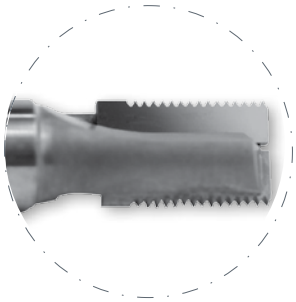
1. Form cutters in PCD (laser machining)

2. Standard tools PCD

PCD end mill l_1=1.5xd_1	4010
PCD end mill l_1=1.5xd_1	4015
PCD end mill l_1=2xd_1	4020
T-slot cutter in PCD	4100
Engraving mill in PCD - ¾ - flat tip	4119-3
Countersink in PCD 90°	4120
PCD end mill with ball end	4200
PCD twist drill - 2 teeth	4500
PCD thread mill	45200

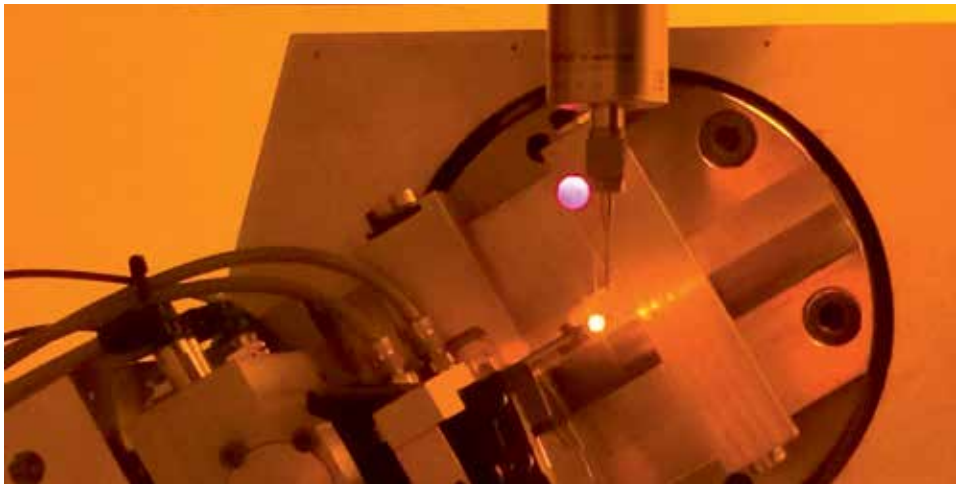
Form cutters in PCD/CVD/CBN Laser machining

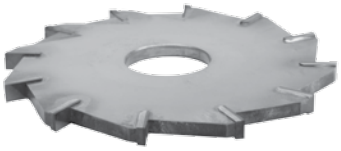


Profiled cutters

The production of PCD cutting tools by laser machining is highly complex, requiring ultra-precise and sophisticated machines.

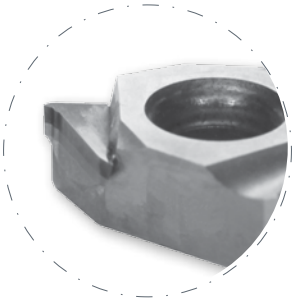
Form cutters





Slitting saws

Laser sharpening generating no efforts on the tool, the mass and the kinetic of the machine have been developed specifically to ensure very fast and precise movements.

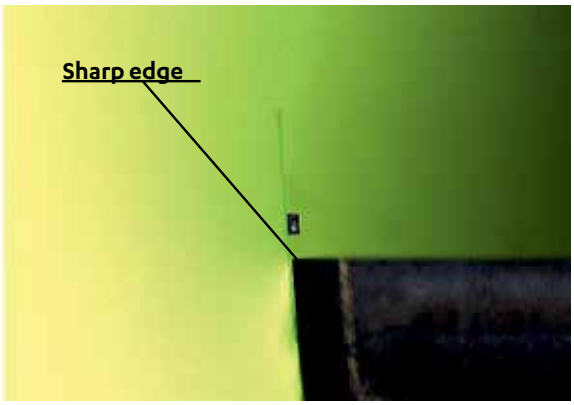


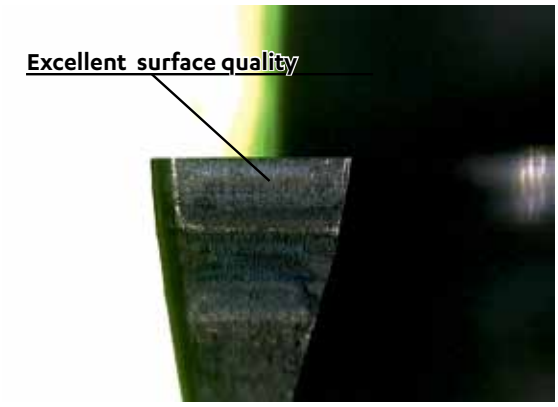
Turning tool with profiled insert

Form cutters in PCD/CVD/CBN Laser machining

The 3 advantages of laser machining of cutting tools :

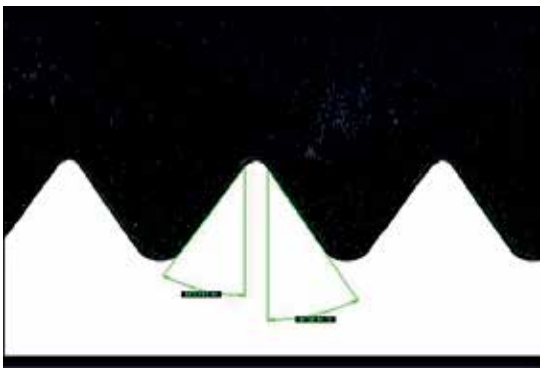
1° Very sharp cutting edges can be achieved. The laser cuts the synthetic diamond.





2° Very long tool life

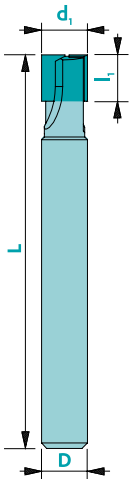
3° Allows the production of highly complex shapes from a dxf file provided by the customer.

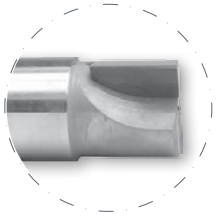


PCD end mill l_1=1xd_1

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted □ highly adapted ■





Tolerances d_1 < 1mm ▶ +0/-0.01 l_1: +0.2/-0
d_1 > 1mm ▶ +0/-0.02 D: h5

Art. n°	d_1	l_1	D	L	Z
4010d0.50L38Z1	0.5	0.5	6	38	1
4010d1.00L38Z1	1.0	1.0	6	38	1
4010d1.50L38Z1	1.5	1.5	6	38	1
4010d2.00L38Z1	2.0	2.0	6	38	1
4010d2.50L38Z1	2.5	2.5	6	38	1
4010d3.00L38Z1	3.0	3.0	6	38	1
4010d3.50L38Z1	3.5	3.5	6	38	1
4010d4.00L51Z1	4.0	4.0	6	51	1
4010d4.00L51Z2	4.0	4.0	6	51	2
4010d5.00L51Z2	5.0	5.0	6	51	2
4010d6.00L51Z2	6.0	6.0	6	51	2
4010d7.00L61Z2	7.0	7.0	8	61	2
4010d8.00L61Z2	8.0	8.0	8	61	2
4010d8.00L120Z2	8.0	8.0	8	120	2
4010d10.00L72Z2	10.0	10.0	10	72	2
4010d10.00L120Z2	10.0	10.0	10	120	2
4010d12.00L83Z2	12.0	12.0	12	83	2
4010d12.00L150Z2	12.0	12.0	12	150	2
4010d14.00L83Z2	14.0	14.0	14	83	2
4010d14.00L150Z2	14.0	14.0	14	150	2
4010d16.00L92Z2	16.0	16.0	16	92	2
4010d16.00L180Z2	16.0	16.0	16	180	2
4010d20.00L104Z2	20.0	20.0	20	104	2
4010d20.00L180Z2	20.0	20.0	20	180	2

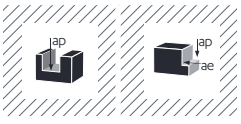
Z1-2

λ 0°

γ 0°

PCD

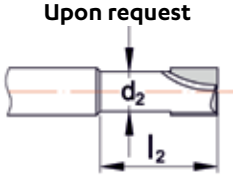
HSC



ap=0.15xd_1

ae=0.03xd_1
ap=1xd_1

Upon request

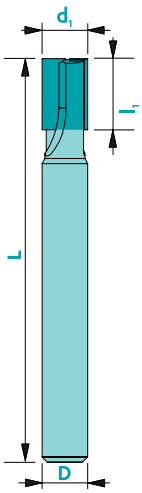


45° 0.03-0.20

r 0.05-0.20

Other dimensions, CVD/CBN available upon request.

PCD end mill l_1=1.5xd_1



Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted □ highly adapted ■

Tolerances d_1 < 1mm ▶ +0/-0.01 D: h5
d_1 > 1mm ▶ +0/-0.02

Art. n°	d_1	l_1	D	L	Z
4015d1.00L38Z1	1.0	1.5	6	38	1
4015d1.50L38Z1	1.5	2.5	6	38	1
4015d2.00L38Z1	2.0	3.0	6	38	1
4015d2.50L38Z1	2.5	3.5	6	38	1
4015d3.00L38Z1	3.0	4.5	6	38	1
4015d3.50L38Z1	3.5	5.0	6	38	1
4015d4.00L51Z1	4.0	6.0	6	51	1
4015d4.00L51Z2	4.0	6.0	6	51	2
4015d5.00L51Z2	5.0	7.5	6	51	2
4015d6.00L51Z2	6.0	9.0	6	51	2
4015d7.00L61Z2	7.0	10.5	8	61	2
4015d8.00L61Z2	8.0	12.0	8	61	2
4015d8.00L120Z2	8.0	12.0	8	120	2
4015d10.00L72Z2	10.0	15.0	10	72	2
4015d10.00L120Z2	10.0	15.0	10	120	2
4015d12.00L83Z2	12.0	18.0	12	83	2
4015d12.00L150Z2	12.0	18.0	12	150	2

Z1-2

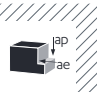
λ 0°

γ 0°

PCD

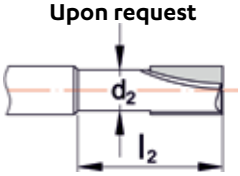
HSC

ap=0.1xd_1



ae=0.03xd_1
ap=1.5xd_1

Upon request



45° 0.03-0.20

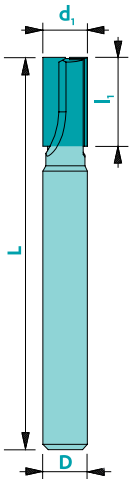
r 0.05-2.00

Other dimensions, CVD/CBN available upon request.

PCD end mill l_1=2xd_1

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted □ highly adapted ■



Tolerances d_1 < 1mm ▶ +0/-0.01 D: h5
d_1 > 1mm ▶ +0/-0.02

Art. n°	d_1	l_1	D	L	Z
4020d2.00L38Z1	2.0	4.0	6	38	1
4020d2.50L38Z1	2.5	5.0	6	38	1
4020d3.00L38Z1	3.0	6.0	6	38	1
4020d3.50L38Z1	3.5	7.0	6	38	1
4020d4.00L38Z1	4.0	8.0	6	38	1
4020d5.00L51Z2	5.0	10.0	6	51	2
4020d6.00L51Z2	6.0	12.0	6	51	2
4020d8.00L61Z2	8.0	16.0	8	61	2
4020d8.00L120Z2	8.0	16.0	8	120	2

Z1-2

λ 0°

γ 0°

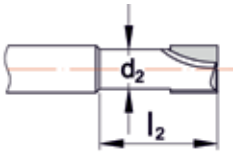
PCD

HSC

ap=0.15xd_1

ae=0.03xd_1
ap=1xd_1

Upon request



45° 0.03-0.20

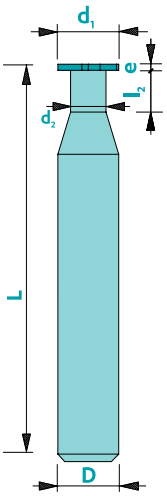
r 0.05-2.00

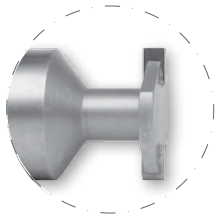
Other dimensions, CVD/CBN available upon request.

T-slot cutter in PCD

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted □ highly adapted ■





Tolerances

d_1 < 1mm ▶ +0/-0.01
d_1 > 1mm ▶ +0/-0.02
e: +0.01/-0.01
d_2: +0/-0.5
l_2: +0.2/-0
D: h5

Art. n°	d_1	e	d_2	l_2	D	L	Z
4100d3.00e#.##Z1	3	0.6 - 1.5	1.5	2	4	38	1
4100d4.00e#.##Z1	4	0.6 - 1.5	2.5	3	4	38	1
4100d4.00e#.##Z2	4	0.6 - 1.5	2.5	3	4	38	2
4100d5.00e#.##Z1	5	0.6 - 1.5	3.0	3	5	38	1
4100d5.00e#.##Z2	5	0.6 - 1.5	3.0	3	5	38	2
4100d6.00e#.##Z2	6	0.6 - 2.0	3.5	4	6	38	2
4100d8.00e#.##Z2	8	0.6 - 3.0	4.0	5	8	51	2
4100d10.00e#.##Z2	10	0.6 - 3.0	5.0	5	10	51	2
4100d12.00e#.##Z2	12	0.6 - 4.0	6.0	6	10	51	2
4100d15.00e#.##Z2	15	0.6 - 5.0	8.0	8	10	61	2
4100d16.00e#.##Z2	16	0.6 - 2.9	8.0	8	10	61	2
4100d16.00e#.##Z2	16	3.0 - 6.0	8.0	8	10	61	2

Z1-2

λ 0°

γ 0°

PCD

HSC

☐ **Order** ☐ **Quotation request**

Dimensions :

d_1 : _____ e : _____ d_2 : _____

D : _____ L : _____ l_2 : _____

Machined material :

_____

Contact person :

_____

Quantity :

_____

Order No :

_____

Company's stamp & date :

_____

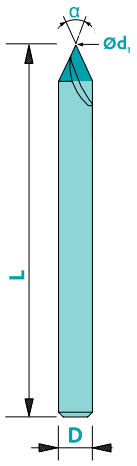
Standard dimensions of the bars : Ø 3x L 38, Ø 4x L 38, Ø 6x L 38, Ø 6x L 51, Ø 8x L 61, Ø 10x L 72, Ø 12x L 83, Ø 16x L 92, Ø 20x L 104

Other dimensions, CVD/CBN available upon request.

Engraving mill in PCD - ¾ - flat tip

Material	n [rpm]	Ap	Uncoated
Steel < 700 N/mm²	-	-	-
Steel > 700 N/mm²	-	-	-
Stainless steel	-	-	-
Cast iron	-	-	-
Copper	20 - 40'000	0.05 - 0.40	■
Brass - Bronze	25 - 40'000	0.05 -0.40	■
Aluminium	25 - 40'000	0.05 - 0.50	■
Gold - Silver	20 - 40'000	0.05 -0.40	■
Platinum - Palladium	25 - 40'000	0.05 -0.40	■
Superalloys	-	-	-
Titanium	25 - 40'000	0.05 - 0.40	□

not adapted - adapted □ highly adapted ■



Tolerances d_1: +/- 0.01
D: h5

Art. n°	α	d_1	D	L
4119-3a40d0.05	40°	0.05	3	33
4119-3a40d0.08	40°	0.08	3	33
4119-3a40d0.10	40°	0.10	3	33
4119-3a50d0.05	50°	0.05	3	33
4119-3a50d0.10	50°	0.08	3	33
4119-3a50d0.15	50°	0.10	3	33
4119-3a60d0.05	60°	0.05	3	33
4119-3a60d0.08	60°	0.08	3	33

Art. n°	α	d_1	D	L
4119-3a60d0.10	60°	0.10	3	33
4119-3a70d0.05	70°	0.05	3	33
4119-3a70d0.08	70°	0.08	3	33
4119-3a70d0.10	70°	0.10	3	33
4119-3a90d0.05	90°	0.05	3	33
4119-3a90d0.08	90°	0.08	3	33
4119-3a90d0.10	90°	0.10	3	33

≥ 0.02 Z1

λ 0°

PCD HSC

☐ **Order** ☐ **Quotation request**

Angle (α):

☐ By default : 60° ☐ 30° ☐ 35° ☐ 45°

☐ Other : _____ ☐ 50° ☐ 55° ☐ 90°

Shank Ø :

☐ By default : D=3

☐ Other : D= _____

Order No :

_____

Machined material :

_____

Quantity :

_____

d_1 (from 0.02 mm) :

_____

Contact person :

_____

Company's stamp & date :

_____

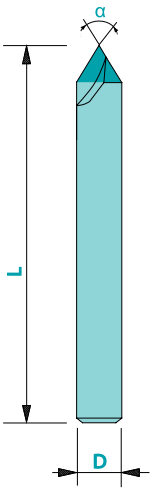
Standard dimensions of the bars : Ø 3x L 38, Ø 4x L 38, Ø 6x L 38, Ø 6x L 51, Ø 8x L 61, Ø 10x L 72, Ø 12x L 83, Ø 16x L 92, Ø 20x L 104

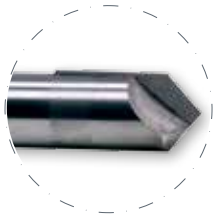
Other dimensions, CVD/CBN available upon request.

Countersink in PCD 90°

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	300	■
Brass - Bronze	400	■
Aluminium	800	■
Gold - Silver	220	■
Platinum - Palladium	110	■
Superalloys	-	-
Titanium	100	■

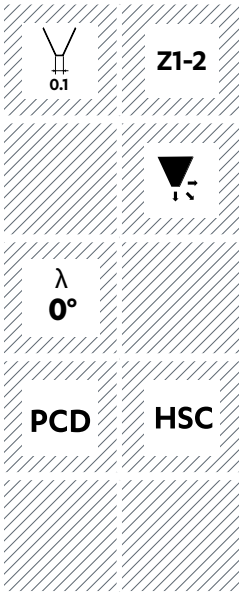
not adapted - adapted □ highly adapted ■





Tolerances d_1: +/- 0.01
D: h5

Art. n°	α	D	L	Z
4010D3.00	90°	3	38	1
4010D4.00	90°	4	50	1
4010D6.00	90°	6	50	2



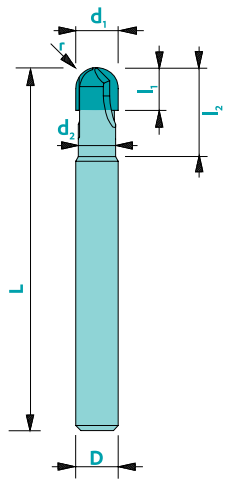
Other dimensions, CVD/CBN available upon request.

PCD end mill with ball end

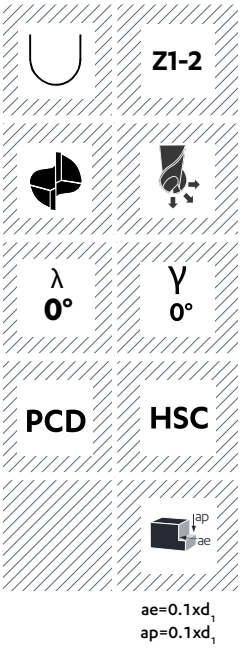
Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	300	■
Brass - Bronze	400	■
Aluminium	800	■
Gold - Silver	220	■
Platinum - Palladium	110	■
Superalloys	-	-
Titanium	100	■

not adapted - adapted □ highly adapted ■

Tolerances d_1 < 1mm ▶ +0/-0.01 ⌒ +0/-0.01
d_1 > 1mm ▶ +0/-0.02 D: h5



Art. n°	d_1	l_1	r	d_2	l_2	D	L	Z
4200d1.0L38Z1	1.00	1.00	0.50	-	-	6	38	1
4200d1.5L38Z1	1.50	1.50	0.75	-	-	6	38	1
4200d2.0L38Z1	2.00	2.00	1.00	1.75	6.50	6	38	1
4200d2.5L38Z1	2.50	2.50	1.25	2.20	7.50	6	38	1
4200d2.5L38Z2	2.50	2.50	1.25	2.20	7.50	6	38	2
4200d3.0L38Z1	3.00	3.00	1.50	2.60	8.00	6	38	1
4200d3.0L38Z2	3.00	3.00	1.50	2.60	8.00	6	38	2
4200d3.5L38Z1	3.50	3.50	1.75	3.00	9.00	6	38	1
4200d3.5L38Z2	3.50	3.50	1.75	3.00	9.00	6	38	2
4200d4.0L51Z1	4.00	4.00	2.00	3.50	10.00	6	51	1
4200d4.0L51Z2	4.00	4.00	2.00	3.50	10.00	6	51	2
4200d5.0L51Z2	5.00	5.00	2.50	4.40	11.00	6	51	2
4200d6.0L51Z2	6.00	6.00	3.00	5.25	12.50	6	51	2
4200d8.0L61Z2	8.00	8.00	4.00	7.00	15.00	8	61	2
4200d8.0L120Z2	8.00	8.00	4.00	7.00	15.00	8	120	2
4200d10.0L72Z2	10.00	10.00	5.00	8.75	17.00	10	72	2
4200d10.0L120Z2	10.00	10.00	5.00	8.75	17.00	10	120	2
4200d12.0L83Z2	12.00	12.00	6.00	10.50	20.00	12	83	2
4200d12.0L150Z2	12.00	12.00	6.00	10.50	20.00	12	150	2



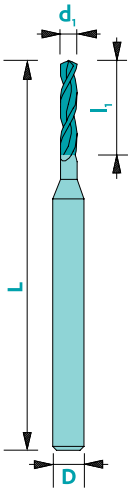
ae=0.1xd$_1$
ap=0.1xd$_1$

Other dimensions, CVD/CBN available upon request.

PCD twist drill - 2 teeth

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	180	■
Brass - Bronze	280	■
Aluminium	250	■
Gold - Silver	200	■
Platinum - Palladium	100	■
Superalloys	-	-
Titanium	140	■

not adapted - adapted □ highly adapted ■



Tolerances d_1=+0/-0.13
D: h6

Art. n°	d_1	l_1	D	L
4500d0.48	0.48	4.0	3	38
4500d0.49	0.49	4.0	3	38
4500d0.50	0.50	4.0	3	38
4500d0.51	0.51	4.0	3	38
4500d0.52	0.52	4.0	3	38
4500d0.53	0.53	4.0	3	38
4500d0.54	0.54	4.0	3	38
4500d0.55	0.55	4.0	3	38
4500d0.56	0.56	4.0	3	38
4500d0.57	0.57	4.0	3	38
4500d0.58	0.58	4.0	3	38
4500d0.59	0.59	4.0	3	38
4500d0.60	0.60	5.0	3	38
4500d0.61	0.61	5.0	3	38
4500d0.62	0.62	5.0	3	38
4500d0.63	0.63	5.0	3	38
4500d0.64	0.64	5.0	3	38
4500d0.65	0.65	5.0	3	38
4500d0.66	0.66	5.0	3	38
4500d0.67	0.67	5.0	3	38
4500d0.68	0.68	5.0	3	38
4500d0.69	0.69	5.0	3	38
4500d0.70	0.70	5.0	3	38
4500d0.71	0.71	5.0	3	38
4500d0.72	0.72	5.0	3	38
4500d0.73	0.73	5.0	3	38
4500d0.74	0.74	5.0	3	38
4500d0.75	0.75	5.0	3	38
4500d0.76	0.76	5.0	3	38

Art. n°	d_1	l_1	D	L
4500d0.77	0.77	5.0	3	38
4500d0.78	0.78	5.0	3	38
4500d0.79	0.79	5.0	3	38
4500d0.80	0.80	6.0	3	38
4500d0.81	0.81	6.0	3	38
4500d0.82	0.82	6.0	3	38
4500d0.83	0.83	6.0	3	38
4500d0.84	0.84	6.0	3	38
4500d0.85	0.85	6.0	3	38
4500d0.86	0.86	6.0	3	38
4500d0.87	0.87	6.0	3	38
4500d0.88	0.88	6.0	3	38
4500d0.89	0.89	6.0	3	38
4500d0.90	0.90	7.0	3	38
4500d0.91	0.91	7.0	3	38
4500d0.92	0.92	7.0	3	38
4500d0.93	0.93	7.0	3	38
4500d0.94	0.94	7.0	3	38
4500d0.95	0.95	7.0	3	38
4500d0.96	0.96	7.0	3	38
4500d0.97	0.97	7.0	3	38
4500d0.98	0.98	7.0	3	38
4500d0.99	0.99	7.0	3	38
4500d1.00	1.00	8.0	3	38
4500d1.01	1.01	8.0	3	38
4500d1.02	1.02	8.0	3	38
4500d1.03	1.03	8.0	3	38
4500d1.04	1.04	8.0	3	38
4500d1.05	1.05	8.0	3	38

118° Z2

λ 30°

PCD HSC

PCD twist drill - 2 teeth

118°

Z2

λ 30°

PCD

HSC

Art. n°	d_1	l_1	D	L
4500d1.06	1.06	8.0	3	38
4500d1.07	1.07	8.0	3	38
4500d1.08	1.08	8.0	3	38
4500d1.09	1.09	8.0	3	38
4500d1.10	1.10	9.0	3	38
4500d1.11	1.11	9.0	3	38
4500d1.12	1.12	9.0	3	38
4500d1.13	1.13	9.0	3	38
4500d1.14	1.14	9.0	3	38
4500d1.15	1.15	9.0	3	38
4500d1.16	1.16	9.0	3	38
4500d1.17	1.17	9.0	3	38
4500d1.18	1.18	9.0	3	38
4500d1.19	1.19	9.0	3	38
4500d1.20	1.20	9.0	3	38
4500d1.21	1.21	9.0	3	38
4500d1.22	1.22	9.0	3	38
4500d1.23	1.23	9.0	3	38
4500d1.24	1.24	9.0	3	38
4500d1.25	1.25	9.0	3	38
4500d1.26	1.26	9.0	3	38
4500d1.27	1.27	9.0	3	38
4500d1.28	1.28	9.0	3	38
4500d1.29	1.29	9.0	3	38
4500d1.30	1.30	9.0	3	38
4500d1.31	1.31	9.0	3	38
4500d1.32	1.32	9.0	3	38
4500d1.33	1.33	9.0	3	38
4500d1.34	1.34	9.0	3	38
4500d1.35	1.35	9.0	3	38
4500d1.36	1.36	9.0	3	38
4500d1.37	1.37	9.0	3	38
4500d1.38	1.38	9.0	3	38
4500d1.39	1.39	9.0	3	38
4500d1.40	1.40	9.0	3	38
4500d1.41	1.41	9.0	3	38
4500d1.42	1.42	9.0	3	38
4500d1.43	1.43	9.0	3	38
4500d1.44	1.44	9.0	3	38
4500d1.45	1.45	9.0	3	38
4500d1.46	1.46	9.0	3	38
4500d1.47	1.47	9.0	3	38
4500d1.48	1.48	9.0	3	38
4500d1.49	1.49	9.0	3	38
4500d1.50	1.50	9.0	3	38

Art. n°	d_1	l_1	D	L
4500d1.55	1.55	9.0	3	38
4500d1.60	1.60	9.0	3	38
4500d1.65	1.65	9.0	3	38
4500d1.70	1.70	9.0	3	38
4500d1.75	1.75	9.0	3	38
4500d1.80	1.80	9.0	3	38
4500d1.85	1.85	9.0	3	38
4500d1.90	1.90	9.0	3	38
4500d1.95	1.95	9.0	3	38
4500d2.00	2.00	9.0	3	38
4500d2.05	2.05	9.0	3	38
4500d2.10	2.10	9.0	3	38
4500d2.15	2.15	9.0	3	38
4500d2.20	2.20	9.0	3	38
4500d2.25	2.25	9.0	3	38
4500d2.29	2.29	9.0	3	38
4500d2.30	2.30	9.0	3	38
4500d2.40	2.40	9.0	3	38
4500d2.50	2.50	9.0	3	38

Other dimensions, CVD/CBN available upon request.

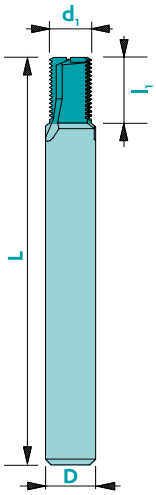
PCD thread mill

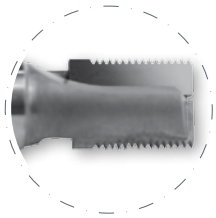
Internal and external threading

45200

Material	Vc	Uncoated
Steel < 700 N/mm²	-	-
Steel > 700 N/mm²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	150	■
Brass - Bronze	140	■
Aluminium	200	■
Gold - Silver	140	■
Platinum - Palladium	80	■
Superalloys	-	-
Titanium	40	□

not adapted - adapted □ highly adapted ■





Tolerances

d_1=+0/-0.1
D: h5

Art. n°	Ø nominal	Pitch	d_1	l_1	D	L	Z
45200M2.00	M2.00	0.40	1.40	4.0	3	38	1
45200M2.50	M2.50	0.45	1.80	5.0	6	57	1
45200M3.00	M3.00	0.50	2.30	6.0	6	57	1
45200M4.00	M4.00	0.70	3.00	8.0	6	57	2
45200M5.00	M5.00	0.80	3.80	10.0	6	57	2
45200M6.00	M6.00	1.00	4.50	12.0	6	57	2
45200M8.00	M8.00	1.25	5.00	16.0	6	57	2

Z1-2

λ 0°

γ 0°

PCD

HSC

Other dimensions, CVD/CBN available upon request.