

Engraving cutters of solid carbide and HSS

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Product line marking

Product lines are labelled in the table header with the appropriate tabs. Further information on page **14** and **15**.

Engraving cutters are available in the following tungsten carbide grade:

Engraving cutters of High Speed Steel (HSS) are available in the following special HSS-qualities

<p>K 10 F Micro grain carbide for machining all materials, for machining steel, cast steel, non-ferrous metals and plastics. Extra long life!</p>	<p>HSS-50 for machining high-tensile and high-grade carbide materials and heat resistant qualities.</p> <p>HSS-60 applications similar to HSS-50, but with extended life. Performance is improved when used in conjunction with a high quality cutting oil.</p> <p>We supply our engraving cutters semi-finished with rough-ground profile (+0,1 mm) or finish ground to your specification.</p>
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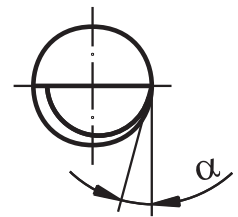
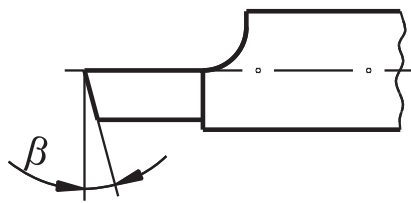
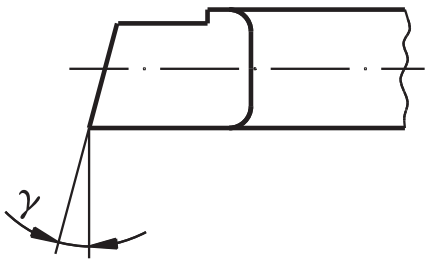
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Engraving Cutters – Recommendation for various applications

For optimal results the cutting and lead angles have to suit the material to be machined.
The values in the tables are recommendations.

Recommended cutting and lead angles

Material to be machined	Engraving cutters of Tungsten Carbide			Engraving cutters of HSS		
	$\sphericalangle \alpha$	$\sphericalangle \beta$	$\sphericalangle \gamma$	$\sphericalangle \alpha$	$\sphericalangle \beta$	$\sphericalangle \gamma$
Cast iron, cast steel	25°	15°	5°	25°	15°	5°
Brass, aluminium	30°	15°	5°	30°	15°	5°
Plastics, reinforced and non-reinforced	35°	15°	5°	35°	15°	5°
Light metals, copper, gold, silver	30°	15°	5°	30°	15°	5°



Recommended cutting speeds in m/min

Material to be machined	Engraving cutters of Tungsten Carbide	Engraving cutters of HSS	Engraving cutters of HSS
	K 10 F	HSS-50	HSS-60
Cast iron, cast steel	60–100	50–70	50–70
Steel up to 900 N/mm ²	120–160	40–70	40–70
Steel above 900 N/mm ²	50–70	–	25–40
Brass, aluminium	200–400	200–250	200–250
Plastics, reinforced and non-reinforced	200–600	200–300	200–300

Recommended feed rates f_z in mm


Material to be machined	
Cast iron, cast steel	0,04–0,1
Steel up to 900 N/mm ²	0,05–0,08
Steel above 900 N/mm ²	0,04–0,08
Brass, aluminium	0,08–0,15
Plastics, reinforced and non-reinforced	0,05–0,20




Engraving cutters

Ordering example: A1300403042


A




B
100°




C

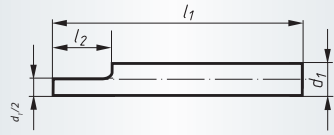


D
60°



F





Packing unit:
1 pc. per type

Further profiles and dimensions on request

d₁/2 as per your request

l₂ does not apply to profile F

Tolerance of semi-finished cutting edge + 0,1, finish ground on request

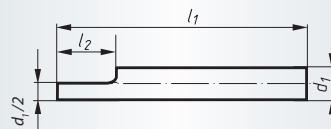
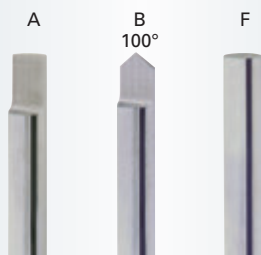
Description	Profile	Quality	d ₁ mm	l ₁ mm	l ₂ mm	Product-Number	recommended for					
HGA 03.040	D	K10F	3	40	6	A1300403042	1		5	6	8	■
HGA 04.040	A	K10F	4	40	6	A1300404012	1		5	6	8	■
HGA 04.040	D	K10F	4	40	6	A1300404042	1		5	6	8	■
HGA 04.040	F	K10F	4	40	6	A1300404062	1		5	6	8	■
HGA 04.060	A	K10F	4	60	6	A1300405012	1		5	6	8	■
HGA 04.060	D	K10F	4	60	6	A1300405042	1		5	6	8	■
HGA 06.070	A	K10F	6	70	8	A1300407012	1		5	6	8	■
HGA 06.070	D	K10F	6	70	8	A1300407042	1		5	6	8	■
HGA 06.100	D	K10F	6	100	8	A1300407142	1		5	6	8	■
HGA 08.080	A	K10F	8	80	12	A1300408012	1		5	6	8	■
HGA 08.100	A	K10F	8	100	12	A1300408112	1		5	6	8	■
HGA 10.080	A	K10F	10	80	14	A1300409012	1		5	6	8	■
HGA 10.100	A	K10F	10	100	14	A1300409112	1		5	6	8	■
HGA 12.080	A	K10F	12	80	16	A1300410012	1		5	6	8	■
HGA 12.100	A	K10F	12	100	16	A1300410112	1		5	6	8	■



Industry

Engraving cutters of HSS-50

Ordering example: A135046106



Packing unit:

5 pc. per type

Further profiles and dimensions on request

$d_1/2$ as per your request

l_2 does not apply to profile F

Tolerance of semi-finished cutting edge + 0,1, finish ground on request

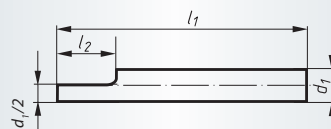
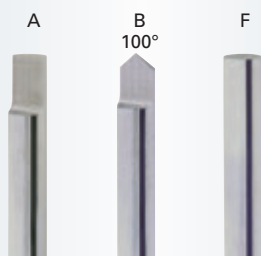
Description	Profile	Quality	d_1 mm	l_1 mm	l_2 mm	Product-Number	recommended for		
SGA 04.060	F	HSS-50	4	60	10	A135046106	①	⑤ ⑥ ⑧	■
SGA 06.080	A	HSS-50	6	80	14	A135046201	①	⑤ ⑥ ⑧	■
SGA 06.080	F	HSS-50	6	80	14	A135046206	①	⑤ ⑥ ⑧	■
SGA 06.160	F	HSS-50	6	160	14	A135046256	①	⑤ ⑥ ⑧	■
SGA 08.125	F	HSS-50	8	125	16	A135046406	①	⑤ ⑥ ⑧	■



Industry

Engraving cutters of HSS-60

Ordering example: A136046101



Packing unit:

5 pc. per type

Further profiles and dimensions on request

$d_1/2$ as per your request

l_2 does not apply to profile F

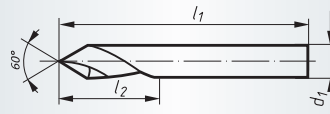
Tolerance of semi-finished cutting edge + 0,1, finish ground on request

Description	Profile	Quality	d_1 mm	l_1 mm	l_2 mm	Product-Number	recommended for		
SGA 04.060	A	HSS-60	4	60	10	A136046101	①	⑤ ⑥ ⑧	■
SGA 06.080	A	HSS-60	6	80	14	A136046201	①	⑤ ⑥ ⑧	■
SGA 06.080	F	HSS-60	6	80	14	A136046206	①	⑤ ⑥ ⑧	■



Engraving cutters of solid carbide, spiral fluted

Ordering example: A1300484071



Packing unit:

1 pc. per type

Further dimensions on request.

Relief-grinding 25°

Quality K 10 F = micro grain tungsten carbide

Description	d ₁ mm	l ₁ mm	l ₂ mm	Product-Number	recommended for	
HGS 03.040	3	40	15	A1300484071		■
HGS 04.040	4	40	20	A1300485071		■
HGS 06.050	6	50	22	A1300486071		■

Application:

Engraving of non-ferrous metals and plastics with minimum generation of burr.