OPTIMUM

- Bring you premium features
- At cost-effective rates

For material application ≤40 HRC

NiTiCo 30

NiTiCo 30 Miniature with Long Neck

P M K S

NiTiCo 30 Kleinst mit langem Hals

Micro toroidali NiTiCo 30 in metallo duro integrale con collo lungo

Micro toriques NiTiCo 30 2 tailles en carbure monobloc avec cou long

NiTiCo 30 系列 长颈短刃 立铣刀, 铣刀 / 球头

	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	**G87**	0.2 -4	2	40°	•				•			135
 R	**H56**				•				•			140
 R	**G88**				•				Profilling			145

NiTiCo 30 Standard Endmills

Fraises 2 tailles NiTiCo 30 Standard

Frese NiTiCo 30 Standard

NiTiCo 30 Standard Fräser

NiTiCo 30 系列 立铣刀 标准长度

	EDP	Ø	N° Z	Helix Angle	G6110	B0909	RC	Weldon	Operation			Page
	**C30**	1 - 25	4	40°	•				•			118
	C31				•				•			118
	C32				•				•			118
	C42	3 - 25			•			√	•			119
	C43				•			√	•			119
	C44				•			√	•			119

OPTIMUM

Optimium DP Endmills with Differential Pitch

P M K N S

Optimium DP Fräser mit ungleicher Teilung

Frese Optimium DP Standard in metallo duro, passo differenziale

Fraises 2 tailles Optimium DP Standard à pas décalés

Optimium DP 系列 立铣刀 标准长度

	EDP	Ø	N° Z	G6110	Helix Angle	B0909	RC	Weldon	Operation			Page
 HEAVY MACHINING DP FINISHING	**918**	1 - 20	4	•	40°				•	•	•	168
 R HEAVY MACHINING DP FINISHING	**K38**	1 - 20		•				√	•	•	•	169
	K47			•					•	•	•	169
	K52			•			√		•	•	•	169
	K53			•			√	√	•	•	•	169

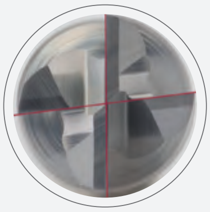
OPTIMUM

01

DIFFERENTIAL PITCH (DP) DESIGN

Reduce Vibrations

Maximizes productivity and tool life



End Face View

02

SUPERIOR COATING

Enchances Heat Resistance

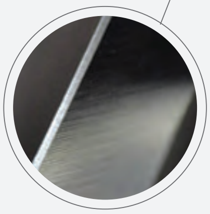
- Reduce tool wear to achieve cost-effective machining

03

IDEAL CUTTING EDGE

Enchances Durability

- Provide edge protection to prolong tool life



04

SUITABLE FOR MATERIAL GROUPS

P M K N S

DEUTSCH

01 UNGLEICHE TEILUNG (DP)

Reduziert Vibrationen

- Maximiert die Produktivität und die Werkzeuglebensdauer

02 AUSGEZEICHNETE BESCHICHTUNG

Verbessert die Hitzebeständigkeit

- Reduziert den Werkzeugverschleiß und das bedeutet eine kostengünstige Bearbeitung

03 PERFEKTE SCHNEIDE

Verbesserte Haltbarkeit

- Bietet Schneidkantenschutz, um die Lebensdauer des Werkzeugs zu verlängern

04 GEEIGNET FÜR MATERIALGRUPPEN P,M,K,N,S

FRANÇAIS

01 CONCEPTION À PAS DIFFÉRENTIEL (PD)

Réduit les vibrations

- Optimise la productivité et la durée de vie de l’outil

02 REVÊTEMENT SUPÉRIEUR

Augmente la résistance à la chaleur

- Réduit l’usure de l’outil pour parvenir à un usinage économique

03 ARÊTE TRANCHANTE IDÉALE

Augmente la durabilité

- Protège les arêtes pour prolonger la durée de vie de l’outil

04 ADAPTÉ AUX MATÉRIAUX P, M, K, N, S

ITALIANO

01 STRUTTURA DEL PASSO DIFFERENZIALE (DP)

Riduce le vibrazioni

- Ottimizza la produttività e la durata dello strumento

02 RIVESTIMENTO SUPERIORE

Migliora la resistenza al calore

- Riduce l’usura dello strumento per raggiungere una lavorazione efficace in termini di costi

03 ANGOLO DI TAGLIO IDEALE

Migliora la resistenza

- Offre una protezione degli angoli per prolungare la durata dello strumento

04 ADATTO PER MATERIALE P,M,K,N,S

中文

01 分割的抗震设计

降低刀具加工時的振动

- 延長刀具寿命
- 獲得更佳的生产率

02 卓越的涂层

提升刀具的抗热能力

- 降低刀具的磨损与加工成本

03 完美精密研磨的刀刃

增加刀具的耐用性

刀刃经过特别处理可加强刀具表现与寿命

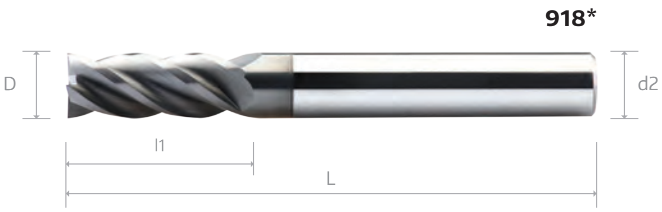
04 适合加工钢、不锈钢、铸铁、有色金属、超合金和钛的材料

OPTIMUM

LINE DP STANDARD ENDMILLS

HPMT

🇩🇪	VHM Optimum Line DP Standard Fräser mit ungleicher Teilung, 4 Zähne	🇫🇷	Fraises 2 tailles Optimum LineDP Standard à pas décalés, 4 dents, en carbure monobloc
🇮🇹	Frese Optimum Line DP Standard in metallo duro, passo differenziale, 4 taglienti	🇨🇳	整体硬质合金 Optimum Line DP 系列 立铣刀 4 刃 - 标准长度



MG

γ=7°±1°

λ=40°

DP

DIN 6535
HA
HB

HPT
G6110
AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					918 *
= * + Ø data	D	l 1	l 2	L	d2 (h6)	G6110
0100 050 03	1	3		50	3	●
0100 050 04	1	3		50	4	●
0150 050 03	1.5	4.5		50	3	●
0150 050 04	1.5	4.5		50	4	●
0200 050 03	2	6.5		50	3	●
0200 050 04	2	6.5		50	4	●
0250 050 03	2.5	6.5		50	3	●
0250 050 04	2.5	6.5		50	4	●
0300 050 03	3	9		50	3	●
0300 050 04	3	9		50	4	●
0300 050 06	3	9		50	6	●
0400	4	12		50	4	●
0400 050 06	4	12		50	6	●
0500	5	15		50	5	●
0500 050 06 15	5	15		50	6	●
0600 050 16	6	16		50	6	●
0600 060	6	20		60	6	●
0800 22	8	22		64	8	●
1000 070 27	10	27		70	10	●
1000 075	10	22		75	10	●
1200 075 32	12	32		75	12	●
1400	14	32		90	14	○
1600	16	32		90	16	●
1800	18	38		100	18	○
2000	20	38		100	20	●

Ø mm	Tol. µm
3.0~6.0	-0/-20
6.0~30.0	-0/-25

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
○	○	○	○	○	○	○	○	○	○	○	○	○				

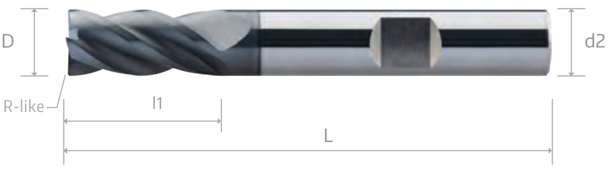
Cutting Parameter
170

OPTIMUM LINE DP R-LIKE ENDMILLS

HPMT

🇩🇪	VHM Optimum Line DP Fräser mit ungleicher Teilung, 4 Zähne	🇫🇷	Fraises 2 tailles Optimum LineDP à pas décalés, 4 dents, en carbure monobloc
🇮🇹	Frese Optimum Line DP in metallo duro, passo differenziale, 4 taglienti	🇨🇳	整体硬质合金 Optimum Line DP 系列 立铣刀 4 刃 - 标准长度

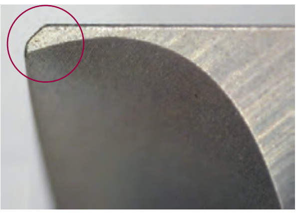
K38*



MG | R-Like | γ=7°±1° | λ=40° | DP | DIN 6535 HA HB | HPT G6110 AlCrN

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						K47 * HA	K38 * HB
= * + Ø data	D	l1	l2	L	d2 (h6)	R - Like	G6110	G6110
0100 050 03	1	3		50	3	0.02	●	-
0150 050 03	1.5	4.5		50	3	0.05	●	-
0200 050 03	2	6.5		50	3	0.05	●	-
0250 050 03	2.5	6.5		50	3	0.05	●	-
0300 050 03	3	9	15	50	3	0.1	●	-
0300 050 06	3	9	15	50	6	0.1	●	●
0400	4	12	20	50	4	0.1	●	-
0400 050 06	4	12	20	50	6	0.1	●	●
0500	5	15	20	50	5	0.1	●	-
0500 050 06 15	5	15	20	50	6	0.1	●	●
0600 050 16	6	16	20	50	6	0.1	●	●
0600 060	6	20	30	60	6	0.1	●	●
0800 22	8	22	30	64	8	0.2	●	●
1000 075	10	22	32	75	10	0.2	●	●
1000 070 27	10	27	32	70	10	0.2	●	●
1200 075 32	12	32	37	75	12	0.2	●	●
1400	14	32	44	90	14	0.2	●	●
1600	16	32	46	90	16	0.2	●	●
1800	18	38	53	100	18	0.2	○	○
2000	20	38	58	100	20	0.2	●	●

K52* K53*



R - Like is functional for enhance edge protection.

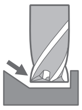
Material Group | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

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

Cutting Parameter

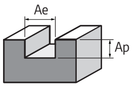
170

DP Standard Endmills 4 Flutes



Ramping	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Ramping depth	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
Ramping angle	45°		45°		30°		15°		10°		45°		30°		45°		10°	
D (mm)	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	120	0.017	105	0.017	95	0.016	90	0.005	50	0.005	125	0.005	150	0.013	135	0.012	60	0.012
4		0.024		0.024		0.023		0.009		0.006		0.006		0.017		0.017		0.016
5		0.031		0.032		0.031		0.011		0.008		0.008		0.022		0.023		0.021
6		0.037		0.038		0.037		0.015		0.009		0.010		0.027		0.028		0.025
8		0.052		0.054		0.053		0.020		0.013		0.014		0.038		0.040		0.035
10		0.069		0.071		0.070		0.024		0.017		0.018		0.047		0.049		0.043
12		0.086		0.090		0.089		0.030		0.021		0.023		0.060		0.063		0.057
14		0.101		0.105		0.104		0.037		0.024		0.031		0.070		0.077		0.066
16		0.120		0.126		0.126		0.045		0.038		0.035		0.084		0.093		0.080
18		0.135		0.141		0.141		0.050		0.051		0.043		0.094		0.105		0.090
20		0.157		0.165		0.165		0.058		0.069		0.048		0.110		0.122		0.105

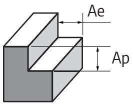
DP Standard Endmills 4 Flutes



Slotting	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	0.60 × D		0.50 × D		0.50 × D		0.50 × D		0.30 × D		0.60 × D		0.80 × D		0.70 × D		0.30 × D	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**	**Vc (m/min)**	**Fz (mm)**
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	190	0.009	175	0.009	120	0.011	95	0.007	50	0.005	140	0.005	250	0.009	220	0.009	65	0.011
4		0.013		0.012		0.015		0.012		0.006		0.007		0.012		0.012		0.015
5		0.017		0.016		0.020		0.014		0.008		0.009		0.016		0.016		0.019
6		0.020		0.019		0.024		0.019		0.009		0.010		0.019		0.019		0.023
8		0.028		0.027		0.034		0.025		0.013		0.014		0.026		0.027		0.032
10		0.035		0.034		0.043		0.033		0.017		0.018		0.033		0.034		0.040
12		0.045		0.043		0.055		0.045		0.021		0.023		0.041		0.043		0.052
14		0.055		0.053		0.069		0.056		0.024		0.028		0.051		0.052		0.061
16		0.063		0.061		0.079		0.066		0.038		0.032		0.058		0.060		0.073
18		0.074		0.073		0.094		0.082		0.051		0.040		0.068		0.071		0.083
20		0.083		0.081		0.105		0.091		0.069		0.045		0.075		0.079		0.097

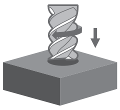
P **M** **K** **N** **S** | **P** **K**

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



DP Standard Endmills 4 Flutes

Side Milling	P						M				K		N				S	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel				Grey Cast iron		Wrought Aluminium		Cast Aluminium		Titanium alloy	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		Low Machinability		-		Si < 9%		Si ≥ 9%		-	
Cutting Depth, Ap (mm)	1.15 × D		1.00 × D		1.00 × D		1.00 × D		0.70 × D		1.00 × D		1.20 × D		1.10 × D		0.80 × D	
Cutting Width, Ae (mm)	0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D		0.30 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	200	0.003	185	0.006	140	0.005	100	0.002	50	0.002	160	0.007	260	0.003	230	0.003	80	0.006
2		0.006		0.012		0.011		0.004		0.005		0.015		0.006		0.006		0.014
3		0.009		0.018		0.017		0.007		0.008		0.024		0.009		0.009		0.024
4		0.013		0.027		0.022		0.009		0.010		0.032		0.012		0.012		0.031
5		0.017		0.034		0.031		0.014		0.013		0.042		0.016		0.016		0.047
6		0.020		0.041		0.037		0.016		0.016		0.050		0.019		0.019		0.056
8		0.028		0.061		0.056		0.024		0.023		0.071		0.027		0.027		0.079
10		0.035		0.076		0.070		0.030		0.028		0.088		0.033		0.034		0.098
12		0.045		0.102		0.094		0.038		0.038		0.110		0.042		0.043		0.130
14		0.055		0.125		0.118		0.049		0.048		0.134		0.049		0.050		0.158
16		0.063		0.143		0.139		0.057		0.055		0.153		0.058		0.060		0.181
18		0.074		0.168		0.167		0.071		0.068		0.186		0.065		0.068		0.212
20		0.082		0.187		0.185		0.086		0.075		0.206		0.076		0.079		0.236



DP Standard Endmills 4 Flutes

Plunging	P						K		N			
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Grey Cast iron		Wrought Aluminium		Cast Aluminium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		-		Si < 9%		Si ≥ 9%	
Cutting Depth, Ap (mm)	-		-		-		-		-		-	
Cutting Width, Ae (mm)	1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D		1.00 × D	
D (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)	Vc (m/min)	Fz (mm)
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	125	0.016	110	0.016	100	0.015	125	0.005	155	0.012	140	0.012
4		0.023		0.023		0.022		0.006		0.016		0.017
5		0.030		0.030		0.029		0.008		0.022		0.022
6		0.036		0.036		0.035		0.010		0.026		0.027
8		0.050		0.051		0.050		0.014		0.036		0.038
10		0.066		0.068		0.067		0.018		0.046		0.048
12		0.083		0.086		0.085		0.023		0.058		0.061
14		0.097		0.100		0.099		0.031		0.067		0.075
16		0.116		0.120		0.119		0.035		0.081		0.090
18		0.130		0.135		0.134		0.043		0.091		0.101
20		0.151		0.157		0.157		0.048		0.106		0.118

P M K N S | P K

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.