

# Tungsten Carbide Burrs

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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**.



## Technical Information

### Quality

LUKAS carbide burrs are manufactured using high quality types of carbide and modern CNC automatic grinding machines in order to guarantee precision and repeatability of angle, profile and twist. Carbide burrs manufactured to your drawings or details assist in solving your particular stock removal problem.

### Application

The best results are obtained by selecting the recommended cut and speed. Please refer to the cutting speeds in the table on page **28** or according to the table illustrating the various cuts on page **29**.

### Power tools

Electric and pneumatic power tools are used; the bearings should be in good condition and the collets running true. Vibration and chatter will cause premature wear and tooth breakage. High pressure will reduce tool life and decreases tool efficiency.

### Shanks

For safety reasons the largest possible shank diameter should always be selected from the table. Other shank diameters and lengths are available on request. A selection of burrs with extra long shanks appears on page **60**.

### Robot application

LUKAS tungsten carbide burrs are precision tools, and have produced excellent results when used in conjunction with industrial robots. We can also develop the optimal burr for your particular application.

### Coated

The reasons for producing cutting tools with hard coatings such as TiN, TiCN, TiALN and LTE are as follows:

- to increase tool life
- to reduce machining forces
- to improve chip removal

The increase in tool life is mainly the result of the considerably higher surface hardness of the coating in comparison to the base material of the tool itself. In addition, due to the high chemical stability, it minimizes the reaction between the cutting edge of the tool and the chip to be removed.

The reduction of machining forces and the improvement in chip removal are achieved through a reduction in the friction between the free cutting zone of the tool and workpiece on the one hand, and the cutting edge of the tool and the chip removed on the other. The reduction in friction depends on the coating improving the surface finish and as previously described by largely avoiding any chemical reaction.

Our technicians would be pleased to help you in the selection of the correct coating. Please note the different possibilities on page **31**.

### Special tools

Tungsten carbide burrs manufactured to your design or drawing guarantee the LUKAS high quality standard, and can therefore assist in solving your particular machining problem.

### Packaging

We use plastics-packaging; please select the respective packing unit from our product lists.

### Recommendations for use

Select the cut to suit the material to be machined. Please kindly follow the principle: **The harder the material, the finer the cut!** The correct selection of speed is the basis of achieving optimum machining results and long tool-life; please refer to the adjoining table. On the following pages you will find some assistance to choose the right speed for your process. Use the highest possible speed within the indicated area.

Too low a speed results in vibration, chipping and premature wear! Reduce the speed of the burrs only when using in large arc angles or when used on low heat conducting materials. Never let the shank and head become discoloured blue. For safety reasons, extended shanks should also be run at low speed.

The power of your machine should be compatible with the machining process. A reduction in RPM due to lack of power – particularly common with pneumactic tools – should be avoided. Collets must run true. Run-out and vibration will result in chipping and premature wear.

For the same reasons, take care that the machine bearings are in perfect condition.

To avoid vibrations and shank breakage, select the shortest shank overhang as possible.

## A summary of available shapes

Shape	Type	Shape			Page
		DIN 8033	DIN 7755	LUKAS	
	Cylindrical	ZYA	7755/2	<b>A</b>	32
	Cylindrical round nose	WRC	7755/3	<b>C</b>	35
	Spherical	KUD	7755/4	<b>D</b>	37
	Oval	TRE	7755/5	<b>E</b>	39
	Arch round nose	RBF	7755/6	<b>F</b>	40
	Arch pointed nose	SPG	7755/7	<b>G</b>	41
	Flame	–	7755/8	<b>H</b>	43
	Internal	–	–	<b>I</b>	43
	Counter sink	KSJ	7755/9	<b>J</b>	44
	Conical round nose	KEL	7755/10	<b>L</b>	44
	Conical pointed nose	SKM	7755/11	<b>M</b>	46
	Inverted cone	WKN	7755/12	<b>N</b>	47
	Burrs for the machining of plastic	–	–	<b>P</b>	48
	Engraving Cutters	–	–	–	49
	Burrs for radius trimming (external)	–	–	<b>R</b>	50
	Burrs for radius trimming (internal)	–	–	<b>S</b>	50
	Miniature Burrs	–	–	–	51
	Small Burrs	–	–	–	52
	Tool-Set	–	–	–	54
	Burrs with TiAlN-coating	–	–	–	56
	Rasp burrs	–	–	–	57
	Rotary files	–	–	–	58
	Burrs for machining of non-ferrous metals	–	–	–	59
	Burrs with extended shank length	–	–	–	60
	Some examples of our competitive performance	–	–	–	62
	Power Tools	–	–	–	381

### Three steps to your optimum burr:

- 1 Select the **material** and **machining mode** (coarse to fine) from the table and
- 2 read off the recommended **cut** and **cutting speed**.
- 3 Determine the appropriate **speed** for your power tool in the second table.

### Recommendations for use of tungsten carbide burrs

1				2		
Material	Lukas material group (see also fold-out tab)	Strength [N/mm <sup>2</sup> ]	Machining	Cut	Recommended cutting speed vc [m/min]	
Steel, cast steel	1 STEEL AND CAST STEEL	< 800	coarse	Z3, Z7, ZX	500 – 700	
			medium	Z5	300 – 500	
			fine	ZF3	500 – 700	
	2 ALLOYED/HARDENED & TEMPERED STEELS	800 to 1200	coarse	Z7, ZX	400 – 600	
			medium	Z5	300 – 400	
			fine	ZF3	400 – 600	
	3 TOOL STEELS	> 1200	coarse	Z7, Z4	300 – 500	
			medium	Z5	300 – 400	
			fine	ZF3	400 – 600	
Stainless steel	4 RUST/ACID/HEAT-RESISTANT STEEL AND CAST STEEL	up to 800	coarse	Z2, Z6	400 – 500	
			medium	Z3, Z7, Z4, Z5	300 – 500	
			fine	ZF3	400 – 600	
Cast metal	5 CAST IRON	150 to 300	coarse	Z6	400 – 600	
			medium	Z7	300 – 500	
	300 to 450	coarse	Z7	300 – 500		
		medium	Z5	300 – 500		
		fine	ZF3	400 – 700		
Non-ferrous metal 1	6 ALUMINIUM, MAGNESIUM AND COPPER ALLOYS	up to 450	coarse	Z9	600 – 1000	
			medium	Z1	500 – 900	
	BRASS, BRONZE, TITANIUM	up to 450	coarse	Z9, Z1	400 – 800	
			medium	Z2	400 – 600	
		from 450	fine	ZF3	500 – 600	
Non-ferrous metal 2	7 TITANIUM AND NICKEL ALLOYS	up to 900	coarse	Z6	300 – 500	
			medium	Z7	300 – 400	
			fine	ZF3	500 – 700	
		900 to 1500	coarse	Z4	300 – 400	
			medium	Z5	400 – 500	
			fine	ZF3	400 – 600	
	Plastics and wood	8 PLASTIC/WOOD/RUBBER	20 to 400	coarse	Z1, Z9	500 – 1000
				fine	ZP, ZR2	500 – 900
			400 to 1000	coarse	Z1	500 – 800
	fine	Z2, ZR2	400 – 800			

Tip: Page 27 contains a complete overview of the shapes for your chosen milling tool.

## Machining



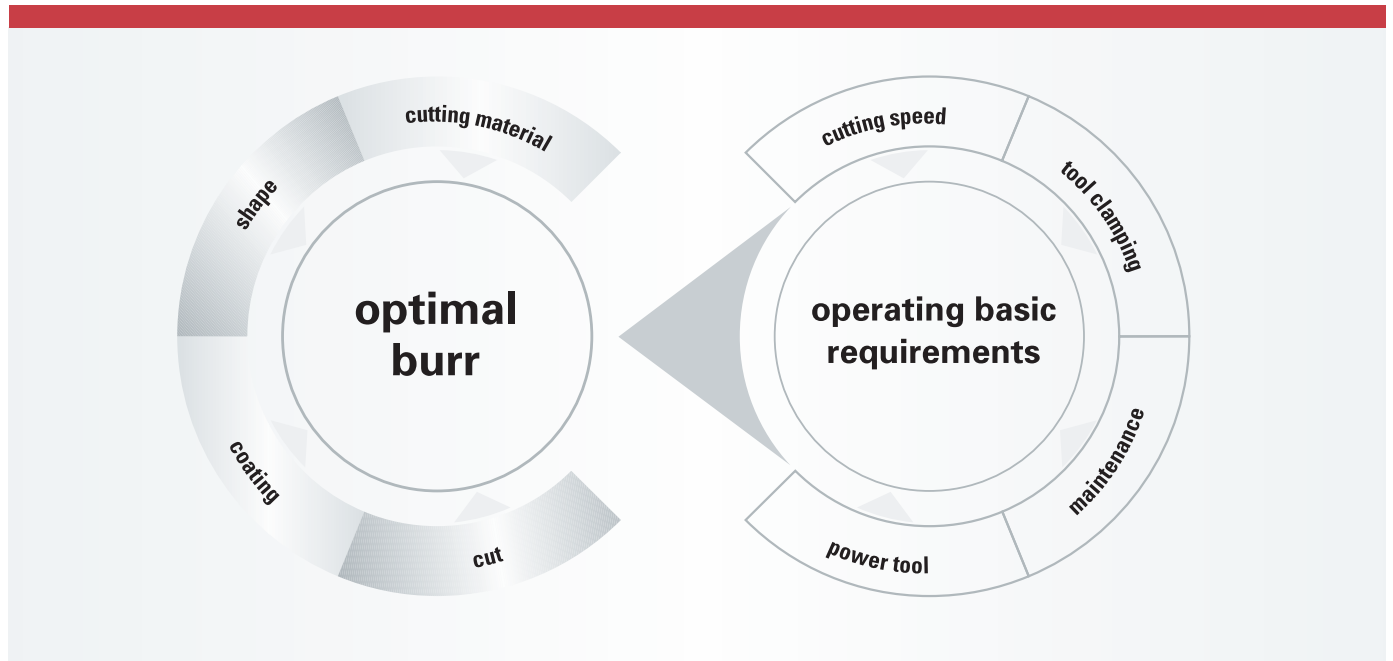
**Rotational speeds for milling tools** based on the tool diameter and cutting speed

3									
Recommended cutting speed $v_c$ [m/min]									
		300	400	500	600	700	800	900	1000
		Rotational speed [min <sup>-1</sup> ]							
Tool diameter [mm]	2	48.000	64.000	80.000	95.000	111.000	127.000	143.000	159.000
	3	32.000	42.000	53.000	64.000	74.000	85.000	95.000	106.000
	4	24.000	32.000	40.000	48.000	56.000	64.000	72.000	80.000
	6	16.000	21.000	27.000	32.000	37.000	42.000	48.000	53.000
	8	12.000	16.000	20.000	24.000	28.000	32.000	36.000	40.000
	10	10.000	13.000	16.000	19.000	22.000	25.000	29.000	32.000
	12	8.000	11.000	13.000	16.000	19.000	21.000	24.000	27.000
	16	6.000	8.000	10.000	12.000	14.000	16.000	18.000	20.000
	20	5.000	6.000	8.000	10.000	11.000	13.000	14.000	16.000



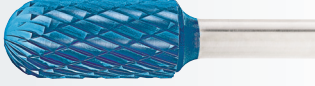

## Cuts

	<b>Z 9</b>	Very coarse single cut with faceting for soft materials		<b>Z 4</b>	Fine cross cut for hard materials
	<b>Z 1</b>	Coarse cut for soft materials		<b>Z 6</b>	Robust cross cut
	<b>Z 2</b>	Robust single cut for high stock removal		<b>Z 7</b>	Medium cross cut
	<b>Z 3</b>	Medium single cut		<b>ZI</b>	Fine cross cut especially to machine the inside of the bore (page 43)
	<b>Z 5</b>	Very fine single cut for high-quality surfaces		<b>ZP</b>	Cross cut for machining plastic (page 48)
	<b>ZF</b>	Very fine cross cut (page 58)		<b>ZX</b>	Universal cross cut for practically every application
	<b>ZR</b>	Rasp cut for pattern construction (page 57)			

### Choosing the appropriate Burr



## Coatings

Coatings	Specification (LUKAS)	Properties	Friction on steel (dry)
	<b>TiN</b> (Titanium nitride)	general purpose coating for steel and cast iron, high toughness	0,65–0,70 µm
	<b>TiCN</b> (Titanium carbon nitride)	wear resisting coating for fine deburring process; suited to applications with higher thermal and shock loads	0,10–0,20 µm
	<b>TiAlN</b> (Titanium aluminium nitride) (see page 56)	high performance coating with a high degree of hardness and low heat conductivity; therefore suitable for high thermal and mechanical applications	0,30–0,35 µm
	<b>LTE</b> (hard coating carbon-based)	Special coating with lotus-effect for long chip and smearing non-ferrous metals, particularly aluminium alloys. Excellent sliding friction properties reducing loading on cutting edges.	0,10–0,20 µm

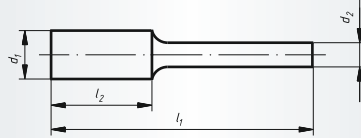
### The reasons for producing cutting tools with hard coatings are as follows:

- to increase tool life
- to reduce machining forces
- to improve chip removal



## Shape A, Cylindrical

Ordering example: A10010210305



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs	
								1	2	3	4	5	6	7	8		
HFA 0210.03	Z5	ZYA 0210	2	10	3	40	A10010210305	1	2	3	4			7			■
HFA 0313.03	Z3	ZYA 0313	3	13	3	40	A10010313303	1	2	3	4			7			■
HFA 0313.03	Z4	ZYA 0313	3	13	3	40	A10010313304		2	3	4			7	8		■
HFA 0313.03	Z5	ZYA 0313	3	13	3	40	A10010313305	1	2	3	4			7			■
HFA 0313.03	Z7	ZYA 0313	3	13	3	40	A10010313308	1	2	3		5		7			■
HFA 0413.06	Z3	ZYA 0413	4	13	6	50	A10010413603	1	2	3	4			7			■
HFA 0413.06	Z7	ZYA 0413	4	13	6	50	A10010413608	1	2	3		5		7			■
HFA 0607.03	Z5	ZYA 0607	6	7	3	37	A10010607305	1	2	3	4			7			■
HFA 0613.03	Z5	ZYA 0613	6	13	3	43	A10010613305	1	2	3	4			7			■
HFA 0613.03	Z7	ZYA 0613	6	13	3	43	A10010613308	1	2	3		5		7			■
HFA 0616.06	Z2	ZYA 0616	6	16	6	50	A10010616602					5	6		8		■
HFA 0616.06	Z3	ZYA 0616	6	16	6	50	A10010616603	1	2	3	4			7			■
HFA 0616.06	Z4	ZYA 0616	6	16	6	50	A10010616604		2	3	4			7	8		■
HFA 0616.06	Z5	ZYA 0616	6	16	6	50	A10010616605	1	2	3	4			7			■
HFA 0616.06	Z7	ZYA 0616	6	16	6	50	A10010616608	1	2	3		5		7			■
HFA 0616.06	Z9	ZYA 0616	6	16	6	50	A10010616609						6		8		■
HFA 0820.06	Z3	ZYA 0820	8	20	6	60	A10010820603	1	2	3	4			7			■
HFA 0820.06	Z4	ZYA 0820	8	20	6	60	A10010820604		2	3	4			7	8		■
HFA 0820.06	Z5	ZYA 0820	8	20	6	60	A10010820605	1	2	3	4			7			■
HFA 0820.06	Z7	ZYA 0820	8	20	6	60	A10010820608	1	2	3		5		7			■
HFA 1013.06	Z3	ZYA 1013	10	13	6	53	A10011013603	1	2	3	4			7			■
HFA 1013.06	Z7	ZYA 1013	10	13	6	53	A10011013608	1	2	3		5		7			■
HFA 1013.08	Z3	ZYA 1013	10	13	6	53	A10011013803	1	2	3	4			7			■
HFA 1020.06	Z3	ZYA 1020	10	20	6	60	A10011020603	1	2	3	4			7			■
HFA 1020.06	Z4	ZYA 1020	10	20	6	60	A10011020604		2	3	4			7	8		■
HFA 1020.06	Z7	ZYA 1020	10	20	6	60	A10011020608	1	2	3		5		7			■
HFA 1025.06	Z4	ZYA 1025	10	25	6	65	A10011025604		2	3	4			7	8		■
HFA 1025.06	Z7	ZYA 1025	10	25	6	65	A10011025608	1	2	3		5		7			■
HFA 1025.08	Z3	ZYA 1025	10	25	8	65	A10011025803	1	2	3	4			7			■
HFA 1225.06	Z3	ZYA 1225	12	25	6	65	A10011225603	1	2	3	4			7			■
HFA 1225.06	Z4	ZYA 1225	12	25	6	65	A10011225604		2	3	4			7	8		■
HFA 1225.06	Z5	ZYA 1225	12	25	6	65	A10011225605	1	2	3	4			7			■
HFA 1225.06	Z7	ZYA 1225	12	25	6	65	A10011225608	1	2	3	4			7			■
HFA 1225.06	Z9	ZYA 1225	12	25	6	65	A10011225609						6		8		■
HFA 1225.08	Z4	ZYA 1225	12	25	8	65	A10011225804		2	3	4			7	8		■
HFA 1225.08	Z9	ZYA 1225	12	25	8	65	A10011225809						6		8		■
HFA 1625.06	Z3	ZYA 1625	16	25	6	65	A10011625603	1	2	3	4			7			■
HFA 1625.06	Z7	ZYA 1625	16	25	6	65	A10011625608	1	2	3		5		7			■
HFA 1625.06	Z9	ZYA 1625	16	25	6	65	A10011625609						6		8		■
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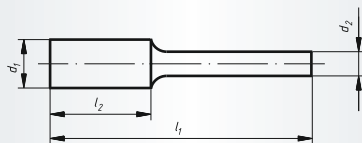




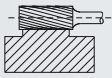
Base


Shape A, Cylindrical BASE-X

Ordering example: A10010313322




**Packing unit:**  
10 pcs. per type,  
from Ø 12 mm: 5 pcs. per type

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFA 0313.03 BASE-X	ZX	ZYA 0313	3	13	3	40	A10010313322		■
HFA 0616.06 BASE-X	ZX	ZYA 0616	6	16	6	50	A10010616622		■
HFA 0820.06 BASE-X	ZX	ZYA 0820	8	20	6	60	A10010820622		■
HFA 1020.06 BASE-X	ZX	ZYA 1020	10	20	6	60	A10011020622		■
HFA 1225.06 BASE-X	ZX	ZYA 1225	12	25	6	65	A10011225622		■



## Always the right tool



**Mounted points and polishing points:**  
11,000 specially produced items according to customers' requests reflect the big variety of these products.

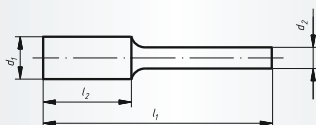
**Martin Reif**  
Sales Department

[www.lukas-erzett.com](http://www.lukas-erzett.com)



### Shape A, Cylindrical, with end-cut

Ordering example: A100102103050001



#### Packing unit:

1 pc. per type

Further dimensions, cuts and shank lengths on request.

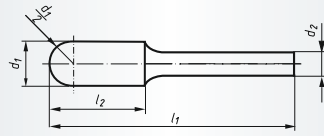
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs
								1	2	3	4	5	7	8		
HFAS 0210.03	Z5	ZYA-S 0210	2	10	3	40	A100102103050001	1	2	3	4		7		■	
HFAS 0313.03	Z3	ZYA-S 0313	3	13	3	40	A100103133030001	1	2	3	4		7		■	
HFAS 0313.03	Z4	ZYA-S 0313	3	13	3	40	A100103133040001		2	3	4		7	8	■	
HFAS 0313.03	Z5	ZYA-S 0313	3	13	3	40	A100103133050001	1	2	3	4		7		■	
HFAS 0313.03	Z7	ZYA-S 0313	3	13	3	40	A100103133080001	1	2	3		5	7		■	
HFAS 0413.06	Z3	ZYA-S 0413	4	13	6	50	A100104136030001	1	2	3	4		7		■	
HFAS 0413.06	Z7	ZYA-S 0413	4	13	6	50	A100104136080001	1	2	3		5	7		■	
HFAS 0607.03	Z5	ZYA-S 0607	6	7	3	37	A100106073050001	1	2	3	4		7		■	
HFAS 0613.03	Z5	ZYA-S 0613	6	13	3	43	A100106133050001	1	2	3	4		7		■	
HFAS 0613.03	Z7	ZYA-S 0613	6	13	3	43	A100106133080001	1	2	3		5	7		■	
HFAS 0616.06	Z3	ZYA-S 0616	6	16	6	50	A100106166030001	1	2	3	4		7		■	
HFAS 0616.06	Z4	ZYA-S 0616	6	16	6	50	A100106166040001		2	3	4		7	8	■	
HFAS 0616.06	Z5	ZYA-S 0616	6	16	6	50	A100106166050001	1	2	3	4		7		■	
HFAS 0616.06	Z7	ZYA-S 0616	6	16	6	50	A100106166080001	1	2	3		5	7		■	
HFAS 0820.06	Z3	ZYA-S 0820	8	20	6	60	A100108206030001	1	2	3	4		7		■	
HFAS 0820.06	Z4	ZYA-S 0820	8	20	6	60	A100108206040001		2	3	4		7	8	■	
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HFAS 0820.06	Z7	ZYA-S 0820	8	20	6	60	A100108206080001	1	2	3		5	7		■	
HFAS 1013.06	Z3	ZYA-S 1013	10	13	6	53	A100110136030001	1	2	3	4		7		■	
HFAS 1013.06	Z7	ZYA-S 1013	10	13	6	53	A100110136080001	1	2	3		5	7		■	
HFAS 1020.06	Z3	ZYA-S 1020	10	20	6	60	A100110206030001	1	2	3	4		7		■	
HFAS 1020.06	Z4	ZYA-S 1020	10	20	6	60	A100110206040001		2	3	4		7	8	■	
HFAS 1020.06	Z7	ZYA-S 1020	10	20	6	60	A100110206080001	1	2	3		5	7		■	
HFAS 1025.06	Z4	ZYA-S 1025	10	25	6	65	A100110256040001		2	3	4		7	8	■	
HFAS 1025.06	Z7	ZYA-S 1025	10	25	6	65	A100110256080001	1	2	3		5	7		■	
HFAS 1225.06	Z3	ZYA-S 1225	12	25	6	65	A100112256030001	1	2	3	4		7		■	
HFAS 1225.06	Z4	ZYA-S 1225	12	25	6	65	A100112256040001		2	3	4		7	8	■	
HFAS 1225.06	Z5	ZYA-S 1225	12	25	6	65	A100112256050001	1	2	3	4		7		■	
HFAS 1225.06	Z7	ZYA-S 1225	12	25	6	65	A100112256080001	1	2	3		5	7		■	
HFAS 1225.08	Z4	ZYA-S 1225	12	25	8	65	A100112258040001		2	3	4		7	8	■	
HFAS 1225.08	Z7	ZYA-S 1225	12	25	8	65	A100112258080001	1	2	3		5	7		■	
HFAS 1625.06	Z3	ZYA-S 1625	16	25	6	65	A100116256030001	1	2	3	4		7		■	
HFAS 1625.06	Z7	ZYA-S 1625	16	25	6	65	A100116256080001	1	2	3		5	7		■	



Industry

Shape C, Cylindrical Round nose

Ordering example: A10020210305



Packing unit:

1 pc. per type

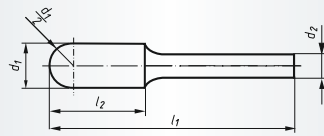
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs
								1	2	3	4	5	6	7	8	
HFC 0210.03	Z5	WRC 0210	2	10	3	40	A10020210305	1	2	3	4		7			■
HFC 0210.03	Z7	WRC 0210	2	10	3	40	A10020210308	1	2	3		5		7		■
HFC 0313.03	Z2	WRC 0313	3	13	3	40	A10020313302	1				5	6		8	■
HFC 0313.03	Z3	WRC 0313	3	13	3	40	A10020313303	1	2	3	4			7		■
HFC 0313.03	Z4	WRC 0313	3	13	3	40	A10020313304		2	3	4			7	8	■
HFC 0313.03	Z5	WRC 0313	3	13	3	40	A10020313305	1	2	3	4			7		■
HFC 0313.03	Z7	WRC 0313	3	13	3	40	A10020313308	1	2	3		5		7		■
HFC 0413.06	Z3	WRC 0413	4	13	6	50	A10020413603	1	2	3	4			7		■
HFC 0413.06	Z4	WRC 0413	4	13	6	50	A10020413604		2	3	4			7	8	■
HFC 0413.06	Z7	WRC 0413	4	13	6	50	A10020413608	1	2	3		5		7		■
HFC 0613.03	Z5	WRC 0613	6	13	3	43	A10020613305	1	2	3	4			7		■
HFC 0613.03	Z7	WRC 0613	6	13	3	43	A10020613308	1	2	3		5		7		■
HFC 0616.06	Z1	WRC 0616	6	16	6	50	A10020616601						6		8	■
HFC 0616.06	Z2	WRC 0616	6	16	6	50	A10020616602	1				5	6		8	■
HFC 0616.06	Z3	WRC 0616	6	16	6	50	A10020616603	1	2	3	4			7		■
HFC 0616.06	Z4	WRC 0616	6	16	6	50	A10020616604		2	3	4			7	8	■
HFC 0616.06	Z5	WRC 0616	6	16	6	50	A10020616605	1	2	3	4			7		■
HFC 0616.06	Z7	WRC 0616	6	16	6	50	A10020616608	1	2	3		5		7		■
HFC 0616.06	Z9	WRC 0616	6	16	6	50	A10020616609						6		8	■
HFC 0820.06	Z3	WRC 0820	8	20	6	60	A10020820603	1	2	3	4			7		■
HFC 0820.06	Z4	WRC 0820	8	20	6	60	A10020820604		2	3	4			7	8	■
HFC 0820.06	Z5	WRC 0820	8	20	6	60	A10020820605	1	2	3	4			7		■
HFC 0820.06	Z6	WRC 0820	8	20	6	60	A10020820606		2	3	4			7	8	■
HFC 0820.06	Z7	WRC 0820	8	20	6	60	A10020820608	1	2	3		5		7		■
HFC 0820.06	Z9	WRC 0820	8	20	6	60	A10020820609						6		8	■
HFC 1020.06	Z3	WRC 1020	10	20	6	60	A10021020603	1	2	3	4			7		■
HFC 1020.06	Z4	WRC 1020	10	20	6	60	A10021020604		2	3	4			7	8	■
HFC 1020.06	Z5	WRC 1020	10	20	6	60	A10021020605	1	2	3	4			7		■
HFC 1020.06	Z6	WRC 1020	10	20	6	60	A10021020606		2	3	4			7	8	■
HFC 1020.06	Z7	WRC 1020	10	20	6	60	A10021020608	1	2	3		5		7		■
HFC 1020.08	Z4	WRC 1020	10	20	8	60	A10021020804		2	3	4			7	8	■
HFC 1020.08	Z7	WRC 1020	10	20	8	60	A10021020808	1	2	3		5		7		■
HFC 1025.06	Z7	WRC 1025	10	25	6	65	A10021025608	1	2	3		5		7		■
HFC 1225.06	Z1	WRC 1225	12	25	6	65	A10021225601						6		8	■
HFC 1225.06	Z2	WRC 1225	12	25	6	65	A10021225602	1				5	6		8	■
HFC 1225.06	Z3	WRC 1225	12	25	6	65	A10021225603	1	2	3	4			7		■
HFC 1225.06	Z4	WRC 1225	12	25	6	65	A10021225604		2	3	4			7	8	■
HFC 1225.06	Z5	WRC 1225	12	25	6	65	A10021225605	1	2	3	4			7		■
HFC 1225.06	Z6	WRC 1225	12	25	6	65	A10021225606		2	3	4			7	8	■
HFC 1225.06	Z7	WRC 1225	12	25	6	65	A10021225608	1	2	3		5		7		■



### Shape C, Cylindrical Round nose

Ordering example: A10021225609



**Packing unit:**

1 pc. per type

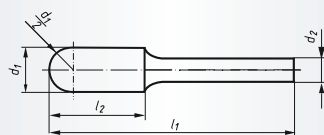
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs	
								1	2	3	4	5	6	7	8		
HFC 1225.06	Z9	WRC 1225	12	25	6	65	A10021225609						6		8		■
HFC 1225.08	Z3	WRC 1225	12	25	8	65	A10021225803	1	2	3	4				7		■
HFC 1225.08	Z4	WRC 1225	12	25	8	65	A10021225804		2	3	4				7	8	■
HFC 1225.08	Z7	WRC 1225	12	25	8	65	A10021225808	1	2	3		5		7		■	
HFC 1225.08	Z9	WRC 1225	12	25	8	65	A10021225809						6		8	■	
HFC 1625.06	Z3	WRC 1625	16	25	6	65	A10021625603	1	2	3	4				7		■
HFC 1625.06	Z7	WRC 1625	16	25	6	65	A10021625608	1	2	3		5		7		■	
HFC 1625.06	Z9	WRC 1625	16	25	6	65	A10021625609						6		8	■	
HFC 1625.08	Z3	WRC 1625	16	25	8	65	A10021625803	1	2	3	4				7		■
HFC 1625.08	Z9	WRC 1625	16	25	8	65	A10021625809						6		8	■	



### Shape C, Cylindrical Round nose BASE-X

Ordering example: A10020313322



**Packing unit:**

10 pcs. per type,

from Ø 12 mm: 5 pcs. per type

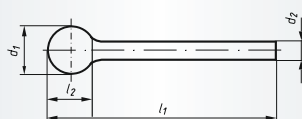
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs	
								1	2	3	4	5	6	7	8		
HFC 0313.03 BASE-X	ZX	WRC 0313	3	13	3	40	A10020313322	1	2	3	4	5			7		■
HFC 0613.03 BASE-X	ZX	WRC 0613	6	13	3	43	A10020613322	1	2	3	4	5			7		■
HFC 0616.06 BASE-X	ZX	WRC 0616	6	16	6	50	A10020616622	1	2	3	4	5			7		■
HFC 0820.06 BASE-X	ZX	WRC 0820	8	20	6	60	A10020820622	1	2	3	4	5			7		■
HFC 1020.06 BASE-X	ZX	WRC 1020	10	20	6	60	A10021020622	1	2	3	4	5			7		■
HFC 1225.06 BASE-X	ZX	WRC 1225	12	25	6	65	A10021225622	1	2	3	4	5			7		■



Industry

Shape D, Spherical

Ordering example: A10030303302



Packing unit:

1 pc. per type

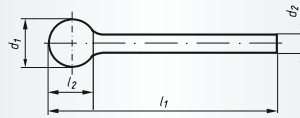
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs
								1	2	3	4	5	6	7	8	
HFD 0302.03	Z2	KUD 0302	3	2	3	40	A10030303302	1				5	6		8	■
HFD 0302.03	Z3	KUD 0302	3	2	3	40	A10030303303	1	2	3	4			7		■
HFD 0302.03	Z4	KUD 0302	3	2	3	40	A10030303304		2	3	4			7	8	■
HFD 0302.03	Z5	KUD 0302	3	2	3	40	A10030303305	1	2	3	4			7		■
HFD 0302.03	Z7	KUD 0302	3	2	3	40	A10030303308	1	2	3		5		7		■
HFD 0403.03	Z5	KUD 0403	4	3	3	34	A100304043050001	1	2	3	4			7		■
HFD 0403.03	Z7	KUD 0403	4	3	3	34	A100304043080001	1	2	3		5		7		■
HFD 0403.06	Z3	KUD 0403	4	3	6	50	A10030404603	1	2	3	4			7		■
HFD 0403.06	Z4	KUD 0403	4	3	6	50	A10030404604		2	3	4			7	8	■
HFD 0403.06	Z7	KUD 0403	4	3	6	50	A10030404608	1	2	3		5		7		■
HFD 0605.03	Z5	KUD 0605	6	5	3	35	A10030606305	1	2	3	4			7		■
HFD 0605.03	Z7	KUD 0605	6	5	3	35	A10030606308	1	2	3		5		7		■
HFD 0605.06	Z3	KUD 0605	6	5	6	50	A10030606603	1	2	3	4			7		■
HFD 0605.06	Z4	KUD 0605	6	5	6	50	A10030606604		2	3	4			7	8	■
HFD 0605.06	Z5	KUD 0605	6	5	6	50	A10030606605	1	2	3	4			7		■
HFD 0605.06	Z7	KUD 0605	6	5	6	50	A10030606608	1	2	3		5		7		■
HFD 0807.06	Z3	KUD 0807	8	7	6	47	A10030808603	1	2	3	4			7		■
HFD 0807.06	Z4	KUD 0807	8	7	6	47	A10030808604		2	3	4			7	8	■
HFD 0807.06	Z5	KUD 0807	8	7	6	47	A10030808605	1	2	3	4			7		■
HFD 0807.06	Z7	KUD 0807	8	7	6	47	A10030808608	1	2	3		5		7		■
HFD 1009.06	Z3	KUD 1009	10	9	6	49	A10031010603	1	2	3	4			7		■
HFD 1009.06	Z4	KUD 1009	10	9	6	49	A10031010604		2	3	4			7	8	■
HFD 1009.06	Z5	KUD 1009	10	9	6	49	A10031010605	1	2	3	4			7		■
HFD 1009.06	Z7	KUD 1009	10	9	6	49	A10031010608	1	2	3		5		7		■
HFD 1210.06	Z3	KUD 1210	12	10	6	51	A10031212603	1	2	3	4			7		■
HFD 1210.06	Z4	KUD 1210	12	10	6	51	A10031212604		2	3	4			7	8	■
HFD 1210.06	Z5	KUD 1210	12	10	6	51	A10031212605	1	2	3	4			7		■
HFD 1210.06	Z7	KUD 1210	12	10	6	51	A10031212608	1	2	3		5		7		■
HFD 1210.06	Z9	KUD 1210	12	10	6	50	A10031212609						6		8	■
HFD 1210.08	Z4	KUD 1210	12	10	8	51	A10031212804		2	3	4			7	8	■
HFD 1210.08	Z7	KUD 1210	12	10	8	51	A10031210808	1	2	3		5		7		■
HFD 1210.08	Z9	KUD 1210	12	10	8	50	A10031212809						6		8	■
HFD 1614.06	Z3	KUD 1614	16	14	6	54	A10031616603	1	2	3	4			7		■
HFD 1614.06	Z4	KUD 1614	16	14	6	54	A10031616604		2	3	4			7	8	■
HFD 1614.06	Z7	KUD 1614	16	14	6	54	A10031616608	1	2	3		5		7		■
HFD 1614.06	Z9	KUD 1614	16	14	6	54	A10031616609						6		8	■
HFD 1614.08	Z3	KUD 1614	16	14	8	54	A10031616803	1	2	3	4			7		■
HFD 1614.08	Z9	KUD 1614	16	14	8	54	A10031616809						6		8	■



### Shape D, Spherical

Ordering example: A10032020603



**Packing unit:**

1 pc. per type

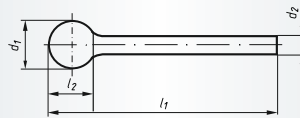
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFD 2018.06	Z3	KUD 2018	20	18	6	58	A10032020603		■
HFD 2018.06	Z7	KUD 2018	20	18	6	58	A10032020608		■
HFD 2018.08	Z3	KUD 2018	20	18	8	58	A10032020803		■



### Shape D, Spherical BASE-X

Ordering example: A10030403322



**Packing unit:**

10 pcs. per type,

from Ø 12 mm: 5 pcs. per type

Further dimensions, cuts and shank lengths on request.

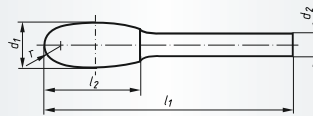
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFD 0403.03 BASE-X	ZX	KUD 0403	4	3	3	34	A10030403322		■
HFD 0605.03 BASE-X	ZX	KUD 0605	6	5	3	35	A10030605322		■
HFD 0807.06 BASE-X	ZX	KUD 0807	8	7	6	47	A10030807622		■
HFD 1009.06 BASE-X	ZX	KUD 1009	10	9	6	49	A10031009622		■
HFD 1210.06 BASE-X	ZX	KUD 1210	12	10	6	51	A10031210622		■



Industry

Shape E, Oval

Ordering example: A10060307303



**Packing unit:**

1 pc. per type

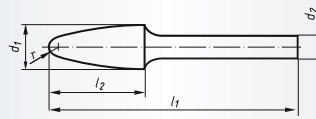
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r≈ mm	Product-Number	recommended for								New burrs	
									1	2	3	4	5	6	7	8		
HFE 0307.03	Z3	TRE 0307	3	7	3	40	1,2	A10060307303	1	2	3	4			7			■
HFE 0307.03	Z5	TRE 0307	3	7	3	40	1,2	A10060307305	1	2	3	4			7			■
HFE 0307.03	Z7	TRE 0307	3	7	3	40	1,2	A10060307308	1	2	3		5		7			■
HFE 0610.03	Z5	TRE 0610	6	10	3	40	2,8	A10060610305	1	2	3	4			7			■
HFE 0610.03	Z7	TRE 0610	6	10	3	40	2,8	A10060610308	1	2	3		5		7			■
HFE 0610.06	Z3	TRE 0610	6	10	6	50	2,8	A10060610603	1	2	3	4			7			■
HFE 0610.06	Z4	TRE 0610	6	10	6	50	2,8	A10060610604		2	3	4			7	8		■
HFE 0610.06	Z7	TRE 0610	6	10	6	50	2,8	A10060610608	1	2	3		5		7			■
HFE 0813.06	Z3	TRE 0813	8	13	6	53	3,7	A10060813603	1	2	3	4			7			■
HFE 0813.06	Z4	TRE 0813	8	13	6	53	3,7	A10060813604		2	3	4			7	8		■
HFE 0813.06	Z7	TRE 0813	8	13	6	53	3,7	A10060813608	1	2	3		5		7			■
HFE 1220.06	Z3	TRE 1220	12	20	6	60	5,0	A10061220603	1	2	3	4			7			■
HFE 1220.06	Z4	TRE 1220	12	20	6	60	5,0	A10061220604		2	3	4			7	8		■
HFE 1220.06	Z5	TRE 1220	12	20	6	60	5,0	A10061220605	1	2	3	4			7			■
HFE 1220.06	Z7	TRE 1220	12	20	6	60	5,0	A10061220608	1	2	3		5		7			■
HFE 1225.08	Z3	TRE 1225	12	25	8	65	5,0	A10061225803	1	2	3	4			7			■
HFE 1225.08	Z9	TRE 1225	12	25	8	65	5,0	A10061225809						6		8		■
HFE 1625.06	Z7	TRE 1625	16	25	6	65	7,1	A10061625608	1	2	3		5		7			■
HFE 1625.08	Z3	TRE 1625	16	25	8	65	7,1	A10061625803	1	2	3	4			7			■
HFE 1625.08	Z9	TRE 1625	16	25	8	65	7,1	A10061625809						6		8		■
HFE 2035.08	Z3	TRE 2035	20	35	8	75	8,0	A10062035803	1	2	3	4			7			■



## Shape F, Arch round nose

Ordering example: A10100307303



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r≈ mm	Product-Number	recommended for								New burrs	
									1	2	3	4	5	6	7	8		
HFF 0307.03	Z3	RBF 0307	3	7	3	40	0,75	A10100307303	1	2	3	4			7			■
HFF 0307.03	Z4	RBF 0307	3	7	3	40	0,75	A10100307304		2	3	4			7	8		■
HFF 0307.03	Z5	RBF 0307	3	7	3	40	0,75	A10100307305	1	2	3	4			7			■
HFF 0313.03	Z5	RBF 0313	3	13	3	40	0,75	A10100313305	1	2	3	4			7			■
HFF 0313.03	Z7	RBF 0313	3	13	3	40	0,75	A10100313308	1	2	3		5		7			■
HFF 0613.03	Z5	RBF 0613	6	13	3	43	1,4	A10100613305	1	2	3	4			7			■
HFF 0613.03	Z7	RBF 0613	6	13	3	43	1,4	A10100613308	1	2	3		5		7			■
HFF 0618.06	Z3	RBF 0618	6	18	6	50	1,5	A10100618603	1	2	3	4			7			■
HFF 0618.06	Z4	RBF 0618	6	18	6	50	1,5	A10100618604		2	3	4			7	8		■
HFF 0618.06	Z5	RBF 0618	6	18	6	50	1,5	A10100618605	1	2	3	4			7			■
HFF 0618.06	Z7	RBF 0618	6	18	6	50	1,5	A10100618608	1	2	3		5		7			■
HFF 0820.06	Z3	---	8	20	6	60	1,8	A10100820603	1	2	3	4			7			■
HFF 0820.06	Z7	---	8	20	6	60	1,8	A10100820608	1	2	3		5		7			■
HFF 1020.06	Z3	RBF 1020	10	20	6	60	2,5	A10101020603	1	2	3	4			7			■
HFF 1020.06	Z4	RBF 1020	10	20	6	60	2,5	A10101020604		2	3	4			7	8		■
HFF 1020.06	Z6	RBF 1020	10	20	6	60	2,5	A10101020606		2	3	4			7	8		■
HFF 1020.06	Z7	RBF 1020	10	20	6	60	2,5	A10101020608	1	2	3		5		7			■
HFF 1225.06	Z1	RBF 1225	12	25	6	65	2,5	A10101225601							6		8	■
HFF 1225.06	Z3	RBF 1225	12	25	6	65	2,5	A10101225603	1	2	3	4			7			■
HFF 1225.06	Z4	RBF 1225	12	25	6	65	2,5	A10101225604		2	3	4			7	8		■
HFF 1225.06	Z7	RBF 1225	12	25	6	65	2,5	A10101225608	1	2	3		5		7			■
HFF 1225.06	Z9	RBF 1225	12	25	6	65	2,5	A10101225609						6		8		■
HFF 1225.08	Z3	RBF 1225	12	25	8	65	2,5	A10101225803	1	2	3	4			7			■
HFF 1225.08	Z7	RBF 1225	12	25	8	65	2,5	A10101225808	1	2	3		5		7			■
HFF 1225.08	Z9	RBF 1225	12	25	8	65	2,5	A10101225809						6		8		■
HFF 1230.06	Z3	RBF 1230	12	30	6	70	2,7	A10101230603	1	2	3	4			7			■
HFF 1230.06	Z7	RBF 1230	12	30	6	70	2,7	A10101230608	1	2	3		5		7			■
HFF 1230.08	Z3	RBF 1230	12	30	8	70	2,7	A10101230803	1	2	3	4			7			■
HFF 1630.06	Z7	RBF 1630	16	30	6	70	3,6	A10101630608	1	2	3		5		7			■
HFF 1630.06	Z9	RBF 1630	16	30	6	70	3,6	A10101630609						6		8		■
HFF 1630.08	Z3	RBF 1630	16	30	8	70	3,6	A10101630803	1	2	3	4			7			■
HFF 1630.08	Z9	RBF 1630	16	30	8	70	3,6	A10101630809						6		8		■

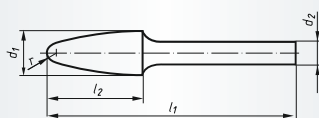




Base

Shape F, Arch round nose BASE-X

Ordering example: A10100313322



**Packing unit:**  
10 pcs. per type,  
from Ø 12 mm: 5 pcs. per type

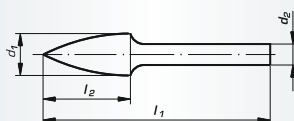
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r≈ mm	Product-Number	recommended for	New burrs
HFF 0313.03 BASE-X	ZX	RBF 0313	3	13	3	40	0,75	A10100313322	1 2 3 4 5 7	■
HFF 0618.06 BASE-X	ZX	RBF 0618	6	18	6	50	1,5	A10100618622	1 2 3 4 5 7	■
HFF 0820.06 BASE-X	ZX	---	8	20	6	60	1,8	A10100820622	1 2 3 4 5 7	■
HFF 1020.06 BASE-X	ZX	RBF 1020	10	20	6	60	2,5	A10101020622	1 2 3 4 5 7	■
HFF 1225.06 BASE-X	ZX	RBF 1225	12	25	6	65	2,5	A10101225622	1 2 3 4 5 7	■



Industry

Shape G, Arch pointed nose

Ordering example: A10040307305



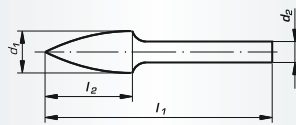
**Packing unit:**  
1 pc. per type  
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFG 0307.03	Z5	SPG 0307	3	7	3	40	A10040307305	1 2 3 4 7	■
HFG 0307.03	Z7	SPG 0307	3	7	3	40	A10040307308	1 2 3 5 7	■
HFG 0313.03	Z3	SPG 0313	3	13	3	40	A10040313303	1 2 3 4 7	■
HFG 0313.03	Z4	SPG 0313	3	13	3	40	A10040313304	2 3 4 7 8	■
HFG 0313.03	Z5	SPG 0313	3	13	3	40	A10040313305	1 2 3 4 7	■
HFG 0313.03	Z7	SPG 0313	3	13	3	40	A10040313308	1 2 3 5 7	■
HFG 0613.03	Z5	SPG 0613	6	13	3	43	A10040613305	1 2 3 4 7	■
HFG 0613.03	Z7	SPG 0613	6	13	3	43	A10040613308	1 2 3 5 7	■
HFG 0618.06	Z1	SPG 0618	6	18	6	50	A10040618601	6 8	■
HFG 0618.06	Z2	SPG 0618	6	18	6	50	A10040618602	1 5 6 8	■
HFG 0618.06	Z3	SPG 0618	6	18	6	50	A10040618603	1 2 3 4 7	■
HFG 0618.06	Z4	SPG 0618	6	18	6	50	A10040618604	2 3 4 7 8	■
HFG 0618.06	Z5	SPG 0618	6	18	6	50	A10040618605	1 2 3 4 7	■
HFG 0618.06	Z7	SPG 0618	6	18	6	50	A10040618608	1 2 3 5 7	■
HFG 0820.06	Z3	---	8	20	6	60	A10040820603	1 2 3 4 7	■
HFG 0820.06	Z7	---	8	20	6	60	A10040820608	1 2 3 5 7	■
HFG 1020.06	Z3	SPG 1020	10	20	6	60	A10041020603	1 2 3 4 7	■
HFG 1020.06	Z4	SPG 1020	10	20	6	60	A10041020604	2 3 4 7 8	■
HFG 1020.06	Z5	SPG 1020	10	20	6	60	A10041020605	1 2 3 4 7	■
HFG 1020.06	Z7	SPG 1020	10	20	6	60	A10041020608	1 2 3 5 7	■



### Shape G, Arch pointed nose

Ordering example: A10041220603



**Packing unit:**

1 pc. per type

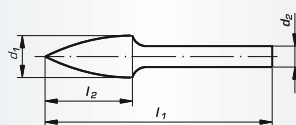
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFG 1220.06	Z3	SPG 1220	12	20	6	60	A10041220603		■
HFG 1220.06	Z7	SPG 1220	12	20	6	60	A10041220608		■
HFG 1225.06	Z2	SPG 1225	12	25	6	65	A10041225602		■
HFG 1225.06	Z3	SPG 1225	12	25	6	65	A10041225603		■
HFG 1225.06	Z4	SPG 1225	12	25	6	65	A10041225604		■
HFG 1225.06	Z7	SPG 1225	12	25	6	65	A10041225608		■
HFG 1225.08	Z3	SPG 1225	12	25	8	65	A10041225803		■
HFG 1230.06	Z2	SPG 1230	12	30	6	70	A10041230602		■
HFG 1230.06	Z3	SPG 1230	12	30	6	70	A10041230603		■
HFG 1230.06	Z4	SPG 1230	12	30	6	70	A10041230604		■
HFG 1230.06	Z5	SPG 1230	12	30	6	70	A10041230605		■
HFG 1230.06	Z7	SPG 1230	12	30	6	70	A10041230608		■
HFG 1230.08	Z3	SPG 1230	12	30	8	70	A10041230803		■
HFG 1630.06	Z3	SPG 1630	16	30	6	70	A10041630603		■
HFG 1630.06	Z4	SPG 1630	16	30	6	70	A10041630604		■
HFG 1630.06	Z7	SPG 1630	16	30	6	70	A10041630608		■
HFG 1630.08	Z3	SPG 1630	16	30	8	70	A10041630803		■



### Shape G, Arch pointed nose BASE-X

Ordering example: A10040313322



**Packing unit:**

10 pcs. per type,

from Ø 12 mm: 5 pcs. per type

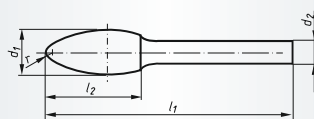
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFG 0313.03 BASE-X	ZX	SPG 0313	3	13	3	40	A10040313322		■
HFG 0613.03 BASE-X	ZX	SPG 0613	6	13	3	43	A10040613322		■
HFG 0820.06 BASE-X	ZX	SPG 0820	8	20	6	60	A10040820622		■
HFG 1020.06 BASE-X	ZX	SPG 1020	10	20	6	60	A10041020622		■
HFG 1225.06 BASE-X	ZX	SPG 1225	12	25	6	65	A10041225622		■
HFG 1230.06 BASE-X	ZX	SPG 1230	12	30	6	65	A10041230622		■



Industry

**Shape H, Flame**

Ordering example: A10090307305



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

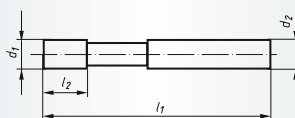
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	Product-Number	recommended for	New burrs
HFH 0307.03	Z5	3	7	3	40	0,8	A10090307305	① ② ③ ④ ⑦	■
HFH 0613.03	Z1	6	13	3	43	1,0	A10090613301	⑥ ⑧	■
HFH 0613.03	Z2	6	13	3	43	1,0	A10090613302	① ⑤ ⑥ ⑧	■
HFH 0613.03	Z3	6	13	3	43	1,0	A10090613303	① ② ③ ④ ⑦	■
HFH 0613.03	Z4	6	13	3	43	1,0	A10090613304	② ③ ④ ⑦ ⑧	■
HFH 0613.03	Z5	6	13	3	43	1,0	A10090613305	① ② ③ ④ ⑦	■
HFH 0613.03	Z7	6	13	3	43	1,0	A10090613308	① ② ③ ⑤ ⑦	■
HFH 0820.06	Z2	8	20	6	60	1,6	A10090820602	① ⑤ ⑥ ⑧	■
HFH 0820.06	Z3	8	20	6	60	1,6	A10090820603	① ② ③ ④ ⑦	■
HFH 0820.06	Z4	8	20	6	60	1,6	A10090820604	② ③ ④ ⑦ ⑧	■
HFH 0820.06	Z7	8	20	6	60	1,6	A10090820608	① ② ③ ⑤ ⑦	■
HFH 1230.06	Z3	12	30	6	70	2,0	A10091230603	① ② ③ ④ ⑦	■
HFH 1230.06	Z4	12	30	6	70	2,0	A10091230604	② ③ ④ ⑦ ⑧	■
HFH 1230.06	Z7	12	30	6	70	2,0	A10091230608	① ② ③ ⑤ ⑦	■
HFH 1230.08	Z3	12	30	8	70	2,0	A10091230803	① ② ③ ④ ⑦	■
HFH 1635.06	Z7	16	35	6	75	2,5	A10091635608	① ② ③ ⑤ ⑦	■
HFH 1635.08	Z3	16	35	8	75	2,5	A10091635803	① ② ③ ④ ⑦	■



Industry

**Shape I, Internal burr with multi purpose cut**

Ordering example: A10010204300



**Packing unit:**

1 pc. per type

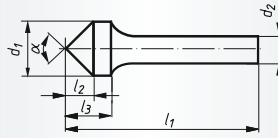
Further dimensions, cuts and shank lengths on request.

Description	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFI 0204.03	2,5	4	3	40	A10010204300	③ ④ ⑦	■
HFI 0408.03	4	8	3	50	A10010408300	③ ④ ⑦	■
HFI 0610.06	6	10	6	65	A10010610600	③ ④ ⑦	■
HFI 0810.06	8	10	6	65	A10010810600	③ ④ ⑦	■



### Shape J, Pointed nose

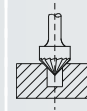
Ordering example: A10080660603



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

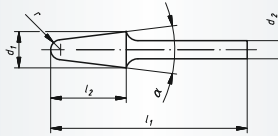


Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	Product-Number	recommended for	New burrs
HFJ 0605.06	Z3	KSJ 0605	6	5	-	6	50	60°	A10080660603	1 2 3 4 7	■
HFJ 1010.06	Z3	KSK 1005	10	5	10	6	50	90°	A10081090603	1 2 3 4 7	■
HFJ 1013.06	Z3	KSJ 1008	10	9	13	6	53	60°	A10081060603	1 2 3 4 7	■
HFJ 1613.06	Z3	KSK 1608	16	8	13	6	53	90°	A10081690603	1 2 3 4 7	■
HFJ 1613.08	Z3	KSK 1608	16	8	13	8	53	90°	A10081690803	1 2 3 4 7	■
HFJ 1616.06	Z3	KSJ 1613	16	14	16	6	56	60°	A10081660603	1 2 3 4 7	■
HFJ 1616.08	Z3	KSJ 1613	16	14	16	8	56	60°	A10081660803	1 2 3 4 7	■



### Shape L, Conical Round nose

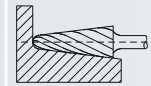
Ordering example: A10070820603



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.



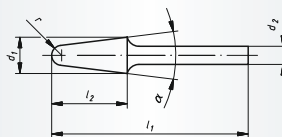
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	α	Product-Number	recommended for	New burrs
HFL 0820.06	Z3	---	8	20	6	60	1,5	14°	A10070820603	1 2 3 4 7	■
HFL 0820.06	Z7	---	8	20	6	60	1,5	14°	A10070820608	1 2 3 5 7	■
HFL 0820.06	Z9	---	8	20	6	60	1,5	14°	A10070820609	6 8	■
HFL 1015.06	Z3	---	10	15	6	55	3,6	14°	A10071015603	1 2 3 4 7	■
HFL 1020.06	Z3	KEL 1020	10	20	6	60	2,9	14°	A10071020603	1 2 3 4 7	■
HFL 1020.06	Z7	KEL 1020	10	20	6	60	2,9	14°	A10071020608	1 2 3 5 7	■
HFL 1020.06	Z9	KEL 1020	10	20	6	60	2,9	14°	A10071020609	6 8	■
HFL 1225.06	Z3	KEL 1225	12	25	6	65	3,3	14°	A10071225603	1 2 3 4 7	■
HFL 1225.06	Z4	KEL 1225	12	25	6	65	3,3	14°	A10071225604	2 3 4 7 8	■
HFL 1225.06	Z7	KEL 1225	12	25	6	65	3,3	14°	A10071225608	1 2 3 5 7	■
HFL 1225.06	Z9	KEL 1225	12	25	6	65	3,3	14°	A10071225609	6 8	■
HFL 1225.08	Z3	KEL 1225	12	25	8	65	3,3	14°	A10071225803	1 2 3 4 7	■
HFL 1225.08	Z7	KEL 1225	12	25	8	65	3,3	14°	A10071225808	1 2 3 5 7	■
HFL 1230.06	Z1	KEL 1230	12	30	6	70	2,6	14°	A10071230601	6 8	■
HFL 1230.06	Z3	KEL 1230	12	30	6	70	2,6	14°	A10071230603	1 2 3 4 7	■
HFL 1230.06	Z4	KEL 1230	12	30	6	70	2,6	14°	A10071230604	2 3 4 7 8	■
HFL 1230.06	Z5	KEL 1230	12	30	6	70	2,6	14°	A10071230605	1 2 3 4 7	■
HFL 1230.06	Z7	KEL 1230	12	30	6	70	2,6	14°	A10071230608	1 2 3 5 7	■



**Industry**

**Shape L, Conical Round nose**

Ordering example: A10071230609



**Packing unit:**

1 pc. per type  
Further dimensions, cuts and shank lengths on request.

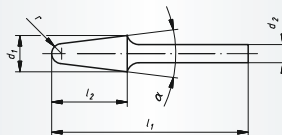
Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	α	Product-Number	recommended for	New burrs
HFL 1230.06	Z9	KEL 1230	12	30	6	70	2,6	14 °	A10071230609		■
HFL 1230.08	Z4	KEL 1230	12	30	8	70	2,6	14 °	A10071230804		■
HFL 1230.08	Z9	KEL 1230	12	30	8	70	2,6	14 °	A10071230809		■
HFL 1630.06	Z3	KEL 1630	16	30	6	70	4,8	14 °	A10071630603		■
HFL 1630.06	Z7	KEL 1630	16	30	6	70	4,8	14 °	A10071630608		■
HFL 1630.08	Z3	KEL 1630	16	30	8	70	4,8	14 °	A10071630803		■
HFL 1630.08	Z9	KEL 1630	16	30	8	70	4,8	14 °	A10071630809		■
HFL 2040.08	Z9	KEL 2040	20	40	8	80	5,5	14 °	A10072040809		■



**Base**

**Shape L, Conical Round nose BASE-X**

Ordering example: A10071230622



**Packing unit:**

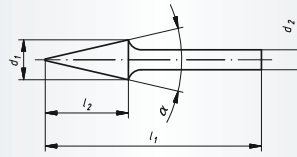
10 pcs. per type,  
from Ø 12 mm: 5 pcs. per type

Description	Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	α	Product-Number	recommended for	New burrs
HFL 1230.06 BASE-X	ZX	KEL 1230	12	30	6	70	2,6	14 °	A10071230622		■



### Shape M, Conical Pointed nose

Ordering example: A10050307303



**Packing unit:**

1 pc. per type

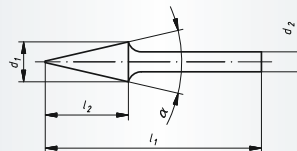
Further dimensions, cuts and shank lengths on request.

Description	Cut	similar DIN 8033	d1 mm	l2 mm	d2 mm	l1 mm	α	Product-Number	recommended for	New burrs
HFM 0307.03	Z3	SKM 0307	3	7	3	40	22°	A10050307303	1 2 3 4 7	■
HFM 0307.03	Z5	SKM 0307	3	7	3	40	22°	A10050307305	1 2 3 4 7	■
HFM 0307.03	Z7	SKM 0307	3	7	3	40	22°	A10050307308	1 2 3 5 7	■
HFM 0311.03	Z5	SKM 0311	3	11	3	40	14°	A10050311305	1 2 3 4 7	■
HFM 0311.03	Z7	SKM 0311	3	11	3	40	14°	A10050311308	1 2 3 5 7	■
HFM 0613.03	Z5	SKM 0613	6	13	3	43	25°	A10050613305	1 2 3 4 7	■
HFM 0613.03	Z7	SKM 0613	6	13	3	43	25°	A10050613308	1 2 3 5 7	■
HFM 0618.06	Z3	SKM 0618	6	18	6	50	16°	A10050618603	1 2 3 4 7	■
HFM 0618.06	Z4	SKM 0618	6	18	6	50	16°	A10050618604	2 3 4 7 8	■
HFM 0618.06	Z5	SKM 0618	6	18	6	50	16°	A10050618605	1 2 3 4 7	■
HFM 0618.06	Z7	SKM 0618	6	18	6	50	16°	A10050618608	1 2 3 5 7	■
HFM 0820.06	Z3	---	8	20	6	60	21°	A10050820603	1 2 3 4 7	■
HFM 0820.06	Z7	---	8	20	6	60	21°	A10050820608	1 2 3 5 7	■
HFM 1020.06	Z3	SKM 1020	10	20	6	60	27°	A10051020603	1 2 3 4 7	■
HFM 1020.06	Z4	SKM 1020	10	20	6	60	27°	A10051020604	2 3 4 7 8	■
HFM 1020.06	Z7	SKM 1020	10	20	6	60	27°	A10051020608	1 2 3 5 7	■
HFM 1020.08	Z3	---	10	20	8	60	27°	A10051020803	1 2 3 4 7	■
HFM 1225.06	Z1	SKM 1225	12	25	6	65	26°	A10051225601	6 8	■
HFM 1225.06	Z3	SKM 1225	12	25	6	65	26°	A10051225603	1 2 3 4 7	■
HFM 1225.06	Z4	SKM 1225	12	25	6	65	26°	A10051225604	2 3 4 7 8	■
HFM 1225.06	Z7	SKM 1225	12	25	6	65	26°	A10051225608	1 2 3 5 7	■
HFM 1225.08	Z3	SKM 1225	12	25	8	65	26°	A10051225803	1 2 3 4 7	■



### Shape M, Conical Pointed nose BASE-X

Ordering example: A10050311322



**Packing unit:**

10 pcs. per type,

from Ø 12 mm: 5 pcs. per type



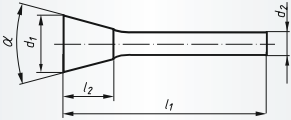
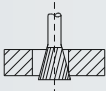
Description	Cut	similar DIN 8033	d1 mm	l2 mm	d2 mm	l1 mm	α	Product-Number	recommended for	New burrs
HFM 0311.03 BASE-X	ZX	SKM 0311	3	11	3	40	14°	A10050311322	1 2 3 4 5 7	■
HFM 0618.06 BASE-X	ZX	SKM 0618	6	18	6	50	16°	A10050618622	1 2 3 4 5 7	■
HFM 1020.06 BASE-X	ZX	SKM 1020	10	20	6	60	27°	A10051020622	1 2 3 4 5 7	■
HFM 1225.06 BASE-X	ZX	SKM 1225	12	25	6	65	26°	A10051225622	1 2 3 4 5 7	■



**Industry**

**Shape N, Inverted cone**

Ordering example: A10120307305



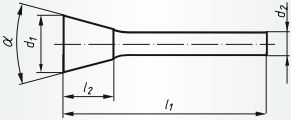
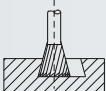
Description		Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	Product-Number	recommended for	New burrs
 									<b>Packing unit:</b> 1 pc. per type Further dimensions, cuts and shank lengths on request.		
											
HFN 0307.03	Z5	WKN 0307	3	7	3	40	10°	A10120307305	1 2 3 4 7	■	
HFN 0307.03	Z7	WKN 0307	3	7	3	40	10°	A10120307308	1 2 3 5 7	■	
HFN 0607.03	Z5	WKN 0607	6	7	3	37	10°	A10120607305	1 2 3 4 7	■	
HFN 0607.06	Z3	WKN 0607	6	7	6	50	10°	A10120607603	1 2 3 4 7	■	
HFN 0607.06	Z4	WKN 0607	6	7	6	50	10°	A10120607604	2 3 4 7 8	■	
HFN 0607.06	Z5	WKN 0607	6	7	6	50	10°	A10120607605	1 2 3 4 7	■	
HFN 1013.06	Z3	WKN 1013	10	13	6	53	10°	A10121013603	1 2 3 4 7	■	
HFN 1013.06	Z4	WKN 1013	10	13	6	53	10°	A10121013604	2 3 4 7 8	■	
HFN 1213.06	Z3	WKN 1213	12	13	6	53	20°	A10121213603	1 2 3 4 7	■	
HFN 1213.06	Z4	WKN 1213	12	13	6	53	20°	A10121213604	2 3 4 7 8	■	
HFN 1613.08	Z3	WKN 1613	16	13	8	53	20°	A10121613803	1 2 3 4 7	■	
HFN 2013.06	Z4	---	20	13	6	53	30°	A10122013604	2 3 4 7 8	■	



**Industry**

**Shape N, Inverted cone with end-cut**

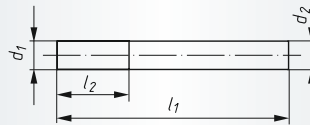
Ordering example: A101203073050001

Description		Cut	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	Product-Number	recommended for	New burrs
 									<b>Packing unit:</b> 1 pc. per type Further dimensions, cuts and shank lengths on request.		
											
HFNS 0307.03	Z5	WKN-S 0307	3	7	3	40	10°	A101203073050001	1 2 3 4 7	■	
HFNS 0307.03	Z7	WKN-S 0307	3	7	3	40	10°	A101203073080001	1 2 3 5 7	■	
HFNS 0607.03	Z5	WKN-S 0607	6	7	3	37	10°	A101206073050001	1 2 3 4 7	■	
HFNS 1013.06	Z3	WKN-S 1013	10	13	6	53	10°	A101210136030001	1 2 3 4 7	■	
HFNS 1013.06	Z4	WKN-S 1013	10	13	6	53	10°	A101210136040001	2 3 4 7 8	■	
HFNS 1213.06	Z3	WKN-S 1213	12	13	6	53	20°	A101212136030001	1 2 3 4 7	■	
HFNS 1213.06	Z4	WKN-S 1213	12	13	6	53	20°	A101212136040001	2 3 4 7 8	■	
HFNS 1613.06	Z4	WKN-S 1613	16	13	6	53	20°	A101216136040001	2 3 4 7 8	■	
HFNS 1613.08	Z3	WKN-S 1613	16	13	8	53	20°	A101216138030001	1 2 3 4 7	■	



## Special milling cutters for machining of fibre reinforced materials and plastics

Ordering example: A101603133001



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	end cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFP 0313.03	01	3	13	3	40	A101603133001		■
HFP 0313.03	02	3	13	3	40	A101603133002		■
HFP 0313.03	03	3	13	3	40	A101603133003		■
HFP 0313.03	04	3	13	3	40	A101603133004		■
HFP 0416.04	02	4	16	4	50	A101604164002		■
HFP 0620.06	01	6	20	6	50	A101606206001		■
HFP 0620.06	02	6	20	6	50	A101606206002		■
HFP 0620.06	04	6	20	6	50	A101606206004		■
HFP 0825.08	01	8	25	8	80	A101608258001		■
HFP 0825.08	02	8	25	8	80	A101608258002		■
HFP 0825.08	04	8	25	8	80	A101608258004		■
HFP 1025.10	02	10	25	10	80	A101610251002		■
HFP 1025.10	04	10	25	10	80	A101610251004		■
HFP 1230.12	02	12	30	12	80	A101612301202		■

**Type of end cut:**



01 = no end cut



03 = double-flute



02 = multi-flute



04 = drill type, 120° tip angle

## General information

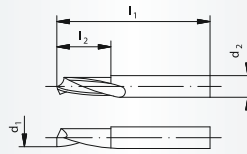
<b>Workpiece material properties:</b>	GRP (glass fibre reinforced plastics) and CRP (carbon reinforced plastics) generally require machining where a high degree of specific strength and rigidity are required. Such particularly light materials should only be machined with special milling cutters which reduce the cutting pressure and prevent damage to the fibres in the material.
<b>Market potential:</b>	<ul style="list-style-type: none"> <li>Aerospace</li> <li>Automotive</li> <li>Ship and yacht building</li> <li>Construction of wind turbines</li> <li>Model building</li> <li>Motor sport</li> </ul>
<b>Examples of application:</b>	<ul style="list-style-type: none"> <li>Aircraft components</li> <li>Car components</li> <li>Pipes</li> <li>Sport equipment</li> <li>Components for wind turbines</li> <li>Applied off-hand or on stationary machines</li> </ul>
<b>LUKAS-milling cutters:</b>	The special milling tool in cut P has been developed solely for the use on CRP and GRP. The special flute geometry allows for precise machining – the choice of different face tooth geometry facilitates drilling (plunge) into the material or simply allows for an optimal facing application.





Engraving cutters of solid carbide single flute type

Ordering example: A13150030337102



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Unless otherwise specified, the tolerances are as DIN 7468

Description	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HGE 0207.03	2	7	3	40	A13150030337102		■
HGE 0307.03	3	7	3	40	A13150030337103		■

**Application:** Very well suited for the machining of light metals, non-ferrous metals, plastics and for high-speed-machining of aluminium parts. Cutters with mirror finished flute to allow ideal chip removal and to avoid clogging.

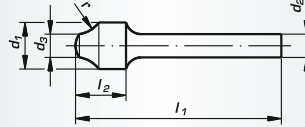
Recommended cutting speeds

Main group of materials	Sub-group	Hardness (HB)	Strength (N/mm <sup>2</sup> )	Optimal cutting speed (m/min)
Aluminium, Magnesium	Al, Mg non alloyed	≤ 100	≤ 350	≤ 400
	Al alloyed Si < 0,5%	≤ 150	≤ 500	≤ 400
	Al alloyed Si ≥ 0,5 < 10%	≤ 120	≤ 400	≤ 100
	Al alloyed Si ≥ 10%, Mg-all., Al-Whisker	≤ 120	≤ 400	≤ 70
	Plastics	Thermoplastics	–	–
	Thermo-setting plastics	–	–	–



### Shape R, Trimming burr (external)

Ordering example: A10140812603



**Packing unit:**

1 pc. per type

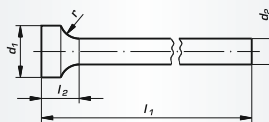
Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	d <sub>3</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	Product-Number	recommended for	New burrs
HFR 0812.06	Z3	8	3	12	6	52	2,5	A10140812603	1 2 3 4 7	■
HFR 1015.06	Z3	10	2	15	6	55	8	A10141015603	1 2 3 4 7	■
HFR 1215.06	Z3	12	6	15	6	55	8	A10141215603	1 2 3 4 7	■
HFR 1215.08	Z3	12	6	15	8	55	8	A10141215803	1 2 3 4 7	■
HFR 1315.06	Z3	13	3	15	6	55	10	A10141315603	1 2 3 4 7	■
HFR 1315.06	Z5	13	3	15	6	55	10	A10141315605	1 2 3 4 7	■
HFR 1315.08	Z3	13	3	15	8	55	10	A10141315803	1 2 3 4 7	■



### Shape S, Trimming burr (internal)

Ordering example: A10131618803



**Packing unit:**

1 pc. per type

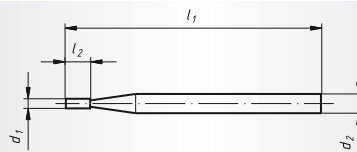
Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	Product-Number	recommended for	New burrs
HFS 1618.08	Z3	16	12	8	120	6	A10131618803	1 2 3 4 7	■
HFS 1818.08	Z3	18	14	8	120	8	A10131818803	1 2 3 4 7	■
HFS 2218.08	Z3	22	16	8	120	10	A10132218803	1 2 3 4 7	■



Miniature burrs with multi-purpose cut

Ordering example: A10010104312



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Shape	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for							New burrs		
							2	3	4	7	8	9	10			
HFA 01004.03		1	4	3	40	A10010104312	2	3	4	7						■
HFA 01504.03		1,5	4	3	40	A100101043120001	2	3	4	7						■
HFA 02004.03		2	4	3	40	A10010204312	2	3	4	7						■
HFC 01004.03		1	4	3	40	A10020104312	2	3	4	7						■
HFC 01504.03		1,5	4	3	40	A100201043120001	2	3	4	7						■
HFC 02004.03		2	4	3	40	A10020204312	2	3	4	7						■
HFD 01001.03		1	0,9	3	40	A10030101312	2	3	4	7						■
HFD 01501.03		1,5	1,35	3	40	A100301013120001	2	3	4	7						■
HFD 02002.03		2	1,8	3	40	A10030202312	2	3	4	7						■
HFE 01504.03		1,5	4	3	40	A10060104312	2	3	4	7						■
HFF 01504.03		1,5	4	3	40	A10100104312	2	3	4	7						■
HFG 01504.03		1,5	4	3	40	A10040104312	2	3	4	7						■
HFM 01504.03		1,5	4	3	40	A10050104312	2	3	4	7						■

**Application:**

- tool manufacture
- precision engineering
- jewellery industry
- turbine manufacture

**Power Tool:**

- We recommend our pneumatic grinder AMIN 72-013 GD, page 395

**Materials to be processed:**

- stainless steel
- CrNi alloys
- non-ferrous metals
- zinc diecasting
- soft ceramics
- titanium alloys

**Useful hints:**

- choose shortest overhang
- concentric running of the collett chuck is very important
- recommended speed: 70.000 rpm

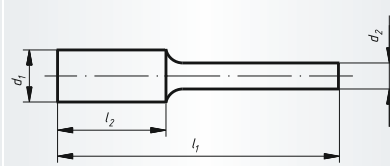
**Advantages:**

- high dimensional accuracy
- minimal runout
- multi-purpose cut
- micro grain carbide
- precision ground cutting edges



## Miniature burrs in cut 5, shank 3 mm

Ordering example: A10010210305



**Packing unit:**

1 pc. per type

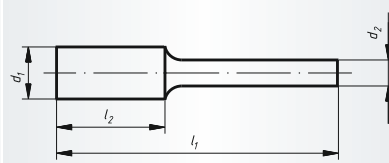
Further dimensions, cuts and shank lengths on request.

Description	Cut	Shape	similar DIN 8033	Shank H = solid carbide S = Steel	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for	New burrs
HFA 0210.03	Z5		ZYA 0210	H	2	10	40	A10010210305	1 2 3 4 7	■
HFA 0313.03	Z5		ZYA 0313	H	3	13	40	A10010313305	1 2 3 4 7	■
HFA 0607.03	Z5		ZYA 0607	S	6	7	37	A10010607305	1 2 3 4 7	■
HFA 0613.03	Z5		ZYA 0613	S	6	13	43	A10010613305	1 2 3 4 7	■
HFAS 0210.03	Z5		ZYA-S 0210	H	2	10	40	A100102103050001	1 2 3 4 7	■
HFAS 0313.03	Z5		ZYA-S 0313	H	3	13	40	A100103133050001	1 2 3 4 7	■
HFAS 0607.03	Z5		ZYA-S 0607	S	6	7	37	A100106073050001	1 2 3 4 7	■
HFAS 0613.03	Z5		ZYA-S 0613	S	6	13	43	A100106133050001	1 2 3 4 7	■
HFC 0210.03	Z5		WRC 0210	H	2	10	40	A10020210305	1 2 3 4 7	■
HFC 0313.03	Z5		WRC 0313	H	3	13	40	A10020313305	1 2 3 4 7	■
HFC 0613.03	Z5		WRC 0613	S	6	13	43	A10020613305	1 2 3 4 7	■
HFD 0302.03	Z5		KUD 0302	H	3	2	40	A10030303305	1 2 3 4 7	■
HFD 0403.03	Z5		KUD 0403	H	4	3	34	A100304043050001	1 2 3 4 7	■
HFD 0605.03	Z5		KUD 0605	S	6	5	35	A10030606305	1 2 3 4 7	■
HFE 0307.03	Z5		TRE 0307	H	3	7	40	A10060307305	1 2 3 4 7	■
HFE 0610.03	Z5		TRE 0610	S	6	10	40	A10060610305	1 2 3 4 7	■
HFF 0307.03	Z5		RBF 0307	H	3	7	40	A10100307305	1 2 3 4 7	■
HFF 0313.03	Z5		RBF 0313	H	3	13	40	A10100313305	1 2 3 4 7	■
HFF 0613.03	Z5		RBF 0613	S	6	13	43	A10100613305	1 2 3 4 7	■
HFG 0307.03	Z5		SPG 0307	H	3	7	40	A10040307305	1 2 3 4 7	■
HFG 0313.03	Z5		SPG 0313	H	3	13	40	A10040313305	1 2 3 4 7	■
HFG 0613.03	Z5		SPG 0613	S	6	13	43	A10040613305	1 2 3 4 7	■
HFH 0307.03	Z5		---	H	3	7	40	A10090307305	1 2 3 4 7	■



Miniature burrs in cut 5, shank 3 mm

Ordering example: A10090613305



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

\* available only with fine cross-cut

Description	Cut	Shape	similar DIN 8033	Shank H = solid carbide S = Steel	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for							New burrs		
									1	2	3	4	5	6	7			
HFH 0613.03	Z5		---	S	6	13	43	A10090613305	1	2	3	4			7			■
HFI 0204.03	*		---	H	2,5	4	40	A10010204300	1	2	3	4			7			■
HFI 0408.03	*		---	H	4	8	50	A10010408300	1	2	3	4			7			■
HFM 0307.03	Z5		SKM 0307	H	3	7	40	A10050307305	1	2	3	4			7			■
HFM 0311.03	Z5		SKM 0311	H	3	11	40	A10050311305	1	2	3	4			7			■
HFM 0613.03	Z5		SKM 0613	S	6	13	43	A10050613305	1	2	3	4			7			■
HFN 0307.03	Z5		WKN 0307	H	3	7	40	A10120307305	1	2	3	4			7			■
HFN 0607.03	Z5		WKN 0607	S	6	7	37	A10120607305	1	2	3	4			7			■
HFNS 0307.03	Z5		WKN-S 0307	H	3	7	40	A101203073050001	1	2	3	4			7			■
HFNS 0607.03	Z5		WKN-S 0607	S	6	7	37	A101206073050001	1	2	3	4			7			■



**Industry**

**Tool-sets, cut 7, shank 3 mm**

Ordering example: A10390010



**Packing unit:**  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 pc. each	Product-Number	recommended for	
F10 S3	3	Z7	10-pieces	HFA 0313, HFA 0613, HFC 0313, HFC 0613, HFD 0302, HFD 0605, HFG 0313, HFG 0613, HFM 0613, HFF 0313	A10390010	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	■



**Industry**

**Tool-sets, cut 7, shank 6 mm**

Ordering example: A1039001006



**Packing unit:**  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 pc. each	Product-Number	recommended for	
F10 S6	6	Z7	10-pieces	HFAS 0616, HFAS 1225, HFC 0616, HFC 1225, HFD 0605, HFD 1210, HFG 0618, HFG 1225, HFF 0820, HFF 1225	A1039001006	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	■



Base

**Tool-set, BASE-X, F5 S3**

Ordering example: A10390053



**Packing unit:**  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 pc. each	Product-Number	recommended for	
F5 S3 BASE-X	3	ZX	5-pieces	HFA 0313, HFC 0313, HFD 0605, HFF 0313, HFG 0313	A10390053	<div style="display: flex; justify-content: space-around;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>7</span> </div>	■



Base

**Tool-set, BASE-X, F5 S6**

Ordering example: A10390056



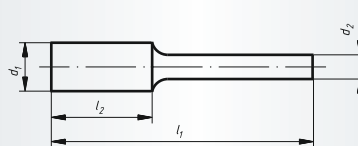
**Packing unit:**  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 pc. each	Product-Number	recommended for	
F5 S6 BASE-X	6	ZX	5-pieces	HFA 1225, HFC 1225, HFD 1210, HFF 1225, HFG 1225	A10390056	<div style="display: flex; justify-content: space-around;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>7</span> </div>	■



### Tungsten Carbide Burrs with TiAlN-coating\*

Ordering example: A10010616608TIALN



#### Packing unit:

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for							New burrs	
HFA 0616.06 Z7 TIALN		Z7	6	16	6	50	A10010616608TIALN	1	2	3	5	7				■
HFA 0820.06 Z7 TIALN		Z7	8	20	6	60	A10010820608TIALN	1	2	3	5	7				■
HFA 1020.06 Z7 TIALN		Z7	10	20	6	60	A10011020608TIALN	1	2	3	5	7				■
HFAS 0616.06 Z7 TIALN		Z7	6	16	6	50	A10010616608TIAL1	1	2	3	5	7				■
HFAS 0820.06 Z7 TIALN		Z7	8	20	6	60	A10010820608TIAL1	1	2	3	5	7				■
HFAS 1020.06 Z7 TIALN		Z7	10	20	6	60	A10011020608TIAL1	1	2	3	5	7				■
HFAS 1225.06 Z7 TIALN		Z7	12	25	6	65	A10011225608TIAL1	1	2	3	5	7				■
HFC 0616.06 Z7 TIALN		Z7	6	16	6	50	A10020616608TIALN	1	2	3	5	7				■
HFC 0820.06 Z7 TIALN		Z7	8	20	6	60	A10020820608TIALN	1	2	3	5	7				■
HFC 1020.06 Z7 TIALN		Z7	10	20	6	60	A10021020608TIALN	1	2	3	5	7				■
HFC 1225.06 Z7 TIALN		Z7	12	25	6	65	A10021225608TIALN	1	2	3	5	7				■
HFD 0605.06 Z7 TIALN		Z7	6	5	6	50	A10030606608TIALN	1	2	3	5	7				■
HFD 0807.06 Z7 TIALN		Z7	8	7	6	47	A10030808608TIALN	1	2	3	5	7				■
HFD 1009.06 Z7 TIALN		Z7	10	9	6	49	A10031010608TIALN	1	2	3	5	7				■
HFD 1210.06 Z7 TIALN		Z7	12	10	6	50	A10031210608TIALN	1	2	3	5	7				■
HFD 1614.06 Z7 TIALN		Z7	16	14	6	54	A10031614608TIALN	1	2	3	5	7				■
HFF 0618.06 Z7 TIALN		Z7	6	18	6	50	A10100618608TIALN	1	2	3	5	7				■
HFF 1225.06 Z7 TIALN		Z7	12	25	6	65	A10101225608TIALN	1	2	3	5	7				■
HFF 1630.06 Z7 TIALN		Z7	16	30	6	70	A10101630608TIALN	1	2	3	5	7				■
HFG 0618.06 Z7 TIALN		Z7	6	18	6	50	A10040618608TIALN	1	2	3	5	7				■
HFG 1020.06 Z7 TIALN		Z7	10	20	6	60	A10041020608TIALN	1	2	3	5	7				■
HFG 1225.06 Z7 TIALN		Z7	12	25	6	65	A10041225608TIALN	1	2	3	5	7				■
HFG 1630.06 Z7 TIALN		Z7	16	30	6	70	A10041630608TIALN	1	2	3	5	7				■
HFH 0820.06 Z7 TIALN		Z7	8	20	6	60	A10090820608TIALN	1	2	3	5	7				■
HFH 1230.06 Z7 TIALN		Z7	12	30	6	70	A10091230608TIALN	1	2	3	5	7				■
HFL 1020.06 Z7 TIALN		Z7	10	20	6	60	A10071020608TIALN	1	2	3	5	7				■
HFL 1230.06 Z7 TIALN		Z7	12	30	6	70	A10071230608TIALN	1	2	3	5	7				■
HFM 1020.06 Z7 TIALN		Z7	10	20	6	60	A10051020608TIALN	1	2	3	5	7				■

\*High performance coating with a high degree of hardness and flow heat conductivity; therefore suitable for high thermal and mechanical applications; very low friction value

#### The reasons for producing Tungsten Carbide Burrs with TiAlN-coating are as follows:

- to increase tool life
- to reduce machining forces
- to improve chip removal

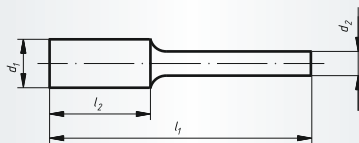






### Tungsten Carbide Rotary files

Ordering example: A100106166150001



**Packing unit:**  
1 pc. per type

Description	Cut	Shape	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for										
HFAS 0616.06	ZF2		6	16	6	50	A100106166150001	1	2	3	4	5	7					■
HFAS 0616.06	ZF3		6	16	6	50	A100106166140001	1	2	3	4	5	7					■
HFAS 1225.06	ZF1		12	25	6	65	A100112256160001	1	2	3	4	5	7					■
HFAS 1225.06	ZF2		12	25	6	65	A100112256150001	1	2	3	4	5	7					■
HFC 0616.06	ZF3		6	16	6	50	A10020616614	1	2	3	4	5	7					■
HFC 1225.06	ZF1		12	25	6	65	A10021225616	1	2	3	4	5	7					■
HFC 1225.06	ZF2		12	25	6	65	A10021225615	1	2	3	4	5	7					■
HFD 1009.06	ZF2		10	9	6	49	A10031009615	1	2	3	4	5	7					■
HFG 0618.06	ZF2			6	18	6	50	A10040618615	1	2	3	4	5	7				
HFG 0618.06	ZF3	6		18	6	50	A10040618614	1	2	3	4	5	7					■
HFG 1230.06	ZF1	12		30	6	70	A10041230616	1	2	3	4	5	7					■
HFG 1230.06	ZF2		12	30	6	70	A10041230615	1	2	3	4	5	7					■
HFG 1230.06	ZF3		12	30	6	70	A10041230614	1	2	3	4	5	7					■
HFM 1225.06	ZF2		12	25	6	65	A10051225615	1	2	3	4	5	7					■

The micro-serration of the new tungsten carbide rotary files is based on the cutting geometry of a file and thus prevents clogging, even when removing soft materials. The precision cut is achieved on CNC grinding machines, thus ensuring perfect concentricity and chatter-free working. The burrs remain sharp for a long time as a result, achieving a clean surface finish free of chatter marks.

Rotary files are available in numerous sizes and shapes and three different cuts ranging from ZF1 (coarse) to ZF3 (fine). This means that the conditions of use can be optimised for each application with the result of the best surface finish.

**Characteristics:**

- Optimum surface finishes, owing to fine serration
- Long service life, owing to tungsten carbide
- No clogging

**Particularly suitable for:**

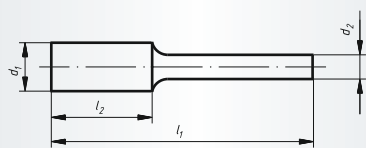
- Perfect surface finishes
- Composite materials
- Soft materials
- Bores



Industry

**Burrs for machining non-ferrous metals, cut 9**

Ordering example: A10010616609



**Packing unit:**

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Cut	Shape	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for				New burrs		
HFA 0616.06	Z9		6	16	6	50	A10010616609					6	8	■
HFA 1225.06	Z9		12	25	6	65	A10011225609					6	8	■
HFA 1225.08	Z9		12	25	8	65	A10011225809					6	8	■
HFA 1625.06	Z9		16	25	6	65	A10011625609					6	8	■
HFA 1625.08	Z9		16	25	8	65	A10011625809					6	8	■
HFC 0616.06	Z9		6	16	6	50	A10020616609					6	8	■
HFC 0820.06	Z9		8	20	6	60	A10020820609					6	8	■
HFC 1225.06	Z9		12	25	6	65	A10021225609					6	8	■
HFC 1225.08	Z9		12	25	8	65	A10021225809					6	8	■
HFC 1625.06	Z9		16	25	6	65	A10021625609					6	8	■
HFC 1625.08	Z9		16	25	8	65	A10021625809					6	8	■
HFD 1210.06	Z9		12	10	6	50	A10031212609					6	8	■
HFD 1210.08	Z9		12	10	8	50	A10031212809					6	8	■
HFD 1614.06	Z9		16	14	6	54	A10031616609					6	8	■
HFD 1614.08	Z9		16	14	8	54	A10031616809					6	8	■
HFE 1225.08	Z9		12	25	8	65	A10061225809					6	8	■
HFE 1625.08	Z9		16	25	8	65	A10061625809					6	8	■
HFF 1225.06	Z9		12	25	6	65	A10101225609					6	8	■
HFF 1225.08	Z9		12	25	8	65	A10101225809					6	8	■
HFF 1630.06	Z9		16	30	6	70	A10101630609					6	8	■
HFF 1630.08	Z9		16	30	8	70	A10101630809					6	8	■
HFL 0820.06	Z9		8	20	6	60	A10070820609					6	8	■
HFL 1020.06	Z9		10	20	6	60	A10071020609					6	8	■
HFL 1225.06	Z9		12	25	6	65	A10071225609					6	8	■
HFL 1230.06	Z9		12	30	6	70	A10071230609					6	8	■
HFL 1230.08	Z9		12	30	8	70	A10071230809					6	8	■
HFL 1630.08	Z9		16	30	8	70	A10071630809					6	8	■
HFL 2040.08	Z9	20	40	8	80	A10072040809					6	8	■	

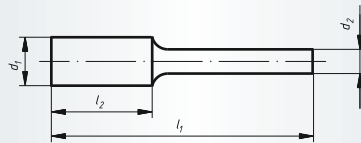
Example using burr with Z9 cut





### Burrs with extended shank length (shank length 200 mm)

Ordering example: A10011225603200



#### Packing unit:

1 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for							New burrs	
HFA 1225.06 L		Z3	12	25	6	225	A10011225603200	1	2	3	4		7			■
HFA 1225.06 L		Z7	12	25	6	225	A10011225608200	1	2	3		5	7			■
HFC 0616.06 L		Z3	6	16	6	216	A10020616603200	1	2	3	4		7			■
HFC 0616.06 L		Z7	6	16	6	216	A10020616608200	1	2	3		5	7			■
HFC 0820.06 L		Z3	8	20	6	220	A10020820603200	1	2	3	4		7			■
HFC 0820.06 L		Z7	8	20	6	220	A10020820608200	1	2	3		5	7			■
HFC 1020.06 L		Z7	10	20	6	220	A10021020608200	1	2	3		5	7			■
HFC 1225.06 L		Z7	12	25	6	225	A10021225608200	1	2	3		5	7			■
HFD 0605.06 L		Z3	6	5	6	205	A10030605603200	1	2	3	4		7			■
HFD 0605.06 L		Z7	6	5	6	205	A10030605608200	1	2	3		5	7			■
HFD 0807.06 L		Z3	8	7	6	207	A10030807603200	1	2	3	4		7			■
HFD 0807.06 L		Z7	8	7	6	207	A10030807608200	1	2	3		5	7			■
HFD 1009.06 L		Z3	10	9	6	209	A10031009603200	1	2	3	4		7			■
HFD 1009.06 L		Z7	10	9	6	209	A10031009608200	1	2	3		5	7			■
HFD 1210.06 L		Z3	12	10	6	210	A10031210603200	1	2	3	4		7			■
HFD 1210.06 L		Z7	12	10	6	210	A10031210608200	1	2	3		5	7			■
HFD 1210.08 L		Z3	12	10	8	210	A10031210803200	1	2	3	4		7			■
HFD 1210.08 L		Z7	12	10	8	210	A10031210808200	1	2	3		5	7			■
HFE 1220.06 L		Z3	12	20	6	220	A10061220603200	1	2	3	4		7			■
HFE 1220.06 L		Z7	12	20	6	220	A10061220608200	1	2	3		5	7			■
HFE 1220.08 L		Z7	12	20	8	220	A10061220808200	1	2	3		5	7			■
HFF 0618.06 L		Z3	6	18	6	218	A10100618603200	1	2	3	4		7			■
HFF 0618.06 L		Z7	6	18	6	218	A10100618608200	1	2	3		5	7			■
HFF 1230.08 L		Z3	12	30	8	230	A10101230803200	1	2	3	4		7			■
HFF 1230.08 L		Z7	12	30	8	230	A10101230808200	1	2	3		5	7			■
HFG 0618.06 L		Z3	6	18	6	218	A10040618603200	1	2	3	4		7			■
HFG 0618.06 L		Z7	6	18	6	218	A10040618608200	1	2	3		5	7			■
HFG 1230.08 L		Z7	12	30	8	230	A10041230808200	1	2	3		5	7			■
HFH 1020.06 L		Z3	10	20	6	220	A10091020603200	1	2	3	4		7			■
HFH 1020.06 L		Z7	10	20	6	220	A10091020608200	1	2	3		5	7			■
HFH 1230.08 L		Z7	12	30	8	230	A10091230808200	1	2	3		5	7			■

#### Safety instructions: Recommended operating speed for major exposed shank lengths

In order to avoid the risk of accidents, it is necessary to ensure contact between the tool and workpiece prior to starting the power tool, or to insert the tool into bores or channels. Contact with the workpiece must be ensured until the machine is deactivated. If permanent contact with the workpiece cannot be ensured, the machine should run at idling speed.

#### Reduced speeds for tungsten carbide burrs with extra long shank (200 mm)

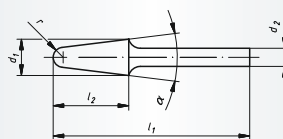
Tool diameter d <sub>1</sub> mm	6	8	10	12	12
Shank diameter d <sub>2</sub> mm	6	6	6	6	8
Maximum idling speed without workpiece contact (1/min)	4.000	3.200	2.800	2.200	3.600
Recommended reduced operating speed with workpiece contact (1/min)	13.000	10.000	8.000	7.000	7.000



Base

**Tungsten Carbide Burrs with Imperial-Sized Shanks, BASE-X**

Ordering example: A5001082062214




**Packing unit:**  
10 pcs. per type,  
from Ø 12 mm: 5 pcs. per type

Description	Cut	Shape	similar DIN 8033	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	r ≈ mm	Product-Number	recommended for	New burrs
HFA 0820.06 BASE-X	ZX		ZYA 8020	8	20	1/4"	60			A5001082062214	1 2 3 4 5 7	■
HFA 1020.06 BASE-X	ZX		ZYA 1020	10	20	1/4"	60			A5001102062214	1 2 3 4 5 7	■
HFA 1225.06 BASE-X	ZX		ZYA 1225	12	25	1/4"	65			A5001122562214	1 2 3 4 5 7	■
HFC 0616.06 BASE-X	ZX		WRC 0616	6	16	1/4"	50			A5002061662214	1 2 3 4 5 7	■
HFC 0820.06 BASE-X	ZX		WRC 0820	8	20	1/4"	60			A5002082062214	1 2 3 4 5 7	■
HFC 1020.06 BASE-X	ZX		WRC 1020	10	20	1/4"	60			A5002102062214	1 2 3 4 5 7	■
HFC 1225.06 BASE-X	ZX		WRC 1225	12	25	1/4"	65			A5002122562214	1 2 3 4 5 7	■
HFD 1009.06 BASE-X	ZX		KUD 1009	10	9	1/4"	49			A5003100962214	1 2 3 4 5 7	■
HFD 1210.06 BASE-X	ZX		KUD 1210	12	10	1/4"	51			A5003121062214	1 2 3 4 5 7	■
HFF 0820.06 BASE-X	ZX		-	8	20	1/4"	60		1,8	A5010082062214	1 2 3 4 5 7	■
HFF 1020.06 BASE-X	ZX		RBF 1020	10	20	1/4"	60		2,5	A5010102062214	1 2 3 4 5 7	■
HFF 1225.06 BASE-X	ZX		RBF 1225	12	25	1/4"	65		2,5	A5010122562214	1 2 3 4 5 7	■
HFG 0820.06 BASE-X	ZX		SPG 8020	8	20	1/4"	60			A5004082062214	1 2 3 4 5 7	■
HFG 1020.06 BASE-X	ZX		SPG 1020	10	20	1/4"	60			A5004102062214	1 2 3 4 5 7	■
HFG 1225.06 BASE-X	ZX		SPG 1225	12	25	1/4"	65			A5004122562214	1 2 3 4 5 7	■
HFG 1230.06 BASE-X	ZX		SPG 1230	12	30	1/4"	70			A5004123062214	1 2 3 4 5 7	■
HFL 1230.06 BASE-X	ZX		KEL 1230	12	30	1/4"	70	14°	2,6	A5007123062214	1 2 3 4 5 7	■
HFM 0618.06 BASE-X	ZX		SKM 0618	6	18	1/4"	50	16°		A5005061862214	1 2 3 4 5 7	■
HFM 1020.06 BASE-X	ZX		SKM 1020	10	20	1/4"	60	27°		A5005102062214	1 2 3 4 5 7	■
HFM 1225.06 BASE-X	ZX		SKM 1225	12	25	1/4"	65	26°		A5005122562214	1 2 3 4 5 7	■



Tools for stationary use


	<p><b>Range of application:</b></p> <ul style="list-style-type: none"> <li>• Tool construction</li> <li>• Turbine construction</li> <li>• Aircraft and space industry</li> <li>• general machine tool construction</li> </ul>	<p>In addition to rotary burrs, we also produce tungsten carbide milling tools in special shapes and sizes for stationary application.</p> <p>We supply these milling cutters with a diameter <b>of 12 mm</b> maximum diameter and with a maximum length <b>of 250 mm</b>; they differ from our extensive standard range by the shape, tool material and geometry (rake, relief and helix angles).</p>
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<p>Differential drill, radius mill, shank-end mill, die mill, profile mill</p>	<p>delivery on request</p>
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Tools for hand-held and floor-stand application

	<p><b>Range of application:</b></p> <ul style="list-style-type: none"> <li>• general machine tool construction</li> <li>• shipbuilding</li> </ul>	
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<p>Trimming burr</p>	<p>delivery on request</p>
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# Burrs of HSS

- 64 Technical Information

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- 65 A summary of available shapes

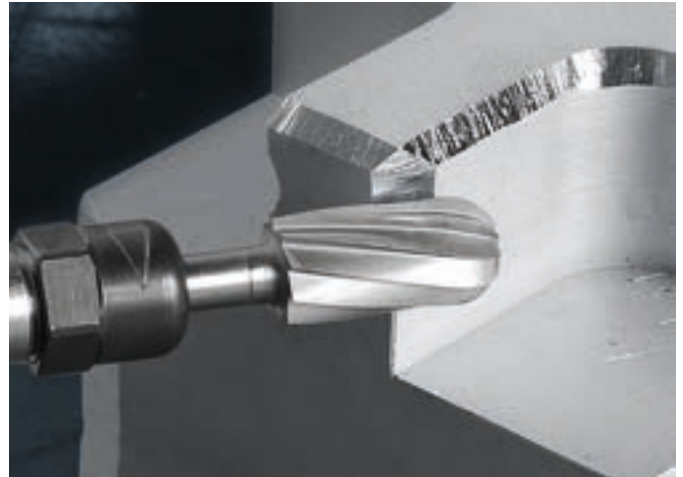
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- 67 Types of cut and their application

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- 68 Burrs of 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**.



## Technical Information

### Quality

LUKAS HSS burrs are manufactured from high quality and well-proven HSS. Our automatic flute grinding machines and our own heat treatment plant guarantee a top quality product.

### Application

Providing the correct type and speed are used, LUKAS HSS burrs will economically machine a wide variety of materials. Regarding cutting speeds, please refer to the table on page **66** or according to the table illustrating the various cuts on page **67**. A rule of thumb: Coarse cuts for soft materials – fine cuts for hard materials.

### Power tools

LUKAS HSS burrs can be used on any air or electric powered machines. To achieve the optimal performance, the machines must be run at the correct speed, the collets must run true, and the bearings to be in good condition.

### Shanks

Standard shank length is 40 mm. To reach inaccessible working areas, extra long shanks are available on request.

### Packaging



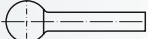


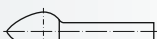
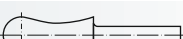



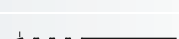

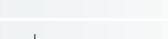
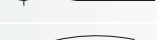


Depending on burr dimension and quantity ordered, we choose the most appropriate packing method from our environmentally-friendly unit packs (5 or 10 pieces).

### Special tools

We can manufacture HSS burrs to your design and drawing and guarantee the usual high quality LUKAS standard.



## A summary of available shapes

Shape	Type	Shape (LUKAS)	Page
	Cylindrical	<b>A</b>	68
	Cylindrical round nose	<b>C</b>	70
	Spherical	<b>D</b>	70
	Oval	<b>E</b>	71
	Arch pointed nose	<b>G</b>	72
	Flame	<b>H</b>	73
	Club	<b>K</b>	73
	Conical round nose	<b>L</b>	74
	Conical pointed nose	<b>M</b>	74
	Inverted cone	<b>N</b>	75
	Edge trimming burr	<b>W</b>	75
	Miniature Burrs, Shank 3 mm		76
	Miniature Burrs, Shank 6 mm		78
	Burrs with internal thread		79
	Tools sets		81
	Power Tools		381

### Three steps to your optimum burr:

- 1 Select the **material** and **machining mode** (coarse to fine) from the table and
- 2 read off the recommended **cut** and **cutting speed**.
- 3 Determine the appropriate **speed** for your power tool in the second table.

### Recommendations for use burrs of HSS

1				2		
Material	Lukas material group (see also fold-out tab)	Strength [N/mm <sup>2</sup> ]	Machining	Cut	Recommended cutting speed vc [m/min]	
Steel, cast steel	1 STEEL AND CAST STEEL	< 800	coarse	Z2	50 – 100	
			medium	Z3	100 – 200	
			fine	Z5	50 – 200	
	2 ALLOYED/HARDENED & TEMPERED STEELS	800 to 1200	coarse	Z2	50 – 100	
			medium	Z3	100 – 200	
			fine	Z5	50 – 200	
Non-ferrous metal 1	6 ALUMINIUM, MAGNESIUM AND COPPER ALLOYS	up to 450	coarse	Z1	200 – 300	
			medium	Z2	150 – 300	
Plastics and wood	8 PLASTIC/WOOD/RUBBER	20 to 400	coarse	Z1	200 – 300	
			fine	Z2	150 – 300	

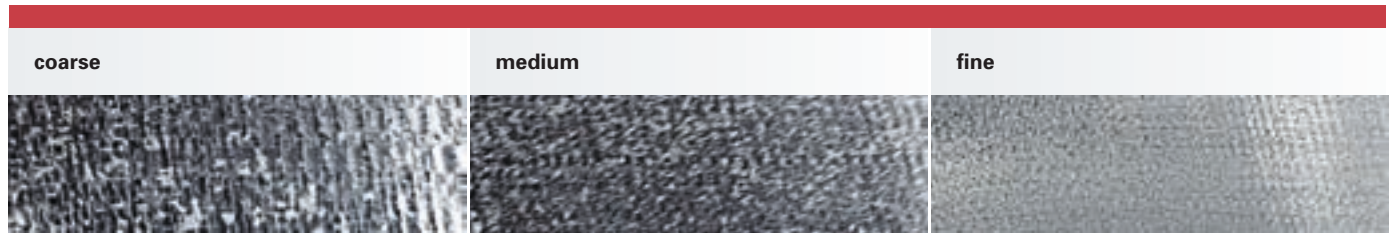
### Rotational speeds for milling tools based on the tool diameter and cutting speed

3							
Recommended cutting speed vc [m/min]							
		50	100	150	200	250	300
		Rotational speed [min <sup>-1</sup> ]					
Tool diameter [mm]	2	8.000	16.000	24.000	32.000	40.000	48.000
	3	5.000	11.000	16.000	21.000	27.000	32.000
	4	4.000	8.000	12.000	16.000	20.000	24.000
	6	3.000	5.000	8.000	11.000	13.000	16.000
	8	2.000	4.000	6.000	8.000	10.000	12.000
	10	2.000	3.000	5.000	6.000	8.000	10.000
	12	1.000	3.000	4.000	5.000	7.000	8.000
	16	1.000	2.000	3.000	4.000	5.000	6.000
	20	1.000	2.000	2.000	3.000	4.000	5.000
	22	1.000	1.000	2.000	3.000	4.000	4.000
	25	1.000	1.000	2.000	3.000	3.000	4.000
	30	1.000	1.000	2.000	2.000	3.000	3.000
	35	–	1.000	1.000	2.000	2.000	3.000

Please see page 381 to 396 for appropriate power tools.

**Tip: Page 65 contains a complete overview of the shapes for your chosen milling tool.**

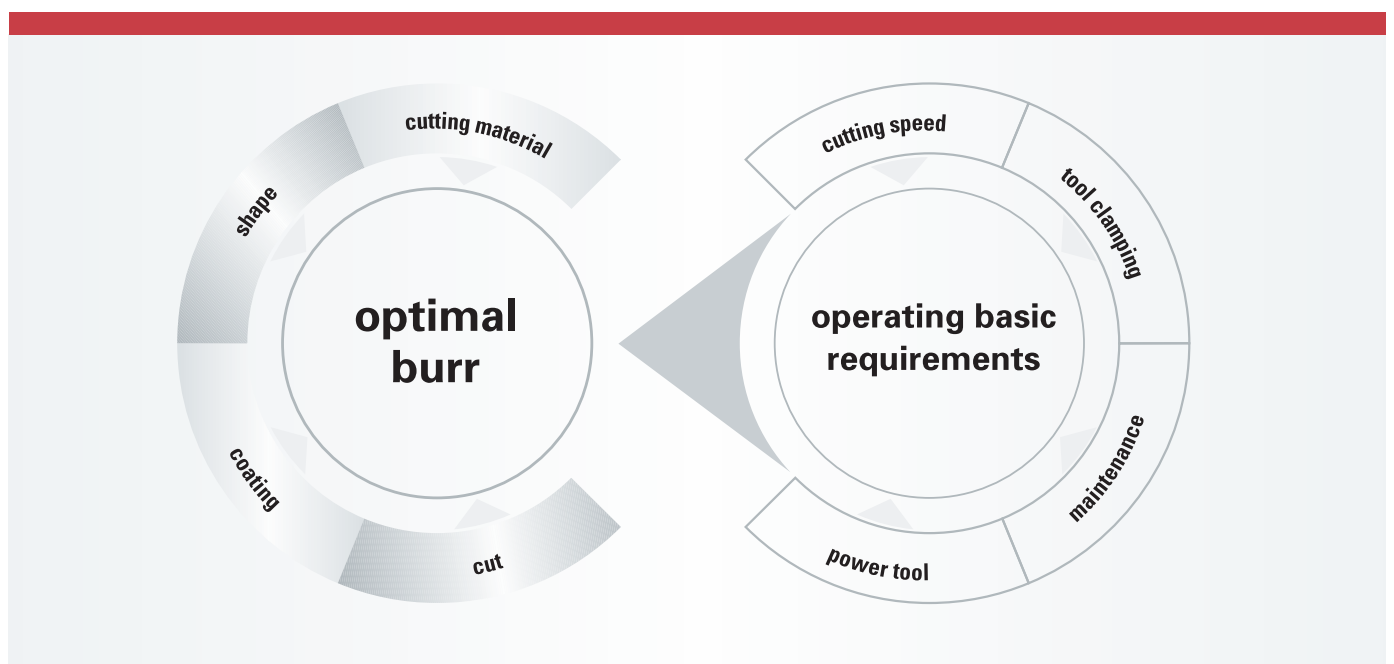
## Machining



## Cuts



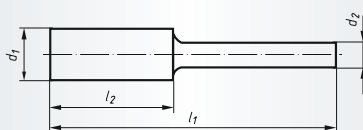
## Choosing the appropriate Burr





### Shape A, Cylindrical

Ordering example: A12000304605



#### Packing unit:

up to  $d_1$  10 mm = 10 pc. per type  
from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

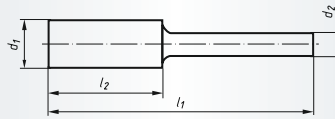
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	d <sub>2</sub> mm	Product-Number	recommended for										New burrs						
							1	2	3	4	5	6	7	8	9	10		11	12				
MFA 0304.06	Z5	3	4,5	60	6	A12000304605	1	2						6								■	
MFA 0607.06	Z5	6	7	60	6	A12000607605	1	2						6									■
MFA 0616.06	Z1	6	16	56	6	A12000616601								6						8			■
MFA 0616.06	Z2	6	16	56	6	A12000616602								6						8			■
MFA 0616.06	Z3	6	16	56	6	A12000616603	1	2															■
MFA 0616.06	Z5	6	16	56	6	A12000616605	1	2						6									■
MFA 0820.06	Z3	8	20	60	6	A12000820603	1	2															■
MFA 1013.06	Z2	10	13	53	6	A12001013602								6						8			■
MFA 1013.06	Z3	10	13	53	6	A12001013603	1	2															■
MFA 1020.06	Z3	10	20	60	6	A12001020603	1	2															■
MFA 1225.06	Z1	12	25	65	6	A12001225601									6						8		■
MFA 1225.06	Z2	12	25	65	6	A12001225602									6						8		■
MFA 1225.06	Z3	12	25	65	6	A12001225603	1	2															■
MFA 1225.06	Z5	12	25	65	6	A12001225605	1	2						6									■
MFA 1625.06	Z1	16	25	65	6	A12001625601									6							8	■
MFA 1625.06	Z2	16	25	65	6	A12001625602									6							8	■
MFA 1625.06	Z3	16	25	65	6	A12001625603	1	2															■



Industry

Shape A, Cylinder with end-cut

Ordering example: A120006166010001



Packing unit:

up to d<sub>1</sub> 10 mm = 10 pc. per type  
from d<sub>1</sub> 12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

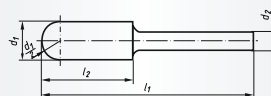
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	d <sub>2</sub> mm	Product-Number	recommended for										New burrs					
MFAS 0616.06	Z1	6	16	56	6	A120006166010001											6	8			■	
MFAS 0616.06	Z2	6	16	56	6	A120006166020001											6	8			■	
MFAS 0616.06	Z3	6	16	56	6	A120006166030001	1	2														■
MFAS 0616.06	Z5	6	16	56	6	A120006166050001	1	2									6					■
MFAS 0820.06	Z3	8	20	60	6	A120008206030001	1	2														■
MFAS 1013.06	Z2	10	13	53	6	A120010136020001											6	8			■	
MFAS 1013.06	Z3	10	13	53	6	A120010136030001	1	2														■
MFAS 1225.06	Z1	12	25	65	6	A120012256010001											6	8			■	
MFAS 1225.06	Z2	12	25	65	6	A120012256020001											6	8			■	
MFAS 1225.06	Z3	12	25	65	6	A120012256030001	1	2														■
MFAS 1625.06	Z1	16	25	65	6	A120016256010001											6	8			■	
MFAS 1625.06	Z2	16	25	65	6	A120016256020001											6	8			■	
MFAS 1625.06	Z3	16	25	65	6	A120016256030001	1	2														■



Industry

## Shape C, Round nose

Ordering example: A12010304605



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

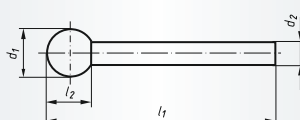
Description	Cut	$d_1$ mm	$l_2$ mm	$l_1$ mm	$d_2$ mm	Product-Number	recommended for	New burrs
MFC 0304.06	Z5	3	4,5	60	6	A12010304605	① ② ⑥	■
MFC 0620.06	Z1	6	20	60	6	A12010620601	⑥ ⑧	■
MFC 0620.06	Z2	6	20	60	6	A12010620602	⑥ ⑧	■
MFC 0620.06	Z3	6	20	60	6	A12010620603	① ②	■
MFC 0620.06	Z5	6	20	60	6	A12010620605	① ② ⑥	■
MFC 0820.06	Z3	8	20	60	6	A12010820603	① ②	■
MFC 0850.06	Z1	8	50	90	6	A12010850601	⑥ ⑧	■
MFC 0850.06	Z2	8	50	90	6	A12010850602	⑥ ⑧	■
MFC 1020.06	Z3	10	20	60	6	A12011020603	① ②	■
MFC 1225.06	Z1	12	25	65	6	A12011225601	⑥ ⑧	■
MFC 1225.06	Z2	12	25	65	6	A12011225602	⑥ ⑧	■
MFC 1225.06	Z3	12	25	65	6	A12011225603	① ②	■
MFC 1225.06	Z5	12	25	65	6	A12011225605	① ② ⑥	■



Industry

## Shape D, Spherical

Ordering example: A12050303603



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

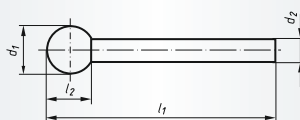
Description	Cut	$d_1$ mm	$l_2$ mm	$d_2$ mm	$l_1$ mm	Product-Number	recommended for	New burrs
MFD 0302.06	Z3	3	2	6	60	A12050303603	① ②	■
MFD 0303.06	Z3	3,5	3	6	60	A120503036030001	① ②	■
MFD 0403.06	Z3	4	3	6	60	A12050404603	① ②	■
MFD 0404.06	Z2	4,5	4	6	60	A120504046020001	⑥ ⑧	■
MFD 0404.06	Z3	4,5	4	6	60	A120504046030001	① ②	■
MFD 0504.06	Z3	5	4	6	60	A12050505603	① ②	■
MFD 0605.06	Z2	6	5	6	60	A12050606602	⑥ ⑧	■
MFD 0605.06	Z3	6	5	6	60	A12050606603	① ②	■
MFD 0807.06	Z1	8	7	6	60	A12050808601	⑥ ⑧	■
MFD 0807.06	Z2	8	7	6	60	A12050808602	⑥ ⑧	■
MFD 0807.06	Z3	8	7	6	60	A12050808603	① ②	■
MFD 0807.06	Z5	8	7	6	60	A12050808605	① ② ⑥	■



Industry

Shape D, Spherical

Ordering example: A12051010602



Packing unit:

up to d<sub>1</sub> 10 mm = 10 pc. per type  
from d<sub>1</sub> 12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

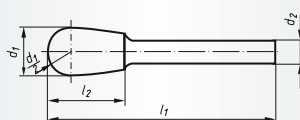
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs		
							1	2	3	4	5	6	7	8		9	
MFD 1009.06	Z2	10	9	6	60	A12051010602							6		8		■
MFD 1009.06	Z3	10	9	6	60	A12051010603	1	2									■
MFD 1009.06	Z5	10	9	6	60	A12051010605	1	2					6				■
MFD 1210.06	Z1	12	10	6	60	A12051212601							6		8		■
MFD 1210.06	Z2	12	10	6	60	A12051212602							6		8		■
MFD 1210.06	Z3	12	10	6	60	A12051212603	1	2									■
MFD 1614.06	Z1	16	14	6	60	A12051614601							6		8		■
MFD 1614.06	Z2	16	14	6	60	A12051614602							6		8		■
MFD 1614.06	Z3	16	14	6	60	A12051614603	1	2									■



Industry

Shape E, Oval

Ordering example: A12080607605



Packing unit:

up to d<sub>1</sub> 10 mm = 10 pc. per type  
from d<sub>1</sub> 12 mm = 5 pc. per type

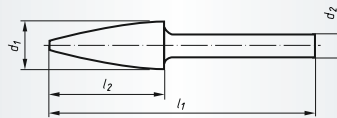
Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for								New burrs		
							1	2	3	4	5	6	7	8		9	
MFE 0607.06	Z5	6	7	6	60	A12080607605	1	2					6				■
MFE 1220.06	Z1	12	20	6	60	A12081220601							6		8		■
MFE 1220.06	Z3	12	20	6	60	A12081220603	1	2									■
MFE 1625.06	Z1	16	25	6	60	A12081625601							6		8		■
MFE 1625.06	Z2	16	25	6	60	A12081625602							6		8		■
MFE 1625.06	Z3	16	25	6	60	A12081625603	1	2									■



### Shape G, Arch pointed nose

Ordering example: A12060618601



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
 from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for										New burrs					
MFG 0618.06	Z1	6	18	6	58	A12060618601											6	8			■	
MFG 0618.06	Z2	6	18	6	58	A12060618602											6	8			■	
MFG 0618.06	Z3	6	18	6	58	A12060618603	1	2														■
MFG 1220.06	Z1	12	20	6	60	A12061220601											6	8			■	
MFG 1220.06	Z2	12	20	6	60	A12061220602											6	8			■	
MFG 1220.06	Z3	12	20	6	60	A12061220603	1	2														■
MFG 1225.06	Z3	12	25	6	65	A12061225603	1	2														■
MFG 1230.06	Z1	12	30	6	70	A12061230601											6	8			■	
MFG 1230.06	Z2	12	30	6	70	A12061230602											6	8			■	
MFG 1230.06	Z3	12	30	6	70	A12061230603	1	2														■
MFG 1230.06	Z5	12	30	6	70	A12061230605	1	2									6					■
MFG 1630.06	Z1	16	30	6	70	A12061630601											6	8			■	
MFG 1630.06	Z2	16	30	6	70	A12061630602											6	8			■	
MFG 1630.06	Z3	16	30	6	70	A12061630603	1	2														■
MFG 1630.06	Z5	16	30	6	70	A12061630605	1	2									6					■

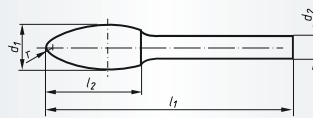




Industry

Shape H, Flame

Ordering example: A12070305605



Packing unit:

up to  $d_1$  10 mm = 10 pc. per type  
 from  $d_1$  12 mm = 5 pc. per type  
 Further dimensions, cuts and shank lengths on request.

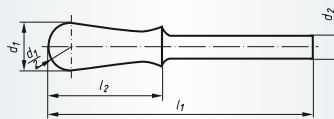
Description	Cut	$d_1$ mm	$l_2$ mm	$d_2$ mm	$l_1$ mm	$r \approx$ mm	Product-Number	recommended for	New burrs
MFH 0305.06	Z5	3	5	6	60	--	A12070305605	① ② ⑥	■
MFH 0820.06	Z3	8	20	6	60	1,3	A12070820603	① ②	■
MFH 1230.06	Z3	12	30	6	70	1,9	A12071230603	① ②	■
MFH 1635.06	Z3	16	35	6	75	2,4	A12071635603	① ②	■
MFH 1750.08	Z1	17	50	8	80	--	A12071750801	⑥ ⑧	■



Industry

Shape K, Club

Ordering example: A12090620602



Packing unit:

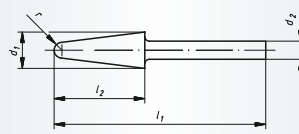
up to  $d_1$  10 mm = 10 pc. per type  
 from  $d_1$  12 mm = 5 pc. per type  
 Further dimensions, cuts and shank lengths on request.

Description	Cut	$d_1$ mm	$l_2$ mm	$d_2$ mm	$l_1$ mm	Product-Number	recommended for	New burrs
MFK 0620.06	Z2	6	20	6	60	A12090620602	⑥ ⑧	■
MFK 0620.06	Z3	6	20	6	60	A12090620603	① ②	■
MFK 1230.06	Z2	12	30	6	70	A12091230602	⑥ ⑧	■
MFK 1230.06	Z3	12	30	6	70	A12091230603	① ②	■



### Shape L, Conical round nose

Ordering example: A12031020602



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
from  $d_1$  12 mm = 5 pc. per type

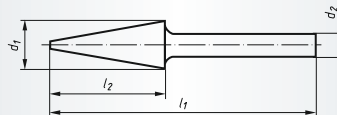
Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r ≈ mm	Product-Number	recommended for								New burrs				
								1	2	3	4	5	6	7	8		9	10		
MFL 1020.06	Z2	10	20	6	60	2,9	A12031020602								6		8			■
MFL 1020.06	Z3	10	20	6	60	2,9	A12031020603	1	2											■
MFL 1230.06	Z3	12	30	6	70	2,6	A12031230603	1	2											■
MFL 1630.06	Z1	16	30	6	70	4,8	A12031630601								6		8			■
MFL 1630.06	Z2	16	30	6	70	4,8	A12031630602								6		8			■
MFL 1630.06	Z3	16	30	6	70	4,8	A12031630603	1	2											■
MFL 1630.06	Z5	16	30	6	70	4,8	A12031630605	1	2						6					■



### Shape M, Conical pointed nose

Ordering example: A12020304605



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.


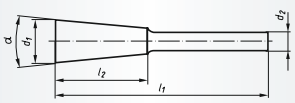
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for										New burrs			
							1	2	3	4	5	6	7	8	9	10				
MFM 0304.06	Z5	3	4,5	6	60	A12020304605	1	2							6					■
MFM 0607.06	Z5	6	7	6	60	A12020607605	1	2							6					■
MFM 0618.06	Z1	6	18	6	58	A12020618601									6		8			■
MFM 0618.06	Z2	6	18	6	58	A12020618602									6		8			■
MFM 0618.06	Z3	6	18	6	58	A12020618603	1	2												■
MFM 0820.06	Z3	8	20	6	60	A12020820603	1	2												■
MFM 1020.06	Z2	10	20	6	60	A12021020602									6		8			■
MFM 1020.06	Z3	10	20	6	60	A12021020603	1	2												■
MFM 1225.06	Z1	12	25	6	65	A12021225601									6		8			■
MFM 1225.06	Z3	12	25	6	65	A12021225603	1	2												■
MFM 1230.06	Z1	12	30	6	70	A12021230601									6		8			■
MFM 1230.06	Z2	12	30	6	70	A12021230602									6		8			■
MFM 1230.06	Z3	12	30	6	70	A12021230603	1	2												■
MFM 1230.06	Z5	12	30	6	70	A12021230605	1	2							6					■



Industry

Shape N, Inverted cone

Ordering example: A12040303605

**Packing unit:**  
 up to d<sub>1</sub> 10 mm = 10 pc. per type  
 from d<sub>1</sub> 12 mm = 5 pc. per type  
 Further dimensions, cuts and shank lengths on request.


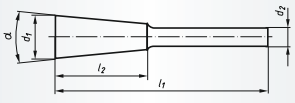
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	Product-Number	recommended for	New burrs
MFN 0303.06	Z5	3	3	6	60	20°	A12040303605	① ② ⑥	■
MFN 0606.06	Z5	6	6	6	60	20°	A12040606605	① ② ⑥	■
MFN 1213.06	Z1	12	13	6	53	17°	A12041213601	⑥ ⑧	■
MFN 1213.06	Z3	12	13	6	53	17°	A12041213603	① ②	■
MFN 1230.06	Z3	12	30	6	70	8°	A12041230603	① ②	■



Industry

Shape N, Inverted cone with end-cut

Ordering example: A120412136010001

**Packing unit:**  
 5 pc. per type  
 Further dimensions, cuts and shank lengths on request.


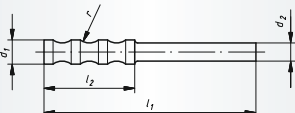
Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	α	Product-Number	recommended for	New burrs
MFNS 1213.06	Z1	12	13	6	53	17°	A120412136010001	⑥ ⑧	■
MFNS 1213.06	Z3	12	13	6	53	17°	A120412136030001	① ②	■
MFNS 1230.06	Z3	12	30	6	70	8°	A120412306030001	① ②	■



Industry

Shape W, Cylindrical multiple concave burrs

Ordering example: A12430340

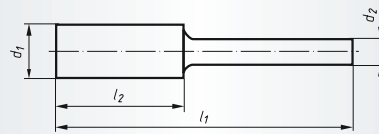
**Packing unit:**  
 10 pc. per type  
 Further dimensions, cuts and shank lengths on request.

Description	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	l <sub>1</sub> mm	r mm	Product-Number	recommended for	New burrs
MFW 0620.06	16	6	20	6	60	3	A12430340	① ② ⑥	■
MFW 0830.06	18	8	30	6	70	5	A12433401	① ② ⑥	■



### Miniature Burrs, shank 3 mm

Ordering example: A1236082705



**Packing unit:**

up to  $d_1$  10 mm = 10 pc. per type  
 from  $d_1$  12 mm = 5 pc. per type

Further dimensions, cuts and shank lengths on request.

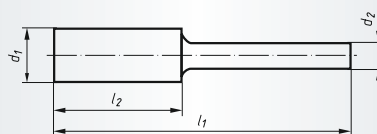
Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for						New burrs		
							1	2	3	4	5	6			
MF 827		Z5	4	2,8	40	A1236082705	1	2				6			■
MF 829		Z5	6	4,2	41	A1236082905	1	2				6			■
MF 831		Z5	8	5,5	43	A1236083105	1	2				6			■
MF 837		Z5	6	6	43	A1236083705	1	2				6			■
MF 839		Z5	8	8	45	A1236083905	1	2				6			■
MF 840		Z5	1,6	2,8	40	A1237084005	1	2				6			■
MF 841		Z5	2,3	4	41	A1237084105	1	2				6			■
MF 842		Z5	3,2	5,6	43	A1237084205	1	2				6			■
MF 843		Z5	4	7	44	A1237084305	1	2				6			■
MF 844		Z5	5	8,7	46	A1237084405	1	2				6			■
MF 845		Z5	6	10,5	46	A1237084505	1	2				6			■
MF 846		Z5	7	12,5	46	A1237084605	1	2				6			■
MF 847		Z5	8	14	46	A1237084705	1	2				6			■
MF 848		Z5	1,6	1,5	38	A1238084805	1	2				6			■
MF 849		Z5	2,3	2,1	39	A1238084905	1	2				6			■
MF 850		Z5	3,2	3	40	A1238085005	1	2				6			■
MF 851		Z5	4	3,8	41	A1238085105	1	2				6			■
MF 852		Z5	5	4,8	42	A1238085205	1	2				6			■
MF 853		Z5	6	5,6	43	A1238085305	1	2				6			■



Industry

Miniature Burrs, shank 3 mm

Ordering example: A1238085405



Packing unit:

up to d<sub>1</sub> 10 mm = 10 pc. per type  
from d<sub>1</sub> 12 mm = 5 pc. per type

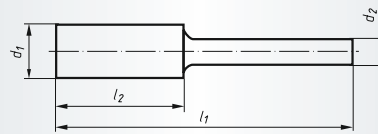
Further dimensions, cuts and shank lengths on request.

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for										New burrs		
MF 854		Z5	7	6,7	44	A1238085405	1	2				6							■
MF 855		Z5	8	7,7	45	A1238085505	1	2				6							■
MF 806		Z5	7	7,5	40	A1235080605	1	2				6							■
MF 807		Z5	7	10	42	A1235080705	1	2				6							■
MF 808		Z5	8	11	43	A1235080805	1	2				6							■
MF 813		Z5	7	10	42	A1235081305	1	2				6							■
MF 814		Z5	6	10	42	A1235081405	1	2				6							■
MF 815		Z5	7	12	44	A1235081505	1	2				6							■
MF 864		Z5	8	2	39	A1239086405	1	2				6							■
MF 865		Z5	10	2,5	40	A1239086505	1	2				6							■
MF 866		Z5	12	3	40	A1239086605	1	2				6							■
MF 867		Z5	14	3,5	41	A1239086705	1	2				6							■
MF 868		Z5	8	2	39	A1240086805	1	2				6							■
MF 869		Z5	10	2,3	39	A1240086905	1	2				6							■
MF 870		Z5	12	2,6	40	A1240087005	1	2				6							■
MF 871		Z5	14	3	40	A1240087105	1	2				6							■
MF 872		Z5	6	1	38	A1241087205	1	2				6							■
MF 873		Z5	8	1	38	A1241087305	1	2				6							■
MF 874		Z5	10	1	38	A1241087405	1	2				6							■



### Miniature Burrs, shank 6 mm

Ordering example: A12000304605



**Packing unit:**

10 pc. per type

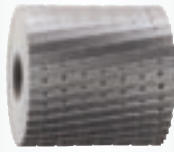
Further dimensions, cuts and shank lengths on request.

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	Product-Number	recommended for										New burrs							
MFA 0304.06		Z5	3	4,5	60	A12000304605	1	2					6											■
MFA 0607.06		Z5	6	7	60	A12000607605	1	2					6											■
MFC 0304.06		Z5	3	4,5	60	A12010304605	1	2					6											■
MFD 0302.06		Z3	3	2	60	A12050303603	1	2																■
MFD 0303.06		Z3	3,5	3	60	A120503036030001	1	2																■
MFE 0607.06		Z5	6	7	60	A12080607605	1	2					6											■
MFH 0305.06		Z5	3	5	60	A12070305605	1	2					6											■
MFM 0304.06		Z5	3	4,5	60	A12020304605	1	2					6											■
MFM 0607.06		Z5	6	7	60	A12020607605	1	2					6											■
MFN 0303.06		Z5	3	3	60 (20°)	A12040303605	1	2					6											■
MFN 0606.06		Z5	6	6	60 (20°)	A12040606605	1	2					6											■



Burrs with internal thread

Ordering example: A122022150803



Packing unit:

2 pc. per type

MFAS = with end-cut

Other dimensions and cuts available on request.

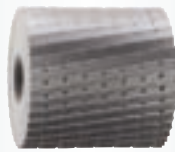
Suitable mounting arbors pages 410

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	B mm	Product-Number	recommended for								New burrs	
MFA 2215.08		Z3	22	15	M 8	A122022150803	1	2	3	4		7				■
MFA 3030.10		Z2	30	30	M 10	A122030301002	1					5	6		8	■
MFAS 2215.08		Z3	22	15	M 8	A1220221508030001	1	2	3	4		7				■
MFAS 3030.10		Z2	30	30	M 10	A1220303010020001	1					5	6		8	■
MFD 2018.08		Z3	20	18	M 8	A122520180803	1	2	3	4		7				■
MFD 2522.10		Z1	25	22	M 10	A122525221001						6		8		■
MFD 2522.10		Z2	25	22	M 10	A122525221002	1					5	6		8	■
MFD 3027.12		Z3	30	27	M 12	A122530271203	1	2	3	4		7				■
MFE 2535.12		Z3	25	35	M 12	A122825351203	1	2	3	4		7				■
MFG 3555.12		Z1	35	55	M 12	A122635551201						6		8		■
MFH 2055.10		Z1	20	55/65	M 10	A122720551001						6		8		■
MFH 2055.10		Z2	20	55/65	M 10	A122720551002	1					5	6		8	■



Burrs with internal thread

Ordering example: A122320551001



**Packing unit:**  
2 pc. per type  
Further dimensions and cuts on request.  
Suitable mounting arbors pages 410

Description	Shape	Cut	d <sub>1</sub> mm	l <sub>2</sub> mm	B mm	Product-Number	recommended for	New burrs
MFL 2055.10		Z1	20	55	M 10	A122320551001	6 8	■
MFM 2540.10		Z3	25	40	M 10	A122225401003	1 2 3 4 7	■

What is your  
experience when  
using this tool?

**V3 Control:** Fast removal whilst maintaining your workpiece in view – this allows you to grind exactly where you want to (I tested this myself).

**Eva Jensch**  
Sales Department

[www.lukas-erzett.com](http://www.lukas-erzett.com)







Industry

Tool-sets, cut 5, shank 3 mm

Ordering example: A1239000110



Packing unit:  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 piece each	Product-Number	recommended for	
F1	3	Z5	10-pieces	MF 807, MF 813, MF 841, MF 845, MF 850, MF 853, MF 864, MF 866, MF 872, MF 874	A1239000110	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	■



Industry

Tool-sets, cut 5, shank 6 mm

Ordering example: A123900003



Packing unit:  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 piece each	Product-Number	recommended for	
F3	6	Z3	10-pieces	MFA 0616, MFA 1225, MFC 1225, MFD 0403, MFD 1210, MFE 1220, MFG 1230, MFH 1230, MFK 0620, MFM 0618	A123900003	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	■



### Tool-sets, cut 3 and cut 5, shank 6 mm

Ordering example: A12390004



**Packing unit:**  
1 pc. per type

Description	Shank Ø mm	Cut	Contents	1 piece each	Product-Number	recommended for																		
F4	6	Z3/Z5	20-pieces	Z3 MFA 0616, MFA 1013, MFA 1225, MFC 1225, MFD 0807, MFD 1210, MFE 1220, MFE 1625, MFG 1220 MFG 1230, MFK 1230, MFL 1630, MFM 0618, MFM 1230, MFN 1213, MFN 1230 Z5 MFA 0304, MFA 0607, MFN 0303, MFN 0606	A12390004	①	②							⑥										■

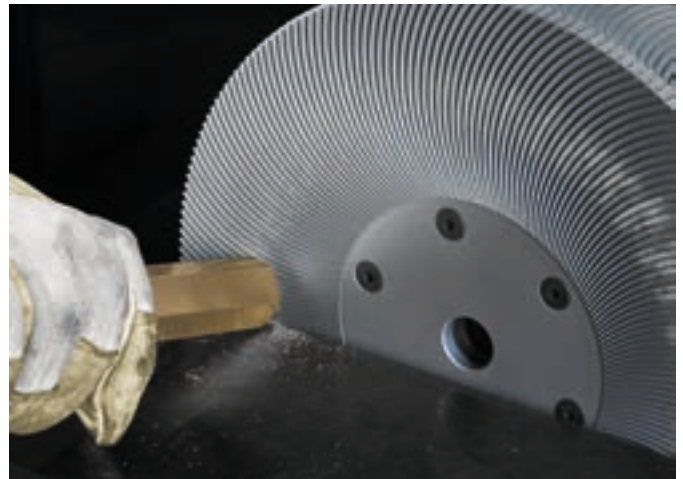
## Filing Discs and Rings Tailor-made solution

84 Technical Information

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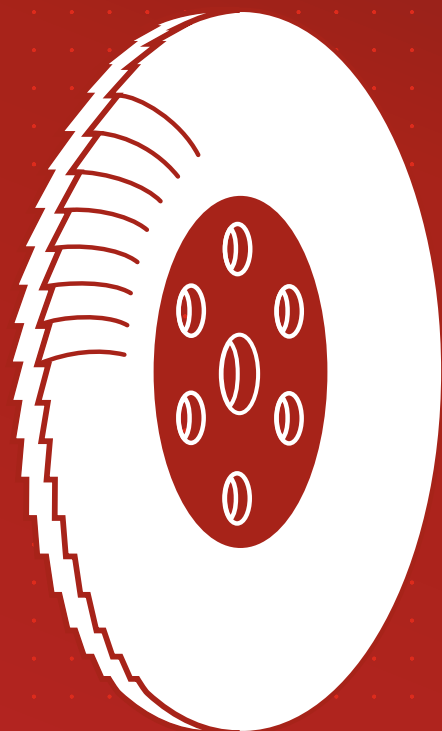
85 Filing Discs and Rings Special production

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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**.

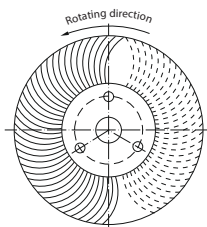


## Types of cut and their application

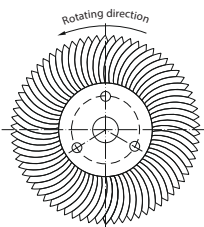
	Z1	Z2	Z3
	Aluminium alloys, plastics v = 38–150 m/min Wood v = 150–300 m/min	Aluminium alloys, plastics v = 38–150 m/min Bronze, brass v = 150–300 m/min	Steel up to 450 N/mm <sup>2</sup> v = 38–75 m/min  Cast and malleable iron v = 38–150 m/min

## Number of teeth

Disc-Ø Ring-Ø	Z1 cut coarse		Z2 cut medium		Z3 cut fine	
	Disc	Ring	Disc	Ring	Disc	Ring
160	120	160	160	200	200	240
210	160	200	200	240	240	280
260	200	240	240	280	280	320
310	240	280	280	320	320	360



**Cut design 1**  
Right-hand cutting,  
usable both sides



**Cut design 4**  
One-sided cutting with  
teeth on periphery

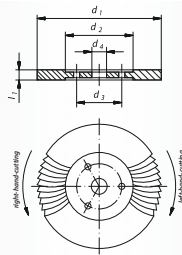
### Recommended speeds

Material	speeds approx. RPM
Cast iron	75/150
Steel up to 450 N/mm <sup>2</sup>	75
Aluminium alloys	75/150
Bronze, brass	300
Plastics	75/150
Wood	300



Filing discs

Ordering example: F 16-R-1 Z3



**Packing unit:**

1 pc. per type

If left-hand-cutting is desired for cut design 1 and cut design 4 please replace R by L in the Lukas-No.

Further dimensions on request.

Description	Cut	d <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	l <sub>1</sub> mm	Number of bores	recommended for					
F 16-R-1	Z1	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 16-R-1	Z2	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 16-R-1	Z3	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 16-R-4	Z1	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 16-R-4	Z2	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 16-R-4	Z3	160	80	60	15	7	3	①		⑤	⑥	⑧	▲
F 21-R-1	Z1	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 21-R-1	Z2	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 21-R-1	Z3	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 21-R-4	Z1	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 21-R-4	Z2	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 21-R-4	Z3	210	80	60	15	8	3	①		⑤	⑥	⑧	▲
F 26-R-1	Z1	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 26-R-1	Z2	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 26-R-1	Z3	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 26-R-4	Z1	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 26-R-4	Z2	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 26-R-4	Z3	260	110	90	20	9	6	①		⑤	⑥	⑧	▲
F 31-R-1	Z1	310	125	90	20	10	6	①		⑤	⑥	⑧	▲
F 31-R-1	Z2	310	125	90	20	10	6	①		⑤	⑥	⑧	▲
F 31-R-1	Z3	310	125	90	20	10	6	①		⑤	⑥	⑧	▲
F 31-R-4	Z1	310	125	90	20	10	6	①		⑤	⑥	⑧	▲
F 31-R-4	Z2	310	125	90	20	10	6	①		⑤	⑥	⑧	▲
F 31-R-4	Z3	310	125	90	20	10	6	①		⑤	⑥	⑧	▲

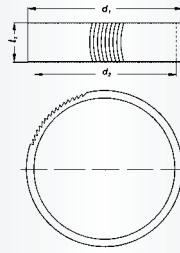
Made of alloyed tool steel (WS) for all machinable materials with tensile strength up to approx. 450 N/mm<sup>2</sup>. Particularly suitable for the machining of aluminium and non-ferrous metals. Filing discs in cut design 1 can be used on

both sides. For the severest conditions, filing discs in HSS are also available on request.



### Filing rings

Ordering example: FR 16 Z3



**Packing unit:**

1 pc. per type

Further dimensions on request.

Description	Cut	d <sub>1</sub> mm	l <sub>1</sub> mm	d <sub>2</sub> mm	recommended for									
FR 16	Z1	160	40	145	①				⑤	⑥		⑧		▲
FR 16	Z2	160	40	145	①				⑤	⑥		⑧		▲
FR 16	Z3	160	40	145	①				⑤	⑥		⑧		▲
FR 21	Z1	210	40	195	①				⑤	⑥		⑧		▲
FR 21	Z2	210	40	195	①				⑤	⑥		⑧		▲
FR 21	Z3	210	40	195	①				⑤	⑥		⑧		▲
FR 26	Z1	260	40	245	①				⑤	⑥		⑧		▲
FR 26	Z2	260	40	245	①				⑤	⑥		⑧		▲
FR 26	Z3	260	40	245	①				⑤	⑥		⑧		▲
FR 31	Z1	310	40	295	①				⑤	⑥		⑧		▲
FR 31	Z2	310	40	295	①				⑤	⑥		⑧		▲
FR 31	Z3	310	40	295	①				⑤	⑥		⑧		▲

Filing rings of WS are seamless forged. If correctly used, they will not crack even under the most severe conditions. **Application – similar to filing discs.**

Not available in high speed steel.

## Engraving cutters of solid carbide and HSS

- 88 General Information

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- 89 Technical Information

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- 90 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><b>K 10 F</b> Micro grain carbide for machining all materials, for machining steel, cast steel, non-ferrous metals and plastics. Extra long life!</p>	<p><b>HSS-50</b> for machining high-tensile and high-grade carbide materials and heat resistant qualities.</p> <p><b>HSS-60</b> 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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Example	Description	Page
	Engraving cutters of solid carbide	90
	Tungsten carbide cutters, spiral flute type	90
	HSS engraving cutters	91

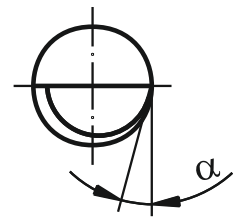
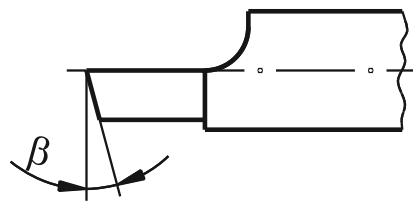
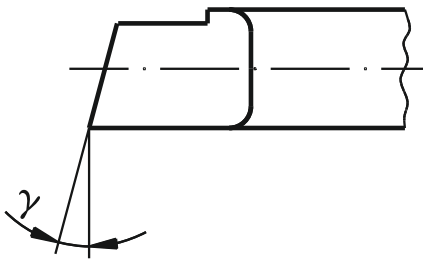
**Engraving Cutters – Recommendation for various applications**

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 <sup>2</sup>	120–160	40–70	40–70
Steel above 900 N/mm <sup>2</sup>	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 <sup>2</sup>	0,05–0,08
Steel above 900 N/mm <sup>2</sup>	0,04–0,08
Brass, aluminium	0,08–0,15
Plastics, reinforced and non-reinforced	0,05–0,20



## Engraving cutters of solid carbide

Ordering example: A1300403042

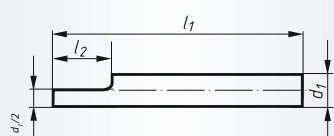
A

B  
100°

C

D  
60°

F



**Packing unit:**  
1 pc. per type


Further profiles and dimensions on request  
d/2 as per your request  
l2 does not apply to profile F  
Tolerance of semi-finished cutting edge + 0,1,  
finish ground on request

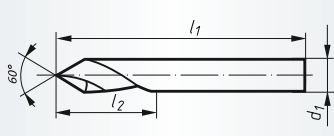
Description	Profile	Quality	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	Product-Number	recommended for					
HGA 03.040	D	K10F	3	40	6	A1300403042	1		5	6	8	■
HGA 04.040	A	K10F	4	40	6	A1300404012	1		5	6	8	■
HGA 04.040	D	K10F	4	40	6	A1300404042	1		5	6	8	■
HGA 04.040	F	K10F	4	40	6	A1300404062	1		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	■



## 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 <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	Product-Number	recommended for				
HGS 03.040	3	40	15	A1300484071			6	8	■
HGS 04.040	4	40	20	A1300485071			6	8	■
HGS 06.050	6	50	22	A1300486071			6	8	■

**Application:**

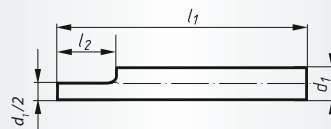
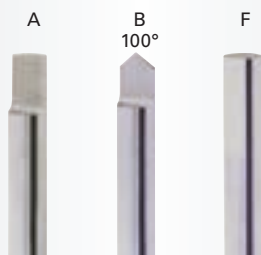
Engraving of non-ferrous metals and plastics with minimum generation of burr.



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

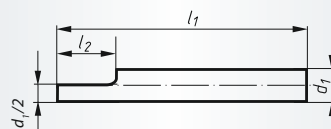
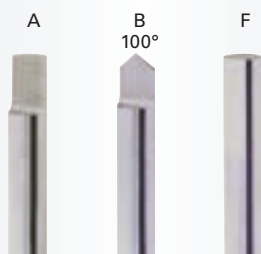
Description	Profile	Quality	$d_1$ mm	$l_1$ mm	$l_2$ mm	Product-Number	recommended for		
SGA 04.060	F	HSS-50	4	60	10	A135046106	①	⑤ ⑥ ⑧	■
SGA 06.080	A	HSS-50	6	80	14	A135046201	①	⑤ ⑥ ⑧	■
SGA 06.080	F	HSS-50	6	80	14	A135046206	①	⑤ ⑥ ⑧	■
SGA 06.160	F	HSS-50	6	160	14	A135046256	①	⑤ ⑥ ⑧	■
SGA 08.125	F	HSS-50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

## Material classification

<b>1</b>	<b>STEELS AND CAST STEELS</b> Rm up to 800 N/mm <sup>2</sup>	<b>5</b>	<b>CAST IRON</b>
	<ul style="list-style-type: none"> <li>• common structural steels</li> <li>• free cutting steels</li> <li>• case hardened steels</li> <li>• fine grained structural steels</li> <li>• extruded steels</li> <li>• toughened structural steels</li> <li>• boiler plate</li> <li>• nitrided steels</li> <li>• cast steels</li> <li>• heat treated steels</li> <li>• heat resistant structural steels</li> </ul>	<b>6</b>	<b>ALUMINIUM, MAGNESIUM AND COPPER ALLOYS</b>
			<ul style="list-style-type: none"> <li>• over 300 HB</li> <li>• 200-300 HB</li> <li>• up to 200 HB</li> <li>• over 15% Si</li> <li>• 10-15% Si</li> <li>• 0,5-10% Si</li> <li>• below 0,5% Si</li> </ul>
<b>2</b>	<b>ALLOYED, TEMPERED STEELS</b> Rm 800 up to 1200 N/mm <sup>2</sup>	<b>7</b>	<b>TITANIUM AND NICKEL ALLOYS</b>
	<ul style="list-style-type: none"> <li>• case hardened steels</li> <li>• spring steels</li> <li>• fine grained structural steels</li> <li>• nitrided steels</li> <li>• heat treated steels</li> <li>• wear resistant steels</li> <li>• bearing steels</li> </ul>		<ul style="list-style-type: none"> <li>• Rm 900 up to 1500 N/mm<sup>2</sup></li> <li>• Rm up to 900 N/mm<sup>2</sup></li> </ul>
<b>3</b>	<b>TOOL STEELS</b> Rm up to 1300 N/mm <sup>2</sup>	<b>8</b>	<b>PLASTICS, WOOD, RUBBER</b>
	<ul style="list-style-type: none"> <li>• 60 - 65 HRC</li> <li>• high-speed steels</li> <li>• non-alloyed tool steels</li> <li>• cold working tool steels</li> <li>• hot working tool steels</li> </ul>	<b>9</b>	<b>GLASS / CARBIDES</b>
<b>4</b>	<b>RUST, ACID AND HEAT RESISTANT STEELS AND CAST STEELS</b>	<b>10</b>	<b>STONE / TILES / GAS CEMENT</b>
	<ul style="list-style-type: none"> <li>• austenitic</li> <li>• ferritic</li> <li>• ferritic-austenitic</li> <li>• heat-resistant</li> <li>• martensitic</li> <li>• stainless, sulphurized</li> </ul>	<b>11</b>	<b>CONCRETE / REINFORCED CONCRETE</b>
		<b>12</b>	<b>CERAMIC / FLOOR TILES</b>
		<b>13</b>	<b>MARBLE</b>
		<b>14</b>	<b>GRANITE</b>
		<b>15</b>	<b>FRESHLY POURED CONCRETE</b>
		<b>16</b>	<b>ASPHALT</b>

- best suitable
- suitable
- delivery ex-stock
- ▲ delivery on request

## Safety Symbols

(Depending on the product these symbols may vary)



Wear eye protection



Wear hearing protection



Wear a respirator



Read the instructions



Wear gloves



Only permitted with a back-up pad



Not permitted for wet grinding



Not permitted for face grinding



Do not use if damaged



Not permitted for hand-held or manually-guided grinding