

Special solutions for special requirements



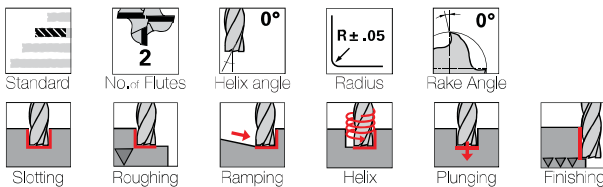
PCD End Mill - Guhring series 5493

Summary of advantages

- Individual solutions for the highly accurate and productive machining of small to large diameters
- Special requirements necessitate special solutions, therefore, tools are manufactured taking the customer requirements into consideration
- PCD/CBN special tools enable maximum machine capacity utilization, increasing the production capacity, tight tolerances, optimal surface qualities, maximum cutting speeds and essential process reliability
- It is also possible to reduce the set-up times for mass production components due to the longer tool life

PCD Slot Drills (2-flute) - Inch - Standard Length

for aluminum and composites



Tool material
Surface finish

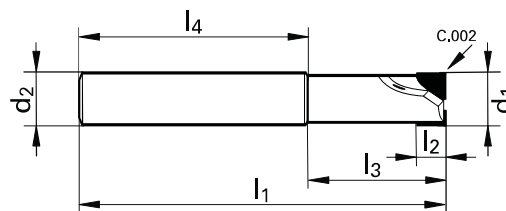


PCD
Bright

Series **3867**

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

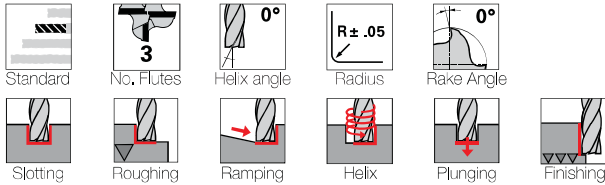
●=Optimal ○=Secondary



d1 e10	d2 h6	l1	l2	l3	l4	No. of Flutes	Code no.	EDP Number
inch	inch	inch	inch	inch	inch			
1/4	1/4	2 1/2	3/4	1 1/16	1 7/16	2	6.350	9038670063500
3/8	3/8	3	3/4	1 1/4	1 3/4	2	9.520	9038670095200
1/2	1/2	3	1	1 5/16	1 11/16	2	12.700	9038670127000
3/4	3/4	4	1	1 5/8	2 3/8	2	19.050	9038670190500

PCD Slot Drills (3-flute) - Inch - Standard Length

for aluminum and composites



Tool material

PCD

Surface finish

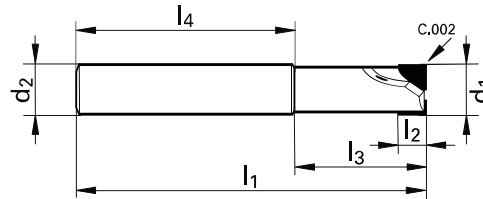
Bright

Series

3870

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

●=Optimal ○=Secondary



d1 e10	d2 h6	l1	l2	l3	l4	No. of Flutes	Code no.	EDP Number
inch	inch	inch	inch	inch	inch			
1/2	1/2	3	1/2	1 5/16	1 11/16	3	12.700	9038700127000
3/4	3/4	3	1/2	1	2	3	19.050	9038700190500
1	1	4	1	1 5/8	2 3/8	3	25.400	9038700254000

Cutting values: Slotting*, HPC-roughing and copy milling

ISO Code	Hardness	Cutting Speed SFM	Feed Inch Per Tooth (IPT) with nom. Dia				
			1/4	3/8	1/2	3/4	1
N Aluminium	less than 7% Si	1970	0.0015	0.0023	0.0029	0.0038	0.0040
	Up to 17% Si	850	0.0013	0.0019	0.0025	0.0034	0.0036
Graphite	up to 8 micron grain size	1475	0.0025	0.0038	0.0050	0.0068	0.0072
Composites	over 50% fiber content	980	0.0013	0.0019	0.0025	0.0034	0.0036

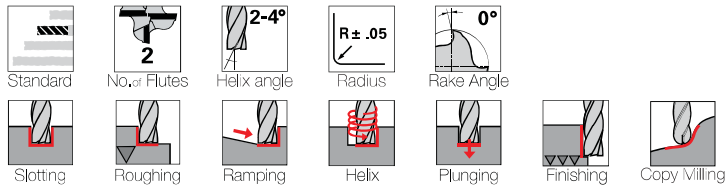
* peripheral cooling "Guhrojet" is recommended for optimal chip evacuation and tool life, for graphite and Kevlar-machining air cooling

** at lower feed width the cutting speed vc and feed rate fz can be increased by 30%

PCD Slot Drills (2-flute) - Metric - Standard Length - Coolant Fed



for aluminum and composites



Tool material

PCD

Surface finish

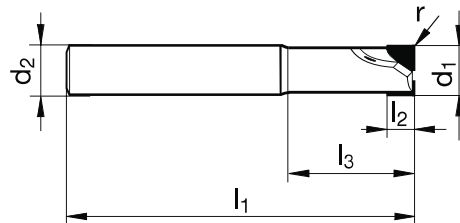
bright

Series

5492

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

●=Optimal ○=Secondary



d1	tol. d1	d2 h6	l1	l2	l3	r	No. of Flutes	Code no.	EDP Number
mm	mm	mm	mm	mm	mm	mm			
4.000	± 0,02	6.000	51.00	6.00	6.40	0.10	2	4.000	9054920040000
5.000	± 0,02	6.000	51.00	8.00	8.40	0.10	2	5.000	9054920050000
6.000	± 0,02	6.000	57.00	8.00	21.00	0.10	2	6.000	9054920060000
8.000	± 0,02	8.000	63.00	8.00	27.00	0.10	2	8.000	9054920080000
8.000	± 0,02	8.000	63.00	12.00	27.00	0.10	2	8.001	9054920080010
10.000	± 0,02	10.000	72.00	8.00	32.00	0.10	2	10.000	9054920100000
10.000	± 0,02	10.000	72.00	16.00	32.00	0.10	2	10.001	9054920100010
12.000	± 0,02	12.000	83.00	8.00	38.00	0.10	2	12.000	9054920120000
12.000	± 0,02	12.000	83.00	16.00	38.00	0.10	2	12.001	9054920120010
14.000	± 0,02	14.000	83.00	8.00	38.00	0.10	2	14.000	9054920140000
14.000	± 0,02	14.000	83.00	16.00	38.00	0.10	2	14.001	9054920140010
16.000	± 0,02	16.000	100.00	12.00	52.00	0.10	2	16.000	9054920160000
16.000	± 0,02	16.000	100.00	20.00	52.00	0.10	2	16.001	9054920160010
18.000	± 0,02	18.000	100.00	12.00	52.00	0.10	2	18.000	9054920180000
18.000	± 0,02	18.000	100.00	20.00	52.00	0.10	2	18.001	9054920180010
20.000	± 0,02	20.000	100.00	12.00	50.00	0.10	2	20.000	9054920200000
20.000	± 0,02	20.000	100.00	20.00	50.00	0.10	2	20.001	9054920200010

Cutting values: Slotting*, HPC-roughing and copy milling

Type	Characteristic	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø						
					4	6	8	10	12	16	20
Aluminium	up to 7% Si	—	—	—	—	—	—	—	—	—	—
	up to 17% Si	0.5xd	1xd	220	0.02	0.03	0.04	0.05	0.06	0.07	0.09
Graphite	up to 8 µm grain size	1.5xd	1xd	350	0.04	0.06	0.08	0.1	0.12	0.15	0.18
Composites	over 50% fiber content	1xd	1xd	200	0.015	0.03	0.04	0.05	0.06	0.08	0.09

* peripheral cooling "Guhrojet" is recommended for optimal chip evacuation and tool life, for graphite and Kevlar-machining air cooling

** at lower feed width the cutting speed v_c and feed rate f_z can be increased by 30%

PCD Slot Drills (2-flute) - Metric - Long Length - Coolant Fed



for aluminum and composites



Long



No. of Flutes



Helix angle



Radius



Rake Angle



Slotting



Roughing



Ramping



Helix



Finishing



Copy Milling

Tool material

Surface finish



PCD

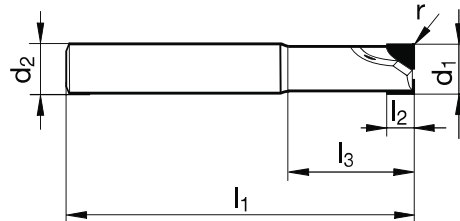
bright

Series

5493

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

●=Optimal ○=Secondary



d1	tol. d1	d2 h6	l1	l2	l3	r	No. of Flutes	Code no.	EDP Number
mm	mm	mm	mm	mm	mm	mm			
4.000	± 0,02	6.000	70.00	6.00	6.40	0.10	2	4.000	9054930040000
5.000	± 0,02	6.000	70.00	8.00	8.40	0.10	2	5.000	9054930050000
6.000	± 0,02	6.000	75.00	8.00	21.00	0.10	2	6.000	9054930060000
8.000	± 0,02	8.000	100.00	8.00	27.00	0.10	2	8.000	9054930080000
8.000	± 0,02	8.000	100.00	12.00	27.00	0.10	2	8.001	9054930080010
10.000	± 0,02	10.000	100.00	8.00	32.00	0.10	2	10.000	9054930100000
10.000	± 0,02	10.000	100.00	16.00	32.00	0.10	2	10.001	9054930100010
12.000	± 0,02	12.000	100.00	8.00	38.00	0.10	2	12.000	9054930120000
12.000	± 0,02	12.000	100.00	16.00	38.00	0.10	2	12.001	9054930120010
14.000	± 0,02	14.000	100.00	8.00	38.00	0.10	2	14.000	9054930140000
14.000	± 0,02	14.000	100.00	16.00	38.00	0.10	2	14.001	9054930140010
16.000	± 0,02	16.000	150.00	12.00	52.00	0.10	2	16.000	9054930160000
16.000	± 0,02	16.000	150.00	20.00	52.00	0.10	2	16.001	9054930160010
18.000	± 0,02	18.000	125.00	12.00	52.00	0.10	2	18.000	9054930180000
18.000	± 0,02	18.000	125.00	20.00	52.00	0.10	2	18.001	9054930180010
18.000	± 0,02	18.000	150.00	20.00	52.00	0.10	2	18.002	9054930180020
18.000	± 0,02	18.000	150.00	12.00	52.00	0.10	2	18.003	9054930180030
20.000	± 0,02	20.000	150.00	12.00	50.00	0.10	2	20.000	9054930200000
20.000	± 0,02	20.000	150.00	20.00	50.00	0.10	2	20.001	9054930200010

Cutting values: Slotting*, HPC-roughing and copy milling

Type	Characteristic	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø						
					4	6	8	10	12	16	20
N Aluminium	up to 7% Si	—	—	—	—	—	—	—	—	—	—
	up to 17% Si	0.5xd	1xd	220	0.02	0.03	0.04	0.05	0.06	0.07	0.09
Graphite	up to 8 µm grain size	1.5xd	1xd	350	0.04	0.06	0.08	0.1	0.12	0.15	0.18
Composites	over 50% fiber content	1xd	1xd	200	0.015	0.03	0.04	0.05	0.06	0.08	0.09

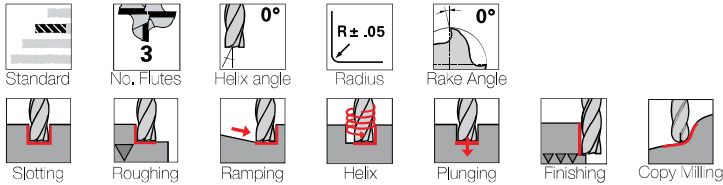
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** at lower feed width the cutting speed v_c and feed rate f_z can be increased by 30%

PCD Slot Drills (3-flute) - Metric - Standard Length - Coolant Fed



for aluminum and composites



Tool material

PCD

Surface finish

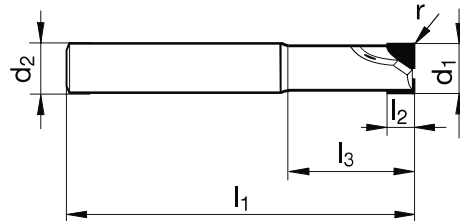
bright

Series

5495

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

●=Optimal ○=Secondary



d1	tol. d1	d2 h6	l1	l2	l3	r	No. of Flutes	Code no.	EDP Number
mm	mm	mm	mm	mm	mm	mm			
14.000	± 0,02	14.000	83.00	8.00	38.00	0.10	3	14.000	9054950140000
14.000	± 0,02	14.000	83.00	16.00	38.00	0.10	3	14.001	9054950140010
16.000	± 0,02	16.000	100.00	12.00	52.00	0.10	3	16.000	9054950160000
16.000	± 0,02	16.000	100.00	20.00	52.00	0.10	3	16.001	9054950160010
18.000	± 0,02	18.000	100.00	12.00	52.00	0.10	3	18.000	9054950180000
18.000	± 0,02	18.000	100.00	20.00	52.00	0.10	3	18.001	9054950180010
20.000	± 0,02	20.000	100.00	12.00	50.00	0.10	3	20.000	9054950200000
20.000	± 0,02	20.000	100.00	20.00	50.00	0.10	3	20.001	9054950200010

Cutting values: Slotting*, HPC-roughing and copy milling

Type	Characteristic	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø						
					4	6	8	10	12	16	20
N Aluminium	up to 7% Si	—	—	—	—	—	—	—	—	—	—
	up to 17% Si	0.5xd	1xd	220	0.02	0.03	0.04	0.05	0.06	0.07	0.09
Graphite	up to 8 µm grain size	1.5xd	1xd	350	0.04	0.06	0.08	0.1	0.12	0.15	0.18
Composites	over 50% fiber content	1xd	1xd	200	0.015	0.03	0.04	0.05	0.06	0.08	0.09

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** at lower feed width the cutting speed v_c and feed rate f_z can be increased by 30%

PCD Slot Drills (3-flute) - Metric - Standard Length - Coolant Fed



for aluminum and composites



Standard



No. of Flutes



Radius



Rake Angle



HA



Slotting



Roughing



Ramping



Helix



Finishing



Copy Milling

Tool material

PCD

Surface finish

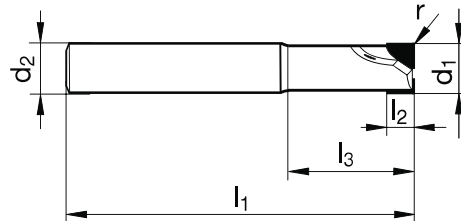
bright

Series

5496

Application group	Material examples	Ideal for
P	Steel	—
M	Stainless steel	—
K	Cast iron	—
N	Aluminum	●
S	Ni / Ti alloys	—
H	Hardened steel	—
	Composites	●

●=Optimal ○=Secondary



d1	tol. d1	d2 h6	l1	l2	l3	r	No. of Flutes	Code no.	EDP Number
mm	mm	mm	mm	mm	mm	mm			
14.000	± 0,02	14.000	100.00	8.00	38.00	0.10	3	14.000	9054960140000
14.000	± 0,02	14.000	100.00	16.00	38.00	0.10	3	14.001	9054960140010
16.000	± 0,02	16.000	150.00	12.00	52.00	0.10	3	16.000	9054960160000
16.000	± 0,02	16.000	150.00	20.00	52.00	0.10	3	16.001	9054960160010
18.000	± 0,02	18.000	150.00	12.00	52.00	0.10	3	18.000	9054960180000
18.000	± 0,02	18.000	150.00	20.00	52.00	0.10	3	18.001	9054960180010
20.000	± 0,02	20.000	150.00	12.00	50.00	0.10	3	20.000	9054960200000
20.000	± 0,02	20.000	150.00	20.00	50.00	0.10	3	20.001	9054960200010

Cutting values: Slotting*, HPC-roughing and copy milling

Type	Characteristic	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø						
					4	6	8	10	12	16	20
N Aluminium	up to 7% Si	—	—	—	—	—	—	—	—	—	—
	up to 17% Si	0.5xd	1xd	220	0.02	0.03	0.04	0.05	0.06	0.07	0.09
Graphite	up to 8 µm grain size	1.5xd	1xd	350	0.04	0.06	0.08	0.1	0.12	0.15	0.18
Composites	over 50% fiber content	1xd	1xd	200	0.015	0.03	0.04	0.05	0.06	0.08	0.09

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** at lower feed width the cutting speed v_c and feed rate f_z can be increased by 30%