiten von bis zu 25 %
kann beim Schlitzten, Profilieren und Vorschlichten verwendet werden.
2. Kleiner Eckenradius
Für weniger Ausbrüche der Schneidkanten und längere Standzeiten.
3. Ungleiche Drallsteigung (DH)
Reduziert Bearbeitungsvibrationen und ermöglicht eine Hochgeschwindigkeitsbearbeitung und eine höhere Produktivität
Zur Schnittkraftreduzierung und Leistungssteigerung
4. Perfekte Schneide
Bietet Schneidkantenschutz, um die Lebensdauer des Werkzeugs zu verlängern
5. Große Kühlkanalbohrungen für Hochleistungsfräsen
Verbessert die Spanabfuhr
Ermöglicht umfangreiche Applikationen
Große Vorteile für die Bearbeitung festerer Aluminiumlegierungen XQ
6. Spanbrechergeometrie
Erzeugt kontrollierte, kurze Späne



1. 5个设计大师
进给率提高到25%超过4种工具。
可以用于开槽, 轮廓和半成品应用程序。
2. 小角半径
减少切削刃刀口和更长的刀具寿命。
3. 不等距螺旋设计 (DH)
减少切削阻力, 提高机械加工性能。
用于无颤振加工和出色的表面光洁度。
4. 理想的切削刃
提供边缘保护延长刀具寿命。
5. 高性能油孔
切削时更能达到冷却的效果。
降低积屑的效果从而更优。
化排屑性能。
6. 使用断屑槽优化几何
高效剪切工作材料并缩短切屑以改善排屑。



1. Design a 5 taglienti
Il design a 5 taglienti garantisce un avanzamento del 25% superiore rispetto alle frese Z4 e può essere usato per cave dal pieno, profilatura e operazioni di semifinitura.
2. Tagliente leggermente raggiato
Riduce le scheggiature del tagliente garantendo una vita utensile più lunga.
3. Elica variabile (DH)
Per lavorazioni senza vibrazioni e ottime finiture superficiali
4. Preparazione del tagliente ideale e prolungamento della vita utensile.
5. Fori di lubrorefrigerazione
Consentono una vasta gamma di processi di lavorazione.
Particolarmente vantaggioso su materiali difficili da lavorare garantendo stabilità nella lavorazione.
6. Geometria ottimizzata
Riduce la lunghezza dei trucioli consentendone una migliore evacuazione.



1. Conception de 5 flûtes
les applications de rainurage, de profilage et de semi-finition.
2. Petit rayon d'angle
Pour moins d'écaillage des arêtes de coupe et une plus longue durée de vie de l'outil.
3. Conception à hélice variable
Réduit les efforts de coupes et améliore les performances d'usinage
Pour un usinage sans bavardage et un excellent état de surface
4. Arête tranchante idéale
Protège les arêtes pour prolonger la durée de vie de l'outil
5. Trou d'huile pour le fraisage haute performance
Améliore la résistance au soudage
Permet une large gamme de processus d'usinage
Particulièrement bénéfique pour les matériaux difficiles à couper, offrant un usinage stable
6. Géométrie optimisée avec brise-copeaux
Cisaille efficacement les matériaux de travail et raccourcit les copeaux pour une meilleure élimination des copeaux.



K65 NEW



NITICO 30 DH ENDMILLS, WITH INTERNAL OIL HOLE, CHIP BREAKER, RECESS AND WELDON, 5 FLUTES

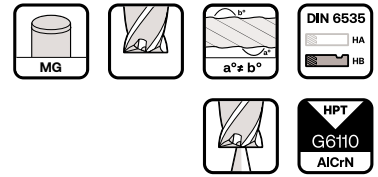
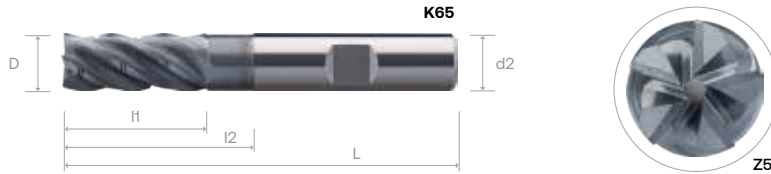
VHM NiTiCo 30 DH Standard Fräser, lang, mit Spanbrecher, Freistellung und Weldon, 5 Zähne

Frese NiTiCo 30, con elica differenziale, rompitrucciolo, foro lubrificante interno, recesso e weldon, 5 taglienti

Fraises NiTiCo 30 DH Standard à pas décalés av ec hélice différentielle, brise-copeaux, év idement et Weldon , 5 dents

整体硬质合金 NiTiCo 30 DH 系列 5刃平底铣刀(断屑槽、避空位和侧固柄)

* A small radius similar to torus



Order Number DIN 6535	Dimension (mm)						G6110
	D	l1	l2	L	d2 (h6)	R	
K65 0400 057 06	4	10	15	57	6	0.1	•
K65 0600 057 *	6	15	20	57	6	0.1	•
K65 0800 064	8	20	25	64	8	0.15	•
K65 1000 072 *	10	25	30	72	10	0.2	•
K65 1200 083 *	12	30	38	83	12	0.2	•
K65 1600 092 *	16	39	44	92	16	0.3	•
K65 2000 104 *	20	48	54	104	20	0.3	•

* - DIN 6535

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类



Cutting Parameter

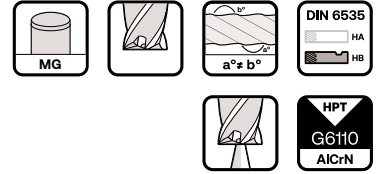
148 - 149

ALU LINE
EZ LINE -
ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DN70 -
SE 70
SE GR
TE 45
PLUNGE
-MILL
THREAD
MILL

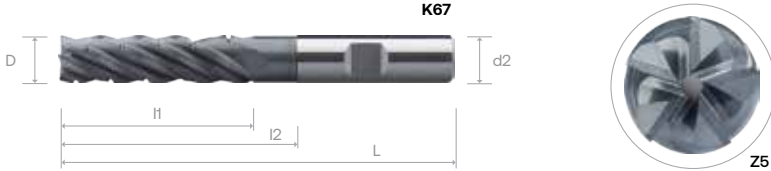


NITICO 30 DH LONG ENDMILLS, WITH INTERNAL OIL HOLE, CHIP BREAKER, RECESS AND WELDON 5 FLUTES

- VHM NiTiCo 30 DH Fräser, lang, mit Spanbrecher, Freistellung und Weldon, 5 Zähne
- Frese lunghe NiTiCo 30, con elica v variabile, rompitruciolo, foro lubrificante interno, recesso e weldon, 5 taglienti
- Fraises NiTiCo 30 DH Long à pas décalés av ec hélice différentielle, brise-copeaux, év idement et Weldon , 5 dents
- 整体硬质合金 NiTiCo 30 DH 系列 5刃长型平底铣刀(断屑槽、避空位和侧固柄)



* A small radius similar to torus



Order Number DIN 6535	Dimension (mm)						G610
	D	l1	l2	L	d2 (h6)	R	
K67 0600 075	6	26	32	75	6	0.1	•
K67 0800 075 *	8	32	38	75	8	0.2	•
K67 1000 100	10	42	52	100	10	0.2	•
K67 1200 100 *	12		54	100	12	0.2	•
K67 1600 125	16	60	68	125	16	0.3	•
K67 2000 125 *	20	67	75	125	20	0.3	•

* - DIN 6535

CNC Repeatability

Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	149
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FEATURES & BENEFITS

NiTiCo DP/DH



Top View

1 Differential Helix (DH)



- Reduces machining vibrations allowing for high speed machining and increased productivity
- For chatter free machining and excellent surface finishing

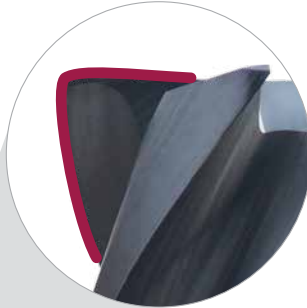
3 Differential Pitch (DP)



- Provides excellent surface finishing while eliminating chatter

5 Stable Cutting Edge

Allows for high speeds and feed rates greatly improving productivity



4 Corner Radius



- Reducing chipping and providing longer tool life
- Standardized corner radius for aerospace components

2 The Perfect Edge Design



- Provides a stable cutting edge with much reduced possibility of chipping while prolonging the tool life
- High CNC repeatability within 0.010mm

6 Suitable for Materials





1. Ungleiche Drallsteigung (DH)
Reduziert Bearbeitungsvibrationen und ermöglicht eine Hochgeschwindigkeitsbearbeitung und eine höhere Produktivität
Zur Schnittkraftreduzierung und Leistungssteigerung
2. Kleinstfase entlang der Schneiden
Eine optimale Schneidkantenpräparation ermöglicht eine stabile Schneidkante und sorgt für einen gleichmäßigen und kontrollierten Verschleiß. Dadurch wird ebenfalls die Standzeit optimiert und Ermöglicht hohe Geschwindigkeiten und Vorschübe und verbessert die Produktivität.
Ermöglicht hohe CNC-Wiederholbarkeit innerhalb 0,01mm
3. Ungleiche Teilung (DP)
Per una lavorazione senza vibrazione e finiture superficiali eccellenti
4. Eckenradius
Eckenradiushervorragender Schneideckenschutz sorgt für längere Werkzeuglebensdauer genormte Eckenradien für Aerospace Bauteile•
Standardisierter Eckradius für Aerospace-Komponenten (XQ Alu)
5. Stabile Schneide
Ermöglicht hohe Geschwindigkeiten und Vorschubgeschwindigkeiten, wodurch die Produktivität erheblich verbessert wird
6. Geeignet für die Materialgruppen P, M, K, S



1. 不等距螺旋设计 (DH)
减少切削阻力,提高机械加工性能。
用于无颤振加工和出色的表面光洁度。
2. 发线边刃
提供稳定的切削刃,大大降低崩刃的可能性,同时延长刀具寿命。
3. 不等分割设计 (DP)
有效降低加工时的振动从而,达到更好的工件表面光洁度。
4. 拐角半径
减少碎屑并延长刀具寿命。
航空航天部件的标准化圆角半径 (XQ Alu)。
5. 稳定的切削刃
允许高速和进给率,大大提高生产率。
6. 适用于材料 P、M、K、S



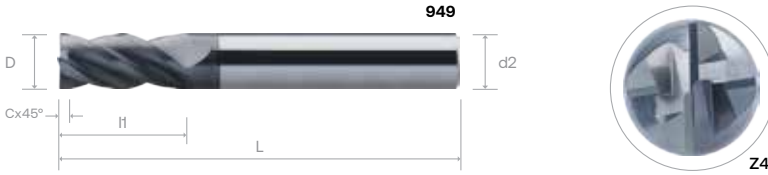
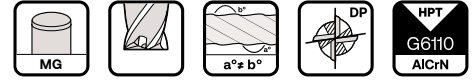
1. Elica differenziale (DH)
Riduce le vibrazioni di lavorazione, consentendo di lavorazioni ad alta velocità e maggiore produttività
Per ridurre le forze di taglio e migliorare le performance di lavorazione
2. Il design del bordo prefetto
Fornisce un bordo di taglio stabile con molto ridotta possibilità di scheggiatura mentre prolungare la vita dell'utensile
ridotta possibilità di scheggiatura mentre prolungare la vita dell'utensile
3. Design del passo differenziale (DP)
Design del passo differenziale (DP) Riduce le vibrazioni, massimizza la produttività e la durata dell'utensile.
4. Raggio d'angolo
Riduzione dei trucioli e maggiore durata dell'utensile
Raggio d'angolo standardizzato per componenti aerospaziali (XQ Alu)
5. Boardo di taglio stabile
Consente velocità e velocità di avanzamento elevate, migliorando notevolmente la produttività
6. Adatto per il materiale P, M, K, S



1. Conception à hélice variable
Réduit les efforts de coupes et améliore les performances d'usinage
Pour un usinage sans bavardage et un excellent état de surface
2. Marge de craquelure
Fournit un tranchant stable avec beaucoup possibilité réduite d'écaillage en prolongeant la durée de vie de l'outil
Très bonne répétabilité de l'usinage sur cnc à moins de 0,010 mm
3. Conception à pas différentiel (DP)
Pour un usinage sans vibrations et un très bon état de surface
4. Rayon d'angle
Réduire l'écaillage et prolonger la durée de vie de l'outil
Rayon d'angle normalisé pour les composants aérospatiaux (XQ Alu)
5. Bord de coupe stable
Permet des vitesses et des vitesses d'avance élevées améliorant considérablement la productivité
6. Adapté aux matériaux P, M, K, S

NITICO 30 DP/DH ENDMILLS / WITH WELDON, 4 FLUTES

- VHM NiTiCo 30 DP/DH Fräser, 4 Zähne
- Frese NiTiCo 30, con passo differenziale, elica v ariabile, 4 taglienti
- Fraises NiTiCo 30 DP/DH à pas décalés et hélices différentes, 4 dents
- 整体硬质合金 NiTiCo 30 DP/DH 系列 4刃平底铣刀



Order Number	Dimension (mm)							HA	Order Number	Dimension (mm)							HB
	D	l1	l2	L	d2 (h6)	C	G6110			D	l1	l2	L	d2 (h6)	C	G6110	
949 0400	4	11		57	6	0.1	•	C49 0400	4	11		57	6	0.1	◦		
949 0500	5	13		57	6	0.1	•	C49 0500	5	13		57	6	0.1	◦		
949 0600	6			57	6	0.1	•	C49 0600	6				57	6	0.1	◦	
949 0800	8	20		64	8	0.2	•	C49 0800	8	20		64	8	0.2	◦		
949 1000	10	22		72	10	0.2	•	C49 1000	10	22		72	10	0.2	◦		
949 1200	12	26		83	12	0.2	•	C49 1200	12	26		83	12	0.2	◦		
949 1400	14			83	14	0.3	•	C49 1400	14				83	14	0.3	◦	
949 1600	16	32		92	16	0.3	•	C49 1600	16	32		92	16	0.3	◦		
949 2000	20	38		104	20	0.4	•	C49 2000	20	38		104	20	0.4	◦		

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

CNC Repeatability
 Ø1 - Ø3 within 10µm
 Ø4 - Ø8 within 15µm
 ≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

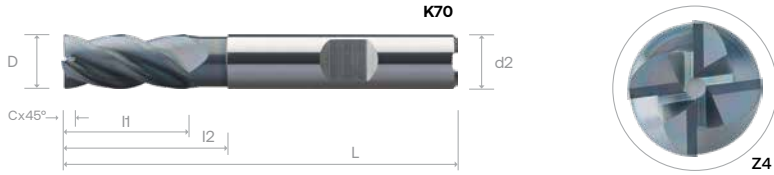
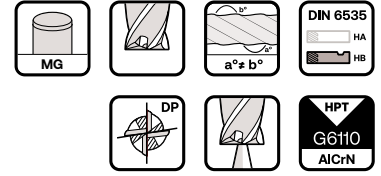
N01
N02
N03
K01
K02
P01
P02
P03
M01
M02
S01
S02
S03
H01
H02
O01
O02

Cutting Parameter

150 - 151

NITICO 30 DP/DH ENDMILLS, RECESS AND WELDON / WITH INTERNAL OIL HOLE, 4 FLUTES

- VHM NiTiCo 30 DP/DH Standard Fräser mit Innenkühlung, 4 Zähne
- Frese NiTiCo 30 con foro lubrificante interno, weldon e recesso, 4 taglienti
- Fraises NiTiCo 30 DP/DH av ec queue d'huile Weldon and dégageant - 4 dents
- 整体硬质合金 NiTiCo 30 DP/DH 系列 4刃平底铣刀(内冷孔、避空位和侧固柄)



Order Number DIN 6535	Dimension (mm)							With Oil Hole	Order Number	Dimension (mm)							Without Oil Hole
	D	I1	I2	L	d2 (h6)	C	G610	D		I1	I2	L	d2 (h6)	C	G610		
K70 0400	4	11	15	57	6	0.1	°	K78 0400	4	11	15	57	6	0.1	•		
K70 0500 *	5	13	18	57	6	0.1	°	K78 0500	5	13	18	57	6	0.1	•		
K70 0600 *	6		19	57	6	0.1	°	K78 0600	6		19	57	6	0.1	•		
K70 0800 *	8	20	26	64	8	0.2	°	K78 0800	8	20	26	64	8	0.2	•		
K70 1000 *	10	22	30	72	10	0.2	°	K78 1000	10	22	30	72	10	0.2	•		
K70 1200 *	12	26	36	83	12	0.2	°	K78 1200	12	26	36	83	12	0.2	•		
K70 1400 *	14		36	83	14	0.3	°	K78 1400	14		36	83	14	0.3	°		
K70 1600 *	16	32	42	92	16	0.3	°	K78 1600	16	32	42	92	16	0.3	•		
K70 2000 *	20	38	52	104	20	0.4	°	K78 2000	20	38	52	104	20	0.4	•		

* - DIN 6535

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

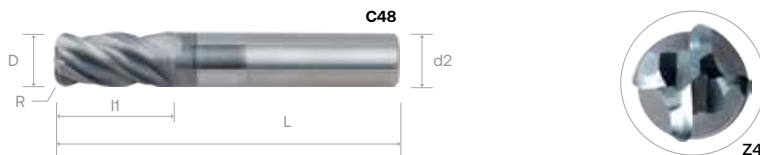
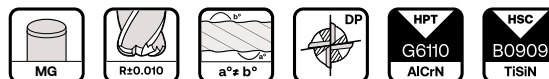
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	150 - 152
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NITICO 30 DP/DH TORUS ENDMILLS, 4 FLUTES

- VHM NiTiCo 30R DP/DH Torusfräser, 4 Zähne
- Frese toroidali NiTiCo 30, con passo differenziale, elica v ariabile, 4 taglienti
- Fraises NiTiCo 30 DP/DH toriques à pas décalés et hélices différentes, 4 dents
- 整体硬质合金 NiTiCo 30 DP/DH 系列 4刃平底铣刀



Order Number	Dimension (mm)						HA	Order Number	Dimension (mm)						HA	
	D	I1	I2	L	d2(h8)	R			G6f10	D	I1	I2	L	d2(h8)		R
C48 0400 057 0600 030	4	11		57	6	0.3	o	A1R 0400 057 0600 030	4	11		57	6	0.3	o	
C48 0400 057 0600 050				57	6	0.5	•	A1R 0400 057 0600 050				57	6	0.5	•	
C48 0500 057 0600 030	5			57	6	0.3	•	A1R 0500 057 0600 030	5			57	6	0.3	•	
C48 0500 057 0600 050				57	6	0.5	•	A1R 0500 057 0600 050				57	6	0.5	•	
C48 0600 057 0600 030	6	13		57	6	0.3	•	A1R 0600 057 0600 030	6	13		57	6	0.3	•	
C48 0600 057 0600 050				57	6	0.5	•	A1R 0600 057 0600 050				57	6	0.5	•	
C48 0600 057 0600 100	8	20		57	6	1	•	A1R 0600 057 0600 100	8	20		57	6	1	o	
C48 0800 064 0800 030				64	8	0.3	•	A1R 0800 064 0800 030				64	8	0.3	•	
C48 0800 064 0800 050	10	22		64	8	0.5	•	A1R 0800 064 0800 050	10	22		64	8	0.5	o	
C48 0800 064 0800 100				64	8	1	•	A1R 0800 064 0800 100				64	8	1	o	
C48 1000 072 1000 030	12	26		72	10	0.3	o	A1R 1000 072 1000 030	12	26		72	10	0.3	•	
C48 1000 072 1000 050				72	10	0.5	•	A1R 1000 072 1000 050				72	10	0.5	o	
C48 1000 072 1000 100	14	26		72	10	1	•	A1R 1000 072 1000 100	14	26		72	10	1	•	
C48 1200 083 1200 030				83	12	0.3	•	A1R 1200 083 1200 030				83	12	0.3	•	
C48 1200 083 1200 050	16	32		83	12	0.5	•	A1R 1200 083 1200 050	16	32		83	12	0.5	o	
C48 1200 083 1200 100				83	12	1	•	A1R 1200 083 1200 100				83	12	1	o	
C48 1200 083 1200 200	18	38		83	12	2	•	A1R 1200 083 1200 200	18	38		83	12	2	•	
C48 1200 083 1200 250				83	12	2.5	o	A1R 1200 083 1200 250				83	12	2.5	o	
C48 1200 083 1200 300	20	38		83	12	3	•	A1R 1200 083 1200 300	20	38		83	12	3	•	
C48 1400 083 1400 030				83	14	0.3	o	A1R 1400 083 1400 030				83	14	0.3	o	
C48 1400 083 1400 050	16	32		83	14	0.5	o	A1R 1400 083 1400 050	16	32		83	14	0.5	o	
C48 1400 083 1400 100				83	14	1	o	A1R 1400 083 1400 100				83	14	1	o	
C48 1400 083 1400 200	18	38		83	14	2	o	A1R 1400 083 1400 200	18	38		83	14	2	o	
C48 1400 083 1400 300				83	14	3	o	A1R 1400 083 1400 300				83	14	3	o	
C48 1600 092 1600 030	20	38		92	16	0.3	o	A1R 1600 092 1600 030	20	38		92	16	0.3	o	
C48 1600 092 1600 050				92	16	0.5	•	A1R 1600 092 1600 050				92	16	0.5	o	
C48 1600 092 1600 100	16	32		92	16	1	•	A1R 1600 092 1600 100	16	32		92	16	1	o	
C48 1600 092 1600 200				92	16	2	o	A1R 1600 092 1600 200				92	16	2	•	
C48 1600 092 1600 250	18	38		92	16	2.5	o	A1R 1600 092 1600 250	18	38		92	16	2.5	o	
C48 1600 092 1600 300				92	16	3	o	A1R 1600 092 1600 300				92	16	3	o	
C48 1800 092 1800 030	20	38		92	16	4	•	A1R 1600 092 1600 400	20	38		92	16	4	•	
C48 1800 092 1800 050				92	18	0.3	o	A1R 1800 092 1800 030				92	18	0.3	o	
C48 1800 092 1800 100	16	32		92	18	0.5	o	A1R 1800 092 1800 050	16	32		92	18	0.5	o	
C48 1800 092 1800 200				92	18	1	o	A1R 1800 092 1800 100				92	18	1	o	
C48 1800 092 1800 300	18	38		92	18	2	o	A1R 1800 092 1800 200	18	38		92	18	2	o	
C48 2000 104 2000 030				92	18	3	o	A1R 1800 092 1800 300				92	18	3	o	
C48 2000 104 2000 050	20	38		104	20	0.3	o	A1R 2000 104 2000 030	20	38		104	20	0.3	o	
C48 2000 104 2000 100				104	20	0.5	•	A1R 2000 104 2000 050				104	20	0.5	o	
C48 2000 104 2000 200	16	32		104	20	1	•	A1R 2000 104 2000 100	16	32		104	20	1	o	
C48 2000 104 2000 250				104	20	2	o	A1R 2000 104 2000 200				104	20	2	o	
C48 2000 104 2000 300	18	38		104	20	2.5	o	A1R 2000 104 2000 250	18	38		104	20	2.5	o	
C48 2000 104 2000 400				104	20	3	•	A1R 2000 104 2000 300				104	20	3	o	
	20	38		104	20	4	•	A1R 2000 104 2000 400	20	38		104	20	4	o	

CNC Repeatability	
Ø1 - Ø3	within 10µm
Ø4 - Ø8	within 15µm
≥ Ø10	within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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Cutting Parameter

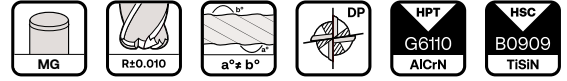
150 - 151

C50 / A1T



NITICO 30 DP/DH TORUS ENDMILLS WITH WELDON, 4 FLUTES

- VHM NiTiCo 30R DP/DH Torusfräser, 4 Zähne
- Frese toroidali NiTiCo 30, con passo differenziale, elica v variabile, 4 taglianti
- Fraises NiTiCo 30 DP/DH toriques à pas décalés et hélices différentes, 4 dents
- 整体硬质合金 NiTiCo 30 DP/DH 系列 4刃平底铣刀



Order Number	Dimension (mm)						HB	G6110	Order Number	Dimension (mm)						HB	B0909
	D	I1	I2	L	d2 (H6)	R				D	I1	I2	L	d2 (H6)	R		
C50 0400 057 0600 030	4	11		57	6	0.3	°	A1T 0400 057 0600 030	4	11		57	6	0.3	°		
C50 0400 057 0600 050				57	6	0.5	°	A1T 0400 057 0600 050				57	6	0.5	°		
C50 0500 057 0600 030	5	13		57	6	0.3	°	A1T 0500 057 0600 030	5	13		57	6	0.3	°		
C50 0500 057 0600 050				57	6	0.5	°	A1T 0500 057 0600 050				57	6	0.5	°		
C50 0600 057 0600 030	6	13		57	6	0.3	°	A1T 0600 057 0600 030	6	13		57	6	0.3	°		
C50 0600 057 0600 050				57	6	0.5	°	A1T 0600 057 0600 050				57	6	0.5	°		
C50 0600 057 0600 100				57	6	1	°	A1T 0600 057 0600 100				57	6	1	°		
C50 0800 064 0800 030	8	20		64	8	0.3	°	A1T 0800 064 0800 030	8	20		64	8	0.3	°		
C50 0800 064 0800 050				64	8	0.5	°	A1T 0800 064 0800 050				64	8	0.5	°		
C50 0800 064 0800 100				64	8	1	°	A1T 0800 064 0800 100				64	8	1	°		
C50 1000 072 1000 030	10	22		72	10	0.3	°	A1T 1000 072 1000 030	10	22		72	10	0.3	°		
C50 1000 072 1000 050				72	10	0.5	°	A1T 1000 072 1000 050				72	10	0.5	°		
C50 1000 072 1000 100				72	10	1	°	A1T 1000 072 1000 100				72	10	1	°		
C50 1200 083 1200 030	12	26		83	12	0.3	°	A1T 1200 083 1200 030	12	26		83	12	0.3	°		
C50 1200 083 1200 050				83	12	0.5	°	A1T 1200 083 1200 050				83	12	0.5	°		
C50 1200 083 1200 100				83	12	1	°	A1T 1200 083 1200 100				83	12	1	°		
C50 1200 083 1200 200				83	12	2	°	A1T 1200 083 1200 200				83	12	2	°		
C50 1200 083 1200 250				83	12	2.5	°	A1T 1200 083 1200 250				83	12	2.5	°		
C50 1200 083 1200 300				83	12	3	°	A1T 1200 083 1200 300				83	12	3	°		
C50 1400 083 1400 030	14	26		83	14	0.3	°	A1T 1400 083 1400 030	14	26		83	14	0.3	°		
C50 1400 083 1400 050				83	14	0.5	°	A1T 1400 083 1400 050				83	14	0.5	°		
C50 1400 083 1400 100				83	14	1	°	A1T 1400 083 1400 100				83	14	1	°		
C50 1400 083 1400 200				83	14	2	°	A1T 1400 083 1400 200				83	14	2	°		
C50 1400 083 1400 300				83	14	3	°	A1T 1400 083 1400 300				83	14	3	°		
C50 1600 092 1600 030	16	32		92	16	0.3	°	A1T 1600 092 1600 030	16	32		92	16	0.3	°		
C50 1600 092 1600 050				92	16	0.5	°	A1T 1600 092 1600 050				92	16	0.5	°		
C50 1600 092 1600 100				92	16	1	°	A1T 1600 092 1600 100				92	16	1	°		
C50 1600 092 1600 200				92	16	2	°	A1T 1600 092 1600 200				92	16	2	°		
C50 1600 092 1600 250				92	16	2.5	°	A1T 1600 092 1600 250				92	16	2.5	°		
C50 1600 092 1600 300				92	16	3	°	A1T 1600 092 1600 300				92	16	3	°		
C50 1600 092 1600 400				92	16	4	°	A1T 1600 092 1600 400				92	16	4	°		
C50 1800 092 1800 030	18	38		92	18	0.3	°	A1T 1800 092 1800 030	18	38		92	18	0.3	°		
C50 1800 092 1800 050				92	18	0.5	°	A1T 1800 092 1800 050				92	18	0.5	°		
C50 1800 092 1800 100				92	18	1	°	A1T 1800 092 1800 100				92	18	1	°		
C50 1800 092 1800 200				92	18	2	°	A1T 1800 092 1800 200				92	18	2	°		
C50 1800 092 1800 300				92	18	3	°	A1T 1800 092 1800 300				92	18	3	°		
C50 2000 104 2000 030	20	38		104	20	0.3	°	A1T 2000 104 2000 030	20	38		104	20	0.3	°		
C50 2000 104 2000 050				104	20	0.5	°	A1T 2000 104 2000 050				104	20	0.5	°		
C50 2000 104 2000 100				104	20	1	°	A1T 2000 104 2000 100				104	20	1	°		
C50 2000 104 2000 200				104	20	2	°	A1T 2000 104 2000 200				104	20	2	°		
C50 2000 104 2000 250				104	20	2.5	°	A1T 2000 104 2000 250				104	20	2.5	°		
C50 2000 104 2000 300				104	20	3	°	A1T 2000 104 2000 300				104	20	3	°		
C50 2000 104 2000 400				104	20	4	°	A1T 2000 104 2000 400				104	20	4	°		

CNC Repeatability
Ø1 - Ø3 within 10µm
Ø4 - Ø8 within 15µm
≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

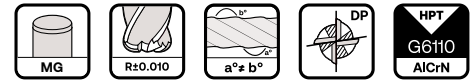
Cutting Parameter

N01 N02 N03 K01 K02 P01 P02 P03 M01 M02 S01 S02 S03 H01 H02 O01 O02

150 - 151

NITICO 30 DP/DH TORUS ENDMILLS / WITH WELDON, 4 FLUTES

- VHM NiTiCo 30R DP/DH Torusfräser, 4 Zähne
- Frese toroidali NiTiCo 30, con passo differenziale, elica v ariabile, 4 taglienti
- Fraises NiTiCo 30 DP/DH toriques à pas décalés et hélices différentes, 4 dents
- 整体硬质合金 NiTiCo 30R DP/DH 系列 4刃平底铣刀



Order Number	Dimension (mm)						HA	Order Number	Dimension (mm)						HB
	D	l1	l2	L	d2 (h6)	R	G6f10		D	l1	l2	L	d2 (h6)	R	G6f10
J01 0400 057 0600 030	4	l1	20	57	6	0.3	◦	H98 0400 057 0600 030	4	l1	20	57	6	0.3	•
J01 0400 057 0600 050			20	57	6	0.5	•	H98 0400 057 0600 050			20	57	6	0.5	◦
J01 0500 057 0600 030	5	13	20	57	6	0.3	•	H98 0500 057 0600 030	5	13	20	57	6	0.3	•
J01 0500 057 0600 050			20	57	6	0.5	•	H98 0500 057 0600 050			20	57	6	0.5	•
J01 0600 057 0600 030	6	13	20	57	6	0.3	•	H98 0600 057 0600 030	6	13	20	57	6	0.3	◦
J01 0600 057 0600 050			20	57	6	0.5	•	H98 0600 057 0600 050			20	57	6	0.5	•
J01 0600 057 0600 100	6	13	20	57	6	1	•	H98 0600 057 0600 100	6	13	20	57	6	1	•
J01 0800 064 0800 030			30	64	8	0.3	◦	H98 0800 064 0800 030			30	64	8	0.3	◦
J01 0800 064 0800 050	8	20	30	64	8	0.5	•	H98 0800 064 0800 050	8	20	30	64	8	0.5	•
J01 0800 064 0800 100			30	64	8	1	•	H98 0800 064 0800 100			30	64	8	1	◦
J01 1000 072 1000 030	10	22	32	72	10	0.3	◦	H98 1000 072 1000 030	10	22	32	72	10	0.3	◦
J01 1000 072 1000 050			32	72	10	0.5	•	H98 1000 072 1000 050			32	72	10	0.5	•
J01 1000 072 1000 100	10	22	32	72	10	1	•	H98 1000 072 1000 100	10	22	32	72	10	1	•
J01 1200 083 1200 030			83	12	0.3	•	H98 1200 083 1200 030	83			12	0.3	-		
J01 1200 083 1200 050	12	26	37	83	12	0.5	◦	H98 1200 083 1200 050	12	26	37	83	12	0.5	◦
J01 1200 083 1200 100			37	83	12	1	◦	H98 1200 083 1200 100			37	83	12	1	◦
J01 1200 083 1200 200	12	26	37	83	12	2	◦	H98 1200 083 1200 200	12	26	37	83	12	2	•
J01 1200 083 1200 250			37	83	12	2.5	◦	H98 1200 083 1200 250			37	83	12	2.5	◦
J01 1200 083 1200 300	12	26	37	83	12	3	◦	H98 1200 083 1200 300	12	26	37	83	12	3	◦
J01 1400 083 1400 030			83	14	0.3	-	H98 1400 083 1400 030	83			14	0.3	-		
J01 1400 083 1400 050	14	26	83	14	0.5	-	H98 1400 083 1400 050	14	26	83	14	0.5	-		
J01 1400 083 1400 100			83	14	1	-	H98 1400 083 1400 100			83	14	1	-		
J01 1400 083 1400 200	14	26	83	14	2	-	H98 1400 083 1400 200	14	26	83	14	2	-		
J01 1400 083 1400 300			83	14	3	-	H98 1400 083 1400 300			83	14	3	-		
J01 1600 092 1600 030	16	32	92	16	0.3	-	H98 1600 092 1600 030	16	32	92	16	0.3	-		
J01 1600 092 1600 050			46	92	16	0.5	◦			H98 1600 092 1600 050	46	92	16	0.5	◦
J01 1600 092 1600 100	16	32	46	92	16	1	•	H98 1600 092 1600 100	16	32	46	92	16	1	•
J01 1600 092 1600 200			46	92	16	2	•	H98 1600 092 1600 200			46	92	16	2	•
J01 1600 092 1600 250	16	32	46	92	16	2.5	-	H98 1600 092 1600 250	16	32	46	92	16	2.5	-
J01 1600 092 1600 300			46	92	16	3	•	H98 1600 092 1600 300			46	92	16	3	◦
J01 1600 092 1600 400	16	32	46	92	16	4	◦	H98 1600 092 1600 400	16	32	46	92	16	4	◦
J01 1800 092 1800 030			92	18	0.3	-	H98 1800 092 1800 030	92			18	0.3	-		
J01 1800 092 1800 050	18	38	92	18	0.5	-	H98 1800 092 1800 050	18	38	92	18	0.5	-		
J01 1800 092 1800 100			92	18	1	-	H98 1800 092 1800 100			92	18	1	-		
J01 1800 092 1800 200	18	38	92	18	2	-	H98 1800 092 1800 200	18	38	92	18	2	-		
J01 1800 092 1800 300			92	18	3	-	H98 1800 092 1800 300			92	18	3	-		
J01 2000 104 2000 030	20	38	104	20	0.3	-	H98 2000 104 2000 030	20	38	104	20	0.3	-		
J01 2000 104 2000 050			58	104	20	0.5	◦			H98 2000 104 2000 050	58	104	20	0.5	◦
J01 2000 104 2000 100	20	38	58	104	20	1	◦	H98 2000 104 2000 100	20	38	58	104	20	1	•
J01 2000 104 2000 200			58	104	20	2	◦	H98 2000 104 2000 200			58	104	20	2	◦
J01 2000 104 2000 250	20	38	58	104	20	2.5	-	H98 2000 104 2000 250	20	38	58	104	20	2.5	-
J01 2000 104 2000 300			58	104	20	3	◦	H98 2000 104 2000 300			58	104	20	3	◦
J01 2000 104 2000 400	20	38	58	104	20	4	◦	H98 2000 104 2000 400	20	38	58	104	20	4	◦

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

CNC Repeatability
 Ø1 - Ø3 within 10µm
 Ø4 - Ø8 within 15µm
 ≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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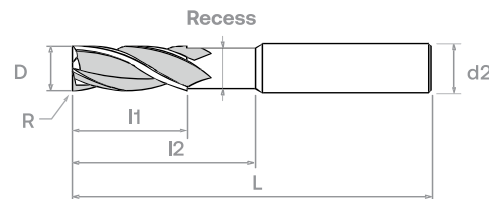
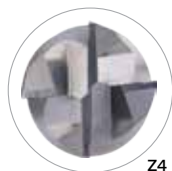
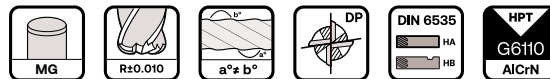
Cutting Parameter
 150 - 151

J97 / J98 / H38 / H39



NITICO 30 DP/DH TORUS LONG ENDMILLS / WITH RECESS, 4 FLUTES

- VHM NiTiCo 30 DP/DH Fräser, lang, 4 Zähne
- Frese lunghe NiTiCo 30, con passo differenziale, elica variabile, 4 taglienti
- Fraises NiTiCo 30 DP/DH longue, 4 dents
- 整体硬质合金 NiTiCo 30 DP/DH 系列 4刃长型平底铣刀



Order Number	Dimension (mm)							HA
	D	l1	l2	L	d2 (h6)	R	G6110	
J97 0400 075 06	4	19		75	6	0.1	◦	
J97 0500 075 06	5			75	6	0.1	◦	
J97 0600 075	6	25		75	6	0.1	◦	
J97 0800 075	8	30		75	8	0.2	•	
J97 1000 100	10	40		100	10	0.2	•	
J97 1200 100	12	45		100	12	0.3	•	
J97 1600 125	16	65		125	16	0.3	◦	
J97 2000 125	20			125	20	0.3	•	

Order Number	Dimension (mm)							HB
	D	l1	l2	L	d2 (h6)	R	G6110	
J98 0400 075 06	4	19		75	6	0.1	•	
J98 0500 075 06	5			75	6	0.1	•	
J98 0600 075	6	25		75	6	0.1	•	
J98 0800 075	8	30		75	8	0.2	•	
J98 1000 100	10	40		100	10	0.2	•	
J98 1200 100	12	45		100	12	0.3	◦	
J98 1600 125	16	65		125	16	0.3	•	
J98 2000 125	20			125	20	0.3	•	

Order Number	Dimension (mm)							HA
	D	l1	l2	L	d2 (h6)	R	G6110	
H38 0400 075 06	4	19	32	75	6	0.1	•	
H38 0500 075 06	5		32	75	6	0.1	◦	
H38 0600 075	6	25	32	75	6	0.1	◦	
H38 0800 075 *	8	30	38	75	8	0.2	◦	
H38 1000 100	10	40	50	100	10	0.2	◦	
H38 1200 100 *	12	45	55	100	12	0.3	◦	
H38 1600 125 *	16	65	75	125	16	0.3	◦	
H38 2000 125 *	20		75	125	20	0.3	◦	

Order Number	Dimension (mm)							HB
	D	l1	l2	L	d2 (h6)	R	G6110	
H39 0400 075 06	4	19	32	75	6	0.1	◦	
H39 0500 075 06	5		32	75	6	0.1	◦	
H39 0600 075	6	25	32	75	6	0.1	◦	
H39 0800 075 *	8	30	38	75	8	0.2	◦	
H39 1000 100	10	40	50	100	10	0.2	◦	
H39 1200 100 *	12	45	55	100	12	0.3	◦	
H39 1600 125 *	16	65	75	125	16	0.3	◦	
H39 2000 125 *	20		75	125	20	0.3	◦	

* - DIN 6535

CNC Repeatability
 Ø1 - Ø3 within 10µm
 Ø4 - Ø8 within 15µm
 ≥ Ø10 within 20µm

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

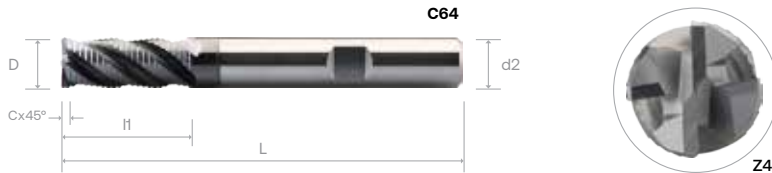
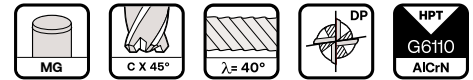
Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
			●	○	●	●	●	●	●	●	○	●				

146

NITICO 30 DP ROUGHING ENDMILLS / WITH WELDON, 4 FLUTES

- VHM NiTiCo 30 DP Schrüppfräser, 4 Zähne
- Frese per sgrossare NiTiCo 30, con passo differenziale, 4 taglienti
- Fraises ébauches NiTiCo 30 DP à pas décalés - 4 dents
- 整体硬质合金 NiTiCo 30 DP 系列 4刃粗加工平底铣刀



Order Number	Dimension (mm)							HA	Order Number	Dimension (mm)							HB
	D	I1	I2	L	d2 (h6)	C	G6110			D	I1	I2	L	d2 (h6)	R	G6110	
C47 0600 050	6	16		50	6	0.1	•	C64 0600 050	6	16		50	6	0.1	◦		
C47 0600 057				57	6	0.1	•	C64 0600 057				57	6	0.1	•		
C47 0800 064	8	20		64	8	0.2	•	C64 0800 064	8	20		64	8	0.2	•		
C47 1000 070				70	10	0.2	•	C64 1000 070				70	10	0.2	•		
C47 1000 072	10	22		72	10	0.2	•	C64 1000 072	10	22		72	10	0.2	•		
C47 1000 075				75	10	0.2	•	C64 1000 075				75	10	0.2	◦		
C47 1200 075	12	26		75	12	0.2	•	C64 1200 075	12	26		75	12	0.2	•		
C47 1200 083				83	12	0.2	•	C64 1200 083				83	12	0.2	•		
C47 1400 083	14	32		83	14	0.3	•	C64 1400 083	14	32		83	14	0.3	•		
C47 1400 090				90	14	0.3	•	C64 1400 090				90	14	0.3	◦		
C47 1600 090	16	38		90	16	0.3	•	C64 1600 090	16	38		90	16	0.3	•		
C47 1600 092				92	16	0.3	•	C64 1600 092				92	16	0.3	◦		
C47 1800 092	18	38		92	18	0.3	•	C64 1800 092	18	38		92	18	0.3	◦		
C47 1800 100				100	18	0.3	•	C64 1800 100				100	18	0.3	◦		
C47 2000 100	20	38		100	20	0.4	•	C64 2000 100	20	38		100	20	0.4	◦		
C47 2000 104				104	20	0.4	•	C64 2000 104				104	20	0.4	•		

ALU LINE
 EZ LINE - ENDMILL
 SE 30
 NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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148

NITICO 30 MINIATURE ENDMILLS WITH LONG NECK, 2 FLUTES

- VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne
- Micro-frese NiTiCo 30, con collo lungo, 2 taglienti
- Micro-fraises NiTiCo 30 av ec cou long, 2 dents
- 整体硬质合金 NiTiCo 30 系列 微小径2刃长颈平底铣刀



Order Number	Dimension (mm)						G6110	Order Number	Dimension (mm)						G6110	
	D	l1	l2	L	d1	d2 (h6)			D	l1	l2	L	d1	d2 (h6)		
G87 0020 050 0400	0.2	0.3	-	50	0.17	4	○	G87 0120 050 0400	1.2	1.8	-	50	1.1	4	○	
G87 0020 050 0400 005			0.5	50	0.17	4	●				G87 0120 050 0400 060	6.0	50	1.1	4	●
G87 0020 050 0400 010			1	50	0.17	4	●				G87 0120 050 0400 080	8.0	50	1.1	4	●
G87 0020 050 0400 015	0.3	0.4	1.5	50	0.17	4	○	G87 0120 050 0400 100	10	50	1.1	4	●			
G87 0030 050 0400			-	50	0.27	4	○	G87 0120 050 0400 120	12	50	1.1	4	●			
G87 0030 050 0400 010			1	50	0.27	4	●	G87 0140 050 0400	-	50	1.3	4	○			
G87 0030 050 0400 020	0.4	0.6	2	50	0.27	4	●	G87 0140 050 0400 060	6.0	50	1.3	4	○			
G87 0030 050 0400 030			3	50	0.27	4	●	G87 0140 050 0400 080	8.0	50	1.3	4	○			
G87 0040 050 0400			-	50	0.37	4	○	G87 0140 050 0400 100	10	50	1.3	4	○			
G87 0040 050 0400 020	0.5	0.7	2	50	0.37	4	●	G87 0140 050 0400 120	12	50	1.3	4	○			
G87 0040 050 0400 030			3	50	0.37	4	○	G87 0140 050 0400 140	14	50	1.3	4	○			
G87 0040 050 0400 040			4	50	0.37	4	●	G87 0140 050 0400 160 *	16	50	1.3	4	○			
G87 0040 050 0400 050	0.6	0.9	5	50	0.37	4	○	G87 0150 050 0400	-	50	1.4	4	○			
G87 0050 050 0400			-	50	0.45	4	○	G87 0150 050 0400 060	6.0	50	1.4	4	●			
G87 0050 050 0400 020			2	50	0.45	4	●	G87 0150 050 0400 080	8.0	50	1.4	4	●			
G87 0050 050 0400 040	0.7	1.0	4	50	0.45	4	●	G87 0150 050 0400 100	10	50	1.4	4	●			
G87 0050 050 0400 060			6	50	0.45	4	●	G87 0150 050 0400 120	12	50	1.4	4	●			
G87 0050 050 0400 080			8	50	0.45	4	●	G87 0150 050 0400 140	14	50	1.4	4	○			
G87 0060 050 0400	0.8	1.2	-	50	0.55	4	○	G87 0150 050 0400 160 *	16	50	1.4	4	●			
G87 0060 050 0400 020			2	50	0.55	4	●	G87 0150 060 0400	-	60	1.4	4	○			
G87 0060 050 0400 040			4	50	0.55	4	●	G87 0150 060 0400 180	18	60	1.4	4	○			
G87 0060 050 0400 060	0.9	1.4	6	50	0.55	4	●	G87 0150 060 0400 200	20	60	1.4	4	●			
G87 0060 050 0400 080			8	50	0.55	4	○	G87 0160 050 0400	-	50	1.5	4	○			
G87 0060 050 0400 100			10	50	0.55	4	○	G87 0160 050 0400 060	6.0	50	1.5	4	○			
G87 0070 050 0400	1.0	1.5	-	50	0.65	4	○	G87 0160 050 0400 080	8.0	50	1.5	4	○			
G87 0070 050 0400 020			2	50	0.65	4	○	G87 0160 050 0400 100	10	50	1.5	4	○			
G87 0070 050 0400 040			4	50	0.65	4	○	G87 0160 050 0400 120	12	50	1.5	4	○			
G87 0070 050 0400 060	0.8	1.2	6	50	0.65	4	○	G87 0160 050 0400 140	14	50	1.5	4	○			
G87 0070 050 0400 080			8	50	0.65	4	○	G87 0160 050 0400 160 *	16	50	1.5	4	○			
G87 0070 050 0400 100			10	50	0.65	4	○	G87 0160 060 0400	-	60	1.5	4	○			
G87 0080 050 0400	0.9	1.4	-	50	0.75	4	○	G87 0160 060 0400 180	18	60	1.5	4	○			
G87 0080 050 0400 040			4	50	0.75	4	●	G87 0160 060 0400 200	20	60	1.5	4	○			
G87 0080 050 0400 060			6	50	0.75	4	●	G87 0180 050 0400	-	50	1.7	4	○			
G87 0080 050 0400 080	1.0	1.5	8	50	0.75	4	○	G87 0180 050 0400 060	6	50	1.7	4	○			
G87 0080 050 0400 100			10	50	0.75	4	○	G87 0180 050 0400 080	8	50	1.7	4	○			
G87 0080 050 0400 120			12	50	0.75	4	○	G87 0180 050 0400 100	10	50	1.7	4	○			
G87 0090 050 0400	0.9	1.4	-	50	0.85	4	○	G87 0180 050 0400 120	12	50	1.7	4	○			
G87 0090 050 0400 060			6	50	0.85	4	○	G87 0180 050 0400 140	14	50	1.7	4	○			
G87 0090 050 0400 080			8	50	0.85	4	○	G87 0180 050 0400 160 *	16	50	1.7	4	○			
G87 0090 050 0400 100	1.0	1.5	10	50	0.85	4	○	G87 0180 060 0400	-	60	1.7	4	○			
G87 0090 050 0400 150 *			15	50	0.85	4	○	G87 0180 060 0400 180	18	60	1.7	4	○			
G87 0100 050 0400			-	50	0.9	4	○	G87 0180 060 0400 200	20	60	1.7	4	○			
G87 0100 050 0400 060	0.8	1.2	6.0	50	0.9	4	●	G87 0200 050 0400	-	50	1.9	4	○			
G87 0100 050 0400 080			8.0	50	0.9	4	●	G87 0200 050 0400 060	6	50	1.9	4	●			
G87 0100 050 0400 100			10	50	0.9	4	●	G87 0200 050 0400 080	8	50	1.9	4	●			
G87 0100 050 0400 120	1.0	1.5	12	50	0.9	4	○	G87 0200 050 0400 100	10	50	1.9	4	●			
G87 0100 050 0400 140			14	50	0.9	4	○	G87 0200 050 0400 120	12	50	1.9	4	●			
G87 0100 050 0400 160 *			16	50	0.9	4	○	G87 0200 050 0400 140	14	50	1.9	4	●			

* - DIN 6535

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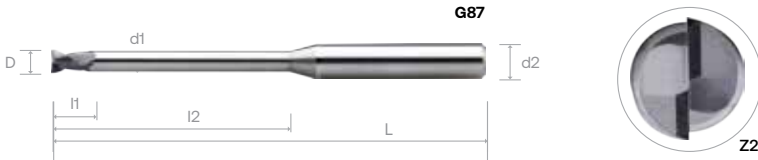
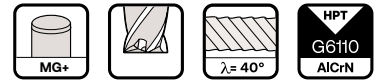
Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02	153 - 156
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NITICO 30 MINIATURE ENDMILLS WITH LONG NECK, 2 FLUTES

- VHM NiTiCo 30 Kleinstfräser mit langem Hals, 2 Zähne
- Micro-frese NiTiCo 30, con collo lungo, 2 taglienti
- Micro-fraises NiTiCo 30 av ec cou long, 2 dents
- 整体硬质合金 NiTiCo 30 系列 微小径2刃长颈平底铣刀



Order Number	Dimension (mm)						G6110	Order Number	Dimension (mm)						G6110		
	D	I1	I2	L	d1	d2 (r6)			D	I1	I2	L	d1	d2 (r6)			
G87 0200 050 0400 160	2	3	16	50	1.9	4	•										
G87 0200 060 0400			-	60	1.9	4	◦										
G87 0200 060 0400 180			18	60	1.9	4	◦										
G87 0200 060 0400 200			20	60	1.9	4	•										
G87 0200 075 0400			-	75	1.9	4	◦										
G87 0200 075 0400 250			25	75	1.9	4	•										
G87 0200 075 0400 300	30	75	1.9	4	•												
G87 0250 050 0400	2.5	3.7	-	50	2.4	4	◦										
G87 0250 050 0400 080			8	50	2.4	4	◦										
G87 0250 050 0400 100			10	50	2.4	4	•										
G87 0250 050 0400 120			12	50	2.4	4	◦										
G87 0250 050 0400 140			14	50	2.4	4	◦										
G87 0250 050 0400 160			16	50	2.4	4	◦										
G87 0250 060 0400			-	60	2.4	4	◦										
G87 0250 060 0400 180			18	60	2.4	4	•										
G87 0250 060 0400 200			20	60	2.4	4	•										
G87 0250 060 0400 250			25	60	2.4	4	◦										
G87 0250 075 0400			-	75	2.4	4	◦										
G87 0250 075 0400 300			30	75	2.4	4	◦										
G87 0300 050 0600	3	4.5	-	50	2.8	6	◦										
G87 0300 050 0600 080 *			8	50	2.8	6	•										
G87 0300 050 0600 100			10	50	2.8	6	•										
G87 0300 050 0600 120			12	50	2.8	6	•										
G87 0300 050 0600 140			14	50	2.8	6	◦										
G87 0300 060 0600			-	60	2.8	6	◦										
G87 0300 060 0600 160			16	60	2.8	6	•										
G87 0300 060 0600 180 *			18	60	2.8	6	◦										
G87 0300 060 0600 200			20	60	2.8	6	•										
G87 0300 075 0600			-	75	2.8	6	◦										
G87 0300 075 0600 250			25	75	2.8	6	•										
G87 0400 060 0600			4	4.5	-	60	3.7	6	◦								
G87 0400 060 0600 100	10	60			3.7	6	◦										
G87 0400 060 0600 150	15	60			3.7	6	◦										
G87 0400 060 0600 200	20	60			3.7	6	•										
G87 0400 075 0600	-	75			3.7	6	◦										
G87 0400 075 0600 250	25	75			3.7	6	◦										
G87 0400 075 0600 300	30	75			3.7	6	•										
G87 0400 075 0600 400	40	75			3.7	6	◦										

* - DIN 6535

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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153 - 156

NITICO 30 MINIATURE TORUS ENDMILLS WITH LONG NECK, 2 FLUTES

- VHM NiTiCo 30 Toruskleinstfräser mit langem Hals, 2 Zähne
Micro-frese toroidali NiTiCo 30, con collo lungo, 2 taglianti
Micro-fraises NiTiCo 30 toriques av ec cou long, 2 dents
整体硬质合金 NiTiCo 30 系列 微小径2刃长颈圆鼻铣刀

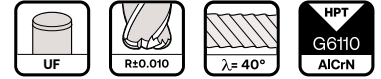


Table with columns for Order Number, Dimension (mm) (D, l1, l2, L, d1, d2(h6), R), and G6110. It lists various endmill specifications and their dimensions.

* - DIN 6535

cont'd ▶

Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

Cutting Parameter

Material selection bar with colored boxes for N01-N03, K01-K02, P01-P03, M01-M02, S01-S03, H01-H02, O01-O02 and a value box for 153 - 156.

Vertical sidebar text: ALU LINE, EZ LINE - ENDMILL, SE 30, NITICO 30, OPTIMUM, SE 45, SE 45X, SE 45, NITICO 45, SE 60, SE 60X, DM70 - SE70, SE GR, TE 45, PLUNGE-MILL, THREAD MILL

NITICO 30 MINIATURE TORUS ENDMILLS WITH LONG NECK, 2 FLUTES

- VHM NiTiCo 30 Toruskleinstfräser mit langem Hals, 2 Zähne
- Micro-frese toroidali NiTiCo 30, con collo lungo, 2 taglianti
- Micro-fraises NiTiCo30 toriques av ec cou long, 2 dents
- 整体硬质合金 NiTiCo 30 系列 微小径2刃长颈圆鼻铣刀



Order Number	Dimension (mm)							G6110	Order Number	Dimension (mm)							G6110	
	D	I1	I2	L	d1	d2(h6)	R			D	I1	I2	L	d1	d2(h6)	R		
H56 0200 050 0400 160	2	3	16	50	1.9	4	0.20	•										
H56 0200 060 0400			-	60	1.9	4	0.20	◦										
H56 0200 060 0400 180			18	60	1.9	4	0.20	◦										
H56 0200 060 0400 200			20	60	1.9	4	0.20	•										
H56 0200 075 0400			-	75	1.9	4	0.20	◦										
H56 0200 075 0400 250			25	75	1.9	4	0.20	•										
H56 0200 075 0400 300			30	75	1.9	4	0.20	◦										
H56 0250 050 0400			-	50	2.4	4	0.30	◦										
H56 0250 050 0400 080			8	50	2.4	4	0.30	•										
H56 0250 050 0400 100			10	50	2.4	4	0.30	◦										
H56 0250 050 0400 120	12	50	2.4	4	0.30	•												
H56 0250 050 0400 140	14	50	2.4	4	0.30	◦												
H56 0250 050 0400 160	16	50	2.4	4	0.30	•												
H56 0250 060 0400	-	60	2.4	4	0.30	◦												
H56 0250 060 0400 180	18	60	2.4	4	0.30	◦												
H56 0250 060 0400 200	20	60	2.4	4	0.30	•												
H56 0250 060 0400 250	25	60	2.4	4	0.30	•												
H56 0250 075 0400	-	75	2.4	4	0.30	◦												
H56 0250 075 0400 300	30	75	2.4	4	0.30	◦												
H56 0300 050 0600	-	50	2.8	6	0.30	◦												
H56 0300 050 0600 080 *	8	50	2.8	6	0.30	•												
H56 0300 050 0600 100	10	50	2.8	6	0.30	•												
H56 0300 050 0600 120	12	50	2.8	6	0.30	•												
H56 0300 050 0600 140	14	50	2.8	6	0.30	◦												
H56 0300 060 0600	-	60	2.8	6	0.30	◦												
H56 0300 060 0600 160	16	60	2.8	6	0.30	◦												
H56 0300 060 0600 180 *	18	60	2.8	6	0.30	◦												
H56 0300 060 0600 200	20	60	2.8	6	0.30	•												
H56 0300 075 0600	-	75	2.8	6	0.30	◦												
H56 0300 075 0600 250	25	75	2.8	6	0.30	◦												
H56 0400 060 0600	-	60	3.7	6	0.40	◦												
H56 0400 060 0600 100	10	60	3.7	6	0.40	◦												
H56 0400 060 0600 150	15	60	3.7	6	0.40	◦												
H56 0400 060 0600 200	20	60	3.7	6	0.40	•												
H56 0400 075 0600	-	75	3.7	6	0.40	◦												
H56 0400 075 0600 250	25	75	3.7	6	0.40	◦												
H56 0400 075 0600 300	30	75	3.7	6	0.40	◦												
H56 0400 075 0600 400	40	75	3.7	6	0.40	◦												

* - DIN 6535

ALU LINE
 EZ LINE - ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

Material Group | Material-Gruppe | Groupe Matière | Gruppo Materiali | 材质主类

Cutting Parameter

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

153 - 156

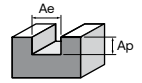
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

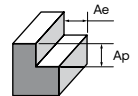


NiTiCo 30 Endmills, 2 Flutes - C30, C42



Slotting	K		P		M		S		
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		
Properties	-		-		520 < Rm < 1200		High Machinability		
Cutting depth, ap	0.50 x D		0.50 x D		0.50 x D		0.40 x D		
Cutting Width, ae	1.00 x D		1.00 x D		0.080xD		1.00 x D		
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	
1	90	0.004	115	0.004	100	0.002	80	0.002	35
2		0.009		0.009		0.005		0.005	
3		0.016		0.014		0.008		0.008	
4		0.023		0.020		0.012		0.012	
5		0.030		0.027		0.016		0.016	
6		0.039		0.034		0.021		0.020	
8		0.057		0.049		0.031		0.031	
10		0.078		0.067		0.043		0.043	
12		0.101		0.087		0.057		0.057	
14		0.113		0.098		0.063		0.063	
16		0.124		0.107		0.067		0.068	
18		0.134		0.116		0.070		0.072	
20		0.143		0.123		0.072		0.075	

NiTiCo 30 Endmills, 2 Flutes - C30, C42



Side Milling	K		P		M		S		
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		
Properties	-		-		520 < Rm < 1200		High Machinability		
Cutting depth, ap	1.00 x D		1.00 x D		1.00 x D		1.00 x D		
Cutting Width, ae	0.25 x D		0.25 x D		0.20 x D		0.18 x D		
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	
1	115	0.005	135	0.005	110	0.004	90	0.003	50
2		0.012		0.011		0.009		0.008	
3		0.019		0.018		0.015		0.013	
4		0.026		0.024		0.021		0.019	
5		0.034		0.032		0.028		0.025	
6		0.043		0.040		0.035		0.032	
8		0.061		0.058		0.051		0.048	
10		0.082		0.078		0.068		0.066	
12		0.105		0.101		0.087		0.086	
14		0.118		0.113		0.095		0.096	
16		0.129		0.124		0.104		0.104	
18		0.140		0.134		0.111		0.111	
20		0.149		0.143		0.117		0.117	

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

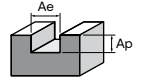
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

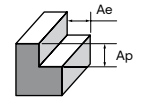


NiTiCo 30 Endmills, 3 Flutes - C31, C43



Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	0.50 x D		0.50 x D		0.50 x D		0.40 x D		0.35 x D	
Cutting Width, ae	1.00 x D		1.00 x D		1.00 x D		1.00 x D		1.00 x D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1		0.003		0.003		0.001		0.001		0.001
2		0.008		0.007		0.003		0.003		0.004
3		0.013		0.011		0.006		0.006		0.007
4		0.018		0.016		0.009		0.009		0.010
5		0.023		0.020		0.012		0.011		0.015
6		0.030		0.026		0.015		0.015		0.020
8	100	0.043	125	0.038	110	0.023	90	0.022	40	0.033
10		0.059		0.052		0.032		0.031		0.049
12		0.075		0.067		0.042		0.042		0.067
14		0.086		0.075		0.046		0.047		0.070
16		0.093		0.083		0.050		0.050		0.070
18		0.100		0.089		0.053		0.052		0.071
20		0.106		0.093		0.056		0.053		0.073

NiTiCo 30 Endmills, 3 Flutes - C31, C43



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 x D		1.00 x D		1.00 x D		1.00 x D		1.00 x D	
Cutting Width, ae	0.25 x D		0.25 x D		0.20 x D		0.18 x D		0.15 x D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1		0.004		0.004		0.003		0.002		0.002
2		0.008		0.008		0.007		0.006		0.006
3		0.014		0.013		0.012		0.010		0.012
4		0.019		0.019		0.017		0.014		0.017
5		0.025		0.024		0.022		0.020		0.024
6		0.031		0.030		0.027		0.025		0.032
8	130	0.045	150	0.044	120	0.038	100	0.037	55	0.050
10		0.060		0.059		0.050		0.050		0.070
12		0.077		0.075		0.065		0.064		0.096
14		0.088		0.085		0.072		0.072		0.105
16		0.096		0.094		0.080		0.078		0.111
18		0.104		0.102		0.085		0.083		0.115
20		0.110		0.107		0.089		0.088		0.117

ALU LINE
ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DM70 - SE70
SE GR
TE 45
PLUNGE-MILL
THREAD MILL

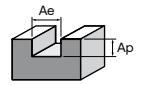
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

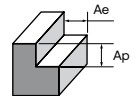


NiTiCo 30 Endmills, 4 Flutes - C44



Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		0.80 × D		0.65 × D		0.50 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1	100	0.004	125	0.003	110	0.002	90	0.002	40	0.003
2		0.008		0.007		0.004		0.004		
3		0.013		0.011		0.007		0.005		
4		0.017		0.015		0.010		0.008		
5		0.022		0.019		0.012		0.011		
6		0.028		0.024		0.015		0.015		
8		0.039		0.033		0.021		0.022		
10		0.051		0.044		0.028		0.030		
12		0.064		0.055		0.035		0.041		
14		0.073		0.061		0.039		0.046		
16		0.080		0.068		0.042		0.047		
18		0.088		0.075		0.045		0.051		
20		0.095		0.080		0.047		0.053		

NiTiCo 30 Endmills, 4 Flutes - C44



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1	130	0.003	150	0.003	104	0.003	100	0.003	55	0.003
2		0.008		0.008		0.007		0.007		
3		0.013		0.013		0.023		0.025		
4		0.018		0.018		0.016		0.033		
5		0.024		0.023		0.020		0.042		
6		0.030		0.030		0.025		0.053		
8		0.042		0.041		0.064		0.065		
10		0.056		0.055		0.072		0.074		
12		0.071		0.070		0.056		0.000		
14		0.079		0.077		0.000		0.000		
16		0.086		0.084		0.000		0.000		
18		0.092		0.090		0.000		0.000		
20		0.097		0.094		0.000		0.000		

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

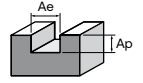
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

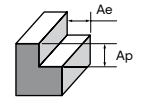


NiTiCo 30 Endmills, 4 Flutes - 951, 972, C46, C50



Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1		0.003		0.003		0.002		0.003		0.004
2		0.005		0.005		0.005		0.006		0.008
3		0.008		0.008		0.008		0.009		0.013
4		0.011		0.011		0.011		0.012		0.017
5		0.015		0.015		0.014		0.016		0.023
6		0.018		0.018		0.018		0.020		0.027
8	170	0.025	200	0.025	160	0.025	120	0.028	60	0.039
10		0.033		0.033		0.033		0.037		0.052
12		0.041		0.042		0.041		0.048		0.064
14		0.048		0.047		0.047		0.054		0.074
16		0.054		0.053		0.053		0.060		0.081
18		0.058		0.058		0.058		0.065		0.086
20		0.063		0.063		0.063		0.069		0.093

NiTiCo 30 Endmills, 4 Flutes - 951, 972, C46, C50



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1		0.007		0.008		0.006		0.004		0.006
2		0.010		0.010		0.009		0.010		0.012
3		0.016		0.016		0.014		0.015		0.019
4		0.021		0.022		0.019		0.021		0.026
5		0.027		0.028		0.025		0.027		0.033
6		0.033		0.034		0.030		0.034		0.040
8	250	0.046	280	0.047	230	0.043	160	0.046	85	0.057
10		0.060		0.060		0.056		0.059		0.075
12		0.075		0.074		0.069		0.074		0.094
14		0.086		0.086		0.080		0.084		0.105
16		0.097		0.097		0.090		0.095		0.115
18		0.106		0.107		0.099		0.103		0.123
20		0.114		0.117		0.107		0.110		0.130

ALU LINE
EZ LINE - ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DM70 - SE70
SE GR
TE 45
PLUNGE -MILL
THREAD MILL

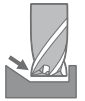
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

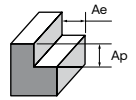


NiTiCo 30 Endmills, 4 Flutes - 951, 972, C46, C50



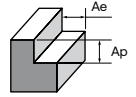
Ramp/Helical	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		5°		3°		2°	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
3	200	0.007	200	0.007	140	0.006	70	0.006	50	0.004
4		0.010		0.010		0.009		0.010		0.006
5		0.013		0.014		0.013		0.014		0.010
6		0.016		0.017		0.016		0.019		0.013
8		0.023		0.024		0.023		0.028		0.021
10		0.030		0.032		0.031		0.038		0.030
12		0.038		0.040		0.039		0.051		0.038
14		0.043		0.046		0.045		0.058		0.042
16		0.048		0.051		0.049		0.063		0.045
18		0.051		0.056		0.053		0.064		0.047
20	0.054	0.059	0.055	0.063	0.047					

NiTiCo 30 DP/DH Torus Endmills, 4 Flutes - Long - J97, J98, H38, H39



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.20 × D		0.20 × D		0.15 × D		0.13 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	220	0.020	250	0.021	200	0.018	140	0.020	70	0.026
5		0.026		0.027		0.023		0.026		0.033
6		0.033		0.032		0.029		0.031		0.041
8		0.044		0.044		0.040		0.041		0.056
10		0.057		0.056		0.051		0.053		0.072
12		0.069		0.067		0.065		0.066		0.089
16		0.086		0.084		0.080		0.081		0.113
20		0.102		0.102		0.090		0.093		0.135

NiTiCo 30 DH Endmills, 5 Flutes - J89, J90



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	250	0.017	280	0.018	230	0.018	160	0.018	85	0.024
5		0.022		0.023		0.022		0.023		0.030
6		0.027		0.028		0.027		0.028		0.037
8		0.036		0.038		0.038		0.039		0.051
10		0.049		0.048		0.049		0.050		0.065
12		0.059		0.057		0.062		0.063		0.081
16		0.077		0.074		0.076		0.077		0.103
20		0.086		0.089		0.086		0.088		0.122

ALU LINE
EZ LINE - ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DN70 - SE 70
SE GR
TE 45
PLUNGE MILL
THREAD MILL

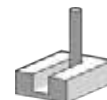
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

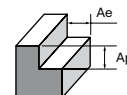


NiTiCo 30 DH Endmills, 5 Flutes - J89, J90



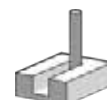
Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.12 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	300	0.015	330	0.015	280	0.016	200	0.017	110	0.024
5		0.021		0.020		0.022		0.023		0.031
6		0.027		0.028		0.030		0.031		0.038
8		0.038		0.039		0.043		0.044		0.054
10		0.051		0.051		0.058		0.059		0.071
12		0.064		0.064		0.078		0.079		0.092
16		0.080		0.082		0.095		0.096		0.115
20		0.094		0.093		0.108		0.109		0.135

NiTiCo 30 Endmills, 5 Flutes - Long - J92, J93



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.12 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	230	0.014	260	0.015	210	0.016	140	0.017	75	0.023
5		0.019		0.019		0.020		0.021		0.029
6		0.024		0.023		0.025		0.027		0.036
8		0.031		0.032		0.035		0.037		0.049
10		0.041		0.041		0.046		0.048		0.063
12		0.053		0.050		0.057		0.060		0.078
16		0.066		0.062		0.071		0.074		0.099
20		0.078		0.073		0.080		0.085		0.119

NiTiCo 30 Endmills, 5 Flutes - Long - J92, J93



Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D	
Cutting Width, ae	0.12 × D		0.12 × D		0.10 × D		0.08 × D		0.08 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	270	0.014	300	0.014	260	0.014	170	0.016	95	0.021
5		0.018		0.018		0.020		0.022		0.027
6		0.023		0.025		0.027		0.029		0.035
8		0.034		0.035		0.040		0.042		0.049
10		0.047		0.046		0.054		0.056		0.065
12		0.061		0.059		0.070		0.071		0.083
16		0.068		0.068		0.089		0.090		0.106
20		0.080		0.078		0.101		0.103		0.126

ALU LINE
ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DM70 - SE70
SE GR
TE 45
PLUNGE-MILL
THREAD MILL

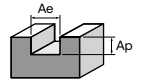
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

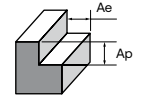


NiTiCo 30 Roughing Endmills, 4 Flutes - C47, C64



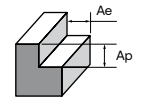
Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
6	190	0.020	220	0.020	175	0.020	130	0.022	65	0.032
8		0.027		0.027		0.027		0.030		0.042
10		0.035		0.035		0.035		0.039		0.054
12		0.043		0.043		0.042		0.048		0.067
14		0.049		0.050		0.048		0.055		0.076
16		0.056		0.057		0.054		0.062		0.085
18		0.062		0.063		0.060		0.068		0.093
20		0.069		0.069		0.066		0.075		0.102

NiTiCo 30 Roughing Endmills, 4 Flutes - C47, C64



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
6	275	0.035	310	0.037	255	0.034	175	0.036	95	0.043
8		0.048		0.050		0.046		0.048		0.059
10		0.060		0.063		0.059		0.061		0.075
12		0.075		0.076		0.072		0.075		0.093
14		0.086		0.087		0.084		0.086		0.106
16		0.095		0.096		0.093		0.095		0.119
18		0.103		0.105		0.102		0.103		0.131
20		0.113		0.116		0.111		0.113		0.141

NiTiCo 30 DH Endmills, with Internal Oil Hole, Chip Breaker, Recess and Weldon, 5 flutes - K65



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	280	0.016	310	0.017	250	0.019	180	0.021	100	0.025
5		0.021		0.022		0.025		0.027		0.032
6		0.025		0.027		0.031		0.033		0.039
8		0.035		0.036		0.043		0.045		0.054
10		0.045		0.046		0.055		0.057		0.069
12		0.056		0.056		0.069		0.071		0.087
16		0.071		0.072		0.087		0.089		0.108
20		0.084		0.088		0.107		0.109		0.128

ALU LINE
 EZ LINE - ENDMILL
 SE 30
 NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

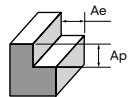


NiTiCo 30 DH Endmills, with Internal Oil Hole, Chip Breaker, Recess and Weldon, 5 flutes - K65



Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.12 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	330	0.015	360	0.016	300	0.017	220	0.019	130	0.025
5		0.020		0.021		0.023		0.025		0.032
6		0.026		0.027		0.031		0.033		0.040
8		0.037		0.037		0.044		0.046		0.055
10		0.049		0.049		0.059		0.061		0.072
12		0.063		0.064		0.078		0.080		0.096
16		0.078		0.079		0.097		0.099		0.117
20		0.089		0.089		0.110		0.112		0.138

NiTiCo 30 DH Long Endmills, with Internal Oil Hole, Chip Breaker, Recess and Weldon 5 flutes - K67



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.12 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	250	0.014	280	0.014	230	0.018	160	0.020	85	0.020
5		0.019		0.019		0.023		0.025		0.027
6		0.023		0.024		0.029		0.031		0.035
8		0.031		0.032		0.039		0.041		0.050
10		0.040		0.041		0.050		0.052		0.066
12		0.053		0.054		0.063		0.065		0.084
16		0.068		0.069		0.082		0.084		0.107
20		0.080		0.083		0.099		0.101		0.126

NiTiCo 30 DH Long Endmills, with Internal Oil Hole, Chip Breaker, Recess and Weldon 5 flutes - K67



Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	2.00 × D		2.00 × D		2.00 × D		2.00 × D		2.00 × D	
Cutting Width, ae	0.12 × D		0.12 × D		0.10 × D		0.08 × D		0.08 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	300	0.013	330	0.014	280	0.014	200	0.016	115	0.021
5		0.018		0.019		0.021		0.023		0.028
6		0.024		0.025		0.028		0.030		0.035
8		0.034		0.035		0.040		0.042		0.049
10		0.045		0.046		0.055		0.057		0.066
12		0.059		0.060		0.072		0.074		0.089
16		0.072		0.074		0.088		0.090		0.107
20		0.081		0.082		0.099		0.101		0.123

ALU LINE
EZ LINE - ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DM70 - SE70
SE GR
TE 45
PLUNGE -MILL
THREAD MILL

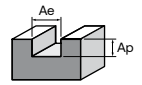
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

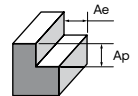


NiTiCo 30 DP/DH Endmills, 4 Flutes - 949, C49, K78, C48, C52, A1R, A1T, H98, J01



Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1	170	0.003	200	0.003	160	0.003	120	0.003	60	0.004
2		0.006		0.005		0.006		0.006		
3		0.009		0.009		0.009		0.009		
4		0.012		0.012		0.012		0.013		
5		0.016		0.015		0.015		0.017		
6		0.019		0.019		0.019		0.021		
8		0.027		0.027		0.027		0.031		
10		0.037		0.036		0.036		0.041		
12		0.046		0.046		0.045		0.053		
14		0.053		0.053		0.052		0.060		
16		0.058		0.058		0.058		0.066		
18		0.064		0.064		0.064		0.071		
20		0.069		0.069		0.069		0.076		

NiTiCo 30 DP/DH Endmills, 4 Flutes - 949, C49, K78, C48, C52, A1R, A1T, H98, J01



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
1	250	0.008	280	0.009	230	0.007	160	0.006	85	0.007
2		0.010		0.010		0.010		0.012		
3		0.016		0.016		0.015		0.018		
4		0.022		0.022		0.021		0.025		
5		0.029		0.029		0.027		0.031		
6		0.035		0.035		0.033		0.038		
8		0.050		0.050		0.047		0.052		
10		0.066		0.066		0.061		0.067		
12		0.083		0.083		0.077		0.082		
14		0.095		0.095		0.088		0.093		
16		0.106		0.107		0.099		0.103		
18		0.116		0.118		0.109		0.112		
20		0.126		0.129		0.118		0.121		

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

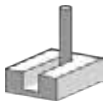


NiTiCo 30 DP/DH Endmills, 4 Flutes - 949, C49, K78, C48, C52, A1R, A1T, H98, J01



Ramp/Helical	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping Angle	5°		5°		5°		3°		2°	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
3		0.008		0.009		0.008		0.008		0.005
4		0.011		0.012		0.011		0.012		0.008
5		0.014		0.016		0.014		0.016		0.011
6		0.018		0.020		0.018		0.020		0.014
8		0.025		0.028		0.026		0.031		0.021
10	200	0.033	200	0.037	140	0.034	70	0.043	50	0.031
12		0.042		0.046		0.043		0.058		0.041
14		0.047		0.052		0.049		0.063		0.046
16		0.052		0.057		0.054		0.067		0.049
18		0.056		0.061		0.058		0.069		0.052
20		0.060		0.065		0.062		0.070		0.053

NiTiCo 30 DP/DH Endmills, 4 Flutes - 949, C49, K78, C48, C52, A1R, A1T, H98, J01



Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.15 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4		0.021		0.023		0.019		0.024		0.024
5		0.027		0.029		0.025		0.030		0.031
6		0.034		0.037		0.032		0.037		0.039
8		0.049		0.051		0.047		0.051		0.055
10		0.065		0.067		0.063		0.067		0.074
12	330	0.087	360	0.089	300	0.085	220	0.090	130	0.101
14		0.093		0.095		0.090		0.095		0.106
16		0.098		0.102		0.095		0.100		0.111
18		0.104		0.108		0.100		0.110		0.120
20		0.110		0.114		0.106		0.116		0.126

ALU LINE
ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DM70 - SE70
SE GR
TE 45
PLUNGE -MILL
THREAD MILL

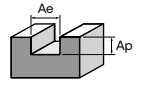
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition

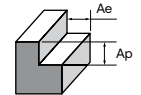


NiTiCo 30 DP/DH OH Standard Endmills, 4 Flutes - K70



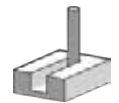
Slotting	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		0.50 × D	
Cutting Width, ae	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	200	0.015	230	0.015	190	0.014	140	0.016	75	0.020
5		0.019		0.019		0.018		0.020		0.026
6		0.023		0.024		0.022		0.024		0.032
8		0.031		0.032		0.030		0.033		0.043
10		0.040		0.040		0.038		0.041		0.055
12		0.049		0.049		0.047		0.052		0.069
16		0.064		0.065		0.062		0.067		0.091
20		0.079		0.080		0.077		0.080		0.111

NiTiCo 30 DP/DH OH Standard Endmills, 4 Flutes - K70



Side Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Cutting depth, ap	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Cutting Width, ae	0.25 × D		0.25 × D		0.20 × D		0.18 × D		0.15 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	280	0.020	310	0.023	260	0.018	180	0.023	100	0.025
5		0.027		0.030		0.025		0.031		0.033
6		0.034		0.037		0.032		0.038		0.041
8		0.049		0.051		0.047		0.053		0.057
10		0.065		0.068		0.063		0.070		0.072
12		0.084		0.087		0.083		0.089		0.099
16		0.107		0.109		0.105		0.113		0.118
20		0.123		0.127		0.121		0.131		0.137

NiTiCo 30 DP/DH OH Standard Endmills, 4 Flutes - K70



Trochoidal Milling	K		P		M		S			
Working Material	Grey Cast Iron		Carbon Steel		Alloy steel		Stainless steel		Titanium	
Properties	-		-		520 < Rm < 1200		High Machinability		-	
Maximum Slot Width	1.25 × D		1.25 × D		1.25 × D		1.25 × D		1.25 × D	
Cutting depth, ap	1.50 × D		1.50 × D		1.50 × D		1.50 × D		1.50 × D	
Cutting Width, ae	0.15 × D		0.15 × D		0.15 × D		0.10 × D		0.10 × D	
D	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz	Vc	Fz
4	330	0.021	360	0.023	300	0.019	220	0.024	130	0.024
5		0.027		0.029		0.025		0.030		0.031
6		0.034		0.037		0.032		0.037		0.039
8		0.049		0.051		0.047		0.051		0.055
10		0.065		0.067		0.063		0.067		0.074
12		0.087		0.089		0.085		0.090		0.101
14		0.093		0.095		0.090		0.095		0.106
16		0.098		0.102		0.095		0.100		0.111
18	0.104	0.108	0.100	0.110	0.120					
20	0.110	0.114	0.106	0.116	0.126					

ALU LINE
 EZ LINE - ENDMILL
 SE 30
 NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 - SE 70
 SE GR
 TE 45
 PLUNGE -MILL
 THREAD MILL

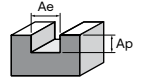
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Endmills with Long Neck, 2 Flutes - G87, H56



Slotting		K			P					
Working Material		Grey Cast Iron			Carbon Steel			Alloy steel		
Properties		-			-			520 < Rm < 1200		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
0.2	1.0	0.013	42750	0.007						
	2.0	0.013	42750	0.007						
0.3	1.0	0.020	38000	0.008	0.021	40000	0.008	0.021	36800	0.007
	2.0	0.011	34200	0.006	0.012	36000	0.007	0.012	33120	0.006
	3.0	0.008	34200	0.006	0.008	36000	0.007	0.008	33120	0.006
0.4	2.0	0.027	30400	0.011	0.028	32000	0.011	0.028	29440	0.010
	3.0	0.015	27360	0.010	0.016	28800	0.010	0.016	26500	0.009
	4.0	0.010	27360	0.010	0.010	28800	0.010	0.010	26500	0.009
	5.0	0.010	24320	0.008	0.010	25600	0.009	0.010	23550	0.008
0.5	2.0	0.033	30400	0.010	0.035	32000	0.011	0.035	29440	0.010
	4.0	0.019	27360	0.010	0.020	28800	0.010	0.020	26500	0.009
	6.0	0.012	24320	0.008	0.013	25600	0.009	0.013	23550	0.008
0.6	8.0	0.008	24320	0.007	0.008	25600	0.008	0.008	23550	0.007
	2.0	0.040	30400	0.015	0.042	32000	0.016	0.042	29440	0.015
	4.0	0.023	27360	0.014	0.024	28800	0.014	0.024	26500	0.013
0.7	6.0	0.014	27360	0.014	0.015	28800	0.014	0.015	26500	0.013
	8.0	0.014	24320	0.012	0.015	25600	0.013	0.015	23550	0.012
	10.0	0.009	24320	0.012	0.009	25600	0.013	0.009	23550	0.012
0.8	2.0	0.067	30400	0.015	0.070	32000	0.016	0.070	29440	0.015
	4.0	0.047	27360	0.014	0.049	28800	0.014	0.049	26500	0.013
	6.0	0.017	27360	0.014	0.018	28800	0.014	0.018	26500	0.013
	8.0	0.017	24320	0.012	0.018	25600	0.013	0.018	23550	0.012
0.9	10.0	0.017	24320	0.012	0.018	25600	0.013	0.018	23550	0.012
	4.0	0.076	30400	0.015	0.080	32000	0.016	0.080	29440	0.015
	6.0	0.053	30400	0.012	0.056	32000	0.013	0.056	29440	0.012
	8.0	0.030	27360	0.014	0.032	28800	0.014	0.032	26500	0.013
1.0	10.0	0.019	24320	0.012	0.020	25600	0.013	0.020	23550	0.012
	12.0	0.011	24320	0.012	0.012	25600	0.013	0.012	23550	0.012
	6.0	0.034	27360	0.016	0.036	28800	0.017	0.036	26500	0.016
	8.0	0.022	27360	0.015	0.023	28800	0.016	0.023	26500	0.015
1.2	10.0	0.022	24320	0.012	0.023	25600	0.013	0.023	23550	0.012
	15.0	0.017	23750	0.010	0.018	25000	0.010	0.018	23000	0.009
	6.0	0.038	24620	0.019	0.040	25920	0.020	0.040	23850	0.019
	8.0	0.038	24620	0.017	0.040	25920	0.018	0.040	23850	0.017
1.4	10.0	0.024	23750	0.014	0.025	25000	0.015	0.025	23000	0.014
	12.0	0.024	21890	0.018	0.025	23040	0.019	0.025	21200	0.017
	14.0	0.024	21890	0.018	0.025	23040	0.019	0.025	21200	0.017
	16.0	0.014	21890	0.012	0.015	23040	0.013	0.015	21200	0.012
1.5	6.0	0.080	24320	0.020	0.084	25600	0.021	0.084	23550	0.020
	8.0	0.046	21890	0.021	0.048	23040	0.022	0.048	21200	0.020
	10.0	0.029	21890	0.021	0.030	23040	0.022	0.030	21200	0.020
1.5	12.0	0.029	21890	0.018	0.030	23040	0.019	0.030	21200	0.017
	6.0	0.095	21280	0.024	0.100	22400	0.026	0.100	20610	0.024
	8.0	0.057	20950	0.023	0.060	22050	0.024	0.060	20290	0.022
	10.0	0.048	19700	0.024	0.050	20740	0.025	0.050	19080	0.023
	12.0	0.033	19150	0.020	0.035	20160	0.022	0.035	18550	0.020
	14.0	0.033	20430	0.019	0.035	21500	0.020	0.035	19780	0.019
	16.0	0.026	18050	0.016	0.027	19000	0.017	0.027	17480	0.016
6.0	0.105	21280	0.025	0.110	22400	0.026	0.110	20610	0.024	
1.5	8.0	0.076	19150	0.026	0.080	20160	0.027	0.080	18550	0.025
	10.0	0.057	19150	0.025	0.06	20160	0.026	0.06	18550	0.024
	12.0	0.057	19150	0.020	0.060	20160	0.022	0.060	18550	0.020
	14.0	0.036	19150	0.020	0.038	20160	0.022	0.038	18550	0.020
	16.0	0.036	17020	0.018	0.038	17920	0.019	0.038	16490	0.017
	18.0	0.036	17020	0.018	0.038	17920	0.019	0.038	16490	0.017
20.0	0.036	17020	0.018	0.038	17920	0.019	0.038	16490	0.017	

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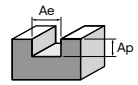
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Endmills with Long Neck, 2 Flutes - G87, H56



Slotting		K			P					
Working Material		Grey Cast Iron			Carbon Steel			Alloy steel		
Properties		-			-			520 < Rm < 1200		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
1.6	6.0	0.105	19760	0.027	0.110	20800	0.028	0.110	19140	0.026
	8.0	0.105	19760	0.026	0.110	20800	0.028	0.110	19140	0.025
	10.0	0.081	17230	0.028	0.085	18140	0.030	0.085	16690	0.027
	12.0	0.076	17580	0.023	0.080	18500	0.024	0.080	17020	0.022
	14.0	0.057	18240	0.023	0.060	19200	0.024	0.060	17660	0.022
	16.0	0.048	16150	0.020	0.050	17000	0.021	0.050	15640	0.019
	18.0	0.043	16060	0.020	0.045	16900	0.021	0.045	15550	0.019
	20.0	0.043	16010	0.020	0.045	16850	0.021	0.045	15500	0.019
1.8	6.0	0.124	19760	0.027	0.130	20800	0.029	0.130	19140	0.026
	8.0	0.124	19760	0.026	0.130	20800	0.028	0.130	19140	0.025
	10.0	0.114	17580	0.028	0.120	18500	0.029	0.120	17020	0.027
	12.0	0.076	16630	0.024	0.080	17500	0.026	0.080	16100	0.024
	14.0	0.043	16150	0.025	0.045	17000	0.026	0.045	15640	0.024
	16.0	0.060	15580	0.022	0.063	16400	0.023	0.063	15090	0.022
	18.0	0.052	15110	0.022	0.055	15900	0.024	0.055	14630	0.022
	20.0	0.046	14730	0.021	0.048	15500	0.022	0.048	14260	0.020
2.0	6.0	0.190	15960	0.032	0.200	16800	0.033	0.200	15460	0.031
	8.0	0.133	15960	0.033	0.140	16800	0.035	0.140	15460	0.032
	10.0	0.133	15960	0.033	0.140	16800	0.035	0.140	15460	0.032
	12.0	0.095	15300	0.028	0.100	16100	0.030	0.100	14810	0.027
	14.0	0.076	15300	0.028	0.080	16100	0.030	0.080	14810	0.027
	16.0	0.076	14360	0.029	0.080	15120	0.030	0.080	13910	0.028
	18.0	0.048	14360	0.029	0.050	15120	0.030	0.050	13910	0.028
	20.0	0.048	14360	0.027	0.050	15120	0.029	0.050	13910	0.026
	25.0	0.048	12770	0.024	0.050	13440	0.025	0.050	12360	0.023
	30.0	0.029	12770	0.024	0.030	13440	0.025	0.030	12360	0.023
2.5	8.0	0.171	13680	0.045	0.180	14400	0.047	0.180	13250	0.043
	10.0	0.138	15390	0.038	0.145	16200	0.040	0.145	14900	0.037
	12.0	0.171	13680	0.041	0.180	14400	0.043	0.180	13250	0.040
	14.0	0.090	14060	0.037	0.095	14800	0.039	0.095	13620	0.036
	16.0	0.095	12310	0.039	0.100	12960	0.041	0.100	11920	0.038
	18.0	0.095	12310	0.036	0.100	12960	0.038	0.100	11920	0.035
	20.0	0.095	12310	0.034	0.100	12960	0.036	0.100	11920	0.033
	25.0	0.062	11400	0.030	0.065	12000	0.031	0.065	11040	0.029
	30.0	0.057	10940	0.030	0.060	11520	0.031	0.060	10600	0.029
3.0	8.0	0.285	12160	0.046	0.300	12800	0.048	0.300	11780	0.045
	10.0	0.147	15200	0.045	0.155	16000	0.047	0.155	14720	0.043
	12.0	0.200	12160	0.041	0.210	12800	0.043	0.210	11780	0.040
	14.0	0.095	13300	0.033	0.100	14000	0.035	0.100	12880	0.032
	16.0	0.143	10940	0.040	0.150	11520	0.042	0.150	10600	0.039
	18.0	0.128	10940	0.038	0.135	11520	0.040	0.135	10600	0.037
	20.0	0.114	10940	0.038	0.120	11520	0.039	0.120	10600	0.036
	25.0	0.076	10940	0.038	0.080	11520	0.039	0.080	10600	0.036
	10.0	0.152	14920	0.057	0.160	15700	0.060	0.160	14440	0.055
4.0	15.0	0.152	12350	0.062	0.160	13000	0.065	0.160	11960	0.060
	20.0	0.266	8040	0.095	0.280	8460	0.100	0.280	7780	0.092
	25.0	0.152	8040	0.086	0.160	8460	0.090	0.160	7780	0.083
	30.0	0.152	8040	0.085	0.160	8460	0.090	0.160	7780	0.083
	40.0	0.095	7240	0.085	0.100	7620	0.090	0.100	7010	0.083

ALU LINE
EZ LINE -
ENDMILL
SE 30
NITICO 30
OPTIMUM
SE 45
SE 45X
NITICO 45
SE 60
SE 60X
DN70 -
SE 70
SE GR
TE 45
PLUNGE
-MILL
THREAD
MILL

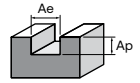
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Endmills with Long Neck, 2 Flutes - G87, H56



Slotting		M			S					
Working Material		Stainless steel			Titanium			Cobalt Alloy		
Properties		High Machinability			-			-		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
0.2	1.0	0.013	40500	0.007		39600	0.004	0.013	35640	0.004
	2.0	0.019	36000	0.008	0.019	35200	0.004	0.019	31680	0.004
0.3	1.0	0.011	32400	0.006	0.011	31680	0.004	0.011	28510	0.003
	2.0	0.007	32400	0.006	0.007	31680	0.004	0.007	28510	0.003
	3.0	0.025	28800	0.011	0.025	28160	0.006	0.025	25340	0.005
0.4	2.0	0.014	25920	0.010	0.014	25340	0.006	0.014	22810	0.005
	3.0	0.009	25920	0.010	0.009	25340	0.006	0.009	22810	0.005
	4.0	0.009	23040	0.009	0.009	22530	0.005	0.009	20280	0.004
0.5	2.0	0.032	28800	0.011	0.032	28160	0.006	0.032	25340	0.005
	4.0	0.018	25920	0.010	0.018	25340	0.006	0.018	22810	0.005
	6.0	0.012	23040	0.009	0.012	22530	0.005	0.012	20280	0.004
0.6	8.0	0.007	23040	0.008	0.007	22530	0.004	0.007	20280	0.004
	2.0	0.038	28800	0.016	0.038	28160	0.009	0.038	25340	0.008
	4.0	0.022	25920	0.014	0.022	25340	0.008	0.022	22810	0.007
0.7	6.0	0.014	25920	0.014	0.014	25340	0.008	0.014	22810	0.007
	8.0	0.014	23040	0.013	0.014	22530	0.007	0.014	20280	0.006
	10.0	0.008	23040	0.013	0.008	22530	0.007	0.008	20280	0.006
0.8	2.0	0.063	28800	0.016	0.063	28160	0.009	0.063	25340	0.008
	4.0	0.044	25920	0.014	0.044	25340	0.008	0.044	22810	0.007
	6.0	0.016	25920	0.014	0.016	25340	0.008	0.016	22810	0.007
0.9	8.0	0.016	23040	0.013	0.016	22530	0.007	0.016	20280	0.006
	10.0	0.016	23040	0.013	0.016	22530	0.007	0.016	20280	0.006
	4.0	0.072	28800	0.016	0.072	28160	0.009	0.072	25340	0.008
1.0	6.0	0.050	25920	0.014	0.050	28160	0.007	0.050	25340	0.006
	8.0	0.029	25920	0.014	0.029	25340	0.008	0.029	22810	0.007
	10.0	0.018	23040	0.013	0.018	22530	0.007	0.018	20280	0.006
1.2	12.0	0.011	23040	0.013	0.011	22530	0.007	0.011	20280	0.006
	6.0	0.032	25920	0.017	0.032	25340	0.009	0.032	22810	0.009
	8.0	0.021	25920	0.016	0.021	25340	0.009	0.021	22810	0.008
1.4	10.0	0.021	23040	0.013	0.021	22530	0.007	0.021	20280	0.006
	15.0	0.015	22500	0.010	0.015	22000	0.006	0.015	19800	0.005
	6.0	0.036	23320	0.021	0.036	22810	0.010	0.036	20530	0.009
1.5	8.0	0.036	23320	0.018	0.036	22810	0.010	0.036	20530	0.009
	10.0	0.023	23000	0.015	0.023	22000	0.008	0.023	19800	0.007
	12.0	0.023	20730	0.019	0.023	20280	0.010	0.023	18250	0.009
1.6	14.0	0.023	20730	0.019	0.023	20280	0.010	0.023	18250	0.009
	16.0	0.014	20730	0.014	0.014	20280	0.007	0.014	18250	0.006
	6.0	0.076	23040	0.023	0.076	22530	0.012	0.076	20280	0.011
1.8	8.0	0.043	20730	0.022	0.043	20280	0.012	0.043	18250	0.011
	10.0	0.027	20730	0.022	0.027	20280	0.012	0.027	18250	0.011
	12.0	0.027	20730	0.019	0.027	20280	0.010	0.027	18250	0.009
2.0	6.0	0.090	20160	0.027	0.090	19710	0.014	0.090	17740	0.013
	8.0	0.054	22050	0.022	0.054	19400	0.013	0.054	17460	0.012
	10.0	0.040	18660	0.025	0.040	18250	0.014	0.040	16430	0.013
2.2	12.0	0.032	18140	0.022	0.032	17740	0.012	0.032	15970	0.011
	14.0	0.033	19350	0.020	0.033	18920	0.011	0.033	17030	0.010
	16.0	0.026	17000	0.017	0.026	16720	0.009	0.026	15050	0.008
2.4	6.0	0.099	20160	0.028	0.099	19710	0.014	0.099	17740	0.013
	8.0	0.072	18140	0.028	0.072	17740	0.015	0.072	15970	0.014
	10.0	0.054	18140	0.026	0.054	17740	0.014	0.054	15970	0.013
2.6	12.0	0.054	18140	0.022	0.054	17740	0.012	0.054	15970	0.011
	14.0	0.034	18140	0.021	0.034	17740	0.012	0.034	15970	0.011
	16.0	0.034	16130	0.019	0.034	15770	0.010	0.034	14190	0.009
2.8	18.0	0.034	16130	0.019	0.034	15770	0.010	0.034	14190	0.009
	20.0	0.034	16130	0.019	0.034	15770	0.010	0.034	14190	0.009

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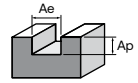
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Endmills with Long Neck, 2 Flutes - G87, H56



Slotting		M			S						
Working Material		Stainless steel			Titanium			Cobalt Alloy			
Properties		High Machinability			-			-			
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz	
1.6	6.0	0.099	18720	0.030	0.099	18300	0.016	0.099	16470	0.014	
	8.0	0.099	18720	0.029	0.099	18300	0.015	0.099	16470	0.014	
	10.0	0.075	16320	0.030	0.075	15960	0.016	0.075	14370	0.015	
	12.0	0.060	16650	0.026	0.060	16280	0.013	0.060	14650	0.012	
	14.0	0.050	17280	0.024	0.050	16900	0.013	0.050	15210	0.012	
	16.0	0.045	15500	0.022	0.045	14960	0.011	0.045	13460	0.010	
	18.0	0.045	15500	0.022	0.045	14870	0.011	0.045	13380	0.010	
	20.0	0.040	15500	0.022	0.040	14830	0.011	0.040	13350	0.010	
1.8	6.0	0.117	18720	0.032	0.117	18300	0.016	0.117	16470	0.014	
	8.0	0.117	18720	0.029	0.117	18300	0.015	0.117	16470	0.014	
	10.0	0.118	16650	0.029	0.118	16280	0.016	0.118	14650	0.014	
	12.0	0.075	15800	0.027	0.075	15400	0.014	0.075	13860	0.013	
	14.0	0.040	15700	0.025	0.040	14960	0.014	0.040	13460	0.013	
	16.0	0.060	14200	0.026	0.060	14430	0.013	0.060	12990	0.012	
	18.0	0.050	14100	0.026	0.050	13990	0.013	0.050	12590	0.012	
	20.0	0.043	14000	0.026	0.043	13640	0.012	0.043	12280	0.011	
2.0	6.0	0.180	15120	0.039	0.180	14780	0.018	0.180	13310	0.017	
	8.0	0.126	15120	0.036	0.126	14780	0.019	0.126	13310	0.017	
	10.0	0.126	15120	0.035	0.126	14780	0.019	0.126	13310	0.017	
	12.0	0.090	13610	0.032	0.090	14170	0.016	0.090	12750	0.015	
	14.0	0.072	13610	0.032	0.072	14170	0.016	0.072	12750	0.015	
	16.0	0.072	13610	0.032	0.072	13310	0.017	0.072	11980	0.015	
	18.0	0.045	13610	0.032	0.045	13310	0.017	0.045	11980	0.015	
	20.0	0.045	13610	0.029	0.045	13310	0.016	0.045	11980	0.014	
	25.0	0.045	12100	0.025	0.045	11830	0.014	0.045	10640	0.012	
	30.0	0.027	12100	0.025	0.027	11830	0.014	0.027	10640	0.012	
2.5	8.0	0.162	12960	0.044	0.162	12670	0.026	0.162	11400	0.023	
	10.0	0.140	14580	0.040	0.140	14260	0.022	0.140	12830	0.020	
	12.0	0.162	12960	0.043	0.162	12670	0.024	0.162	11400	0.021	
	14.0	0.080	13320	0.033	0.080	13020	0.021	0.080	11720	0.019	
	16.0	0.090	11670	0.042	0.090	11400	0.023	0.090	10260	0.020	
	18.0	0.090	11670	0.039	0.090	11400	0.021	0.090	10260	0.019	
	20.0	0.090	11670	0.036	0.090	11400	0.020	0.090	10260	0.018	
	25.0	0.058	11000	0.035	0.058	10560	0.017	0.058	9500	0.015	
	30.0	0.054	10370	0.031	0.054	10140	0.017	0.054	9120	0.016	
	3.0	8.0	0.270	11520	0.052	0.270	11260	0.027	0.270	10140	0.024
10.0		0.150	14400	0.047	0.150	14080	0.026	0.150	12670	0.023	
12.0		0.189	11520	0.043	0.189	11260	0.024	0.189	10140	0.021	
14.0		0.095	10600	0.042	0.095	12320	0.019	0.095	11090	0.017	
16.0		0.135	10370	0.042	0.135	10140	0.023	0.135	9120	0.021	
18.0		0.120	10370	0.041	0.120	10140	0.022	0.120	9120	0.020	
20.0		0.108	10360	0.040	0.108	10140	0.022	0.108	9120	0.020	
25.0		0.072	10360	0.040	0.072	10140	0.022	0.072	9120	0.020	
4.0		10.0	0.155	14130	0.054	0.155	13820	0.033	0.155	12430	0.030
		15.0	0.155	12000	0.058	0.155	11440	0.036	0.155	10300	0.032
	20.0	0.252	7620	0.090	0.252	7440	0.055	0.252	6700	0.049	
	25.0	0.144	7620	0.081	0.144	7440	0.050	0.144	6700	0.045	
	30.0	0.144	7610	0.081	0.144	7440	0.049	0.144	6700	0.044	
	40.0	0.090	6850	0.081	0.090	6710	0.049	0.090	6040	0.044	

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

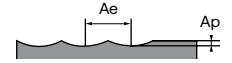
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Ballnose with Long Neck, 2 Flutes - G88



Profiling		K			P					
Working Material		Grey Cast Iron			Carbon Steel			Alloy steel		
Properties		-			520 < Rm < 1200					
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
0.2	1.0	0.013	47500	0.003		50000	0.004	0.014	46000	0.003
	2.0	0.008	47500	0.003	0.008	50000	0.003	0.008	46000	0.003
0.3	1.0	0.020	47500	0.005	0.021	50000	0.005	0.021	46000	0.005
	2.0	0.011	47500	0.004	0.012	50000	0.005	0.012	46000	0.004
	3.0	0.008	46170	0.004	0.008	48600	0.005	0.008	44710	0.004
0.4	1.0	0.038	47500	0.008	0.040	50000	0.008	0.040	46000	0.008
	2.0	0.027	47500	0.006	0.028	50000	0.006	0.028	46000	0.006
	3.0	0.015	47500	0.004	0.016	50000	0.005	0.016	46000	0.004
	4.0	0.010	44460	0.005	0.010	46800	0.005	0.010	43060	0.005
0.5	5.0	0.015	44460	0.005	0.016	46800	0.005	0.016	43060	0.004
	2.0	0.033	47500	0.011	0.035	50000	0.012	0.035	46000	0.011
	3.0	0.029	44460	0.009	0.030	46800	0.009	0.030	43060	0.008
	4.0	0.019	44460	0.007	0.020	46800	0.007	0.020	43060	0.006
	5.0	0.017	41040	0.007	0.018	43200	0.008	0.018	39740	0.007
0.6	6.0	0.017	36940	0.007	0.018	38880	0.007	0.018	35770	0.006
	8.0	0.008	36940	0.007	0.008	38880	0.007	0.008	35770	0.006
	2.0	0.060	47500	0.021	0.063	50000	0.023	0.063	46000	0.021
	3.0	0.039	44460	0.018	0.041	46800	0.019	0.041	43060	0.018
	4.0	0.025	41040	0.019	0.026	43200	0.020	0.026	39740	0.018
	5.0	0.019	41040	0.014	0.020	43200	0.015	0.020	39740	0.013
0.8	6.0	0.014	35570	0.011	0.015	37440	0.012	0.015	34440	0.011
	8.0	0.014	35570	0.010	0.015	37440	0.011	0.015	34440	0.010
	2.0	0.114	47500	0.026	0.120	50000	0.027	0.120	46000	0.025
	4.0	0.074	41040	0.030	0.078	43200	0.031	0.078	39740	0.029
	5.0	0.056	39520	0.028	0.059	41600	0.029	0.059	38270	0.027
	6.0	0.040	36940	0.024	0.042	38880	0.025	0.042	35770	0.023
1.0	7.0	0.033	34580	0.020	0.035	36400	0.021	0.035	33490	0.019
	8.0	0.019	32830	0.019	0.020	34560	0.020	0.020	31800	0.018
	10.0	0.019	31920	0.014	0.020	33600	0.015	0.020	30910	0.013
	3.0	0.190	41040	0.041	0.200	43200	0.043	0.200	39740	0.040
	4.0	0.133	40010	0.042	0.140	42120	0.045	0.140	38750	0.041
	5.0	0.086	36940	0.040	0.090	38880	0.042	0.090	35770	0.039
	6.0	0.057	32110	0.030	0.060	33800	0.032	0.060	31100	0.029
	7.0	0.057	30780	0.026	0.060	32400	0.027	0.060	29810	0.025
	8.0	0.057	30400	0.026	0.060	32000	0.027	0.060	29440	0.025
	9.0	0.043	30400	0.026	0.045	32000	0.027	0.045	29440	0.025
1.2	10.0	0.036	30400	0.026	0.038	32000	0.027	0.038	29440	0.025
	12.0	0.024	27360	0.020	0.025	28800	0.021	0.025	26500	0.020
	14.0	0.019	27360	0.020	0.020	28800	0.021	0.020	26500	0.020
	16.0	0.014	27360	0.020	0.015	28800	0.021	0.015	26500	0.020
	20.0	0.010	21550	0.018	0.010	22680	0.019	0.010	20870	0.018
	6.0	0.105	32830	0.036	0.110	34560	0.038	0.110	31800	0.035
1.4	8.0	0.057	30400	0.032	0.060	32000	0.033	0.060	29440	0.031
	10.0	0.050	31120	0.025	0.053	32760	0.026	0.053	30140	0.024
	12.0	0.043	29450	0.025	0.045	31000	0.026	0.045	28520	0.024
1.5	8.0	0.105	31120	0.034	0.110	32760	0.036	0.110	30140	0.033
	12.0	0.050	28730	0.026	0.053	30240	0.027	0.053	27820	0.025
	16.0	0.033	26680	0.019	0.035	28080	0.020	0.035	25830	0.019
1.5	8.0	0.086	30400	0.039	0.090	32000	0.041	0.090	29440	0.038
	12.0	0.086	28730	0.028	0.090	30240	0.030	0.090	27820	0.027
	18.0	0.0361	26680	0.021	0.038	28080	0.022	0.038	25830	0.021
	18.0	0.036	21550	0.026	0.038	22680	0.028	0.038	20870	0.025

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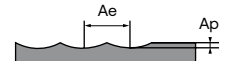
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Ballnose with Long Neck, 2 Flutes - G88



Profiling		K			P					
Working Material		Grey Cast Iron			Carbon Steel			Alloy steel		
Properties					-			520 < Rm < 1200		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
1.6	8.0	0.209	30400	0.045	0.220	32000	0.048	0.220	29440	0.044
	12.0	0.093	31120	0.042	0.098	32760	0.044	0.098	30140	0.041
	16.0	0.057	23340	0.034	0.060	24570	0.036	0.060	22600	0.033
	20.0	0.038	20520	0.027	0.040	21600	0.029	0.040	19870	0.026
1.8	8.0	0.247	29930	0.049	0.260	31500	0.052	0.260	28980	0.047
	12.0	0.100	26680	0.034	0.105	28080	0.036	0.105	25830	0.033
	16.0	0.065	21280	0.043	0.068	22400	0.045	0.068	20610	0.042
	20.0	0.043	19760	0.032	0.045	20800	0.034	0.045	19140	0.031
2.0	4.0	0.380	29450	0.072	0.400	31000	0.076	0.400	28520	0.070
	6.0	0.380	29930	0.064	0.400	31500	0.068	0.400	28980	0.062
	8.0	0.266	29930	0.064	0.280	31500	0.068	0.280	28980	0.062
	10.0	0.200	27930	0.057	0.210	29400	0.060	0.210	27050	0.055
	12.0	0.114	25140	0.057	0.120	26460	0.060	0.120	24340	0.055
	14.0	0.114	25140	0.049	0.120	26460	0.052	0.120	24340	0.048
	16.0	0.114	21280	0.038	0.120	22400	0.039	0.120	20610	0.036
	18.0	0.086	21280	0.035	0.090	22400	0.036	0.090	20610	0.034
	20.0	0.071	19760	0.037	0.075	20800	0.039	0.075	19140	0.036
	22.0	0.048	16960	0.032	0.050	17850	0.034	0.050	16420	0.031
3.0	8.0	0.570	22800	0.107	0.600	24000	0.113	0.600	22080	0.104
	10.0	0.399	22800	0.107	0.420	24000	0.113	0.420	22080	0.104
	16.0	0.299	21280	0.077	0.315	22400	0.081	0.315	20610	0.075
	20.0	0.171	17780	0.064	0.180	18720	0.067	0.180	17220	0.062
	25.0	0.114	15960	0.071	0.120	16800	0.075	0.120	15460	0.069
	30.0	0.114	15960	0.066	0.120	16800	0.069	0.120	15460	0.064
	35.0	0.076	12160	0.061	0.080	12800	0.064	0.080	11780	0.059
4.0	10.0	0.570	16390	0.143	0.600	17250	0.150	0.600	15870	0.138
	16.0	0.399	16390	0.143	0.420	17250	0.150	0.420	15870	0.138
	20.0	0.399	14200	0.114	0.420	14950	0.120	0.420	13750	0.110
	25.0	0.228	12780	0.103	0.240	13460	0.108	0.240	12380	0.099
	30.0	0.152	11800	0.086	0.160	12420	0.090	0.160	11430	0.083
	35.0	0.095	11800	0.086	0.100	12420	0.090	0.100	11430	0.083
	40.0	0.095	11800	0.086	0.100	12420	0.090	0.100	11430	0.083
	50.0	0.095	8740	0.081	0.100	9200	0.085	0.100	8460	0.078

AU LINE
 EZ LINE -
 ENDMILL
 SE 30
 NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL

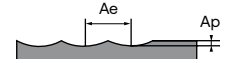
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Ballnose with Long Neck, 2 Flutes - G88



Profiling		M			S					
Working Material		Stainless steel			Titanium			Cobalt Alloy		
Properties		High Machinability			-			-		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
0.2	1.0	0.013	50000	0.004		44000	0.002	0.013	39600	0.002
	2.0	0.007	50000	0.003	0.007	44000	0.002	0.007	39600	0.002
0.3	1.0	0.019	50000	0.005	0.019	44000	0.003	0.019	39600	0.002
	2.0	0.011	50000	0.004	0.011	44000	0.002	0.011	39600	0.002
	3.0	0.007	48600	0.004	0.007	42770	0.002	0.007	38490	0.002
0.4	1.0	0.036	50000	0.008	0.036	44000	0.005	0.036	39600	0.004
	2.0	0.025	50000	0.006	0.025	44000	0.003	0.025	39600	0.003
	3.0	0.014	46800	0.005	0.014	4180	0.003	0.014	37070	0.002
	4.0	0.009	45000	0.005	0.009	39600	0.003	0.009	35640	0.002
0.5	5.0	0.014	42120	0.005	0.014	37070	0.003	0.014	33360	0.002
	2.0	0.032	50000	0.011	0.032	44000	0.006	0.032	39600	0.006
	3.0	0.027	43200	0.009	0.027	38020	0.005	0.027	34210	0.004
	4.0	0.018	42120	0.007	0.018	37070	0.004	0.018	33360	0.003
	5.0	0.016	32400	0.009	0.016	28510	0.005	0.016	25660	0.004
0.6	6.0	0.012	34990	0.007	0.012	30790	0.004	0.012	27710	0.003
	8.0	0.007	34990	0.007	0.007	30790	0.004	0.007	27710	0.003
	2.0	0.057	48600	0.023	0.057	42770	0.013	0.057	38490	0.011
	3.0	0.037	43200	0.021	0.037	38020	0.011	0.037	34210	0.010
	4.0	0.023	42120	0.020	0.023	37070	0.011	0.023	33360	0.010
	5.0	0.018	38880	0.015	0.018	34210	0.008	0.018	30790	0.007
0.8	6.0	0.014	33700	0.013	0.014	29650	0.007	0.014	26690	0.007
	8.0	0.014	33700	0.011	0.014	29650	0.006	0.014	26690	0.005
	2.0	0.108	48600	0.028	0.108	42770	0.015	0.108	38490	0.014
	4.0	0.070	40820	0.033	0.070	35930	0.018	0.070	32330	0.016
	5.0	0.053	37440	0.032	0.053	32950	0.018	0.053	29650	0.016
	6.0	0.038	34990	0.027	0.038	30790	0.015	0.038	27710	0.013
1.0	7.0	0.250	32760	0.022	0.250	28830	0.012	0.250	25950	0.011
	8.0	0.018	31100	0.019	0.018	27370	0.011	0.018	24630	0.010
	10.0	0.018	31000	0.014	0.018	27280	0.008	0.018	24550	0.007
	3.0	0.180	32400	0.054	0.180	28510	0.030	0.180	25660	0.027
	4.0	0.126	32400	0.056	0.126	28510	0.031	0.126	25660	0.028
	5.0	0.081	34990	0.052	0.081	30790	0.029	0.081	27710	0.026
	6.0	0.054	31000	0.048	0.054	27280	0.026	0.054	24550	0.024
	7.0	0.054	30240	0.026	0.054	26610	0.014	0.054	23950	0.013
	8.0	0.054	30000	0.026	0.054	26400	0.014	0.054	23760	0.013
	9.0	0.041	30000	0.026	0.041	26400	0.014	0.041	23760	0.013
1.2	10.0	0.034	28800	0.027	0.034	25340	0.015	0.034	22810	0.014
	12.0	0.023	25920	0.021	0.023	22810	0.012	0.023	20530	0.011
	14.0	0.018	25920	0.021	0.018	22810	0.012	0.018	20530	0.011
	16.0	0.014	25920	0.021	0.014	22810	0.012	0.014	20530	0.011
	20.0	0.009	20410	0.019	0.009	17960	0.010	0.009	16170	0.009
	6.0	0.099	31100	0.040	0.099	27370	0.022	0.099	24630	0.020
	8.0	0.054	28350	0.037	0.054	24950	0.020	0.054	22450	0.018
1.4	10.0	0.048	29480	0.025	0.048	25950	0.014	0.048	23350	0.012
	12.0	0.041	28350	0.026	0.041	24950	0.014	0.041	22450	0.013
	8.0	0.099	29480	0.036	0.099	25950	0.020	0.099	23350	0.018
1.5	12.0	0.048	27220	0.027	0.048	23950	0.015	0.048	21560	0.013
	16.0	0.032	25270	0.020	0.032	22240	0.011	0.032	20020	0.010
	8.0	0.081	28800	0.036	0.081	25340	0.020	0.081	22810	0.018
1.5	12.0	0.081	27220	0.030	0.081	23950	0.016	0.081	21560	0.015
	16.0	0.034	25270	0.022	0.0342	22240	0.012	0.0342	20020	0.011
	18.0	0.034	20410	0.028	0.034	17960	0.015	0.034	16170	0.014

cont'd ▶

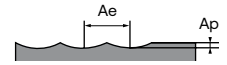
Recommended Cutting Data



Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition



NiTiCo 30 Miniature Ballnose with Long Neck, 2 Flutes - G88



Profiling		M			S					
Working Material		Stainless steel			Titanium			Cobalt Alloy		
Properties		High Machinability			-			-		
D	Effective Length	Ap	N	Fz	Ap	N	Fz	Ap	N	Fz
1.6	8.0	0.198	28800	0.048	0.198	25340	0.026	0.198	22810	0.024
	12.0	0.088	29480	0.044	0.088	25950	0.024	0.088	23350	0.022
	16.0	0.054	22110	0.036	0.054	19460	0.020	0.054	17510	0.018
	20.0	0.036	19440	0.029	0.036	17110	0.016	0.036	15400	0.014
1.8	8.0	0.234	28800	0.051	0.234	25340	0.028	0.234	22810	0.025
	12.0	0.095	25270	0.036	0.095	22240	0.020	0.095	20020	0.018
	16.0	0.061	20160	0.045	0.061	17740	0.025	0.061	15970	0.022
	20.0	0.041	18720	0.034	0.041	16470	0.019	0.041	14830	0.017
2.0	4.0	0.360	28350	0.075	0.360	24950	0.041	0.360	22450	0.037
	6.0	0.360	28350	0.067	0.360	24950	0.037	0.360	22450	0.033
	8.0	0.252	28350	0.067	0.252	24950	0.037	0.252	22450	0.033
	10.0	0.189	26460	0.060	0.189	23280	0.033	0.189	20960	0.030
	12.0	0.108	23810	0.060	0.108	20960	0.033	0.108	18860	0.030
	14.0	0.108	23810	0.052	0.108	20960	0.029	0.108	18860	0.026
	16.0	0.108	20160	0.040	0.108	17740	0.022	0.108	15970	0.020
	18.0	0.081	20110	0.037	0.081	17690	0.020	0.081	15920	0.018
	20.0	0.068	18720	0.039	0.068	16470	0.022	0.068	14830	0.019
	22.0	0.045	16070	0.034	0.045	14140	0.019	0.045	12720	0.017
3.0	8.0	0.540	21600	0.113	0.540	19010	0.062	0.540	17110	0.056
	10.0	0.378	21600	0.113	0.378	19010	0.062	0.378	17110	0.056
	16.0	0.284	20160	0.081	0.284	17740	0.045	0.284	15970	0.040
	20.0	0.162	16850	0.068	0.162	14830	0.037	0.162	13340	0.033
	25.0	0.108	15120	0.075	0.108	13310	0.041	0.108	11980	0.037
	30.0	0.108	15120	0.069	0.108	13310	0.038	0.108	11980	0.034
4.0	10.0	0.540	15530	0.150	0.540	13660	0.083	0.540	12300	0.074
	16.0	0.378	15530	0.150	0.378	13660	0.083	0.378	12300	0.074
	20.0	0.378	13460	0.120	0.378	11840	0.066	0.378	10660	0.059
	25.0	0.216	12110	0.108	0.216	10660	0.059	0.216	9590	0.053
	30.0	0.144	11180	0.090	0.144	9840	0.049	0.144	8850	0.045
	35.0	0.090	11180	0.090	0.090	9840	0.049	0.090	8850	0.045
	40.0	0.090	11180	0.090	0.090	9840	0.049	0.090	8850	0.045
	45.0	0.090	8280	0.085	0.090	7290	0.047	0.090	6560	0.042
	50.0	0.090	8280	0.085	0.090	7290	0.047	0.090	6560	0.042

ALU LINE
 EZ LINE -
 ENDMILL
 SE 30
NITICO 30
 OPTIMUM
 SE 45
 SE 45X
 NITICO 45
 SE 60
 SE 60X
 DN70 -
 SE 70
 SE GR
 TE 45
 PLUNGE
 -MILL
 THREAD
 MILL