

MICRO-Line



APPLITEC
CUTTING TOOLS

Nuances
Sorten
Grades

> **16.03**

Micro-fraises de précision
Mikropräzisionsfräser
Precision micro end mills



> **16.06**

Fraises en bout / Fraises à angler
Schaftfräser / Kegelsenker
End mills / Chamfering tools



> **16.52**

Outils pour machine WM 701S
Werkzeuge für Maschine WM 701S
Executions for machine WM 701S



> **16.96**

Fraises à graver
Gravierfräser
Engraving mills



> **16.108**

Micro-forets et forets à centrer
Mikrobohrer und Zentrierbohrer
Micro drills and centering drills



> **16.115**

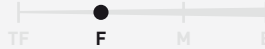
Informations techniques et symboles
Technische Informationen und Symbole
Technical information and symbols

> **16.136**

TiAlN**Revêtement PVD à couche mince**

Dünnschicht PVD Beschichtung

Thin PVD coating



P ★★★★★

M ★★★★★

N ★★★★★

S ★★★★★

- revêtement de dernière génération couche mince et lisse
- idéal pour tous les aciers et aciers inoxydables
- bonne condition pour les grades de titane et les alliages de nickel
- excellente variante universelle pour un fraisage en finition ou ébauche
- très bonne résistance à la température

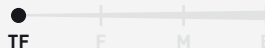
- neuesten Generation Beschichtung, dünne und glatte Schicht
- hervorragend für alle Stähle und rostfreie Stähle
- guter Zustand für Titan- und Nickellegierungssorten
- ausgezeichnete Universalsorte zum Schlicht- oder Schrappfräsen
- sehr gute Temperaturbeständigkeit

- latest generation coating thin and smooth layer
- specially adapted for our tools. Ideal for all basic steels and stainless steels
- good condition for titanium grades and nickel alloys
- excellent universal variant for finishing or rough milling
- very good temperature resistance

STF**Revêtement PVD à couche mince**

Dünnschicht PVD Beschichtung

Thin PVD coating



P ★★★★★

M ★★★★★

N ★★★★★

S ★★★★★

- revêtement de haute performance
- 1^{er} choix pour les alliages de chrome/nickel, inox, titane, zirconium
- spécialement adapté aux matières extrêmes en général

- hochleistungsbeschichtung
- erste Wahl für Chrom/Nickel, rostfreiem Stahl, Titan, Zirkoniumlegierungen
- speziell angepasst für extreme Materialien im Allgemeinen

- high performance coating
- first choice for chrome/nickel, stainless steel, titanium, zirconium alloys
- specially adapted to extreme materials in general

Nuances

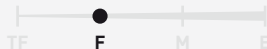
Sorten
Grades

TiCN



Revêtement PVD à couche mince

Dünnschicht PVD Beschichtung
Thin PVD coating



P	★★★★★
M	★★★★★
N	★★★★★
S	★★★★★

- revêtement de dernière génération offrant une excellente adhérence, avec une couche mince et lisse
- idéal pour le fraisage en finition de tous les aciers et aciers inoxydables
- excellente nuance pour les outils de petits diamètres (0.02-0.90 mm)

- Beschichtung der neuesten Generation mit ausgezeichneter Haftung, dünner und glatter Schicht
- hervorragend für Schlichtfräsen aller Stähle und rostfreien Stähle
- ausgezeichnete Sorte für Werkzeuge mit kleinem Durchmesser (0.02-0.90 mm)

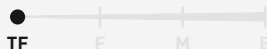
- latest generation coating with excellent adhesion, thin and smooth layer
- ideal for finish milling for all steels and stainless steels
- specially adapted for small diameters (0.02-0.90 mm)

DLC



Revêtement DLC à couche mince

Dünnschicht DLC Beschichtung
Thin DLC coating



P	★★★★★
M	★★★★★
N	★★★★★
S	★★★☆☆

- revêtement de très haute performance et à couche extra-mince
- très faible coefficient de frottement
- 1^{er} choix pour toutes les matières précieuses, non ferreuses et abrasives, telles que l'or, l'argent, le laiton sans plomb, le cuivre, l'aluminium, la fibre de carbone, la nacre et divers polymères...
- angles de coupe à finition poli miroir, offrant une excellente acuité d'arête
- durée de vie de l'outil considérablement prolongée

- hochleistungsbeschichtung mit extra-feiner Schicht
- sehr geringer Reibwert
- erste Wahl für alle edlen, nicht eisenhaltig und abrasiven Materialien wie Gold, Silber, bleifreies Messing, Kupfer, Aluminium, Kohlefaser, Perlmutt und diverse Polymere...
- Schneidkanten mit hochglanzpolierte Oberfläche, die eine hervorragende Schneidkanten-schärfe bieten
- deutlich verlängerte Lebensdauer des Werkzeugs

- very high-performance coating with extra-thin layer
- very low friction ratio
- first choice for all precious, non-ferrous and abrasive materials, such as gold, silver, lead-free brass, copper, aluminum, carbon fiber, mother-of-pearl and various polymers...
- cutting edges with mirror-polished finish, offering excellent edge sharpness
- significantly extended tool life

N

Non revêtu
Unbeschichtet
Uncoated



- carbures de haute qualité, adaptés aux différents groupes de produits
- tous les carbures ont une excellente dureté et une bonne résistance à la déformation
- acuité d'arête maximale grâce à une finition super polie
- idéal pour l'usinage en super finition de matières non ferreuses ou faiblement alliées

- hochwertige und spezifische Hartmetalle gemäss den Produktgruppen
- alle Hartmetalle haben eine ausgezeichnete Härte und eine gute Verformungsbeständigkeit
- maximale Kantenschärfe durch hochpoliertes Finish
- ideal für superfinish Bearbeitung von Nichteisen- oder niedriglegierten Materialien

- high-quality and specific carbides according to the product groups in our catalog
- all carbides have excellent hardness and good resistance to deformation
- maximum edge sharpness thanks to a super polished tool finish
- ideal for super-finish machining of non-ferrous or low-alloy materials

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

> 16.07

Z	λ	L2	D1	D2	Type	Corner	page
Z=1	0°	2x D1	Ø0.20 - 3.00	Ø3 h4 / Ø4 h5	3170-2		> 16.08
		2x D1	Ø0.20 - 3.00	Ø3 h4 / Ø4 h5	3170R-2		> 16.09
		3x D1	Ø0.20 - 3.00	Ø3 h4 / Ø4 h5	3170R-3		> 16.10
		4x D1	Ø0.30 - 3.00	Ø3 h4 / Ø4 h5	3170R-4		> 16.11
Z=2	30°	0.75x D1	Ø0.20 - 2.00	Ø3 h4	3271-0.75		> 16.12
		1x D1	Ø0.30 - 2.50	Ø3 h4	3271-1		> 16.13
		1.5x D1	Ø0.10 - 2.00	Ø3 h4	3271-1.5		> 16.14
		2x D1	Ø0.10 - 2.00	Ø3 h4	3271-2		> 16.15
		3x D1	Ø0.10 - 2.90	Ø3 h4	3271-3		> 16.16
		5x D1	Ø0.30 - 2.50	Ø3 h4	3271-5		> 16.17
		8x D1	Ø0.40 - 2.50	Ø3 h4 / Ø4 h5	3271-8		> 16.18
		2x D1	Ø0.20 - 3.00	Ø3 h4 / Ø6 h5	3270S-3X		> 16.19
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3270S-6X		> 16.20
		2x D1	Ø0.40 - 3.00	Ø3 h4 / Ø6 h5	3270S-9X		> 16.21
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3279T-3X		> 16.22
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3279T-6X		> 16.23
Z=3	30°	1.3x D1	Ø0.30 - 2.90	Ø3 h4	3371-1.3		> 16.25
		2x D1	Ø0.30 - 2.90	Ø3 h4	3371-2		> 16.26
		3x D1	Ø0.30 - 2.90	Ø3 h4	3371-3		> 16.27
		4x D1	Ø0.30 - 2.90	Ø3 h4	3371-4		> 16.28
		5x D1	Ø0.50 - 2.50	Ø3 h4	3371-5		> 16.29
	45°	8x D1	Ø0.50 - 2.50	Ø3 h4 / Ø4 h5	3371-8		> 16.30
		2.5x D1	Ø0.30 - 2.90	Ø3 h4	3375-2.5		> 16.31
		1.5x D1	Ø0.30 - 2.50	Ø3 h4	DHD3371-1.5		> 16.32
	36°-38°-40°	3x D1	Ø0.30 - 2.50	Ø3 h4	DHD3371-3		> 16.33
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3370S-3X		> 16.34
	30°	2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3370S-6X		> 16.35
		2x D1	Ø0.40 - 3.00	Ø3 h4 / Ø6 h5	3370S-9X		> 16.36
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3379T-3X		> 16.37
		2x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3379T-6X		> 16.38
		2x D1	Ø0.40 - 3.00	Ø3 h4 / Ø6 h5	3379T-9X		> 16.39
Z=4	30°	1.5x D1	Ø0.30 - 2.90	Ø3 h4	3471-1.5		> 16.40
		3x D1	Ø0.30 - 2.90	Ø3 h4	3471-3		> 16.41
	40°	2x D1	Ø0.30 - 2.90	Ø3 h4	3472-2		> 16.42
		4x D1	Ø0.40 - 2.90	Ø3 h4	3472-4		> 16.43
	35°-38°	3x D1	Ø0.50 - 2.50	Ø3 h4	DHP3471-3		> 16.44
Z=2	30°	0.75x D1	Ø0.20 - 2.50	Ø3 h4	3278-0.75		> 16.45
		1x D1	Ø0.20 - 2.90	Ø3 h4	3278-1		> 16.46
		1.5x D1	Ø0.20 - 2.90	Ø3 h4	3278-1.5		> 16.47
		3x D1	Ø0.20 - 2.90	Ø3 h4	3278-3		> 16.48
		1.5x D1	Ø0.20 - 3.00	Ø3 h4 / Ø6 h5	3278H-3X		> 16.49
		1.5x D1	Ø0.30 - 3.00	Ø3 h4 / Ø6 h5	3278H-6X		> 16.50
		1.5x D1	Ø0.40 - 3.00	Ø3 h4 / Ø6 h5	3278H-9X		> 16.51

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Matière Werkstoff Material		VC	0.10 - 0.50	0.60 - 1.50	1.60 - 2.90	N	TiAlN	STF	TiCN	DLC
		(m/min)	fz (mm)	fz (mm)	fz (mm)					
Acier de décolletage Automatenstahl Free-cutting steel	P	80 - 130	0.003 - 0.005	0.006 - 0.010	0.013 - 0.020	-	***	***	**	-
Acier Stahl Steel	< 600 N/mm ² P	70 - 100	0.003 - 0.005	0.006 - 0.010	0.013 - 0.020	-	***	***	**	-
Acier Stahl Steel	< 800 N/mm ² P	70 - 100	0.003 - 0.005	0.006 - 0.010	0.013 - 0.020	-	***	***	**	-
Acier Stahl Steel	> 800 N/mm ² P	50 - 80	0.003 - 0.005	0.006 - 0.010	0.013 - 0.020	-	***	***	**	-
Acier trempé Gehärteter Stahl -55HRC Hardened steel	H	60 - 90	0.001 - 0.002	0.003 - 0.005	0.007 - 0.010	-	***	***	*	-
Acier trempé Gehärteter Stahl +55HRC Hardened steel	H	40 - 70	0.001 - 0.002	0.003 - 0.005	0.007 - 0.010	-	***	***	*	-
Inox Rostfreistahl Stainless steel	M	40 - 80	0.003 - 0.005	0.006 - 0.010	0.013 - 0.020	-	***	***	**	-
Aluminium	N	200 - 300	0.002 - 0.005	0.005 - 0.010	0.010 - 0.030	***	-	-	**	***
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze	N	100 - 200	0.001 - 0.005	0.006 - 0.010	0.010 - 0.015	***	**	**	**	***
Matière synthétique Synthetisches Material Synthetic material	N	200 - 700	0.002 - 0.004	0.006 - 0.015	0.015 - 0.050	***	**	**	**	***
Métaux précieux Edelmetalle Precious metals	N	90 - 140	0.002 - 0.003	0.004 - 0.012	0.012 - 0.025	***	**	**	*	***
Titane Titan Titanium	S	25 - 70	0.001 - 0.003	0.004 - 0.010	0.006 - 0.015	-	***	***	**	-
Alliage de nickel Nickel-Legierung Nickel alloy	S	40 - 70	0.001 - 0.003	0.004 - 0.008	0.008 - 0.012	-	***	***	**	-
Matière exotique Exotisches material Exotic material	O	15 - 25	0.001 - 0.002	0.003 - 0.005	0.006 - 0.010	-	***	***	**	***

Avec revêtement, augmenter les valeurs de 20-30%

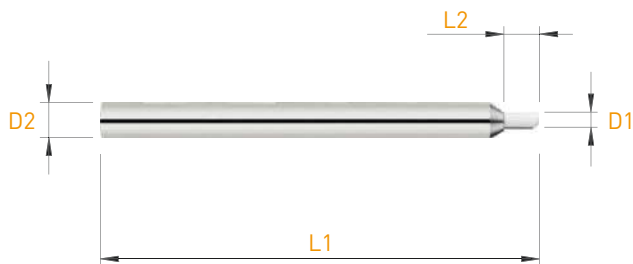
Mit Beschichtung, Daten um 20-30% erhöhen

With coating, increase data by 20-30%

* Bien / Gut / Good

** Très bien / Sehr gut / Very good

*** Excellent / Ausgezeichnet / Excellent



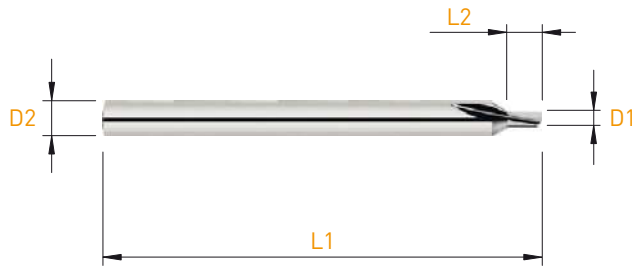
D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.40	3.00	39	3170-2-0.20	•				
0.30	0.60	3.00	39	3170-2-0.30	•	•	•	•	•
0.40	0.80	3.00	39	3170-2-0.40	•	•	•	•	•
0.50	1.00	3.00	39	3170-2-0.50	•	•	•	•	•
0.60	1.20	3.00	39	3170-2-0.60	•	•	•	•	•
0.70	1.40	3.00	39	3170-2-0.70	•	•	•	•	•
0.80	1.60	3.00	39	3170-2-0.80	•	•	•	•	•
0.90	1.80	3.00	39	3170-2-0.90	•	•	•	•	•
1.00	2.00	3.00	39	3170-2-1.00	•	•	•	•	•
1.10	2.20	3.00	39	3170-2-1.10	•	•	•	•	•
1.20	2.40	3.00	39	3170-2-1.20	•	•	•	•	•
1.30	2.60	3.00	39	3170-2-1.30	•	•	•	•	•
1.40	2.80	3.00	39	3170-2-1.40	•	•	•	•	•
1.50	3.00	3.00	39	3170-2-1.50	•	•	•	•	•
1.60	3.20	3.00	39	3170-2-1.60	•	•	•	•	•
1.70	3.40	3.00	39	3170-2-1.70	•	•	•	•	•
1.80	3.60	3.00	39	3170-2-1.80	•	•	•	•	•
1.90	3.80	3.00	39	3170-2-1.90	•	•	•	•	•
2.00	4.00	3.00	39	3170-2-2.00	•	•	•	•	•
2.10	4.20	3.00	39	3170-2-2.10	•	•	•	•	•
2.20	4.40	3.00	39	3170-2-2.20	•	•	•	•	•
2.30	4.60	3.00	39	3170-2-2.30	•	•	•	•	•
2.40	4.80	3.00	39	3170-2-2.40	•	•	•	•	•
2.50	5.00	3.00	39	3170-2-2.50	•	•	•	•	•
2.60	5.20	3.00	39	3170-2-2.60	•	•	•	•	•
2.70	5.40	3.00	39	3170-2-2.70	•	•	•	•	•
2.80	5.60	3.00	39	3170-2-2.80	•	•	•	•	•
2.90	5.80	3.00	39	3170-2-2.90	•	•	•	•	•
3.00	6.00	4.00	40	3170-2-3.00	•	•	•	•	•

Micro-fraises de précision

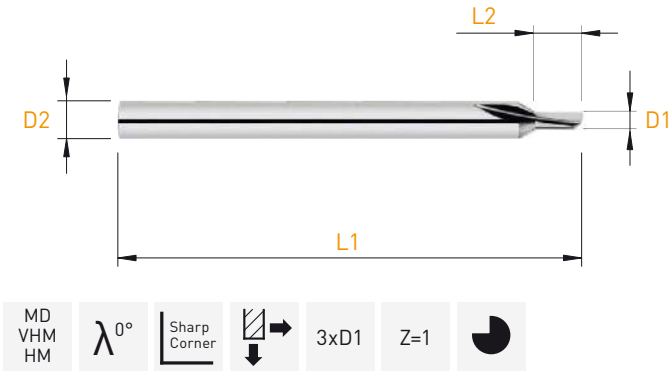
Mikropräzisionsfräser

Precision micro end mills

3170R-2



D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.40	3.00	39	3170R-2-0.20	●				
0.30	0.60	3.00	39	3170R-2-0.30	●	●	●	●	●
0.40	0.80	3.00	39	3170R-2-0.40	●	●	●	●	●
0.50	1.00	3.00	39	3170R-2-0.50	●	●	●	●	●
0.60	1.20	3.00	39	3170R-2-0.60	●	●	●	●	●
0.70	1.40	3.00	39	3170R-2-0.70	●	●	●	●	●
0.80	1.60	3.00	39	3170R-2-0.80	●	●	●	●	●
0.90	1.80	3.00	39	3170R-2-0.90	●	●	●	●	●
1.00	2.00	3.00	39	3170R-2-1.00	●	●	●	●	●
1.10	2.20	3.00	39	3170R-2-1.10	●	●	●	●	●
1.20	2.40	3.00	39	3170R-2-1.20	●	●	●	●	●
1.30	2.60	3.00	39	3170R-2-1.30	●	●	●	●	●
1.40	2.80	3.00	39	3170R-2-1.40	●	●	●	●	●
1.50	3.00	3.00	39	3170R-2-1.50	●	●	●	●	●
1.60	3.20	3.00	39	3170R-2-1.60	●	●	●	●	●
1.70	3.40	3.00	39	3170R-2-1.70	●	●	●	●	●
1.80	3.60	3.00	39	3170R-2-1.80	●	●	●	●	●
1.90	3.80	3.00	39	3170R-2-1.90	●	●	●	●	●
2.00	4.00	3.00	39	3170R-2-2.00	●	●	●	●	●
2.10	4.10	3.00	39	3170R-2-2.10	●	●	●	●	●
2.20	4.40	3.00	39	3170R-2-2.20	●	●	●	●	●
2.30	4.60	3.00	39	3170R-2-2.30	●	●	●	●	●
2.40	4.80	3.00	39	3170R-2-2.40	●	●	●	●	●
2.50	5.00	3.00	39	3170R-2-2.50	●	●	●	●	●
2.60	5.20	3.00	39	3170R-2-2.60	●	●	●	●	●
2.70	5.40	3.00	39	3170R-2-2.70	●	●	●	●	●
2.80	5.60	3.00	39	3170R-2-2.80	●	●	●	●	●
2.90	5.80	3.00	39	3170R-2-2.90	●	●	●	●	●
3.00	6.00	4.00	40	3170R-2-3.00	●	●	●	●	●

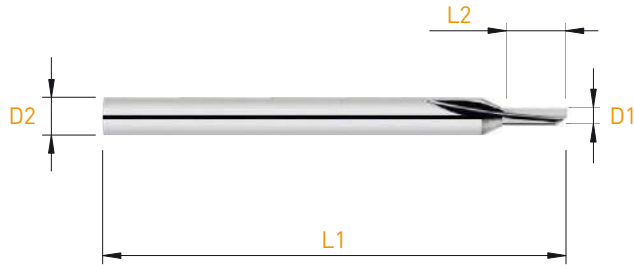


D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAIN	STF	TiCN	DLC
0.20	0.60	3.00	39	3170R-3-0.20	●				
0.30	0.90	3.00	39	3170R-3-0.30	●	●	●	●	●
0.40	1.20	3.00	39	3170R-3-0.40	●	●	●	●	●
0.50	1.50	3.00	39	3170R-3-0.50	●	●	●	●	●
0.60	1.80	3.00	39	3170R-3-0.60	●	●	●	●	●
0.70	2.10	3.00	39	3170R-3-0.70	●	●	●	●	●
0.80	2.40	3.00	39	3170R-3-0.80	●	●	●	●	●
0.90	2.70	3.00	39	3170R-3-0.90	●	●	●	●	●
1.00	3.00	3.00	39	3170R-3-1.00	●	●	●	●	●
1.10	3.30	3.00	39	3170R-3-1.10	●	●	●	●	●
1.20	3.60	3.00	39	3170R-3-1.20	●	●	●	●	●
1.30	3.90	3.00	39	3170R-3-1.30	●	●	●	●	●
1.40	4.20	3.00	39	3170R-3-1.40	●	●	●	●	●
1.50	4.50	3.00	39	3170R-3-1.50	●	●	●	●	●
2.00	6.00	3.00	39	3170R-3-2.00	●	●	●	●	●
2.50	7.50	3.00	39	3170R-3-2.50	●	●	●	●	●
3.00	9.00	4.00	40	3170R-3-3.00	●	●	●	●	●

Micro-fraises de précision

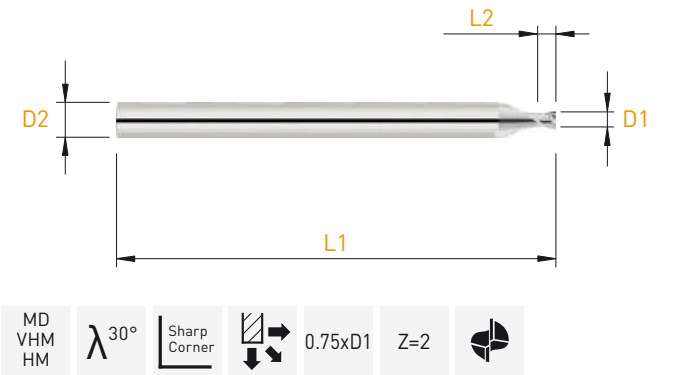
Mikropräzisionsfräser

Precision micro end mills

3170R-4

D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	1.20	3.00	39	3170R-4-0.30	•	•	•	•	•
0.40	1.60	3.00	39	3170R-4-0.40	•	•	•	•	•
0.50	2.00	3.00	39	3170R-4-0.50	•	•	•	•	•
0.60	2.40	3.00	39	3170R-4-0.60	•	•	•	•	•
0.70	2.80	3.00	39	3170R-4-0.70	•	•	•	•	•
0.80	3.20	3.00	39	3170R-4-0.80	•	•	•	•	•
0.90	3.60	3.00	39	3170R-4-0.90	•	•	•	•	•
1.00	4.00	3.00	39	3170R-4-1.00	•	•	•	•	•
1.10	4.40	3.00	39	3170R-4-1.10	•	•	•	•	•
1.20	4.80	3.00	39	3170R-4-1.20	•	•	•	•	•
1.30	5.20	3.00	39	3170R-4-1.30	•	•	•	•	•
1.40	5.60	3.00	39	3170R-4-1.40	•	•	•	•	•
1.50	6.00	3.00	39	3170R-4-1.50	•	•	•	•	•
2.00	8.00	3.00	39	3170R-4-2.00	•	•	•	•	•
2.50	10.00	3.00	39	3170R-4-2.50	•	•	•	•	•
3.00	12.00	4.00	40	3170R-4-3.00	•	•	•	•	•

3271-0.75

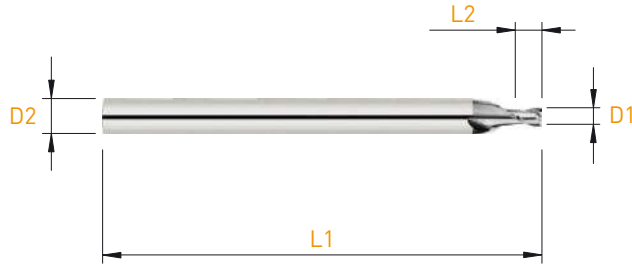


D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.15	3.00	39	3271-0.75-0.20	●				
0.30	0.25	3.00	39	3271-0.75-0.30	●	●	●	●	●
0.40	0.30	3.00	39	3271-0.75-0.40	●	●	●	●	●
0.50	0.37	3.00	39	3271-0.75-0.50	●	●	●	●	●
0.60	0.45	3.00	39	3271-0.75-0.60	●	●	●	●	●
0.70	0.53	3.00	39	3271-0.75-0.70	●	●	●	●	●
0.80	0.60	3.00	39	3271-0.75-0.80	●	●	●	●	●
0.90	0.70	3.00	39	3271-0.75-0.90	●	●	●	●	●
1.00	0.75	3.00	39	3271-0.75-1.00	●	●	●	●	●
1.10	0.90	3.00	39	3271-0.75-1.10	●	●	●	●	●
1.20	0.90	3.00	39	3271-0.75-1.20	●	●	●	●	●
1.30	1.00	3.00	39	3271-0.75-1.30	●	●	●	●	●
1.40	1.10	3.00	39	3271-0.75-1.40	●	●	●	●	●
1.50	1.15	3.00	39	3271-0.75-1.50	●	●	●	●	●
1.60	1.20	3.00	39	3271-0.75-1.60	●	●	●	●	●
1.70	1.30	3.00	39	3271-0.75-1.70	●	●	●	●	●
1.80	1.40	3.00	39	3271-0.75-1.80	●	●	●	●	●
1.90	1.45	3.00	39	3271-0.75-1.90	●	●	●	●	●
2.00	1.50	3.00	39	3271-0.75-2.00	●	●	●	●	●

Micro-fraises de précision

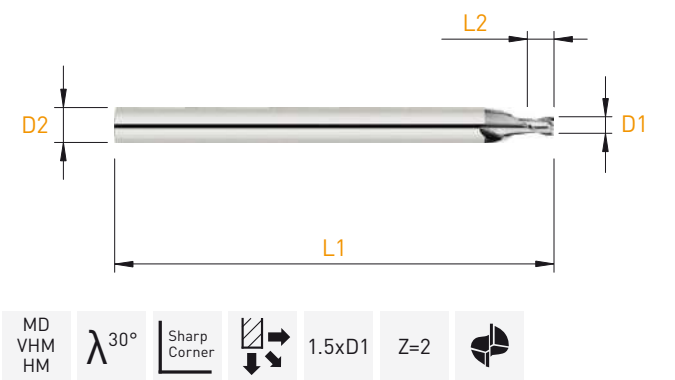
Mikropräzisionsfräser

Precision micro end mills

3271-1

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAIN	STF	TiCN	DLC
0.30	0.30	3.00	39	3271-1-0.30	•	•	•	•	•
0.40	0.40	3.00	39	3271-1-0.40	•	•	•	•	•
0.50	0.50	3.00	39	3271-1-0.50	•	•	•	•	•
0.60	0.60	3.00	39	3271-1-0.60	•	•	•	•	•
0.70	0.70	3.00	39	3271-1-0.70	•	•	•	•	•
0.80	0.80	3.00	39	3271-1-0.80	•	•	•	•	•
0.90	0.90	3.00	39	3271-1-0.90	•	•	•	•	•
1.00	1.00	3.00	39	3271-1-1.00	•	•	•	•	•
1.10	1.10	3.00	39	3271-1-1.10	•	•	•	•	•
1.20	1.20	3.00	39	3271-1-1.20	•	•	•	•	•
1.30	1.30	3.00	39	3271-1-1.30	•	•	•	•	•
1.40	1.40	3.00	39	3271-1-1.40	•	•	•	•	•
1.50	1.50	3.00	39	3271-1-1.50	•	•	•	•	•
1.60	1.60	3.00	39	3271-1-1.60	•	•	•	•	•
1.70	1.70	3.00	39	3271-1-1.70	•	•	•	•	•
1.80	1.80	3.00	39	3271-1-1.80	•	•	•	•	•
1.90	1.90	3.00	39	3271-1-1.90	•	•	•	•	•
2.00	2.00	3.00	39	3271-1-2.00	•	•	•	•	•
2.50	2.50	3.00	39	3271-1-2.50	•	•	•	•	•

3271-1.5

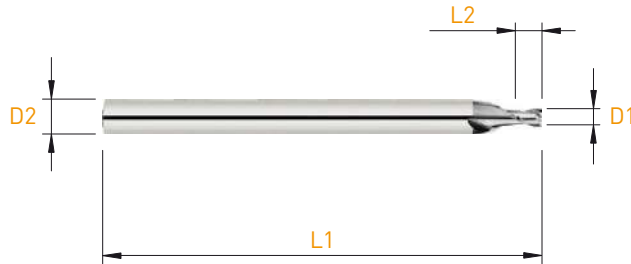


D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.10	0.15	3.00	39	3271-1.5-0.10	●				
0.15	0.20	3.00	39	3271-1.5-0.15	●				
0.20	0.30	3.00	39	3271-1.5-0.20	●				
0.25	0.35	3.00	39	3271-1.5-0.25	●				
0.30	0.45	3.00	39	3271-1.5-0.30	●	●	●	●	●
0.40	0.60	3.00	39	3271-1.5-0.40	●	●	●	●	●
0.45	0.70	3.00	39	3271-1.5-0.45	●	●	●	●	●
0.50	0.75	3.00	39	3271-1.5-0.50	●	●	●	●	●
0.60	0.90	3.00	39	3271-1.5-0.60	●	●	●	●	●
0.70	1.05	3.00	39	3271-1.5-0.70	●	●	●	●	●
0.80	1.20	3.00	39	3271-1.5-0.80	●	●	●	●	●
0.90	1.35	3.00	39	3271-1.5-0.90	●	●	●	●	●
1.00	1.50	3.00	39	3271-1.5-1.00	●	●	●	●	●
1.10	1.65	3.00	39	3271-1.5-1.10	●	●	●	●	●
1.20	1.80	3.00	39	3271-1.5-1.20	●	●	●	●	●
1.30	1.95	3.00	39	3271-1.5-1.30	●	●	●	●	●
1.40	2.10	3.00	39	3271-1.5-1.40	●	●	●	●	●
1.50	2.25	3.00	39	3271-1.5-1.50	●	●	●	●	●
1.60	2.40	3.00	39	3271-1.5-1.60	●	●	●	●	●
1.70	2.55	3.00	39	3271-1.5-1.70	●	●	●	●	●
1.80	2.70	3.00	39	3271-1.5-1.80	●	●	●	●	●
1.90	2.85	3.00	39	3271-1.5-1.90	●	●	●	●	●
2.00	3.00	3.00	39	3271-1.5-2.00	●	●	●	●	●

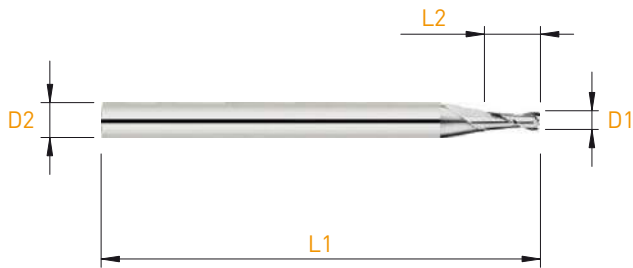
Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3271-2

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TAIN	STF	TiCN	DLC
0.10	0.20	3.00	39	3271-2-0.10	●				
0.15	0.30	3.00	39	3271-2-0.15	●				
0.20	0.40	3.00	39	3271-2-0.20	●				
0.25	0.50	3.00	39	3271-2-0.25	●				
0.30	0.60	3.00	39	3271-2-0.30	●	●	●	●	●
0.40	0.80	3.00	39	3271-2-0.40	●	●	●	●	●
0.50	1.00	3.00	39	3271-2-0.50	●	●	●	●	●
0.60	1.20	3.00	39	3271-2-0.60	●	●	●	●	●
0.70	1.40	3.00	39	3271-2-0.70	●	●	●	●	●
0.80	1.60	3.00	39	3271-2-0.80	●	●	●	●	●
0.90	1.80	3.00	39	3271-2-0.90	●	●	●	●	●
1.00	2.00	3.00	39	3271-2-1.00	●	●	●	●	●
1.10	2.20	3.00	39	3271-2-1.10	●	●	●	●	●
1.20	2.40	3.00	39	3271-2-1.20	●	●	●	●	●
1.30	2.60	3.00	39	3271-2-1.30	●	●	●	●	●
1.40	2.80	3.00	39	3271-2-1.40	●	●	●	●	●
1.50	3.00	3.00	39	3271-2-1.50	●	●	●	●	●
1.60	3.20	3.00	39	3271-2-1.60	●	●	●	●	●
1.70	3.40	3.00	39	3271-2-1.70	●	●	●	●	●
1.80	3.60	3.00	39	3271-2-1.80	●	●	●	●	●
1.90	3.80	3.00	39	3271-2-1.90	●	●	●	●	●
2.00	4.00	3.00	39	3271-2-2.00	●	●	●	●	●



MD
VHM
HM

λ 30°

Sharp
Corner

3xD1

Z=2

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.10	0.25	3.00	39	3271-3-0.10	●				
0.15	0.45	3.00	39	3271-3-0.15	●				
0.20	0.50	3.00	39	3271-3-0.20	●				
0.25	0.75	3.00	39	3271-3-0.25	●				
0.30	1.00	3.00	39	3271-3-0.30	●	●	●	●	●
0.35	1.10	3.00	39	3271-3-0.35	●	●	●	●	●
0.40	1.20	3.00	39	3271-3-0.40	●	●	●	●	●
0.50	1.50	3.00	39	3271-3-0.50	●	●	●	●	●
0.60	2.00	3.00	39	3271-3-0.60	●	●	●	●	●
0.65	2.00	3.00	39	3271-3-0.65	●	●	●	●	●
0.70	2.00	3.00	39	3271-3-0.70	●	●	●	●	●
0.75	2.00	3.00	39	3271-3-0.75	●	●	●	●	●
0.80	2.50	3.00	39	3271-3-0.80	●	●	●	●	●
0.90	2.50	3.00	39	3271-3-0.90	●	●	●	●	●
0.95	3.00	3.00	39	3271-3-0.95	●	●	●	●	●
1.00	3.00	3.00	39	3271-3-1.00	●	●	●	●	●
1.05	3.00	3.00	39	3271-3-1.05	●	●	●	●	●
1.10	3.00	3.00	39	3271-3-1.10	●	●	●	●	●
1.15	3.50	3.00	39	3271-3-1.15	●	●	●	●	●
1.20	4.00	3.00	39	3271-3-1.20	●	●	●	●	●
1.30	4.00	3.00	39	3271-3-1.30	●	●	●	●	●
1.35	4.00	3.00	39	3271-3-1.35	●	●	●	●	●
1.40	4.00	3.00	39	3271-3-1.40	●	●	●	●	●
1.45	4.40	3.00	39	3271-3-1.45	●	●	●	●	●
1.50	4.50	3.00	39	3271-3-1.50	●	●	●	●	●
1.55	4.50	3.00	39	3271-3-1.55	●	●	●	●	●
1.60	4.50	3.00	39	3271-3-1.60	●	●	●	●	●
1.65	5.00	3.00	39	3271-3-1.65	●	●	●	●	●
1.70	5.00	3.00	39	3271-3-1.70	●	●	●	●	●
1.75	5.30	3.00	39	3271-3-1.75	●	●	●	●	●

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
1.80	6.00	3.00	39	3271-3-1.80	●	●	●	●	●
1.85	6.00	3.00	39	3271-3-1.85	●	●	●	●	●
1.90	6.00	3.00	39	3271-3-1.90	●	●	●	●	●
1.95	6.00	3.00	39	3271-3-1.95	●	●	●	●	●
2.00	6.00	3.00	39	3271-3-2.00	●	●	●	●	●
2.10	6.00	3.00	39	3271-3-2.10	●	●	●	●	●
2.20	6.50	3.00	39	3271-3-2.20	●	●	●	●	●
2.30	7.00	3.00	39	3271-3-2.30	●	●	●	●	●
2.40	7.00	3.00	39	3271-3-2.40	●	●	●	●	●
2.50	7.50	3.00	39	3271-3-2.50	●	●	●	●	●
2.60	7.50	3.00	39	3271-3-2.60	●	●	●	●	●
2.70	8.00	3.00	39	3271-3-2.70	●	●	●	●	●
2.80	8.00	3.00	39	3271-3-2.80	●	●	●	●	●
2.90	8.00	3.00	39	3271-3-2.90	●	●	●	●	●

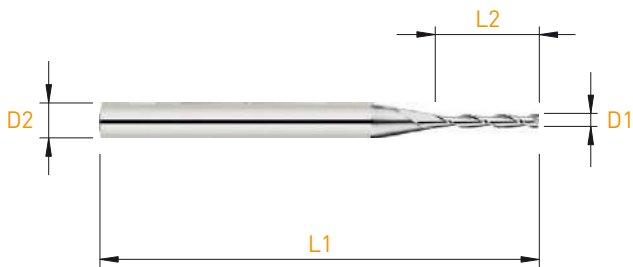
Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3271-5

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	1.50	3.00	39	3271-5-0.30	•	•	•	•	•
0.35	1.80	3.00	39	3271-5-0.35	•	•	•	•	•
0.40	2.00	3.00	39	3271-5-0.40	•	•	•	•	•
0.50	2.50	3.00	39	3271-5-0.50	•	•	•	•	•
0.55	2.80	3.00	39	3271-5-0.55	•	•	•	•	•
0.60	3.00	3.00	39	3271-5-0.60	•	•	•	•	•
0.65	3.30	3.00	39	3271-5-0.65	•	•	•	•	•
0.70	3.50	3.00	39	3271-5-0.70	•	•	•	•	•
0.75	3.80	3.00	39	3271-5-0.75	•	•	•	•	•
0.80	4.00	3.00	39	3271-5-0.80	•	•	•	•	•
0.85	4.30	3.00	39	3271-5-0.85	•	•	•	•	•
0.90	4.50	3.00	39	3271-5-0.90	•	•	•	•	•
0.95	4.80	3.00	39	3271-5-0.95	•	•	•	•	•
1.00	5.00	3.00	39	3271-5-1.00	•	•	•	•	•
1.10	5.50	3.00	39	3271-5-1.10	•	•	•	•	•
1.20	6.00	3.00	39	3271-5-1.20	•	•	•	•	•
1.50	7.50	3.00	39	3271-5-1.50	•	•	•	•	•
2.00	10.00	3.00	39	3271-5-2.00	•	•	•	•	•
2.50	12.50	3.00	39	3271-5-2.50	•	•	•	•	•



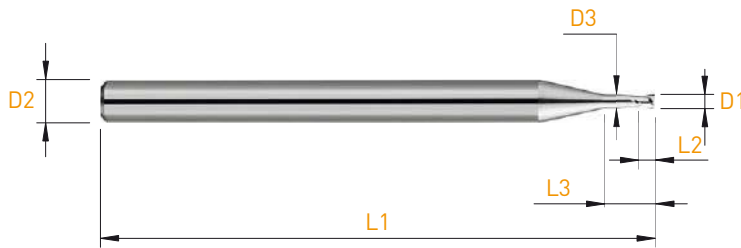
D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	3.20	3.00	39	3271-8-0.40	●	●	●	●	●
0.50	4.00	3.00	39	3271-8-0.50	●	●	●	●	●
0.60	5.00	3.00	39	3271-8-0.60	●	●	●	●	●
0.70	5.60	3.00	39	3271-8-0.70	●	●	●	●	●
0.80	6.00	3.00	39	3271-8-0.80	●	●	●	●	●
0.90	7.20	3.00	39	3271-8-0.90	●	●	●	●	●
1.00	8.00	3.00	39	3271-8-1.00	●	●	●	●	●
1.20	9.00	3.00	39	3271-8-1.20	●	●	●	●	●
1.50	12.00	4.00	50	3271-8-1.50	●	●	●	●	●
2.00	16.00	4.00	50	3271-8-2.00	●	●	●	●	●
2.50	20.00	4.00	50	3271-8-2.50	●	●	●	●	●

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3270S-3X



D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.40	0.60	0.17	3.00	39	3270S-3X-0.20	●				
0.30	0.60	0.90	0.27	3.00	39	3270S-3X-0.30	●	●	●	●	●
0.40	0.80	1.20	0.37	3.00	39	3270S-3X-0.40	●	●	●	●	●
0.50	1.00	1.50	0.45	3.00	39	3270S-3X-0.50	●	●	●	●	●
0.60	1.20	1.80	0.55	3.00	39	3270S-3X-0.60	●	●	●	●	●
0.70	1.40	2.10	0.65	3.00	39	3270S-3X-0.70	●	●	●	●	●
0.80	1.60	2.40	0.75	3.00	39	3270S-3X-0.80	●	●	●	●	●
0.90	1.80	2.70	0.85	3.00	39	3270S-3X-0.90	●	●	●	●	●
1.00	2.00	3.00	0.95	3.00	39	3270S-3X-1.00	●	●	●	●	●
1.10	2.20	3.30	1.05	3.00	39	3270S-3X-1.10	●	●	●	●	●
1.20	2.40	3.60	1.15	3.00	39	3270S-3X-1.20	●	●	●	●	●
1.30	2.60	3.90	1.25	3.00	39	3270S-3X-1.30	●	●	●	●	●
1.40	2.80	4.20	1.35	3.00	39	3270S-3X-1.40	●	●	●	●	●
1.50	3.00	4.50	1.45	3.00	39	3270S-3X-1.50	●	●	●	●	●
1.60	3.20	4.80	1.55	3.00	39	3270S-3X-1.60	●	●	●	●	●
1.70	3.40	5.10	1.65	3.00	39	3270S-3X-1.70	●	●	●	●	●
1.80	3.60	5.40	1.75	3.00	39	3270S-3X-1.80	●	●	●	●	●
1.90	3.80	5.70	1.85	3.00	39	3270S-3X-1.90	●	●	●	●	●
2.00	4.00	6.00	1.95	6.00	50	3270S-3X-2.00	●	●	●	●	●
2.10	4.20	6.30	2.05	6.00	50	3270S-3X-2.10	●	●	●	●	●
2.20	4.40	6.60	2.15	6.00	50	3270S-3X-2.20	●	●	●	●	●
2.30	4.60	6.90	2.25	6.00	50	3270S-3X-2.30	●	●	●	●	●
2.40	4.80	7.20	2.35	6.00	50	3270S-3X-2.40	●	●	●	●	●
2.50	5.00	7.50	2.45	6.00	50	3270S-3X-2.50	●	●	●	●	●
3.00	6.00	9.00	2.95	6.00	50	3270S-3X-3.00	●	●	●	●	●



D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	1.80	0.27	3.00	39	3270S-6X-0.30	•	•	•	•	•
0.40	0.80	2.40	0.37	3.00	39	3270S-6X-0.40	•	•	•	•	•
0.50	1.00	3.00	0.45	3.00	39	3270S-6X-0.50	•	•	•	•	•
0.60	1.20	3.60	0.55	3.00	39	3270S-6X-0.60	•	•	•	•	•
0.70	1.40	4.20	0.65	3.00	39	3270S-6X-0.70	•	•	•	•	•
0.80	1.60	4.80	0.75	3.00	39	3270S-6X-0.80	•	•	•	•	•
0.90	1.80	5.40	0.85	3.00	39	3270S-6X-0.90	•	•	•	•	•
1.00	2.00	6.00	0.95	3.00	39	3270S-6X-1.00	•	•	•	•	•
1.10	2.20	6.60	1.05	3.00	39	3270S-6X-1.10	•	•	•	•	•
1.20	2.40	7.20	1.15	3.00	39	3270S-6X-1.20	•	•	•	•	•
1.30	2.60	7.80	1.25	3.00	39	3270S-6X-1.30	•	•	•	•	•
1.40	2.80	8.40	1.35	3.00	39	3270S-6X-1.40	•	•	•	•	•
1.50	3.00	9.00	1.45	3.00	39	3270S-6X-1.50	•	•	•	•	•
1.60	3.20	9.60	1.55	3.00	39	3270S-6X-1.60	•	•	•	•	•
1.70	3.40	10.20	1.65	3.00	39	3270S-6X-1.70	•	•	•	•	•
1.80	3.60	10.80	1.75	3.00	39	3270S-6X-1.80	•	•	•	•	•
1.90	3.80	11.40	1.85	3.00	39	3270S-6X-1.90	•	•	•	•	•
2.00	4.00	12.00	1.95	6.00	50	3270S-6X-2.00	•	•	•	•	•
2.10	4.20	12.60	2.05	6.00	50	3270S-6X-2.10	•	•	•	•	•
2.20	4.40	13.20	2.15	6.00	50	3270S-6X-2.20	•	•	•	•	•
2.30	4.60	13.80	2.25	6.00	50	3270S-6X-2.30	•	•	•	•	•
2.40	4.80	14.40	2.35	6.00	50	3270S-6X-2.40	•	•	•	•	•
2.50	5.00	15.00	2.45	6.00	50	3270S-6X-2.50	•	•	•	•	•
3.00	6.00	18.00	2.95	6.00	50	3270S-6X-3.00	•	•	•	•	•

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3270S-9X



D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	0.80	3.60	0.37	3.00	39	3270S-9X-0.40	●	●	●	●	●
0.50	1.00	4.50	0.45	3.00	39	3270S-9X-0.50	●	●	●	●	●
0.60	1.20	5.40	0.55	3.00	39	3270S-9X-0.60	●	●	●	●	●
0.70	1.40	6.30	0.65	3.00	39	3270S-9X-0.70	●	●	●	●	●
0.80	1.60	7.20	0.75	3.00	39	3270S-9X-0.80	●	●	●	●	●
0.90	1.80	8.10	0.85	3.00	39	3270S-9X-0.90	●	●	●	●	●
1.00	2.00	9.00	0.95	3.00	39	3270S-9X-1.00	●	●	●	●	●
1.10	2.20	9.90	1.05	3.00	39	3270S-9X-1.10	●	●	●	●	●
1.20	2.40	10.80	1.15	3.00	39	3270S-9X-1.20	●	●	●	●	●
1.30	2.60	11.70	1.25	3.00	39	3270S-9X-1.30	●	●	●	●	●
1.40	2.80	12.60	1.35	3.00	39	3270S-9X-1.40	●	●	●	●	●
1.50	3.00	13.50	1.45	3.00	39	3270S-9X-1.50	●	●	●	●	●
1.60	3.20	14.40	1.55	3.00	39	3270S-9X-1.60	●	●	●	●	●
1.70	3.40	15.30	1.65	3.00	39	3270S-9X-1.70	●	●	●	●	●
1.80	3.60	16.20	1.75	3.00	39	3270S-9X-1.80	●	●	●	●	●
1.90	3.80	17.10	1.85	3.00	39	3270S-9X-1.90	●	●	●	●	●
2.00	4.00	18.00	1.95	6.00	50	3270S-9X-2.00	●	●	●	●	●
2.10	4.20	18.90	2.05	6.00	50	3270S-9X-2.10	●	●	●	●	●
2.20	4.40	19.80	2.15	6.00	50	3270S-9X-2.20	●	●	●	●	●
2.30	4.60	20.70	2.25	6.00	50	3270S-9X-2.30	●	●	●	●	●
2.40	4.80	21.60	2.35	6.00	50	3270S-9X-2.40	●	●	●	●	●
2.50	5.00	22.50	2.45	6.00	50	3270S-9X-2.50	●	●	●	●	●
3.00	6.00	27.00	2.95	6.00	50	3270S-9X-3.00	●	●	●	●	●



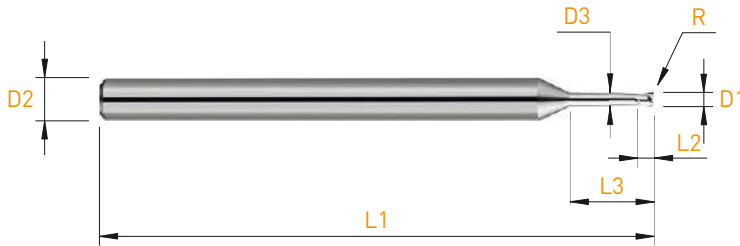
D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.05	0.60	0.90	0.27	3.00	39	3279T-3X-0.30	●	●	●	●	●
0.40	0.05	0.80	1.20	0.37	3.00	39	3279T-3X-0.40	●	●	●	●	●
0.50	0.05	1.00	1.50	0.45	3.00	39	3279T-3X-0.50	●	●	●	●	●
0.60	0.05	1.20	1.80	0.55	3.00	39	3279T-3X-0.60	●	●	●	●	●
0.70	0.05	1.40	2.10	0.65	3.00	39	3279T-3X-0.70	●	●	●	●	●
0.80	0.05	1.60	2.40	0.75	3.00	39	3279T-3X-0.80	●	●	●	●	●
0.90	0.05	1.80	2.70	0.85	3.00	39	3279T-3X-0.90	●	●	●	●	●
1.00	0.10	2.00	3.00	0.95	3.00	39	3279T-3X-1.00	●	●	●	●	●
1.10	0.10	2.20	3.30	1.05	3.00	39	3279T-3X-1.10	●	●	●	●	●
1.20	0.10	2.40	3.60	1.15	3.00	39	3279T-3X-1.20	●	●	●	●	●
1.30	0.10	2.60	3.90	1.25	3.00	39	3279T-3X-1.30	●	●	●	●	●
1.40	0.10	2.80	4.20	1.35	3.00	39	3279T-3X-1.40	●	●	●	●	●
1.50	0.20	3.00	4.50	1.45	3.00	39	3279T-3X-1.50	●	●	●	●	●
1.60	0.20	3.20	4.80	1.55	3.00	39	3279T-3X-1.60	●	●	●	●	●
1.70	0.20	3.40	5.10	1.65	3.00	39	3279T-3X-1.70	●	●	●	●	●
1.80	0.20	3.60	5.40	1.75	3.00	39	3279T-3X-1.80	●	●	●	●	●
1.90	0.20	3.80	5.70	1.85	3.00	39	3279T-3X-1.90	●	●	●	●	●
2.00	0.20	4.00	6.00	1.95	6.00	50	3279T-3X-2.00	●	●	●	●	●
2.10	0.20	4.20	6.30	2.05	6.00	50	3279T-3X-2.10	●	●	●	●	●
2.20	0.20	4.40	6.60	2.15	6.00	50	3279T-3X-2.20	●	●	●	●	●
2.30	0.20	4.60	6.90	2.25	6.00	50	3279T-3X-2.30	●	●	●	●	●
2.40	0.20	4.80	7.20	2.35	6.00	50	3279T-3X-2.40	●	●	●	●	●
2.50	0.20	5.00	7.50	2.45	6.00	50	3279T-3X-2.50	●	●	●	●	●
3.00	0.20	6.00	9.00	2.95	6.00	50	3279T-3X-3.00	●	●	●	●	●

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3279T-6X



D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.05	0.60	1.80	0.27	3.00	39	3279T-6X-0.30	●	●	●	●	●
0.40	0.05	0.80	2.40	0.37	3.00	39	3279T-6X-0.40	●	●	●	●	●
0.50	0.05	1.00	3.00	0.45	3.00	39	3279T-6X-0.50	●	●	●	●	●
0.60	0.05	1.20	3.60	0.55	3.00	39	3279T-6X-0.60	●	●	●	●	●
0.70	0.05	1.40	4.20	0.65	3.00	39	3279T-6X-0.70	●	●	●	●	●
0.80	0.05	1.60	4.80	0.75	3.00	39	3279T-6X-0.80	●	●	●	●	●
0.90	0.05	1.80	5.40	0.85	3.00	39	3279T-6X-0.90	●	●	●	●	●
1.00	0.10	2.00	6.00	0.95	3.00	39	3279T-6X-1.00	●	●	●	●	●
1.10	0.10	2.20	6.60	1.05	3.00	39	3279T-6X-1.10	●	●	●	●	●
1.20	0.10	2.40	7.20	1.15	3.00	39	3279T-6X-1.20	●	●	●	●	●
1.30	0.10	2.60	7.80	1.25	3.00	39	3279T-6X-1.30	●	●	●	●	●
1.40	0.10	2.80	8.40	1.35	3.00	39	3279T-6X-1.40	●	●	●	●	●
1.50	0.20	3.00	9.00	1.45	3.00	39	3279T-6X-1.50	●	●	●	●	●
1.60	0.20	3.20	9.60	1.55	3.00	39	3279T-6X-1.60	●	●	●	●	●
1.70	0.20	3.40	10.20	1.65	3.00	39	3279T-6X-1.70	●	●	●	●	●
1.80	0.20	3.60	10.80	1.75	3.00	39	3279T-6X-1.80	●	●	●	●	●
1.90	0.20	3.80	11.40	1.85	3.00	39	3279T-6X-1.90	●	●	●	●	●
2.00	0.20	4.00	12.00	1.95	6.00	50	3279T-6X-2.00	●	●	●	●	●
2.10	0.20	4.20	12.60	2.05	6.00	50	3279T-6X-2.10	●	●	●	●	●
2.20	0.20	4.40	13.20	2.15	6.00	50	3279T-6X-2.20	●	●	●	●	●
2.30	0.20	4.60	13.80	2.25	6.00	50	3279T-6X-2.30	●	●	●	●	●
2.40	0.20	4.80	14.40	2.35	6.00	50	3279T-6X-2.40	●	●	●	●	●
2.50	0.20	5.00	15.00	2.45	6.00	50	3279T-6X-2.50	●	●	●	●	●
3.00	0.20	6.00	18.00	2.95	6.00	50	3279T-6X-3.00	●	●	●	●	●



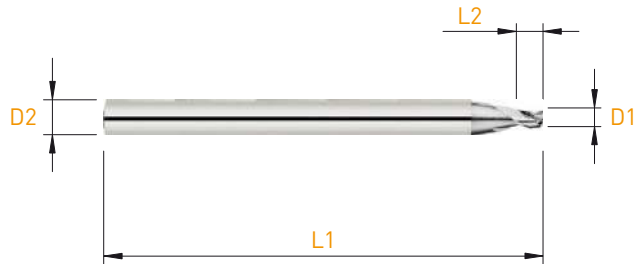
D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	0.05	0.80	3.60	0.37	3.00	39	3279T-9X-0.40	●	●	●	●	●
0.50	0.05	1.00	4.50	0.45	3.00	39	3279T-9X-0.50	●	●	●	●	●
0.60	0.05	1.20	5.40	0.55	3.00	39	3279T-9X-0.60	●	●	●	●	●
0.70	0.05	1.40	6.30	0.65	3.00	39	3279T-9X-0.70	●	●	●	●	●
0.80	0.05	1.60	7.20	0.75	3.00	39	3279T-9X-0.80	●	●	●	●	●
0.90	0.05	1.80	8.10	0.85	3.00	39	3279T-9X-0.90	●	●	●	●	●
1.00	0.10	2.00	9.00	0.95	3.00	39	3279T-9X-1.00	●	●	●	●	●
1.10	0.10	2.20	9.90	1.05	3.00	39	3279T-9X-1.10	●	●	●	●	●
1.20	0.10	2.40	10.80	1.15	3.00	39	3279T-9X-1.20	●	●	●	●	●
1.30	0.10	2.60	11.70	1.25	3.00	39	3279T-9X-1.30	●	●	●	●	●
1.40	0.10	2.80	12.60	1.35	3.00	39	3279T-9X-1.40	●	●	●	●	●
1.50	0.20	3.00	13.50	1.45	3.00	39	3279T-9X-1.50	●	●	●	●	●
1.60	0.20	3.20	14.40	1.55	3.00	39	3279T-9X-1.60	●	●	●	●	●
1.70	0.20	3.40	15.30	1.65	3.00	39	3279T-9X-1.70	●	●	●	●	●
1.80	0.20	3.60	16.20	1.75	3.00	39	3279T-9X-1.80	●	●	●	●	●
1.90	0.20	3.80	17.10	1.85	3.00	39	3279T-9X-1.90	●	●	●	●	●
2.00	0.20	4.00	18.00	1.95	6.00	50	3279T-9X-2.00	●	●	●	●	●
2.10	0.20	4.20	18.90	2.05	6.00	50	3279T-9X-2.10	●	●	●	●	●
2.20	0.20	4.40	19.80	2.15	6.00	50	3279T-9X-2.20	●	●	●	●	●
2.30	0.20	4.60	20.70	2.25	6.00	50	3279T-9X-2.30	●	●	●	●	●
2.40	0.20	4.80	21.60	2.35	6.00	50	3279T-9X-2.40	●	●	●	●	●
2.50	0.20	5.00	22.50	2.45	6.00	50	3279T-9X-2.50	●	●	●	●	●
3.00	0.20	6.00	27.00	2.95	6.00	50	3279T-9X-3.00	●	●	●	●	●

Micro-fraises de précision

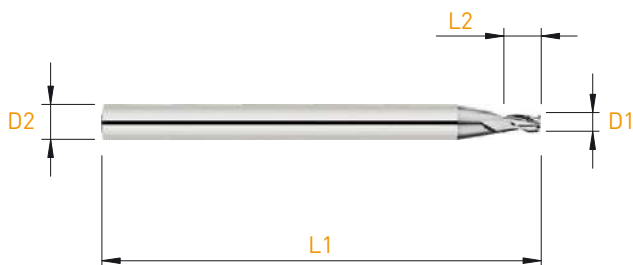
Mikropräzisionsfräser

Precision micro end mills

3371-1.3



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.40	3.00	39	3371-1.3-0.30	•	•	•	•	•
0.35	0.50	3.00	39	3371-1.3-0.35	•	•	•	•	•
0.40	0.50	3.00	39	3371-1.3-0.40	•	•	•	•	•
0.45	0.60	3.00	39	3371-1.3-0.45	•	•	•	•	•
0.50	0.70	3.00	39	3371-1.3-0.50	•	•	•	•	•
0.60	0.80	3.00	39	3371-1.3-0.60	•	•	•	•	•
0.70	0.90	3.00	39	3371-1.3-0.70	•	•	•	•	•
0.80	1.00	3.00	39	3371-1.3-0.80	•	•	•	•	•
0.90	1.30	3.00	39	3371-1.3-0.90	•	•	•	•	•
1.00	1.30	3.00	39	3371-1.3-1.00	•	•	•	•	•
1.10	1.50	3.00	39	3371-1.3-1.10	•	•	•	•	•
1.20	1.60	3.00	39	3371-1.3-1.20	•	•	•	•	•
1.30	1.80	3.00	39	3371-1.3-1.30	•	•	•	•	•
1.40	1.80	3.00	39	3371-1.3-1.40	•	•	•	•	•
1.50	2.00	3.00	39	3371-1.3-1.50	•	•	•	•	•
1.55	2.00	3.00	39	3371-1.3-1.55	•	•	•	•	•
1.60	2.00	3.00	39	3371-1.3-1.60	•	•	•	•	•
1.65	2.00	3.00	39	3371-1.3-1.65	•	•	•	•	•
1.70	2.00	3.00	39	3371-1.3-1.70	•	•	•	•	•
1.80	2.40	3.00	39	3371-1.3-1.80	•	•	•	•	•
1.90	2.40	3.00	39	3371-1.3-1.90	•	•	•	•	•
2.00	2.60	3.00	39	3371-1.3-2.00	•	•	•	•	•
2.05	2.70	3.00	39	3371-1.3-2.05	•	•	•	•	•
2.20	3.00	3.00	39	3371-1.3-2.20	•	•	•	•	•
2.50	3.30	3.00	39	3371-1.3-2.50	•	•	•	•	•
2.80	3.50	3.00	39	3371-1.3-2.80	•	•	•	•	•
2.90	3.50	3.00	39	3371-1.3-2.90	•	•	•	•	•



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	3.00	39	3371-2-0.30	•	•	•	•	•
0.35	0.70	3.00	39	3371-2-0.35	•	•	•	•	•
0.40	0.80	3.00	39	3371-2-0.40	•	•	•	•	•
0.45	0.90	3.00	39	3371-2-0.45	•	•	•	•	•
0.50	1.00	3.00	39	3371-2-0.50	•	•	•	•	•
0.60	1.20	3.00	39	3371-2-0.60	•	•	•	•	•
0.70	1.40	3.00	39	3371-2-0.70	•	•	•	•	•
0.75	1.50	3.00	39	3371-2-0.75	•	•	•	•	•
0.80	1.60	3.00	39	3371-2-0.80	•	•	•	•	•
0.90	1.80	3.00	39	3371-2-0.90	•	•	•	•	•
0.95	1.90	3.00	39	3371-2-0.95	•	•	•	•	•
1.00	2.00	3.00	39	3371-2-1.00	•	•	•	•	•
1.10	2.20	3.00	39	3371-2-1.10	•	•	•	•	•
1.20	2.40	3.00	39	3371-2-1.20	•	•	•	•	•
1.30	2.60	3.00	39	3371-2-1.30	•	•	•	•	•
1.40	2.80	3.00	39	3371-2-1.40	•	•	•	•	•
1.50	3.00	3.00	39	3371-2-1.50	•	•	•	•	•
1.60	3.20	3.00	39	3371-2-1.60	•	•	•	•	•
1.70	3.40	3.00	39	3371-2-1.70	•	•	•	•	•
1.80	3.60	3.00	39	3371-2-1.80	•	•	•	•	•
1.90	3.80	3.00	39	3371-2-1.90	•	•	•	•	•
2.00	4.00	3.00	39	3371-2-2.00	•	•	•	•	•
2.10	4.20	3.00	39	3371-2-2.10	•	•	•	•	•
2.20	4.40	3.00	39	3371-2-2.20	•	•	•	•	•
2.30	4.60	3.00	39	3371-2-2.30	•	•	•	•	•
2.40	4.80	3.00	39	3371-2-2.40	•	•	•	•	•
2.50	5.00	3.00	39	3371-2-2.50	•	•	•	•	•
2.60	5.20	3.00	39	3371-2-2.60	•	•	•	•	•
2.70	5.40	3.00	39	3371-2-2.70	•	•	•	•	•
2.80	5.60	3.00	39	3371-2-2.80	•	•	•	•	•
2.90	5.80	3.00	39	3371-2-2.90	•	•	•	•	•

Micro-fraises de précision

Mikropräzisionsfräser

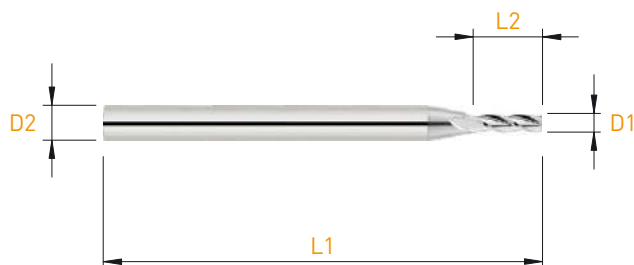
Precision micro end mills

3371-3



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.90	3.00	39	3371-3-0.30	●	●	●	●	●
0.40	1.20	3.00	39	3371-3-0.40	●	●	●	●	●
0.45	1.40	3.00	39	3371-3-0.45	●	●	●	●	●
0.50	1.50	3.00	39	3371-3-0.50	●	●	●	●	●
0.55	1.80	3.00	39	3371-3-0.55	●	●	●	●	●
0.60	2.00	3.00	39	3371-3-0.60	●	●	●	●	●
0.65	2.00	3.00	39	3371-3-0.65	●	●	●	●	●
0.70	2.00	3.00	39	3371-3-0.70	●	●	●	●	●
0.75	2.00	3.00	39	3371-3-0.75	●	●	●	●	●
0.80	2.50	3.00	39	3371-3-0.80	●	●	●	●	●
0.85	2.50	3.00	39	3371-3-0.85	●	●	●	●	●
0.90	2.50	3.00	39	3371-3-0.90	●	●	●	●	●
0.95	2.90	3.00	39	3371-3-0.95	●	●	●	●	●
1.00	3.00	3.00	39	3371-3-1.00	●	●	●	●	●
1.05	3.20	3.00	39	3371-3-1.05	●	●	●	●	●
1.10	3.30	3.00	39	3371-3-1.10	●	●	●	●	●
1.15	3.50	3.00	39	3371-3-1.15	●	●	●	●	●
1.20	4.00	3.00	39	3371-3-1.20	●	●	●	●	●
1.25	4.00	3.00	39	3371-3-1.25	●	●	●	●	●
1.30	4.00	3.00	39	3371-3-1.30	●	●	●	●	●
1.35	4.00	3.00	39	3371-3-1.35	●	●	●	●	●
1.40	4.00	3.00	39	3371-3-1.40	●	●	●	●	●
1.45	4.50	3.00	39	3371-3-1.45	●	●	●	●	●
1.50	4.50	3.00	39	3371-3-1.50	●	●	●	●	●
1.60	4.50	3.00	39	3371-3-1.60	●	●	●	●	●
1.65	5.00	3.00	39	3371-3-1.65	●	●	●	●	●
1.70	5.00	3.00	39	3371-3-1.70	●	●	●	●	●
1.80	6.00	3.00	39	3371-3-1.80	●	●	●	●	●
1.85	6.00	3.00	39	3371-3-1.85	●	●	●	●	●
1.90	6.00	3.00	39	3371-3-1.90	●	●	●	●	●
1.95	6.00	3.00	39	3371-3-1.95	●	●	●	●	●

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
2.00	6.00	3.00	39	3371-3-2.00	●	●	●	●	●
2.10	6.00	3.00	39	3371-3-2.10	●	●	●	●	●
2.20	6.50	3.00	39	3371-3-2.20	●	●	●	●	●
2.30	7.00	3.00	39	3371-3-2.30	●	●	●	●	●
2.40	7.00	3.00	39	3371-3-2.40	●	●	●	●	●
2.50	7.50	3.00	39	3371-3-2.50	●	●	●	●	●
2.60	7.50	3.00	39	3371-3-2.60	●	●	●	●	●
2.70	8.00	3.00	39	3371-3-2.70	●	●	●	●	●
2.80	8.00	3.00	39	3371-3-2.80	●	●	●	●	●
2.90	8.50	3.00	39	3371-3-2.90	●	●	●	●	●

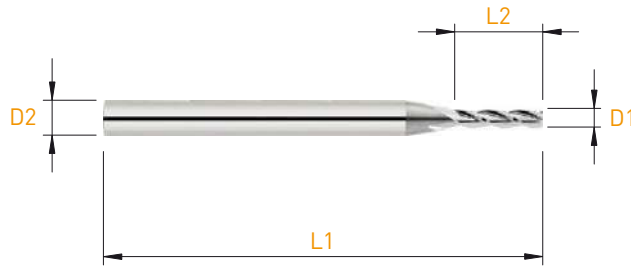


D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	1.20	3.00	39	3371-4-0.30	•	•	•	•	•
0.40	1.60	3.00	39	3371-4-0.40	•	•	•	•	•
0.50	2.00	3.00	39	3371-4-0.50	•	•	•	•	•
0.60	2.40	3.00	39	3371-4-0.60	•	•	•	•	•
0.70	2.80	3.00	39	3371-4-0.70	•	•	•	•	•
0.80	3.20	3.00	39	3371-4-0.80	•	•	•	•	•
0.90	3.60	3.00	39	3371-4-0.90	•	•	•	•	•
1.00	4.00	3.00	39	3371-4-1.00	•	•	•	•	•
1.10	4.40	3.00	39	3371-4-1.10	•	•	•	•	•
1.20	4.80	3.00	39	3371-4-1.20	•	•	•	•	•
1.30	5.20	3.00	39	3371-4-1.30	•	•	•	•	•
1.40	5.60	3.00	39	3371-4-1.40	•	•	•	•	•
1.50	6.00	3.00	39	3371-4-1.50	•	•	•	•	•
1.60	6.40	3.00	39	3371-4-1.60	•	•	•	•	•
1.70	6.80	3.00	39	3371-4-1.70	•	•	•	•	•
1.80	7.20	3.00	39	3371-4-1.80	•	•	•	•	•
1.90	7.60	3.00	39	3371-4-1.90	•	•	•	•	•
2.00	8.00	3.00	39	3371-4-2.00	•	•	•	•	•
2.10	8.40	3.00	39	3371-4-2.10	•	•	•	•	•
2.20	8.80	3.00	39	3371-4-2.20	•	•	•	•	•
2.30	9.20	3.00	39	3371-4-2.30	•	•	•	•	•
2.40	9.60	3.00	39	3371-4-2.40	•	•	•	•	•
2.50	10.00	3.00	39	3371-4-2.50	•	•	•	•	•
2.60	10.40	3.00	39	3371-4-2.60	•	•	•	•	•
2.70	10.80	3.00	39	3371-4-2.70	•	•	•	•	•
2.80	11.20	3.00	39	3371-4-2.80	•	•	•	•	•
2.90	11.60	3.00	39	3371-4-2.90	•	•	•	•	•

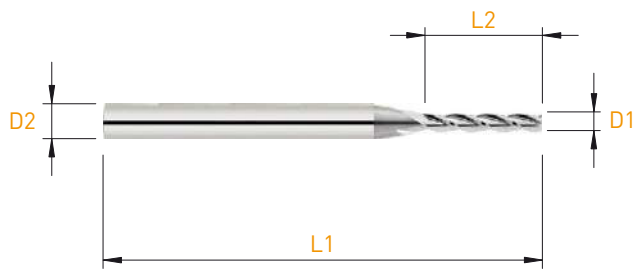
Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3371-5

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.50	2.50	3.00	39	3371-5-0.50	●	●	●	●	●
0.60	3.00	3.00	39	3371-5-0.60	●	●	●	●	●
0.70	3.50	3.00	39	3371-5-0.70	●	●	●	●	●
0.80	4.00	3.00	39	3371-5-0.80	●	●	●	●	●
0.90	4.50	3.00	39	3371-5-0.90	●	●	●	●	●
1.00	5.00	3.00	39	3371-5-1.00	●	●	●	●	●
1.10	5.50	3.00	39	3371-5-1.10	●	●	●	●	●
1.20	6.00	3.00	39	3371-5-1.20	●	●	●	●	●
1.50	7.50	3.00	39	3371-5-1.50	●	●	●	●	●
2.00	10.00	3.00	39	3371-5-2.00	●	●	●	●	●
2.50	12.50	3.00	39	3371-5-2.50	●	●	●	●	●



MD
VHM
HM

λ 30°

Sharp
Corner

8xD1

Z=3

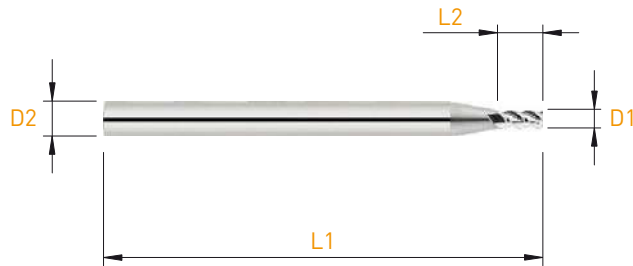
D1 +0.005 / -0.010	L2	D2 h4 Ø3.0 h5 Ø4.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.50	4.00	3.00	39	3371-8-0.50	●	●	●	●	●
0.60	5.00	3.00	39	3371-8-0.60	●	●	●	●	●
0.70	5.60	3.00	39	3371-8-0.70	●	●	●	●	●
0.80	6.00	3.00	39	3371-8-0.80	●	●	●	●	●
0.90	7.20	3.00	39	3371-8-0.90	●	●	●	●	●
1.00	8.00	3.00	39	3371-8-1.00	●	●	●	●	●
1.20	9.00	3.00	39	3371-8-1.20	●	●	●	●	●
1.30	11.00	3.00	39	3371-8-1.30	●	●	●	●	●
1.50	12.00	4.00	50	3371-8-1.50	●	●	●	●	●
2.00	16.00	4.00	50	3371-8-2.00	●	●	●	●	●
2.50	20.00	4.00	50	3371-8-2.50	●	●	●	●	●

Micro-fraises de précision

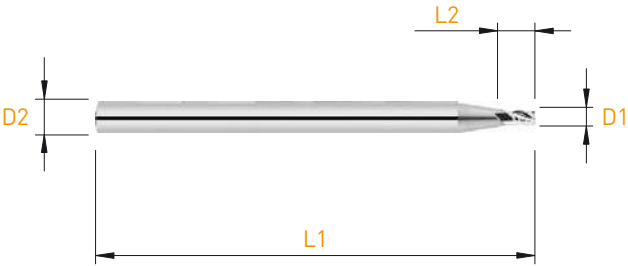
Mikropräzisionsfräser

Precision micro end mills

3375-2.5



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.80	3.00	39	3375-2.5-0.30	●	●	●	●	●
0.40	1.00	3.00	39	3375-2.5-0.40	●	●	●	●	●
0.50	1.30	3.00	39	3375-2.5-0.50	●	●	●	●	●
0.60	1.50	3.00	39	3375-2.5-0.60	●	●	●	●	●
0.70	1.70	3.00	39	3375-2.5-0.70	●	●	●	●	●
0.80	2.00	3.00	39	3375-2.5-0.80	●	●	●	●	●
0.90	2.30	3.00	39	3375-2.5-0.90	●	●	●	●	●
1.00	2.50	3.00	39	3375-2.5-1.00	●	●	●	●	●
1.10	2.80	3.00	39	3375-2.5-1.10	●	●	●	●	●
1.20	3.00	3.00	39	3375-2.5-1.20	●	●	●	●	●
1.30	3.30	3.00	39	3375-2.5-1.30	●	●	●	●	●
1.40	3.50	3.00	39	3375-2.5-1.40	●	●	●	●	●
1.50	3.80	3.00	39	3375-2.5-1.50	●	●	●	●	●
1.60	4.00	3.00	39	3375-2.5-1.60	●	●	●	●	●
1.70	4.30	3.00	39	3375-2.5-1.70	●	●	●	●	●
1.80	4.50	3.00	39	3375-2.5-1.80	●	●	●	●	●
1.90	4.80	3.00	39	3375-2.5-1.90	●	●	●	●	●
2.00	5.00	3.00	39	3375-2.5-2.00	●	●	●	●	●
2.10	5.30	3.00	39	3375-2.5-2.10	●	●	●	●	●
2.20	5.50	3.00	39	3375-2.5-2.20	●	●	●	●	●
2.30	5.80	3.00	39	3375-2.5-2.30	●	●	●	●	●
2.40	6.00	3.00	39	3375-2.5-2.40	●	●	●	●	●
2.50	6.30	3.00	39	3375-2.5-2.50	●	●	●	●	●
2.60	6.50	3.00	39	3375-2.5-2.60	●	●	●	●	●
2.70	6.80	3.00	39	3375-2.5-2.70	●	●	●	●	●
2.80	7.00	3.00	39	3375-2.5-2.80	●	●	●	●	●
2.90	7.30	3.00	39	3375-2.5-2.90	●	●	●	●	●



MD
VHM
HM

λ
36°
38°
40°

Sharp
Corner

1.5xD1

Z=3

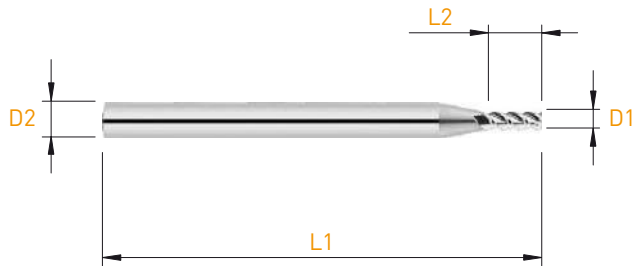
DHD Denture à pas irrégulier, hélice différente
 Ungleiche Teilung, unterschiedliche Spirale
 Uneven tooth pitch, different helix

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.45	3.00	39	DHD3371-1.5-0.30	●	●	●	●	●
0.40	0.60	3.00	39	DHD3371-1.5-0.40	●	●	●	●	●
0.50	0.75	3.00	39	DHD3371-1.5-0.50	●	●	●	●	●
0.60	0.90	3.00	39	DHD3371-1.5-0.60	●	●	●	●	●
0.70	1.05	3.00	39	DHD3371-1.5-0.70	●	●	●	●	●
0.80	1.20	3.00	39	DHD3371-1.5-0.80	●	●	●	●	●
0.90	1.35	3.00	39	DHD3371-1.5-0.90	●	●	●	●	●
1.00	1.50	3.00	39	DHD3371-1.5-1.00	●	●	●	●	●
1.10	1.65	3.00	39	DHD3371-1.5-1.10	●	●	●	●	●
1.20	1.80	3.00	39	DHD3371-1.5-1.20	●	●	●	●	●
1.30	1.95	3.00	39	DHD3371-1.5-1.30	●	●	●	●	●
1.40	2.10	3.00	39	DHD3371-1.5-1.40	●	●	●	●	●
1.50	2.25	3.00	39	DHD3371-1.5-1.50	●	●	●	●	●
1.60	2.40	3.00	39	DHD3371-1.5-1.60	●	●	●	●	●
1.70	2.55	3.00	39	DHD3371-1.5-1.70	●	●	●	●	●
1.80	2.70	3.00	39	DHD3371-1.5-1.80	●	●	●	●	●
1.90	2.85	3.00	39	DHD3371-1.5-1.90	●	●	●	●	●
2.00	3.00	3.00	39	DHD3371-1.5-2.00	●	●	●	●	●
2.50	3.75	3.00	39	DHD3371-1.5-2.50	●	●	●	●	●

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

DHD3371-3**DHD**

Denture à pas irrégulier, hélice différente
 Ungleiche Teilung, unterschiedliche Spirale
 Uneven tooth pitch, different helix

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	N	TiAlN	STF	TiCN	DLC
0.30	0.90	3.00	39	DHD3371-3-0.30	●	●	●	●	●
0.40	1.20	3.00	39	DHD3371-3-0.40	●	●	●	●	●
0.50	1.50	3.00	39	DHD3371-3-0.50	●	●	●	●	●
0.60	1.80	3.00	39	DHD3371-3-0.60	●	●	●	●	●
0.70	2.10	3.00	39	DHD3371-3-0.70	●	●	●	●	●
0.80	2.40	3.00	39	DHD3371-3-0.80	●	●	●	●	●
0.90	2.70	3.00	39	DHD3371-3-0.90	●	●	●	●	●
1.00	3.00	3.00	39	DHD3371-3-1.00	●	●	●	●	●
1.10	3.30	3.00	39	DHD3371-3-1.10	●	●	●	●	●
1.20	3.60	3.00	39	DHD3371-3-1.20	●	●	●	●	●
1.30	3.90	3.00	39	DHD3371-3-1.30	●	●	●	●	●
1.40	4.20	3.00	39	DHD3371-3-1.40	●	●	●	●	●
1.50	4.50	3.00	39	DHD3371-3-1.50	●	●	●	●	●
1.60	4.80	3.00	39	DHD3371-3-1.60	●	●	●	●	●
1.70	5.10	3.00	39	DHD3371-3-1.70	●	●	●	●	●
1.80	5.40	3.00	39	DHD3371-3-1.80	●	●	●	●	●
1.90	5.70	3.00	39	DHD3371-3-1.90	●	●	●	●	●
2.00	6.00	3.00	39	DHD3371-3-2.00	●	●	●	●	●
2.50	7.50	3.00	39	DHD3371-3-2.50	●	●	●	●	●



D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	0.90	0.27	3.00	39	3370S-3X-0.30	•	•	•	•	•
0.40	0.80	1.20	0.37	3.00	39	3370S-3X-0.40	•	•	•	•	•
0.50	1.00	1.50	0.45	3.00	39	3370S-3X-0.50	•	•	•	•	•
0.60	1.20	1.80	0.55	3.00	39	3370S-3X-0.60	•	•	•	•	•
0.70	1.40	2.10	0.65	3.00	39	3370S-3X-0.70	•	•	•	•	•
0.80	1.60	2.40	0.75	3.00	39	3370S-3X-0.80	•	•	•	•	•
0.90	1.80	2.70	0.85	3.00	39	3370S-3X-0.90	•	•	•	•	•
1.00	2.00	3.00	0.95	3.00	39	3370S-3X-1.00	•	•	•	•	•
1.10	2.20	3.30	1.05	3.00	39	3370S-3X-1.10	•	•	•	•	•
1.20	2.40	3.60	1.15	3.00	39	3370S-3X-1.20	•	•	•	•	•
1.30	2.60	3.90	1.25	3.00	39	3370S-3X-1.30	•	•	•	•	•
1.40	2.80	4.20	1.35	3.00	39	3370S-3X-1.40	•	•	•	•	•
1.50	3.00	4.50	1.45	3.00	39	3370S-3X-1.50	•	•	•	•	•
1.60	3.20	4.80	1.55	3.00	39	3370S-3X-1.60	•	•	•	•	•
1.70	3.40	5.10	1.65	3.00	39	3370S-3X-1.70	•	•	•	•	•
1.80	3.60	5.40	1.75	3.00	39	3370S-3X-1.80	•	•	•	•	•
1.90	3.80	5.70	1.85	3.00	39	3370S-3X-1.90	•	•	•	•	•
2.00	4.00	6.00	1.95	6.00	50	3370S-3X-2.00	•	•	•	•	•
2.10	4.20	6.30	2.05	6.00	50	3370S-3X-2.10	•	•	•	•	•
2.20	4.40	6.60	2.15	6.00	50	3370S-3X-2.20	•	•	•	•	•
2.30	4.60	6.90	2.25	6.00	50	3370S-3X-2.30	•	•	•	•	•
2.40	4.80	7.20	2.35	6.00	50	3370S-3X-2.40	•	•	•	•	•
2.50	5.00	7.50	2.45	6.00	50	3370S-3X-2.50	•	•	•	•	•
3.00	6.00	9.00	2.95	6.00	50	3370S-3X-3.00	•	•	•	•	•

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3370S-6X



D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	1.80	0.27	3.00	39	3370S-6X-0.30	•	•	•	•	•
0.40	0.80	2.40	0.37	3.00	39	3370S-6X-0.40	•	•	•	•	•
0.50	1.00	3.00	0.45	3.00	39	3370S-6X-0.50	•	•	•	•	•
0.60	1.20	3.60	0.55	3.00	39	3370S-6X-0.60	•	•	•	•	•
0.70	1.40	4.20	0.65	3.00	39	3370S-6X-0.70	•	•	•	•	•
0.80	1.60	4.80	0.75	3.00	39	3370S-6X-0.80	•	•	•	•	•
0.90	1.80	5.40	0.85	3.00	39	3370S-6X-0.90	•	•	•	•	•
1.00	2.00	6.00	0.95	3.00	39	3370S-6X-1.00	•	•	•	•	•
1.10	2.20	6.60	1.05	3.00	39	3370S-6X-1.10	•	•	•	•	•
1.20	2.40	7.20	1.15	3.00	39	3370S-6X-1.20	•	•	•	•	•
1.30	2.60	7.80	1.25	3.00	39	3370S-6X-1.30	•	•	•	•	•
1.40	2.80	8.40	1.35	3.00	39	3370S-6X-1.40	•	•	•	•	•
1.50	3.00	9.00	1.45	3.00	39	3370S-6X-1.50	•	•	•	•	•
1.60	3.20	9.60	1.55	3.00	39	3370S-6X-1.60	•	•	•	•	•
1.70	3.40	10.20	1.65	3.00	39	3370S-6X-1.70	•	•	•	•	•
1.80	3.60	10.80	1.75	3.00	39	3370S-6X-1.80	•	•	•	•	•
1.90	3.80	11.40	1.85	3.00	39	3370S-6X-1.90	•	•	•	•	•
2.00	4.00	12.00	1.95	6.00	50	3370S-6X-2.00	•	•	•	•	•
2.10	4.20	12.60	2.05	6.00	50	3370S-6X-2.10	•	•	•	•	•
2.20	4.40	13.20	2.15	6.00	50	3370S-6X-2.20	•	•	•	•	•
2.30	4.60	13.80	2.25	6.00	50	3370S-6X-2.30	•	•	•	•	•
2.40	4.80	14.40	2.35	6.00	50	3370S-6X-2.40	•	•	•	•	•
2.50	5.00	15.00	2.45	6.00	50	3370S-6X-2.50	•	•	•	•	•
3.00	6.00	18.00	2.95	6.00	50	3370S-6X-3.00	•	•	•	•	•



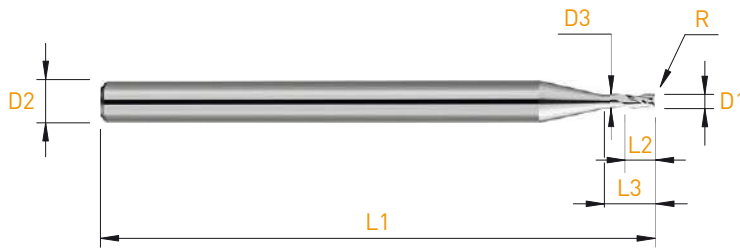
D1 +0.005 / -0.010	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	0.80	3.60	0.37	3.00	39	3370S-9X-0.40	●	●	●	●	●
0.50	1.00	4.50	0.45	3.00	39	3370S-9X-0.50	●	●	●	●	●
0.60	1.20	5.40	0.55	3.00	39	3370S-9X-0.60	●	●	●	●	●
0.70	1.40	6.30	0.65	3.00	39	3370S-9X-0.70	●	●	●	●	●
0.80	1.60	7.20	0.75	3.00	39	3370S-9X-0.80	●	●	●	●	●
0.90	1.80	8.10	0.85	3.00	39	3370S-9X-0.90	●	●	●	●	●
1.00	2.00	9.00	0.95	3.00	39	3370S-9X-1.00	●	●	●	●	●
1.10	2.20	9.90	1.05	3.00	39	3370S-9X-1.10	●	●	●	●	●
1.20	2.40	10.80	1.15	3.00	39	3370S-9X-1.20	●	●	●	●	●
1.30	2.60	11.70	1.25	3.00	39	3370S-9X-1.30	●	●	●	●	●
1.40	2.80	12.60	1.35	3.00	39	3370S-9X-1.40	●	●	●	●	●
1.50	3.00	13.50	1.45	3.00	39	3370S-9X-1.50	●	●	●	●	●
1.60	3.20	14.40	1.55	3.00	39	3370S-9X-1.60	●	●	●	●	●
1.70	3.40	15.30	1.65	3.00	39	3370S-9X-1.70	●	●	●	●	●
1.80	3.60	16.20	1.75	3.00	39	3370S-9X-1.80	●	●	●	●	●
1.90	3.80	17.10	1.85	3.00	39	3370S-9X-1.90	●	●	●	●	●
2.00	4.00	18.00	1.95	6.00	50	3370S-9X-2.00	●	●	●	●	●
2.10	4.20	18.90	2.05	6.00	50	3370S-9X-2.10	●	●	●	●	●
2.20	4.40	19.80	2.15	6.00	50	3370S-9X-2.20	●	●	●	●	●
2.30	4.60	20.70	2.25	6.00	50	3370S-9X-2.30	●	●	●	●	●
2.40	4.80	21.60	2.35	6.00	50	3370S-9X-2.40	●	●	●	●	●
2.50	5.00	22.50	2.45	6.00	50	3370S-9X-2.50	●	●	●	●	●
3.00	6.00	27.00	2.95	6.00	50	3370S-9X-3.00	●	●	●	●	●

Micro-fraises de précision

Mikropräzisionsfräser

Precision micro end mills

3379T-3X



D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.05	0.60	0.90	0.27	3.00	39	3379T-3X-0.30	●	●	●	●	●
0.40	0.05	0.80	1.20	0.37	3.00	39	3379T-3X-0.40	●	●	●	●	●
0.50	0.05	1.00	1.50	0.45	3.00	39	3379T-3X-0.50	●	●	●	●	●
0.60	0.05	1.20	1.80	0.55	3.00	39	3379T-3X-0.60	●	●	●	●	●
0.70	0.05	1.40	2.10	0.65	3.00	39	3379T-3X-0.70	●	●	●	●	●
0.80	0.05	1.60	2.40	0.75	3.00	39	3379T-3X-0.80	●	●	●	●	●
0.90	0.05	1.80	2.70	0.85	3.00	39	3379T-3X-0.90	●	●	●	●	●
1.00	0.10	2.00	3.00	0.95	3.00	39	3379T-3X-1.00	●	●	●	●	●
1.10	0.10	2.20	3.30	1.05	3.00	39	3379T-3X-1.10	●	●	●	●	●
1.20	0.10	2.40	3.60	1.15	3.00	39	3379T-3X-1.20	●	●	●	●	●
1.30	0.10	2.60	3.90	1.25	3.00	39	3379T-3X-1.30	●	●	●	●	●
1.40	0.10	2.80	4.20	1.35	3.00	39	3379T-3X-1.40	●	●	●	●	●
1.50	0.20	3.00	4.50	1.45	3.00	39	3379T-3X-1.50	●	●	●	●	●
1.60	0.20	3.20	4.80	1.55	3.00	39	3379T-3X-1.60	●	●	●	●	●
1.70	0.20	3.40	5.10	1.65	3.00	39	3379T-3X-1.70	●	●	●	●	●
1.80	0.20	3.60	5.40	1.75	3.00	39	3379T-3X-1.80	●	●	●	●	●
1.90	0.20	3.80	5.70	1.85	3.00	39	3379T-3X-1.90	●	●	●	●	●
2.00	0.20	4.00	6.00	1.95	6.00	50	3379T-3X-2.00	●	●	●	●	●
2.10	0.20	4.20	6.30	2.05	6.00	50	3379T-3X-2.10	●	●	●	●	●
2.20	0.20	4.40	6.60	2.15	6.00	50	3379T-3X-2.20	●	●	●	●	●
2.30	0.20	4.60	6.90	2.25	6.00	50	3379T-3X-2.30	●	●	●	●	●
2.40	0.20	4.80	7.20	2.35	6.00	50	3379T-3X-2.40	●	●	●	●	●
2.50	0.20	5.00	7.50	2.45	6.00	50	3379T-3X-2.50	●	●	●	●	●
3.00	0.20	6.00	9.00	2.95	6.00	50	3379T-3X-3.00	●	●	●	●	●



D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.05	0.60	1.80	0.27	3.00	39	3379T-6X-0.30	●	●	●	●	●
0.40	0.05	0.80	2.40	0.37	3.00	39	3379T-6X-0.40	●	●	●	●	●
0.50	0.05	1.00	3.00	0.45	3.00	39	3379T-6X-0.50	●	●	●	●	●
0.60	0.05	1.20	3.60	0.55	3.00	39	3379T-6X-0.60	●	●	●	●	●
0.70	0.05	1.40	4.20	0.65	3.00	39	3379T-6X-0.70	●	●	●	●	●
0.80	0.05	1.60	4.80	0.75	3.00	39	3379T-6X-0.80	●	●	●	●	●
0.90	0.05	1.80	5.40	0.85	3.00	39	3379T-6X-0.90	●	●	●	●	●
1.00	0.10	2.00	6.00	0.95	3.00	39	3379T-6X-1.00	●	●	●	●	●
1.10	0.10	2.20	6.60	1.05	3.00	39	3379T-6X-1.10	●	●	●	●	●
1.20	0.10	2.40	7.20	1.15	3.00	39	3379T-6X-1.20	●	●	●	●	●
1.30	0.10	2.60	7.80	1.25	3.00	39	3379T-6X-1.30	●	●	●	●	●
1.40	0.10	2.80	8.40	1.35	3.00	39	3379T-6X-1.40	●	●	●	●	●
1.50	0.20	3.00	9.00	1.45	3.00	39	3379T-6X-1.50	●	●	●	●	●
1.60	0.20	3.20	9.60	1.55	3.00	39	3379T-6X-1.60	●	●	●	●	●
1.70	0.20	3.40	10.20	1.65	3.00	39	3379T-6X-1.70	●	●	●	●	●
1.80	0.20	3.60	10.80	1.75	3.00	39	3379T-6X-1.80	●	●	●	●	●
1.90	0.20	3.80	11.40	1.85	3.00	39	3379T-6X-1.90	●	●	●	●	●
2.00	0.20	4.00	12.00	1.95	6.00	50	3379T-6X-2.00	●	●	●	●	●
2.10	0.20	4.20	12.60	2.05	6.00	50	3379T-6X-2.10	●	●	●	●	●
2.20	0.20	4.40	13.20	2.15	6.00	50	3379T-6X-2.20	●	●	●	●	●
2.30	0.20	4.60	13.80	2.25	6.00	50	3379T-6X-2.30	●	●	●	●	●
2.40	0.20	4.80	14.40	2.35	6.00	50	3379T-6X-2.40	●	●	●	●	●
2.50	0.20	5.00	15.00	2.45	6.00	50	3379T-6X-2.50	●	●	●	●	●
3.00	0.20	6.00	18.00	2.95	6.00	50	3379T-6X-3.00	●	●	●	●	●

Micro-fraises de précision

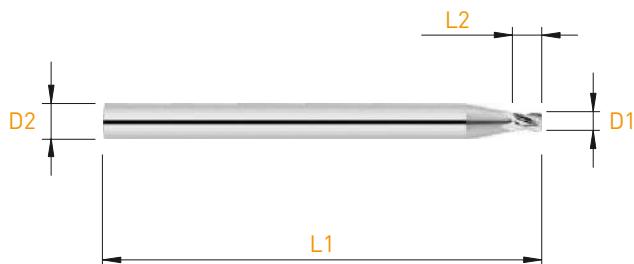
Mikropräzisionsfräser

Precision micro end mills

3379T-9X



D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAIN	STF	TiCN	DLC
0.40	0.05	0.80	3.60	0.37	3.00	39	3379T-9X-0.40	●	●	●	●	●
0.50	0.05	1.00	4.50	0.45	3.00	39	3379T-9X-0.50	●	●	●	●	●
0.60	0.05	1.20	5.40	0.55	3.00	39	3379T-9X-0.60	●	●	●	●	●
0.70	0.05	1.40	6.30	0.65	3.00	39	3379T-9X-0.70	●	●	●	●	●
0.80	0.05	1.60	7.20	0.75	3.00	39	3379T-9X-0.80	●	●	●	●	●
0.90	0.05	1.80	8.10	0.85	3.00	39	3379T-9X-0.90	●	●	●	●	●
1.00	0.10	2.00	9.00	0.95	3.00	39	3379T-9X-1.00	●	●	●	●	●
1.10	0.10	2.20	9.90	1.05	3.00	39	3379T-9X-1.10	●	●	●	●	●
1.20	0.10	2.40	10.80	1.15	3.00	39	3379T-9X-1.20	●	●	●	●	●
1.30	0.10	2.60	11.70	1.25	3.00	39	3379T-9X-1.30	●	●	●	●	●
1.40	0.10	2.80	12.60	1.35	3.00	39	3379T-9X-1.40	●	●	●	●	●
1.50	0.20	3.00	13.50	1.45	3.00	39	3379T-9X-1.50	●	●	●	●	●
1.60	0.20	3.20	14.40	1.55	3.00	39	3379T-9X-1.60	●	●	●	●	●
1.70	0.20	3.40	15.30	1.65	3.00	39	3379T-9X-1.70	●	●	●	●	●
1.80	0.20	3.60	16.20	1.75	3.00	39	3379T-9X-1.80	●	●	●	●	●
1.90	0.20	3.80	17.10	1.85	3.00	39	3379T-9X-1.90	●	●	●	●	●
2.00	0.20	4.00	18.00	1.95	6.00	50	3379T-9X-2.00	●	●	●	●	●
2.10	0.20	4.20	18.90	2.05	6.00	50	3379T-9X-2.10	●	●	●	●	●
2.20	0.20	4.40	19.80	2.15	6.00	50	3379T-9X-2.20	●	●	●	●	●
2.30	0.20	4.60	20.70	2.25	6.00	50	3379T-9X-2.30	●	●	●	●	●
2.40	0.20	4.80	21.60	2.35	6.00	50	3379T-9X-2.40	●	●	●	●	●
2.50	0.20	5.00	22.50	2.45	6.00	50	3379T-9X-2.50	●	●	●	●	●
3.00	0.20	6.00	27.00	2.95	6.00	50	3379T-9X-3.00	●	●	●	●	●



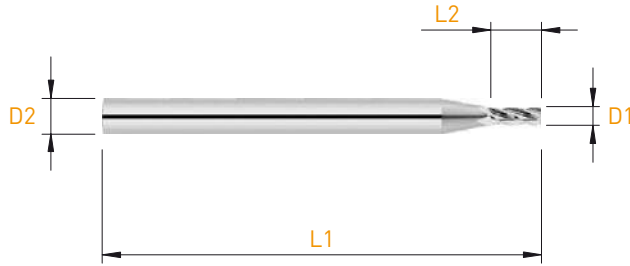
D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	N	TiAlN	STF	TiCN	DLC
0.30	0.45	3.00	39	3471-1.5-0.30	●	●	●	●	●
0.40	0.60	3.00	39	3471-1.5-0.40	●	●	●	●	●
0.50	0.75	3.00	39	3471-1.5-0.50	●	●	●	●	●
0.60	0.90	3.00	39	3471-1.5-0.60	●	●	●	●	●
0.70	1.05	3.00	39	3471-1.5-0.70	●	●	●	●	●
0.80	1.20	3.00	39	3471-1.5-0.80	●	●	●	●	●
0.90	1.35	3.00	39	3471-1.5-0.90	●	●	●	●	●
1.00	1.50	3.00	39	3471-1.5-1.00	●	●	●	●	●
1.10	1.65	3.00	39	3471-1.5-1.10	●	●	●	●	●
1.20	1.80	3.00	39	3471-1.5-1.20	●	●	●	●	●
1.30	1.95	3.00	39	3471-1.5-1.30	●	●	●	●	●
1.40	2.10	3.00	39	3471-1.5-1.40	●	●	●	●	●
1.50	2.25	3.00	39	3471-1.5-1.50	●	●	●	●	●
1.60	2.40	3.00	39	3471-1.5-1.60	●	●	●	●	●
1.70	2.55	3.00	39	3471-1.5-1.70	●	●	●	●	●
1.80	2.70	3.00	39	3471-1.5-1.80	●	●	●	●	●
1.90	2.85	3.00	39	3471-1.5-1.90	●	●	●	●	●
2.00	3.00	3.00	39	3471-1.5-2.00	●	●	●	●	●
2.10	3.15	3.00	39	3471-1.5-2.10	●	●	●	●	●
2.20	3.30	3.00	39	3471-1.5-2.20	●	●	●	●	●
2.30	3.45	3.00	39	3471-1.5-2.30	●	●	●	●	●
2.40	3.60	3.00	39	3471-1.5-2.40	●	●	●	●	●
2.50	3.75	3.00	39	3471-1.5-2.50	●	●	●	●	●
2.60	3.90	3.00	39	3471-1.5-2.60	●	●	●	●	●
2.70	4.05	3.00	39	3471-1.5-2.70	●	●	●	●	●
2.80	4.20	3.00	39	3471-1.5-2.80	●	●	●	●	●
2.90	4.35	3.00	39	3471-1.5-2.90	●	●	●	●	●

Micro-fraises de précision

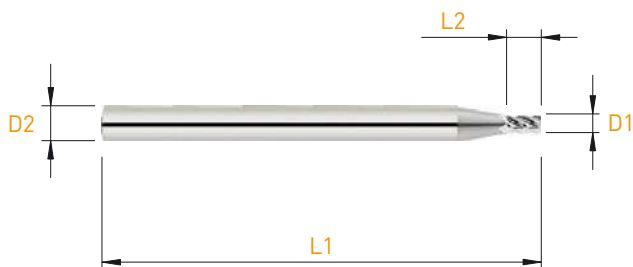
Mikropräzisionsfräser

Precision micro end mills

3471-3



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.90	3.00	39	3471-3-0.30	●	●	●	●	●
0.40	1.20	3.00	39	3471-3-0.40	●	●	●	●	●
0.50	1.50	3.00	39	3471-3-0.50	●	●	●	●	●
0.55	1.70	3.00	39	3471-3-0.55	●	●	●	●	●
0.60	1.80	3.00	39	3471-3-0.60	●	●	●	●	●
0.70	2.10	3.00	39	3471-3-0.70	●	●	●	●	●
0.75	2.30	3.00	39	3471-3-0.75	●	●	●	●	●
0.80	2.40	3.00	39	3471-3-0.80	●	●	●	●	●
0.85	2.60	3.00	39	3471-3-0.85	●	●	●	●	●
0.90	2.70	3.00	39	3471-3-0.90	●	●	●	●	●
0.95	2.90	3.00	39	3471-3-0.95	●	●	●	●	●
1.00	3.00	3.00	39	3471-3-1.00	●	●	●	●	●
1.10	3.30	3.00	39	3471-3-1.10	●	●	●	●	●
1.20	3.60	3.00	39	3471-3-1.20	●	●	●	●	●
1.30	3.90	3.00	39	3471-3-1.30	●	●	●	●	●
1.40	4.20	3.00	39	3471-3-1.40	●	●	●	●	●
1.50	4.50	3.00	39	3471-3-1.50	●	●	●	●	●
1.60	4.80	3.00	39	3471-3-1.60	●	●	●	●	●
1.70	5.10	3.00	39	3471-3-1.70	●	●	●	●	●
1.80	5.40	3.00	39	3471-3-1.80	●	●	●	●	●
1.90	5.70	3.00	39	3471-3-1.90	●	●	●	●	●
2.00	6.00	3.00	39	3471-3-2.00	●	●	●	●	●
2.10	6.30	3.00	39	3471-3-2.10	●	●	●	●	●
2.20	6.60	3.00	39	3471-3-2.20	●	●	●	●	●
2.30	6.90	3.00	39	3471-3-2.30	●	●	●	●	●
2.40	7.20	3.00	39	3471-3-2.40	●	●	●	●	●
2.50	7.50	3.00	39	3471-3-2.50	●	●	●	●	●
2.60	7.80	3.00	39	3471-3-2.60	●	●	●	●	●
2.70	8.10	3.00	39	3471-3-2.70	●	●	●	●	●
2.80	8.40	3.00	39	3471-3-2.80	●	●	●	●	●
2.90	8.70	3.00	39	3471-3-2.90	●	●	●	●	●



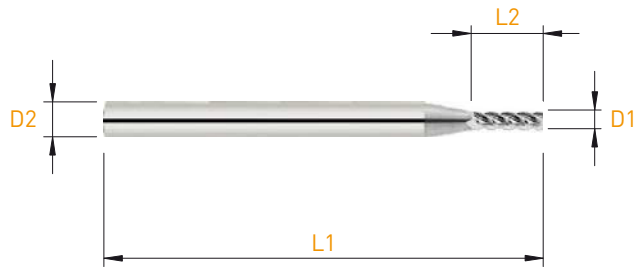
D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	3.00	39	3472-2-0.30	•	•	•	•	•
0.40	0.80	3.00	39	3472-2-0.40	•	•	•	•	•
0.50	1.00	3.00	39	3472-2-0.50	•	•	•	•	•
0.60	1.20	3.00	39	3472-2-0.60	•	•	•	•	•
0.70	1.40	3.00	39	3472-2-0.70	•	•	•	•	•
0.80	1.60	3.00	39	3472-2-0.80	•	•	•	•	•
0.90	1.80	3.00	39	3472-2-0.90	•	•	•	•	•
1.00	2.00	3.00	39	3472-2-1.00	•	•	•	•	•
1.10	2.20	3.00	39	3472-2-1.10	•	•	•	•	•
1.20	2.40	3.00	39	3472-2-1.20	•	•	•	•	•
1.30	2.60	3.00	39	3472-2-1.30	•	•	•	•	•
1.40	2.80	3.00	39	3472-2-1.40	•	•	•	•	•
1.50	3.00	3.00	39	3472-2-1.50	•	•	•	•	•
1.60	3.20	3.00	39	3472-2-1.60	•	•	•	•	•
1.70	3.40	3.00	39	3472-2-1.70	•	•	•	•	•
1.80	3.60	3.00	39	3472-2-1.80	•	•	•	•	•
1.90	3.80	3.00	39	3472-2-1.90	•	•	•	•	•
2.00	4.00	3.00	39	3472-2-2.00	•	•	•	•	•
2.10	4.20	3.00	39	3472-2-2.10	•	•	•	•	•
2.20	4.40	3.00	39	3472-2-2.20	•	•	•	•	•
2.30	4.60	3.00	39	3472-2-2.30	•	•	•	•	•
2.40	4.80	3.00	39	3472-2-2.40	•	•	•	•	•
2.50	5.00	3.00	39	3472-2-2.50	•	•	•	•	•
2.60	5.20	3.00	39	3472-2-2.60	•	•	•	•	•
2.70	5.40	3.00	39	3472-2-2.70	•	•	•	•	•
2.80	5.60	3.00	39	3472-2-2.80	•	•	•	•	•
2.90	5.80	3.00	39	3472-2-2.90	•	•	•	•	•

Micro-fraises de précision

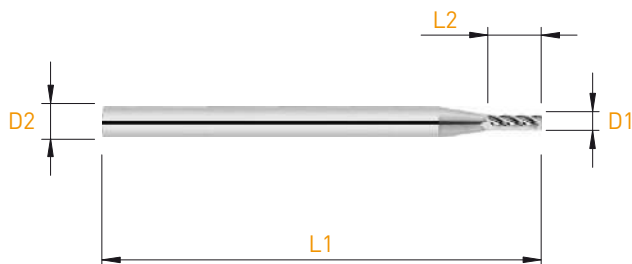
Mikropräzisionsfräser

Precision micro end mills

3472-4



D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	1.60	3.00	39	3472-4-0.40	•	•	•	•	•
0.50	2.00	3.00	39	3472-4-0.50	•	•	•	•	•
0.60	2.40	3.00	39	3472-4-0.60	•	•	•	•	•
0.70	2.80	3.00	39	3472-4-0.70	•	•	•	•	•
0.80	3.20	3.00	39	3472-4-0.80	•	•	•	•	•
0.90	3.60	3.00	39	3472-4-0.90	•	•	•	•	•
1.00	4.00	3.00	39	3472-4-1.00	•	•	•	•	•
1.10	4.40	3.00	39	3472-4-1.10	•	•	•	•	•
1.20	4.80	3.00	39	3472-4-1.20	•	•	•	•	•
1.30	5.20	3.00	39	3472-4-1.30	•	•	•	•	•
1.40	5.60	3.00	39	3472-4-1.40	•	•	•	•	•
1.50	6.00	3.00	39	3472-4-1.50	•	•	•	•	•
1.60	6.40	3.00	39	3472-4-1.60	•	•	•	•	•
1.70	6.80	3.00	39	3472-4-1.70	•	•	•	•	•
1.80	7.20	3.00	39	3472-4-1.80	•	•	•	•	•
1.90	7.60	3.00	39	3472-4-1.90	•	•	•	•	•
2.00	8.00	3.00	39	3472-4-2.00	•	•	•	•	•
2.10	8.40	3.00	39	3472-4-2.10	•	•	•	•	•
2.20	8.80	3.00	39	3472-4-2.20	•	•	•	•	•
2.30	9.20	3.00	39	3472-4-2.30	•	•	•	•	•
2.40	9.60	3.00	39	3472-4-2.40	•	•	•	•	•
2.50	10.00	3.00	39	3472-4-2.50	•	•	•	•	•
2.60	10.40	3.00	39	3472-4-2.60	•	•	•	•	•
2.70	10.80	3.00	39	3472-4-2.70	•	•	•	•	•
2.80	11.20	3.00	39	3472-4-2.80	•	•	•	•	•
2.90	11.60	3.00	39	3472-4-2.90	•	•	•	•	•



DHP

Denture à pas irrégulier, hélice progressive
Ungleiche Teilung, progressive Spirale
Uneven tooth pitch, progressive helix

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.50	1.50	3.00	39	DHP3471-3-0.50	●	●	●	●	●
0.60	1.80	3.00	39	DHP3471-3-0.60	●	●	●	●	●
0.70	2.10	3.00	39	DHP3471-3-0.70	●	●	●	●	●
0.80	2.40	3.00	39	DHP3471-3-0.80	●	●	●	●	●
0.90	2.70	3.00	39	DHP3471-3-0.90	●	●	●	●	●
1.00	3.00	3.00	39	DHP3471-3-1.00	●	●	●	●	●
1.10	3.30	3.00	39	DHP3471-3-1.10	●	●	●	●	●
1.20	3.60	3.00	39	DHP3471-3-1.20	●	●	●	●	●
1.30	3.90	3.00	39	DHP3471-3-1.30	●	●	●	●	●
1.40	4.20	3.00	39	DHP3471-3-1.40	●	●	●	●	●
1.50	4.50	3.00	39	DHP3471-3-1.50	●	●	●	●	●
1.60	4.80	3.00	39	DHP3471-3-1.60	●	●	●	●	●
1.70	5.10	3.00	39	DHP3471-3-1.70	●	●	●	●	●
1.80	5.40	3.00	39	DHP3471-3-1.80	●	●	●	●	●
1.90	5.70	3.00	39	DHP3471-3-1.90	●	●	●	●	●
2.00	6.00	3.00	39	DHP3471-3-2.00	●	●	●	●	●
2.50	7.50	3.00	39	DHP3471-3-2.50	●	●	●	●	●

Micro-fraises hémisphériques

Vollradius Mikrofräser

Ball nose micro end mills

3278-0.75

D1 +0.005 / -0.010	R	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.10	0.15	3.00	39	3278-0.75-0.20	●				
0.30	0.15	0.20	3.00	39	3278-0.75-0.30	●	●	●	●	●
0.40	0.20	0.30	3.00	39	3278-0.75-0.40	●	●	●	●	●
0.50	0.25	0.35	3.00	39	3278-0.75-0.50	●	●	●	●	●
0.60	0.30	0.45	3.00	39	3278-0.75-0.60	●	●	●	●	●
0.70	0.35	0.55	3.00	39	3278-0.75-0.70	●	●	●	●	●
0.80	0.40	0.60	3.00	39	3278-0.75-0.80	●	●	●	●	●
0.90	0.45	0.70	3.00	39	3278-0.75-0.90	●	●	●	●	●
1.00	0.50	0.75	3.00	39	3278-0.75-1.00	●	●	●	●	●
1.50	0.75	1.15	3.00	39	3278-0.75-1.50	●	●	●	●	●
2.00	1.00	1.50	3.00	39	3278-0.75-2.00	●	●	●	●	●
2.50	1.25	1.90	3.00	39	3278-0.75-2.50	●	●	●	●	●

3278-1



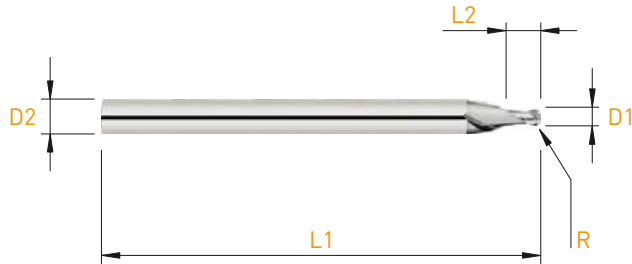
D1 +0.005 / -0.010	R	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.10	0.20	3.00	39	3278-1-0.20	●				
0.30	0.15	0.30	3.00	39	3278-1-0.30	●	●	●	●	●
0.40	0.20	0.40	3.00	39	3278-1-0.40	●	●	●	●	●
0.50	0.25	0.50	3.00	39	3278-1-0.50	●	●	●	●	●
0.60	0.30	0.60	3.00	39	3278-1-0.60	●	●	●	●	●
0.70	0.35	0.70	3.00	39	3278-1-0.70	●	●	●	●	●
0.80	0.40	0.80	3.00	39	3278-1-0.80	●	●	●	●	●
0.90	0.45	0.90	3.00	39	3278-1-0.90	●	●	●	●	●
1.00	0.50	1.00	3.00	39	3278-1-1.00	●	●	●	●	●
1.10	0.55	1.10	3.00	39	3278-1-1.10	●	●	●	●	●
1.20	0.60	1.20	3.00	39	3278-1-1.20	●	●	●	●	●
1.30	0.35	1.30	3.00	39	3278-1-1.30	●	●	●	●	●
1.40	0.70	1.40	3.00	39	3278-1-1.40	●	●	●	●	●
1.50	0.75	1.50	3.00	39	3278-1-1.50	●	●	●	●	●
1.60	0.80	1.60	3.00	39	3278-1-1.60	●	●	●	●	●
1.70	0.85	1.70	3.00	39	3278-1-1.70	●	●	●	●	●
1.80	0.90	1.80	3.00	39	3278-1-1.80	●	●	●	●	●
1.90	0.95	1.90	3.00	39	3278-1-1.90	●	●	●	●	●
2.00	1.00	2.00	3.00	39	3278-1-2.00	●	●	●	●	●
2.10	1.05	2.10	3.00	39	3278-1-2.10	●	●	●	●	●
2.20	1.10	2.20	3.00	39	3278-1-2.20	●	●	●	●	●
2.30	1.15	2.30	3.00	39	3278-1-2.30	●	●	●	●	●
2.40	1.20	2.40	3.00	39	3278-1-2.40	●	●	●	●	●
2.50	1.25	2.50	3.00	39	3278-1-2.50	●	●	●	●	●
2.60	1.30	2.60	3.00	39	3278-1-2.60	●	●	●	●	●
2.70	1.35	2.70	3.00	39	3278-1-2.70	●	●	●	●	●
2.80	1.40	2.80	3.00	39	3278-1-2.80	●	●	●	●	●
2.90	1.45	2.90	3.00	39	3278-1-2.90	●	●	●	●	●

Micro-fraises hémisphériques

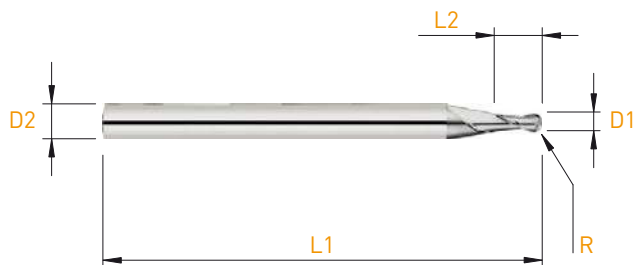
Vollradius Mikrofräser

Ball nose micro end mills

3278-1.5



D1 +0.005 / -0.010	R	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.10	0.30	3.00	39	3278-1.5-0.20	●				
0.25	0.125	0.35	3.00	39	3278-1.5-0.25	●				
0.30	0.15	0.45	3.00	39	3278-1.5-0.30	●	●	●	●	●
0.40	0.20	0.60	3.00	39	3278-1.5-0.40	●	●	●	●	●
0.50	0.25	0.75	3.00	39	3278-1.5-0.50	●	●	●	●	●
0.60	0.30	0.90	3.00	39	3278-1.5-0.60	●	●	●	●	●
0.70	0.35	1.05	3.00	39	3278-1.5-0.70	●	●	●	●	●
0.80	0.40	1.20	3.00	39	3278-1.5-0.80	●	●	●	●	●
0.85	0.40	1.30	3.00	39	3278-1.5-0.85	●	●	●	●	●
0.90	0.45	1.35	3.00	39	3278-1.5-0.90	●	●	●	●	●
1.00	0.50	1.50	3.00	39	3278-1.5-1.00	●	●	●	●	●
1.10	0.55	1.65	3.00	39	3278-1.5-1.10	●	●	●	●	●
1.15	0.55	1.75	3.00	39	3278-1.5-1.15	●	●	●	●	●
1.20	0.60	1.80	3.00	39	3278-1.5-1.20	●	●	●	●	●
1.30	0.65	1.95	3.00	39	3278-1.5-1.30	●	●	●	●	●
1.40	0.70	2.10	3.00	39	3278-1.5-1.40	●	●	●	●	●
1.50	0.75	2.25	3.00	39	3278-1.5-1.50	●	●	●	●	●
1.60	0.80	2.40	3.00	39	3278-1.5-1.60	●	●	●	●	●
1.70	0.85	2.60	3.00	39	3278-1.5-1.70	●	●	●	●	●
1.80	0.90	2.70	3.00	39	3278-1.5-1.80	●	●	●	●	●
1.90	0.95	2.90	3.00	39	3278-1.5-1.90	●	●	●	●	●
2.00	1.00	3.00	3.00	39	3278-1.5-2.00	●	●	●	●	●
2.10	1.05	3.20	3.00	39	3278-1.5-2.10	●	●	●	●	●
2.20	1.10	3.30	3.00	39	3278-1.5-2.20	●	●	●	●	●
2.30	1.15	3.50	3.00	39	3278-1.5-2.30	●	●	●	●	●
2.40	1.20	3.60	3.00	39	3278-1.5-2.40	●	●	●	●	●
2.50	1.25	3.75	3.00	39	3278-1.5-2.50	●	●	●	●	●
2.60	1.30	3.90	3.00	39	3278-1.5-2.60	●	●	●	●	●
2.70	1.35	4.00	3.00	39	3278-1.5-2.70	●	●	●	●	●
2.80	1.40	4.20	3.00	39	3278-1.5-2.80	●	●	●	●	●
2.90	1.45	4.40	3.00	39	3278-1.5-2.90	●	●	●	●	●



D1 +0.005 / -0.010	R	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.10	0.60	3.00	39	3278-3-0.20	●				
0.30	0.15	1.00	3.00	39	3278-3-0.30	●	●	●	●	●
0.40	0.20	1.00	3.00	39	3278-3-0.40	●	●	●	●	●
0.50	0.25	1.50	3.00	39	3278-3-0.50	●	●	●	●	●
0.60	0.30	1.50	3.00	39	3278-3-0.60	●	●	●	●	●
0.70	0.35	2.00	3.00	39	3278-3-0.70	●	●	●	●	●
0.80	0.40	2.00	3.00	39	3278-3-0.80	●	●	●	●	●
0.90	0.45	2.50	3.00	39	3278-3-0.90	●	●	●	●	●
1.00	0.50	3.00	3.00	39	3278-3-1.00	●	●	●	●	●
1.20	0.60	4.00	3.00	39	3278-3-1.20	●	●	●	●	●
1.30	0.65	4.00	3.00	39	3278-3-1.30	●	●	●	●	●
1.40	0.70	4.00	3.00	39	3278-3-1.40	●	●	●	●	●
1.50	0.75	4.50	3.00	39	3278-3-1.50	●	●	●	●	●
1.55	0.775	5.00	3.00	39	3278-3-1.55	●	●	●	●	●
1.60	0.80	5.00	3.00	39	3278-3-1.60	●	●	●	●	●
1.80	0.90	5.50	3.00	39	3278-3-1.80	●	●	●	●	●
2.00	1.00	6.00	3.00	39	3278-3-2.00	●	●	●	●	●
2.10	1.05	6.50	3.00	39	3278-3-2.10	●	●	●	●	●
2.20	1.10	7.00	3.00	39	3278-3-2.20	●	●	●	●	●
2.50	1.25	7.50	3.00	39	3278-3-2.50	●	●	●	●	●
2.60	1.30	7.80	3.00	39	3278-3-2.60	●	●	●	●	●
2.70	1.35	8.10	3.00	39	3278-3-2.70	●	●	●	●	●
2.80	1.40	8.40	3.00	39	3278-3-2.80	●	●	●	●	●
2.90	1.45	8.70	3.00	39	3278-3-2.90	●	●	●	●	●

Micro-fraises hémisphériques

Vollradius Mikrofräser

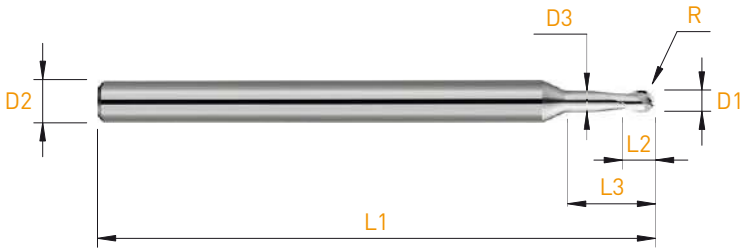
Ball nose micro end mills

3278H-3X



D1 +0.005 / -0.010	R	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.20	0.10	0.30	0.60	0.19	3.00	39	3278H-3X-0.20	●				
0.30	0.15	0.45	0.90	0.27	3.00	39	3278H-3X-0.30	●	●	●	●	●
0.40	0.20	0.60	1.20	0.37	3.00	39	3278H-3X-0.40	●	●	●	●	●
0.50	0.25	0.75	1.50	0.45	3.00	39	3278H-3X-0.50	●	●	●	●	●
0.60	0.30	0.90	1.80	0.55	3.00	39	3278H-3X-0.60	●	●	●	●	●
0.70	0.35	1.05	2.10	0.65	3.00	39	3278H-3X-0.70	●	●	●	●	●
0.80	0.40	1.20	2.40	0.75	3.00	39	3278H-3X-0.80	●	●	●	●	●
0.90	0.45	1.35	2.70	0.85	3.00	39	3278H-3X-0.90	●	●	●	●	●
1.00	0.50	1.50	3.00	0.95	3.00	39	3278H-3X-1.00	●	●	●	●	●
1.10	0.55	1.65	3.30	1.05	3.00	39	3278H-3X-1.10	●	●	●	●	●
1.20	0.60	1.80	3.60	1.15	3.00	39	3278H-3X-1.20	●	●	●	●	●
1.30	0.65	1.95	3.90	1.25	3.00	39	3278H-3X-1.30	●	●	●	●	●
1.40	0.70	2.10	4.20	1.35	3.00	39	3278H-3X-1.40	●	●	●	●	●
1.50	0.75	2.25	4.50	1.45	3.00	39	3278H-3X-1.50	●	●	●	●	●
1.60	0.80	2.40	4.80	1.55	3.00	39	3278H-3X-1.60	●	●	●	●	●
1.70	0.85	2.55	5.10	1.65	3.00	39	3278H-3X-1.70	●	●	●	●	●
1.80	0.90	2.70	5.40	1.75	3.00	39	3278H-3X-1.80	●	●	●	●	●
1.90	0.95	2.85	5.70	1.85	3.00	39	3278H-3X-1.90	●	●	●	●	●
2.00	1.00	3.00	6.00	1.95	6.00	50	3278H-3X-2.00	●	●	●	●	●
2.10	1.05	3.15	6.30	2.05	6.00	50	3278H-3X-2.10	●	●	●	●	●
2.20	1.10	3.30	6.60	2.15	6.00	50	3278H-3X-2.20	●	●	●	●	●
2.30	1.15	3.45	6.90	2.25	6.00	50	3278H-3X-2.30	●	●	●	●	●
2.40	1.20	3.60	7.20	2.35	6.00	50	3278H-3X-2.40	●	●	●	●	●
2.50	1.25	3.75	7.50	2.45	6.00	50	3278H-3X-2.50	●	●	●	●	●
3.00	1.50	4.50	9.00	2.95	6.00	50	3278H-3X-3.00	●	●	●	●	●

3278H-6X



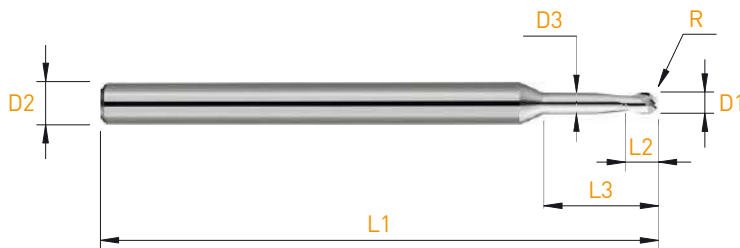
D1 +0.005 / -0.010	R	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.15	0.45	1.80	0.27	3.00	39	3278H-6X-0.30	●	●	●	●	●
0.40	0.20	0.60	2.40	0.37	3.00	39	3278H-6X-0.40	●	●	●	●	●
0.50	0.25	0.75	3.00	0.45	3.00	39	3278H-6X-0.50	●	●	●	●	●
0.60	0.30	0.90	3.60	0.55	3.00	39	3278H-6X-0.60	●	●	●	●	●
0.70	0.35	1.05	4.20	0.65	3.00	39	3278H-6X-0.70	●	●	●	●	●
0.80	0.40	1.20	4.80	0.75	3.00	39	3278H-6X-0.80	●	●	●	●	●
0.90	0.45	1.35	5.40	0.85	3.00	39	3278H-6X-0.90	●	●	●	●	●
1.00	0.50	1.50	6.00	0.95	3.00	39	3278H-6X-1.00	●	●	●	●	●
1.10	0.55	1.65	6.60	1.05	3.00	39	3278H-6X-1.10	●	●	●	●	●
1.20	0.60	1.80	7.20	1.15	3.00	39	3278H-6X-1.20	●	●	●	●	●
1.30	0.65	1.95	7.80	1.25	3.00	39	3278H-6X-1.30	●	●	●	●	●
1.40	0.70	2.10	8.40	1.35	3.00	39	3278H-6X-1.40	●	●	●	●	●
1.50	0.75	2.25	9.00	1.45	3.00	39	3278H-6X-1.50	●	●	●	●	●
1.60	0.80	2.40	9.60	1.55	3.00	39	3278H-6X-1.60	●	●	●	●	●
1.70	0.85	2.55	10.20	1.65	3.00	39	3278H-6X-1.70	●	●	●	●	●
1.80	0.90	2.70	10.80	1.75	3.00	39	3278H-6X-1.80	●	●	●	●	●
1.90	0.95	2.85	11.40	1.85	3.00	39	3278H-6X-1.90	●	●	●	●	●
2.00	1.00	3.00	12.00	1.95	6.00	50	3278H-6X-2.00	●	●	●	●	●
2.10	1.05	3.15	12.60	2.05	6.00	50	3278H-6X-2.10	●	●	●	●	●
2.20	1.10	3.30	13.20	2.15	6.00	50	3278H-6X-2.20	●	●	●	●	●
2.30	1.15	3.45	13.80	2.25	6.00	50	3278H-6X-2.30	●	●	●	●	●
2.40	1.20	3.60	14.40	2.35	6.00	50	3278H-6X-2.40	●	●	●	●	●
2.50	1.25	3.75	15.00	2.45	6.00	50	3278H-6X-2.50	●	●	●	●	●
3.00	1.50	4.50	18.00	2.95	6.00	50	3278H-6X-3.00	●	●	●	●	●

Micro-fraises hémisphériques

Vollradius Mikrofräser

Ball nose micro end mills

3278H-9X



D1 +0.005 / -0.010	R	L2	L3	D3	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.40	0.20	0.60	3.60	0.37	3.00	39	3278H-9X-0.40	●	●	●	●	●
0.50	0.25	0.75	4.50	0.45	3.00	39	3278H-9X-0.50	●	●	●	●	●
0.60	0.30	0.90	5.40	0.55	3.00	39	3278H-9X-0.60	●	●	●	●	●
0.70	0.35	1.05	6.30	0.65	3.00	39	3278H-9X-0.70	●	●	●	●	●
0.80	0.40	1.20	7.20	0.75	3.00	39	3278H-9X-0.80	●	●	●	●	●
0.90	0.45	1.35	8.10	0.85	3.00	39	3278H-9X-0.90	●	●	●	●	●
1.00	0.50	1.50	9.00	0.95	3.00	39	3278H-9X-1.00	●	●	●	●	●
1.10	0.55	1.65	9.90	1.05	3.00	39	3278H-9X-1.10	●	●	●	●	●
1.20	0.60	1.80	10.80	1.15	3.00	39	3278H-9X-1.20	●	●	●	●	●
1.30	0.65	1.95	11.70	1.25	3.00	39	3278H-9X-1.30	●	●	●	●	●
1.40	0.70	2.10	12.60	1.35	3.00	39	3278H-9X-1.40	●	●	●	●	●
1.50	0.75	2.25	13.50	1.45	3.00	39	3278H-9X-1.50	●	●	●	●	●
1.60	0.80	2.40	14.40	1.55	3.00	39	3278H-9X-1.60	●	●	●	●	●
1.70	0.85	2.55	15.30	1.65	3.00	39	3278H-9X-1.70	●	●	●	●	●
1.80	0.90	2.70	16.20	1.75	3.00	39	3278H-9X-1.80	●	●	●	●	●
1.90	0.95	2.85	17.10	1.85	3.00	39	3278H-9X-1.90	●	●	●	●	●
2.00	1.00	3.00	18.00	1.95	6.00	50	3278H-9X-2.00	●	●	●	●	●
2.10	1.05	3.15	18.90	2.05	6.00	50	3278H-9X-2.10	●	●	●	●	●
2.20	1.10	3.30	19.80	2.15	6.00	50	3278H-9X-2.20	●	●	●	●	●
2.30	1.15	3.45	20.70	2.25	6.00	50	3278H-9X-2.30	●	●	●	●	●
2.40	1.20	3.60	21.60	2.35	6.00	50	3278H-9X-2.40	●	●	●	●	●
2.50	1.25	3.75	22.50	2.45	6.00	50	3278H-9X-2.50	●	●	●	●	●
3.00	1.50	4.50	27.00	2.95	6.00	50	3278H-9X-3.00	●	●	●	●	●

Fraises en bout

Schaftfräser

End mills

Index

Paramètres de coupe indicatifs Empfohlene Schnittwerte Standard machining data						> 16.54
Z	λ	D1	D2	Type	Corner	page
Z=3	Div.	Ø1.00 - 8.00	Ø3/6/8	E-DHP3300-1.5		> 16.57
Z=4	26° / 33°	Ø10.00	Ø10 h6	E-DHP3400-1.5		
Z=3	Div.	Ø1.00 - 8.00	Ø3/6/8	E-DHP3300-2.5		
Z=4	26° / 33°	Ø10.00	Ø10 h6	E-DHP3400-2.5		
Z=1	23°	Ø1.00 - 6.00	Ø6 h5	3123-2		> 16.58
		Ø1.00 - 6.00	Ø6 h5	3123-4		> 16.59
Z=2	60°	Ø0.50 - 6.00	Ø3/6/8	3260MV		> 16.60
	90°	Ø0.30 - 6.00	Ø3/6/8	3290MV		> 16.61
	120°	Ø0.50 - 6.00	Ø3/6/8	32120MV		> 16.62
Z=2	30°	Ø1.00 - 6.00	Ø6 h5	3230		> 16.63
		Ø3.00 - 6.00	Ø6 h5	3230-1.5		> 16.64
		Ø3.00 - 6.00	Ø6 h5	3230-3		> 16.65
		Ø2.00 - 6.00	D1 = D2	3231		> 16.66
		Ø3.00 - 6.00	Ø6 h5	3239T-2.5X		> 16.67
		Ø3.00 - 6.00	Ø6 h5	3239T-4X		> 16.68
Z=3	30°	Ø1.00 - 6.00	Ø6 h5	3330-S		> 16.69
		Ø3.00-12.00	D1 = D2	3330		> 16.70
		Ø3.00 - 6.00	Ø6 h5	3330-4		> 16.71
		Ø2.00 - 6.00	D1 = D2	3331		> 16.72
		Ø1.50 - 6.00	Ø6 h5	3336-HA		> 16.73
		Ø1.50 - 6.00	Ø6 h5	3337-HA		> 16.73
	45°	Ø2.00 - 6.00	D1 = D2	3341		> 16.74
		Ø0.50 - 6.00	Ø6 h5	3345-S		> 16.75
	60°	Ø2.00 - 6.00	D1 = D2	3361		> 16.76
	35° / 38°	Ø1.00 - 6.00	Ø6 h5	DHP3336		> 16.77
Z=4	30°	Ø3.00 - 6.00	D1 = D2	3430		> 16.78
		Ø2.00 - 6.00	D1 = D2	3431		> 16.79
	45°	Ø2.00 - 6.00	D1 = D2	3441		> 16.80
		Ø0.50 - 6.00	Ø6 h5	3445-S		> 16.81
	50°	Ø1.00 - 6.00	Ø6 h5	3450		> 16.82
	35° / 38°	Ø1.00 - 6.00	Ø6 h5	DHP3436		> 16.83
	30°	Ø3.00 - 6.00	Ø6 h5	3439T-2.5X		> 16.84
		Ø3.00 - 6.00	Ø6 h5	3439T-4X		> 16.85
Z=5	45°	Ø1.00 - 6.00	Ø6 h5	3545		> 16.86
Z=4/5/6		Ø1.00 - 6.00	Ø6 h5	35645		> 16.87
Z=8	10°	Ø6.00	Ø6 h5	3810		> 16.88

Index

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

> 16.54

Z	λ	D1	D2	Type	Corner	page
Z=2	30°	Ø2.00 - 6.00	D1 = D2	3238		> 16.89
Z=3	30°	Ø2.00 - 6.00	D1 = D2	3338		> 16.90
Z=3	30°	Ø8.00-12.00	Ø6 h6	3383		> 16.91
Z=10	30°	Ø16.3 / 20.30	Ø10 h6	3831 / 3833		> 16.92
Z=3	0°	Ø0.50 -3.00	Ø3 h4	3611		> 16.93
Z=3	0°	Ø0.50 -3.00	Ø3 h4	3911		> 16.94
Z=4	0°	Ø3.00-8.00	Ø3 h4 Ø6 h5 Ø8 h6	1901 / 3901		> 16.95

Fraises ébauches

Schrupfräser

Roughing mills

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Matière Werkstoff Material	VC [m/min]	1.0 - 2.0	2.0 - 4.0	4.0 - 6.0	6.0 - 10.0	N	TAIN	STF
		fz (mm)	fz (mm)	fz (mm)	fz (mm)			
Acier de décolletage Automatenstahl Free-cutting steel (P)	100 - 140	0.010 - 0.015	0.015 - 0.030	0.030 - 0.040	0.040 - 0.060	-	***	***
Acier Stahl Steel < 600 N/mm² (P)	90 - 140	0.010 - 0.015	0.015 - 0.030	0.030 - 0.040	0.040 - 0.060	-	***	***
Acier Stahl Steel < 800 N/mm² (P)	90 - 140	0.010 - 0.015	0.015 - 0.030	0.030 - 0.040	0.040 - 0.060	-	***	***
Acier Stahl Steel > 800 N/mm² (P)	80 - 120	0.010 - 0.015	0.015 - 0.030	0.030 - 0.040	0.040 - 0.060	-	***	***
Acier trempé Gehärteter Stahl -55HRC (H)	120 - 170	0.005 - 0.008	0.008 - 0.015	0.015 - 0.020	0.020 - 0.035	-	***	***
Acier trempé Gehärteter Stahl +55HRC (H)	110 - 150	0.005 - 0.008	0.008 - 0.015	0.015 - 0.020	0.020 - 0.035	-	***	***
Inox Rostfreistahl Stainless steel (M)	50 - 90	0.004 - 0.008	0.008 - 0.012	0.012 - 0.020	0.020 - 0.040	-	***	***
Aluminium (N)	250 - 350	0.008 - 0.015	0.015 - 0.030	0.030 - 0.040	0.040 - 0.065	-	***	**
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze (N)	130 - 240	0.005 - 0.010	0.010 - 0.020	0.020 - 0.030	0.030 - 0.050	-	***	**
Matière synthétique Synthetisches Material Synthetic material (N)	150 - 300	0.020 - 0.030	0.030 - 0.050	0.050 - 0.080	0.080 - 0.150	-	***	**
Métaux précieux Edelmetalle Precious metals (N)	120 - 150	0.005 - 0.010	0.010 - 0.020	0.020 - 0.030	0.030 - 0.050	-	***	**
Titane Titan Titanium (S)	50 - 100	0.010 - 0.015	0.015 - 0.020	0.020 - 0.030	0.030 - 0.050	-	***	***
Alliage de nickel Nickel-Legierung Nickel alloy (S)	40 - 60	0.005 - 0.007	0.007 - 0.012	0.012 - 0.020	0.020 - 0.030	-	***	***
Matière exotique Exotisches material Exotic material (O)	15 - 25	0.005 - 0.010	0.010 - 0.020	0.020 - 0.030	0.030 - 0.050	-	***	***

Avec revêtement, augmenter les valeurs de 20-30%

Mit Beschichtung, Daten um 20-30% erhöhen

With coating, increase data by 20-30%

* Bien / Gut / Good

** Très bien / Sehr gut / Very good

*** Excellent / Ausgezeichnet / Excellent

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Fraises en bout

Schaftfräser

End mills

Matière Werkstoff Material	VC	0.50 - 2.0	2.0 - 4.0	4.0 - 6.0	6.0 - 8.0	8.0 - 12.0	Z	TAIN	STF	DLC
	(m/min)	fz (mm)	fz (mm)	fz (mm)	fz (mm)	fz (mm)				
Acier de décolletage Automatenstahl Free-cutting steel	P 80 - 130	0.004-0.015	0.015 - 0.025	0.025 - 0.035	0.035 - 0.050	0.050 - 0.080	-	★★★	★★★	-
Acier Stahl Steel	< 600 N/mm ² P 70 - 100	0.004-0.015	0.015 - 0.025	0.025 - 0.035	0.035 - 0.050	0.050 - 0.080	-	★★★	★★★	-
Acier Stahl Steel	< 800 N/mm ² P 70 - 100	0.004-0.015	0.015 - 0.025	0.025 - 0.035	0.035 - 0.050	0.050 - 0.080	-	★★★	★★★	-
Acier Stahl Steel	> 800 N/mm ² P 50 - 80	0.004-0.015	0.015 - 0.025	0.025 - 0.035	0.035 - 0.050	0.050 - 0.080	-	★★★	★★★	-
Acier trempé Gehärteter Stahl -55HRC	H 60 - 90	0.002 - 0.008	0.008 - 0.015	0.012 - 0.020	0.020 - 0.025	0.025 - 0.030	-	★★★	★★★	-
Acier trempé Gehärteter Stahl +55HRC	H 40 - 70	0.002 - 0.008	0.008 - 0.015	0.012 - 0.020	0.020 - 0.025	0.020 - 0.030	-	★★★	★★★	-
Inox Rostfreistahl Stainless steel	M 40 - 80	0.003 - 0.008	0.008 - 0.015	0.015 - 0.020	0.020 - 0.030	0.030 - 0.050	-	★★★	★★★	-
Aluminium	N 230 - 320	0.003 - 0.010	0.010 - 0.025	0.025 - 0.030	0.030 - 0.050	0.050 - 0.080	★★	★	★★	★★★
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze	N 100 - 190	0.003 - 0.010	0.010 - 0.020	0.020 - 0.030	0.030 - 0.040	0.040 - 0.070	★★	★	★★	★★★
Matière synthétique Synthetisches Material Synthetic material	N 250 - 500	0.005 - 0.030	0.030 - 0.050	0.050 - 0.080	0.080 - 0.100	0.100 - 0.200	★★★	-	★★	★★★
Métaux précieux Edelmetalle Precious metals	N 90 - 150	0.003 - 0.015	0.015 - 0.025	0.025 - 0.030	0.030 - 0.050	0.050 - 0.080	★★★	★	★★	★★★
Titane Titan Titanium	S 30 - 70	0.004 - 0.010	0.010 - 0.017	0.017-0.025	0.025 - 0.035	0.035 - 0.050	-	★★	★★★	-
Alliage de nickel Nickel-Legierung Nickel alloy	S 30 - 60	0.003 - 0.008	0.008 - 0.015	0.015 - 0.020	0.020 - 0.025	0.025 - 0.040	-	★★★	★★★	-
Matière exotique Exotisches material Exotic material	O 15 - 25	0.002 - 0.008	0.008 - 0.020	0.020 - 0.030	0.030 - 0.040	0.040 - 0.050	-	★★★	★★★	★★

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Fraises à angle

Kegelsenker

Chamfering tools

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Matière Werkstoff Material	VC (m/min)	Z	TAIN	STF
Acier de décolletage Automatenstahl (P) Free-cutting steel	80 - 130	★	★★★	★★★
Acier Stahl < 600 N/mm² (P) Steel	70 - 100	★	★★★	★★★
Acier Stahl < 800 N/mm² (P) Steel	70 - 100	★	★★★	★★★
Acier Stahl > 800 N/mm² (P) Steel	50 - 80	★	★★★	★★★
Acier trempé Gehärteter Stahl -55HRC (H) Hardened steel	60 - 90	-	★★	★★★
Acier trempé Gehärteter Stahl +55HRC (H) Hardened steel	40 - 70	-	★★	★★★
Inox Rostfreistahl (M) Stainless steel	50 - 100	★	★★★	★★★
Aluminium (N)	200 - 300	★★★	★★	★★★
Cuivre, laiton, bronze Kupfer, Messing, Bronze (N) Copper, brass, bronze	100 - 200	★★★	★★	★★★
Matière synthétique Synthetisches Material (N) Synthetic material	200 - 500	★★★	★★	★★
Métaux précieux Edelmetalle (N) Precious metals	90 - 140	★★★	★★	★★★
Titane Titan (S) Titanium	30 - 80	-	★★★	★★★
Alliage de nickel Nickel-Legierung (S) Nickel alloy	30 - 60	-	★★★	★★★
Matière exotique Exotisches material (O) Exotic material	20 - 30	-	★★★	★★★

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Mit Beschichtung, Daten um 20-30% erhöhen

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★ Bien / Gut / Good

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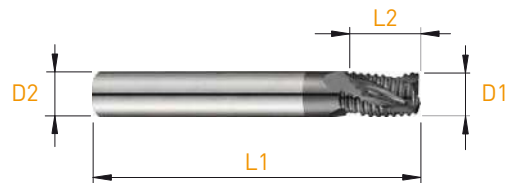
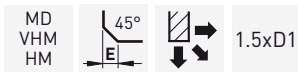
★★★ Excellent / Ausgezeichnet / Excellent

Fraises ébauches

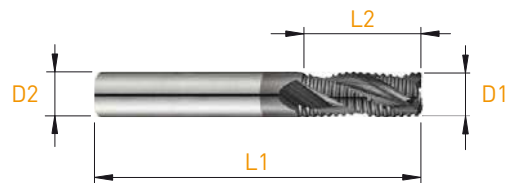
Schruppfräser

Roughing mills

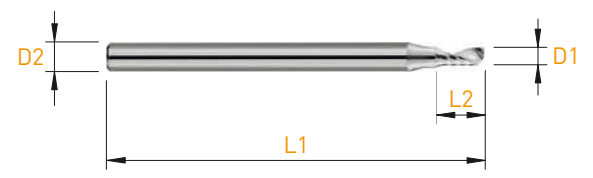
E-DHP3300 / 3400



	Z	E	λ	D1 h10	L2	D2 Ø3 h4 Ø6 h5 Ø8 h6 Ø10 h6	L1	Art. N°	Z	TiAIN	STF
	3	0.05	26°/30°	1.00	1.50	3.00	39	E-DHP3300-1.5-1.00	●	●	●
	3	0.10	26°/30°	1.50	2.25	3.00	39	E-DHP3300-1.5-1.50	●	●	●
	3	0.20	26°/30°	2.00	3.00	3.00	39	E-DHP3300-1.5-2.00	●	●	●
	3	0.20	26°/33°	2.50	3.75	6.00	50	E-DHP3300-1.5-2.50	●	●	●
	3	0.20	26°/33°	3.00	4.25	6.00	50	E-DHP3300-1.5-3.00	●	●	●
	3	0.30	26°/33°	4.00	6.00	6.00	50	E-DHP3300-1.5-4.00	●	●	●
	3	0.30	26°/33°	5.00	7.50	6.00	50	E-DHP3300-1.5-5.00	●	●	●
	3	0.40	26°/33°	6.00	9.00	6.00	50	E-DHP3300-1.5-6.00	●	●	●
	3	0.50	26°/33°	8.00	12.00	8.00	64	E-DHP3300-1.5-8.00	●	●	●
	4	0.50	26°/33°	10.00	15.00	10.00	73	E-DHP3400-1.5-10.00	●	●	●



	Z	E	λ	D1 h10	L2	D2 Ø3 h4 Ø6 h5 Ø8 h6 Ø10 h6	L1	Art. N°	Z	TiAIN	STF
	3	0.05	26°/30°	1.00	2.50	3.00	39	E-DHP3300-2.5-1.00	●	●	●
	3	0.10	26°/30°	1.50	3.75	3.00	39	E-DHP3300-2.5-1.50	●	●	●
	3	0.20	26°/30°	2.00	5.00	3.00	39	E-DHP3300-2.5-2.00	●	●	●
	3	0.20	26°/33°	2.50	6.25	6.00	57	E-DHP3300-2.5-2.50	●	●	●
	3	0.20	26°/33°	3.00	7.50	6.00	57	E-DHP3300-2.5-3.00	●	●	●
	3	0.30	26°/33°	4.00	10.00	6.00	57	E-DHP3300-2.5-4.00	●	●	●
	3	0.30	26°/33°	5.00	12.50	6.00	57	E-DHP3300-2.5-5.00	●	●	●
	3	0.40	26°/33°	6.00	15.00	6.00	57	E-DHP3300-2.5-6.00	●	●	●
	3	0.50	26°/33°	8.00	20.00	8.00	64	E-DHP3300-2.5-8.00	●	●	●
	4	0.50	26°/33°	10.00	25.00	10.00	73	E-DHP3400-2.5-10.00	●	●	●



MD
VHM
HM

λ 23°

Sharp
Corner

2xD1

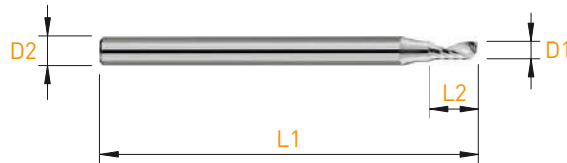
Z=1

D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF	DLC
1.00	2.00	6.00	50	3123-2-1.0	•	•	•	•
2.00	4.00	6.00	50	3123-2-2.0	•	•	•	•
3.00	6.00	6.00	50	3123-2-3.0	•	•	•	•
4.00	8.00	6.00	50	3123-2-4.0	•	•	•	•
5.00	10.00	6.00	50	3123-2-5.0	•	•	•	•
6.00	12.00	6.00	50	3123-2-6.0	•	•	•	•

Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

3123-4

MD VHM HM	λ 23°	Sharp Corner		4xD1	Z=1
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D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAIN	STF	DLC
1.00	4.00	6.00	50	3123-4-1.0	●	●	●	●
2.00	8.00	6.00	50	3123-4-2.0	●	●	●	●
3.00	12.00	6.00	50	3123-4-3.0	●	●	●	●
4.00	16.00	6.00	50	3123-4-4.0	●	●	●	●
5.00	20.00	6.00	50	3123-4-5.0	●	●	●	●
6.00	24.00	6.00	50	3123-4-6.0	●	●	●	●



MD
VHM
HM

60°

Z=2

D1 h10	E	L2	D2 Ø3 h4 Ø6 h5 Ø8 h6	L1	Art. N°	Z	TiAlN	STF
0.50	0.05	1.00	3.00	39	3260MV-0.5	●	●	●
1.00	0.10	2.00	3.00	39	3260MV-1.0	●	●	●
1.50	0.15	3.00	3.00	39	3260MV-1.5	●	●	●
2.00	0.20	4.00	3.00	39	3260MV-2.0	●	●	●
2.50	0.25	5.00	3.00	39	3260MV-2.5	●	●	●
3.00	0.30	6.00	6.00	50	3260MV-3.0	●	●	●
4.00	0.40	8.00	6.00	50	3260MV-4.0	●	●	●
6.00	0.60	12.00	8.00	64	3260MV-6.0	●	●	●

Fraises en bout

Schaftfräser

End mills

3290MV



D1 h10	E	L2	D2 Ø3 h4 Ø6 h5 Ø8 h6	L1	Art. N°	Z	TiAlN	STF
0.30	0.03	0.60	3.00	39	3290MV-0.3	●	●	●
0.40	0.04	0.80	3.00	39	3290MV-0.4	●	●	●
0.50	0.05	1.00	3.00	39	3290MV-0.5	●	●	●
0.60	0.06	1.20	3.00	39	3290MV-0.6	●	●	●
0.70	0.07	1.40	3.00	39	3290MV-0.7	●	●	●
0.80	0.08	1.60	3.00	39	3290MV-0.8	●	●	●
0.90	0.09	1.80	3.00	39	3290MV-0.9	●	●	●
1.00	0.10	2.00	3.00	39	3290MV-1.0	●	●	●
1.10	0.11	2.20	3.00	39	3290MV-1.1	●	●	●
1.20	0.12	2.40	3.00	39	3290MV-1.2	●	●	●
1.30	0.13	2.60	3.00	39	3290MV-1.3	●	●	●
1.40	0.14	2.80	3.00	39	3290MV-1.4	●	●	●
1.50	0.15	3.00	3.00	39	3290MV-1.5	●	●	●
1.60	0.16	3.20	3.00	39	3290MV-1.6	●	●	●
1.70	0.17	3.40	3.00	39	3290MV-1.7	●	●	●
1.80	0.18	3.60	3.00	39	3290MV-1.8	●	●	●
1.90	0.19	3.80	3.00	39	3290MV-1.9	●	●	●
2.00	0.20	4.00	3.00	39	3290MV-2.0	●	●	●
2.50	0.25	5.00	3.00	39	3290MV-2.5	●	●	●
3.00	0.30	6.00	6.00	50	3290MV-3.0	●	●	●
4.00	0.40	8.00	6.00	50	3290MV-4.0	●	●	●
6.00	0.60	12.00	8.00	64	3290MV-6.0	●	●	●

32120MV

Fraises en bout
Schaftfräser
End mills



MD
VHM
HM

120°

Z=2

D1 h10	E	L2	D2 Ø3 h4 Ø6 h5 Ø8 h6	L1	Art. N°	Z	TiAlN	STF
0.50	0.05	1.00	3.00	39	32120MV-0.5	●	●	●
1.00	0.10	2.00	3.00	39	32120MV-1.0	●	●	●
1.50	0.15	3.00	3.00	39	32120MV-1.5	●	●	●
2.00	0.20	4.00	3.00	39	32120MV-2.0	●	●	●
2.50	0.25	5.00	3.00	39	32120MV-2.5	●	●	●
3.00	0.30	6.00	6.00	50	32120MV-3.0	●	●	●
4.00	0.40	8.00	6.00	50	32120MV-4.0	●	●	●
6.00	0.60	12.00	8.00	64	32120MV-6.0	●	●	●

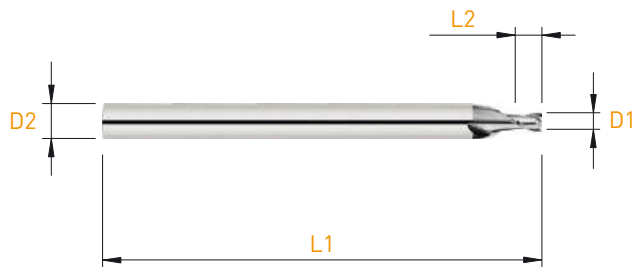
Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

3230

D1 h10	L2	D2 h5	L1	Art. N°	Z	TAIN	STF
1.00	1.00	6.00	50	3230-1.0	●	●	●
1.50	1.50	6.00	50	3230-1.5	●	●	●
2.00	2.00	6.00	50	3230-2.0	●	●	●
2.50	2.50	6.00	50	3230-2.5	●	●	●
3.00	3.00	6.00	50	3230-3.0	●	●	●
4.00	4.00	6.00	50	3230-4.0	●	●	●
5.00	5.00	6.00	50	3230-5.0	●	●	●
6.00	6.00	6.00	50	3230-6.0	●	●	●



MD
VHM
HM

$\lambda \ 30^\circ$

Sharp
Corner

1.5xD1

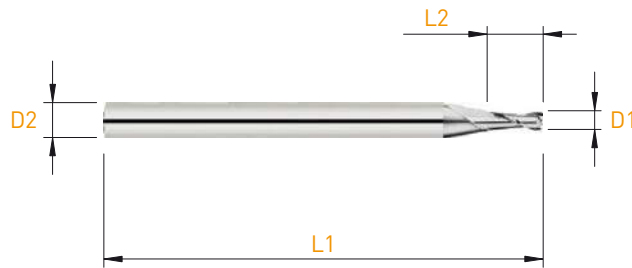
Z=2

D1 h10	L2	D2 h5	L1	Art. N°	Z		
					T	A	S
					T	A	S
3.00	4.50	6.00	50	3230-1.5-3.0	•	•	•
3.50	5.00	6.00	50	3230-1.5-3.5	•	•	•
4.00	6.00	6.00	50	3230-1.5-4.0	•	•	•
4.50	7.00	6.00	50	3230-1.5-4.5	•	•	•
5.00	8.00	6.00	50	3230-1.5-5.0	•	•	•
6.00	9.00	6.00	50	3230-1.5-6.0	•	•	•

Fraises en bout de finition

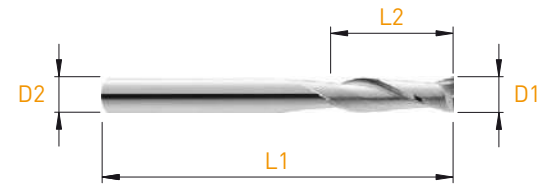
Schlicht Schaftfräser

Finishing end mills

3230-3

D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
3.00	9.00	6.00	50	3230-3-3.0	●	●	●
3.50	10.00	6.00	50	3230-3-3.5	●	●	●
4.00	12.00	6.00	50	3230-3-4.0	●	●	●
4.50	13.00	6.00	50	3230-3-4.5	●	●	●
5.00	15.00	6.00	50	3230-3-5.0	●	●	●
6.00	18.00	6.00	50	3230-3-6.0	●	●	●

3231



MD
VHM
HM

$\lambda 30^\circ$

Sharp
Corner

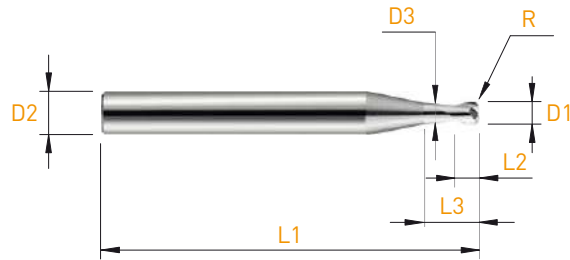
Z=2

D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	32	3231-2.0	●	●	●
2.50	8.00	2.50	32	3231-2.5	●	●	●
3.00	12.00	3.00	32	3231-3.0	●	●	●
3.50	12.00	3.50	32	3231-3.5	●	●	●
4.00	12.00	4.00	40	3231-4.0	●	●	●
4.50	14.00	4.50	50	3231-4.5	●	●	●
5.00	14.00	5.00	50	3231-5.0	●	●	●
6.00	16.00	6.00	50	3231-6.0	●	●	●

Fraises en bout de finition

Schlicht Schaftfräser

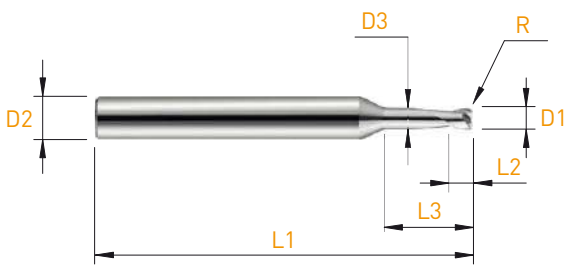
Finishing end mills

3239T-2.5X

D1 h10	R +/- 0.02	L2	L3	D3	D2 h5	L1	Art. N°	Z	TiAIN	STF
3.00	0.50	3.00	7.50	2.95	6.00	57	3239T-2.5X-3.0	●	●	●
3.50	0.50	3.50	8.75	3.45	6.00	57	3239T-2.5X-3.5	●	●	●
4.00	0.50	4.00	10.00	3.95	6.00	57	3239T-2.5X-4.0	●	●	●
4.50	0.50	4.50	11.25	4.45	6.00	57	3239T-2.5X-4.5	●	●	●
5.00	0.50	5.00	12.50	4.95	6.00	57	3239T-2.5X-5.0	●	●	●
5.50	0.50	5.50	13.75	5.45	6.00	57	3239T-2.5X-5.5	●	●	●
6.00	0.50	6.00	15.00	5.95	6.00	57	3239T-2.5X-6.0	●	●	●

3239T-4X

Fraises en bout de finition
Schlicht Schaftfräser
Finishing end mills



MD
VHM
HM

λ 30°

Radius
Corner

L3
4xD1

Z=2

D1 h10	R +/- 0.02	L2	L3	D3	D2 h5	L1	Art. N°	Z	TiAIN	STF
3.00	0.50	3.00	12.00	2.95	6.00	57	3239T-4X-3.0	●	●	●
3.50	0.50	3.50	14.00	3.45	6.00	57	3239T-4X-3.5	●	●	●
4.00	0.50	4.00	16.00	3.95	6.00	57	3239T-4X-4.0	●	●	●
4.50	0.50	4.50	18.00	4.45	6.00	57	3239T-4X-4.5	●	●	●
5.00	0.50	5.00	20.00	4.95	6.00	57	3239T-4X-5.0	●	●	●
5.50	0.50	5.50	22.00	5.45	6.00	57	3239T-4X-5.5	●	●	●
6.00	0.50	6.00	24.00	5.95	6.00	57	3239T-4X-6.0	●	●	●

Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

3330-S

D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAIN	STF
1.00	3.00	6.00	40	3330-S-1.0	●	●	●
1.50	3.00	6.00	40	3330-S-1.5	●	●	●
2.00	3.00	6.00	40	3330-S-2.0	●	●	●
2.50	3.00	6.00	40	3330-S-2.5	●	●	●
3.00	4.00	6.00	40	3330-S-3.0	●	●	●
3.50	4.00	6.00	40	3330-S-3.5	●	●	●
4.00	5.00	6.00	40	3330-S-4.0	●	●	●
4.50	5.00	6.00	40	3330-S-4.5	●	●	●
5.00	6.00	6.00	40	3330-S-5.0	●	●	●
6.00	7.00	6.00	40	3330-S-6.0	●	●	●



MD
VHM
HM

λ 30°

Sharp
Corner

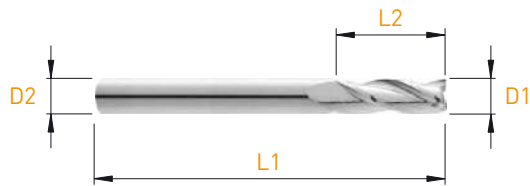
Z=3

D1 e9	L2	D2 h5	L1	Art. N°	Z		
					TAIN	STF	
3.00	3.00	3.00	39	3330-3.0	•	•	•
4.00	4.00	4.00	50	3330-4.0	•	•	•
5.00	5.00	5.00	50	3330-5.0	•	•	•
6.00	6.00	6.00	50	3330-6.0	•	•	•
8.00	8.00	8.00	58	3330-8.0	•		
10.00	10.00	10.00	66	3330-10.0	•		
12.00	12.00	12.00	73	3330-12.0	•		

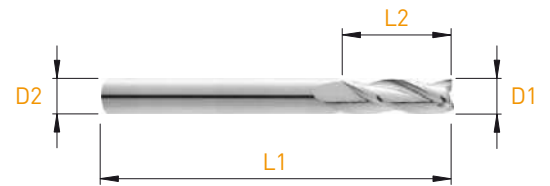
Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

3330-4

D1 h10	L2	D2 h5	L1	Art. N°	Z	TAIN	STF
3.00	12.00	6.00	50	3330-4-3.0	●	●	●
4.00	16.00	6.00	50	3330-4-4.0	●	●	●
5.00	20.00	6.00	50	3330-4-5.0	●	●	●
6.00	24.00	6.00	57	3330-4-6.0	●	●	●



MD
VHM
HM

$\lambda\ 30^\circ$

Sharp
Corner

Z=3

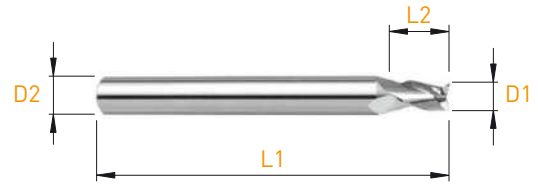
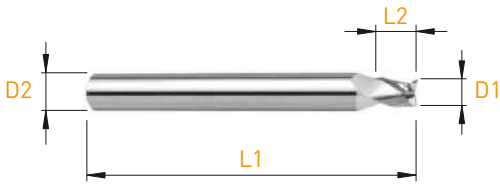
D1 e9	L2	D2 h5	L1	Art. N°	Z		
					T	A	S
					T	A	S
2.00	8.00	2.00	32	3331-2.0	•	•	•
2.50	8.00	2.50	32	3331-2.5	•	•	•
3.00	12.00	3.00	32	3331-3.0	•	•	•
3.50	12.00	3.50	32	3331-3.5	•	•	•
4.00	12.00	4.00	40	3331-4.0	•	•	•
4.50	14.00	4.50	50	3331-4.5	•	•	•
5.00	14.00	5.00	50	3331-5.0	•	•	•
6.00	16.00	6.00	50	3331-6.0	•	•	•

Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

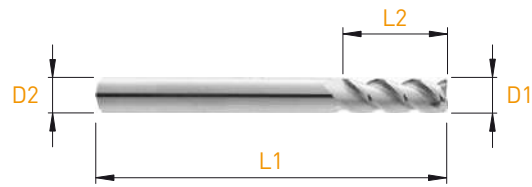
3336-HA / 3337-HA



D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAIN	STF
1.50	3.00	6.00	50	3336-HA-1.5	●	●	●
1.80	3.00	6.00	50	3336-HA-1.8	●	●	●
2.00	3.00	6.00	50	3336-HA-2.0	●	●	●
2.50	3.00	6.00	50	3336-HA-2.5	●	●	●
2.80	4.00	6.00	50	3336-HA-2.8	●	●	●
3.00	4.00	6.00	50	3336-HA-3.0	●	●	●
3.50	4.00	6.00	50	3336-HA-3.5	●	●	●
3.80	5.00	6.00	54	3336-HA-3.8	●	●	●
4.00	5.00	6.00	54	3336-HA-4.0	●	●	●
4.50	5.00	6.00	54	3336-HA-4.5	●	●	●
4.80	6.00	6.00	54	3336-HA-4.8	●	●	●
5.00	6.00	6.00	54	3336-HA-5.0	●	●	●
5.50	7.00	6.00	54	3336-HA-5.5	●	●	●
5.80	7.00	6.00	54	3336-HA-5.8	●	●	●
6.00	7.00	6.00	54	3336-HA-6.0	●	●	●



D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAIN	STF
1.50	6.00	6.00	57	3337-HA-1.5	●	●	●
1.80	6.00	6.00	57	3337-HA-1.8	●	●	●
2.00	6.00	6.00	57	3337-HA-2.0	●	●	●
2.50	6.00	6.00	57	3337-HA-2.5	●	●	●
2.80	7.00	6.00	57	3337-HA-2.8	●	●	●
3.00	7.00	6.00	57	3337-HA-3.0	●	●	●
3.50	7.00	6.00	57	3337-HA-3.5	●	●	●
3.80	8.00	6.00	57	3337-HA-3.8	●	●	●
4.00	8.00	6.00	57	3337-HA-4.0	●	●	●
4.50	8.00	6.00	57	3337-HA-4.5	●	●	●
4.80	10.00	6.00	57	3337-HA-4.8	●	●	●
5.00	10.00	6.00	57	3337-HA-5.0	●	●	●
5.50	10.00	6.00	57	3337-HA-5.5	●	●	●
5.80	10.00	6.00	57	3337-HA-5.8	●	●	●
6.00	10.00	6.00	57	3337-HA-6.0	●	●	●



MD
VHM
HM

λ 45°

Sharp
Corner

Z=3

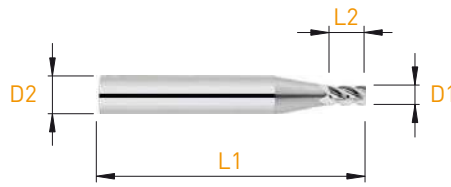
D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	32	3341-2.0	●	●	●
2.50	8.00	2.50	32	3341-2.5	●	●	●
3.00	12.00	3.00	32	3341-3.0	●	●	●
3.50	12.00	3.50	32	3341-3.5	●	●	●
4.00	12.00	4.00	40	3341-4.0	●	●	●
4.50	14.00	4.50	50	3341-4.5	●	●	●
5.00	14.00	5.00	50	3341-5.0	●	●	●
6.00	16.00	6.00	50	3341-6.0	●	●	●

Fraises en bout de finition

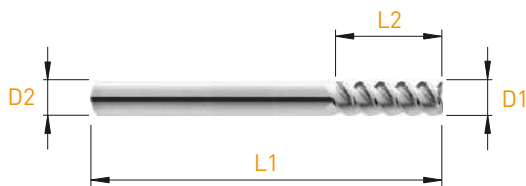
Schlicht Schaftfräser

Finishing end mills

3345-S



D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
0.50	1.00	6.00	40	3345-S-0.5	●	●	●
0.60	1.20	6.00	40	3345-S-0.6	●	●	●
0.70	1.40	6.00	40	3345-S-0.7	●	●	●
0.80	1.60	6.00	40	3345-S-0.8	●	●	●
0.90	1.80	6.00	40	3345-S-0.9	●	●	●
1.00	2.00	6.00	40	3345-S-1.0	●	●	●
1.10	2.20	6.00	40	3345-S-1.1	●	●	●
1.20	2.40	6.00	40	3345-S-1.2	●	●	●
1.30	2.60	6.00	40	3345-S-1.3	●	●	●
1.40	2.80	6.00	40	3345-S-1.4	●	●	●
1.50	3.00	6.00	40	3345-S-1.5	●	●	●
1.60	3.20	6.00	40	3345-S-1.6	●	●	●
1.70	3.40	6.00	40	3345-S-1.7	●	●	●
1.80	3.60	6.00	40	3345-S-1.8	●	●	●
1.90	3.80	6.00	40	3345-S-1.9	●	●	●
2.00	4.00	6.00	40	3345-S-2.0	●	●	●
2.10	4.20	6.00	40	3345-S-2.1	●	●	●
2.20	4.40	6.00	40	3345-S-2.2	●	●	●
2.30	4.60	6.00	40	3345-S-2.3	●	●	●
2.40	4.80	6.00	40	3345-S-2.4	●	●	●
2.50	5.00	6.00	40	3345-S-2.5	●	●	●
2.60	5.20	6.00	40	3345-S-2.6	●	●	●
2.70	5.40	6.00	40	3345-S-2.7	●	●	●
2.80	5.60	6.00	40	3345-S-2.8	●	●	●
2.90	5.80	6.00	40	3345-S-2.9	●	●	●
3.00	6.00	6.00	40	3345-S-3.0	●	●	●
3.50	7.00	6.00	40	3345-S-3.5	●	●	●
4.00	8.00	6.00	40	3345-S-4.0	●	●	●
4.50	9.00	6.00	40	3345-S-4.5	●	●	●
5.00	10.00	6.00	40	3345-S-5.0	●	●	●
6.00	12.00	6.00	40	3345-S-6.0	●	●	●



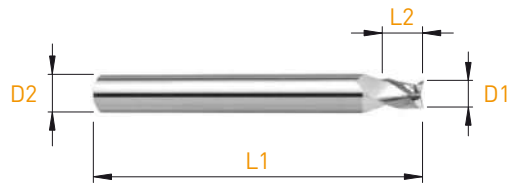
D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	32	3361-2.0	●	●	●
2.50	8.00	2.50	32	3361-2.5	●	●	●
3.00	12.00	3.00	32	3361-3.0	●	●	●
3.50	12.00	3.50	32	3361-3.5	●	●	●
4.00	12.00	4.00	40	3361-4.0	●	●	●
4.50	14.00	4.50	50	3361-4.5	●	●	●
5.00	14.00	5.00	50	3361-5.0	●	●	●
6.00	16.00	6.00	50	3361-6.0	●	●	●

Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

DHP3336



DHP

Denture à pas irrégulier, hélice progressive
 Ungleiche Teilung, progressive Spirale
 Uneven tooth pitch, progressive helix

D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
1.00	4.00	6.00	40	DHP3336-1.0	●	●	●
1.50	4.00	6.00	40	DHP3336-1.5	●	●	●
2.00	4.00	6.00	40	DHP3336-2.0	●	●	●
2.50	4.00	6.00	40	DHP3336-2.5	●	●	●
3.00	5.00	6.00	40	DHP3336-3.0	●	●	●
3.50	5.00	6.00	40	DHP3336-3.5	●	●	●
4.00	6.00	6.00	40	DHP3336-4.0	●	●	●
5.00	7.00	6.00	40	DHP3336-5.0	●	●	●
6.00	8.00	6.00	40	DHP3336-6.0	●	●	●

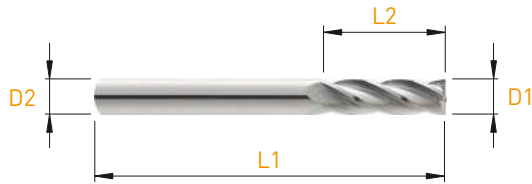


D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
3.00	3.00	3.00	39	3430-3.0	●	●	●
4.00	4.00	4.00	50	3430-4.0	●	●	●
5.00	5.00	5.00	50	3430-5.0	●	●	●
6.00	6.00	6.00	50	3430-6.0	●	●	●

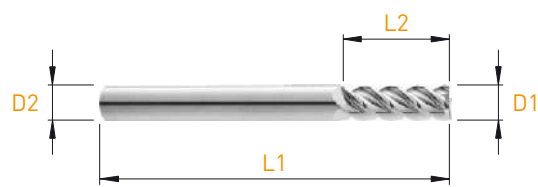
Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

3431

D1 _{e9}	L2	D2 _{h5}	L1	Art. N°	Z	TiAIN	STF
2.00	8.00	2.00	32	3431-2.0	●	●	●
2.50	8.00	2.50	32	3431-2.5	●	●	●
3.00	12.00	3.00	32	3431-3.0	●	●	●
3.50	12.00	3.50	32	3431-3.5	●	●	●
4.00	12.00	4.00	40	3431-4.0	●	●	●
4.50	14.00	4.50	50	3431-4.5	●	●	●
5.00	14.00	5.00	50	3431-5.0	●	●	●
6.00	16.00	6.00	50	3431-6.0	●	●	●



MD
VHM
HM

λ 45°

Sharp
Corner

Z=4

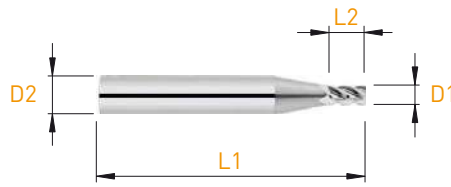
D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	32	3441-2.0	●	●	●
2.50	8.00	2.50	32	3441-2.5	●	●	●
3.00	12.00	3.00	32	3441-3.0	●	●	●
3.50	12.00	3.50	32	3441-3.5	●	●	●
4.00	12.00	4.00	40	3441-4.0	●	●	●
4.50	14.00	4.50	50	3441-4.5	●	●	●
5.00	14.00	5.00	50	3441-5.0	●	●	●
6.00	16.00	6.00	50	3441-6.0	●	●	●

Fraises en bout de finition

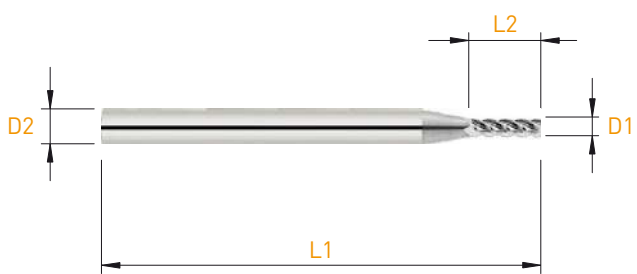
Schlicht Schaftfräser

Finishing end mills

3445-S



D1 _{h10}	L2	D2 _{h5}	L1	Art. N°	Z	TiAlN	STF
0.50	1.00	6.00	40	3445-S-0.5	●	●	●
0.60	1.20	6.00	40	3445-S-0.6	●	●	●
0.70	1.40	6.00	40	3445-S-0.7	●	●	●
0.80	1.60	6.00	40	3445-S-0.8	●	●	●
0.90	1.80	6.00	40	3445-S-0.9	●	●	●
1.00	2.00	6.00	40	3445-S-1.0	●	●	●
1.10	2.20	6.00	40	3445-S-1.1	●	●	●
1.20	2.40	6.00	40	3445-S-1.2	●	●	●
1.30	2.60	6.00	40	3445-S-1.3	●	●	●
1.40	2.80	6.00	40	3445-S-1.4	●	●	●
1.50	3.00	6.00	40	3445-S-1.5	●	●	●
1.60	3.20	6.00	40	3445-S-1.6	●	●	●
1.70	3.40	6.00	40	3445-S-1.7	●	●	●
1.80	3.60	6.00	40	3445-S-1.8	●	●	●
1.90	3.80	6.00	40	3445-S-1.9	●	●	●
2.00	4.00	6.00	40	3445-S-2.0	●	●	●
2.10	4.20	6.00	40	3445-S-2.1	●	●	●
2.20	4.40	6.00	40	3445-S-2.2	●	●	●
2.30	4.60	6.00	40	3445-S-2.3	●	●	●
2.40	4.80	6.00	40	3445-S-2.4	●	●	●
2.50	5.00	6.00	40	3445-S-2.5	●	●	●
2.60	5.20	6.00	40	3445-S-2.6	●	●	●
2.70	5.40	6.00	40	3445-S-2.7	●	●	●
2.80	5.60	6.00	40	3445-S-2.8	●	●	●
2.90	5.80	6.00	40	3445-S-2.9	●	●	●
3.00	6.00	6.00	40	3445-S-3.0	●	●	●
3.50	7.00	6.00	40	3445-S-3.5	●	●	●
4.00	8.00	6.00	40	3445-S-4.0	●	●	●
4.50	9.00	6.00	40	3445-S-4.5	●	●	●
5.00	10.00	6.00	40	3445-S-5.0	●	●	●
6.00	12.00	6.00	40	3445-S-6.0	●	●	●



MD
VHM
HM

λ 50°

Sharp
Corner

1.5xD1

Z=4

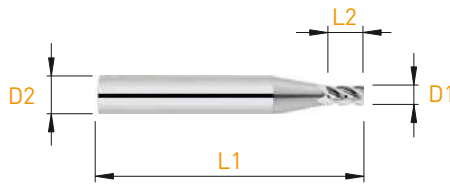
D1 h10	L2	D2 h5	L1	Art. N°	Z TiAlN STF		
1.00	1.50	6.00	50	3450-1.0	●	●	●
1.50	2.25	6.00	50	3450-1.5	●	●	●
2.00	3.00	6.00	50	3450-2.0	●	●	●
2.50	3.75	6.00	50	3450-2.5	●	●	●
3.00	4.50	6.00	50	3450-3.0	●	●	●
3.50	5.25	6.00	50	3450-3.5	●	●	●
4.00	6.00	6.00	50	3450-4.0	●	●	●
5.00	7.50	6.00	50	3450-5.0	●	●	●
6.00	9.00	6.00	50	3450-6.0	●	●	●

Fraises en bout de finition

Schlicht Schaftfräser

Finishing end mills

DHP3436



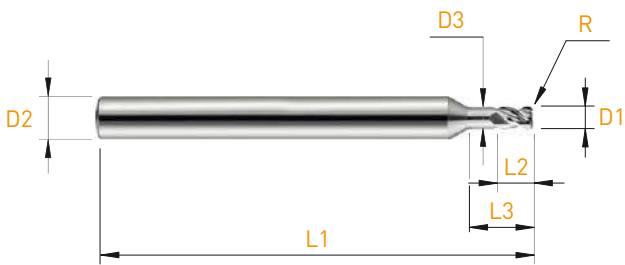
DHP

Denture à pas irrégulier, hélice progressive
 Ungleiche Teilung, progressive Spirale
 Uneven tooth pitch, progressive helix

D1 h10	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
1.00	4.00	6.00	40	DHP3436-1.0	●	●	●
1.50	4.00	6.00	40	DHP3436-1.5	●	●	●
2.00	4.00	6.00	40	DHP3436-2.0	●	●	●
2.50	4.00	6.00	40	DHP3436-2.5	●	●	●
3.00	5.00	6.00	40	DHP3436-3.0	●	●	●
3.50	5.00	6.00	40	DHP3436-3.5	●	●	●
4.00	6.00	6.00	40	DHP3436-4.0	●	●	●
5.00	7.00	6.00	40	DHP3436-5.0	●	●	●
6.00	8.00	6.00	40	DHP3436-6.0	●	●	●

3439T-2.5X

Fraises en bout toriques
Torische Schaftfräser
Toric end mills



MD
VHM
HM

λ 30°

Radius
Corner

L3
2.5xD1

Z=4

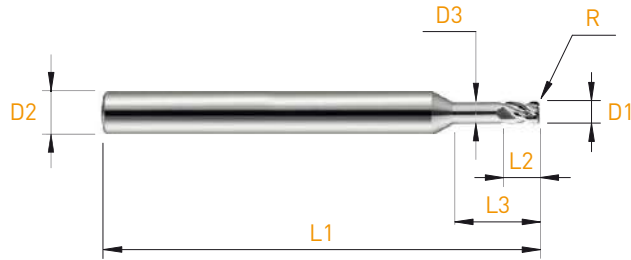
D1 h10	R +/- 0.02	L2	L3	D3	D2 h5	L1	Art. N°	Z	TiAIN	STF
3.00	0.50	3.00	7.50	2.95	6.00	57	3439T-2.5X-3.0	●	●	●
3.50	0.50	3.50	8.75	3.45	6.00	57	3439T-2.5X-3.5	●	●	●
4.00	0.50	4.00	10.00	3.95	6.00	57	3439T-2.5X-4.0	●	●	●
4.50	0.50	4.50	11.25	4.45	6.00	57	3439T-2.5X-4.5	●	●	●
5.00	0.50	5.00	12.50	4.95	6.00	57	3439T-2.5X-5.0	●	●	●
5.50	0.50	5.50	13.75	5.45	6.00	57	3439T-2.5X-5.5	●	●	●
6.00	0.50	6.00	15.00	5.95	6.00	57	3439T-2.5X-6.0	●	●	●

Fraises en bout toriques

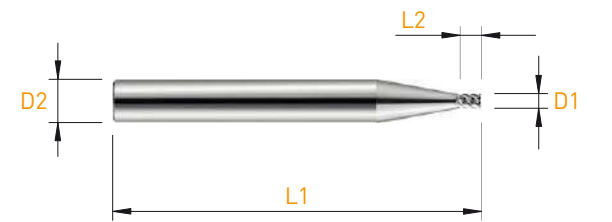
Torische Schaftfräser

Toric end mills

3439T-4X



D1 h10	R +/- 0.02	L2	L3	D3	D2 h5	L1	Art. N°	Z	TAIN	STF
3.00	0.50	3.00	12.00	2.95	6.00	57	3439T-4X-3.0	●	●	●
3.50	0.50	3.50	14.00	3.45	6.00	57	3439T-4X-3.5	●	●	●
4.00	0.50	4.00	16.00	3.95	6.00	57	3439T-4X-4.0	●	●	●
4.50	0.50	4.50	18.00	4.45	6.00	57	3439T-4X-4.5	●	●	●
5.00	0.50	5.00	20.00	4.95	6.00	57	3439T-4X-5.0	●	●	●
5.50	0.50	5.50	22.00	5.45	6.00	57	3439T-4X-5.5	●	●	●
6.00	0.50	6.00	24.00	5.95	6.00	57	3439T-4X-6.0	●	●	●



MD
VHM
HM

λ 45°

Sharp
Corner

1.5xD1

Z=5

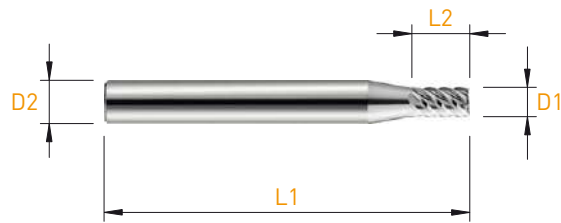
D1 h10	L2	D2 h5	L1	Art. N°	Z TiAIN STF		
1.00	1.50	6.00	50	3545-1.0	●	●	●
2.00	3.00	6.00	50	3545-2.0	●	●	●
3.00	4.50	6.00	50	3545-3.0	●	●	●
4.00	6.00	6.00	50	3545-4.0	●	●	●
5.00	7.50	6.00	50	3545-5.0	●	●	●
6.00	9.00	6.00	50	3545-6.0	●	●	●

Fraises en bout de finition

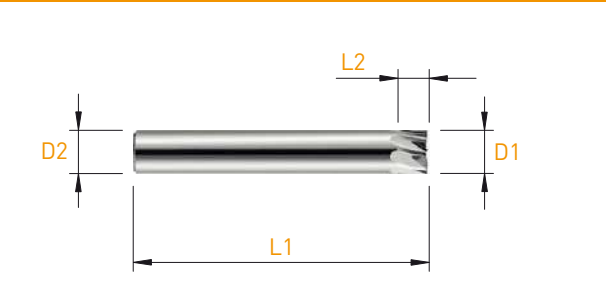
Schlicht Schaftfräser

Finishing end mills

35645



D1 h10	L2	Z	D2 h5	L1	Art. N°	Z	TiAIN	STF
1.00	2.00	4	6.00	50	35645-1.0	●	●	●
1.50	3.00	5	6.00	50	35645-1.5	●	●	●
2.00	4.00	5	6.00	50	35645-2.0	●	●	●
2.50	5.00	5	6.00	50	35645-2.5	●	●	●
3.00	6.00	5	6.00	50	35645-3.0	●	●	●
3.50	7.00	5	6.00	50	35645-3.5	●	●	●
4.00	8.00	6	6.00	50	35645-4.0	●	●	●
4.50	9.00	6	6.00	50	35645-4.5	●	●	●
5.00	10.00	6	6.00	50	35645-5.0	●	●	●
6.00	12.00	6	6.00	50	35645-6.0	●	●	●



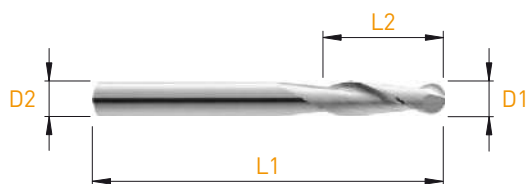
D1 _{e9}	L2	D2 _{h5}	L1	Art. N°	Z	TiAIN	STF
6.00	4.00	6.00	50	3810-0.65-6.0	●	●	●
6.00	6.00	6.00	57	3810-1.0-6.0	●	●	●
6.00	9.00	6.00	57	3810-1.5-6.0	●	●	●

Fraises en bout hémisphériques

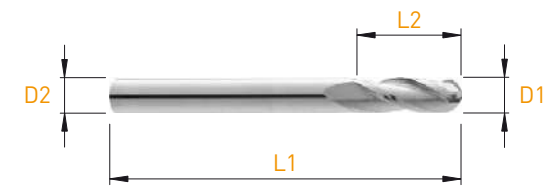
Vollradius Schaftfräser

Ball nose end mills

3238



D1 _{e9}	L2	D2 _{h5}	L1	Art. N°	Z	TiAIN	STF
2.00	8.00	2.00	32	3238-2.0	●	●	●
2.50	8.00	2.50	32	3238-2.5	●	●	●
3.00	12.00	3.00	32	3238-3.0	●	●	●
3.50	12.00	3.50	32	3238-3.5	●	●	●
4.00	12.00	4.00	40	3238-4.0	●	●	●
4.50	14.00	4.50	50	3238-4.5	●	●	●
5.00	14.00	5.00	50	3238-5.0	●	●	●
6.00	16.00	6.00	50	3238-6.0	●	●	●



MD
VHM
HM

λ^{30°

U

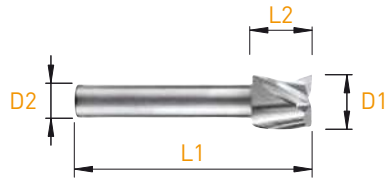
Z=3

D1 e9	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	32	3338-2.0	●	●	●
2.50	8.00	2.50	32	3338-2.5	●	●	●
3.00	12.00	3.00	32	3338-3.0	●	●	●
3.50	12.00	3.50	32	3338-3.5	●	●	●
4.00	12.00	4.00	40	3338-4.0	●	●	●
4.50	14.00	4.50	50	3338-4.5	●	●	●
5.00	14.00	5.00	50	3338-5.0	●	●	●
6.00	16.00	6.00	50	3338-6.0	●	●	●

Fraises en bout pour usinage en bout plat

Schaftfräser für flache Frontbearbeitung

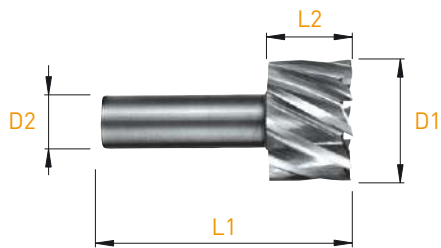
End mills for flat front machining

3383

D1 h_{10}	L2	D2 h_6	L1	Art. N°	z
8.00	8.00	6.00	40	3383-8.0	•
10.00	10.00	6.00	40	3383-10.0	•
12.00	12.00	6.00	40	3383-12.0	•

3831 / 3833

Fraises en bout avec queue réduite
Schaftfräser mit reduziertem Schaft
End mills with reduced shank



MD
VHM
HM

λ 30°

Sharp
Corner

Z=10

D1 _{h10}	L2	D2 _{h6}	L1	Art. N°	z
16.30	15.00	10.00	45	3831	●
20.30	15.00	10.00	45	3833	●

Fraises à angler
Kegelsenker
Chamfering tools

3611

MD VHM HM	λ^{0°		Z=3	60°
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D1 +0.005 / -0.010	L2	D2 h4	L1	d	Art. N°	Z	TiAlN	STF
0.50	3.00	3.00	39	0.10	3611-0.5	●	●	●
0.60	3.00	3.00	39	0.10	3611-0.6	●	●	●
0.70	3.00	3.00	39	0.10	3611-0.7	●	●	●
0.80	3.00	3.00	39	0.10	3611-0.8	●	●	●
0.90	3.00	3.00	39	0.10	3611-0.9	●	●	●
1.00	3.00	3.00	39	0.10	3611-1.0	●	●	●
1.50	4.50	3.00	39	0.10	3611-1.5	●	●	●
2.00	6.00	3.00	39	0.10	3611-2.0	●	●	●
2.50	7.50	3.00	39	0.10	3611-2.5	●	●	●
3.00	-	3.00	39	0.10	3611-3.0	●	●	●



MD
VHM
HM

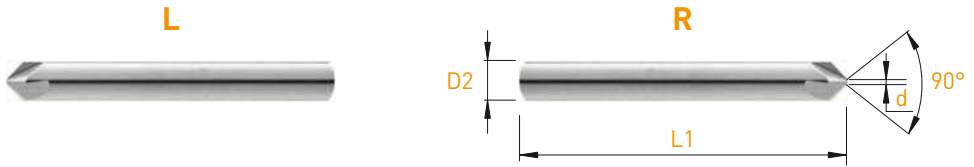
λ^{0°

Z=3

90°

D1 +0.010 / -0.010	L2	D2 h4	L1	d	Art. N°	Z	TIALN	STF
0.30	2.00	3.00	39	0.05	3911-0.30	●	●	●
0.40	2.00	3.00	39	0.05	3911-0.40	●	●	●
0.50	3.00	3.00	39	0.10	3911-0.50	●	●	●
0.60	3.00	3.00	39	0.10	3911-0.60	●	●	●
0.70	3.00	3.00	39	0.10	3911-0.70	●	●	●
0.80	3.00	3.00	39	0.10	3911-0.80	●	●	●
0.90	3.00	3.00	39	0.10	3911-0.90	●	●	●
1.00	3.00	3.00	39	0.10	3911-1.00	●	●	●
1.10	3.00	3.00	39	0.10	3911-1.10	●	●	●
1.20	3.00	3.00	39	0.10	3911-1.20	●	●	●
1.30	3.00	3.00	39	0.10	3911-1.30	●	●	●
1.40	3.00	3.00	39	0.10	3911-1.40	●	●	●
1.50	4.50	3.00	39	0.10	3911-1.50	●	●	●
2.00	6.00	3.00	39	0.10	3911-2.00	●	●	●
2.50	7.50	3.00	39	0.10	3911-2.50	●	●	●
3.00	-	3.00	39	0.10	3911-3.00	●	●	●

Fraises à angler
Kegelsenker
Chamfering tools

1901 / 3901

MD VHM HM	λ^{0°		Z=4	90°	L	R
D2 Ø3 h4 Ø6 h5 Ø8 h6	d	L1	Art. N°	Z	Art. N°	Z TiAlN STF
3.00	0.30	39	1901-3.0	●	3901-3.0	● ● ●
6.00	0.70	50	1901-6.0	●	3901-6.0	● ● ●
8.00	1.20	59	1901-8.0	●	3901-8.0	● ● ●

Paramètres de coupe indicatifs						
Empfohlene Schnittwerte						
Standard machining data						
Z	λ	D1	D2	Type	Corner	page
			Ø6 h4	701SE330-P		> 16.99
			Ø6 h4	701SE330-R		> 16.100
Z=1	0°	Ø0.50 -3.00	Ø6 h4	701S3170R-2		> 16.101
Z=2	0°	Ø0.30 -3.00	Ø6 h4	701S3279T-3X		> 16.102
Z=3		Ø0.30 - 3.50	Ø6 h5	701S3371-1		> 16.103
		Ø0.30 - 3.00	Ø6 h5	701S3371-2		> 16.104
		Ø0.30 - 2.50	Ø6 h5	701S3371-3		> 16.105
Z=3	30°	Ø1.00 -2.00	Ø6 h4	701S3379T-3X		> 16.106
Z=3	0°	Ø0.40 -2.00	Ø6 h4	701S3911		> 16.107



Tous les outils de la gamme MICRO-Line sont réalisables
pour la machine WM 701S sur demande.

Alle Werkzeuge aus der MICRO-Line sind machbar
für die Maschine WM 701S auf Anfrage.

All tools of MICRO-Line can be produced for
the machine WM 701S on request.

Matière Werkstoff Material	VC (m/min)	N	TiAlN	STF	DLC
Acier de décolletage Automatenstahl P Free-cutting steel	120 - 180	-	***	***	-
Acier Stahl < 600 N/mm ² P Steel	100 - 150	-	***	***	-
Acier Stahl < 800 N/mm ² P Steel	100 - 130	-	***	***	-
Acier Stahl > 800 N/mm ² P Steel	80 - 100	-	***	***	-
Acier trempé Gehärteter Stahl -55HRC H Hardened steel	-	-	***	***	-
Acier trempé Gehärteter Stahl +55HRC H Hardened steel	-	-	***	***	-
Inox Rostfreistahl M Stainless steel	60 - 90	-	***	***	-
Aluminium N	250 - 400	**	***	***	***
Cuivre, laiton, bronze Kupfer, Messing, Bronze N Copper, brass, bronze	150 - 200	***	**	**	***
Matière synthétique Synthetisches Material N Synthetic material	100 - 150	***	**	**	***
Métaux précieux Edelmetalle N Precious metals	140 - 200	***	**	**	***
Titane Titan S Titanium	40 - 70	-	***	***	-
Alliage de nickel Nickel-Legierung S Nickel alloy	30 - 60	-	***	***	-
Matière exotique Exotisches material O Exotic material	30 - 60	-	***	***	***

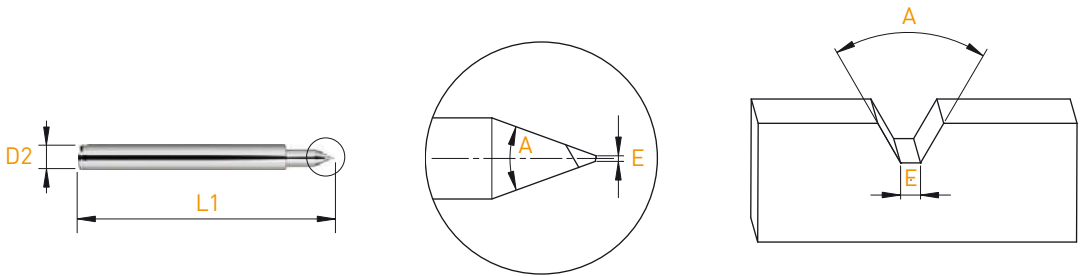
Avec revêtement, augmenter les valeurs de 20-30 %
Mit Beschichtung, Daten um 20-30 % erhöhen
With coating, increase data by 20-30 %

* Bien / Gut / Good
** Très bien / Sehr gut / Very good
*** Excellent / Ausgezeichnet / Excellent

Fraises à graver avec plat - WM 701S

Gravierfräser mit Fläche - WM 701S

Engraving mills with flat - WM 701S

701SE330-P
MD
VHM
HM

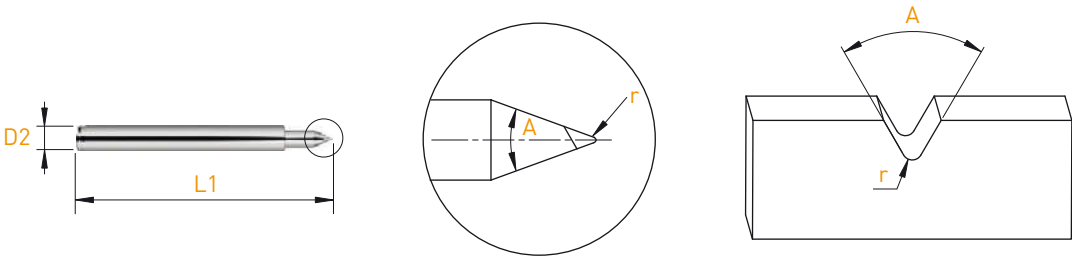
A	E	D2 h4	L1	Art. N°	Z	TiAlN	STF	DLC
30°	0.02-0.10* / 0.10-0.30**	6.00	33	701SE330-P-_(E)	●	●	●	●
35°	0.02-0.10* / 0.10-0.30**	6.00	33	701SE335-P-_(E)	●	●	●	●
40°	0.02-0.10* / 0.10-0.30**	6.00	33	701SE340-P-_(E)	●	●	●	●
50°	0.02-0.10* / 0.10-0.30**	6.00	33	701SE350-P-_(E)	●	●	●	●
60°	0.02-0.10* / 0.10-0.30**	6.00	33	701SE360-P-_(E)	●	●	●	●

* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm

701SE330-R

Fraises à graver à rayon - WM 701S
Gravierfräser mit Radius - WM 701S
Engraving mills with radius - WM 701S



MD
VHM
HM

A	r	D2 h4	L1	Art. N°	Z	TiAIN	STF	DLC
30°	0.04-0.10* / 0.10-0.30**	6.00	33	701SE330-R-_[r]	●	●	●	●
35°	0.04-0.10* / 0.10-0.30**	6.00	33	701SE335-R-_[r]	●	●	●	●
40°	0.04-0.10* / 0.10-0.30**	6.00	33	701SE340-R-_[r]	●	●	●	●
50°	0.04-0.10* / 0.10-0.30**	6.00	33	701SE350-R-_[r]	●	●	●	●
60°	0.04-0.10* / 0.10-0.30**	6.00	33	701SE360-R-_[r]	●	●	●	●

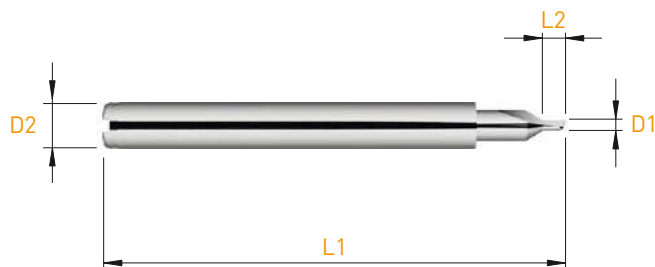
* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm

Fraises en bout - WM 701S

Schaftfräser - WM 701S

End mills - WM 701S

701S3170R-2

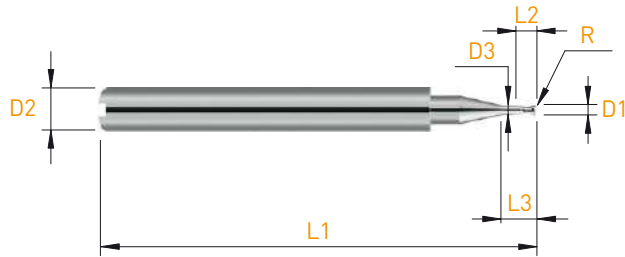
D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAIN	STF	DLC
0.50	1.00	6.00	33	701S3170R-2-0.50	●	●	●	●
1.00	2.00	6.00	33	701S3170R-2-1.00	●	●	●	●
1.50	3.00	6.00	33	701S3170R-2-1.50	●	●	●	●
2.00	4.00	6.00	33	701S3170R-2-2.00	●	●	●	●
2.50	5.00	6.00	33	701S3170R-2-2.50	●	●	●	●
3.00	6.00	6.00	33	701S3170R-2-3.00	●	●	●	●

701S3279T-3X

Fraises en bout toriques - WM 701S

Torische Schaftfräser - WM 701S

Toric end mills - WM 701S

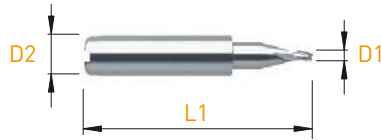


D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4	L1	Art. N°	Z	TiAlN	STF	DLC
0.30	0.05	0.30	0.90	0.27	6.00	33	701S3279T-3X-0.30	●	●	●	●
0.40	0.05	0.40	1.20	0.45	6.00	33	701S3279T-3X-0.40	●	●	●	●
0.50	0.05	0.50	1.50	0.45	6.00	33	701S3279T-3X-0.50	●	●	●	●
0.60	0.05	0.60	1.80	0.55	6.00	33	701S3279T-3X-0.60	●	●	●	●
0.80	0.05	0.80	2.40	0.75	6.00	33	701S3279T-3X-0.80	●	●	●	●
1.00	0.10	1.00	3.00	0.95	6.00	33	701S3279T-3X-1.00	●	●	●	●
1.20	0.10	1.20	3.60	1.15	6.00	33	701S3279T-3X-1.20	●	●	●	●
1.50	0.20	1.50	4.50	1.45	6.00	33	701S3279T-3X-1.50	●	●	●	●
1.80	0.20	1.80	5.40	1.75	6.00	33	701S3279T-3X-1.80	●	●	●	●
2.00	0.20	2.00	6.00	1.95	6.00	33	701S3279T-3X-2.00	●	●	●	●
2.50	0.20	2.50	7.50	2.45	6.00	33	701S3279T-3X-2.50	●	●	●	●
3.00	0.20	3.00	9.00	2.95	6.00	33	701S3279T-3X-3.00	●	●	●	●

Fraises en bout - WM 701S

Schaftfräser - WM 701S

End mills - WM 701S

701S3371-1

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.30	6.00	33	701S3371-1-0.30	●	●	●	●	●
0.40	0.40	6.00	33	701S3371-1-0.40	●	●	●	●	●
0.50	0.50	6.00	33	701S3371-1-0.50	●	●	●	●	●
0.60	0.60	6.00	33	701S3371-1-0.60	●	●	●	●	●
0.80	0.80	6.00	33	701S3371-1-0.80	●	●	●	●	●
1.00	1.00	6.00	33	701S3371-1-1.00	●	●	●	●	●
1.20	1.20	6.00	33	701S3371-1-1.20	●	●	●	●	●
1.50	1.50	6.00	33	701S3371-1-1.50	●	●	●	●	●
1.80	1.80	6.00	33	701S3371-1-1.80	●	●	●	●	●
2.00	2.00	6.00	33	701S3371-1-2.00	●	●	●	●	●
2.50	2.50	6.00	33	701S3371-1-2.50	●	●	●	●	●
3.00	3.00	6.00	33	701S3371-1-3.00	●	●	●	●	●
3.20	3.20	6.00	33	701S3371-1-3.20	●	●	●	●	●

701S3371-2

Fraises en bout - WM 701S
Schaftfräser - WM 701S
End mills - WM 701S



MD
VHM
HM

λ 36°
↓
38°

Sharp
Corner

2xD1

Z=3

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.60	6.00	33	701S3371-2-0.30	●	●	●	●	●
0.40	0.80	6.00	33	701S3371-2-0.40	●	●	●	●	●
0.50	1.00	6.00	33	701S3371-2-0.50	●	●	●	●	●
0.60	1.20	6.00	33	701S3371-2-0.60	●	●	●	●	●
0.80	1.60	6.00	33	701S3371-2-0.80	●	●	●	●	●
1.00	2.00	6.00	33	701S3371-2-1.00	●	●	●	●	●
1.20	2.40	6.00	33	701S3371-2-1.20	●	●	●	●	●
1.50	3.00	6.00	33	701S3371-2-1.50	●	●	●	●	●
1.80	3.60	6.00	33	701S3371-2-1.80	●	●	●	●	●
2.00	4.00	6.00	33	701S3371-2-2.00	●	●	●	●	●
2.50	5.00	6.00	33	701S3371-2-2.50	●	●	●	●	●
3.00	6.00	6.00	33	701S3371-2-3.00	●	●	●	●	●

Fraises en bout - WM 701S

Schaftfräser - WM 701S

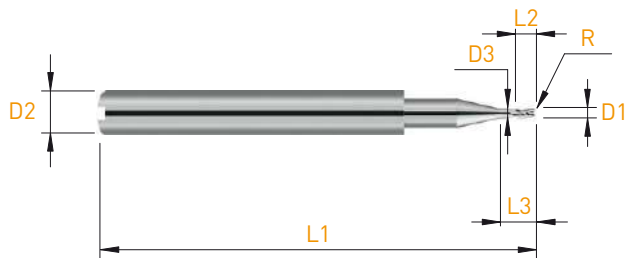
End mills - WM 701S

701S3371-3

D1 +0.005 / -0.010	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
0.30	0.90	6.00	33	701S3371-3-0.30	●	●	●	●	●
0.40	1.20	6.00	33	701S3371-3-0.40	●	●	●	●	●
0.50	1.50	6.00	33	701S3371-3-0.50	●	●	●	●	●
0.60	1.80	6.00	33	701S3371-3-0.60	●	●	●	●	●
0.80	2.40	6.00	33	701S3371-3-0.80	●	●	●	●	●
1.00	3.00	6.00	33	701S3371-3-1.00	●	●	●	●	●
1.20	3.60	6.00	33	701S3371-3-1.20	●	●	●	●	●
1.50	4.50	6.00	33	701S3371-3-1.50	●	●	●	●	●
1.80	5.40	6.00	33	701S3371-3-1.80	●	●	●	●	●
2.00	6.00	6.00	33	701S3371-3-2.00	●	●	●	●	●
2.50	7.50	6.00	33	701S3371-3-2.50	●	●	●	●	●

701S3379T-3X

Fraises en bout toriques - WM 701S
Torische Schaftfräser - WM 701S
Toric end mills - WM 701S



D1 +0.005 / -0.010	R +/- 0.02	L2	L3	D3	D2 h4	L1	Art. N°	Z	TiAIN	STF	DLC
1.00	0.10	2.00	3.00	0.95	6.00	33	701S3379T-3X-1.00	•	•	•	•
1.50	0.20	3.00	4.50	1.45	6.00	33	701S3379T-3X-1.50	•	•	•	•
2.00	0.20	4.00	6.00	1.95	6.00	33	701S3379T-3X-2.00	•	•	•	•

Fraises à angler - WM 701S

Kegelsenker - WM 701S

Chamfering tools - WM 701S

701S3911

MD VHM HM	λ^{0°		Z=3	90°
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D1 +0.010 / -0.010	L2	D2 h4	L1	d +/- 0.02	Art. N°	Z	TiAlN	STF	DLC
0.40	2.00	6.00	33	0.05	701S3911-0.40	●	●	●	●
0.50	2.50	6.00	33	0.05	701S3911-0.50	●	●	●	●
0.60	2.50	6.00	33	0.05	701S3911-0.60	●	●	●	●
1.00	3.00	6.00	33	0.05	701S3911-1.00	●	●	●	●
1.50	4.50	6.00	33	0.05	701S3911-1.50	●	●	●	●
2.00	4.50	6.00	33	0.05	701S3911-2.00	●	●	●	●

Paramètres de coupe indicatifs				
Empfohlene Schnittwerte				> 16.109
Standard machining data				
A	Plat [E] / Rayon [r] Fläche [E] / Radius [r] Flat [E] / Radius [r]	D2	Type	Page
20° / 30° / 35° / 40° 45° / 50° / 55° / 60° 65° / 70° / 90° / 120°	0.05-0.30 0.05-0.10 / every 0.01 0.10-0.30 / every 0.05	Ø3 h4 Ø6 h5	E100-P	> 16.110
20° / 30° / 35° / 40° 45° / 50° / 55° / 60° 65° / 70° / 90°	0.02-0.30 0.02-0.10 / every 0.01 0.10-0.30 / every 0.05	Ø3 h4	E300-P	> 16.111
20° / 30° / 35° / 40° 45° / 50° / 55° / 60° 65° / 70° / 90°	0.04-0.30 0.04-0.10 / every 0.01 0.10-0.30 / every 0.05	Ø3 h4	E300-R	> 16.112
20° / 30° / 35° / 40° 45° / 50° / 55° / 60° 65° / 70° / 90°	0.04-0.30 0.04-0.10 / every 0.01 0.10-0.30 / every 0.05	Ø3 h4	E900-P	> 16.113
20° / 30° / 35° / 40° 45° / 50° / 55° / 60° 65° / 70° / 90°	0.04-0.30 0.04-0.10 / every 0.01 0.10-0.30 / every 0.05	Ø3 h4	E900-R	> 16.114

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Fraises à graver

Gravierfräser

Engraving mills

Matière Werkstoff Material		n	Vf	N	TiAlN	STF	TiCN	DLC
		(tr/min)	(mm/min)					
Acier de décolletage Automatenstahl Free-cutting steel	P	20 - 50'000	100 - 180	-	***	***	**	-
Acier Stahl Steel	< 600 N/mm ² P	20 - 50'000	100 - 180	-	***	***	**	-
Acier Stahl Steel	< 800 N/mm ² P	20 - 50'000	100 - 180	-	***	***	**	-
Acier Stahl Steel	> 800 N/mm ² P	20 - 50'000	100 - 150	-	***	***	**	-
Acier trempé Gehärteter Stahl Hardened steel	-55HRC H	20 - 50'000	-	-	***	***	*	-
Acier trempé Gehärteter Stahl Hardened steel	+55HRC H	20 - 50'00	-	-	***	***	*	-
Inox Rostfreistahl Stainless steel	M	20 - 50'000	100 - 170	-	***	***	**	-
Aluminium	N	20 - 50'000	100 - 250	***	**	**	*	***
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze	N	20 - 50'000	70 - 150	***	**	**	**	***
Matière synthétique Synthetisches Material Synthetic material	N	20 - 50'000	100 - 200	***	**	**	**	***
Métaux précieux Edelmetalle Precious metals	N	20 - 50'000	100 - 200	***	**	**	**	***
Titane Titan Titanium	S	20 - 50'000	70 - 150	-	***	***	**	-
Alliage de nickel Nickel-Legierung Nickel alloy	S	20 - 50'000	80 - 180	-	***	***	**	-
Matière exotique Exotisches material Exotic material	O	20 - 50'000	80 - 180	*	***	***	**	***

Avec revêtement, augmenter les valeurs de 20-30%

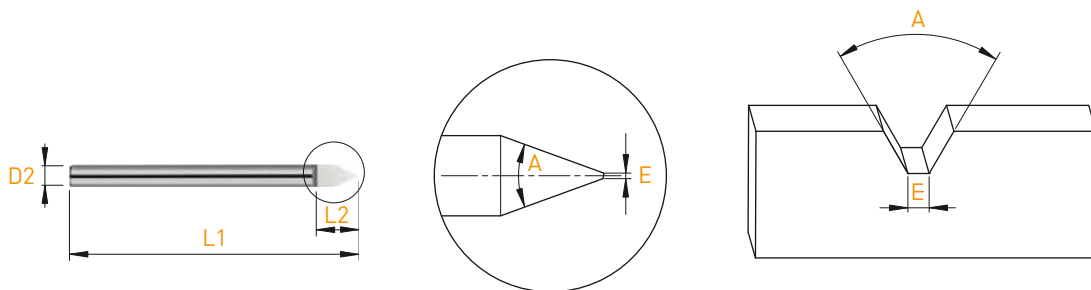
Mit Beschichtung, Daten um 20-30% erhöhen

With coating, increase data by 20-30%

* Bien / Gut / Good

** Très bien / Sehr gut / Very good

*** Excellent / Ausgezeichnet / Excellent



MD
VHM
HM

A	E	L2	D2 h4 Ø3.0 h5 Ø6.0	L1	Art. N°	Z	TiAIN	STF	TiCN	DLC
20°	0.05-0.10* / 0.10-0.30 **	5.20	3.00	33	E120-P-_(E)	●	●	●	●	●
30°	0.05-0.10* / 0.10-0.30 **	5.20	3.00	33	E130-P-_(E)	●	●	●	●	●
35°	0.05-0.10* / 0.10-0.30 **	5.20	3.00	33	E135P-_(E)	●	●	●	●	●
40°	0.05-0.10* / 0.10-0.30 **	6.00	3.00	33	E140-P-_(E)	●	●	●	●	●
45°	0.05-0.10* / 0.10-0.30 **	6.00	3.00	33	E145-P-_(E)	●	●	●	●	●
50°	0.05-0.10* / 0.10-0.30 **	6.00	3.00	33	E150-P-_(E)	●	●	●	●	●
55°	0.05-0.10* / 0.10-0.30 **	6.00	3.00	33	E155-P-_(E)	●	●	●	●	●
60°	0.05-0.10* / 0.10-0.30 **	8.00	3.00	33	E160-P-_(E)	●	●	●	●	●
65°	0.05-0.10* / 0.10-0.30 **	8.00	3.00	33	E165-P-_(E)	●	●	●	●	●
70°	0.05-0.10* / 0.10-0.30 **	8.00	3.00	33	E170-P-_(E)	●	●	●	●	●
90°	0.05-0.10* / 0.10-0.30 **	8.00	3.00	33	E190-P-_(E)	●	●	●	●	●
120°	0.05-0.10* / 0.10-0.30 **	8.00	3.00	33	E1120-P-_(E)	●	●	●	●	●
30°	0.05-0.10* / 0.10-0.30 **	12.00	6.00	40	E130-6-P-_(E)	●	●	●	●	●
40°	0.05-0.10* / 0.10-0.30 **	12.00	6.00	40	E140-6-P-_(E)	●	●	●	●	●

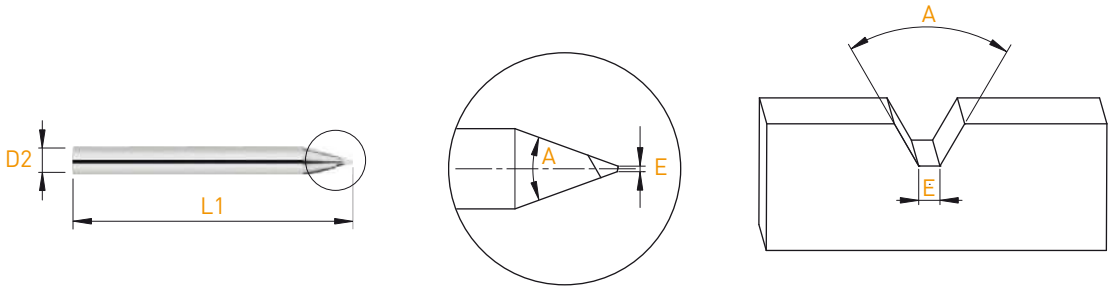
* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm

Fraises à graver avec plat

Gravierfräser mit Fläche

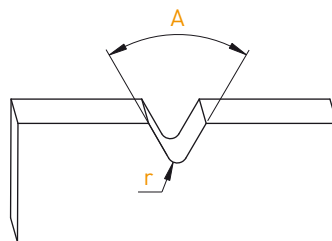
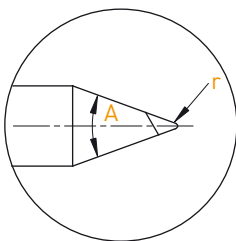
Engraving mills with flat

E300-P
MD
VHM
HM

A	E	D2 _{h4}	L1	Art. N°	N	TiAlN	STF	TiCN	DLC
20°	0.02-0.10* / 0.10-0.30**	3.00	33	E320-P-_(E)	●	●	●	●	●
30°	0.02-0.10* / 0.10-0.30**	3.00	33	E330-P-_(E)	●	●	●	●	●
35°	0.02-0.10* / 0.10-0.30**	3.00	33	E335-P-_(E)	●	●	●	●	●
40°	0.02-0.10* / 0.10-0.30**	3.00	33	E340-P-_(E)	●	●	●	●	●
45°	0.02-0.10* / 0.10-0.30**	3.00	33	E345-P-_(E)	●	●	●	●	●
50°	0.02-0.10* / 0.10-0.30**	3.00	33	E350-P-_(E)	●	●	●	●	●
55°	0.02-0.10* / 0.10-0.30**	3.00	33	E355-P-_(E)	●	●	●	●	●
60°	0.02-0.10* / 0.10-0.30**	3.00	33	E360-P-_(E)	●	●	●	●	●
65°	0.02-0.10* / 0.10-0.30**	3.00	33	E365-P-_(E)	●	●	●	●	●
70°	0.02-0.10* / 0.10-0.30**	3.00	33	E370-P-_(E)	●	●	●	●	●
90°	0.02-0.10* / 0.10-0.30**	3.00	33	E390-P-_(E)	●	●	●	●	●

* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm



MD
VHM
HM

A	r	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
20°	0.04-0.10* / 0.10-0.30**	3.00	33	E320-R-_(r)	●	●	●	●	●
30°	0.04-0.10* / 0.10-0.30**	3.00	33	E330-R-_(r)	●	●	●	●	●
35°	0.04-0.10* / 0.10-0.30**	3.00	33	E335-R-_(r)	●	●	●	●	●
40°	0.04-0.10* / 0.10-0.30**	3.00	33	E340-R-_(r)	●	●	●	●	●
45°	0.04-0.10* / 0.10-0.30**	3.00	33	E345-R-_(r)	●	●	●	●	●
50°	0.04-0.10* / 0.10-0.30**	3.00	33	E350-R-_(r)	●	●	●	●	●
55°	0.04-0.10* / 0.10-0.30**	3.00	33	E355-R-_(r)	●	●	●	●	●
60°	0.04-0.10* / 0.10-0.30**	3.00	33	E360-R-_(r)	●	●	●	●	●
65°	0.04-0.10* / 0.10-0.30**	3.00	33	E365-R-_(r)	●	●	●	●	●
70°	0.04-0.10* / 0.10-0.30**	3.00	33	E370-R-_(r)	●	●	●	●	●
90°	0.04-0.10* / 0.10-0.30**	3.00	33	E390-R-_(r)	●	●	●	●	●

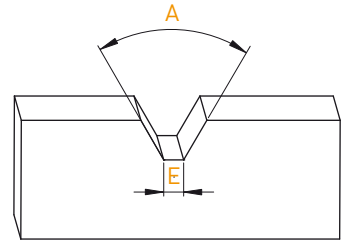
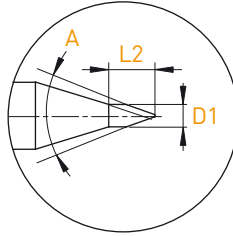
* tous les 0.01 mm
 alle 0.01 mm
 every 0.01 mm

** tous les 0.05 mm
 alle 0.05 mm
 every 0.05 mm

Fraises à graver renforcées

Verstärkte Gravierfräser

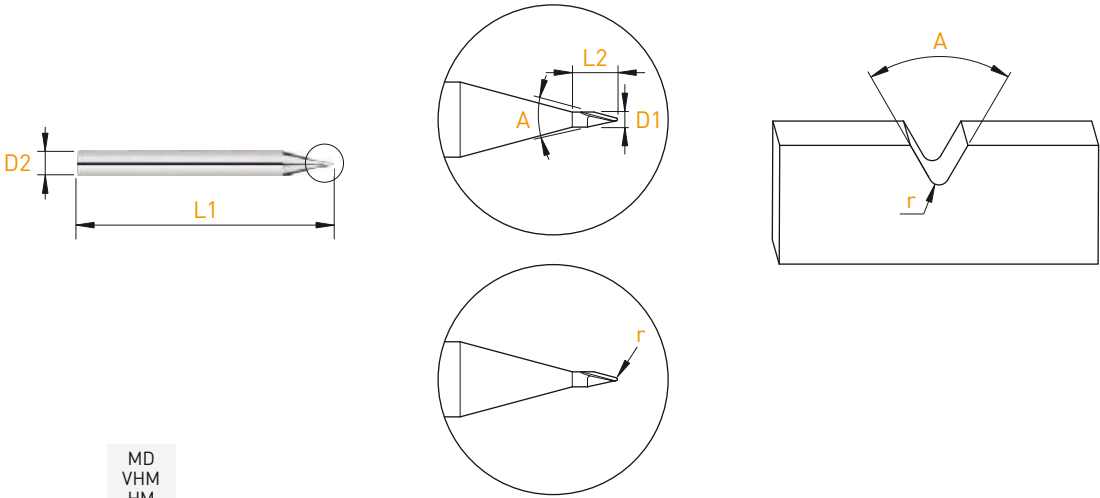
Reinforced engraving mills

E900-PMD
VHM
HM

A	E	D1	L2	D2 h4	L1	Art. N°	Z	TiAlN	STF	TiCN	DLC
20°	0.04-0.10* / 0.10-0.30**	0.60	1.80	3.00	33	E920-P-_(E)	●	●	●	●	●
30°	0.04-0.10* / 0.10-0.30**	0.60	1.80	3.00	33	E930-P-_(E)	●	●	●	●	●
35°	0.04-0.10* / 0.10-0.30**	0.60	1.80	3.00	33	E935-P-_(E)	●	●	●	●	●
40°	0.04-0.10* / 0.10-0.30**	0.60	1.80	3.00	33	E940-P-_(E)	●	●	●	●	●
45°	0.04-0.10* / 0.10-0.30**	1.00	1.80	3.00	33	E945-P-_(E)	●	●	●	●	●
50°	0.04-0.10* / 0.10-0.30**	1.00	2.00	3.00	33	E950-P-_(E)	●	●	●	●	●
55°	0.04-0.10* / 0.10-0.30**	1.00	2.00	3.00	33	E955-P-_(E)	●	●	●	●	●
60°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E960-P-_(E)	●	●	●	●	●
65°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E965-P-_(E)	●	●	●	●	●
70°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E970-P-_(E)	●	●	●	●	●
90°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E990-P-_(E)	●	●	●	●	●

* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm



MD
VHM
HM

A	r	D1	L2	D2 h4	L1	Art. N°	z	TiAlN	STF	TiCN	DLC
20°	0.04-0.10* / 0.10-0.20**	0.60	1.80	3.00	33	E920-R_(E)	●	●	●	●	●
30°	0.04-0.10* / 0.10-0.20**	0.60	1.80	3.00	33	E930-R_(E)	●	●	●	●	●
35°	0.04-0.10* / 0.10-0.20**	0.60	1.80	3.00	33	E935-R_(E)	●	●	●	●	●
40°	0.04-0.10* / 0.10-0.20**	0.60	1.80	3.00	33	E940-R_(E)	●	●	●	●	●
45°	0.04-0.10* / 0.10-0.30**	1.00	1.80	3.00	33	E945-R_(E)	●	●	●	●	●
50°	0.04-0.10* / 0.10-0.30**	1.00	2.00	3.00	33	E950-R_(E)	●	●	●	●	●
55°	0.04-0.10* / 0.10-0.30**	1.00	2.00	3.00	33	E955-R_(E)	●	●	●	●	●
60°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E960-R_(E)	●	●	●	●	●
65°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E965-R_(E)	●	●	●	●	●
70°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E970-R_(E)	●	●	●	●	●
90°	0.04-0.10* / 0.10-0.30**	1.20	2.00	3.00	33	E990-R_(E)	●	●	●	●	●

* tous les 0.01 mm
alle 0.01 mm
every 0.01 mm

** tous les 0.05 mm
alle 0.05 mm
every 0.05 mm

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

> 16.116

Standard machining data

Micro-forets et forets à centrer

Mikrobohrer und Zentrierbohrer

Micro drills and centering drills

Point angle	λ	L2	D1	D2	Type	Page
60°	25°	Div.	Ø 2.00 - 6.00	D1 = D2	2680-60	> 16.118
90°	25°	Div.	Ø 0.50 - 20.00	Ø 2.0 - 20.0 h5	2680-90	> 16.119
90°	25°	Div.	Ø 2.00 - 16.00	D1 = D2	1680-90	> 16.119
120°	25°	Div.	Ø 0.50 - 20.00	Ø 2.0 - 20.0 h5	2680-120	> 16.120
120°	25°	Div.	Ø 2.00 - 12.00	D1 = D2	1680-120	> 16.120

Micro-forets de préperçage

Mikro Pilotbohrer

Micro pilot drill

Z	Point angle	λ	L2	D1	D2	Type	Page
Z2	90°	25° - 32°	Div.	Ø 0.50 - 3.00	Ø2 h5 Ø3 h4	2690	> 16.121
Z2	130°	30°	~ 2 x D1	Ø 0.10 - 2.00	Ø3 h6	2020	> 16.126

Micro-forets avec affûtage à facettes

Mikrobohrer mit Facettenschliff

Micro drills with faceted drill point

Z	Point angle	λ	L2	D1	D2	Type	Page
Z2	118°	25°	~ 5-10 x D1	Ø 0.50 - 6.00	D1 = D2	1010	> 16.122
Z2	118°	25°/35°	~ 5-10 x D1	Ø 0.50 - 6.00	D1 = D2	2010	> 16.123
Z2	120°	30°	~ 2 x D1	Ø 0.80 - 2.00	Ø2 h6	2011	> 16.124
Z2	120°	24°	~ 3 x D1	Ø 0.50 - 2.40	Ø1.5 - 3.0 h6	2012	> 16.124
Z2	120°	35°	~ 8 x D1	Ø 0.40 - 1.90	Ø1.0 - 2.0 h6	2013	> 16.125
Z2	120°	30°	~ 12 x D1	Ø 0.50 - 1.95	Ø1.5 - 2.0 h6	2014	> 16.125
Z2	130°	35°	6 x D1	Ø 0.10 - 3.00	Ø3 h6	2023	> 16.128
Z2	130°	35°	12 x D1	Ø 0.20 - 2.00	Ø3 h6	2026	> 16.131
Z3	140°	35°	5 x D1	Ø 0.20 - 2.99	Ø3 h6	2030	> 16.133

Forets à centrer

Zentrierbohrer

Centering drills

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Matière Werkstoff Material	VC {m/min}	f {mm}	Z	TAIN	STF
Acier de décolletage Automatenstahl Free-cutting steel (P)	60	D1/55	★★	★★★	★★★
Acier Stahl Steel < 600 N/mm² (P)	55	D1/55	★★	★★★	★★★
Acier Stahl Steel < 800 N/mm² (P)	55	D1/55	★★	★★★	★★★
Acier Stahl Steel > 800 N/mm² (P)	55	D1/55	★★	★★★	★★★
Acier trempé Gehärteter Stahl -55HRC (H)	10	D1/100	-	★★★	★★★
Acier trempé Gehärteter Stahl +55HRC (H)	-	-	-	-	-
Inox Rostfreistahl Stainless steel (M)	30	D1/85	★★	★★★	★★★
Aluminium (N)	100 - 180	D1/50	★★★	★★	★★
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze (N)	60 - 90	D1/60	★★★	★★	★★
Matière synthétique Synthetisches Material Synthetic material (N)	350 - 700	D1/60	★★★	★★	★★
Métaux précieux Edelmetalle Precious metals (N)	50 - 80	D1/100	★★★	★★	★★
Titane Titan Titanium (S)	30	D1/115	★★	★★★	★★★
Alliage de nickel Nickel-Legierung Nickel alloy (S)	15 - 20	D1/120	★★	★★★	★★★
Matière exotique Exotisches material Exotic material (O)	10	D1/100	★★	★★★	★★★

Avec revêtement, augmenter les valeurs de 20-30%

Mit Beschichtung, Daten um 20-30% erhöhen

With coating, increase data by 20-30%

★ Bien / Gut / Good

★★ Très bien / Sehr gut / Very good

★★★ Excellent / Ausgezeichnet / Excellent

Paramètres de coupe indicatifs

Empfohlene Schnittwerte

Standard machining data

Forets

Bohrer

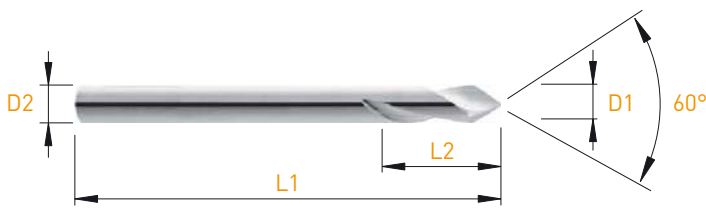
Drills

Matière Werkstoff Material		VC	f	Débouillage Entspannvorgang Pecking
		(m/min)	(mm)	
Acier de décolletage Automatenstahl Free-cutting steel	(P)	60 - 90	D1/70	1.5xØ
Acier Stahl Steel	< 600 N/mm ² (P)	50 - 80	D1/70	1.5xØ
Acier Stahl Steel	< 800 N/mm ² (P)	50 - 80	D1/70	1.5xØ
Acier Stahl Steel	> 800 N/mm ² (P)	50 - 80	D1/70	1.5xØ
Acier trempé Gehärteter Stahl Hardened steel	-55HRC (H)	-	-	-
Acier trempé Gehärteter Stahl Hardened steel	+55HRC (H)	-	-	-
Inox Rostfreistahl Stainless steel	(M)	20 - 30	D1/70	3xØ
Aluminium	(N)	100 - 180	D1/40	2xØ
Cuivre, laiton, bronze Kupfer, Messing, Bronze Copper, brass, bronze	(N)	50 - 85	D1/120	1xØ
Matière synthétique Synthetisches Material Synthetic material	(N)	350 - 750	D1/40	2xØ
Métaux précieux Edelmetalle Precious metals	(N)	60 - 90	D1/100	0.85xØ
Titane Titan Titanium	(S)	20 - 40	D1/120	1.3xØ
Alliage de nickel Nickel-Legierung Nickel alloy	(S)	20	D1/120	1xØ
Matière exotique Exotisches material Exotic material	(O)	5 - 10	D1/100	1xØ

Avec revêtement, augmenter les valeurs de 20-30%

Mit Beschichtung, Daten um 20-30% erhöhen

With coating, increase data by 20-30%



MD VHM HM	λ 25°	60°
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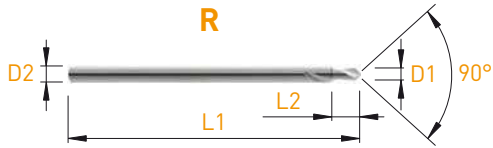
D1 h6	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
2.00	8.00	2.00	39	2680-2.00-60	●	●	●
3.00	10.00	3.00	39	2680-3.00-60	●	●	●
4.00	12.00	4.00	50	2680-4.00-60	●	●	●
5.00	14.00	5.00	50	2680-5.00-60	●	●	●
6.00	16.00	6.00	50	2680-6.00-60	●	●	●

Forets à centrer

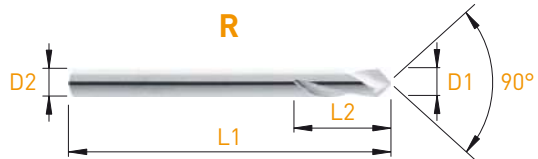
Zentrierbohrer

Centering drills

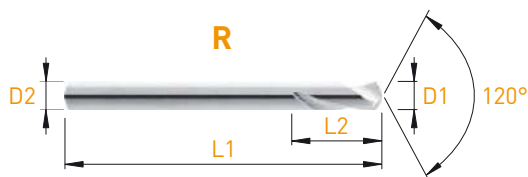
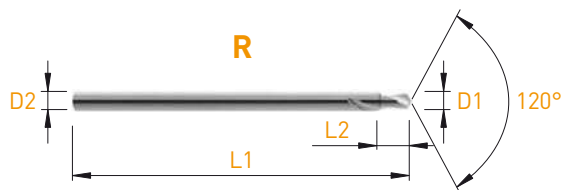
1680-90° / 2680-90°



MD VHM HM	λ	25°	90°	R	
D1 h6	L2	D2 h5	L1	Art. N°	z
0.50	1.50	2.00	39	2680-0.50-90	●
0.60	1.50	2.00	39	2680-0.60-90	●
0.70	1.50	2.00	39	2680-0.70-90	●
0.80	1.50	2.00	39	2680-0.80-90	●
0.90	1.50	2.00	39	2680-0.90-90	●
1.00	3.00	2.00	39	2680-1.00-90	●
1.10	3.00	2.00	39	2680-1.10-90	●
1.20	3.00	2.00	39	2680-1.20-90	●
1.30	3.00	2.00	39	2680-1.30-90	●
1.40	3.00	2.00	39	2680-1.40-90	●
1.50	4.00	2.00	39	2680-1.50-90	●
1.60	4.00	2.00	39	2680-1.60-90	●
1.70	4.00	2.00	39	2680-1.70-90	●
1.80	4.00	2.00	39	2680-1.80-90	●
1.90	4.00	2.00	39	2680-1.90-90	●



MD VHM HM	λ	25°	90°	L		R				HSS	R	
D1 h6	L2	D2 h5	L1	Art. N°	z	Art. N°	z	TiAIN	STF		Art. N°	z
2.00	8.00	2.00	39	1680-2.00-90	●	2680-2.00-90	●	●	●		-	
2.50	8.00	2.50	39	1680-2.50-90	●	2680-2.50-90	●	●	●		-	
3.00	10.00	3.00	39	1680-3.00-90	●	2680-3.00-90	●	●	●		2680-3.00-90-HSS	●
4.00	12.00	4.00	50	1680-4.00-90	●	2680-4.00-90	●	●	●		2680-4.00-90-HSS	●
5.00	15.00	5.00	50	1680-5.00-90	●	2680-5.00-90	●	●	●		2680-5.00-90-HSS	●
6.00	16.00	6.00	57	1680-6.00-90	●	2680-6.00-90	●	●	●		2680-6.00-90-HSS	●
8.00	20.00	8.00	63	1680-8.00-90	●	2680-8.00-90	●				2680-8.00-90-HSS	●
10.00	22.00	10.00	72	1680-10.00-90	●	2680-10.00-90	●				2680-10.00-90-HSS	●
12.00	24.00	12.00	73	1680-12.00-90	●	2680-12.00-90	●				2680-12.00-90-HSS	●
16.00	26.00	16.00	82	1680-16.00-90	●	2680-16.00-90	●				-	
20.00	30.00	20.00	92	-		2680-20.00-90	●				-	



MD VHM HM	λ 25°	120°	R		
D1 h6	L2	D2 h5	L1	Art. N°	z
0.50	1.50	2.00	39	2680-0.50-120	●
0.60	1.50	2.00	39	2680-0.60-120	●
0.70	1.50	2.00	39	2680-0.70-120	●
0.80	1.50	2.00	39	2680-0.80-120	●
0.90	1.50	2.00	39	2680-0.90-120	●
1.00	3.00	2.00	39	2680-1.00-120	●
1.10	3.00	2.00	39	2680-1.10-120	●
1.20	3.00	2.00	39	2680-1.20-120	●
1.30	3.00	2.00	39	2680-1.30-120	●
1.40	3.00	2.00	39	2680-1.40-120	●
1.50	4.00	2.00	39	2680-1.50-120	●
1.60	4.00	2.00	39	2680-1.60-120	●
1.70	4.00	2.00	39	2680-1.70-120	●
1.80	4.00	2.00	39	2680-1.80-120	●
1.90	4.00	2.00	39	2680-1.90-120	●

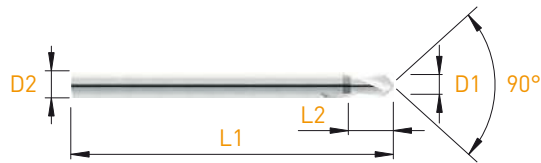
MD VHM HM	λ^{25°	120°				L	R		
D1 h6	L2	D2 h5	L1	Art. N°	z	Art. N°	z	TiAIN	STF
2.00	8.00	2.00	39	1680-2.00-120	●	2680-2.00-120	●	●	●
2.50	8.00	2.50	39	1680-2.50-120	●	2680-2.50-120	●	●	●
3.00	10.00	3.00	39	1680-3.00-120	●	2680-3.00-120	●	●	●
4.00	12.00	4.00	50	1680-4.00-120	●	2680-4.00-120	●	●	●
5.00	15.00	5.00	50	1680-5.00-120	●	2680-5.00-120	●	●	●
6.00	16.00	6.00	57	1680-6.00-120	●	2680-6.00-120	●	●	●
8.00	20.00	8.00	63	1680-8.00-120	●	2680-8.00-120	●		
10.00	22.00	10.00	72	1680-10.00-120	●	2680-10.00-120	●		
12.00	24.00	12.00	73	1680-12.00-120	●	2680-12.00-120	●		
16.00	26.00	16.00	82	-		2680-16.00-120	●		
20.00	30.00	20.00	92	-		2680-20.00-120	●		

Micro-forets de préperçage

Mikro Pilotbohrer

Micro pilot drills

2690

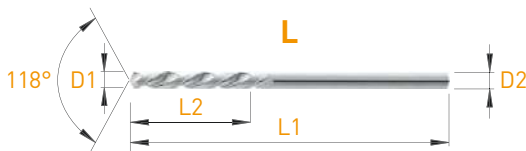


MD VHM HM	λ^{32°	λ^{25°	90°
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D1 h5	L2	D2 h5	L1	Art. N°	Z	TiAlN	STF
0.50*	2.50	2.00	39	2690-0.50	●		
0.60*	2.50	2.00	39	2690-0.60	●		
0.70*	2.50	2.00	39	2690-0.70	●		
0.80*	2.50	2.00	39	2690-0.80	●		
0.90*	2.50	2.00	39	2690-0.90	●		
1.00	3.00	2.00	39	2690-1.00	●		
1.10	3.00	2.00	39	2690-1.10	●		
1.20	3.00	2.00	39	2690-1.20	●		
1.30	3.00	2.00	39	2690-1.30	●		
1.40	3.00	2.00	39	2690-1.40	●		
1.50	3.50	2.00	39	2690-1.50	●		
1.60	3.50	2.00	39	2690-1.60	●		
1.70	3.50	2.00	39	2690-1.70	●		
1.80	3.50	2.00	39	2690-1.80	●		
1.90	3.50	2.00	39	2690-1.90	●		
2.00	-	2.00	39	2690-2.00	●	●	●
2.10	4.00	3.00	39	2690-2.10	●	●	●
2.20	4.00	3.00	39	2690-2.20	●	●	●
2.30	4.00	3.00	39	2690-2.30	●	●	●
2.40	4.00	3.00	39	2690-2.40	●	●	●
2.50	4.00	3.00	39	2690-2.50	●	●	●
2.60	4.00	3.00	39	2690-2.60	●	●	●
2.70	4.00	3.00	39	2690-2.70	●	●	●
2.80	4.00	3.00	39	2690-2.80	●	●	●
2.90	4.00	3.00	39	2690-2.90	●	●	●
3.00	-	3.00	50	2690-3.00	●	●	●

Coupe à gauche
Linksschneidend
Left hand cut

Forets cylindriques
Zylindrische Bohrer
Cylindrical drills



MD
VHM
HM

λ^{25°

Z=2

118°



L

L

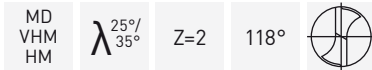
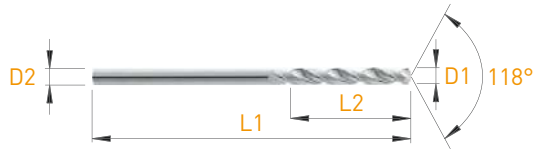
D1 h6 D2 h6	L1	L2	Art. N°	z	D1 h6 D2 h6	L1	L2	Art. N°	z
0.50	30	5.00	1010-0.50	●	2.55	45	18.00	1010-2.55	●
0.55	30	5.00	1010-0.55	●	2.60	45	18.00	1010-2.60	●
0.60	30	5.00	1010-0.60	●	2.65	45	18.00	1010-2.65	●
0.65	30	6.00	1010-0.65	●	2.70	45	18.00	1010-2.70	●
0.70	30	6.00	1010-0.70	●	2.75	45	18.00	1010-2.75	●
0.75	30	8.00	1010-0.75	●	2.80	45	18.00	1010-2.80	●
0.80	30	8.00	1010-0.80	●	2.85	45	18.00	1010-2.85	●
0.85	30	9.00	1010-0.85	●	2.90	45	18.00	1010-2.90	●
0.90	30	9.00	1010-0.90	●	2.95	45	18.00	1010-2.95	●
0.95	30	10.00	1010-0.95	●	3.00	45	18.00	1010-3.00	●
1.00	30	10.00	1010-1.00	●	3.10	50	20.00	1010-3.10	●
1.05	30	10.00	1010-1.05	●	3.20	50	20.00	1010-3.20	●
1.10	30	10.00	1010-1.10	●	3.30	50	20.00	1010-3.30	●
1.15	30	12.00	1010-1.15	●	3.40	50	20.00	1010-3.40	●
1.20	30	12.00	1010-1.20	●	3.50	50	20.00	1010-3.50	●
1.25	30	12.00	1010-1.25	●	3.60	50	20.00	1010-3.60	●
1.30	30	12.00	1010-1.30	●	3.70	50	20.00	1010-3.70	●
1.35	30	12.00	1010-1.35	●	3.80	50	20.00	1010-3.80	●
1.40	30	12.00	1010-1.40	●	3.90	50	20.00	1010-3.90	●
1.45	30	12.00	1010-1.45	●	4.00	50	20.00	1010-4.00	●
1.50	30	12.00	1010-1.50	●	4.10	50	25.00	1010-4.10	●
1.55	40	16.00	1010-1.55	●	4.20	50	25.00	1010-4.20	●
1.60	40	16.00	1010-1.60	●	4.30	50	25.00	1010-4.30	●
1.65	40	16.00	1010-1.65	●	4.40	50	25.00	1010-4.40	●
1.70	40	16.00	1010-1.70	●	4.50	50	25.00	1010-4.50	●
1.75	40	16.00	1010-1.75	●	4.60	50	25.00	1010-4.60	●
1.80	40	16.00	1010-1.80	●	4.70	50	25.00	1010-4.70	●
1.85	40	16.00	1010-1.85	●	4.80	50	25.00	1010-4.80	●
1.90	40	16.00	1010-1.90	●	4.90	50	25.00	1010-4.90	●
1.95	40	16.00	1010-1.95	●	5.00	50	25.00	1010-5.00	●
2.00	40	16.00	1010-2.00	●	5.10	50	25.00	1010-5.10	●
2.05	40	18.00	1010-2.05	●	5.20	50	25.00	1010-5.20	●
2.10	40	18.00	1010-2.10	●	5.30	50	25.00	1010-5.30	●
2.15	40	18.00	1010-2.15	●	5.40	50	25.00	1010-5.40	●
2.20	40	18.00	1010-2.20	●	5.50	50	25.00	1010-5.50	●
2.25	40	18.00	1010-2.25	●	5.60	50	25.00	1010-5.60	●
2.30	40	18.00	1010-2.30	●	5.70	50	25.00	1010-5.70	●
2.35	40	18.00	1010-2.35	●	5.80	50	25.00	1010-5.80	●
2.40	40	18.00	1010-2.40	●	5.90	50	25.00	1010-5.90	●
2.45	40	18.00	1010-2.45	●	6.00	50	25.00	1010-6.00	●
2.50	40	18.00	1010-2.50	●					

Forets cylindriques

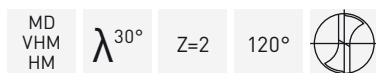
Zylindrische Bohrer

Cylindrical drills

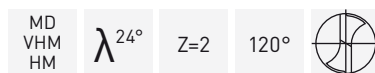
2010



D1 h ₆ D2 h ₆	L1	L2	Art. N°	z	D1 h ₆ D2 h ₆	L1	L2	Art. N°	z
0.50	30	5.00	2010-0.50	●	2.55	45	18.00	2010-2.55	●
0.55	30	5.00	2010-0.55	●	2.60	45	18.00	2010-2.60	●
0.60	30	5.00	2010-0.60	●	2.65	45	18.00	2010-2.65	●
0.65	30	6.00	2010-0.65	●	2.70	45	18.00	2010-2.70	●
0.70	30	6.00	2010-0.70	●	2.75	45	18.00	2010-2.75	●
0.75	30	8.00	2010-0.75	●	2.80	45	18.00	2010-2.80	●
0.80	30	8.00	2010-0.80	●	2.85	45	18.00	2010-2.85	●
0.85	30	9.00	2010-0.85	●	2.90	45	18.00	2010-2.90	●
0.90	30	9.00	2010-0.90	●	2.95	45	18.00	2010-2.95	●
0.95	30	10.00	2010-0.95	●	3.00	45	18.00	2010-3.00	●
1.00	30	10.00	2010-1.00	●	3.10	50	20.00	2010-3.10	●
1.05	30	10.00	2010-1.05	●	3.20	50	20.00	2010-3.20	●
1.10	30	10.00	2010-1.10	●	3.30	50	20.00	2010-3.30	●
1.15	30	12.00	2010-1.15	●	3.40	50	20.00	2010-3.40	●
1.20	30	12.00	2010-1.20	●	3.50	50	20.00	2010-3.50	●
1.25	30	12.00	2010-1.25	●	3.60	50	20.00	2010-3.60	●
1.30	30	12.00	2010-1.30	●	3.70	50	20.00	2010-3.70	●
1.35	30	12.00	2010-1.35	●	3.80	50	20.00	2010-3.80	●
1.40	30	12.00	2010-1.40	●	3.90	50	20.00	2010-3.90	●
1.45	30	12.00	2010-1.45	●	4.00	50	20.00	2010-4.00	●
1.50	30	12.00	2010-1.50	●	4.10	50	25.00	2010-4.10	●
1.55	40	16.00	2010-1.55	●	4.20	50	25.00	2010-4.20	●
1.60	40	16.00	2010-1.60	●	4.30	50	25.00	2010-4.30	●
1.65	40	16.00	2010-1.65	●	4.40	50	25.00	2010-4.40	●
1.70	40	16.00	2010-1.70	●	4.50	50	25.00	2010-4.50	●
1.75	40	16.00	2010-1.75	●	4.60	50	25.00	2010-4.60	●
1.80	40	16.00	2010-1.80	●	4.70	50	25.00	2010-4.70	●
1.85	40	16.00	2010-1.85	●	4.80	50	25.00	2010-4.80	●
1.90	40	16.00	2010-1.90	●	4.90	50	25.00	2010-4.90	●
1.95	40	16.00	2010-1.95	●	5.00	50	25.00	2010-5.00	●
2.00	40	16.00	2010-2.00	●	5.10	50	25.00	2010-5.10	●
2.05	40	18.00	2010-2.05	●	5.20	50	25.00	2010-5.20	●
2.10	40	18.00	2010-2.10	●	5.30	50	25.00	2010-5.30	●
2.15	40	18.00	2010-2.15	●	5.40	50	25.00	2010-5.40	●
2.20	40	18.00	2010-2.20	●	5.50	50	25.00	2010-5.50	●
2.25	40	18.00	2010-2.25	●	5.60	50	25.00	2010-5.60	●
2.30	40	18.00	2010-2.30	●	5.70	50	25.00	2010-5.70	●
2.35	40	18.00	2010-2.35	●	5.80	50	25.00	2010-5.80	●
2.40	40	18.00	2010-2.40	●	5.90	50	25.00	2010-5.90	●
2.45	40	18.00	2010-2.45	●	6.00	50	25.00	2010-6.00	●
2.50	40	18.00	2010-2.50	●					



D1 h6	L2	D2 h6	L1	Art. N°	z
0.80	2.50	2.00	30	2011-0.80	●
0.90	2.50	2.00	30	2011-0.90	●
1.00	2.50	2.00	30	2011-1.00	●
1.10	2.50	2.00	30	2011-1.10	●
1.20	2.50	2.00	30	2011-1.20	●
1.30	2.50	2.00	30	2011-1.30	●
1.40	2.50	2.00	30	2011-1.40	●
1.50	2.50	2.00	30	2011-1.50	●
2.00	2.50	2.00	30	2011-2.00	●



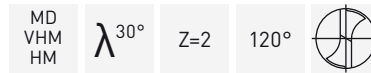
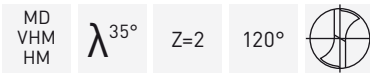
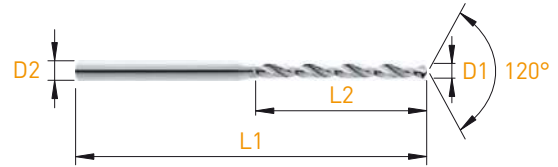
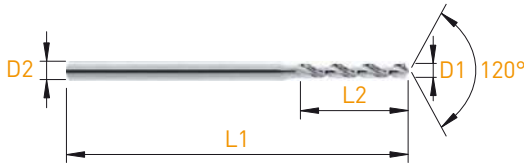
D1 h6	L2	D2 Ø1.5h6 Ø2h6 Ø3h5	L1	Art. N°	z
0.50	1.70	1.50	30	2012-0.50	●
0.55	1.90	1.50	30	2012-0.55	●
0.60	1.90	1.50	30	2012-0.60	●
0.65	1.90	1.50	30	2012-0.65	●
0.70	2.40	1.50	30	2012-0.70	●
0.75	2.40	1.50	30	2012-0.75	●
0.80	2.60	1.50	30	2012-0.80	●
0.85	2.60	1.50	30	2012-0.85	●
0.90	3.00	1.50	30	2012-0.90	●
0.95	3.00	1.50	30	2012-0.95	●
1.00	3.40	1.50	30	2012-1.00	●
1.10	3.80	1.50	30	2012-1.10	●
1.20	4.20	1.50	30	2012-1.20	●
1.30	4.20	1.50	30	2012-1.30	●
1.40	4.70	1.50	30	2012-1.40	●
1.50	4.70	2.00	38	2012-1.50	●
1.60	5.40	2.00	38	2012-1.60	●
1.70	5.40	2.00	38	2012-1.70	●
1.80	6.50	2.00	38	2012-1.80	●
1.90	6.50	2.00	38	2012-1.90	●
2.00	6.50	3.00	38	2012-2.00	●
2.10	6.50	3.00	38	2012-2.10	●
2.20	6.50	3.00	38	2012-2.20	●
2.30	6.50	3.00	38	2012-2.30	●
2.40	6.50	3.00	38	2012-2.40	●

Micro-forets

Mikrobohrer

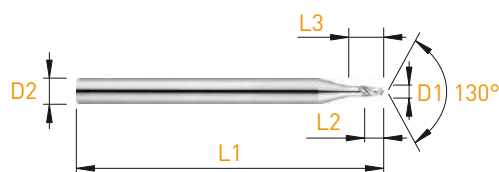
Micro drills

2013 / 2014



D1 h ₆	L2	D2 h ₆	L1	Art. N°	z
0.40	3.60	1.00	25	2013-0.40	●
0.45	3.60	1.00	25	2013-0.45	●
0.50	4.00	1.00	25	2013-0.50	●
0.55	4.50	1.00	25	2013-0.55	●
0.60	4.50	1.50	30	2013-0.60	●
0.65	5.00	1.50	30	2013-0.65	●
0.70	5.60	1.50	30	2013-0.70	●
0.75	5.60	1.50	30	2013-0.75	●
0.80	6.30	1.50	30	2013-0.80	●
0.85	6.30	1.50	30	2013-0.85	●
0.90	7.10	1.50	30	2013-0.90	●
0.95	7.10	1.50	30	2013-0.95	●
1.00	8.00	1.50	30	2013-1.00	●
1.05	8.00	1.50	30	2013-1.05	●
1.10	9.00	1.50	30	2013-1.10	●
1.15	9.00	1.50	30	2013-1.15	●
1.20	10.00	1.50	30	2013-1.20	●
1.25	10.00	1.50	30	2013-1.25	●
1.30	10.00	1.50	30	2013-1.30	●
1.35	11.20	1.50	30	2013-1.35	●
1.40	11.20	1.50	30	2013-1.40	●
1.45	11.20	1.50	30	2013-1.45	●
1.50	12.00	2.00	38	2013-1.50	●
1.60	12.00	2.00	38	2013-1.60	●
1.70	12.00	2.00	38	2013-1.70	●
1.80	12.00	2.00	38	2013-1.80	●
1.90	12.00	2.00	38	2013-1.90	●

D1 h ₆	L2	D2 h ₆	L1	Art. N°	z
0.50	6.00	1.50	30	2014-0.50	●
0.55	6.50	1.50	30	2014-0.55	●
0.60	6.50	1.50	30	2014-0.60	●
0.65	7.50	1.50	30	2014-0.65	●
0.70	8.50	1.50	30	2014-0.70	●
0.75	8.50	1.50	30	2014-0.75	●
0.80	9.50	1.50	30	2014-0.80	●
0.85	9.50	1.50	30	2014-0.85	●
0.90	10.50	1.50	30	2014-0.90	●
0.95	10.50	1.50	30	2014-0.95	●
1.00	12.00	1.50	38	2014-1.00	●
1.05	12.00	1.50	38	2014-1.05	●
1.10	13.50	1.50	38	2014-1.10	●
1.15	13.50	1.50	38	2014-1.15	●
1.20	15.00	1.50	38	2014-1.20	●
1.25	15.00	1.50	38	2014-1.25	●
1.30	17.00	1.50	38	2014-1.30	●
1.35	17.00	1.50	38	2014-1.35	●
1.40	17.00	1.50	38	2014-1.40	●
1.45	17.00	1.50	38	2014-1.45	●
1.50	18.00	2.00	38	2014-1.50	●
1.55	18.00	2.00	38	2014-1.55	●
1.60	18.00	2.00	38	2014-1.60	●
1.65	18.00	2.00	38	2014-1.65	●
1.70	18.00	2.00	38	2014-1.70	●
1.75	18.00	2.00	38	2014-1.75	●
1.80	18.00	2.00	38	2014-1.80	●
1.85	18.00	2.00	38	2014-1.85	●
1.90	18.00	2.00	38	2014-1.90	●
1.95	18.00	2.00	38	2014-1.95	●



MD VHM HM	λ^{30°	2xD1	Z=2	130°	
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D1 +0.005 / 0	L2	L3	D2 h ₆	L1	Art. N°	Z
0.10	0.35	0.55	3.00	38	2020-0.10	●
0.11	0.35	0.55	3.00	38	2020-0.11	●
0.12	0.35	0.55	3.00	38	2020-0.12	●
0.13	0.40	0.60	3.00	38	2020-0.13	●
0.14	0.40	0.60	3.00	38	2020-0.14	●
0.15	0.40	0.60	3.00	38	2020-0.15	●
0.16	0.40	0.60	3.00	38	2020-0.16	●
0.17	0.50	0.70	3.00	38	2020-0.17	●
0.18	0.50	0.70	3.00	38	2020-0.18	●
0.19	0.50	0.70	3.00	38	2020-0.19	●
0.20	0.55	0.75	3.00	38	2020-0.20	●
0.21	0.55	0.75	3.00	38	2020-0.21	●
0.22	0.60	0.80	3.00	38	2020-0.22	●
0.23	0.60	0.80	3.00	38	2020-0.23	●
0.24	0.60	0.80	3.00	38	2020-0.24	●
0.25	0.70	0.90	3.00	38	2020-0.25	●
0.26	0.70	0.90	3.00	38	2020-0.26	●
0.27	0.70	0.90	3.00	38	2020-0.27	●
0.28	0.80	1.00	3.00	38	2020-0.28	●
0.29	0.80	1.00	3.00	38	2020-0.29	●
0.30	0.90	1.20	3.00	38	2020-0.30	●
0.31	0.90	1.20	3.00	38	2020-0.31	●
0.32	0.90	1.20	3.00	38	2020-0.32	●
0.33	0.90	1.20	3.00	38	2020-0.33	●
0.34	0.90	1.35	3.00	38	2020-0.34	●
0.35	0.90	1.35	3.00	38	2020-0.35	●
0.36	0.95	1.35	3.00	38	2020-0.36	●
0.37	0.95	1.35	3.00	38	2020-0.37	●
0.38	0.95	1.50	3.00	38	2020-0.38	●
0.39	0.95	1.50	3.00	38	2020-0.39	●
0.40	0.80	1.60	3.00	38	2020-0.40	●
0.41	0.82	1.60	3.00	38	2020-0.41	●
0.42	0.84	1.60	3.00	38	2020-0.42	●
0.43	0.86	1.60	3.00	38	2020-0.43	●
0.44	0.88	1.60	3.00	38	2020-0.44	●
0.45	0.90	1.60	3.00	38	2020-0.45	●
0.46	0.92	1.70	3.00	38	2020-0.46	●
0.47	0.94	1.70	3.00	38	2020-0.47	●
0.48	0.96	1.70	3.00	38	2020-0.48	●

D1 +0.005 / 0	L2	L3	D2 h ₆	L1	Art. N°	Z
0.49	0.98	1.70	3.00	38	2020-0.49	●
0.50	1.00	1.70	3.00	38	2020-0.50	●
0.51	1.02	1.80	3.00	38	2020-0.51	●
0.52	1.04	1.80	3.00	38	2020-0.52	●
0.53	1.06	1.80	3.00	38	2020-0.53	●
0.54	1.08	1.80	3.00	38	2020-0.54	●
0.55	1.10	1.80	3.00	38	2020-0.55	●
0.56	1.12	1.90	3.00	38	2020-0.56	●
0.57	1.14	1.90	3.00	38	2020-0.57	●
0.58	1.16	1.90	3.00	38	2020-0.58	●
0.59	1.18	1.90	3.00	38	2020-0.59	●
0.60	1.20	1.90	3.00	38	2020-0.60	●
0.61	1.22	2.00	3.00	38	2020-0.61	●
0.62	1.24	2.00	3.00	38	2020-0.62	●
0.63	1.26	2.00	3.00	38	2020-0.63	●
0.64	1.28	2.00	3.00	38	2020-0.64	●
0.65	1.30	2.00	3.00	38	2020-0.65	●
0.66	1.32	2.10	3.00	38	2020-0.66	●
0.67	1.34	2.10	3.00	38	2020-0.67	●
0.68	1.36	2.10	3.00	38	2020-0.68	●
0.69	1.38	2.10	3.00	38	2020-0.69	●
0.70	1.40	2.10	3.00	38	2020-0.70	●
0.71	1.42	2.20	3.00	38	2020-0.71	●
0.72	1.44	2.20	3.00	38	2020-0.72	●
0.73	1.46	2.20	3.00	38	2020-0.73	●
0.74	1.48	2.20	3.00	38	2020-0.74	●
0.75	1.50	2.20	3.00	38	2020-0.75	●
0.76	1.52	2.30	3.00	38	2020-0.76	●
0.77	1.54	2.30	3.00	38	2020-0.77	●
0.78	1.56	2.30	3.00	38	2020-0.78	●
0.79	1.58	2.30	3.00	38	2020-0.79	●
0.80	1.60	2.30	3.00	38	2020-0.80	●
0.81	1.62	2.40	3.00	38	2020-0.81	●
0.82	1.64	2.40	3.00	38	2020-0.82	●
0.83	1.66	2.40	3.00	38	2020-0.83	●
0.84	1.68	2.40	3.00	38	2020-0.84	●
0.85	1.70	2.40	3.00	38	2020-0.85	●
0.86	1.72	2.50	3.00	38	2020-0.86	●
0.87	1.74	2.50	3.00	38	2020-0.87	●
0.88	1.76	2.50	3.00	38	2020-0.88	●
0.89	1.78	2.50	3.00	38	2020-0.89	●
0.90	1.80	2.50	3.00	38	2020-0.90	●
0.91	1.82	2.60	3.00	38	2020-0.91	●
0.92	1.84	2.60	3.00	38	2020-0.92	●
0.93	1.86	2.60	3.00	38	2020-0.93	●
0.94	1.88	2.60	3.00	38	2020-0.94	●
0.95	1.90	2.60	3.00	38	2020-0.95	●
0.96	1.92	2.70	3.00	38	2020-0.96	●
0.97	1.94	2.70	3.00	38	2020-0.97	●
0.98	1.96	2.70	3.00	38	2020-0.98	●
0.99	1.98	2.70	3.00	38	2020-0.99	●

Micro-forets de préperçage

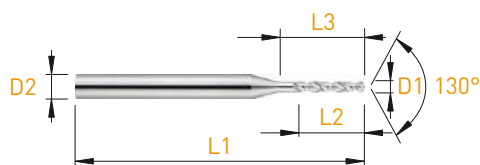
Mikro Pilotbohrer

Micro pilot drills

Ø 1.00 - Ø 2.00 mm

2020

D1 +0.005 / 0	L2	L3	D2 h ₆	L1	Art. N°	z	D1 +0.005 / 0	L2	L3	D2 h ₆	L1	Art. N°	z
1.00	2.00	2.70	3.00	38	2020-1.00	●	1.51	3.02	5.10	3.00	38	2020-1.51	●
1.01	2.02	3.50	3.00	38	2020-1.01	●	1.52	3.04	5.10	3.00	38	2020-1.52	●
1.02	2.04	3.50	3.00	38	2020-1.02	●	1.53	3.06	5.10	3.00	38	2020-1.53	●
1.03	2.06	3.50	3.00	38	2020-1.03	●	1.54	3.08	5.10	3.00	38	2020-1.54	●
1.04	2.08	3.50	3.00	38	2020-1.04	●	1.55	3.10	5.10	3.00	38	2020-1.55	●
1.05	2.10	3.50	3.00	38	2020-1.05	●	1.56	3.12	5.20	3.00	38	2020-1.56	●
1.06	2.12	3.60	3.00	38	2020-1.06	●	1.57	3.14	5.20	3.00	38	2020-1.57	●
1.07	2.14	3.60	3.00	38	2020-1.07	●	1.58	3.16	5.20	3.00	38	2020-1.58	●
1.08	2.16	3.60	3.00	38	2020-1.08	●	1.59	3.18	5.20	3.00	38	2020-1.59	●
1.09	2.18	3.60	3.00	38	2020-1.09	●	1.60	3.20	5.20	3.00	38	2020-1.60	●
1.10	2.20	3.60	3.00	38	2020-1.10	●	1.61	3.22	5.30	3.00	38	2020-1.61	●
1.11	2.22	3.70	3.00	38	2020-1.11	●	1.62	3.24	5.30	3.00	38	2020-1.62	●
1.12	2.24	3.70	3.00	38	2020-1.12	●	1.63	3.26	5.30	3.00	38	2020-1.63	●
1.13	2.26	3.70	3.00	38	2020-1.13	●	1.64	3.28	5.30	3.00	38	2020-1.64	●
1.14	2.28	3.70	3.00	38	2020-1.14	●	1.65	3.30	5.30	3.00	38	2020-1.65	●
1.15	2.30	3.70	3.00	38	2020-1.15	●	1.66	3.32	5.40	3.00	38	2020-1.66	●
1.16	2.32	3.80	3.00	38	2020-1.16	●	1.67	3.34	5.40	3.00	38	2020-1.67	●
1.17	2.34	3.80	3.00	38	2020-1.17	●	1.68	3.36	5.40	3.00	38	2020-1.68	●
1.18	2.36	3.80	3.00	38	2020-1.18	●	1.69	3.38	5.40	3.00	38	2020-1.69	●
1.19	2.38	3.80	3.00	38	2020-1.19	●	1.70	3.40	5.40	3.00	38	2020-1.70	●
1.20	2.40	3.80	3.00	38	2020-1.20	●	1.71	3.42	5.50	3.00	38	2020-1.71	●
1.21	2.42	4.20	3.00	38	2020-1.21	●	1.72	3.44	5.50	3.00	38	2020-1.72	●
1.22	2.44	4.20	3.00	38	2020-1.22	●	1.73	3.46	5.50	3.00	38	2020-1.73	●
1.23	2.46	4.20	3.00	38	2020-1.23	●	1.74	3.48	5.50	3.00	38	2020-1.74	●
1.24	2.48	4.20	3.00	38	2020-1.24	●	1.75	3.50	5.50	3.00	38	2020-1.75	●
1.25	2.50	4.20	3.00	38	2020-1.25	●	1.76	3.52	5.60	3.00	38	2020-1.76	●
1.26	2.52	4.30	3.00	38	2020-1.26	●	1.77	3.54	5.60	3.00	38	2020-1.77	●
1.27	2.54	4.30	3.00	38	2020-1.27	●	1.78	3.56	5.60	3.00	38	2020-1.78	●
1.28	2.56	4.30	3.00	38	2020-1.28	●	1.79	3.58	5.60	3.00	38	2020-1.79	●
1.29	2.58	4.30	3.00	38	2020-1.29	●	1.80	3.60	5.60	3.00	38	2020-1.80	●
1.30	2.60	4.30	3.00	38	2020-1.30	●	1.81	3.62	5.70	3.00	38	2020-1.81	●
1.31	2.62	4.40	3.00	38	2020-1.31	●	1.82	3.64	5.70	3.00	38	2020-1.82	●
1.32	2.64	4.40	3.00	38	2020-1.32	●	1.83	3.66	5.70	3.00	38	2020-1.83	●
1.33	2.66	4.40	3.00	38	2020-1.33	●	1.84	3.68	5.70	3.00	38	2020-1.84	●
1.34	2.68	4.40	3.00	38	2020-1.34	●	1.85	3.70	5.70	3.00	38	2020-1.85	●
1.35	2.70	4.40	3.00	38	2020-1.35	●	1.86	3.72	5.80	3.00	38	2020-1.86	●
1.36	2.72	4.50	3.00	38	2020-1.36	●	1.87	3.74	5.80	3.00	38	2020-1.87	●
1.37	2.74	4.50	3.00	38	2020-1.37	●	1.88	3.76	5.80	3.00	38	2020-1.88	●
1.38	2.76	4.50	3.00	38	2020-1.38	●	1.89	3.78	5.80	3.00	38	2020-1.89	●
1.39	2.78	4.50	3.00	38	2020-1.39	●	1.90	3.80	5.80	3.00	38	2020-1.90	●
1.40	2.80	4.50	3.00	38	2020-1.40	●	1.91	3.82	5.90	3.00	38	2020-1.91	●
1.41	2.82	4.60	3.00	38	2020-1.41	●	1.92	3.84	5.90	3.00	38	2020-1.92	●
1.42	2.84	4.60	3.00	38	2020-1.42	●	1.93	3.86	5.90	3.00	38	2020-1.93	●
1.43	2.86	4.60	3.00	38	2020-1.43	●	1.94	3.88	5.90	3.00	38	2020-1.94	●
1.44	2.88	4.60	3.00	38	2020-1.44	●	1.95	3.90	5.90	3.00	38	2020-1.95	●
1.45	2.90	4.60	3.00	38	2020-1.45	●	1.96	3.92	6.00	3.00	38	2020-1.96	●
1.46	2.92	4.70	3.00	38	2020-1.46	●	1.97	3.94	6.00	3.00	38	2020-1.97	●
1.47	2.94	4.70	3.00	38	2020-1.47	●	1.98	3.96	6.00	3.00	38	2020-1.98	●
1.48	2.96	4.70	3.00	38	2020-1.48	●	1.99	3.98	6.00	3.00	38	2020-1.99	●
1.49	2.98	4.70	3.00	38	2020-1.49	●	2.00	4.00	6.00	3.00	38	2020-2.00	●
1.50	3.00	4.70	3.00	38	2020-1.50	●							



MD VHM HM	λ^{35°	6xD1	Z=2	130°	
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D1 0 / -0.004	L2	L3	D2 h ₆	L1	Art. N°	z
0.10	0.50	0.70	3.00	38	2023-0.10	●
0.11	0.50	0.70	3.00	38	2023-0.11	●
0.12	0.50	0.70	3.00	38	2023-0.12	●
0.13	0.80	1.00	3.00	38	2023-0.13	●
0.14	0.80	1.00	3.00	38	2023-0.14	●
0.15	0.80	1.00	3.00	38	2023-0.15	●
0.16	1.10	1.40	3.00	38	2023-0.16	●
0.17	1.10	1.40	3.00	38	2023-0.17	●
0.18	1.10	1.40	3.00	38	2023-0.18	●
0.19	1.10	1.40	3.00	38	2023-0.19	●
0.20	1.50	1.80	3.00	38	2023-0.20	●
0.21	1.50	1.80	3.00	38	2023-0.21	●
0.22	1.50	1.80	3.00	38	2023-0.22	●
0.23	1.50	1.80	3.00	38	2023-0.23	●
0.24	1.50	1.80	3.00	38	2023-0.24	●
0.25	1.90	2.20	3.00	38	2023-0.25	●
0.26	1.90	2.20	3.00	38	2023-0.26	●
0.27	1.90	2.20	3.00	38	2023-0.27	●
0.28	1.90	2.20	3.00	38	2023-0.28	●
0.29	1.90	2.20	3.00	38	2023-0.29	●
0.30	1.80	2.40	3.00	38	2023-0.30	●
0.31	1.80	2.40	3.00	38	2023-0.31	●
0.32	1.80	2.40	3.00	38	2023-0.32	●
0.33	1.80	2.40	3.00	38	2023-0.33	●
0.34	1.80	2.40	3.00	38	2023-0.34	●
0.35	2.20	2.80	3.00	38	2023-0.35	●
0.36	2.20	2.80	3.00	38	2023-0.36	●
0.37	2.20	2.80	3.00	38	2023-0.37	●
0.38	2.20	2.80	3.00	38	2023-0.38	●
0.39	2.70	3.60	3.00	38	2023-0.39	●
0.40	2.70	3.60	3.00	38	2023-0.40	●
0.41	2.70	3.60	3.00	38	2023-0.41	●
0.42	2.70	3.60	3.00	38	2023-0.42	●
0.43	2.70	3.60	3.00	38	2023-0.43	●
0.44	2.70	3.60	3.00	38	2023-0.44	●
0.45	2.70	3.60	3.00	38	2023-0.45	●
0.46	2.70	3.60	3.00	38	2023-0.46	●
0.47	2.70	3.60	3.00	38	2023-0.47	●
0.48	2.70	3.60	3.00	38	2023-0.48	●

D1 0 / -0.004	L2	L3	D2 h ₆	L1	Art. N°	z
0.49	3.20	4.00	3.00	38	2023-0.49	●
0.50	3.20	4.00	3.00	38	2023-0.50	●
0.51	3.20	4.00	3.00	38	2023-0.51	●
0.52	3.20	4.00	3.00	38	2023-0.52	●
0.53	3.20	4.00	3.00	38	2023-0.53	●
0.54	3.60	4.50	3.00	38	2023-0.54	●
0.55	3.60	4.50	3.00	38	2023-0.55	●
0.56	3.60	4.50	3.00	38	2023-0.56	●
0.57	3.60	4.50	3.00	38	2023-0.57	●
0.58	3.60	4.50	3.00	38	2023-0.58	●
0.59	3.60	4.50	3.00	38	2023-0.59	●
0.60	3.60	4.50	3.00	38	2023-0.60	●
0.61	3.90	5.00	3.00	38	2023-0.61	●
0.62	3.90	5.00	3.00	38	2023-0.62	●
0.63	3.90	5.00	3.00	38	2023-0.63	●
0.64	3.90	5.00	3.00	38	2023-0.64	●
0.65	3.90	5.00	3.00	38	2023-0.65	●
0.66	3.90	5.00	3.00	38	2023-0.66	●
0.67	3.90	5.00	3.00	38	2023-0.67	●
0.68	4.50	5.60	3.00	38	2023-0.68	●
0.69	4.50	5.60	3.00	38	2023-0.69	●
0.70	4.50	5.60	3.00	38	2023-0.70	●
0.71	4.50	5.60	3.00	38	2023-0.71	●
0.72	4.50	5.60	3.00	38	2023-0.72	●
0.73	4.50	5.60	3.00	38	2023-0.73	●
0.74	4.50	5.60	3.00	38	2023-0.74	●
0.75	4.50	5.60	3.00	38	2023-0.75	●
0.76	5.00	6.30	3.00	38	2023-0.76	●
0.77	5.00	6.30	3.00	38	2023-0.77	●
0.78	5.00	6.30	3.00	38	2023-0.78	●
0.79	5.00	6.30	3.00	38	2023-0.79	●
0.80	5.00	6.30	3.00	38	2023-0.80	●
0.81	5.00	6.30	3.00	38	2023-0.81	●
0.82	5.00	6.30	3.00	38	2023-0.82	●
0.83	5.00	6.30	3.00	38	2023-0.83	●
0.84	5.00	6.30	3.00	38	2023-0.84	●
0.85	5.00	6.30	3.00	38	2023-0.85	●
0.86	5.70	7.10	3.00	38	2023-0.86	●
0.87	5.70	7.10	3.00	38	2023-0.87	●
0.88	5.70	7.10	3.00	38	2023-0.88	●
0.89	5.70	7.10	3.00	38	2023-0.89	●
0.90	5.70	7.10	3.00	38	2023-0.90	●
0.91	5.70	7.10	3.00	38	2023-0.91	●
0.92	5.70	7.10	3.00	38	2023-0.92	●
0.93	5.70	7.10	3.00	38	2023-0.93	●
0.94	5.70	7.10	3.00	38	2023-0.94	●
0.95	5.70	7.10	3.00	38	2023-0.95	●
0.96	6.50	8.00	3.00	38	2023-0.96	●
0.97	6.50	8.00	3.00	38	2023-0.97	●
0.98	6.50	8.00	3.00	38	2023-0.98	●
0.99	6.50	8.00	3.00	38	2023-0.99	●

Micro-forets

Mikrobohrer

Micro drills

Ø 1.00 - Ø 2.00 mm

2023

D1 0 / -0.004	L2	L3	D2 h6	L1	Art. N°	z	D1 0 / -0.004	L2	L3	D2 h6	L1	Art. N°	z
1.00	6.50	8.00	3.00	38	2023-1.00	●	1.51	11.20	13.40	3.00	38	2023-1.51	●
1.01	6.50	8.00	3.00	38	2023-1.01	●	1.52	11.20	13.40	3.00	38	2023-1.52	●
1.02	6.50	8.00	3.00	38	2023-1.02	●	1.53	11.20	13.40	3.00	38	2023-1.53	●
1.03	6.50	8.00	3.00	38	2023-1.03	●	1.54	11.20	13.40	3.00	38	2023-1.54	●
1.04	6.50	8.00	3.00	38	2023-1.04	●	1.55	11.20	13.40	3.00	38	2023-1.55	●
1.05	6.50	8.00	3.00	38	2023-1.05	●	1.56	11.20	13.40	3.00	38	2023-1.56	●
1.06	7.30	9.00	3.00	38	2023-1.06	●	1.57	11.20	13.40	3.00	38	2023-1.57	●
1.07	7.30	9.00	3.00	38	2023-1.07	●	1.58	11.20	13.40	3.00	38	2023-1.58	●
1.08	7.30	9.00	3.00	38	2023-1.08	●	1.59	11.20	13.40	3.00	38	2023-1.59	●
1.09	7.30	9.00	3.00	38	2023-1.09	●	1.60	11.20	13.40	3.00	38	2023-1.60	●
1.10	7.30	9.00	3.00	38	2023-1.10	●	1.61	11.20	13.40	3.00	38	2023-1.61	●
1.11	7.30	9.00	3.00	38	2023-1.11	●	1.62	11.20	13.40	3.00	38	2023-1.62	●
1.12	7.30	9.00	3.00	38	2023-1.12	●	1.63	11.20	13.40	3.00	38	2023-1.63	●
1.13	7.30	9.00	3.00	38	2023-1.13	●	1.64	11.20	13.40	3.00	38	2023-1.64	●
1.14	7.30	9.00	3.00	38	2023-1.14	●	1.65	11.20	13.40	3.00	38	2023-1.65	●
1.15	7.30	9.00	3.00	38	2023-1.15	●	1.66	11.20	13.40	3.00	38	2023-1.66	●
1.16	8.20	10.00	3.00	38	2023-1.16	●	1.67	11.20	13.40	3.00	38	2023-1.67	●
1.17	8.20	10.00	3.00	38	2023-1.17	●	1.68	11.20	13.40	3.00	38	2023-1.68	●
1.18	8.20	10.00	3.00	38	2023-1.18	●	1.69	11.20	13.40	3.00	38	2023-1.69	●
1.19	8.20	10.00	3.00	38	2023-1.19	●	1.70	11.20	13.40	3.00	38	2023-1.70	●
1.20	8.20	10.00	3.00	38	2023-1.20	●	1.71	11.20	13.40	3.00	38	2023-1.71	●
1.21	8.20	10.00	3.00	38	2023-1.21	●	1.72	11.20	13.40	3.00	38	2023-1.72	●
1.22	8.20	10.00	3.00	38	2023-1.22	●	1.73	11.20	13.40	3.00	38	2023-1.73	●
1.23	8.20	10.00	3.00	38	2023-1.23	●	1.74	11.20	13.40	3.00	38	2023-1.74	●
1.24	8.20	10.00	3.00	38	2023-1.24	●	1.75	11.20	13.40	3.00	38	2023-1.75	●
1.25	8.20	10.00	3.00	38	2023-1.25	●	1.76	11.20	13.40	3.00	38	2023-1.76	●
1.26	8.20	10.00	3.00	38	2023-1.26	●	1.77	11.20	13.40	3.00	38	2023-1.77	●
1.27	8.20	10.00	3.00	38	2023-1.27	●	1.78	11.20	13.40	3.00	38	2023-1.78	●
1.28	8.20	10.00	3.00	38	2023-1.28	●	1.79	11.20	13.40	3.00	38	2023-1.79	●
1.29	8.20	10.00	3.00	38	2023-1.29	●	1.80	11.20	13.40	3.00	38	2023-1.80	●
1.30	8.20	10.00	3.00	38	2023-1.30	●	1.81	11.20	13.40	3.00	38	2023-1.81	●
1.31	9.20	11.20	3.00	38	2023-1.31	●	1.82	11.20	13.40	3.00	38	2023-1.82	●
1.32	9.20	11.20	3.00	38	2023-1.32	●	1.83	11.20	13.40	3.00	38	2023-1.83	●
1.33	9.20	11.20	3.00	38	2023-1.33	●	1.84	11.20	13.40	3.00	38	2023-1.84	●
1.34	9.20	11.20	3.00	38	2023-1.34	●	1.85	11.20	13.40	3.00	38	2023-1.85	●
1.35	9.20	11.20	3.00	38	2023-1.35	●	1.86	11.20	13.40	3.00	38	2023-1.86	●
1.36	9.20	11.20	3.00	38	2023-1.36	●	1.87	11.20	13.40	3.00	38	2023-1.87	●
1.37	9.20	11.20	3.00	38	2023-1.37	●	1.88	11.20	13.40	3.00	38	2023-1.88	●
1.38	9.20	11.20	3.00	38	2023-1.38	●	1.89	11.20	13.40	3.00	38	2023-1.89	●
1.39	9.20	11.20	3.00	38	2023-1.39	●	1.90	11.20	13.40	3.00	38	2023-1.90	●
1.40	9.20	11.20	3.00	38	2023-1.40	●	1.91	11.20	13.40	3.00	38	2023-1.91	●
1.41	9.20	11.20	3.00	38	2023-1.41	●	1.92	11.20	13.40	3.00	38	2023-1.92	●
1.42	9.20	11.20	3.00	38	2023-1.42	●	1.93	11.20	13.40	3.00	38	2023-1.93	●
1.43	9.20	11.20	3.00	38	2023-1.43	●	1.94	11.20	13.40	3.00	38	2023-1.94	●
1.44	9.20	11.20	3.00	38	2023-1.44	●	1.95	11.20	13.40	3.00	38	2023-1.95	●
1.45	9.20	11.20	3.00	38	2023-1.45	●	1.96	11.20	13.40	3.00	38	2023-1.96	●
1.46	9.20	11.20	3.00	38	2023-1.46	●	1.97	11.20	13.40	3.00	38	2023-1.97	●
1.47	9.20	11.20	3.00	38	2023-1.47	●	1.98	11.20	13.40	3.00	38	2023-1.98	●
1.48	9.20	11.20	3.00	38	2023-1.48	●	1.99	11.20	13.40	3.00	38	2023-1.99	●
1.49	9.20	11.20	3.00	38	2023-1.49	●	2.00	11.20	13.40	3.00	38	2023-2.00	●
1.50	9.20	11.20	3.00	38	2023-1.50	●							

D1 0 / -0.004	L2	L3	D2 h ₆	L1	Art. N°	z	D1 0 / -0.004	L2	L3	D2 h ₆	L1	Art. N°	z
2.01	12.50	14.00	3.00	38	2023-2.01	●	2.51	14.00	17.00	3.00	38	2023-2.51	●
2.02	12.50	14.00	3.00	38	2023-2.02	●	2.52	14.00	17.00	3.00	38	2023-2.52	●
2.03	12.50	14.00	3.00	38	2023-2.03	●	2.53	14.00	17.00	3.00	38	2023-2.53	●
2.04	12.50	14.00	3.00	38	2023-2.04	●	2.54	14.00	17.00	3.00	38	2023-2.54	●
2.05	12.50	14.00	3.00	38	2023-2.05	●	2.55	14.00	17.00	3.00	38	2023-2.55	●
2.06	12.50	14.00	3.00	38	2023-2.06	●	2.56	14.00	17.00	3.00	38	2023-2.56	●
2.07	12.50	14.00	3.00	38	2023-2.07	●	2.57	14.00	17.00	3.00	38	2023-2.57	●
2.08	12.50	14.00	3.00	38	2023-2.08	●	2.58	14.00	17.00	3.00	38	2023-2.58	●
2.09	12.50	14.00	3.00	38	2023-2.09	●	2.59	14.00	17.00	3.00	38	2023-2.59	●
2.10	12.50	14.00	3.00	38	2023-2.10	●	2.60	14.00	17.00	3.00	38	2023-2.60	●
2.11	12.50	14.00	3.00	38	2023-2.11	●	2.61	14.00	17.00	3.00	38	2023-2.61	●
2.12	12.50	14.00	3.00	38	2023-2.12	●	2.62	14.00	17.00	3.00	38	2023-2.62	●
2.13	12.50	14.00	3.00	38	2023-2.13	●	2.63	14.00	17.00	3.00	38	2023-2.63	●
2.14	12.50	14.00	3.00	38	2023-2.14	●	2.64	14.00	17.00	3.00	38	2023-2.64	●
2.15	12.50	14.00	3.00	38	2023-2.15	●	2.65	14.00	17.00	3.00	38	2023-2.65	●
2.16	12.50	14.00	3.00	38	2023-2.16	●	2.66	14.00	17.00	3.00	38	2023-2.66	●
2.17	12.50	14.00	3.00	38	2023-2.17	●	2.67	14.00	17.00	3.00	38	2023-2.67	●
2.18	12.50	14.00	3.00	38	2023-2.18	●	2.68	14.00	17.00	3.00	38	2023-2.68	●
2.19	12.50	14.00	3.00	38	2023-2.19	●	2.69	14.00	17.00	3.00	38	2023-2.69	●
2.20	12.50	14.00	3.00	38	2023-2.20	●	2.70	14.00	17.00	3.00	38	2023-2.70	●
2.21	12.50	14.00	3.00	38	2023-2.21	●	2.71	14.00	17.00	3.00	38	2023-2.71	●
2.22	12.50	14.00	3.00	38	2023-2.22	●	2.72	14.00	17.00	3.00	38	2023-2.72	●
2.23	12.50	14.00	3.00	38	2023-2.23	●	2.73	14.00	17.00	3.00	38	2023-2.73	●
2.24	12.50	14.00	3.00	38	2023-2.24	●	2.74	14.00	17.00	3.00	38	2023-2.74	●
2.25	12.50	14.00	3.00	38	2023-2.25	●	2.75	14.00	17.00	3.00	38	2023-2.75	●
2.26	12.50	14.00	3.00	38	2023-2.26	●	2.76	14.00	17.00	3.00	38	2023-2.76	●
2.27	12.50	14.00	3.00	38	2023-2.27	●	2.77	14.00	17.00	3.00	38	2023-2.77	●
2.28	12.50	14.00	3.00	38	2023-2.28	●	2.78	14.00	17.00	3.00	38	2023-2.78	●
2.29	12.50	14.00	3.00	38	2023-2.29	●	2.79	14.00	17.00	3.00	38	2023-2.79	●
2.30	12.50	14.00	3.00	38	2023-2.30	●	2.80	14.00	17.00	3.00	38	2023-2.80	●
2.31	12.50	14.00	3.00	38	2023-2.31	●	2.81	14.00	17.00	3.00	38	2023-2.81	●
2.32	12.50	14.00	3.00	38	2023-2.32	●	2.82	14.00	17.00	3.00	38	2023-2.82	●
2.33	12.50	14.00	3.00	38	2023-2.33	●	2.83	14.00	17.00	3.00	38	2023-2.83	●
2.34	12.50	14.00	3.00	38	2023-2.34	●	2.84	14.00	17.00	3.00	38	2023-2.84	●
2.35	12.50	14.00	3.00	38	2023-2.35	●	2.85	14.00	17.00	3.00	38	2023-2.85	●
2.36	12.50	14.00	3.00	38	2023-2.36	●	2.86	14.00	17.00	3.00	38	2023-2.86	●
2.37	12.50	14.00	3.00	38	2023-2.37	●	2.87	14.00	17.00	3.00	38	2023-2.87	●
2.38	12.50	14.00	3.00	38	2023-2.38	●	2.88	14.00	17.00	3.00	38	2023-2.88	●
2.39	12.50	14.00	3.00	38	2023-2.39	●	2.89	14.00	17.00	3.00	38	2023-2.89	●
2.40	12.50	14.00	3.00	38	2023-2.40	●	2.90	14.00	17.00	3.00	38	2023-2.90	●
2.41	12.50	14.00	3.00	38	2023-2.41	●	2.91	14.00	17.00	3.00	38	2023-2.91	●
2.42	12.50	14.00	3.00	38	2023-2.42	●	2.92	14.00	17.00	3.00	38	2023-2.92	●
2.43	12.50	14.00	3.00	38	2023-2.43	●	2.93	14.00	17.00	3.00	38	2023-2.93	●
2.44	12.50	14.00	3.00	38	2023-2.44	●	2.94	14.00	17.00	3.00	38	2023-2.94	●
2.45	12.50	14.00	3.00	38	2023-2.45	●	2.95	14.00	17.00	3.00	38	2023-2.95	●
2.46	12.50	14.00	3.00	38	2023-2.46	●	2.96	14.00	17.00	3.00	38	2023-2.96	●
2.47	12.50	14.00	3.00	38	2023-2.47	●	2.97	14.00	17.00	3.00	38	2023-2.97	●
2.48	12.50	14.00	3.00	38	2023-2.48	●	2.98	14.00	17.00	3.00	38	2023-2.98	●
2.49	12.50	14.00	3.00	38	2023-2.49	●	2.99	14.00	17.00	3.00	38	2023-2.99	●
2.50	14.00	17.00	3.00	38	2023-2.50	●	3.00	14.00	17.00	3.00	38	2023-3.00	●

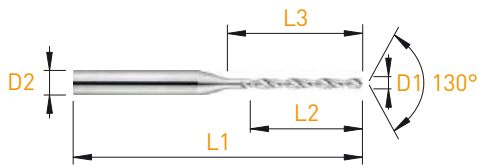
Micro-forets

Mikrobohrer

Micro drills

Ø 0.20 - Ø 1.09 mm

2026



MD VHM HM	λ^{25°	Z=2	12xD1	130°	
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D1 h6	L2	L3	D2 h6	L1	Art. N°	z
0.20	2.40	3.50	3.00	38	2026-0.20	●
0.21	2.50	3.50	3.00	38	2026-0.21	●
0.22	2.70	3.50	3.00	38	2026-0.22	●
0.23	2.80	3.50	3.00	38	2026-0.23	●
0.24	2.90	4.00	3.00	38	2026-0.24	●
0.25	3.00	4.00	3.00	38	2026-0.25	●
0.26	3.10	4.00	3.00	38	2026-0.26	●
0.27	3.30	4.00	3.00	38	2026-0.27	●
0.28	3.40	4.50	3.00	38	2026-0.28	●
0.29	3.50	4.50	3.00	38	2026-0.29	●
0.30	3.60	4.50	3.00	38	2026-0.30	●
0.31	3.70	4.50	3.00	38	2026-0.31	●
0.32	3.90	5.00	3.00	38	2026-0.32	●
0.33	4.00	5.00	3.00	38	2026-0.33	●
0.34	4.10	5.00	3.00	38	2026-0.34	●
0.35	4.20	5.00	3.00	38	2026-0.35	●
0.36	4.30	5.50	3.00	38	2026-0.36	●
0.37	4.50	5.50	3.00	38	2026-0.37	●
0.38	4.60	5.50	3.00	38	2026-0.38	●
0.39	4.70	5.50	3.00	38	2026-0.39	●
0.40	4.80	6.00	3.00	38	2026-0.40	●
0.41	4.90	6.00	3.00	38	2026-0.41	●
0.42	5.10	6.00	3.00	38	2026-0.42	●
0.43	5.20	6.00	3.00	38	2026-0.43	●
0.44	5.30	6.50	3.00	38	2026-0.44	●
0.45	5.40	6.50	3.00	38	2026-0.45	●
0.46	5.50	6.50	3.00	38	2026-0.46	●
0.47	5.70	6.50	3.00	38	2026-0.47	●
0.48	5.80	7.00	3.00	38	2026-0.48	●
0.49	5.90	7.00	3.00	38	2026-0.49	●
0.50	6.00	7.00	3.00	38	2026-0.50	●
0.51	6.10	7.00	3.00	38	2026-0.51	●
0.52	6.30	7.50	3.00	38	2026-0.52	●
0.53	6.40	7.50	3.00	38	2026-0.53	●
0.54	6.50	7.50	3.00	38	2026-0.54	●
0.55	6.60	7.50	3.00	38	2026-0.55	●
0.56	6.70	8.00	3.00	38	2026-0.56	●
0.57	6.90	8.00	3.00	38	2026-0.57	●
0.58	7.00	8.00	3.00	38	2026-0.58	●

D1 h6	L2	L3	D2 h6	L1	Art. N°	z
0.59	7.10	8.00	3.00	38	2026-0.59	●
0.60	7.20	9.00	3.00	38	2026-0.60	●
0.61	7.30	9.00	3.00	38	2026-0.61	●
0.62	7.50	9.00	3.00	38	2026-0.62	●
0.63	7.60	9.00	3.00	38	2026-0.63	●
0.64	7.70	9.50	3.00	38	2026-0.64	●
0.65	7.80	9.50	3.00	38	2026-0.65	●
0.66	7.90	9.50	3.00	38	2026-0.66	●
0.67	8.10	9.50	3.00	38	2026-0.67	●
0.68	8.20	10.00	3.00	38	2026-0.68	●
0.69	8.30	10.00	3.00	38	2026-0.69	●
0.70	8.40	10.00	3.00	38	2026-0.70	●
0.71	8.50	10.00	3.00	38	2026-0.71	●
0.72	8.70	10.50	3.00	38	2026-0.72	●
0.73	8.80	10.50	3.00	38	2026-0.73	●
0.74	8.90	10.50	3.00	38	2026-0.74	●
0.75	9.00	10.50	3.00	38	2026-0.75	●
0.76	9.10	11.00	3.00	38	2026-0.76	●
0.77	9.30	11.00	3.00	38	2026-0.77	●
0.78	9.40	11.00	3.00	38	2026-0.78	●
0.79	9.50	11.00	3.00	38	2026-0.79	●
0.80	9.60	11.50	3.00	38	2026-0.80	●
0.81	9.70	11.50	3.00	38	2026-0.81	●
0.82	9.90	11.50	3.00	38	2026-0.82	●
0.83	10.00	11.50	3.00	38	2026-0.83	●
0.84	10.10	12.00	3.00	38	2026-0.84	●
0.85	10.20	12.00	3.00	38	2026-0.85	●
0.86	10.30	12.00	3.00	38	2026-0.86	●
0.87	10.50	12.00	3.00	38	2026-0.87	●
0.88	10.60	12.50	3.00	38	2026-0.88	●
0.89	10.70	12.50	3.00	38	2026-0.89	●
0.90	10.80	12.50	3.00	38	2026-0.90	●
0.91	10.90	12.50	3.00	38	2026-0.91	●
0.92	11.10	13.00	3.00	38	2026-0.92	●
0.93	11.20	13.00	3.00	38	2026-0.93	●
0.94	11.30	13.00	3.00	38	2026-0.94	●
0.95	11.40	13.00	3.00	38	2026-0.95	●
0.96	11.50	13.50	3.00	38	2026-0.96	●
0.97	11.70	13.50	3.00	38	2026-0.97	●
0.98	11.80	13.50	3.00	38	2026-0.98	●
0.99	11.90	13.50	3.00	38	2026-0.99	●
1.00	12.00	14.50	3.00	38	2026-1.00	●
1.01	12.10	14.50	3.00	38	2026-1.01	●
1.02	12.30	14.50	3.00	38	2026-1.02	●
1.03	12.40	14.50	3.00	38	2026-1.03	●
1.04	12.50	15.00	3.00	38	2026-1.04	●
1.05	12.60	15.00	3.00	38	2026-1.05	●
1.06	12.70	15.00	3.00	38	2026-1.06	●
1.07	12.90	15.00	3.00	38	2026-1.07	●
1.08	13.00	15.50	3.00	38	2026-1.08	●
1.09	13.10	15.50	3.00	38	2026-1.09	●

D1 h6	L2	L3	D2 h6	L1	Art. N°	z	D1 h6	L2	L3	D2 h6	L1	Art. N°	z
1.10	13.20	15.50	3.00	38	2026-1.10	●	1.61	19.30	22.00	3.00	50	2026-1.61	●
1.11	13.30	15.50	3.00	38	2026-1.11	●	1.62	19.40	22.50	3.00	50	2026-1.62	●
1.12	13.50	16.00	3.00	38	2026-1.12	●	1.63	19.60	22.50	3.00	50	2026-1.63	●
1.13	13.60	16.00	3.00	38	2026-1.13	●	1.64	19.70	22.50	3.00	50	2026-1.64	●
1.14	13.70	16.00	3.00	38	2026-1.14	●	1.65	19.80	22.50	3.00	50	2026-1.65	●
1.15	13.80	16.00	3.00	38	2026-1.15	●	1.66	19.90	23.00	3.00	50	2026-1.66	●
1.16	13.90	16.50	3.00	38	2026-1.16	●	1.67	20.10	23.00	3.00	50	2026-1.67	●
1.17	14.10	16.50	3.00	38	2026-1.17	●	1.68	20.20	23.00	3.00	50	2026-1.68	●
1.18	14.20	16.50	3.00	38	2026-1.18	●	1.69	20.30	23.00	3.00	50	2026-1.69	●
1.19	14.30	16.50	3.00	38	2026-1.19	●	1.70	20.40	23.50	3.00	50	2026-1.70	●
1.20	14.40	17.00	3.00	38	2026-1.20	●	1.71	20.50	23.50	3.00	50	2026-1.71	●
1.21	14.50	17.00	3.00	38	2026-1.21	●	1.72	20.70	23.50	3.00	50	2026-1.72	●
1.22	14.70	17.00	3.00	38	2026-1.22	●	1.73	20.80	23.50	3.00	50	2026-1.73	●
1.23	14.80	17.00	3.00	38	2026-1.23	●	1.74	20.90	24.00	3.00	50	2026-1.74	●
1.24	14.90	17.50	3.00	38	2026-1.24	●	1.75	21.00	24.00	3.00	50	2026-1.75	●
1.25	15.00	17.50	3.00	38	2026-1.25	●	1.76	21.10	24.00	3.00	50	2026-1.76	●
1.26	15.10	17.50	3.00	50	2026-1.26	●	1.77	21.30	24.00	3.00	50	2026-1.77	●
1.27	15.30	17.50	3.00	50	2026-1.27	●	1.78	21.40	24.50	3.00	50	2026-1.78	●
1.28	15.40	18.00	3.00	50	2026-1.28	●	1.79	21.50	24.50	3.00	50	2026-1.79	●
1.29	15.50	18.00	3.00	50	2026-1.29	●	1.80	21.60	25.00	3.00	50	2026-1.80	●
1.30	15.60	18.00	3.00	50	2026-1.30	●	1.81	21.70	25.00	3.00	50	2026-1.81	●
1.31	15.70	18.00	3.00	50	2026-1.31	●	1.82	21.90	25.00	3.00	50	2026-1.82	●
1.32	15.90	18.50	3.00	50	2026-1.32	●	1.83	22.00	25.00	3.00	50	2026-1.83	●
1.33	16.00	18.50	3.00	50	2026-1.33	●	1.84	22.10	25.50	3.00	50	2026-1.84	●
1.34	16.10	18.50	3.00	50	2026-1.34	●	1.85	22.20	25.50	3.00	50	2026-1.85	●
1.35	16.20	18.50	3.00	50	2026-1.35	●	1.86	22.30	25.50	3.00	50	2026-1.86	●
1.36	16.30	19.00	3.00	50	2026-1.36	●	1.87	22.50	25.50	3.00	50	2026-1.87	●
1.37	16.50	19.00	3.00	50	2026-1.37	●	1.88	22.60	26.00	3.00	50	2026-1.88	●
1.38	16.60	19.00	3.00	50	2026-1.38	●	1.89	22.70	26.00	3.00	50	2026-1.89	●
1.39	16.70	19.00	3.00	50	2026-1.39	●	1.90	22.80	26.00	3.00	50	2026-1.90	●
1.40	16.80	19.50	3.00	50	2026-1.40	●	1.91	22.90	26.00	3.00	50	2026-1.91	●
1.41	16.90	19.50	3.00	50	2026-1.41	●	1.92	23.10	26.50	3.00	50	2026-1.92	●
1.42	17.10	19.50	3.00	50	2026-1.42	●	1.93	23.20	26.50	3.00	50	2026-1.93	●
1.43	17.20	19.50	3.00	50	2026-1.43	●	1.94	23.30	26.50	3.00	50	2026-1.94	●
1.44	17.30	20.00	3.00	50	2026-1.44	●	1.95	23.40	26.50	3.00	50	2026-1.95	●
1.45	17.40	20.00	3.00	50	2026-1.45	●	1.96	23.50	27.00	3.00	50	2026-1.96	●
1.46	17.50	20.00	3.00	50	2026-1.46	●	1.97	23.70	27.00	3.00	50	2026-1.97	●
1.47	17.70	20.00	3.00	50	2026-1.47	●	1.98	23.80	27.00	3.00	50	2026-1.98	●
1.48	17.80	20.50	3.00	50	2026-1.48	●	1.99	23.90	27.00	3.00	50	2026-1.99	●
1.49	17.90	20.50	3.00	50	2026-1.49	●	2.00	24.00	27.00	3.00	50	2026-2.00	●
1.50	18.00	21.00	3.00	50	2026-1.50	●							
1.51	18.10	21.00	3.00	50	2026-1.51	●							
1.52	18.30	21.00	3.00	50	2026-1.52	●							
1.53	18.40	21.00	3.00	50	2026-1.53	●							
1.54	18.50	21.50	3.00	50	2026-1.54	●							
1.55	18.60	21.50	3.00	50	2026-1.55	●							
1.56	18.70	21.50	3.00	50	2026-1.56	●							
1.57	18.90	21.50	3.00	50	2026-1.57	●							
1.58	19.00	22.00	3.00	50	2026-1.58	●							
1.59	19.10	22.00	3.00	50	2026-1.59	●							
1.60	19.20	22.00	3.00	50	2026-1.60	●							

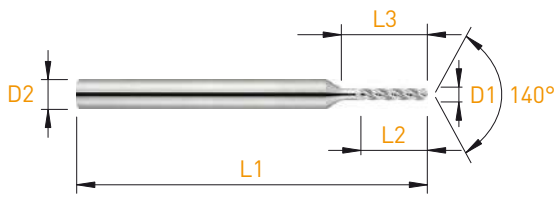
Micro-forets

Mikrobohrer

Micro drills

Ø 0.20 - Ø 1.09 mm

2030



MD VHM HM	λ^{35°	5xD1	Z=3	140°	
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D1 h6	L2	L3	D2 h6	L1	Art. N°	z
0.20	1.00	1.50	3.00	38	2030-0.20	●
0.21	1.05	1.50	3.00	38	2030-0.21	●
0.22	1.10	1.60	3.00	38	2030-0.22	●
0.23	1.15	1.60	3.00	38	2030-0.23	●
0.24	1.20	1.70	3.00	38	2030-0.24	●
0.25	1.25	1.70	3.00	38	2030-0.25	●
0.26	1.30	1.80	3.00	38	2030-0.26	●
0.27	1.35	1.80	3.00	38	2030-0.27	●
0.28	1.40	1.90	3.00	38	2030-0.28	●
0.29	1.45	1.90	3.00	38	2030-0.29	●
0.30	1.50	2.00	3.00	38	2030-0.30	●
0.31	1.55	2.00	3.00	38	2030-0.31	●
0.32	1.60	2.10	3.00	38	2030-0.32	●
0.33	1.65	2.10	3.00	38	2030-0.33	●
0.34	1.70	2.20	3.00	38	2030-0.34	●
0.35	1.75	2.20	3.00	38	2030-0.35	●
0.36	1.80	2.30	3.00	38	2030-0.36	●
0.37	1.85	2.30	3.00	38	2030-0.37	●
0.38	1.90	2.40	3.00	38	2030-0.38	●
0.39	1.95	2.40	3.00	38	2030-0.39	●
0.40	2.00	2.50	3.00	38	2030-0.40	●
0.41	2.05	2.50	3.00	38	2030-0.41	●
0.42	2.10	2.60	3.00	38	2030-0.42	●
0.43	2.15	2.60	3.00	38	2030-0.43	●
0.44	2.20	2.70	3.00	38	2030-0.44	●
0.45	2.25	2.70	3.00	38	2030-0.45	●
0.46	2.30	2.80	3.00	38	2030-0.46	●
0.47	2.35	2.80	3.00	38	2030-0.47	●
0.48	2.40	2.90	3.00	38	2030-0.48	●
0.49	2.45	2.90	3.00	38	2030-0.49	●
0.50	2.50	3.00	3.00	38	2030-0.50	●
0.51	2.55	3.00	3.00	38	2030-0.51	●
0.52	2.60	3.10	3.00	38	2030-0.52	●
0.53	2.65	3.10	3.00	38	2030-0.53	●
0.54	2.70	3.20	3.00	38	2030-0.54	●
0.55	2.75	3.20	3.00	38	2030-0.55	●
0.56	2.80	3.30	3.00	38	2030-0.56	●
0.57	2.85	3.30	3.00	38	2030-0.57	●
0.58	2.90	3.40	3.00	38	2030-0.58	●
0.59	2.95	3.40	3.00	38	2030-0.59	●
0.60	3.00	3.50	3.00	38	2030-0.60	●
0.61	3.05	3.50	3.00	38	2030-0.61	●
0.62	3.10	3.60	3.00	38	2030-0.62	●
0.63	3.15	3.60	3.00	38	2030-0.63	●
0.64	3.20	3.70	3.00	38	2030-0.64	●
0.65	3.25	3.70	3.00	38	2030-0.65	●
0.66	3.30	3.80	3.00	38	2030-0.66	●
0.67	3.35	3.80	3.00	38	2030-0.67	●
0.68	3.40	3.90	3.00	38	2030-0.68	●
0.69	3.45	3.90	3.00	38	2030-0.69	●
0.70	3.50	4.00	3.00	38	2030-0.70	●
0.71	3.55	4.00	3.00	38	2030-0.71	●
0.72	3.60	4.10	3.00	38	2030-0.72	●
0.73	3.65	4.10	3.00	38	2030-0.73	●
0.74	3.70	4.20	3.00	38	2030-0.74	●
0.75	3.75	4.20	3.00	38	2030-0.75	●
0.76	3.80	4.30	3.00	38	2030-0.76	●
0.77	3.85	4.30	3.00	38	2030-0.77	●
0.78	3.90	4.40	3.00	38	2030-0.78	●
0.79	3.95	4.40	3.00	38	2030-0.79	●
0.80	4.00	4.50	3.00	38	2030-0.80	●
0.81	4.05	4.50	3.00	38	2030-0.81	●
0.82	4.10	4.60	3.00	38	2030-0.82	●
0.83	4.15	4.60	3.00	38	2030-0.83	●
0.84	4.20	4.70	3.00	38	2030-0.84	●
0.85	4.25	4.70	3.00	38	2030-0.85	●
0.86	4.30	4.80	3.00	38	2030-0.86	●
0.87	4.35	4.80	3.00	38	2030-0.87	●
0.88	4.40	4.90	3.00	38	2030-0.88	●
0.89	4.45	4.90	3.00	38	2030-0.89	●
0.90	4.50	5.00	3.00	38	2030-0.90	●
0.91	4.55	5.00	3.00	38	2030-0.91	●
0.92	4.60	5.10	3.00	38	2030-0.92	●
0.93	4.65	5.10	3.00	38	2030-0.93	●
0.94	4.70	5.20	3.00	38	2030-0.94	●
0.95	4.75	5.20	3.00	38	2030-0.95	●
0.96	4.80	5.30	3.00	38	2030-0.96	●
0.97	4.85	5.30	3.00	38	2030-0.97	●
0.98	4.90	5.40	3.00	38	2030-0.98	●
0.99	4.95	5.40	3.00	38	2030-0.99	●
1.00	5.00	6.50	3.00	38	2030-1.00	●
1.01	5.05	6.50	3.00	38	2030-1.01	●
1.02	5.10	6.50	3.00	38	2030-1.02	●
1.03	5.15	6.50	3.00	38	2030-1.03	●
1.04	5.20	6.50	3.00	38	2030-1.04	●
1.05	5.25	6.50	3.00	38	2030-1.05	●
1.06	5.30	6.50	3.00	38	2030-1.06	●
1.07	5.35	7.50	3.00	38	2030-1.07	●
1.08	5.40	7.50	3.00	38	2030-1.08	●
1.09	5.45	7.50	3.00	38	2030-1.09	●

2030

Ø 1.10 - Ø 2.11 mm

Micro-forets

Mikrobohrer

Micro drills

D1 h6	L2	L3	D2 h6	L1	Art. N°	z	D1 h6	L2	L3	D2 h6	L1	Art. N°	z
1.10	5.50	7.50	3.00	38	2030-1.10	●	1.61	8.05	10.50	3.00	38	2030-1.61	●
1.11	5.55	7.50	3.00	38	2030-1.11	●	1.62	8.10	10.50	3.00	38	2030-1.62	●
1.12	5.60	7.50	3.00	38	2030-1.12	●	1.63	8.15	10.50	3.00	38	2030-1.63	●
1.13	5.65	7.50	3.00	38	2030-1.13	●	1.64	8.20	10.50	3.00	38	2030-1.64	●
1.14	5.70	7.50	3.00	38	2030-1.14	●	1.65	8.25	10.50	3.00	38	2030-1.65	●
1.15	5.75	7.50	3.00	38	2030-1.15	●	1.66	8.30	10.50	3.00	38	2030-1.66	●
1.16	5.80	7.50	3.00	38	2030-1.16	●	1.67	8.35	10.50	3.00	38	2030-1.67	●
1.17	5.85	7.50	3.00	38	2030-1.17	●	1.68	8.40	10.50	3.00	38	2030-1.68	●
1.18	5.90	8.50	3.00	38	2030-1.18	●	1.69	8.45	10.50	3.00	38	2030-1.69	●
1.19	5.95	8.50	3.00	38	2030-1.19	●	1.70	8.50	10.50	3.00	38	2030-1.70	●
1.20	6.00	8.50	3.00	38	2030-1.20	●	1.71	8.55	11.50	3.00	38	2030-1.71	●
1.21	6.05	8.50	3.00	38	2030-1.21	●	1.72	8.60	11.50	3.00	38	2030-1.72	●
1.22	6.10	8.50	3.00	38	2030-1.22	●	1.73	8.65	11.50	3.00	38	2030-1.73	●
1.23	6.15	8.50	3.00	38	2030-1.23	●	1.74	8.70	11.50	3.00	38	2030-1.74	●
1.24	6.20	8.50	3.00	38	2030-1.24	●	1.75	8.75	11.50	3.00	38	2030-1.75	●
1.25	6.25	8.50	3.00	38	2030-1.25	●	1.76	8.80	11.50	3.00	38	2030-1.76	●
1.26	6.30	8.50	3.00	38	2030-1.26	●	1.77	8.85	11.50	3.00	38	2030-1.77	●
1.27	6.35	8.50	3.00	38	2030-1.27	●	1.78	8.90	11.50	3.00	38	2030-1.78	●
1.28	6.40	8.50	3.00	38	2030-1.28	●	1.79	8.95	11.50	3.00	38	2030-1.79	●
1.29	6.45	8.50	3.00	38	2030-1.29	●	1.80	9.00	11.50	3.00	38	2030-1.80	●
1.30	6.50	8.50	3.00	38	2030-1.30	●	1.81	9.05	11.50	3.00	38	2030-1.81	●
1.31	6.55	8.50	3.00	38	2030-1.31	●	1.82	9.10	11.50	3.00	38	2030-1.82	●
1.32	6.60	8.50	3.00	38	2030-1.32	●	1.83	9.15	11.50	3.00	38	2030-1.83	●
1.33	6.65	9.50	3.00	38	2030-1.33	●	1.84	9.20	11.50	3.00	38	2030-1.84	●
1.34	6.70	9.50	3.00	38	2030-1.34	●	1.85	9.25	11.50	3.00	38	2030-1.85	●
1.35	6.75	9.50	3.00	38	2030-1.35	●	1.86	9.30	11.50	3.00	38	2030-1.86	●
1.36	6.80	9.50	3.00	38	2030-1.36	●	1.87	9.35	11.50	3.00	38	2030-1.87	●
1.37	6.85	9.50	3.00	38	2030-1.37	●	1.88	9.40	11.50	3.00	38	2030-1.88	●
1.38	6.90	9.50	3.00	38	2030-1.38	●	1.89	9.45	11.50	3.00	38	2030-1.89	●
1.39	6.95	9.50	3.00	38	2030-1.39	●	1.90	9.50	11.50	3.00	38	2030-1.90	●
1.40	7.00	9.50	3.00	38	2030-1.40	●	1.91	9.55	12.50	3.00	38	2030-1.91	●
1.41	7.05	9.50	3.00	38	2030-1.41	●	1.92	9.60	12.50	3.00	38	2030-1.92	●
1.42	7.10	9.50	3.00	38	2030-1.42	●	1.93	9.65	12.50	3.00	38	2030-1.93	●
1.43	7.15	9.50	3.00	38	2030-1.43	●	1.94	9.70	12.50	3.00	38	2030-1.94	●
1.44	7.20	9.50	3.00	38	2030-1.44	●	1.95	9.75	12.50	3.00	38	2030-1.95	●
1.45	7.25	9.50	3.00	38	2030-1.45	●	1.96	9.80	12.50	3.00	38	2030-1.96	●
1.46	7.30	9.50	3.00	38	2030-1.46	●	1.97	9.85	12.50	3.00	38	2030-1.97	●
1.47	7.35	9.50	3.00	38	2030-1.47	●	1.98	9.90	12.50	3.00	38	2030-1.98	●
1.48	7.40	9.50	3.00	38	2030-1.48	●	1.99	9.95	12.50	3.00	38	2030-1.99	●
1.49	7.45	9.50	3.00	38	2030-1.49	●	2.00	10.00	12.50	3.00	38	2030-2.00	●
1.50	7.50	9.50	3.00	38	2030-1.50	●	2.01	10.05	12.50	3.00	38	2030-2.01	●
1.51	7.55	10.50	3.00	38	2030-1.51	●	2.02	10.10	12.50	3.00	38	2030-2.02	●
1.52	7.60	10.50	3.00	38	2030-1.52	●	2.03	10.15	12.50	3.00	38	2030-2.03	●
1.53	7.65	10.50	3.00	38	2030-1.53	●	2.04	10.20	12.50	3.00	38	2030-2.04	●
1.54	7.70	10.50	3.00	38	2030-1.54	●	2.05	10.25	12.50	3.00	38	2030-2.05	●
1.55	7.75	10.50	3.00	38	2030-1.55	●	2.06	10.30	12.50	3.00	38	2030-2.06	●
1.56	7.80	10.50	3.00	38	2030-1.56	●	2.07	10.35	12.50	3.00	38	2030-2.07	●
1.57	7.85	10.50	3.00	38	2030-1.57	●	2.08	10.40	12.50	3.00	38	2030-2.08	●
1.58	7.90	10.50	3.00	38	2030-1.58	●	2.09	10.45	12.50	3.00	38	2030-2.09	●
1.59	7.95	10.50	3.00	38	2030-1.59	●	2.10	10.50	12.50	3.00	38	2030-2.10	●
1.60	8.00	10.50	3.00	38	2030-1.60	●	2.11	10.55	12.50	3.00	38	2030-2.11	●

Micro-forets

Mikrobohrer

Micro drills

Ø 2.12 - Ø 2.99 mm

2030

D1 h6	L2	L3	D2 h6	L1	Art. N°	z	D1 h6	L2	L3	D2 h6	L1	Art. N°	z
2.12	10.60	12.50	3.00	38	2030-2.12	●	2.63	13.15	14.50	3.00	38	2030-2.63	●
2.13	10.65	13.50	3.00	38	2030-2.13	●	2.64	13.20	14.50	3.00	38	2030-2.64	●
2.14	10.70	13.50	3.00	38	2030-2.14	●	2.65	13.25	14.50	3.00	38	2030-2.65	●
2.15	10.75	13.50	3.00	38	2030-2.15	●	2.66	13.30	16.50	3.00	38	2030-2.66	●
2.16	10.80	13.50	3.00	38	2030-2.16	●	2.67	13.35	16.50	3.00	38	2030-2.67	●
2.17	10.85	13.50	3.00	38	2030-2.17	●	2.68	13.40	16.50	3.00	38	2030-2.68	●
2.18	10.90	13.50	3.00	38	2030-2.18	●	2.69	13.45	16.50	3.00	38	2030-2.69	●
2.19	10.95	13.50	3.00	38	2030-2.19	●	2.70	13.50	16.50	3.00	38	2030-2.70	●
2.20	11.00	13.50	3.00	38	2030-2.20	●	2.71	13.55	16.55	3.00	38	2030-2.71	●
2.21	11.05	13.50	3.00	38	2030-2.21	●	2.72	13.60	16.50	3.00	38	2030-2.72	●
2.22	11.10	13.50	3.00	38	2030-2.22	●	2.73	13.65	16.50	3.00	38	2030-2.73	●
2.23	11.15	13.50	3.00	38	2030-2.23	●	2.74	13.70	16.50	3.00	38	2030-2.74	●
2.24	11.20	13.50	3.00	38	2030-2.24	●	2.75	13.75	16.50	3.00	38	2030-2.75	●
2.25	11.25	13.50	3.00	38	2030-2.25	●	2.76	13.80	16.50	3.00	38	2030-2.76	●
2.26	11.30	13.50	3.00	38	2030-2.26	●	2.77	13.85	16.50	3.00	38	2030-2.77	●
2.27	11.35	13.50	3.00	38	2030-2.27	●	2.78	13.90	16.50	3.00	38	2030-2.78	●
2.28	11.40	13.50	3.00	38	2030-2.28	●	2.79	13.95	16.50	3.00	38	2030-2.79	●
2.29	11.45	13.50	3.00	38	2030-2.29	●	2.80	14.00	16.50	3.00	38	2030-2.80	●
2.30	11.50	13.50	3.00	38	2030-2.30	●	2.81	14.05	16.50	3.00	38	2030-2.81	●
2.31	11.55	13.50	3.00	38	2030-2.31	●	2.82	14.10	16.50	3.00	38	2030-2.82	●
2.32	11.60	13.50	3.00	38	2030-2.32	●	2.83	14.15	16.50	3.00	38	2030-2.83	●
2.33	11.65	13.50	3.00	38	2030-2.33	●	2.84	14.20	16.50	3.00	38	2030-2.84	●
2.34	11.70	13.50	3.00	38	2030-2.34	●	2.85	14.25	16.50	3.00	38	2030-2.85	●
2.35	11.75	13.50	3.00	38	2030-2.35	●	2.86	14.30	16.50	3.00	38	2030-2.86	●
2.36	11.80	13.50	3.00	38	2030-2.36	●	2.87	14.35	16.50	3.00	38	2030-2.87	●
2.37	11.85	14.50	3.00	38	2030-2.37	●	2.88	14.40	16.50	3.00	38	2030-2.88	●
2.38	11.90	14.50	3.00	38	2030-2.38	●	2.89	14.45	16.50	3.00	38	2030-2.89	●
2.39	11.95	14.50	3.00	38	2030-2.39	●	2.90	14.50	16.50	3.00	38	2030-2.90	●
2.40	12.00	14.50	3.00	38	2030-2.40	●	2.91	14.55	16.50	3.00	38	2030-2.91	●
2.41	12.05	14.50	3.00	38	2030-2.41	●	2.92	14.60	16.50	3.00	38	2030-2.92	●
2.42	12.10	14.50	3.00	38	2030-2.42	●	2.93	14.65	16.50	3.00	38	2030-2.93	●
2.43	12.15	14.50	3.00	38	2030-2.43	●	2.94	14.70	16.50	3.00	38	2030-2.94	●
2.44	12.20	14.50	3.00	38	2030-2.44	●	2.95	14.75	16.50	3.00	38	2030-2.95	●
2.45	12.25	14.50	3.00	38	2030-2.45	●	2.96	14.80	16.50	3.00	38	2030-2.96	●
2.46	12.30	14.50	3.00	38	2030-2.46	●	2.97	14.85	16.50	3.00	38	2030-2.97	●
2.47	12.35	14.50	3.00	38	2030-2.47	●	2.98	14.90	16.50	3.00	38	2030-2.98	●
2.48	12.40	14.50	3.00	38	2030-2.48	●	2.99	14.95	16.50	3.00	38	2030-2.99	●
2.49	12.45	14.50	3.00	38	2030-2.49	●							
2.50	12.50	14.50	3.00	38	2030-2.50	●							
2.51	12.55	14.50	3.00	38	2030-2.51	●							
2.52	12.60	14.50	3.00	38	2030-2.52	●							
2.53	12.65	14.50	3.00	38	2030-2.53	●							
2.54	12.70	14.50	3.00	38	2030-2.54	●							
2.55	12.75	14.50	3.00	38	2030-2.55	●							
2.56	12.80	14.50	3.00	38	2030-2.56	●							
2.57	12.85	14.50	3.00	38	2030-2.57	●							
2.58	12.90	14.50	3.00	38	2030-2.58	●							
2.59	12.95	14.50	3.00	38	2030-2.59	●							
2.60	13.00	14.50	3.00	38	2030-2.60	●							
2.61	13.05	14.50	3.00	38	2030-2.61	●							
2.62	13.10	14.50	3.00	38	2030-2.62	●							

Informations techniques et symboles

Technische Informationen und Symbole

Technical information and symbols

60° Angle
90° Winkel
120° Angle

 Coin vif
Scharfkantige Ecke
Sharp corner

λ 25° Angle d'hélice
Spiralwinkel
Helix angle

 Fraises hémisphériques
Radiusfräser
End mills with ball nose

λ 36° Hélice différente
 λ 38° Unterschiedliche Spirale
 λ 40° Different helix

 Rayon de coin
Eckradius
Corner radius

λ Hélice progressive
35°/38° Progressive Spirale
Progressive helix

 Dents avec coupe centrale
Zähne Zentrumschnitt
Teeth center cutting

Z Nombre de dents
Anzahl der Zähne
Number of teeth

 Denture décalée
Versetzte Verzahnung
Alternated teeth

2xD1 Rapport longueur-diamètre
Länge-Durchmesser Verhältnis
Length to diameter ratio

DHD Denture à pas irrégulier, hélice différente
Ungleiche Teilung, unterschiedliche Spirale
Uneven tooth pitch, different helix

 Lèvres, affûtage à facettes
Schneiden, Facettenschärfen
Flutes, sharpening with facets

DHP Denture à pas irrégulier, hélice progressive
Ungleiche Teilung, progressive Spirale
Uneven tooth pitch, progressive helix

 Taillage demi-lune
Kanonenbohrer Spitze
Gundrills tip

 Usinage torique
Torusbearbeitung
Toroidal machining

 Taillage renforcé 3/4
3/4 genuteter Fräser
3/4 straight fluted

MD Métal dur
VHM Vollhartmetall
HM Hard metal

 Usinage radial, diagonal et axial
Radiale, diagonale und axiale Bearbeitung
Radial, diagonal and axial machining

 Usinage radial et axial
Radiale und axiale Bearbeitung
Radial and axial machining

 Chanfrein
Fase
Chamfer

Informations techniques et symboles
Technische Informationen und Symbole
Technical information and symbols

Diamètre outil Werkzeugdurchmesser Tool diameter	D (mm)		
Nombre de dents Zähnezahl Number of teeth	Z		
Profondeur de coupe Schnitttiefe Cutting depth	ap (mm)		
Largeur de coupe Schnittbreite Cutting width	ae (mm)		
Vitesse de coupe Schnittgeschwindigkeit Cutting speed	(m/min)	Vc =	$\frac{D \times \pi \times n}{1000}$
Nombre de tours Umdrehungen Rotations	(U/min)	n =	$\frac{Vc \times 1000}{\pi \times D}$
Avance par dent Vorschub pro Zahn Cutting feed per teeth	(mm/tooth)	fz =	$\frac{Vf}{n \times Z}$
Vitesse d'avance Vorschubgeschwindigkeit Feed rate	(mm/min)	Vf =	fz x Z x n
Débit d'enlèvement de copeaux Spanvolumen Chip flow rate	(mm³/min)	Q =	ap x ae x Vf
Avance par tour Vorschub pro Umdrehung Cutting feed per rotation	(mm/U)	f =	$\frac{Vf}{n}$

Nos propositions techniques s'appliquent à la plupart des utilisations courantes.

N'hésitez pas à nous contacter pour des conseils plus précis.

Diese technische Empfehlungen gelten für die Mehrzahl der Standardanwendungen.

Unsere Techniker beraten Sie gerne für spezifische Anliegen.

These technical propositions apply to the majority of standard usages.

Do not hesitate to contact us for more specific advices.

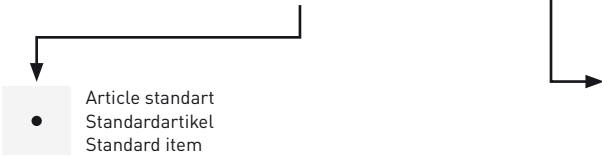
SYMBOL

Légende des symboles

Symbollegende

Symbol Legend

E	L	Art. N°	TiAlN	TiN	N (µK20)	HTA	HTiN	HN (µK10)
1.0	5	731RU-1.0	•	•				
1.2	5	731RU-1.2	•	•				
1.5	7	731RU-1.5	•	•	•	•	•	•
2.0	7	731RU-2.0	•	•				



Acier
Stahl
Steel



Inox
Rostfreistahl
Stainless steel



Alliages d'aluminium et non ferreux
Aluminium- und Nichtisenlegierungen
Aluminium and non-ferrous alloys



Titane et superalliages
Titan und Superlegierungen
Titanium and superalloys



Acier trempé
Gehärteter Stahl
Hardened steel



Fonte
Gusseisen
Cast iron



Matière exotique
Exotisches material
Exotic material



Carbure
Hartmetall
Carbide



µK20 + revêtement PVD
µK20 + PVD Beschichtung
µK20 + PVD coating

TF F M E

TF ★★★★★
M ★★★★★
N ★★★★★
S ★★★★★

