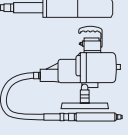


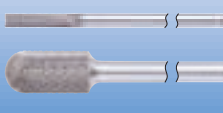








Tool drive	Contents	Page
■ General information		3
■ The fast way to the best tool		4-5
TC burrs (TC = tungsten carbide)		
	 TC burrs shank dia. 3 mm shank dia. 6 mm shank dia. 8 mm	6-17
	 TC burr sets shank dia. 3 mm shank dia. 6 mm	17 18
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Tool drive	Contents	Page
HSS cutters (HSS = High-performance, high-speed steel)		
	 HSS rotary cutters shank dia. 6 mm	43-49
	 HSS rotary cutters Special shapes shank dia. 6 mm	50-51
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	 HSS step drill HICOAT®	55
	 HSS hole saws Sets and accessories	56-61
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	Straight grinders	
	Flexible shaft drives	
	Power drills	
	Box column drills	

PFERD offers an extensive range of top quality tools. The high quality and wide product range can provide the right tool for each application, ensuring that every task can be carried out optimally and efficiently.

Thanks to a very good stock removal performance over the entire service life, these tools deliver outstanding results in minimum time. PFERD-tool production technology is certified in accordance with EN ISO 9001.

Technical customer support

Our sales consultants will be glad to visit you to address all machining optimisation issues. Together with you, PFERD will develop application-relevant solutions for processing different materials. Please just contact us. You will find our worldwide sales addresses at www.pferd.com.

Products made to order

If you cannot find the solution for your particular application in our product catalogue, we can produce burrs in premium PFERD quality tailor-made to meet the requirements of your job.

We will take into account your specifications and wishes, drawings relating to cuts, shank diameters, special lengths, special shapes and coatings.

Just call our sales consultant! Our specialist team for production-related specially-made tools will be glad to help!



Use of robots

Tungsten carbide burrs from PFERD can be used with robots. Depending on the operating conditions, it may be necessary to decide which burr is the best suited for your application. Just call our sales consultant.



Resharpener

Tungsten carbide burrs can usually be re-ground (this is not recommended for tungsten carbide burrs of shank dia. 3 mm for economic reasons)!

According to the level of wear, the following differentiation is made:

1. Tungsten carbide burrs, that have become blunt during normal use.
2. Tungsten carbide burrs that are extremely worn and e.g. have broken teeth or damaged shanks.

Our production specialists will decide whether re-grinding makes economic or technical sense in each individual case.

Please talk to our sales consultants.

Safety recommendations



= Wear eye protection!



= Wear hearing protection!



Read the instructions!
(Please observe the recommended RPM, in particular for burrs with long shanks!)

PFERD packaging

All cutters and burrs are packed individually and supplied in sturdy reliable plastic boxes. The packaging protects the quality of the cutting edges. Please refer to the product tables for the packaging units (VE).

The packaging unit contains technical information, the order number, EAN-Code, the article number and the batch number (production information).



PFERD TOOL-CENTER

All cutters and burrs can be attractively presented using the PFERD TOOL-CENTER or other selling aids.

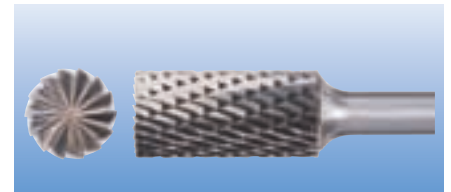
Also, PFERD offers a lockable display as an attractive and secure sales promotion unit.

If you are looking to present a special product family to a particular target group or are planning a sales promotion, then our sales consultants will be happy to help you draw up a promotional concept with the matching choice of tools.

Ordering instructions

Please state the EAN-number **or** order no., cut and shank diameter when ordering. If no details are provided, the cut 3 PLUS and shank dia. 6 mm will be delivered.

In the case of tungsten carbide burrs with a shank dia. 3 mm, the cut 5 will be delivered.



Ordering examples: TC burrs

EAN 4007220**045176**

ZYAS 1225 6 C3 PLUS

1 2 3 4 5

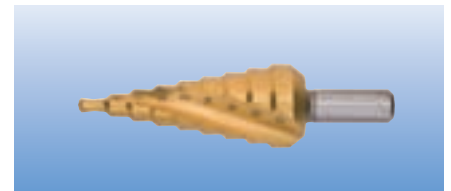
EAN 4007220**047781**

RBF 1225 6 C3 PLUS

1 3 4 5

How to order:

- 1 Shape
- 2 For cylindrical shape with end cut
- 3 Burr dia. x head length $d_1 \times l_2$ [mm]
- 4 Shank dia. d_2 [mm]
- 5 Cut



Ordering example: Step drill

EAN 4007220**802755**

STB HSS 04-20/8 HC-FE

1 2 3 4

How to order:

- 1 Step drill
- 2 Smallest - largest drilling step [mm]
- 3 Shank dia [mm]
- 4 Coating



Working from

- ① Application
- ② Material group
- ③ Application variants
 - standard applications
 - professional applications
 - high-performance applications
 - problem applications










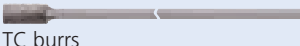



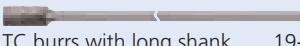







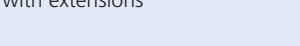




gives you an overview of suitable burrs, rotary cutters, hole saws, hole cutters and step drills from the PFERD-program and facilitates the selection of the right tool.

③ Standard applications



Page


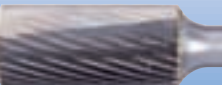










① Processing tasks	Application examples	② Material group		
Deburring, milling out in preparation for build-up welding, machining of welded joints, machining of contours, chamfering, sinking, cleaning cast material		Steel, cast steel, stainless steel (INOX), cast iron		HSS rotary cutters 43-54
		Non-ferrous metals, brass, copper, bronze, titanium		HSS rotary cutters 43-54
		High-temperature resistant materials, nickel based alloys, cobalt based alloys		
		Aluminium of the machinability classifications SOFT, TOUGH, HARD For more information, please refer to the PRAXIS "PFERD Tools for Use on Aluminium".		HSS rotary cutters 43-54
Trimming, contour milling, cutting out		Fibre-reinforced plastics (GRP/CRP)		HSS rotary cutters 43-54
Fine machining, stationary inner concentric milling		Steel, cast steel, stainless steel (INOX), cast iron		For detailed information concerning mounted points please refer to catalogue 203.
Cutting out round openings		Steel, cast steel, stainless steel (INOX), cast iron, non-ferrous metals, aluminium of the machinability class SOFT, TOUGH, HARD, fibre-reinforced plastics (GRP/CRP)		HSS step drill HICOAT® 55
				HSS hole saws 56-61

③ Professional applications		③ High-performance applications		③ Problem applications	
				<div>Hard to access areas</div> 	
Page		Page		Page	
 TC burrs 6-18		 TC burrs HICOAT®-coatings 24-29		<div> TC burrs with long shank 19-22</div> <div> Combination burrs with extensions 23</div>	
 TC burrs 35-38		<div> TC burrs 35-38</div> <div> TC burrs HICOAT®-coatings 24-29</div>		<div> TC burrs with long shank 19-22</div> <div> Combination burrs with extensions 23</div>	
 TC burrs 6-18		<div> TC burrs 6-18</div> <div> TC burrs HICOAT®-coatings 24-29</div>		<div> TC burrs with long shank 19-22</div> <div> Combination burrs with extensions 23</div>	
 TC burrs 35-38		 TC burrs HICOAT®-coatings 24-29		 Combination burrs with extensions 23	
 TC burrs for GRP/CRP 39-40		 TC burrs for GRP/CRP 39-40		 Combination burrs with extensions 23	
 TC burrs 35-38		 TC burrs HICOAT®-coatings 24-29		 Combination burrs with extensions 23	
 TC micro burrs X 41-42		 <div>For detailed information and ordering data on diamond and CBN tools, please refer to catalogue 205.</div>		 Combination burrs with extensions 23	
 HSS step drill HICOAT® 55		 TC hole cutters 62-64		 Combination HSS hole saws with shank extensions 61	
 HSS hole saws 56-61				 <div>For applications with high impact loads and tooth chipping problems, our sales consultants will be happy to advise you on an individual basis. Just call our sales consultant. Our specialist team for production-related custom tools will be happy to help!</div>	
 TC hole cutters 62-64					

Tungsten Carbide Burrs

PFERD-Cuts and their Applications



<p>Cut 1 (conforms to DIN C)</p> 	<p>Suitable for coarse machining of light metals, plastics, non-ferrous metals, steel and cast iron.</p>
<p>Cut 3 (conforms to DIN MY)</p> 	<p>Suitable for high coarse stock removal and good surface finish on cast iron, steel < 60 HRC, stainless steel (INOX), nickel-based alloys and titanium alloys.</p>
<p>Cut 3 PLUS (conforms to DIN MX)</p> 	<p>Similar to cut 3, but with cross cut. Suitable for high coarse stock removal on cast iron, steel < 60 HRC, stainless steel (INOX), nickel-based alloys and titanium alloys.</p>
<p>Cut 4 (conforms to DIN MX)</p> 	<p>Suitable for machining when a high stock removal is required. Creates short chips and good surface quality on stainless steels (INOX), steel < 60 HRC, high heat-resistant materials such as e.g. nickel-based alloys, cobalt-based alloys.</p>
<p>Cut 5 (conforms to DIN F)</p> 	<p>Suitable for fine deburring of stainless steel (INOX), high heat-resistant materials such as e.g. nickel based, cobalt based alloys.</p>
<p>Cut ALU</p> 	<p>Suitable for coarse machining with high stock removal of aluminium and aluminium alloys, light metals, non-ferrous metals and plastics.</p>
<p>Cut ALU PLUS</p> 	<p>Suitable for coarse machining of hard aluminium alloys with an Si-content of > 12% and non-ferrous metals. High machining performance thanks to specially developed tooth geometry.</p>
<p>Cut FVK</p> 	<p>Suitable for trimming and contour milling of fibre-reinforced plastics GRP and CRP, hard rubber and thermoplastics. Thanks to the high level of concentric accuracy, suitable for use in stationary machines as well as manual applications. These burrs with an end cut allow both drilling and cutting tasks to be performed.</p>
<p>Cut FVKS</p> 	<p>Similar to cut FVK. Due to the special tooth design, suitable for smooth milling on machines and robots with high feed rates. These burrs with an end cut allow both drilling and cutting tasks to be performed.</p>
<p>Cut 3R</p> 	<p>With extreme impact resistance, these burrs also provide a high wrap angle > 1/3. Suitable for machining with high stock removal on cast iron, steel < 55 HRC, stainless steel (INOX), nickel-based alloys and titanium alloys.</p>
<p>Cut 3RS</p> 	<p>Similar to cut 3R, but with smooth milling behaviour, creates shorter chips. Due to the extreme impact resistance, can also be used with a high wrap angle > 1/3 and under impacting loads. Suitable for coarse machining with high stock removal on cast iron, steel < 55 HRC, stainless steel (INOX), nickel-based alloys and titanium alloys.</p>
<p>Cut MZ</p> 	<p>Suitable for fine smooth milling of boreholes up to dia. 12 mm and for very fine machining with high surface quality of material hardnesses < 60 HRC.</p>

PFERD tungsten carbide burrs are designed for machining materials of virtually any strength. The perfect combination of tungsten carbide, shape and cut geometry and, if required, coatings, make this possible.

Advantages

The high concentricity

- allows the operator to work more safely,
- reduces tool drive wear,
- provides smooth operating action,
- prevents chatter marks,
- increases tool life and stock removal performances.

Application examples

- Deburring.
- Contouring.
- Milling in preparation for build-up welding.
- Weld dressing.
- Milling of acute-angled surfaces.
- Inner contour work, i.e. peripheral and face milling.

Recommendations for use

Optimum power output and RPM of the power source (air-powered or electric machine, flexible shaft system) are necessary conditions for an cost-effective use of tungsten carbide burrs.

We therefore recommend that you:

- Use highest possible speeds. Please observe our recommendations for speed/cutting speed.
- For stationary use or when countersinking with 360° use of the burr, work in these instances at 3.000 RPM or less.
- Only use rigid clamping systems/drives as impacts and chattering on the tools lead to premature wear.
- Do not chose a too small burr clamping depth. In general the minimum clamping depth is 2/3 of the shaft length.
- For the cost-effective use of burrs with a diameter > 6 mm a tool drive output of 300-500 watts is required used at the higher cutting speeds. When using burrs with coarse cuts (e.g. ALU cut), even higher tool drive outputs of 500-1.500 watts are of advantage.
- The speed can be substantially increased with low stock removal (deburring, chamfering, light surface work).







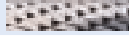
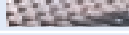

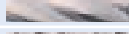
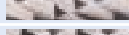
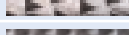
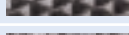
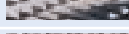
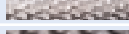
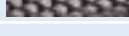
- We recommend substantially lowering the speed to avoid damage to materials which do not conduct heat well, such as stainless steel (INOX), titanium alloys etc. Avoid making the shank and tool turn blue. If subjected to excessive temperatures, the soldering connection between the burr head and the shank becomes less rigid. The head may tear off.
- The burr contact surface to the workpiece should not total more than a third of the circumference. An excessively large wrap angle > 1/3 prevents smooth milling behaviour. This results in cut breakage. If an enlacement angle > 1/3 cannot be avoided, we recommend cuts 3R and 3RS.
- When machining very cloying materials, the use of a suitable lubricant such as cutting oil, grease, kerosene, chalk or similar is recommended, to prevent the cut from clogging up.

Shapes and cuts for TC burrs and HSS rotary cutters

The DIN Standards Institute uses a specific code system to denote the shape (DIN 8032) and cut (DIN 8033) of these burrs.

The tables compare the shapes and cuts between the PFERD and DIN codes.

Shape	PFERD shapes	DIN shapes
	ZYA	ZYA
	ZYAS	ZYA...S
	B	-
	KUD	KUD
	WRC	WRC
	SPG	SPG
	SKM	SKM
	RBF	RBF
	KEL	KEL
	TRE	TRE
	WKN	WKN
	WKNS	WKN...S
	KSJ	KSJ
	KSK	KSK
	R	-
	V	-
	N	-

PFERD cuts		DIN cuts
	1	C
	2 (HSS with chip breaker)	-
	3 (HSS with chip breaker)	-
	3	MY
	3 PLUS	MX
	4	MX
	5	F
	ALU	-
	ALU PLUS	-
	FVK	-
	FVKS	-
	3R	-
	3RS	-
	MZ	-
-	special cut	-

Tungsten Carbide Burrs

Tungsten Carbide Burrs



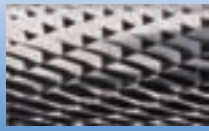
Cut 1
(conforms to DIN C)



Cut 3
(conforms to DIN MY)



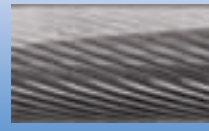
Cut 3 PLUS
(conforms to DIN MX)



Cut 4
(conforms to DIN MX)



Cut 5
(conforms to DIN F)



Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

- ❶ Select the material group that is to be processed.
- ❷ Determine the type of application.
- ❸ Select the cut.

- ❹ Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

- ❺ Select the required burr diameter.
- ❻ The cutting speed range and the burr diameter determine the recommended rotational speed range [RPM].

❶ Material groups			❷ Application	❸ Cut	❹ Cutting speed
Steel, cast steel	Non-hardened, non-heat treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Coarse machining = high stock removal	1	600 - 900 m/min
				3	450 - 600 m/min
				3 PLUS	
			Fine machining = low stock removal	3	500 - 600 m/min
	Hardened, heat-treated steels exceeding 1200 N/mm ² (> 38 HRC)	Tool steels, tempering steels, alloyed steel, cast steels	Coarse machining = high stock removal	3	250 - 350 m/min
				3 PLUS	
				4	
			Fine machining = low stock removal	5	350 - 450 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse machining = high stock removal	1	300 - 450 m/min
				3	250 - 350 m/min
				3 PLUS	
				4	
			Fine machining = low stock removal	5	350 - 450 m/min
Non-ferrous metals	Soft non-ferrous metals	Alu-alloys, brass, copper, zinc	Coarse machining = high stock removal	1	600 - 900 m/min
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard alu-alloys (high Si content)	Coarse machining = high stock removal	3	250 - 350 m/min
				4	
			Fine machining = low stock removal	3	350 - 450 m/min
	High-temperature resistant materials	Nickel based alloys, cobalt based alloys (aircraft engine and turbine construction)	Coarse machining = high stock removal	3 PLUS	300 - 450 m/min
				4	
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL, with nodular graphite cast iron EN-GJS, white annealed cast iron EN-GJMW, black cast iron EN-GJMB	Coarse machining = high stock removal	1	600 - 900 m/min
				3	450 - 600 m/min
				3 PLUS	
			Fine machining = low stock removal	3	500 - 600 m/min

Example:

Tungsten carbide burr, cut 3 PLUS

Diameter: 12 mm.

Coarse machining of non-hardened and non-heat-treated steels.

Cutting speed: 450 - 600 m/min

Rotational speed: 12.000 - 16.000 RPM

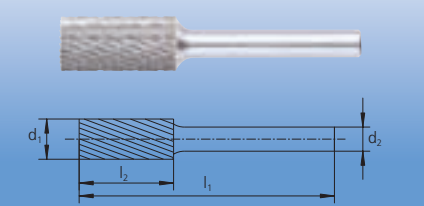
❻ Cutting speed [m/min]								
❺ Dia. [mm]	250	300	350	400	450	500	600	900
	Rotational Speed [RPM]							
2	40.000	48.000	56.000	64.000	72.000	80.000	95.000	143.000
3	27.000	32.000	37.000	42.000	48.000	53.000	64.000	95.000
4	20.000	24.000	28.000	32.000	36.000	40.000	48.000	72.000
6	13.000	16.000	19.000	21.000	24.000	27.000	32.000	48.000
8	10.000	12.000	14.000	16.000	18.000	20.000	24.000	36.000
10	8.000	10.000	11.000	13.000	14.000	16.000	19.000	29.000
12	7.000	8.000	9.000	11.000	12.000	13.000	16.000	24.000
16	5.000	6.000	7.000	8.000	9.000	10.000	12.000	18.000
20	4.000	5.000	6.000	6.000	7.000	8.000	10.000	14.000
25	3.000	4.000	4.000	5.000	6.000	6.000	8.000	11.000




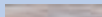


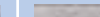


Cylindrical burr according to DIN 8032 with circumferential cut conforming to DIN 8033.

Ordering example:
 EAN 4007220**045435**
 ZYA 0413/6 C3 PLUS
 Please state required cut.

Cylindrical shape ZYA



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	1	3	3 PLUS	4	5					
										
EAN 4007220										

Shank ø 3 mm

ZYA 0210/3	-	-	233771	233788	233795	3	2 x 10	40	1	4
ZYA 0313/3	-	-	233801	402627	233818	3	3 x 13	43	1	5
ZYA 0607/3	-	-	233825	-	233832	3	6 x 7	37	1	5
ZYA 0613/3	-	-	233849	-	233856	3	6 x 13	43	1	7

Shank ø 6 mm

ZYA 0413/6	-	-	045435	045459	045466	6	4 x 13	55	1	19
ZYA 0616/6	-	045473	045480	045503	045510	6	6 x 16	55	1	23
ZYA 0820/6	-	045534	045541	045565	045572	6	8 x 20	60	1	24
ZYA 1013/6	-	-	045596	045626	045640	6	10 x 13	53	1	24
ZYA 1020/6	045862	045855	045879	045916	045930	6	10 x 20	60	1	32
ZYA 1025/6	-	-	045978	046012	-	6	10 x 25	65	1	39
ZYA 1225/6	045671	045657	045695	045732	045756	6	12 x 25	65	1	60
ZYA 1625/6	-	045787	045800	045848	-	6	16 x 25	65	1	93

Shank ø 8 mm

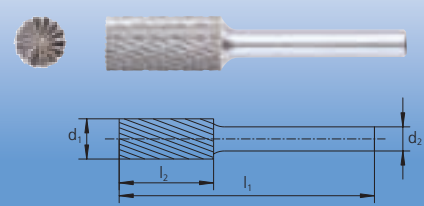
ZYA 1225/8	-	-	045701	045749	-	8	12 x 25	65	1	67
ZYA 1625/8	-	-	045817	-	-	8	16 x 25	65	1	100









Cylindrical burr according to DIN 8032 with circumferential and end cut conforming to DIN 8033.

Ordering example:
 EAN 4007220**045022**
 ZYAS 0820/6 C3 PLUS
 Please state required cut.

Cylindrical shape with end cut ZYAS



Order No.	Cuts				Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	3	3 PLUS	4	5					
									
EAN 4007220									

Shank ø 3 mm with end cut

ZYAS 0210/3	-	049471	049457	049464	3	2 x 10	40	1	4
ZYAS 0313/3	-	049501	072394	049488	3	3 x 13	43	1	5
ZYAS 0607/3	-	049532	-	049518	3	6 x 7	37	1	5
ZYAS 0613/3	-	049563	402634	049549	3	6 x 13	43	1	7

Shank ø 6 mm with end cut

ZYAS 0413/6	-	044926	044940	044957	6	4 x 13	55	1	19
ZYAS 0616/6	044964	044971	044995	045008	6	6 x 16	55	1	23

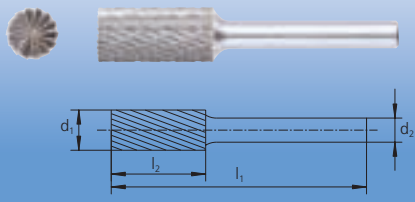
Continued on next page.

Tungsten Carbide Burrs

TC Burrs Shank Dia. 3, 6 and 8 mm



Cylindrical shape with end cut ZYAS



Cylindrical burr according to DIN 8032 with circumferential and end cut conforming to DIN 8033.

Ordering example:
EAN 4007220**045022**
ZYAS 0820/6 C3 PLUS
Please state required cut.



Continued from last page.

Order No.	Cuts				Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	3	3 PLUS	4	5					
EAN 4007220									

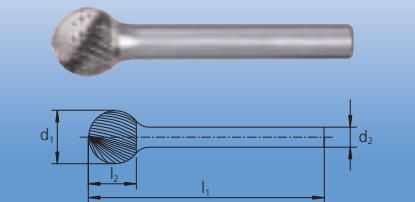
Shank ø 6 mm with end cut

ZYAS 0820/6	045015	045022	045046	045053	6	8 x 20	60	1	24
ZYAS 1013/6	-	045084	-	-	6	10 x 13	53	1	24
ZYAS 1020/6	045299	045305	045336	045350	6	10 x 20	60	1	32
ZYAS 1025/6	-	045374	045404	-	6	10 x 25	65	1	39
ZYAS 1225/6	045145	045176	045213	045237	6	12 x 25	65	1	60
ZYAS 1625/6	045244	045251	045275	045282	6	16 x 25	65	1	93

Shank ø 8 mm with end cut

ZYAS 1225/8	-	045183	-	-	8	12 x 25	65	1	67
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Ball shape KUD



Ball shape burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**046791**
KUD 0403/6 C3 PLUS
Please state required cut.



Order No.	Cuts					Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	1	3	3 PLUS	4	5					
										
EAN 4007220										

Shank ø 3 mm

KUD 0302/3	-	-	049778	392058	049761	3	3 x 2	33	1	4
KUD 0403/3	-	-	049792	394915	049785	3	4 x 3	34	1	4
KUD 0605/3	-	-	049815	393192	049808	3	6 x 5	35	1	4

Shank ø 6 mm

KUD 0403/6	-	-	046791	-	046807	6	4 x 3	45	1	17
KUD 0605/6	046814	046838	046821	046845	046852	6	6 x 5	45	1	18
KUD 0807/6	046876	046890	046883	046906	046913	6	8 x 7	47	1	14
KUD 1009/6	046944	046937	046951	046975	046982	6	10 x 9	49	1	17
KUD 1210/6	-	047002	047033	047071	047088	6	12 x 10	51	1	25
KUD 1614/6	047125	-	047132	047170	047187	6	16 x 14	54	1	46
KUD 2018/6	-	047194	047224	-	-	6	20 x 18	58	1	74

Shank ø 8 mm

KUD 1210/8	-	-	047040	-	-	8	12 x 10	51	1	32
KUD 1614/8	-	-	047149	-	-	8	16 x 14	54	1	53
KUD 2018/8	-	-	047231	-	-	8	20 x 18	58	1	81

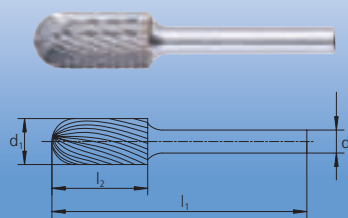


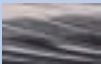






General-use shape (combination of cylindrical and ball shapes).

Cylindrical shape with radius end according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
 EAN 4007220**046173**
 WRC 0413/6 C3 PLUS
 Please state required cut.

Cylindrical shape with radius end WRC



Order No.	1	3	Cuts 3 PLUS	4	5	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
										
EAN 4007220										

Shank ø 3 mm

WRC 0210/3	-	-	049631	395837	049624	3	2 x 10	40	1	4
WRC 0313/3	-	-	049662	393161	049648	3	3 x 13	43	1	5
WRC 0613/3	-	-	049693	393178	049679	3	6 x 13	43	1	7

Shank ø 6 mm

WRC 0413/6	-	-	046173	046197	-	6	4 x 13	55	1	19
WRC 0616/6	046227	046210	046234	046258	046265	6	6 x 16	55	1	22
WRC 0820/6	046296	046289	046302	046326	046333	6	8 x 20	60	1	22
WRC 1020/6	046371	046357	046388	046425	046449	6	10 x 20	60	1	29
WRC 1025/6	-	046708	046715	046746	-	6	10 x 25	65	1	45
WRC 1225/6	046487	046463	046500	046548	046562	6	12 x 25	65	1	57
WRC 1625/6	046623	046609	046630	046678	-	6	16 x 25	65	1	89

Shank ø 8 mm

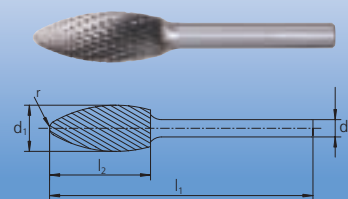
WRC 1020/8	-	-	046395	-	-	8	10 x 20	60	1	36
WRC 1225/8	-	-	046517	046555	-	8	12 x 25	65	1	64
WRC 1625/8	-	-	046647	-	-	8	16 x 25	65	1	96

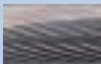






Flame shape burr according to ISO 7755/8, cut conforming to DIN 8033.

Ordering example:
 EAN 4007220**046067**
 B 0820/6 C3 PLUS
 Please state required cut.

Flame shape B



Order No.	3	Cuts 3 PLUS	5	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
									
EAN 4007220									

Shank ø 3 mm

B 0307/3	-	-	049570	3	3 x 7	37	0,8	1	4
B 0613/3	-	-	049594	3	6 x 13	43	1,0	1	6

Shank ø 6 mm

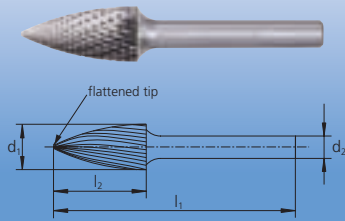
B 0820/6	046050	046067	-	6	8 x 20	60	1,5	1	18
B 1230/6	046098	046111	-	6	12 x 30	70	2,1	1	53
B 1635/6	-	046142	-	6	16 x 35	75	2,6	1	90

Tungsten Carbide Burrs

TC Burrs Shank Dia. 3, 6 and 8 mm



Pointed tree shape SPG



Pointed tree shape burr according to DIN 8032 with cut conforming to DIN 8033, flattened tip.

Ordering example:
EAN 4007220**047941**
SPG 0618/6 C3 PLUS
Please state required cut.



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	1	3	3 PLUS	4	5					
EAN 4007220										

Shank ø 3 mm

SPG 0307/3	-	-	049921	470626	049907	3	3 x 7	37	1	4
SPG 0313/3	-	-	049952	393208	049938	3	3 x 13	43	1	4
SPG 0613/3	-	-	049983	393215	049969	3	6 x 13	43	1	6

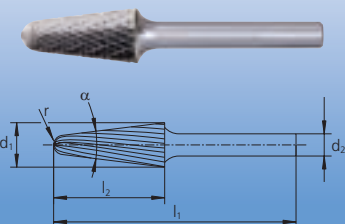
Shank ø 6 mm

SPG 0618/6	047934	047927	047941	047965	047972	6	6 x 18	55	1	21
SPG 1020/6	048016	047996	048023	048061	048085	6	10 x 20	60	1	23
SPG 1225/6	048139	048115	048146	048184	048207	6	12 x 25	65	1	46
SPG 1230/6	048368	048344	048382	048429	048443	6	12 x 30	70	1	54
SPG 1630/6	048252	048238	048276	048313	-	6	16 x 30	70	1	80

Shank ø 8 mm

SPG 1020/8	-	-	048030	-	-	8	10 x 20	60	1	30
SPG 1225/8	-	-	048153	048191	-	8	12 x 25	65	1	53
SPG 1630/8	048269	-	048283	-	-	8	16 x 30	70	1	87

Conical shape with radius end KEL



Conical shape burr with radius end according to DIN 8032 and with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**048481**
KEL 1020/6 C3 PLUS
Please state required cut.



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α	Radius r [mm]		
	1	3	3 PLUS	4	5							
EAN 4007220												

Shank ø 6 mm

KEL 1020/6	-	048467	048481	048504	-	6	10 x 20	60	14°	2,9	1	23
KEL 1225/6	-	048528	048559	048597	-	6	12 x 25	65	14°	3,3	1	46
KEL 1230/6	048627	048603	048634	048672	048689	6	12 x 30	70	14°	2,6	1	54
KEL 1630/6	-	-	048719	048733	-	6	16 x 30	70	14°	4,8	1	80

Shank ø 8 mm

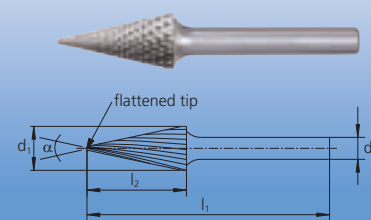
KEL 1225/8	-	-	048566	-	-	8	12 x 25	65	14°	3,3	1	53
KEL 1230/8	-	-	048641	-	-	8	12 x 30	70	14°	2,6	1	61

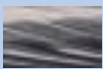
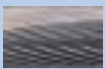







Conical pointed shape burr according to DIN 8032 and cut conforming to DIN 8033, flattened tip.

Ordering example:
EAN 4007220**047293**
SKM 0618/6 C3 PLUS
Please state required cut.

Conical pointed shape SKM



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α		
	1	3	3 PLUS	4	5						
											
	EAN 4007220										

Shank ø 3 mm

SKM 0307/3	-	-	049839	-	049822	3	3 x 7	37	21°	1	4
SKM 0311/3	-	-	049853	451816	049846	3	3 x 11	41	14°	1	4
SKM 0613/3	-	-	049877	-	049860	3	6 x 13	43	25°	1	4

Shank ø 6 mm

SKM 0618/6	047286	047279	047293	047316	047323	6	6 x 18	55	18°	1	19
SKM 1020/6	-	047330	047354	047378	047385	6	10 x 20	60	28°	1	22
SKM 1225/6	047415	047392	047422	047460	047477	6	12 x 25	65	26°	1	39

Shank ø 8 mm

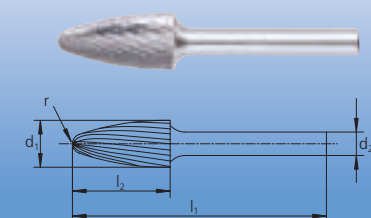
SKM 1225/8	-	-	047439	-	-	8	12 x 25	65	26°	1	46
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


Tree shape with radius end burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**047606**
RBF 0618/6 C3 PLUS
Please state required cut.

Tree shape with radius end RBF



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	1	3	3 PLUS	4	5						
											
	EAN 4007220										

Shank ø 3 mm

RBF 0307/3	-	-	049891	-	049884	3	3 x 7	37	0,75	1	4
RBF 0613/3	-	-	050019	400722	049990	3	6 x 13	43	1,5	1	6

Shank ø 6 mm

RBF 0618/6	-	047590	047606	047620	047637	6	6 x 18	55	1,5	1	21
RBF 0820/6	-	047644	047651	047675	-	6	8 x 20	60	1,2	1	18
RBF 1020/6	-	047682	047705	047729	047736	6	10 x 20	60	2,5	1	24
RBF 1225/6	047774	047750	047781	047828	047835	6	12 x 25	65	2,5	1	47
RBF 1630/6	-	047859	047873	047910	-	6	16 x 30	70	3,6	1	82

Shank ø 8 mm

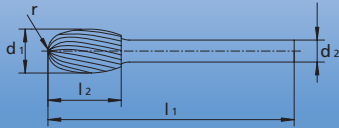
RBF 1225/8	-	-	047798	-	-	8	12 x 25	65	2,5	1	54
RBF 1630/8	-	-	047880	-	-	8	16 x 30	70	3,6	1	89

Tungsten Carbide Burrs

TC Burrs Shank Dia. 3, 6 and 8 mm



Oval shape TRE



Oval burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:

EAN 4007220**048771**

TRE 0610/6 C3 PLUS

Please state required cut.



Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	1	3	3 PLUS	4	5						
EAN 4007220											

Shank ø 3 mm

TRE 0307/3	-	-	049754	-	049747	3	3 x 7	37	1,2	1	4
TRE 0610/3	-	-	050040	-	050026	3	6 x 10	40	2,8	1	6

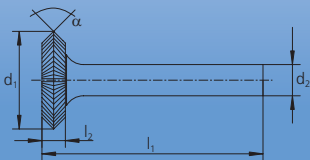
Shank ø 6 mm

TRE 0610/6	-	-	048771	-	048801	6	6 x 10	50	2,8	1	20
TRE 0813/6	-	-	048894	048917	048924	6	8 x 13	53	3,7	1	17
TRE 1016/6	-	-	048832	048856	-	6	10 x 16	56	4,0	1	23
TRE 1220/6	048955	048931	048962	049006	049020	6	12 x 20	60	5,0	1	44
TRE 1625/6	049075	-	049099	049136	-	6	16 x 25	65	6,5	1	77

Shank ø 8 mm

TRE 1220/8	-	-	048979	049013	-	8	12 x 20	60	5,0	1	51
TRE 1625/8	-	-	049105	-	-	8	16 x 25	65	6,5	1	84

Rim shape N






Suitable for producing and machining prism-shaped keyways.

Rim shaped burr, circumferential cut is 90° symmetrically acute-angled.

Ordering example:

EAN 4007220**048740**

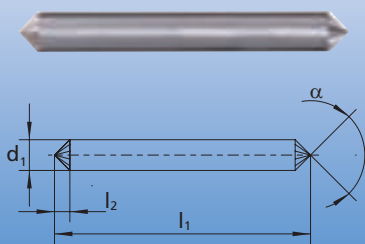
N 2503/8 C3

Order No.	Cut 3	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α		
							
	EAN 4007220						

Shank ø 8 mm

N 2503/8	048740	8	25 x 3	43	90°	1	52
N 2506/8	048757	8	25 x 6	46	90°	1	73

Conical counterbore shape KSK (double ended)

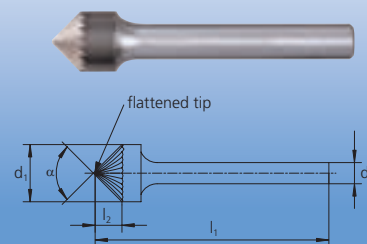






Suitable for counterboring and chamfering with defined chamfer angles.

Conical burr according to DIN 8032 with cut conforming to DIN 8033 with angle (90°). The KSK 0603/6 (double ended) design is cut and usable on both sides: see picture left.

Ordering example:
EAN 4007220**047521**
KSK 1608/6 C3
Please state required cut.

Conical counterbore shape KSK

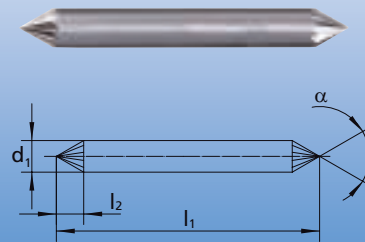


Order No.	Cuts		Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α		
	3	5						
								
EAN 4007220								

Shank ø 6 mm

KSK 0603/6	047569	-	6	6 x 3	50	90°	1	20
KSK 1005/6	047583	-	6	10 x 5	50	90°	1	17
KSK 1608/6	047521	047545	6	16 x 8	53	90°	1	48

Conical counterbore shape KSJ (double ended)

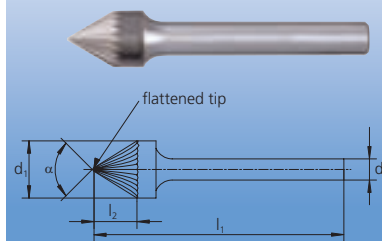






Suitable for counterboring and chamfering with defined chamfer angles.

Conical bore according to DIN 8032 with cut conforming to DIN 8033 with pointed angle (60°). The KSJ 0605/6 (double ended) design is cut and usable on both sides: see picture left.

Ordering example:
EAN 4007220**047552**
KSJ 0605/6 C3
Please state required cut.

Conical counterbore shape KSJ



Order No.	Cuts		Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α		
	3	5						
								
EAN 4007220								

Shank ø 6 mm

KSJ 0605/6	047552	-	6	6 x 5	50	60°	1	19
KSJ 1008/6	047576	-	6	10 x 8	53	60°	1	19
KSJ 1613/6	047491	047507	6	16 x 13	56	60°	1	51

Tungsten Carbide Burrs

TC Burrs Shank Dia. 3, 6 and 8 mm



Radius burrs R

R0615/6
R0830/8



R1618/8



Suitable for the production and machining of outer radii and rounded edges.

Radius burr with concave shape and special cut, available in two designs:

- Cylindrical with triple concave contour.
- With concave shape, tapered towards shank.

Radius burrs cannot be re-sharpened.

Recommendation for use:

The speed recommendations for tungsten carbide burrs cut 3 are valid for radius burrs with special cut.

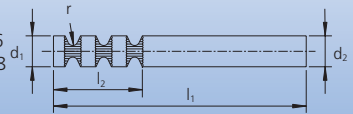
Ordering example:

EAN 4007220**049143**

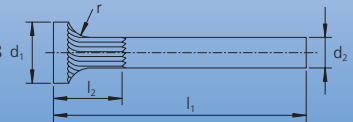
R 0615/6 special cut

Radius burrs R

R0615/6
R0830/8



R1618/8



Order No.	Cut	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	Special cut						
	EAN 4007220						

Shank \varnothing 6 mm

R 0615/6	049143	6	6 x 18	60	1,5	1	35
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Shank \varnothing 8 mm

R 0830/8	049150	8	8 x 27	60	3,0	1	42
R 1618/8	049167	8	16 x 18	100	6,0	1	69

Concave radius burrs V

V1015/6



V1215/6



V1315/6



Suitable for the production and machining of outer radii and rounded edges.

Radius burr with concave end shape, cut conforming to DIN 8033.

Radius burrs cannot be re-sharpened.

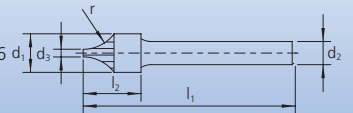
Ordering example:

EAN 4007220**049174**

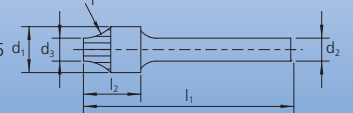
V 1015/6 C3

Concave radius burrs V

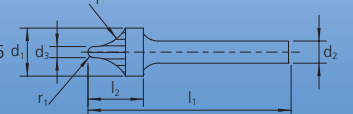
V1015/6



V1215/6



V1315/6



Order No.	Cut	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	$\varnothing d_3$ [mm]	Radius r [mm]	Radius r_1 [mm]		
	3								
	 EAN 4007220								

Shank \varnothing 6 mm

V 1015/6	049174	6	10 x 15	55	2	10	-	1	21
V 1215/6	049204	6	12 x 15	55	6	10	-	1	27
V 1315/6	049198	6	13 x 15	55	3	10	1,5	1	27

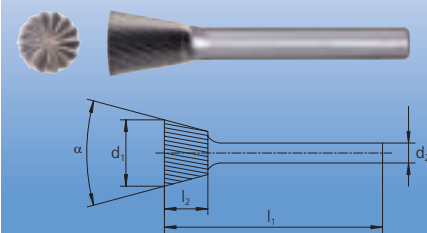







Suitable for working on hard-to-reach, rear-side edges.

Inverted cone burr, tapering off towards the shank according to DIN 8032 with cut conforming to DIN 8033. WKNS shape with end cut.

Ordering example:
EAN 4007220**049211**
WKN 1013/6 C3
Please state required cut.

Inverted cone WKN
Inverted cone with end cut WKNS



Order No.	Cut			Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α		
	3	3 PLUS	5						
									
	EAN 4007220								

Shank ø 3 mm without end cut

WKN 0307/3	-	233863	233870	3	3 x 7	37	4°	1	4
WKN 0607/3	-	233887	233894	3	6 x 7	37	10°	1	5

Shank ø 3 mm with end cut

WKNS 0307/3	-	049716	049709	3	3 x 7	37	4°	1	4
WKNS 0607/3	-	049730	049723	3	6 x 7	37	10°	1	5

Shank ø 6 mm without end cut

WKN 1013/6	049211	-	-	6	10 x 13	53	10°	1	21
WKN 1213/6	049235	-	-	6	12 x 13	53	20°	1	35
WKN 1613/6	049242	-	-	6	16 x 13	53	20°	1	52

TC Burr Sets

Includes the most common shapes and dimensions for general applications and requirements.




Contents:
15 tungsten carbide burrs
shank diameter 3 mm, cut 5

1 piece each:

ZYA 0210/3 C5	SPG 0307/3 C5
ZYA 0313/3 C5	SKM 0613/3 C5
ZYA 0607/3 C5	RBF 0307/3 C5
ZYA 0613/3 C5	RBF 0613/3 C5
B 0307/3 C5	TRE 0307/3 C5
KUD 0403/3 C5	TRE 0610/3 C5
WRC0210/3 C5	WKN 0307/3 C5
WRC0313/3 C5	

Set 1501 HM



Order No.	Cut		Shank dia. [mm]		
	5				
					
	EAN 4007220				

Shank ø 3 mm

1501 HM	055892	3	1	130
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Tungsten Carbide Burrs

TC Burr Sets



Set 1500 HM



Includes the most common shapes and dimensions for general applications and requirements.

Contents:

22 tungsten carbide burrs

1 piece each: cut 5, shank diameter 3 mm:

ZYAS 0210/3 C5 SPG 0307/3 C5
ZYAS 0313/3 C5 RBF 0307/3 C5
WRC 0210/3 C5 TRE 0307/3 C5
WRC 0313/3 C5 WKN 0307/3 C5

1 piece each: cut 3 PLUS, shank diameter 6 mm:

ZYAS 0616/6 C3 PLUS WRC 0616/6 C3 PLUS
ZYAS 1013/6 C3 PLUS WRC 1225/6 C3 PLUS
ZYAS 1225/6 C3 PLUS SPG 0618/6 C3 PLUS
KUD 0605/6 C3 PLUS SPG 1020/6 C3 PLUS
KUD 0807/6 C3 PLUS SPG 1225/6 C3 PLUS
KUD 1210/6 C3 PLUS SKM 0618/6 C3 PLUS
KUD 1614/6 C3 PLUS SKM 1020/6 C3 PLUS

Order No.

Cut 3 PLUS, 5



EAN 4007220



Shank-ø 3 and 6 mm

1500 HM

055885

1

1.550

Set 1506 HM



Includes the five most common shapes with burr diameter 6 mm and the universal cut 3 PLUS. Suitable for the most common requirements and applications in workshops. The sturdy plastic box protects the tools from damage. The tools are stored safely in the box with the burrs secured at the shanks. Five further, empty insert points are available for other burrs.

Contents:

5 tungsten carbide burrs, shank diameter 6 mm:

1 piece each:

ZYA 0616/6 C3 PLUS
KUD 0605/6 C3 PLUS
WRC 0616/6 C3 PLUS
SPG 0618/6 C3 PLUS
RBF 0618/6 C3 PLUS

Order No.

Cut 3 PLUS



EAN 4007220



Shank ø 6 mm

1506 HM

801017

1

248

Set 1512 HM



Includes the five most common shapes with burr diameter 12 mm and the universal cut 3 PLUS. Suitable for the most common requirements and applications in workshop areas. The sturdy plastic box protects the tools from damage. The tools are stored safely in the box with the burrs secured at the shanks. Five further, empty insert points are available for other burrs.

Contents:

5 tungsten carbide burrs, shank diameter 6 mm:

1 piece each:

ZYA 1225/6 C3 PLUS
KUD 1210/6 C3 PLUS
WRC 1225/6 C3 PLUS
SPG 1225/6 C3 PLUS
RBF 1225/6 C3 PLUS

Order No.

Cut 3 PLUS



EAN 4007220



Shank ø 6 mm

1512 HM

801338

1

326



Tungsten carbide burrs with long shank (75 and 150 mm)

Small tungsten carbide burrs with long shanks (**75 mm**) are perfect for work on small hard-to-reach components.

Tungsten carbide burrs with long shanks (**150 mm**) are ideal for cost-effective work in deep, hard-to-reach places.

Tungsten carbide burrs with long steel shank (designation **SL 75 mm** or **SL 150 mm**) can, if required, be shortened by the user.

Tungsten carbide burrs with the designation **GL 75 mm** are produced from solid metal and can therefore only be shortened using diamond tools.

GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

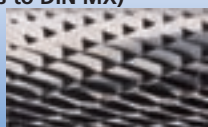
Safety note

Not suitable for robotic and stationary usage.
Danger of bending. Only use rigid clamping systems/drives.

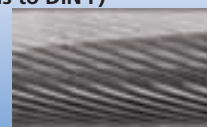


Read the instructions!
= (Please observe the recommended RPM!)

Cut 3 PLUS
(conforms to DIN MX)



Cut 5
(conforms to DIN F)



Safety information

Recommended RPM

When working with long shank burrs, the burr must be in contact with the workpiece (or inserted in the bore or slot to be machined) before the machine is turned on. As a rule, the tool must remain in contact with the workpiece for as long as the machine is running. Failure to observe this procedure may result in shank failure and hence, an increased accident risk.

If the continuous contact between the tool and the workpiece is not guaranteed, the **⑥ idling speeds** stated in the table should **not be exceeded**.

For safety reasons, drive speeds **⑤ with contact to workpiece** require a reduction in the recommended standard length burr speed from the speeds stated in the table below.

Proceed as follows:

- ❶ Determine the type material group to be machined.
- ❷ Select application.
- ❸ Select the cut.
- ❹ Select the burr diameter.
- ❺ For the recommended reduced speed [RPM] with workpiece contact, please refer to the right-hand side of the table.

❶ Material groups			❷ Application	❸ Cut
Steel, cast steel	Non-hardened, non-heat treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Coarse machining = high stock removal	3 PLUS
	Hardened, heat-treated steels exceeding 1200 N/mm ² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steels	Fine machining = low stock removal	5
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse machining = high stock removal	3 PLUS
			Fine machining = low stock removal	5
Non-ferrous metals	High-temperature resistant materials	Nickel based alloys, cobalt based alloys (aircraft engine and turbine construction)	Coarse machining = high stock removal	3 PLUS
			Fine machining = low stock removal	5
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL, with nodular graphite cast iron EN-GJS, white annealed cast iron EN-GJMW, black cast iron EN-GJMB	Coarse machining = high stock removal	3 PLUS
			Fine machining = low stock removal	5

Example

Tungsten carbide burr, SL 150, cut 3 PLUS,
Diameter: 12 mm.
Coarse machining of non-hardened and non-heat-treated steels.

Recommended reduced speed with workpiece contact: 7.000 RPM

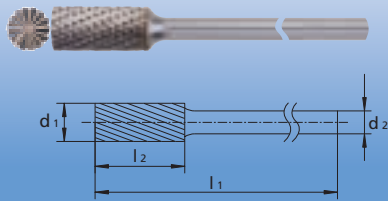
④ Dia. [mm]	⑥ Maximum idling speed [RPM] no contact to the workpiece		⑤ Recommended reduced application speed [RPM] with contact to the workpiece	
	Shank length [mm]			
	75	150	75	150
3	10.000	-	31.000	-
6	6.000	-	15.000	-
8	-	6.000	-	11.000
12	-	3.000	-	7.000

Tungsten Carbide Burrs

TC Burrs with Long Shank



Cylindrical shape ZYA Cylindrical shape with end cut ZYAS



Cylindrical burr according to DIN 8032 with circumferential and end cut acc. DIN 8033.





GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

Ordering example:

EAN 4007220**617632**

ZYA 0820/6 C3 PLUS SL 150

Please state required cut.

Order No.	Cut		Shank dia. d_2 [mm]	Shank length [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	3 PLUS 	5 						
EAN 4007220								

Shank \varnothing 3 mm without end cut

ZYA 0313/3 GL 75	779699	779644	3	62	3 x 13	75	1	11
ZYA 0613/3 SL 75	779606	779583	3	75	6 x 13	88	1	15

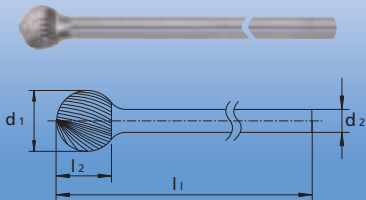
Shank \varnothing 3 mm with end cut

ZYAS 0313/3 GL 75	779705	779712	3	62	3 x 13	75	1	19
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Shank \varnothing 6 mm without end cut

ZYA 0820/6 SL 150	617632	-	6	150	8 x 20	170	1	34
ZYA 1225/6 SL 150	617649	-	6	150	12 x 25	175	1	61

Ball shape KUD



Ball-shaped burr according to DIN 8032 with cut conforming to DIN 8033.

GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)





Ordering example:

EAN 4007220**617687**

KUD 0807/6 C3 PLUS SL 150

Please state required cut.



Order No.	Cut		Shank dia. d_2 [mm]	Shank length [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	3 PLUS 	5 						
EAN 4007220								

Shank \varnothing 3 mm

KUD 0302/3 GL 75	780060	780053	3	73	3 x 2	75	1	19
KUD 0605/3 SL 75	780039	780022	3	75	6 x 5	80	1	9

Shank \varnothing 6 mm

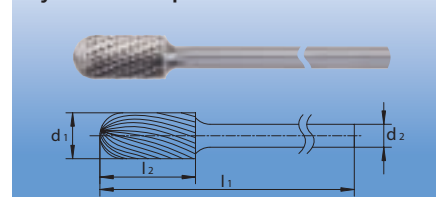
KUD 0807/6 SL 150	617687	-	6	150	8 x 7	157	1	25
KUD 1210/6 SL 150	617694	-	6	150	12 x 10	160	1	36





Cylindrical shape with radius end according to DIN 8032 with cut conforming to DIN 8033.

GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

Ordering example:
EAN 4007220617656
WRC 0820/6/6 C3 PLUS SL 150
Please state required cut.

Cylindrical shape with radius end WRC



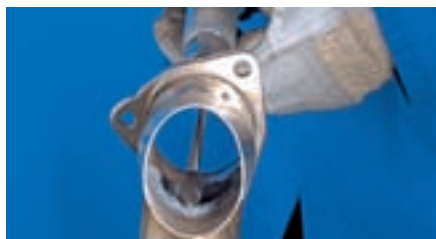
Order No.	Cut		Shank dia. d ₂ [mm]	Shank length [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	3 PLUS	5						
								
	EAN 4007220							

Shank ø 3 mm

WRC 0313/3 GL 75	779767	779750	3	62	3 x 13	75	1	18
WRC 0613/3 SL 75	779743	779729	3	75	6 x 13	88	1	14

Shank ø 6 mm

WRC 0820/6 SL 150	617656	-	6	150	8 x 20	170	1	34
WRC 1225/6 SL 150	617663	-	6	150	12 x 25	175	1	61

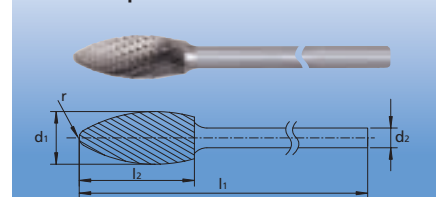





Flame shape burr according to ISO 7755/8 with cut conforming to DIN 8033.

SL = Shank length (long steel shank)

Ordering example:
EAN 4007220617755
B 0820/6 C3 PLUS SL 150

Flame shape B



Order No.	Cut		Shank dia. d ₂ [mm]	Shank length [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	3 PLUS								
									
	EAN 4007220								

Shank ø 6 mm

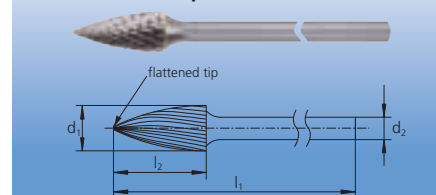
B 0820/6 SL 150	617755		6	150	8 x 20	170	1.5	1	34
B 1230/6 SL 150	617779		6	150	12 x 30	180	2.1	1	69







Pointed tree shaped burr according to DIN 8032 with cut conforming to DIN 8033, flattened tip.
GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

Ordering example:
EAN 4007220779972
SPG 0313/3 C3 PLUS GL 75
Please state required cut.

Pointed tree shape SPG



Order No.	Cuts		Shank dia. d ₂ [mm]	Shank length [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	3 PLUS	5						
								
	EAN 4007220							

Shank ø 3 mm

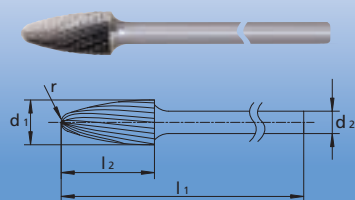
SPG 0313/3 GL 75	779972	779965	3	62	3 x 13	75	1	19
SPG 0613/3 SL 75	779828	779811	3	75	6 x 13	88	1	12

Tungsten Carbide Burrs

TC Burrs with Long Shank



Tree shape with radius end RBF





Tree shape burr according to DIN 8032 with cut conforming to DIN 8033.

GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

Ordering example:

EAN 4007220**617731**
RBF 0820/6 C3 PLUS SL 150
Please state required cut.



Order No.	Cut		Shank dia. d_2 [mm]	Shank length [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	3 PLUS 	5 							
	EAN 4007220								

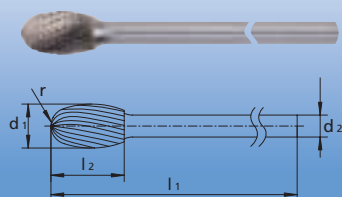
Shank \varnothing 3 mm

RBF 0307/3 GL 75	780015	780008	3	68	3 x 7	75	0,75	1	19
RBF 0613/3 SL 75	779996	779989	3	75	6 x 13	88	1,5	1	15

Shank \varnothing 6 mm

RBF 0820/6 SL 150	617731	-	6	150	8 x 20	170	1,2	1	52
RBF 1225/6 SL 150	617748	-	6	150	12 x 25	175	2,5	1	81

Oval shape TRE

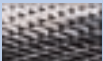



Oval burr according to DIN 8032 with cut conforming to DIN 8033.

GL = Total length (solid tungsten carbide)
SL = Shank length (long steel shank)

Ordering example:

EAN 4007220**617700**
TRE 0813/6 C3 PLUS SL 150
Please state required cut.

Order No.	Cut		Shank dia. d_2 [mm]	Shank length [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	3 PLUS 	5 							
	EAN 4007220								

Shank \varnothing 3 mm

TRE 0307/3 GL 75	779804	779798	3	68	3 x 7	75	1,2	1	19
TRE 0610/3 SL 75	779781	779774	3	75	6 x 10	85	2,8	1	13

Shank \varnothing 6 mm

TRE 0813/6 SL 150	617700	-	6	150	8 x 13	163	3,7	1	29
TRE 1220/6 SL 150	617724	-	6	150	12 x 20	170	5,0	1	53

Burrs (shank dia. 3 and 6 mm) can be extended with spindle extensions. They allow access to hard-to-reach areas. The extension is mounted in the collet chuck of the machine (air-powered or electric), or in the handpiece of the flexible shaft. In some applications spindle extensions are efficient alternatives to customised burrs with long shanks.

Safety note

For safety reasons, it is not possible to use spindle extensions in combination with long shank burrs.

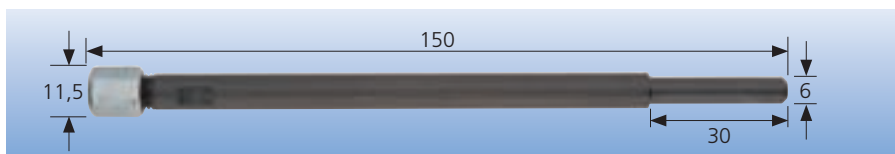
For more safety information, please refer to the catalogue 209.



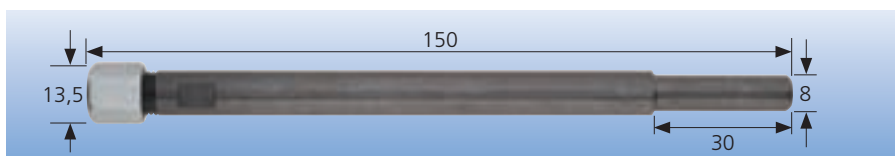
= Read the instructions!



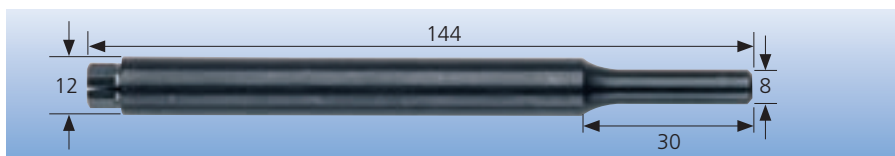
202



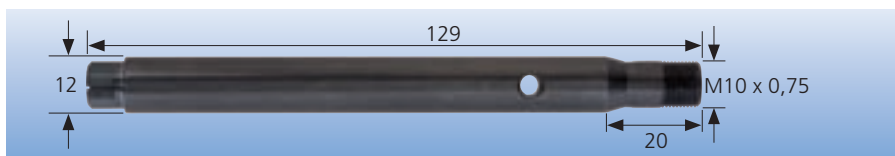
Extension SPV 150-3 S6
for 3 mm shanks



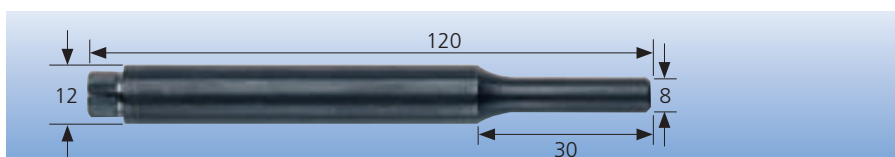
Extension SPV 150-6 S8
for 6 mm shanks



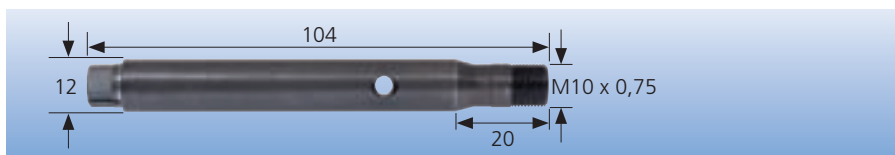
Extension SPV 100-6 S8
for 6 mm shanks



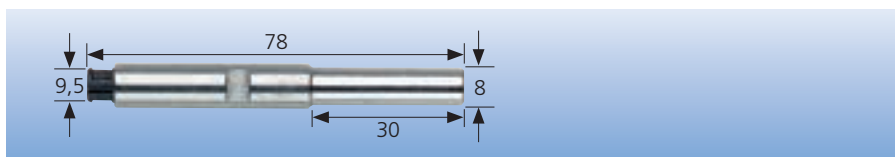
Extension SPV 100-6 SPG 6
for 6 mm shanks



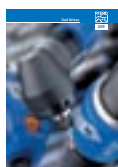
Extension SPV 75-6 S8
for 6 mm shanks



Extension SPV 75-6 SPG 6
for 6 mm shanks



Extension SPV 50-3 S8
for 3 mm shanks



For detailed information and ordering data on drive spindle extensions please refer to catalogue 209.

Tungsten Carbide Burrs

TC Burrs HICOAT®



Advantages

- Effective chip discharge due to improved anti-adhesion characteristics.
- Low thermal loads.
- More effective production by working at higher speeds.
- Longer tool life.

Coating types

Coating HC-FE for iron and steel materials

- Multi-purpose coating for steel and cast iron.
- High wear resistance.
- High resistance against thermal changes.
- Tough coating.

Coating HC-HT

for high temperature resistant materials

- Mainly used for high temperature resistant non-ferrous metals.
- Low friction values, low heat build-up.
- Good combination of wear and oxidation resistance. Result: reduced chemical wear.

Coating HC-NFE

for aluminium and non-ferrous metals

- Mainly used for long-chipping and cloying non-ferrous metals.
- Highest standard of stock removal and tool life.
- Improved anti-friction and anti-adhesion characteristics.

Note:

- Normally, all tungsten burrs are available with coatings.
- Please ask about alternative models and coatings.

Coating HC-FE for iron and steel materials



Coating HC-HT for high-temperature resistant materials



Coating HC-NFE for non-ferrous metals



Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

- 1 Select the material group that is to be machined.
- 2 Determine the type of application.

- 3 Select the cut.
- 4 Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

- 5 Select the required burr diameter.
- 6 The cutting speed range and the burr diameter determine the recommended rotational speed range [RPM].

1 Material groups			2 Application	3 Cut	Coating	4 Cutting speed
Steel, cast steel	Non-hardened, non-heat treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Coarse machining = high stock removal	3 PLUS	HC-FE	450 - 600 m/min
	Hardened, heat-treated steels exceeding 1200 N/mm ² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steels			HC-FE	250 - 350 m/min
Non-ferrous metals	Soft non-ferrous metals	Alu-alloys, brass, copper, zinc	Coarse machining = high stock removal Fine machining = low stock removal	ALU	HC-NFE	600 - 1.100 m/min 900 - 1.100 m/min
	High-temperature resistant materials	Nickel based alloys, cobalt based alloys (aircraft engine and turbine construction)	Coarse machining = high stock removal	4	HC-HT	300 - 450 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL, with nodular graphite cast iron EN-GJS, white annealed cast iron EN-GJMW, black cast iron EN-GJMB	Coarse machining = high stock removal	3 PLUS	HC-FE	450 - 600 m/min

Example

Tungsten carbide burr, cut 3 PLUS,
Diameter: 12 mm.
Coarse machining of non-hardened, non-heat-treated steels.

Cutting speed: 450 - 600 m/min

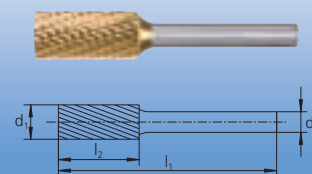
Rotational speed: 12.000 - 16.000 RPM


5 Dia. [mm]	6 Cutting speed [m/min]						
	250	300	350	450	600	900	1.100
	Rotational Speed [RPM]						
3	27.000	32.000	37.000	48.000	64.000	95.000	117.000
6	13.000	16.000	19.000	24.000	32.000	48.000	59.000
8	10.000	12.000	14.000	18.000	24.000	36.000	44.000
10	8.000	10.000	12.000	14.000	19.000	29.000	35.000
12	7.000	8.000	9.000	12.000	16.000	24.000	29.000

Cylindrical burr according to DIN 8032 with circumferential and end cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533291**
ZYA 0616/6 C3 PLUS HC-FE

Cylindrical shape ZYA



Order No.	Cut 3 PLUS 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	EAN 4007220							

Shank ø 6 mm

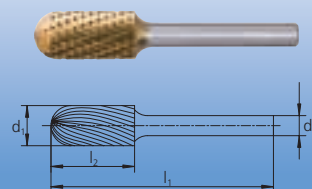
ZYA 0616/6	533291	HC-FE	gold	6	6 x 16	55	1	23
ZYA 1225/6	533307	HC-FE	gold	6	12 x 25	65	1	60



Cylindrical shape with radius end burr DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533239**
WRC 0616/6 C3 PLUS HC-FE

Cylindrical shape with radius end WRC



Order No.	Cut 3 PLUS 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	EAN 4007220							

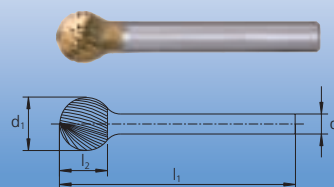
Shank ø 6 mm



WRC 0616/6	533239	HC-FE	gold	6	6 x 16	55	1	22
WRC 1225/6	533246	HC-FE	gold	6	12 x 25	65	1	57

Ball shape burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533123**
KUD 0807/6 C3 PLUS HC-FE

Ball shape KUD



Order No.	Cut 3 PLUS 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	EAN 4007220							

Shank ø 6 mm

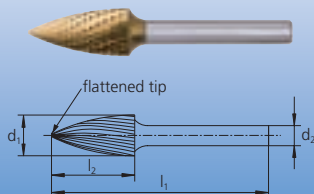
KUD 0807/6	533123	HC-FE	gold	6	8 x 7	47	1	14
KUD 1009/6	533130	HC-FE	gold	6	10 x 9	49	1	17

Tungsten Carbide Burrs

TC Burrs HICOAT® - Coating HC-FE






Pointed tree shape SPG



Pointed tree shape burr according to DIN 8032 with cut conforming to DIN 8033, flattened tip.

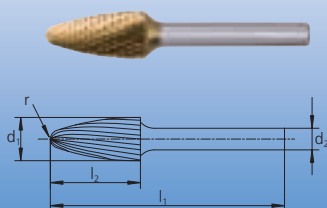
Ordering example:
EAN 4007220**533215**
SPG 1225/6 C3 PLUS HC-FE

Order No.	Cut 3 PLUS 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	EAN 4007220							

Shank ø 6 mm

SPG 1225/6	533215	HC-FE	gold	6	12 x 25	65	1	46
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Tree shape with radius end RBF



Tree shape burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533161**
RBF 1225/6 C3 PLUS HC-FE



Order No.	Cut 3 PLUS 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	EAN 4007220								

Shank ø 6 mm

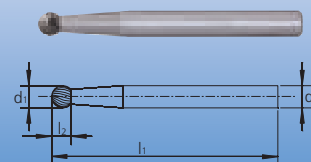
RBF 1225/6	533161	HC-FE	gold	6	12 x 25	65	2,5	1	47
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Ball shape burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533574**
KUD 0302/3 C4 HC-HT

Ball shape KUD



Order No.	Cut 4 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
EAN 4007220								

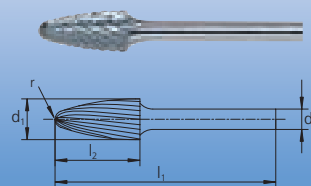
Shank ø 3 mm




KUD 0302/3	533574	HC-HT	silver-grey	3	3 x 2	33	1	4
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Tree shape with radius end burr according to DIN 8032 with cut conforming to DIN 8033.

Ordering example:
EAN 4007220**533581**
RBF 0613/3 C4 HC-HT

Tree shape with radius end RBF



Order No.	Cut 4 	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
EAN 4007220									

Shank ø 3 mm

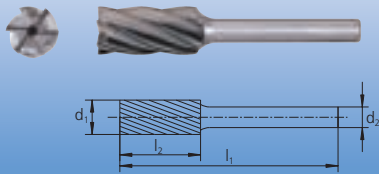
RBF 0613/3	533581	HC-HT	silver-grey	3	6 x 13	43	1,5	1	6
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Tungsten Carbide Burrs

TC Burrs HICOAT® - Coating HC-NFE



Cylindrical shape with end cut ZYAS

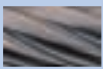




Cylindrical burr according to DIN 8032 with circumferential and end cut.

Ordering example:

EAN 4007220804117

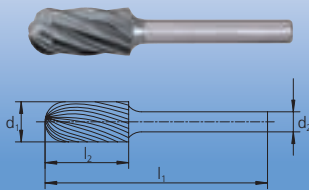
ZYAS 1225/6 C ALU HC-NFE

Order No.	Cut ALU	Coating	Coating colour	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
								
	EAN 4007220							

Shank \varnothing 6 mm

ZYAS 1225/6	804117	HC-NFE	black-grey	6	12 x 25	65	1	60
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Cylindrical shape with radius end WRC






Cylindrical shape with radius end according to DIN 8032.

Ordering example:

EAN 4007220804131

WRC 1225/6 C ALU HC-NFE

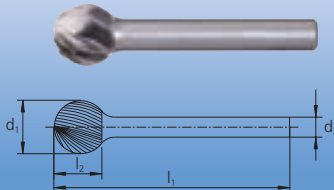


Order No.	Cut ALU	Coating	Coating colour	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
								
	EAN 4007220							

Shank \varnothing 6 mm

WRC 1225/6	804131	HC-NFE	black-grey	6	12 x 25	65	1	57
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Ball shape KUD






Ball shape burr according to DIN 8032.

Ordering example:

EAN 4007220804155

KUD 1210/6 C ALU HC-NFE

Order No.	Cut ALU	Coating	Coating colour	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
								
	EAN 4007220							

Shank \varnothing 6 mm

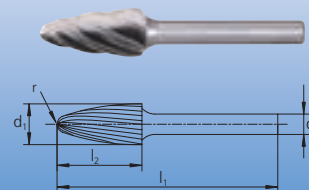
KUD 1210/6	804155	HC-NFE	black-grey	6	12 x 10	50	1	25
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Tree shape burr according to DIN 8032.

Ordering example:
 EAN 4007220**533192**
 RBF 1225/6 C ALU HC-NFE

Tree shape with radius end RBF



Order No.	Cut ALU	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
									
	EAN 4007220								

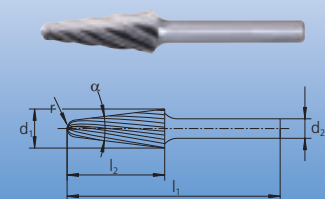
Shank ø 6 mm

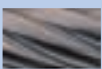


RBF 1225/6	533192	HC-NFE	black-grey	6	12 x 25	65	2,5	1	47
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Conical shape with radius end according to DIN 8032.

Ordering example:
 EAN 4007220**533093**
 KEL 1230/6 C ALU HC-NFE

Conical shape with radius end KEL



Order No.	Cut ALU	Coating	Coating colour	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Angle α	Radius r [mm]		
										
	EAN 4007220									

Shank ø 6 mm

KEL 1230/6	533093	HC-NFE	black-grey	6	12 x 30	70	14°	2,5	1	54
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Tungsten Carbide Burrs

TC Burrs for Tough Applications



The 3R and 3RS cuts represent a new PFERD product line designed especially for tough operating conditions in dockyards, foundries and on steel constructions.

Advantages

- Innovative, special cuts providing exceptional impact resistance.
- These extremely robust, high-performance cut patterns minimise tooth chipping/breakage, splintering and burr head failures.
- The 3R and 3RS cuts can be used on materials up to 55 HRC.
- These products can also be used at low speeds.

- Their extremely high impact resistance means that they are perfectly suited for use as long shank variants. Available as special products with 150 or 200 mm shaft length.
- Developed specifically for applications involving high impact loads, the new 3R and 3RS cuts are the latest addition to the existing PFERD range.

Application examples

- High-impact applications due to long shank design.
- Heavy-duty applications, due to angled working.
- High angle of surface contact.
- Milling of narrow contours.

Cut 3R

- Coarse, aggressive machining, with high stock removal.



Cut 3RS

- Coarse machining, with smooth milling performance.



Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

- 1 Select the material group that is to be machined.
- 2 Determine the type of application.

- 3 Select the cut.
- 4 Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

- 5 Select the required burr diameter.
- 6 The cutting speed range and the burr diameter determine the recommended rotational speed range [RPM].

1 Material groups			2 Application	3 Cut	4 Cutting speed
Steel, cast steel	Non-hardened, non-heat treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Coarse machining = high stock removal with impact load	3R	250 - 600 m/min
	Hardened, heat-treated steels exceeding 1200 N/mm ² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steels		3RS	
Non-ferrous metals	High-temperature resistant materials	Nickel based alloys, cobalt based alloys (aircraft engine and turbine construction)	Coarse machining = high stock removal with impact load	3R	250 - 350 m/min
				3RS	
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black cast iron EN-GJMB (GTS)	Coarse machining = high stock removal with impact load	3R	250 - 450 m/min
				3RS	

Example

Tungsten carbide burr, cut 3R,
Diameter 12 mm.
Coarse machining of non-hardened, non-heat treated steels.
Cutting speed: 250 - 600 m/min
Rotational speed: 7.000 - 16.000 RPM

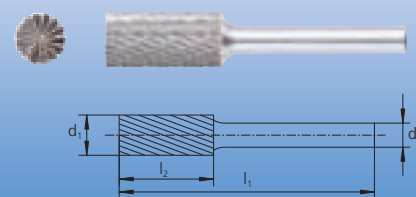
5 Dia. [mm]	6 Cutting speed [m/min]			
	250	350	450	600
	RPM			
8	10.000	14.000	18.000	24.000
10	8.000	11.000	14.000	19.000
12	7.000	9.000	12.000	16.000
16	5.000	7.000	9.000	12.000

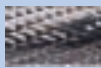




Cylindrical burr according to DIN 8032 with circumferential and end cut.

Ordering example:
EAN 4007220**769997**
ZYAS 0820/6 C3R

Cylindrical shape with end cut ZYAS



Order No.	Cut 3R 	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	EAN 4007220					

Shank ø 6 mm

ZYAS 0820/6	769997	6	8 x 20	60	1	25
ZYAS 1020/6	770023	6	10 x 20	60	1	33

Shank ø 8 mm

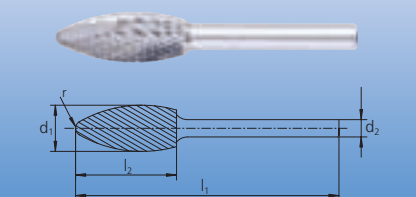
ZYAS 1225/8	770054	8	12 x 25	65	1	56
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Flame shape burr according to ISO 7755/8.

Ordering example:
EAN 4007220**770061**
B 0820/6 C3R

Flame shape B



Order No.	Cut 3R 	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	EAN 4007220						

Shank ø 6 mm

B 0820/6	770061	6	8 x 20	60	1,5	1	22
B 1230/6	770085	6	12 x 30	70	2,1	1	48

Shank ø 8 mm

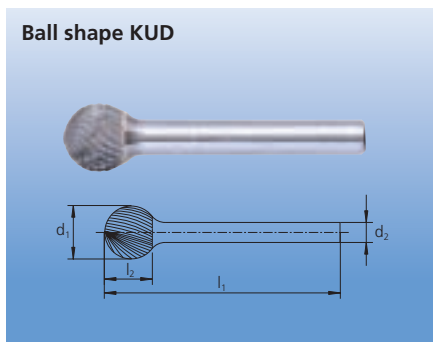
B 1230/8	770092	8	12 x 30	70	2,1	1	50
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Tungsten Carbide Burrs

TC Burrs for Tough Applications



Ball shape KUD



Ball shape burr according to DIN 8032.

Ordering example:
EAN 4007220**770160**
KUD 1210/6 C3R

Order No.	Cut 3R	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	 EAN 4007220					

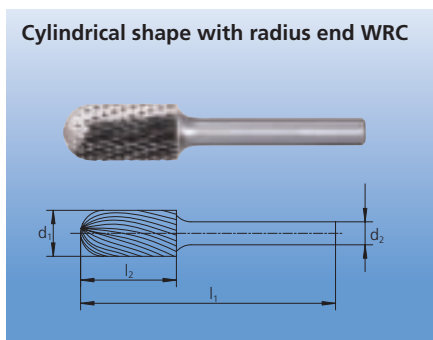
Shank \varnothing 6 mm

KUD 1210/6	770160	6	12 x 10	51	1	30
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Shank \varnothing 8 mm

KUD 1210/8	770177	8	12 x 10	51	1	35
KUD 1614/8	770184	8	16 x 14	54	1	53

Cylindrical shape with radius end WRC



General-use shape, combination of cylindrical and ball shapes according to DIN 8032.

Ordering example:
EAN 4007220**770108**
WRC 0820/6 C3R
Please state required cut.



Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	3R	3RS					
	EAN 4007220						

Shank \varnothing 6 mm

WRC 0820/6	770108	-	6	8 x 20	60	1	25
WRC 1020/6	770115	-	6	10 x 20	60	1	32
WRC 1225/6	770122	770139	6	12 x 25	65	1	52

Shank \varnothing 8 mm

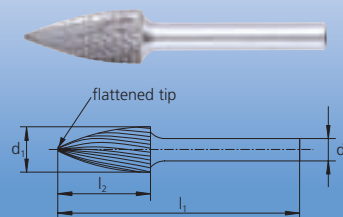
WRC 1225/8	769881	770153	8	12 x 25	65	1	59
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Pointed tree shape according to DIN 8032.

Ordering example:
 EAN 4007220**770252**
 SPG 1020/6 C3R
 Please state required cut.

Pointed tree shape SPG



Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	3R 	3RS 					
	EAN 4007220						

Shank \varnothing 6 mm

SPG 1020/6	770252	770269	6	10 x 20	60	1	25
SPG 1225/6	770276	-	6	12 x 25	65	1	40

Shank \varnothing 8 mm

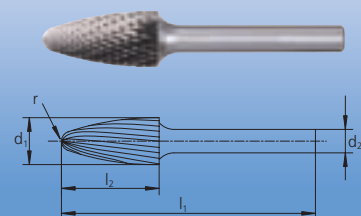
SPG 1225/8	770283	-	8	12 x 25	65	1	47
SPG 1625/8	770290	770306	8	16 x 25	65	1	64







Tree shape burr according to DIN 8032.

Ordering example:
 EAN 4007220**770191**
 RBF 0820/6 C3R
 Please state required cut.

Tree shape with radius end RBF



Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	3R 	3RS 						
	EAN 4007220							

Shank \varnothing 6 mm

RBF 0820/6	770191	-	6	8 x 20	60	1,2	1	21
RBF 1020/6	770207	-	6	10 x 20	60	2,5	1	28
RBF 1225/6	770214	770238	6	12 x 25	65	2,5	1	43

Shank \varnothing 8 mm

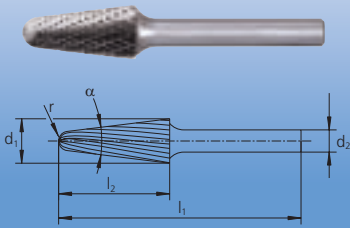
RBF 1225/8	770221	770245	8	12 x 25	65	2,5	1	49
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Tungsten Carbide Burrs

TC Burrs for Tough Applications



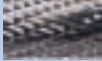


Conical shape with radius end KEL



Conical shape with radius end according to DIN 8032.

Ordering example:
EAN 4007220**770320**
KEL 1225/6 C3R



Order No.	Cut 3R 	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Angle α	Radius r [mm]		
EAN 4007220								

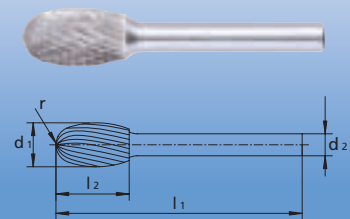
Shank \varnothing 6 mm

KEL 1225/6	770320	6	12 x 25	65	14°	3,3	1	39
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Shank \varnothing 8 mm

KEL 1225/8	770337	8	12 x 25	65	14°	3,3	1	47
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Oval shape TRE



Oval burr according to DIN 8032.

Ordering example:
EAN 4007220**770344**
TRE 1016/6 C3R
Please state required cut.



Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	3R 	3RS 						
EAN 4007220								

Shank \varnothing 6 mm

TRE 1016/6	770344	770382	6	10 x 16	56	4,0	1	27
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TRE 1220/6	770351	-	6	12 x 20	60	5,0	1	41
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Shank \varnothing 8 mm

TRE 1220/8	770368	-	8	12 x 20	60	5,0	1	48
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PFERD has further developed the ALU cut especially for stock removal of aluminium. This cut is characterised by its high stock removal performance on all aluminium materials.

Note

You can find the coated tungsten carbide ALU cut under tungsten carbide burrs HICOAT®, coating HC-NFE, on pages 28-29.

Please refer to the PRAXIS "PFERD Tools for Use on Aluminium" for instructions and further information on working with aluminium.

Application examples

- Contouring.
- Bore deburring.
- Milling in preparation of build-up welding.
- Suitable for milling work (deburring, weld dressing, contouring etc.) Also suitable for work on small and miniature components in mould, machine and model construction.

Advantages of ALU cut

- Reduces material adhesion.
- Long tool life.
- Large chip volume and high stock removal performance.
- Can be used with cutting rates of up to 1.100 m/min.
- Smooth running.

Recommendations for use

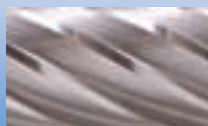
The use of grinding oil prevents chips adhering during work on soft aluminium alloys. This increases the tool life and improves the finish of the workpiece.

Refer to catalogue 204 for detailed information and order data for grinding oil 412 ALU.

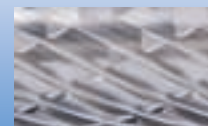
Advantages of ALU PLUS cut

- Mainly used for coarse stock removal of non-ferrous metals, brass, copper, hard aluminium alloys, plastics, fibre-reinforced plastics and rubber.

Cut ALU



Cut ALU PLUS



Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

- ① Select the material group that is to be processed.
- ② Determine the type of machining.

③ Select the cut.

④ Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

⑤ Select the required burr diameter.

⑥ The cutting speed range and the burr diameter determine the recommended rotational speed range [RPM].

① Material groups			② Application	③ Cut	④ Cutting speed
Non-ferrous metals	Soft non-ferrous metals	Alu-alloys, brass, copper, zinc	Coarse machining = high stock removal	ALU	600 - 1.100 m/min
				ALU PLUS	400 - 500 m/min
	Hard non-ferrous metals	Bronze, titanium, hard aluminium alloys (high Si content)	Fine machining = low stock removal	ALU	800 - 1.100 m/min
			Coarse machining = high stock removal	ALU	600 - 1.100 m/min
				ALU PLUS	400 - 500 m/min
			Fine machining = low stock removal	ALU	900 - 1.100 m/min
Plastics and other materials	Fibre-reinforced plastics (GRP/CRP) thermoplastics, hard rubber		Coarse machining = high stock removal	ALU	500 - 1.100 m/min
				ALU PLUS	500 - 900 m/min
			Fine machining = low stock removal	ALU	500 - 1.100 m/min

Example

Tungsten carbide burr, ALU cut

Diameter: 12 mm

Coarse machining of hardened non-ferrous metals, e.g. bronze.

Cutting speed: 600 - 1.100 m/min

Rotational speed: 16.000 - 30.000 RPM

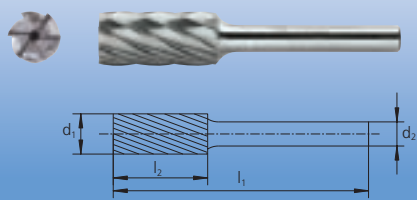
⑥ Cutting speed [m/min]					
⑤ Dia. [mm]	400	500	600	900	1.100
	Rotational Speed [RPM]				
3	42.000	53.000	64.000	95.000	117.000
6	21.000	27.000	32.000	48.000	59.000
8	16.000	20.000	24.000	36.000	44.000
10	13.000	16.000	19.000	29.000	35.000
12	11.000	13.000	16.000	24.000	30.000
16	8.000	10.000	12.000	18.000	22.000

Tungsten Carbide Burrs

TC Burrs for ALU/Non-Ferrous Metals



Cylindrical shape ZYA Cylindrical shape with end cut ZYAS



Cylindrical burr according to DIN 8032 with circumferential and end cut.

Ordering example:
EAN 4007220**246986**
ZYAS 0616/6 C ALU



Order No.	Cut		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	ALU	ALU PLUS					
	EAN 4007220						

Shank \varnothing 3 mm with end cut

ZYAS 0313/3	803653	-	3	3 x 13	43	1	5
ZYAS 0613/3	803660	-	3	6 x 13	43	1	7

Shank \varnothing 6 mm with end cut

ZYAS 0616/6	246986	-	6	6 x 16	55	1	23
ZYAS 1020/6	533321	-	6	10 x 20	60	1	32
ZYAS 1225/6	533345	-	6	12 x 25	65	1	60
ZYAS 1625/6	803974	-	6	16 x 25	65	1	93

Shank \varnothing 8 mm with end cut

ZYAS 1225/8	246979	-	8	12 x 25	65	1	67
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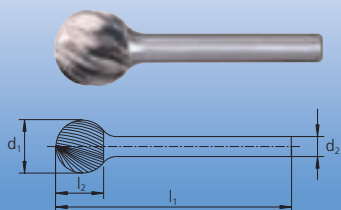
Shank \varnothing 6 mm without end cut

ZYA 0616/6	-	221044	6	6 x 16	55	1	23
ZYA 1225/6	-	533314	6	12 x 25	65	1	60

Shank \varnothing 8 mm without end cut

ZYA 1225/8	-	221051	8	12 x 25	65	1	67
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Ball shape KUD



Ball shape burr according to DIN 8032.

Ordering example:
EAN 4007220**533147**
KUD 1210/6 C ALU
Please state required cut.

Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	ALU	ALU PLUS					
	EAN 4007220						

Shank \varnothing 3 mm

KUD 0302/3	803714	-	3	3 x 2	32	1	4
KUD 0605/3	803721	-	3	6 x 5	35	1	4

Shank \varnothing 6 mm

KUD 0807/6	-	221082	6	8 x 7	47	1	14
KUD 1210/6	533147	533154	6	12 x 10	50	1	25
KUD 1614/6	803998	-	6	16 x 14	54	1	46

Shank \varnothing 8 mm

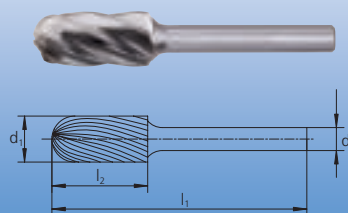
KUD 1210/8	247044	-	8	12 x 10	50	1	32
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General-use shape, combination of cylindrical and ball shapes.
Cylindrical shape with radius end according DIN 8032.

Ordering example:
EAN 4007220**247006**
WRC 0616/6 C ALU
Please state required cut.

Cylindrical shape with radius end WRC



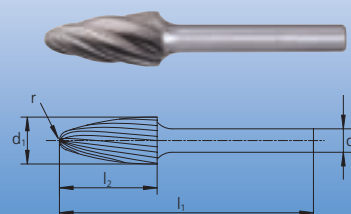
Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	ALU	ALU PLUS					
	EAN 4007220						
Shank \varnothing 3 mm							
WRC 0313/3	803691	-	3	3 x 13	43	1	5
WRC 0613/3	803707	-	3	6 x 13	43	1	7
Shank \varnothing 6 mm							
WRC 0616/6	247006	221068	6	6 x 16	55	1	22
WRC 1225/6	533260	533284	6	12 x 25	65	1	57
WRC 1625/6	803981	-	6	16 x 25	65	1	89
Shank \varnothing 8 mm							
WRC 1225/8	247013	-	8	12 x 25	65	1	64






Tree shape burr according to DIN 8032.

Ordering example:
EAN 4007220**328071**
RBF 0618/6 C ALU

Tree shape with radius end RBF



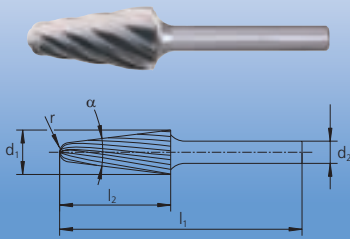
Order No.	Cut ALU	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
							
	EAN 4007220						
Shank \varnothing 3 mm							
RBF 0313/3	803677	3	3 x 13	43	0,75	1	5
RBF 0613/3	803684	3	6 x 13	43	1,5	1	6
Shank \varnothing 6 mm							
RBF 0618/6	328071	6	6 x 18	55	1,5	1	21
RBF 1225/6	533208	6	12 x 25	65	2,5	1	47
RBF 1630/6	804001	6	16 x 30	70	3,6	1	82
Shank \varnothing 8 mm							
RBF 1225/8	247020	8	12 x 25	65	2,5	1	54

Tungsten Carbide Burrs

TC Burrs for ALU/Non-Ferrous Metals





Conical shape with radius end KEL



Conical shape burr with radius end according to DIN 8032.

Ordering example:
EAN 4007220**533109**
KEL 1230/6 C ALU
Please state required cut.



Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Angle α	Radius r [mm]		
	ALU	ALU PLUS							
	EAN 4007220								
Shank \varnothing 6 mm									
KEL 1020/6	-	221105	6	10 x 20	60	14°	2,9	1	23
KEL 1230/6	533109	533116	6	12 x 30	70	14°	2,6	1	54
KEL 1630/6	804018	-	6	16 x 30	70	14°	4,8	1	80
Shank \varnothing 8 mm									
KEL 1230/8	247037	-	8	12 x 30	70	14°	2,6	1	61
KEL 1630/8	-	221129	8	16 x 30	70	14°	4,8	1	80





Tungsten carbide burrs with both FVK and FVKS cuts are suitable for trimming and contour milling of a wide range of glass and carbon-fibre reinforced plastics (GRP/CRP).

Advantages

- The special cutting geometry allows high feed rates due to the low resistance.
- The end cut (BS) allows penetration into solid material, i.e. drilling and cutting in one work step.

FVK

Suitable for trimming and contour milling of fibre-reinforced plastics GRP and CRP, hard rubber and thermoplastics. Thanks to the high level of concentric accuracy it is suitable for use on stationary machines and hand-held applications. The end cut allows both drilling and milling work to be carried out.

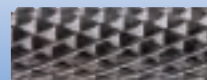
Cut FVK



FVKS

Similar to the FVK cut. Due to its special tooth design it is suitable for use on machines and robots with high feed rates, as its smooth milling behaviour creates a burr free edge. Burrs with end cut allow both drilling and milling tasks to be performed.

Cut FVKS



Application examples

- Trimming.
- Contour milling.
- Production of cut-outs.
- Deburring.

Recommended uses

When processing thermoplastics, the speed should be set to avoid the material melting and clogging the burr.

Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

- ① Select the material group that is to be machined.
- ② Determine the type of application.

- ③ Select the cut.
- ④ Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

- ⑤ Select the required burr diameter.
- ⑥ The cutting speed range and the burr diameter determine the recommended rotational speed range [RPM].

① Material groups		② Application	③ Cut	④ Cutting speed
Plastics and other materials	Fibre-reinforced plastics (GRP/CRP), thermoplastics, hard rubber, wood	Coarse machining = high stock removal	FVK	500 – 900 m/min
		Fine machining = low stock removal	FVKS	

Example

Burr, FVK cut

Diameter: 8 mm.

Coarse machining of plastics.

Cutting speed: 500 - 900 m/min

Rotational speed: 20.000 - 36.000 RPM

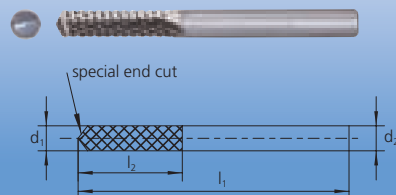
⑥ Cutting speed [m/min]		
⑤ Dia. [mm]	500	900
	Rotational Speed [RPM]	
6	27.000	48.000
8	20.000	36.000

Tungsten Carbide Burrs

TC Burrs for GRP/CRP



Tungsten carbide burrs for GRP and CRP



These tungsten carbide burrs for work on GRP (glass fibre reinforced plastic) and CRP (carbon fibre reinforced plastic) are produced specially for use on fibre reinforced plastics.

These special cut types give extremely high stock removal rates.

The special end cut allows good penetration into solid material, allowing drilling and milling in one operation.

Available in two shank diameters and burr dimensions.

Workpiece materials:

■ Glass and carbon fibre-reinforced (GRP, CRP) plastics

Industry / target group:

■ Plastic and rubber processing industry

Ordering example:

EAN 40072200**50217**

ZYA 0625 BS/6 C FVK

Please state required cut.

Order No.	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
	FVK 	FVKS 					
	EAN 4007220						
Shank \varnothing 6 mm							
ZYA 0625BS/6	050217	808900	6	6 x 25	65	1	26
Shank \varnothing 8 mm							
ZYA 0825BS/8	050231	808917	8	8 x 25	65	1	46





Micro burrs X are perfectly suited for delicate work in manual and machine applications. Due to their special cut, they achieve a high-quality finish and are excellent for work on very hard materials.

Advantages with hand-held tool drives

- These products produce a high-quality finish.
- In comparison to vitrified-bond mounted points, they maintain their shape for the tool life.

Advantages with stationary machine tool drives

- These products achieve as precise and as good a surface finish as vitrified-bond mounted points.
- No diameter loss due to wear.
- They have a higher stock removal than vitrified-bond mounted points.
- Tool changes are seldom required due to extended tool life.

Recommended rotational speed range

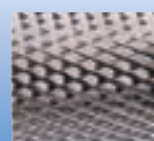
To determine the recommended cutting speed [m/min], please proceed as follows:

- ① Select the material group that is to be processed.
- ② Determine the type of application.
- ③ Select the cut.
- ④ Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

- ⑤ Select the required burr diameter.
- ⑥ The cutting speed range and burr diameter determine the rotational speed range [RPM].

Cut MZ



① Material groups			② Application	③ Cut	④ Cutting speed
Steel, cast steel	Non-hardened, non-heat-treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Fine machining = low stock removal	MZ	650 - 750 m/min
	Hardened, heat-treated steels exceeding 1200 N/mm ² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steels			450 - 600 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Fine machining = low stock removal	MZ	450 - 600 m/min
Non-ferrous metals	Hard non-ferrous metals	Bronze, titanium, titanium alloys, hard aluminium alloys (high Si content)	Fine machining = low stock removal	MZ	450 - 600 m/min
	High-temperature resistant materials	Nickel based alloys, cobalt based alloys (aircraft engine and turbine construction)			450 - 650 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL, with nodular graphite/ductile graphite iron EN-GJS, white annealed cast iron EN-GJMW, black cast iron EN-GJMB	Fine machining = low stock removal	MZ	650 - 750 m/min

Example

Micro burr, cut MZ

Diameter: 10 mm.

Fine finish milling of non-hardened, non-tempered steels.

Cutting speed: 650 - 750 m/min

Rotational speed: 21.000 - 24.000 RPM

⑤ Dia. [mm]	⑥ Cutting speed [m/min]			
	450	600	650	750
	Rotational Speed [RPM]			
2	72.000	95.000	103.000	119.000
4	36.000	48.000	52.000	60.000
6	24.000	32.000	34.000	40.000
8	18.000	24.000	26.000	30.000
10	14.000	19.000	21.000	24.000

Tungsten Carbide Burrs

TC Micro Burrs X



Micro burrs X

X 0204



X 0408



X 0610



X 0810



X 1010



Cylindrical burrs similar to DIN 8032 (shape ZYA) with special cut.

Recommendation for use:

Manual application

- Fine machining.
- Very fine cleaning work.
- Corrections in tool and mould construction.
- Sharpening of cutting tools.

Recommendations for use:

Machine application




- The burr diameter should total 75 to 80 % of the centre hole diameter.
- Normally, material hardness grades of max. 50 HRC can easily be worked on using this product. Please carry out appropriate trials before using them on harder materials.

- Effective bore size up to max. 12 mm diameter.
- Only use rigid spindles. Observe the true running of the clamping system.
- Feed speed rate for stationary use:
for soft materials 100-200 mm/min,
for hard materials 50-100 mm/min.
Chip depth:
for soft materials 0,08 to 0,13 mm,
for hard materials 0,008 to 0,013 mm.
Work is generally carried out counter-rotationally.

Ordering example:

EAN 4007220049266

X 0204/3 C MZ

Order No.	Cut Micro cut 	Shank dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Tool spindle at right [RPM]	Workpiece at left [RPM]		
	EAN 4007220							

Shank ø 3 mm

X 0204/3 MZ	049266	3	2,5 x 4	40	27.500	250	1	6
X 0408/3 MZ	049273	3	4 x 8	50	21.000	200	1	8

Shank ø 6 mm

X 0610/6 MZ	049280	6	6 x 10	65	18.000	200	1	25
X 0810/6 MZ	049297	6	8 x 10	65	16.000	150	1	21
X 1010/6 MZ	049303	6	10 x 10	65	14.500	150	1	30





HSS rotary cutters are particularly suitable for deburring, chamfering, fettling and work on aluminium due to their special tooth geometry and high production quality. They also provide cost-effective benefits on low-performance machines at low speed ranges.

Advantages

- Highly-aggressive.
- Can be used at low speeds.
- High stock removal in shorter time.

Application examples

- Deburring.
- Contouring.
- Milling of acute-angled surfaces.
- Inner contour work, i.e. peripheral and face milling.

Recommendations for use

- For applications where high speeds are not available.
- The toughness of the high-performance high-speed steel (HSS) makes the tooth cutting process extremely stable.

Recommended RPM

The recommended speeds and cutting speeds of cut 5 can be used for HSS cutters with special cut, with the exception of antennae and light metal cutters. The speeds and cutting speeds specially adapted for these tools are to be found on pages 50-51.

If only a small part of the rotary cutter head is used then the recommended speed can be increased accordingly.

Safety recommendations








= Wear eye protection!

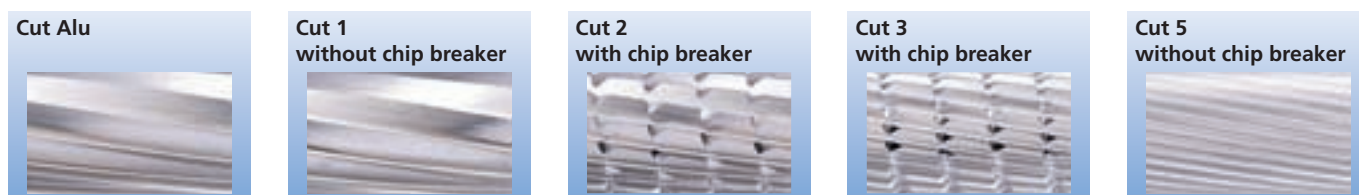


= Wear hearing protection!



Read the instructions!
= (Please observe the recommended RPM!)

Cut ALU 	Suitable for machining soft non-ferrous metals, brass, copper, aluminium alloys, plastics, fibre-reinforced plastics and rubber. RPM range depends on the rotary cutter diameter 3.900 to 5.900 RPM.
Cut 1 without chip breaker 	Suitable for machining steel, cast steel and stainless steel (INOX). RPM range depends on the rotary cutter diameter 1.200 to 6.300 RPM.
Cut 2 with chip breaker 	Suitable for machining steel, cast steel and cast iron materials. Also suitable for fine machining e.g. deburring steel, cast steel and cast iron materials, non-ferrous metals and plastics. RPM range depends on the rotary cutter diameter 1.200 to 13.200 RPM.
Cut 3 with chip breaker 	Suitable for machining steel, cast steel and cast iron materials. Also suitable for fine machining e.g. deburring steel, cast steel and cast iron materials. RPM range depends on the rotary cutter diameter 1.200 to 7.900 RPM.
Cut 5 without chip breaker 	Suitable for fine machining e.g. deburring steel, cast steel and cast iron materials. RPM range depends on the rotary cutter diameter 1.600 to 5.300 RPM.



Recommended rotational speed range

To determine the recommended cutting speed [m/min], please proceed as follows:

① Select the material group that is to be machined.

② Determine the type of application.

③ Select the cut.

④ Establish the cutting speed range.

To determine the recommended rotational speed [RPM], please proceed as follows:

⑤ Select the required cutter diameter.

⑥ The cutting speed range and the cutter diameter determine the recommended rotational speed range [RPM].

① Material groups			② Application	③ Cut	④ Cutting speed
Steel, cast steel	Non-hardened, non-heat treated steels up to 1200 N/mm ² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	Coarse machining = high stock removal	2	60 - 80 m/min
				3	
			Fine machining = low stock removal	3	80 - 100 m/min
				5	60 - 80 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse machining = high stock removal	1	60 - 80 m/min
			Fine machining = low stock removal	1	80 - 100 m/min
				2	60 - 80 m/min
Non-ferrous metals	Soft non-ferrous metals	Alu-alloys, brass, copper, zinc	Coarse machining = high stock removal	ALU	200 - 300 m/min
			Fine machining = low stock removal	1	
				2	200 - 250 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL, with nodular graphite cast iron EN-GJS, white annealed cast iron EN-GJMW, black cast iron EN-GJMB	Coarse machining = high stock removal	2	60 - 80 m/min
				3	
			Fine machining = low stock removal	3	80 - 100 m/min
				5	
Plastics and other materials	Fibre-reinforced thermoplastics, duroplastics, hard rubber, wood		Coarse machining = high stock removal	ALU	200 - 300 m/min
			Fine machining = low stock removal	1	
				1	250 - 300 m/min
				2	200 - 250 m/min

Example:

HSS rotary cutter, cut 2

Diameter: 12 mm.

Rough chipping of non-hardened, non-tempered steels.

Cutting speed: 60 - 80 m/min

Rotational speed: 1.600 - 2.100 RPM

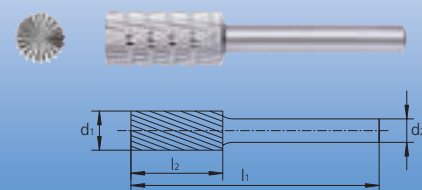
⑤ Dia. [mm]	⑥ Cutting speed [m/min]					
	60	80	100	200	250	300
	Rotational Speed [RPM]					
1,6	12.000	16.000	19.900	39.800	49.800	59.700
2,3	8.400	11.100	13.900	27.700	34.600	41.600
3,2	6.000	8.000	10.000	19.900	24.900	29.900
4,0	4.800	6.400	8.000	16.000	19.900	23.900
5,0	3.900	5.100	6.400	12.800	16.000	19.100
6,0	3.200	4.300	5.400	10.700	13.300	16.000
7,0	2.800	3.700	4.600	9.100	11.400	13.700
8,0	2.400	3.200	4.000	8.000	10.000	12.000
10,0	2.000	2.600	3.200	6.400	8.000	9.600
12,0	1.600	2.200	2.700	5.400	6.700	8.000
14,0	1.400	1.900	2.300	4.600	5.700	6.900
16,0	1.200	1.600	2.000	4.000	5.000	6.000










Cylindrical shape rotary cutter with end cut.

Ordering example:
 EAN 4007220**058596**
 HSS A 0413ST/6 C3
 Please state required cut.

Cylindrical shape with end cut A ST

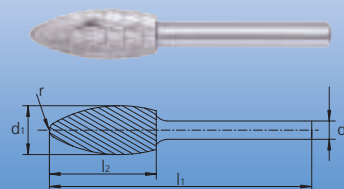





Order No.	ALU	Cuts				Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
		1 	2 	3 	5 					
EAN 4007220										
HSS A 0413ST/6	-	-	-	058596	-	6	4 x 13	60	5	62
HSS A 0616ST/6	-	058602	058619	058626	058633	6	6 x 16	60	5	70
HSS A 0820ST/6	-	-	-	058640	-	6	8 x 20	60	5	82
HSS A 1013ST/6	-	058657	058664	058671	-	6	10 x 13	53	5	85
HSS A 1020ST/6	-	-	-	058695	-	6	10 x 20	60	5	86
HSS A 1225ST/6	-	058701	058718	058725	058732	6	12 x 25	65	5	170
HSS A 1625ST/6	801345	-	058756	058763	-	6	16 x 25	65	5	240

Flame shape rotary cutter.

Ordering example:
 EAN 4007220**058787**
 HSS B 0820/6 C3

Flame shape B



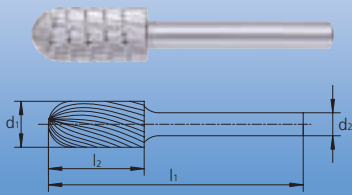
Order No.	Cut 3 	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Radius r [mm]		
	EAN 4007220						
HSS B 0820/6	058787	6	8 x 20	60	1,5	5	80
HSS B 1230/6	058794	6	12 x 30	70	2,0	5	110
HSS B 1635/6	058800	6	16 x 35	75	2,6	5	180

HSS Rotary Cutters

HSS Rotary Cutters Shank Dia. 6 mm



Cylindrical shape with radius end C



Cylindrical shape rotary cutter with radius end.

Ordering example:

EAN 4007220**058817**

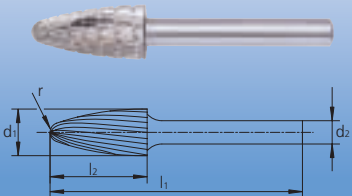
HSS C 0413/6 C3

Please state required cut.



Order No.	ALU	Cuts			Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]		
		1 	2 	3 					
EAN 4007220									
HSS C 0413/6	-	-	-	058817	6	4 x 13	60	5	62
HSS C 0616/6	-	058824	058831	058848	6	6 x 16	60	5	70
HSS C 0820/6	-	-	-	058879	6	8 x 20	60	5	80
HSS C 1020/6	-	-	-	058893	6	10 x 20	60	5	105
HSS C 1225/6	-	058909	058916	058923	6	12 x 25	65	5	160
HSS C 1625/6	058947	-	-	058961	6	16 x 25	65	5	200

Tree shape with radius end H



Tree-shaped rotary cutter with radius end.

Ordering example:

EAN 4007220**059319**

HSS H 0618/6 C3

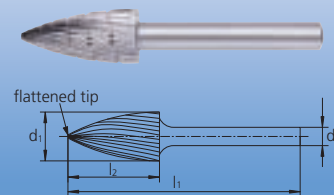
Order No.	Cut 3 	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
	EAN 4007220						
HSS H 0618/6	059319	6	6 x 18	60	1,5	5	58
HSS H 0820/6	059326	6	8 x 20	60	1,2	5	80
HSS H 1020/6	059333	6	10 x 20	60	2,5	5	82
HSS H 1225/6	059357	6	12 x 25	65	2,5	5	100
HSS H 1630/6	059364	6	16 x 30	70	3,6	5	170








Pointed tree shape rotary cutter.

Ordering example:
 EAN 4007220**059371**
 HSS K 0618/6 C1
 Please state required cut.

Pointed tree shape K

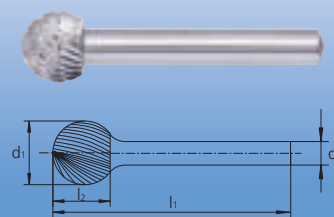


Order No.	Cuts					Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	ALU	1	2	3	5					
										
EAN 4007220										
HSS K 0618/6	-	059371	059388	059395	059401	6	6 x 18	60	5	65
HSS K 1020/6	-	-	-	059425	-	6	10 x 20	60	5	82
HSS K 1225/6	-	059432	-	059456	-	6	12 x 25	65	5	110
HSS K 1230/6	-	059470	059487	059494	-	6	12 x 30	70	5	130
HSS K 1630/6	059517	-	059524	059531	-	6	16 x 30	70	5	175

Ball-shaped rotary cutter.

Ordering example:
 EAN 4007220**058978**
 HSS F 0403/6 C1
 Please state required cut.

Ball shape F



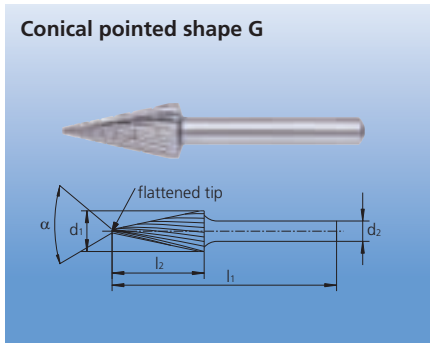
Order No.	Cuts				Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]		
	1	2	3	5					
									
EAN 4007220									
HSS F 0403/6	058978	-	058992	-	6	4 x 3	55	5	60
HSS F 0605/6	-	-	059029	-	6	6 x 5	55	5	65
HSS F 0807/6	059043	059050	059067	059074	6	8 x 7	55	5	80
HSS F 1009/6	-	-	059098	-	6	10 x 9	49	5	85
HSS F 1210/6	059111	-	059135	-	6	12 x 10	51	5	90
HSS F 1614/6	059159	059166	059173	-	6	16 x 14	54	5	115

HSS Rotary Cutters

HSS Rotary Cutters Shank Dia. 6 mm



Conical pointed shape G



Conical pointed rotary cutter.

Ordering example:

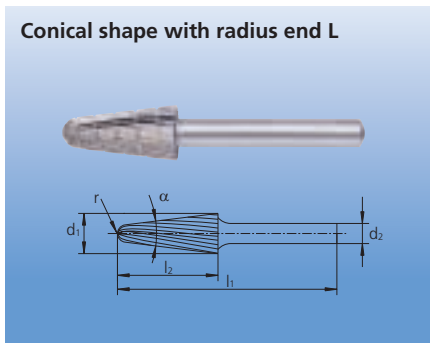
EAN 4007220059197

HSS G 0618/6 C1

Please state required cut.

Order No.	Cuts				Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Angle α		
	1	2	3	5						
	EAN 4007220									
HSS G 0618/6	059197	-	059210	059227	6	6 x 18	60	14°	5	63
HSS G 1020/6	059234	059241	059258	-	6	10 x 20	60	28°	5	80
HSS G 1225/6	059272	059289	059296	-	6	12 x 25	65	27°	5	100

Conical shape with radius end L



Conical shape rotary cutter with radius end.

Ordering example:

EAN 4007220059579

HSS L 1020/6 C3

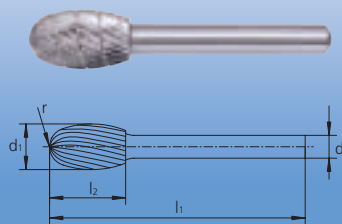
Please state required cut.

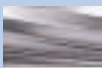



Order No.	ALU	Cuts		Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Angle α	Radius r [mm]		
		2	3							
	EAN 4007220									
HSS L 1020/6	-	059562	059579	6	10 x 20	60	14°	2,9	5	72
HSS L 1225/6	-	-	059593	6	12 x 25	65	14°	3,3	5	130
HSS L 1230/6	-	-	059609	6	12 x 30	70	14°	2,6	5	130
HSS L 1630/6	059616	-	059630	6	16 x 30	70	14°	4,8	5	180

Oval shape rotary cutter.

Ordering example:
 EAN 4007220059678
 HSS O 0610/6 C3
 Please state required cut.

Oval shape O

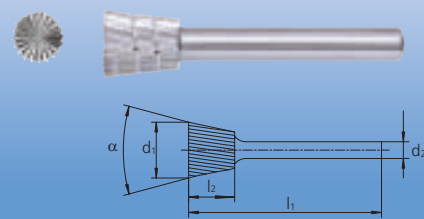



Order No.	ALU	Cuts			Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Radius r [mm]		
		1 	2 	3 						
	EAN 4007220									
HSS O 0610/6	-	-	-	059678	6	6 x 10	55	2,8	5	65
HSS O 1016/6	-	-	-	059692	6	10 x 16	56	4	5	105
HSS O 1220/6	-	059708	-	059722	6	12 x 20	60	5	5	110
HSS O 1625/6	059746	-	059753	059760	6	16 x 25	65	6,5	5	190

Inverted cone rotary cutter, tapering off towards the shank, with end cut.

Ordering example:
 EAN 4007220059784
 HSS W 1213/6 C3

Inverted cone shape W with end cut



Order No.	Cut 3 	Shank dia. d_2 [mm]	Burr dia. x length $d_1 \times l_2$ [mm]	Overall length l_1 [mm]	Angle α		
	EAN 4007220						
HSS W 1213ST/6	059784	6	12 x 13	53	20°	5	85

HSS Rotary Cutters

HSS Rotary Cutters, Special Shapes



Special shapes shank dia. 6 mm

HSS 45/6



HSS 55/6



HSS 63/6



HSS 64/6

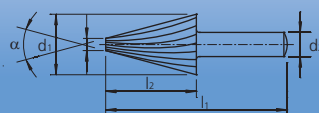
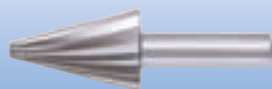


Rotary cutters in four special shapes with shank dia. 6 mm. Perfectly suited for diverse milling work due to different shapes.

Ordering example:
EAN 4007220056776
HSS 64/6 C3

Order No.	Cut 3	Shank dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Max. burr dia. [mm]	Min. burr dia. [mm]	Angle α		
	EAN 4007220								
HSS 45/6	056035	6	12 x 18	58	12	-	-	5	95
HSS 55/6	056424	6	6 x 20	60	6	-	-	5	60
HSS 63/6	056738	6	12 x 30	70	12	8	7°	5	130
HSS 64/6	056776	6	12 x 70	70	12	-	-	5	115

HSS antenna cutter



Conical cutter in special cut with shank dia. 8 mm.

Application:

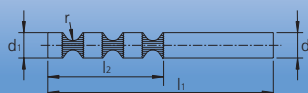
- Stepless milling
- Enlarging bores and holes, e.g. antenna mounting holes in car bodies

Recommendation for use:

Speed range 200-500 RPM
To be used for smallest burr dia., e.g. sheet edge work max. 9.000 RPM.

Order No.	Cut Special cut	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Max. burr dia. [mm]	Min. burr dia. [mm]	Angle α		
	EAN 4007220								
HSS 104/8	057902	8	20 x 30	60	20	4	31°	1	195

HSS edge trimming cutter



With their three identical cutting areas, these HSS edge trimming cutters provides "three-in-one" versatility and achieve a much longer service life.

Cylindrical rotary cutter with triple, concave contour in special cut with shank dia. 6 mm.

Application:

- Edge breaking to a defined radius

Recommendation for use:

Cutting speed range 60-80 m/min,
Speed range 3.100-4.200 RPM.
For use on smallest burr dia., e.g. sheet edge work max. 9.000 RPM.

Order No.	Cut Special cut	Shank dia. d ₂ [mm]	Burr dia. x length d ₁ x l ₂ [mm]	Overall length l ₁ [mm]	Max. burr dia. [mm]	Min. burr dia. [mm]	Radius r [mm]		
	EAN 4007220								
HSS 156/6	057964	6	8 x 30	70	8	5,5	5,0	1	92

Versatile rotary cutters for general use on aluminium, similar to tree shape.

Available in two different special cuts with female thread M10.

Recommendation for use:

For work on soft non-ferrous metals
Cutting speed range 200-300 m/min
Speed range 3.100-4.700 RPM
For work on aluminium applications up to max. 9.000 RPM.

Ordering note:

HSS 120 is delivered with chip breaker.

Ordering example:

EAN 4007220**057919**
HSS 119 M10 special cut



HSS aluminium cutters with female thread

HSS 119



HSS 120



Order No.	Cut	Max. burr dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Inside thread DIN	Suitable holder		
	Special cut EAN 4007220							
HSS 119 M10	057919	20	53	62	M10	6/10, 8/10	1	390
HSS 120 M10	057926	20	45	54	M10	6/10, 8/10	1	330

Arbors



Suitable for tools with female thread M10.



Ordering example:

4007220**062111**
BO 6/10

Arbor

for tools with female thread



Order No.	EAN 4007220	Shank dia. [mm]	Shank length [mm]	Thread (DIN)		
BO 6/10	062111	6	40	M10	1	22
BO 8/10	062128	8	40	M10	1	32

HSS Engraving Cutters Shank Dia. 6 mm

For fine-machining small and hard-to-reach places.

Available in special cut, different head shapes and dimensions.

Ordering example:

EAN 4007220**057971**
301/6 special cut

HSS engraving cutters

301/6



305/6



306/6





307/6



311/6



Order No.	Cut	Shank dia. [mm]	Shank length [mm]	Burr dia. x length [mm]	Angle α		
	Special cut EAN 4007220						
301/6	057971	6	40	3,0 x 2,7	-	5	62
305/6	058015	6	40	3,0 x 4,5	-	5	62
306/6	058022	6	40	3,0 x 4,5	34°	5	62
307/6	058039	6	40	3,0 x 4,5	-	5	62
311/6	058077	6	40	6,0 x 5,6	-	5	66

HSS Rotary Cutters

HSS Rotary Cutter Sets



Set 81 HSS




The tools are kept clean, protected, secured and neatly arranged in a non-breakable plastic box.

Contents:

10 HSS rotary cutters

1 piece each:

HSS A 0616 ST/6 C3	HSS K 0618/6 C3
HSS A 1013 ST/6 C3	HSS K 1230/6 C3
HSS A 1225/6 C3	HSS K 1630/6 C3
HSS C 0616/6 C3	HSS F 1210/6 C3
HSS C 1225/6 C3	HSS L 1630/6 C3

Order No.	Cut 3	Shank dia. [mm]		
	EAN 4007220			
81 HSS	060957	6	1	640

Set 82 HSS




The tools are kept clean, protected, secured and neatly arranged in a non-breakable plastic box.

Contents:

10 HSS rotary cutters

1 piece each:

HSS A 1013 ST/6 C3	HSS L 1020/6 C3
HSS A 1625 ST/6 C3	HSS L 1630/6 C3
HSS K 1630/6 C3	HSS O 1625/6 C3
HSS F 1614/6 C3	HSS W 1220/6 C3
HSS G 1020/6 C3	HSS 45/6 C3

Order No.	Cut 3	Shank dia. [mm]		
	EAN 4007220			
82 HSS	060988	6	1	415

Set 83 HSS



The tools are kept clean, protected and neatly arranged in a plastic box with transparent lid.

Contents:

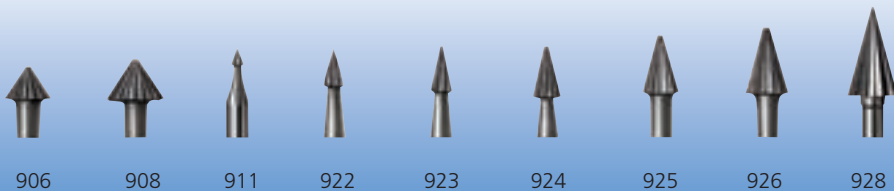
18 HSS rotary cutters

1 piece each:

HSS A 0616 ST/6 C3	HSS F 1210/6 C3
HSS A 1225/6 C3	HSS F 1614/6 C3
HSS C 0616/6 C3	HSS G 0618/6 C3
HSS C 1225/6 C3	HSS G 1225/6 C3
HSS K 0618/6 C3	HSS O 0610/6 C3
HSS K 1225/6 C3	HSS O 1220/6 C3
HSS K 1230/6 C3	HSS 55/6 C3
HSS F 0403/6 C3	HSS 63/6 C3
HSS 0807/6 C3	HSS 64/6 C3

Order No.	Cut 3	Shank dia. [mm]		
	EAN 4007220			
83 HSS	060995	6	1	490



906-928



For fine-machining small and hard-to-reach places.



Available with special cut, in nine different head shapes, and a wide range of dimensions, 3 mm shank dia., shank length 30 mm.

Ordering example:
EAN 4007220**058190**
906/3 special cut

Order No.	Cut	Shank dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Angle α	Radius r [mm]		
	Special cut EAN 4007220							
906/3	058190	3	6,0 x 4,2	34,2	70°	-	5	15
908/3	058213	3	8,0 x 5,5	35,5	70°	-	5	20
911/3	058244	3	1,6 x 2,8	32,8	32°	-	5	15
922/3	058251	3	2,3 x 4,0	34,0	32°	-	5	15
923/3	058268	3	3,2 x 5,6	35,6	32°	-	5	15
924/3	058275	3	4,0 x 7,0	37,0	32°	-	5	15
925/3	058282	3	5,0 x 8,7	38,7	32°	-	5	15
926/3	058299	3	6,0 x 10,5	40,5	32°	-	5	16
928/3	058312	3	8,0 x 14,0	44,0	32°	-	5	22

941-954



Order No.	Cut	Shank dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Angle α	Radius r [mm]		
	Special cut EAN 4007220							
941/3	058329	3	1,6	31,6	-	-	5	15
942/3	058336	3	2,3	32,3	-	-	5	15
943/3	058343	3	3,2	33,2	-	-	5	15
944/3	058350	3	4,0	34,0	-	-	5	15
945/3	058367	3	5,0	35,0	-	-	5	16
946/3	058374	3	6,0	36,0	-	-	5	18
947/3	058381	3	7,0	37,0	-	-	5	24
948/3	058398	3	8,0	38,0	-	-	5	25
951/3	058404	3	8,0 x 2,0	32,0	-	9,5	5	20
952/3	058411	3	10,0 x 2,5	32,5	-	11,5	5	22
953/3	058428	3	12,0 x 3,0	33,0	-	14	5	24
954/3	058435	3	14,0 x 3,5	33,5	-	15,5	5	28

HSS Rotary Cutters

HSS Finishing Cutters Shank Dia. 3 mm



961-987



For fine-machining small and hard-to-reach places.



Available with special cut, in nine different head shapes, and a wide range of dimensions, 3 mm shank dia., shank length 30 mm.

Ordering note:

HSS finishing cutters 985 and 987 are supplied with chip breakers.

Ordering example:

EAN 4007220**058442**
961/3 special cut

Order No.	Cut	Shank dia. [mm]	Burr dia. x length [mm]	Overall length [mm]	Angle α	Radius r [mm]		
	Special cut EAN 4007220							
961/3	058442	3	8,0 x 2,0	32,0	-	1,1	5	20
962/3	058459	3	10,0 x 2,3	32,3	-	1,25	5	25
963/3	058466	3	12,0 x 2,6	32,6	-	1,4	5	30
964/3	058473	3	14,0 x 3,0	33,0	-	1,6	5	35
971/3	058480	3	6,0 x 1,0	31,0	-	-	5	15
972/3	058497	3	8,0 x 1,0	31,0	-	-	5	20
973/3	058503	3	10,0 x 1,0	31,0	-	-	5	20
979/3	058534	3	7,0 x 10,0	40,0	22°	2	5	25
985/3	058565	3	7,0 x 10,0	40,0	-	-	5	28
986/3	058572	3	6,0 x 10,0	40,0	-	-	5	25
987/3	058589	3	7,0 x 12,0	42,0	-	-	5	25

Set 84 HSS



Suitable for fine stock removal on small and hard-to-reach places.



The tools are kept clean, protected and neatly arranged in a plastic box with transparent lid.

Contents:

15 HSS finishing cutters

1 piece each:

923	928	943
946	952	924
941	944	947
954	926	942
945	951	973

Order No.	Cut	Shank dia. [mm]		
	Special cut EAN 4007220			
84 HSS	061008	3	1	116



Robust high-performance tool for burr-free drilling and deburring of sheets, pipes and profiles. Materials up to a material thickness of 4 mm can be drilled and deburred in a labour-saving manner in one procedure. The high-quality coating is resistant against wear and suitable for diverse applications with steel and cast iron, stainless steel (INOX), non-ferrous metals, thermoplastics and duroplastics.

Advantages

- The deep-cut chip flute contributes to the extremely smooth running and high cutting performance.
- The high-quality drill tip ensures easy centring and drilling.

- The tool taper facilitates pulling back from drilled plates.
- Chips which do not break are cleanly removed as with a spiral drill.
- Built-up edges and cold welding on the blades are prevented.

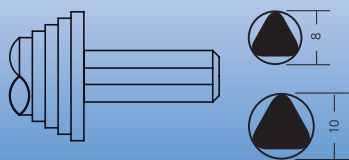
Recommendations for use

- The HSS step drill HICOAT® is used on sheets, pipes and profiles with a maximum material thickness of 4 mm.
- Cutting oil or compressed air can be used as coolant/lubricant.
- Please refer to the table for the recommended speed ranges.

	Steel, cast steel up to 700 N/mm ²	Steel, cast steel between 700 N/mm ² and 1.000 N/mm ²	Stainless steel (INOX)	Cast iron	Non-ferrous metals	Fibre reinforced plastics (GRP/CRP), thermoplastics
Step dia. [mm]	Recommended [RPM]					
4	2.390	1.590	1.590	1.190	2.390	1.590
6	1.590	1.060	1.060	800	1.590	1.060
8	1.190	800	800	600	1.190	800
10	950	640	640	480	950	640
12	800	530	530	400	800	530
14	680	450	450	340	680	450
16	600	400	400	300	600	400
18	530	350	350	270	530	350
20	480	320	320	240	480	320
22	430	290	290	220	430	290
24	400	270	270	200	400	270
26	370	240	240	180	370	240
28	340	230	230	170	340	230
30	320	210	210	160	320	210

HSS Step Drill HICOAT®



Shank dimensions [mm]



Ordering example:
EAN 4007220**802755**
STB HSS 04-20/8 HC-FE

HSS step drill HICOAT®



Order No.	EAN 4007220	No. of drill steps	Drill bit diameter range [mm]	Shank dia. [mm]	Shank length [mm]	Head length [mm]		
STB HSS 04-20/8 HC-FE	802755	9	4 - 20	8	21	54	1	63
STB HSS 04-30/10 HC-FE	802762	14	4 - 30	10	21	78	1	190



Hole saws, made of shatter-proof and tough HSS bimetal are used on drilling machines and hand-held drills.

Advantages

- Cost-effective sawing of round cut outs.
- Can be used on diverse materials such as alloy and non-alloy steels, stainless steel (INOX) – please observe recommended use – cast iron, aluminium, copper, bronze, brass, wood, plastics etc.
- Hole saws have an alternating tooth pitch which prevents chattering during sawing.
- PFERD offers a range of the most common HSS hole saws in sets for tradesmen, fitters, electricians and mechanics.
- Hole saws are centred and guided via the HSS pilot drill (supplied with compression spring for improved ejection of the sawn material).

Safety recommendations

When using shank extensions, the recommended hole saw speed ranges must not be exceeded. Risk of accidents!



= Wear eye protection!



Read the instructions!
= (Please observe the recommended RPM!)

Recommendations for use

- The pilot drill is clamped in the hole saw shank and should project at least 3 mm (1/8") over the hole saw teeth.
- When sawing metal, use a high-quality cutting oil. The cutting oil facilitates smooth running and lengthens the hole saw life.
Exceptions: Do not use cutting oil when working on cast iron. When working on aluminium add kerosene instead of cutting oil.
- HSS hole saws are suitable for work on stainless steel (INOX).
- To avoid corrosion, particles resulting during work must be removed. We recommend either mechanical or chemical cleaning (etching/polishing etc.)
- All teeth should be applied evenly. Avoid swinging movements during sawing to avoid tooth breaks.
- Avoid overheating the hole saw.

Application examples for HSS hole saws and TC hole cutters



ø [mm]	Application examples
25,0	Plumbing and heating pipes
30,0	Plumbing and heating pipes
32,0	Sink fittings dia. 32 mm
35,0	Sanitary and heating pipes, hollow wall junction boxes, halogen spots
40,0	Sanitary drain pipes
45,0	Water and heating pipes
50,0	Water and heating pipes, insulated
55,0	Built-in lights dia. 55 mm
60,0	Built-in lights dia. 60 mm

ø [mm]	Application examples
65,0	Pattress boxes dia. 65 mm (e.g. power sockets)
68,0	Pattress boxes dia. 68 mm
70,0	Hollow wall junction boxes dia. 70 mm
74,0	Hollow wall junction boxes dia. 74 mm
80,0	Distribution boxes, built-in lights, cable opening covers dia. 80 mm
90,0	Built-in lights dia. 90 mm
105,0	Waste air pipes

Please refer to table below for maximum cutting depth.

Thread:
LS 14-LS 30 = 1/2-20
LS 32-LS 152 = 5/8-18

Packaging unit 1 piece

Ordering note:


Please order hole saw arbors separately. Please refer to page 60 for detailed information on hole saw arbors.

Ordering example:

EAN 4007220319086
LS 14

HSS hole saws



Order No.	EAN 4007220	Dia. D [mm]	Dia. d [Inch]	Max. cutting [mm]	Max. cutting [Inch]	Rec. [RPM] Steel, cast steel < 700 N/mm²	Rec. [RPM] Steel, cast steel > 700 < 1.000 N/mm²	Rec. [RPM] Stainless steel (INOX)	Rec. [RPM] Non-ferrous metals	Rec. [RPM] Cast iron	Suitable arbors	
LS 14	319086	14	9/16	34	1 5/16	620	310	310	800	400	LSS 1, 4	28
LS 16	062319	16	5/8	34	1 5/16	550	275	275	730	365	LSS 1, 4	29
LS 17	319093	17	11/16	36	1 7/16	520	260	260	680	340	LSS 1, 4	32
LS 19	062326	19	3/4	36	1 7/16	460	230	230	600	300	LSS 1, 4	40
LS 20	062333	20	-	36	1 7/16	425	210	210	560	280	LSS 1, 4	42
LS 21	319109	21	13/16	36	1 7/16	410	205	205	540	270	LSS 1, 4	43
LS 22	062340	22	7/8	36	1 7/16	390	195	195	520	260	LSS 1, 4	50
LS 24	319116	24	15/16	36	1 7/16	360	180	180	470	235	LSS 1, 4	57
LS 25	062357	25	1	36	1 7/16	350	175	175	470	235	LSS 1, 4	60
LS 27	062364	27	1 1/16	36	1 7/16	325	160	160	435	215	LSS 1, 4	66
LS 29	062371	29	1 1/8	36	1 7/16	300	150	150	400	200	LSS 1, 4	68
LS 30	062388	30	1 3/16	36	1 7/16	285	145	145	380	190	LSS 1, 4	75
LS 32	062395	32	1 1/4	36	1 7/16	275	140	140	360	180	LSS 2	82
LS 33	062401	33	1 5/16	36	1 7/16	260	135	135	345	175	LSS 2	102
LS 35	062418	35	1 3/8	36	1 7/16	250	125	125	330	165	LSS 2	108
LS 37	319123	37	1 7/16	36	1 7/16	235	115	115	310	155	LSS 2	111
LS 38	062425	38	1 1/2	36	1 7/16	230	115	115	300	150	LSS 2	112
LS 40	319130	40	1 9/16	36	1 7/16	215	110	110	280	140	LSS 2	114
LS 41	062432	41	1 5/8	36	1 7/16	210	105	105	280	140	LSS 2	115
LS 43	319147	43	1 11/16	31	1 1/4	200	100	100	260	130	LSS 2	116
LS 44	062449	44	1 3/4	31	1 1/4	195	95	95	260	130	LSS 2	118
LS 46	319154	46	1 13/16	31	1 1/4	185	90	90	250	125	LSS 2	119
LS 48	062456	48	1 7/8	31	1 1/4	180	90	90	240	120	LSS 2	122
LS 51	062463	51	2	31	1 1/4	170	85	85	230	115	LSS 2	124
LS 52	319161	52	2 1/16	31	1 1/4	165	80	80	220	110	LSS 2	130
LS 54	062470	54	2 1/8	31	1 1/4	160	80	80	210	105	LSS 2	140
LS 57	062487	57	2 1/4	31	1 1/4	150	75	75	200	100	LSS 2	150
LS 59	319178	59	2 5/16	31	1 1/4	145	70	70	190	95	LSS 2	156
LS 60	062494	60	2 3/8	31	1 1/4	140	70	70	190	95	LSS 2	165
LS 64	062500	64	2 1/2	31	1 1/4	135	65	65	180	90	LSS 2	180
LS 65	319185	65	2 9/16	31	1 1/4	135	60	60	180	90	LSS 2	190
LS 67	062517	67	2 5/8	31	1 1/4	130	65	65	170	85	LSS 2	200
LS 68	500811	68	2 11/16	31	1 1/4	130	65	65	170	85	LSS 2	205
LS 70	062524	70	2 3/4	31	1 1/4	125	60	60	160	80	LSS 2	210
LS 73	062531	73	2 7/8	31	1 1/4	120	60	60	160	80	LSS 2	225
LS 76	062548	76	3	31	1 1/4	115	55	55	150	75	LSS 2	245
LS 79	062555	79	3 1/8	31	1 1/4	110	55	55	140	70	LSS 2	260
LS 83	062562	83	3 1/4	31	1 1/4	105	50	50	140	70	LSS 2	285
LS 86	319192	86	3 3/8	31	1 1/4	100	50	50	130	65	LSS 2	310

Continued on next page.

HSS Hole Saws

HSS Hole Saws and Sets



HSS hole saws



Please refer to table below for maximum cutting depth.

Thread:
LS 14-LS 30 = 1/2-20
LS 32-LS 152 = 5/8-18

Packaging unit 1 piece


Ordering note:

Please order hole saw arbors separately. Please refer to page 60 for detailed information on hole saw arbors.

Ordering example:

EAN 4007220**062579**
LS 89

Continued from last page.

Order No.	EAN 4007220	Dia. D [mm]	Dia. d [Inch]	Max. cutting [mm]	Max. cutting [Inch]	Rec. [RPM] Steel, cast steel < 700 N/mm ²	Rec. [RPM] Steel, cast steel > 700 < 1.000 N/mm ²	Rec. [RPM] Stainless steel (INOX)	Rec. [RPM] Non- ferrous metals	Rec. [RPM] Cast iron	Suitable arbors	
LS 89	062579	89	3 1/2	31	1 1/4	95	45	45	130	65	LSS 2	320
LS 92	062586	92	3 5/8	31	1 1/4	95	45	45	120	60	LSS 2	335
LS 95	062593	95	3 3/4	31	1 1/4	90	45	45	120	60	LSS 2	350
LS 98	319208	98	3 7/8	31	1 1/4	90	45	45	120	60	LSS 2	370
LS 102	062609	102	4	31	1 1/4	85	40	40	110	55	LSS 2	390
LS 105	062616	105	4 1/8	31	1 1/4	80	40	40	110	55	LSS 2	420
LS 111	319222	111	4 3/8	31	1 1/4	75	35	35	100	50	LSS 2	475
LS 114	062623	114	4 1/2	31	1 1/4	75	35	35	100	50	LSS 2	490
LS 121	319239	121	4 3/4	31	1 1/4	70	35	35	90	45	LSS 2	550
LS 127	319246	127	5	31	1 1/4	65	30	30	80	40	LSS 2	595
LS 140	319253	140	5 1/2	31	1 1/4	60	30	30	75	40	LSS 2	720
LS 152	319260	152	6	31	1 1/4	55	25	25	70	35	LSS 2	850

Set for craftsmen




Contains the most common diameters for use in the crafts.

The set is delivered neatly arranged in a protective plastic box. The Operating Instructions are included.

It is possible to use the LS 32 and LS 38 hole saws with the LSA adapter (with washer).

Contents:

5 HSS hole saws LS 22, LS 25, LS 29, LS 32, LS 38
1 hole saw arbor LSS 4
1 LSA adapter for a hole saw arbor LSS 4
1 allen key, 4 mm
1 ejection spring

Order No.	EAN 4007220	Dimension [mm]		
LS-SO 7 H	319314	168 x 116 x 57	1	600

Contains the most common diameters for plumbers and sanitary engineers.

The set is neatly arranged in a protective plastic box. The operating instructions are included.

It is possible to use the LS 38 hole saw in connection with the LSA adapter (with washer).

Contents:

6 HSS hole saws LS 19, LS 22, LS 29, LS 38, LS 44, LS 57
2 hole saw arbors LSS 2, LSS 4
1 LSA adapter for a hole saw arbor LSS 4
1 allen key, 4 mm
1 ejection spring

Set for plumbers



Order No.	EAN 4007220	Dimension [mm]		
LS-SO 9 I	319338	219 x 156 x 60	1	1.035

Contains the most common international diameters for electricians.

The set is neatly arranged in a protective plastic box. The operating instructions are included.

It is possible to use the LS 35 hole saw in connection with the LSA adapter (with washer).

Contents:

6 HSS hole saws LS 22, LS 29, LS 35, LS 44, LS 51, LS 64
2 hole saw arbors LSS 2, LSS 4
1 LSA adapter for a hole saw arbor LSS 4
1 allen key, 4 mm
1 ejection spring

Set for electricians (International standard sizes)



Order No.	EAN 4007220	Dimension [mm]		
LS-SO 9 E-1	319321	219 x 156 x 60	1	1.200

Contains the most common German diameters for electricians.

The set is neatly arranged in a protective plastic box. The operating instructions are included.

It is possible to use the LS 38 hole saw in connection with the LSA adapter (with washer).

Contents:

9 HSS hole saws LS 19, LS 22, LS 25, LS 32, LS 38, LS 44, LS 51, LS 60, LS 68
2 hole saw arbors LSS 2, LSS 4
1 LSA adapter for a hole saw arbor LSS 4
1 pilot drill LSB 6/90
1 allen key, 4 mm
1 ejection spring

Set for electricians (German standard sizes)



Order No.	EAN 4007220	Dimension [mm]		
LS-SO 13 E-2	319369	219 x 156 x 60	1	1.330

Contains the most common diameters for engineers in construction, containers and pipeline industries.

The set is neatly arranged in a protective plastic box. The operating instructions are included.

It is possible to use the LS 35 and LS 38 hole saws in connection with the LSA adapter (with washer).

Contents:

9 HSS hole saws LS 19, LS 22, LS 29, LS 35, LS 38, LS 44, LS 51, LS 57, LS 64
2 hole saw arbors LSS 2, LSS 4
1 pilot drill LSB 6/90
1 LSA adapter for a hole saw arbor LSS 4
1 allen key, 4 mm
1 ejection spring

Set for engineers



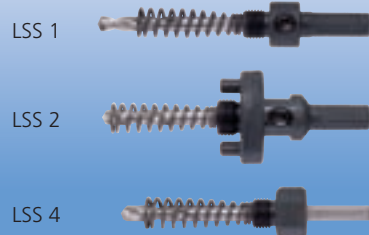
Order No.	EAN 4007220	Dimension [mm]		
LS-SO 13 M	319352	219 x 180 x 66	1	1.610

HSS Hole Saws

Hole Saw Arbors



Hole saw arbors LSS



Hole saw arbors are designed for mounting the hole saw and the pilot drill.

The PFERD range includes three different sizes. Select the appropriate arbor, taking into account the hole saw diameter and available tool drive spindle.

Purpose of the compression spring

This prevents "jamming" of the sawn-out material between the inner walls of the hole saw and the drill. The spring force ejects the material. Should this effect not be required for

a particular application, e.g. ready-installed pipes, the spring can easily be removed manually without the help of tools.

Ordering note:






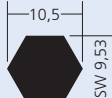

The hole saw arbors LSS 1 and LSS 2 are delivered with the HSS pilot drill LSB 6/60 and one ejection spring.

The hole saw arbor LSS 4 is delivered with the HSS pilot drill LSB 6/90 and one ejection spring.

Order No.	EAN 4007220	Shank dia. [mm]	Shank dia. [inch]	Thread [inch]	Shank type	Suitable for hole saws		
LSS 1	062630	9,53	3/8	1/2 - 20 UNF	hexagonal	LS 14 - 30	1	82
LSS 2	062647	9,53	3/8	5/8 - 18 UNF	hexagonal	LS 32 - 152	1	205
LSS 4	062661	6,35	1/4	1/2 - 20 UNF	round	LS 14 - 30	1	72

Arbor shapes

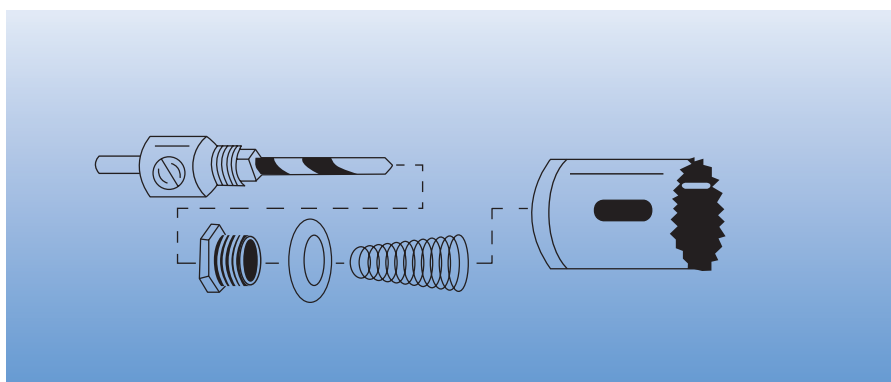
The adjacent table shows information on shank forms, LSS dimensions and LSB pilot drills. The appropriate PFERD hole saws have been shown.

PFERD-hole saw arbors no.	Shank dia. [mm]	Shank dia. [inch]	Shank shape	for PFERD hole saw no.
LSS 1	9,53	3/8		LS 14 - LS 30
LSS 2	9,53	3/8		LS 32 - LS 152
LSS 4	6,35	1/4		LS 14 - LS 30
Pilot drill LSB 6/60 LSB 6/90	6,35 6,35	1/4 1/4	 	for hole saw arbors LSS 1, 2, 4 LSS 1, 2, 4
Shank dimensions [mm]				

Compression spring

All hole saw arbors are delivered with a compression spring for better ejection of the sawn material.

Before application, this compression spring can be installed/deinstalled if required. Screw on the compression spring from the side with the smaller diameter up to its limit. It is also possible to use the compression spring with the LSA adapter (see diagram).



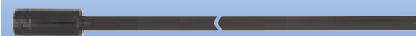
The HSS hole saw arbors LSS 1 and LSS 2 can be extended using the arbor extension SVL-300.



Advantages:

- Suitable for work on hard-to-reach components.
- Particularly suitable for work on hollow walls. Deep holes can be sawn with ease.

- Achieves the required distance between the power source and the work area.
- Avoids damage to workpiece and machine.
- Dust is not drawn into the power source during sawing.

Arbor extension for hole saws



Order No.	EAN 4007220	Hexagon socket (sw) [mm]	Hexagon socket (sw) [Inch]	Overall length [mm]	Overall length [inch]	Shank type	Width across flats [mm]	Suitable for		
SVL-300	798447	9,53	3/8	300	12	hexagonal	11	LSS 1, LSS 2	1	341


With the repair set for hole saw arbors the most common parts can be replaced in case of loss or damage.

Contents:

- 2 compression springs
- 2 hexagon socket head screws
- 1 hexagon socket wrench SW 4

Repair set for hole saw arbors



Order No.	EAN 4007220		
RSL-5	758953	1	34



Hole saws LS 32 to LS 38 can be used with the LSA adapter, a washer and the hole saws arbors LSS 1 and LSS 4.

Recommendation for use:

We do not recommend using the adapter for hole saws with a diameter of more than 38 mm.

LSA adapter



Order No.	EAN 4007220	Suitable for hole saws	Suitable for arbor		
LSA	319291	LS 32 - 38	LSS 1, 4	1	18

HSS Pilot Drill for HSS Hole Saws

The hole saw arbors LSS 1 and LSS 2 are delivered with the HSS pilot drill LSB 6/60.

Ordering example:
EAN 4007220319284
LSB 6/60

The hole saw arbor LSS 4 is delivered with the HSS pilot drill LSB 6/90.

HSS pilot drill LSB



Order No.	EAN 4007220	Shank dia. [mm]	Shank dia. [inch]	Shank type	Suitable for hole saws	Suitable for arbor		
LSB 6/60	319284	6,35	1/4	round	LS 14 - 152	LSS 1, 2	1	18
LSB 6/90	062708	6,35	1/4	round	LS 14 - 152	LSS 4	1	24

TC Hole Cutters

TC Hole Cutters, Recommendations for Use



Tungsten carbide hole cutters are professional tools for quick, precise hole-cutting (cut-outs) of between 16 and 105 mm in diameter. They are suitable for working on alloy and non-alloy steels, stainless steel (INOX), non-ferrous metals and plastics (including GRP). Tungsten carbide hole cutters are used on hand-held drills or on stationary machines.

Advantages

- High concentricity, as the cutting head and shank are produced in one piece.
- Optimum cutting performance due to sharp ground teeth from high-quality tungsten carbide.
- Replaceable HSS pilot drill.

Note

PFERD tungsten carbide hole cutters can be re-sharpened. Timely and professional re-sharpening substantially lengthens the tool life. Please call your local sharpening service.

PFERD offers two types of tungsten carbide hole cutters:

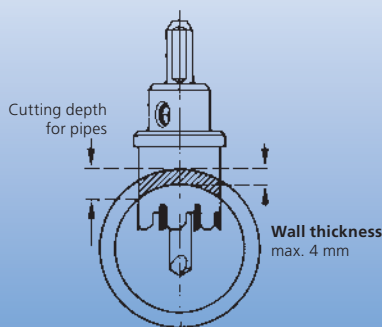
- 8 mm tool height (flat type) for work on sheets and flat materials, available in different diameters from 16 to 105 mm.
- 35 mm tool height (long type) for work on pipes and curved surfaces, available in different diameters from 16 to 60 mm.

Recommendations for use

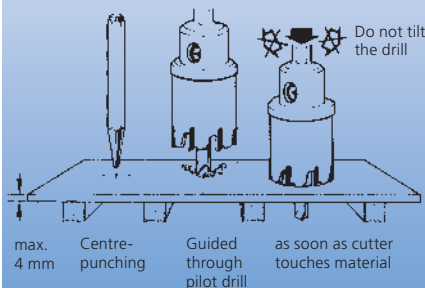
- The stated reference speeds (see "Recommended RPM") apply to machines capable of providing constant RPM under load. For low-power machines where speeds drop under load the RPM should be increased by about 30%. If the teeth of the cutter are not continuously engaged (e.g. on pipes or curved surfaces), the recommended RPM levels may be increased by up to 100%. This will help to prevent chatter and tooth breakage when using the cutter in a hand-held power tool.
- TC hole cutters are suitable for work on stainless steel (INOX).
- Particles from the workpieces which develop during work must be removed in order to avoid corrosion. We recommend mechanical and chemical cleaning (etching/polishing etc).

Recommendations for use

Pipes

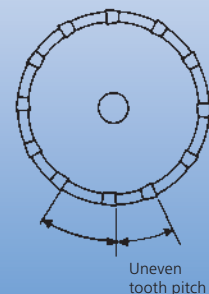


Flat products exit without obstruction.
Place supports **outside** the cutting area.



Tooth pitch

PFERD hole cutters have an irregular tooth pitch (distance between teeth) to prevent tool chatter.



TC hole cutters	Shank dia. mm	Shank shape
dia. 16 to 22 mm	7	
dia. 23 to 55 mm	10	
dia. 60 to 105 mm	12	

The adjacent table shows information about the shank shape and the dimensions of the LOS hole saw.

Safety recommendations



= Wear eye protection!

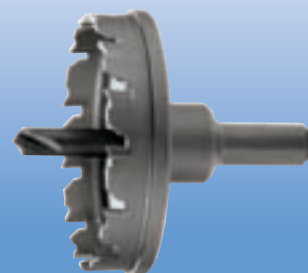




= Read the instructions!
(Please observe the recommended RPM!)

The flat type (tool height 8 mm) is suitable for work on flat materials up to 4 mm in thickness.

Ordering example:
EAN 4007220062913
LOS HM 1608

Flat type
tool height 8 mm



Order No.	EAN 4007220	Dia. D [mm]	Shank dia. [mm]	Rec. [RPM] Steel, cast steel	Rec. [RPM] Stainless steel (INOX)	Matching drill		
LOS HM 1608	062913	16	7	790 - 1.200	400 - 1.000	LOSB 6/48	1	84
LOS HM 1808	062937	18	7	710 - 1.060	350 - 880	LOSB 6/48	1	88
LOS HM 1908	062944	19	7	670 - 1.000	330 - 480	LOSB 6/48	1	92
LOS HM 2008	062951	20	7	630 - 950	320 - 800	LOSB 6/48	1	96
LOS HM 2108	062968	21	7	600 - 910	300 - 760	LOSB 6/48	1	100
LOS HM 2208	062975	22	7	580 - 870	290 - 720	LOSB 6/48	1	104
LOS HM 2308	062982	23	10	550 - 830	280 - 690	LOSB 6/48	1	120
LOS HM 2408	062999	24	10	530 - 800	270 - 660	LOSB 6/48	1	122
LOS HM 2508	063002	25	10	510 - 760	260 - 640	LOSB 6/48	1	126
LOS HM 2708	063026	27	10	470 - 710	240 - 590	LOSB 6/48	1	130
LOS HM 2808	063033	28	10	455 - 680	230 - 570	LOSB 6/48	1	132
LOS HM 3008	063057	30	10	425 - 635	210 - 530	LOSB 6/48	1	138
LOS HM 3208	063071	32	10	400 - 600	200 - 500	LOSB 6/48	1	150
LOS HM 3408	063095	34	10	375 - 560	185 - 470	LOSB 6/48	1	150
LOS HM 3508	063101	35	10	365 - 545	180 - 450	LOSB 6/48	1	158
LOS HM 3808	063132	38	10	335 - 505	170 - 420	LOSB 6/48	1	168
LOS HM 4008	063156	40	10	320 - 480	160 - 400	LOSB 6/48	1	190
LOS HM 4208	063170	42	10	305 - 455	150 - 380	LOSB 6/48	1	192
LOS HM 4308	063187	43	10	295 - 445	150 - 370	LOSB 6/48	1	196
LOS HM 4508	063200	45	10	285 - 425	140 - 355	LOSB 6/48	1	202
LOS HM 4808	063231	48	10	265 - 400	135 - 330	LOSB 6/48	1	214
LOS HM 5008	063255	50	10	255 - 380	125 - 320	LOSB 6/48	1	220
LOS HM 5108	063262	51	10	250 - 375	125 - 310	LOSB 6/48	1	232
LOS HM 5208	063279	52	10	245 - 370	120 - 305	LOSB 6/48	1	232
LOS HM 5408	063293	54	10	235 - 355	120 - 295	LOSB 6/48	1	250
LOS HM 5508	063309	55	10	230 - 350	115 - 290	LOSB 6/48	1	250
LOS HM 6008	063354	60	12	210 - 320	105 - 265	LOSB 8/48	1	280
LOS HM 6508	063361	65	12	195 - 295	100 - 245	LOSB 8/48	1	314
LOS HM 6808	063378	68	12	190 - 280	95 - 235	LOSB 8/48	1	330
LOS HM 7008	063385	70	12	180 - 270	90 - 230	LOSB 8/48	1	342
LOS HM 7508	063392	75	12	170 - 255	85 - 215	LOSB 8/48	1	370
LOS HM 8008	063408	80	12	160 - 240	80 - 200	LOSB 8/48	1	400
LOS HM 9008	063422	90	12	140 - 210	70 - 180	LOSB 8/48	1	490
LOS HM 10008	063446	100	12	125 - 190	65 - 160	LOSB 8/48	1	580
LOS HM 10508	063453	105	12	120 - 180	60 - 150	LOSB 8/48	1	680

TC Hole Cutters

TC Hole Cutters



**Long type
tool height 35 mm**



The long type (tool height 35 mm) is suitable for use on curved surfaces and pipe materials.

Ordering note:



LOS HM 6060: tool height 60 mm

Ordering example:

EAN 4007220**063491**

LOS HM 1635



Order No.	EAN 4007220	Dia. D [mm]	Shank dia. [mm]	Rec. [RPM] Steel, cast steel	Rec. [RPM] Stainless steel (INOX)	Matching drill		
LOS HM 1635	063491	16	7	790 - 1.200	400 - 1.000	LOSB 6/69	1	100
LOS HM 1735	063507	17	7	750 - 1.130	370 - 930	LOSB 6/69	1	102
LOS HM 1835	063514	18	7	710 - 1.060	350 - 880	LOSB 6/69	1	104
LOS HM 1935	063521	19	7	670 - 1.000	330 - 480	LOSB 6/69	1	108
LOS HM 2035	063538	20	7	630 - 950	320 - 800	LOSB 6/69	1	110
LOS HM 2135	063545	21	7	600 - 910	300 - 760	LOSB 6/69	1	112
LOS HM 2235	063552	22	7	580 - 870	290 - 720	LOSB 6/69	1	118
LOS HM 2435	063576	24	10	530 - 800	270 - 660	LOSB 8/69	1	152
LOS HM 2535	063583	25	10	510 - 760	260 - 640	LOSB 8/69	1	160
LOS HM 2635	063590	26	10	490 - 740	250 - 610	LOSB 8/69	1	162
LOS HM 2735	063606	27	10	470 - 710	240 - 590	LOSB 8/69	1	164
LOS HM 2835	063613	28	10	455 - 680	230 - 570	LOSB 8/69	1	170
LOS HM 3035	063637	30	10	425 - 635	210 - 530	LOSB 8/69	1	174
LOS HM 3235	063651	32	10	400 - 600	200 - 500	LOSB 8/69	1	180
LOS HM 3535	063682	35	10	365 - 545	180 - 450	LOSB 8/69	1	200
LOS HM 3835	063712	38	10	335 - 505	170 - 420	LOSB 8/69	1	212
LOS HM 4035	063736	40	10	320 - 480	160 - 400	LOSB 8/69	1	218
LOS HM 4235	063750	42	10	305 - 455	150 - 380	LOSB 8/69	1	234
LOS HM 4335	063767	43	10	295 - 445	150 - 370	LOSB 8/69	1	242
LOS HM 4535	063781	45	10	285 - 425	140 - 355	LOSB 8/69	1	250
LOS HM 4835	063811	48	10	265 - 400	135 - 330	LOSB 8/69	1	264
LOS HM 5035	063835	50	10	255 - 380	125 - 320	LOSB 8/69	1	280
LOS HM 5235	063842	52	10	245 - 370	120 - 305	LOSB 8/69	1	284
LOS HM 5535	063859	55	10	230 - 350	115 - 290	LOSB 8/69	1	304
LOS HM 6060	063866	60	12	210 - 320	105 - 265	LOSB 8/94	1	400

HSS Pilot Drill for TC Hole Cutters

HSS pilot drill LOSB





The HSS pilot drill is replaceable.

Ordering example:

EAN 4007220**063873**

LOSB 6/48

Order No.	EAN 4007220	Suitable for carbide tipped hole cutter dia. [mm]	Tool height [mm]		
LOSB 6/48	063873	16 - 59	8	1	11
LOSB 6/69	063880	16 - 22	35	1	16
LOSB 8/69	063903	23 - 59	35	1	28
LOSB 8/94	063910	60	60	1	37
LOSB 8/48	063897	60 - 105	8	1	19