PFERD

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Milling, drilling and countersinking tools

Milling, drilling and countersinking tools

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Tungsten carbide burrs for high-performance applications

Tungsten carbide burrs from the high-performance line provide fast and efficient solutions.

The innovative and sophisticated system for work on surfaces includes a wide range of high-performance cuts for a variety of materials and applications.

Scan the QR code to find out more about the PFERD cuts for specific materials and applications.

Advantages:
- Optimum stock removal rate, high aggressiveness and good guidance.
- High economic efficiency compared with conventional burrs.
- The highly accurate concentricity enables impact-free working without creating chatter marks.
- Significant time savings.
- Also available with a high-quality HICOAT coating.

Milling tools with cutting inserts

A high stock removal rate, a lower tendency to clog up and the production of large chips rather than hazardous dust are just three reasons to use milling tools when machining aluminium.

PFERD has developed innovative milling tools with cutting inserts such as the High Speed Disc **ALU**MASTER and the High Speed Torus Cutter for safe and efficient processing of aluminium. Whether used for milling out, work on weld seams and fillet welds or for edge and surface work, the unique milling tools are versatile and also suitable for robot-assisted applications.

Scan the QR code to find out more about PFERD tools with cutting inserts.

Advantages:
- Do not generate hazardous or explosive dust.
- An extraction system is not required.
- Exceptionally high stock removal rate.
- Turnable and replaceable tungsten carbide cutting inserts.

HICOAT coating

PFERD offers tools with HICOAT coatings to tackle particularly demanding applications. Two different coatings are available. The HICOAT coating HC-FEP is specifically designed for iron and steel materials.

The HICOAT coating HC-NFE is mainly used for long-chipping and lubricating aluminium alloys and non-ferrous metals. In general, all PFERD tungsten carbide burrs are also available with HICOAT coatings.

Scan the QR code to find out more about PFERD's HICOAT coatings.

Advantages:
- Improved anti-adhesion characteristics.
- Effective chip discharge.
- Lower thermal loads.
- Increased tool life.
- Burrs with the HICOAT coating HC-FEP achieve a much higher stock removal rate than uncoated burrs.

Milling, drilling and countersinking tools
General information

Custom-made products

If you cannot find the solution for your particular application in our comprehensive catalogue range, we are happy to produce milling tools to meet your wishes and requirements. Our sales representatives and technical advisers will be happy to assist you in analyzing your task. Your specifications and wishes, drawings relating to cuts, shank diameters, special lengths, special shapes and coatings can thus be taken into account.

Resharpening

PFERD offers resharpening of tungsten carbide burrs, subject to a minimum resharpening quantity of 25 units (unmixed items). Regrinding of HSS rotary cutters or tungsten carbide burrs with a shank diameter of 3 mm is not recommended for economic reasons. In each case, our production specialists will decide whether resharpening makes sense from an economic point of view and is technically feasible. The following cuts can be resharpened (only applies to a shank diameter of 6 and 8 mm):

- Cut 1
- Cut 3
- Cut 3 PLUS
- Cut 4
- Cut 5
- INOX
- ALU
- TITANIUM
- TOUGH
- TOUGH-S
- MICRO

Safety notes

- For safety reasons, the maximum permitted rotational speed indicated must never be exceeded.

Wear eye protection!

Wear gloves!

Wear a dust mask!

Wearing protective gloves is recommended. Handle the tool drive with both hands.

Observe the recommended rotational speed, especially when using burrs with long shanks!

Observe the contact angle of 5–60° (**ALU**MASTER HSD-F)!

Tighten the bolts!

Do not use if damaged!

Do not use for cutting!

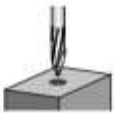
CE-marked

Burr shapes

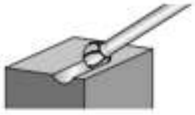
ZYA
Cylindrical shape

ZYA BS
Cylindrical shape with drill cut

ZYAS/HSS A-ST
Cylindrical shape with end cut

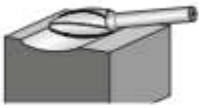


ZYA ZBS
Cylindrical shape with centre drill



KUD/HSS F
Ball shape

WRC/HSS C
Cylindrical shape with radius end



B
Flame shape

SPG/ HSS K
Pointed tree shape

KEL/HSS L
Conical shape with radius end

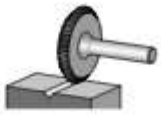
SKM/HSS G
Conical pointed shape

RBF/HSS H
Tree shape with radius end

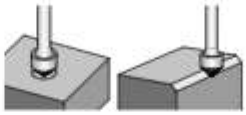
TRE/HSS O
Oval shape

WKN
Inverted cones

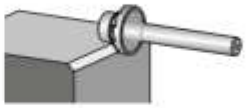
WKNS/HSS W-ST
Inverted cones with end cut



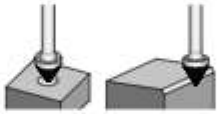
N
Disc shape



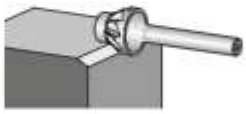
KSK
Conical counterbore shape 90°



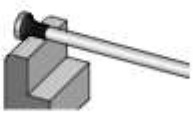
KSK EDGE
EDGE 45°



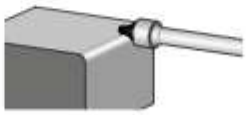
KSJ
Conical counterbore shape 60°



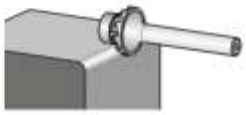
KSJ EDGE
EDGE 30°



R
Radius burrs



V
Concave radius burrs



V EDGE
EDGE R3.0

Milling, drilling and countersinking tools

The quick way to find the perfect tool

2

Application	Material group			Used for	High-performance application	Universal application
Deburring, chamfering, milling out for the preparation of build-up welding, machining weld seams, machining contours, cleaning cast material	Steel, cast steel	Steels up to 1,200 N/mm² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal	STEEL ALLROUND	3 PLUS
				Fine stock removal	MICRO	5
		Hardened, heat-treated steels over 1,200 N/mm² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal	STEEL ALLROUND	3 PLUS
				Fine stock removal	MICRO	5
	Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	INOX ALLROUND	4
				Fine stock removal	MICRO	5
	Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys	Coarse stock removal	ALU	1
				Fine stock removal		-
			Brass, copper, zinc	Coarse stock removal	NON-FERROUS ALU ALLROUND	1
				Fine stock removal	ALU	3
		Hard non-ferrous metals	Bronze, titanium/ titanium alloys, hard aluminium alloys (high Si content)	Coarse stock removal	TITANIUM ALU NON-FERROUS INOX ALLROUND	4
				Fine stock removal	MICRO	5
		High-temperature-resistant materials	Nickel-based and cobalt-based alloys (engine and turbine construction)	Coarse stock removal	On request	4
				Fine stock removal	MICRO	5
	Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Coarse stock removal	CAST ALLROUND	3 PLUS
				Fine stock removal	MICRO	3
Milling out, machining contours	Plastics, other materials	Thermoplastics, fibre-reinforced plastics (GRP/CRP) with a fibre content ≤ 40%		Coarse stock removal	PLAST	-
Trimming, contour milling, cutting out holes		Thermoplastics, fibre-reinforced plastics (GRP/CRP) with a fibre content > 40%			FVK/FVKS ALU NON-FERROUS	

Special applications

Application	High-performance application	Universal application
Work on edges	TC burrs for work on edges	-
	EDGE FINISH system for work on edges	-
Problems with broken teeth	TC burrs – TOUGH, TOUGH-S cuts	HSS rotary cutters
Cutting out round holes	TC hole cutter	HSS step drills, HSS hole saws
Machining butt welds and fillet welds, work on edges/ chamfering using an angle grinder	**ALU**MASTER High Speed Disc	-
Machining butt welds and fillet welds, work on edges	High Speed Torus Cutter	-

PFERD cuts for universal applications

Cut 1 (C according to DIN 8033)
- Machining of non-ferrous metals, steel and cast iron.
- High stock removal.

Cut 3 (MY according to DIN 8033)
- Machining of steel, cast iron, stainless steel (INOX), nickel-based alloys and titanium alloys.
- High stock removal.
- Good surface.

Cut 3 PLUS (MX according to DIN 8033)
- Similar to the 3 cut, but with cross cut.
- Machining of steel, cast iron, stainless steel (INOX), nickel-based alloys and titanium alloys.
- High stock removal.
- Burrs with the HICOAT coating HC-FEP achieve a much higher stock removal rate than uncoated burrs.

Cut 4 (MX according to DIN 8033)
- Machining of stainless steel (INOX), steel and high-temperature-resistant materials such as nickel-based and cobalt-based alloys.
- High stock removal with short chips.
- Good surface.

Cut 5 (F according to DIN 8033)
- Fine machining of steel, cast iron, stainless steel (INOX) and high-temperature-resistant materials such as nickel-based and cobalt-based alloys.
- Good surface.

PFERD cuts for high-performance applications

ALLROUND cut
- High stock removal rate on key materials such as steel, cast steel, stainless steel (INOX), non-ferrous metals and cast iron.
- Similar to the 3 PLUS cut but with a significantly higher stock removal rate.
- Burrs with the HICOAT coating HC-FEP achieve a much higher stock removal rate than uncoated burrs.

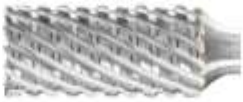
STEEL cut
- Extremely high stock removal rate on steel and cast steel.
- Smooth milling.
- Reduced vibration and less noise.
- Burrs with the HICOAT coating HC-FEP achieve a much higher stock removal rate than uncoated burrs.

INOX cut
- Extremely high stock removal rate on all austenitic, rust and acid-resistant steels, stainless steel (INOX) and soft titanium alloys (tensile strength < 500 N/mm²).
- Significantly reduced vibration and less noise.
- Burrs with the HICOAT coating HC-FEP achieve a much higher stock removal rate than uncoated burrs.

ALU cut
- High stock removal rate on aluminium and aluminium alloys, non-ferrous metals and plastics.
- Smooth milling.
- HICOAT coating HC-NFE for long-chipping and lubricating aluminium alloys and non-ferrous metals.

NON-FERROUS cut
- High stock removal rate on non-ferrous metals, brass, copper, plastics and fibre-reinforced plastics.
- Suitable for universal use.

CAST cut
- Extremely high stock removal rate on cast iron.
- Smooth milling.
- Reduced vibration and less noise.



TITANIUM cut
- Outstanding stock removal rate and tool life on hard titanium alloys.
- Tangibly more aggressive, large chips and very good chip removal.
- Reduced vibration and less noise.
- For soft titanium alloys (tensile strength < 500 N/mm²), PFERD recommends the INOX cut.

EDGE cut
- Creates exact edge shapes – with either 30° or 45° chamfering or a defined radius of 3.0 mm.
- Safe and comfortable to guide.

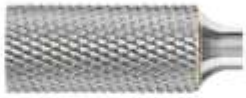
PLAST cut
- Trimming and contour milling of workpieces made from less hard glass and carbon-fibre-reinforced duroplastics (GRP and CRP with ≤ 40 % fibre content) and fibre-reinforced thermoplastics.
- Minimized delamination and fraying through straight cut.
- Highly suitable for use on machines and on robots.
- Reduced vibration and less noise.

FVK cut
- Trimming and contour milling of workpieces made from hard glass and carbon-fibre-reinforced duroplastics (also GRP and CRP > 40 %).

FVKS cut
- Similar to the FVK cut.
- Smooth milling.

TOUGH cut
- High stock removal rate on cast iron, steel < 54 HRC.
- Extremely resistant to impacts.
- Also suitable for use with high surface contact angles > 1/3 and under impact loads.

TOUGH-S cut
- High stock removal rate on cast iron, steel < 54 HRC.
- Similar to the TOUGH cut, but with smoother milling and shorter chips.
- Extremely resistant to impacts.
- Also suitable for use with high surface contact angles > 1/3 and under impact loads.



MICRO cut
- Good stock removal on almost all materials < 68 HRC.
- High surface quality.
- Reduced vibration and less noise.

Note
- On tungsten carbide burrs designed for high-performance applications, blue discolouration cannot be avoided on account of the very high stock removal rate. However, this does not constitute a safety risk.

Tungsten carbide burrs with a long shank

Tungsten carbide burrs with long shanks are particularly well suited to working in hard-to-reach areas. PFERD holds long-shank versions in stock for the respective product groups. Long-shank versions are available with the 3 PLUS, STEEL, Z5 and TOUGH cuts. Additional variants can be custom-made on request. Tungsten carbide burrs with a long shank should only be used with rigid clamping systems and drives. Long-shank versions are not suitable for robotic or stationary applications. There is a risk that they may break off!

In some applications, drive spindle extensions are an economic alternative to customized burrs with long shanks.

For more information please see catalogue section 9.

Explanation of the code system

d_1 = Burr dia.
l_2 = Cut length
d_2 = Shank dia.
l_1 = Total length

Recommendations for use

An optimum rotational speed and power output for the tool drive are required for cost-effective use of tungsten carbide burrs. Using tungsten carbide burrs on drives with an elastically mounted spindle significantly improves comfort when working. What's more, the grinder's elastically mounted spindle guarantees a longer tool life, especially when using tungsten carbide burrs. Scan the QR code with your mobile device to obtain more handy recommendations for use relating to milling work.

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group 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 range [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.

① Material group			② Used for	③ Cut	④ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal	1	600–900 m/min
				3 PLUS	450–600 m/min
				3 PLUS HC-FEP	450–750 m/min
			Fine stock removal	5	450–600 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal	3	250–350 m/min
				3 PLUS	
				4	
				3 PLUS HC-FEP	250–450 m/min
			Fine stock removal	5	350–450 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	1	250–450 m/min
				3	250–350 m/min
				3 PLUS	
				4	250–450 m/min
			Fine stock removal	5	350–450 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys	Coarse stock removal	1	600–900 m/min
		Brass, copper, zinc	Coarse stock removal	1	600–900 m/min
			Fine stock removal	3	450–600 m/min
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard aluminium alloys (high Si content)	Coarse stock removal	3	250–350 m/min
				4	
			Fine stock removal	5	350–450 m/min
	High-temperature-resistant materials	Nickel-based and cobalt-based alloys (engine and turbine construction)	Coarse stock removal	3 PLUS	250–450 m/min
				4	
			Fine stock removal	5	350–600 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Coarse stock removal	1	600–900 m/min
				3 PLUS	450–600 m/min
			Fine stock removal	3	450–600 m/min

TC burrs

Cutting speeds – burrs for material-specific applications

① Material group			② Used for	③ Cut	④ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (below 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal	ALLROUND	450–750 m/min
				ALLROUND HC-FEP	450–900 m/min
				STEEL	450–750 m/min
				STEEL HC-FEP	450–900 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (over 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal	ALLROUND	250–450 m/min
				ALLROUND HC-FEP	250–600 m/min
				STEEL	450–750 m/min
				STEEL HC-FEP	450–900 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	ALLROUND	450–600 m/min
				INOX	450–600 m/min
			Fine stock removal	INOX HC-FEP	450–750 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys	Coarse stock removal	ALU	600–1,100 m/min
				ALU HC-NFE	600–1,300 m/min
			Fine stock removal	ALU	900–1,100 m/min
				ALU HC-NFE	900–1,300 m/min
		Brass, copper, zinc	Coarse stock removal	ALLROUND	450–750 m/min
				ALLROUND HC-FEP	450–900 m/min
				ALU	600–1,100 m/min
				ALU HC-NFE	600–1,300 m/min
				NON-FERROUS	450–600 m/min
			Fine stock removal	ALU	900–1,100 m/min
				ALU HC-NFE	900–1,300 m/min
	Hard non-ferrous metals	Titanium/titanium alloys, hard aluminium alloys (high Si content)	Coarse stock removal	ALLROUND	450–600 m/min
				ALLROUND HC-FEP	450–750 m/min
				INOX	250–450 m/min
				INOX HC-FEP	250–600 m/min
		Hard titanium alloys	Coarse stock removal	TITANIUM	250–450 m/min
		Bronze	Coarse stock removal	ALLROUND	450–600 m/min
				ALLROUND HC-FEP	450–750 m/min
				ALU	600–900 m/min
				ALU HC-NFE	600–1,300 m/min
				NON-FERROUS	600–900 m/min
			Fine stock removal	ALU	900–1,100 m/min
				ALU HC-NFE	900–1,300 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/ nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Coarse stock removal	ALLROUND	450–900 m/min
				CAST	450–750 m/min
Plastics, other materials	Thermoplastics, Fibre-reinforced plastics (GRP/CRP)		Coarse stock removal	NON-FERROUS	600–1,100 m/min
				ALU	
				ALU HC-NFE	600–1,300 m/min
				PLAST	450–900 m/min
				FVK	
			Fine stock removal	ALU	600–1,100 m/min
				ALU HC-NFE	600–1,300 m/min
				FVKS	450–900 m/min

TC burrs

Cutting speeds – burrs for special applications

① Material group			② Used for	③ Cut	④ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (below 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal with impact load	TOUGH	250–600 m/min
				TOUGH-S	
			Work on edges	3	450–600 m/min
				3 PLUS	
				SP	
				EDGE	600–900 m/min
			Fine stock removal	MICRO	600–750 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (over 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal with impact load	TOUGH	250–350 m/min
				TOUGH-S	
			Work on edges	3	250–350 m/min
				3 PLUS	
				SP	
				5	350–450 m/min
				EDGE	600–750 m/min
			Fine stock removal	MICRO	450–600 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Work on edges	3	250–350 m/min
				3 PLUS	
				SP	
				5	350–450 m/min
			Fine stock removal	MICRO	450–600 m/min
Non-ferrous metals	Soft non-ferrous metals	Soft aluminium alloys	Work on edges	EDGE ALU	900–1,100 m/min
		Brass, copper, zinc	Work on edges	3	600–900 m/min
				3 PLUS	
				SP	
				EDGE ALU	900–1,100 m/min
				EDGE	600–900 m/min
	Hard non-ferrous metals	Bronze, hard aluminium alloys (high Si content)	Work on edges	3	250–450 m/min
				3 PLUS	
				EDGE ALU	900–1,100 m/min
				EDGE	250–450 m/min
			Fine stock removal	MICRO	450–600 m/min
		Titanium/titanium alloys	Work on edges	SP	250–450 m/min
				EDGE	
			Fine stock removal	MICRO	450–600 m/min
	High-temperature-resistant materials	Nickel-based and cobalt-based alloys (engine and turbine construction)	Work on edges	5	350–600 m/min
				EDGE	250–450 m/min
			Fine stock removal	MICRO	450–600 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Coarse stock removal with impact load	TOUGH	250–600 m/min
				TOUGH-S	
			Work on edges	3	450–600 m/min
				3 PLUS	
				SP	
			Fine stock removal	MICRO	600–750 m/min
Plastics, other materials	Fibre-reinforced plastics (GRP/CRP), thermoplastics		Work on edges	EDGE ALU	750–1,100 m/min

Example:
TC burr,
ALLROUND cut,
Burr dia. 12 mm.
Coarse stock removal on steels up to 1,200 N/mm².
Cutting speed: 450–750 m/min
Rotational speed range:
12.000–20.000 RPM

⑤ Burr dia. [mm]	⑥ Cutting speeds [m/min]							
	250	350	450	600	750	900	1,100	1,300
	Rotational speeds [RPM]							
1.5	53,000	74,000	95,000	127,000	159,000	191,000	233,000	275,000
2	40,000	56,000	72,000	95,000	119,000	143,000	175,000	206,000
3	27,000	37,000	48,000	64,000	80,000	95,000	117,000	138,000
4	20,000	28,000	36,000	48,000	60,000	72,000	88,000	104,000
5	16,000	22,000	29,000	40,000	48,000	57,000	70,000	83,000
6	13,000	19,000	24,000	32,000	40,000	48,000	59,000	70,000
8	10,000	14,000	18,000	24,000	30,000	36,000	44,000	52,000
10	8,000	11,000	14,000	19,000	24,000	29,000	35,000	41,000
12	7,000	9,000	12,000	16,000	20,000	24,000	30,000	34,000
13	6,000	9,000	11,000	15,000	22,500	22,000	27,000	32,000
16	5,000	7,000	9,000	12,000	15,000	18,000	22,000	26,000
20	4,000	6,000	7,000	10,000	12,000	14,000	17,000	20,000
25	3,000	4,000	6,000	8,000	10,000	11,000	13,000	16,000

Tungsten carbide burrs with long shanks

Tungsten carbide burrs with long shanks are particularly well suited to working in hard-to-reach areas. PFERD holds long-shank versions in stock for the respective product groups. Long-shank versions are available with the 3 PLUS, STEEL, Z5 and TOUGH cuts. All long shanks can be individually shortened. Tungsten carbide burrs with the designation GL 75 mm are made from solid tungsten carbide, which means they can only be shortened using diamond tools. Additional variants can be custom-made on request. In some applications, drive spindle extensions are an economic alternative to customized burrs with long shanks. For more information please see catalogue section 9.

Safety notes:

- Tungsten carbide burrs with long shanks are not suitable for robotic or stationary applications. There is a risk that they may break off. Use only rigid clamping systems/drives.
- When working with long shank lengths, it is crucial that the tool is in contact with the workpiece (or inserted in the bore or slot to be machined) before the drive system 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 burr failure (bending) and hence an increased risk of accidents. If continuous contact between the tool and the workpiece is not guaranteed, the ⑧ maximum idling speeds stated in the table must not be exceeded.
- For safety reasons, the maximum application speeds ⑦ with contact with the workpiece require a reduction in the recommended rotational speed of tungsten carbide burrs with standard shanks. The reduced rotational speeds are stated in the table below.

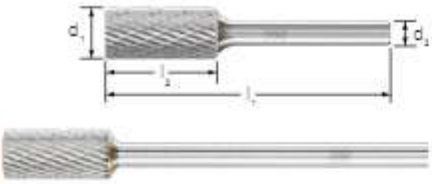
To determine the recommended rotational speed range [RPM], please proceed as follows:
① Select the required burr diameter.
⑦ For the maximum application speed [RPM] with contact with the workpiece, please refer to the right-hand side of the table.

Example:
TC burr, SL 150 mm,
Cut 3 PLUS,
Burr dia. 12 mm.
Coarse stock removal on steels up to 1,200 N/mm².
Maximum application speed with contact with the workpiece: 7.000 RPM

① Burr dia. [mm]	⑧ Maximum idling speed [RPM] without contact with the workpiece		⑦ Maximum application speed [RPM] with contact with the workpiece	
	Shank length [mm]			
	75	150	75	150
3	10,000	-	31,000	-
6	6,000	8,000	15,000	15,000
8	-	6,000	-	11,000
10	-	4,000	-	9,000
12	-	3,000	-	7,000

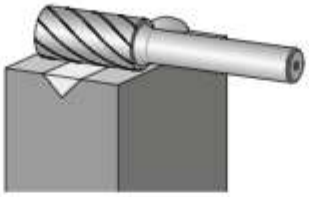
TC burrs for universal applications

For fine and coarse stock removal



Cylindrical shape ZYA without end cut

Cylindrical burrs according to DIN 8032 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:

- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	10	3	40	3 PLUS	1	21201183	ZYA 0210/3 Z3 PLUS	-
				4	1	21201143	ZYA 0210/3 Z4	-
				5	1	21201153	ZYA 0210/3 Z5	-
3	13	3	43	3 PLUS	1	21201283	ZYA 0313/3 Z3 PLUS	-
				4	1	21201243	ZYA 0313/3 Z4	-
				5	1	21201253	ZYA 0313/3 Z5	-
6	7	3	37	3 PLUS	1	21201383	ZYA 0607/3 Z3 PLUS	-
				5	1	21201353	ZYA 0607/3 Z5	-
	13	3	43	3 PLUS	1	21201483	ZYA 0613/3 Z3 PLUS	-
				5	1	21201453	ZYA 0613/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)								
3	13	3	75	3 PLUS	1	21201287	ZYA 0313/3 Z3 PLUS GL 75	-
				5	1	21201257	ZYA 0313/3 Z5 GL 75	-
6	13	3	88	3 PLUS	1	21201487	ZYA 0613/3 Z3 PLUS SL 75	-
				5	1	21201457	ZYA 0613/3 Z5 SL 75	-
Shank diameter 6 mm								
4	13	6	55	3 PLUS	1	21101526	ZYA 0413/6 Z3 PLUS	-
				4	1	21101546	ZYA 0413/6 Z4	-
				5	1	21101556	ZYA 0413/6 Z5	-
6	16	6	55	3	1	21101606	ZYA 0616/6 Z3	-
				3 PLUS	1	21101626	ZYA 0616/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21101624	ZYA 0616/6 Z3 PLUS HC-FEP	-
				4	1	21101646	ZYA 0616/6 Z4	-
				5	1	21101656	ZYA 0616/6 Z5	-
8	20	6	60	3	1	21101706	ZYA 0820/6 Z3	-
				3 PLUS	1	21101726	ZYA 0820/6 Z3 PLUS	-
				4	1	21101746	ZYA 0820/6 Z4	-
				5	1	21101756	ZYA 0820/6 Z5	-
10	13	6	53	3 PLUS	1	21101826	ZYA 1013/6 Z3 PLUS	-
				4	1	21101846	ZYA 1013/6 Z4	-
				5	1	21101856	ZYA 1013/6 Z5	-
	20	6	60	1	1	21102116	ZYA 1020/6 Z1	-
				3	1	21102106	ZYA 1020/6 Z3	-
				3 PLUS	1	21102126	ZYA 1020/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21102124	ZYA 1020/6 Z3 PLUS HC-FEP	-
				4	1	21102146	ZYA 1020/6 Z4	-
				5	1	21102156	ZYA 1020/6 Z5	-
	25	6	65	3 PLUS	1	21102226	ZYA 1025/6 Z3 PLUS	-
				4	1	21102246	ZYA 1025/6 Z4	-
12	25	6	65	1	1	21101916	ZYA 1225/6 Z1	-
				3	1	21101906	ZYA 1225/6 Z3	-

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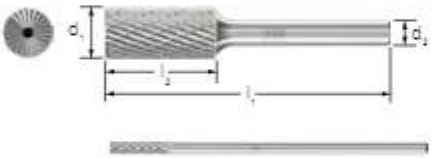
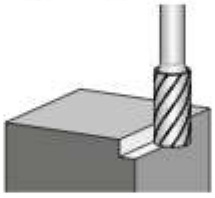
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
12	25	6	65	3 PLUS	1	21101926	ZYA 1225/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21101924	ZYA 1225/6 Z3 PLUS HC-FEP	-
				4	1	21101946	ZYA 1225/6 Z4	-
				5	1	21101956	ZYA 1225/6 Z5	-
16	25	6	65	3	1	21102006	ZYA 1625/6 Z3	-
				3 PLUS	1	21102026	ZYA 1625/6 Z3 PLUS	-
				4	1	21102046	ZYA 1625/6 Z4	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
6	16	6	172	3 PLUS	1	21101627	ZYA 0616/6 Z3 PLUS SL 150	-
8	20	6	170	3 PLUS	1	21101727	ZYA 0820/6 Z3 PLUS SL 150	-
10	20	6	170	3 PLUS	1	21102127	ZYA 1020/6 Z3 PLUS SL 150	-
12	25	6	175	3 PLUS	1	21101927	ZYA 1225/6 Z3 PLUS SL 150	-
Shank diameter 8 mm								
12	25	8	65	3 PLUS	1	21101928	ZYA 1225/8 Z3 PLUS	-
16	25	8	65	3 PLUS	1	21102028	ZYA 1625/8 Z3 PLUS	-



Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	10	3	40	3 PLUS	1	21200183	ZYAS 0210/3 Z3 PLUS	-
				4	1	21200143	ZYAS 0210/3 Z4	-
				5	1	21200153	ZYAS 0210/3 Z5	-
3	13	3	43	3 PLUS	1	21200283	ZYAS 0313/3 Z3 PLUS	-
				4	1	21200243	ZYAS 0313/3 Z4	-
				5	1	21200253	ZYAS 0313/3 Z5	-
6	7	3	37	3 PLUS	1	21200383	ZYAS 0607/3 Z3 PLUS	-
				5	1	21200353	ZYAS 0607/3 Z5	-
	13	3	43	3 PLUS	1	21200483	ZYAS 0613/3 Z3 PLUS	-
				4	1	21200443	ZYAS 0613/3 Z4	-
				5	1	21200453	ZYAS 0613/3 Z5	-
Long shank diameter of 3 mm, total length GL 75 mm (solid tungsten carbide)								
3	13	3	75	3 PLUS	1	21200287	ZYAS 0313/3 Z3 PLUS GL 75	-
				5	1	21200257	ZYAS 0313/3 Z5 GL 75	-
Shank diameter 6 mm								
4	13	6	55	3 PLUS	1	21100126	ZYAS 0413/6 Z3 PLUS	-
				4	1	21100146	ZYAS 0413/6 Z4	-
				5	1	21100156	ZYAS 0413/6 Z5	-
6	16	6	55	3	1	21100206	ZYAS 0616/6 Z3	-
				3 PLUS	1	21100226	ZYAS 0616/6 Z3 PLUS	-
				4	1	21100246	ZYAS 0616/6 Z4	-
				5	1	21100256	ZYAS 0616/6 Z5	-

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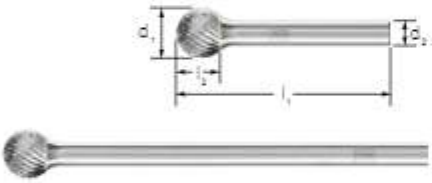
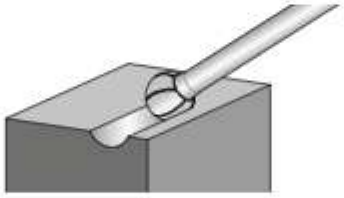
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
8	20	6	60	3	1	21100306	ZYAS 0820/6 Z3	-
				3 PLUS	1	21100326	ZYAS 0820/6 Z3 PLUS	-
				4	1	21100346	ZYAS 0820/6 Z4	-
				5	1	21100356	ZYAS 0820/6 Z5	-
10	13	6	53	3 PLUS	1	21100426	ZYAS 1013/6 Z3 PLUS	-
	20	6	60	3	1	21100706	ZYAS 1020/6 Z3	-
				3 PLUS	1	21100726	ZYAS 1020/6 Z3 PLUS	-
				4	1	21100746	ZYAS 1020/6 Z4	-
				5	1	21100756	ZYAS 1020/6 Z5	-
	25	6	65	3 PLUS	1	21100826	ZYAS 1025/6 Z3 PLUS	-
				4	1	21100846	ZYAS 1025/6 Z4	-
12	25	6	65	3	1	21100506	ZYAS 1225/6 Z3	-
				3 PLUS	1	21100526	ZYAS 1225/6 Z3 PLUS	-
				4	1	21100546	ZYAS 1225/6 Z4	-
				5	1	21100556	ZYAS 1225/6 Z5	-
16	25	6	65	3	1	21100606	ZYAS 1625/6 Z3	-
				3 PLUS	1	21100626	ZYAS 1625/6 Z3 PLUS	-
				4	1	21100646	ZYAS 1625/6 Z4	-
				5	1	21100656	ZYAS 1625/6 Z5	-
Shank diameter 8 mm								
12	25	8	65	3 PLUS	1	21100528	ZYAS 1225/8 Z3 PLUS	-



Ball shape KUD

Ball-shaped burr according to DIN 8032 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
1.5	1	3	33	3 PLUS	1	21211013	KUD 01,51/3 Z3 PLUS	-
				5	1	21211015	KUD 01,51/3 Z5	-
2	1.5	3	33	3 PLUS	1	21211023	KUD 021,5/3 Z3 PLUS	-
				5	1	21211025	KUD 021,5/3 Z5	-
3	2	3	33	3 PLUS	1	21211083	KUD 0302/3 Z3 PLUS	-
				4	1	21211043	KUD 0302/3 Z4	-
				5	1	21211053	KUD 0302/3 Z5	-
4	3	3	34	3 PLUS	1	21212583	KUD 0403/3 Z3 PLUS	-
				4	1	21212543	KUD 0403/3 Z4	-
				5	1	21212553	KUD 0403/3 Z5	-
6	5	3	35	3 PLUS	1	21213083	KUD 0605/3 Z3 PLUS	-
				4	1	21213043	KUD 0605/3 Z4	-
				5	1	21213053	KUD 0605/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)								
3	2	3	75	3 PLUS	1	21211087	KUD 0302/3 Z3 PLUS GL 75	-
				5	1	21211057	KUD 0302/3 Z5 GL 75	-

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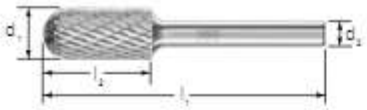
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
6	5	3	80	3 PLUS	1	21213087	KUD 0605/3 Z3 PLUS SL 75	-
				5	1	21213057	KUD 0605/3 Z5 SL 75	-
Shank diameter 6 mm								
4	3	6	45	3 PLUS	1	21112026	KUD 0403/6 Z3 PLUS	-
				5	1	21112056	KUD 0403/6 Z5	-
6	5	6	45	1	1	21112516	KUD 0605/6 Z1	-
				3	1	21112536	KUD 0605/6 Z3	-
				3 PLUS	1	21112526	KUD 0605/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21112524	KUD 0605/6 Z3 PLUS HC-FEP	-
				4	1	21112546	KUD 0605/6 Z4	-
				5	1	21112556	KUD 0605/6 Z5	-
8	7	6	47	1	1	21112616	KUD 0807/6 Z1	-
				3	1	21112636	KUD 0807/6 Z3	-
				3 PLUS	1	21112626	KUD 0807/6 Z3 PLUS	-
				4	1	21112646	KUD 0807/6 Z4	-
				5	1	21112656	KUD 0807/6 Z5	-
10	9	6	49	1	1	21112716	KUD 1009/6 Z1	-
				3	1	21112706	KUD 1009/6 Z3	-
				3 PLUS	1	21112726	KUD 1009/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21112724	KUD 1009/6 Z3 PLUS HC-FEP	-
				4	1	21112746	KUD 1009/6 Z4	-
				5	1	21112756	KUD 1009/6 Z5	-
12	10	6	51	3	1	21112806	KUD 1210/6 Z3	-
				3 PLUS	1	21112826	KUD 1210/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21112824	KUD 1210/6 Z3 PLUS HC-FEP	-
				4	1	21112846	KUD 1210/6 Z4	-
				5	1	21112856	KUD 1210/6 Z5	-
16	14	6	54	1	1	21112916	KUD 1614/6 Z1	-
				3 PLUS	1	21112926	KUD 1614/6 Z3 PLUS	-
				4	1	21112946	KUD 1614/6 Z4	-
				5	1	21112956	KUD 1614/6 Z5	-
20	18	6	58	3	1	21113006	KUD 2018/6 Z3	-
				3 PLUS	1	21113026	KUD 2018/6 Z3 PLUS	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
6	5	6	155	3 PLUS	1	21112527	KUD 0605/6 Z3 PLUS SL 150	-
8	7	6	157	3 PLUS	1	21112627	KUD 0807/6 Z3 PLUS SL 150	-
10	9	6	159	3 PLUS	1	21112727	KUD 1009/6 Z3 PLUS SL 150	-
12	10	6	160	3 PLUS	1	21112827	KUD 1210/6 Z3 PLUS SL 150	-
Shank diameter 8 mm								
12	10	8	51	3 PLUS	1	21112828	KUD 1210/8 Z3 PLUS	-
16	14	8	54	3 PLUS	1	21112928	KUD 1614/8 Z3 PLUS	-
20	18	8	58	3 PLUS	1	21113028	KUD 2018/8 Z3 PLUS	-

TC burrs for universal applications

For fine and coarse stock removal



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.

Special features:

- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	10	3	40	3 PLUS	1	21205083	WRC 0210/3 Z3 PLUS	-
				4	1	21205043	WRC 0210/3 Z4	-
				5	1	21205053	WRC 0210/3 Z5	-
3	13	3	43	3 PLUS	1	21205183	WRC 0313/3 Z3 PLUS	-
				4	1	21205143	WRC 0313/3 Z4	-
				5	1	21205153	WRC 0313/3 Z5	-
6	13	3	43	3 PLUS	1	21205283	WRC 0613/3 Z3 PLUS	-
				4	1	21205243	WRC 0613/3 Z4	-
				5	1	21205253	WRC 0613/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)								
3	13	3	75	3 PLUS	1	21205187	WRC 0313/3 Z3 PLUS GL 75	-
				5	1	21205157	WRC 0313/3 Z5 GL 75	-
6	13	3	88	3 PLUS	1	21205287	WRC 0613/3 Z3 PLUS SL 75	-
				5	1	21205257	WRC 0613/3 Z5 SL 75	-
Shank diameter 6 mm								
4	13	6	55	3 PLUS	1	21104926	WRC 0413/6 Z3 PLUS	-
				4	1	21104946	WRC 0413/6 Z4	-
6	16	6	55	1	1	21105016	WRC 0616/6 Z1	-
				3	1	21105006	WRC 0616/6 Z3	-
				3 PLUS	1	21105026	WRC 0616/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21105024	WRC 0616/6 Z3 PLUS HC-FEP	-
				4	1	21105046	WRC 0616/6 Z4	-
				5	1	21105056	WRC 0616/6 Z5	-
8	20	6	60	1	1	21105116	WRC 0820/6 Z1	-
				3	1	21105106	WRC 0820/6 Z3	-
				3 PLUS	1	21105126	WRC 0820/6 Z3 PLUS	-
				4	1	21105146	WRC 0820/6 Z4	-
				5	1	21105156	WRC 0820/6 Z5	-
10	20	6	60	1	1	21105216	WRC 1020/6 Z1	-
				3	1	21105206	WRC 1020/6 Z3	-
				3 PLUS	1	21105226	WRC 1020/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21105224	WRC 1020/6 Z3 PLUS HC-FEP	-
				4	1	21105246	WRC 1020/6 Z4	-
				5	1	21105256	WRC 1020/6 Z5	-
	25	6	65	3	1	21105506	WRC 1025/6 Z3	-
				3 PLUS	1	21105526	WRC 1025/6 Z3 PLUS	-
				4	1	21105546	WRC 1025/6 Z4	-
12	25	6	65	1	1	21105316	WRC 1225/6 Z1	-
				3	1	21105306	WRC 1225/6 Z3	-
				3 PLUS	1	21105326	WRC 1225/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21105324	WRC 1225/6 Z3 PLUS HC-FEP	-

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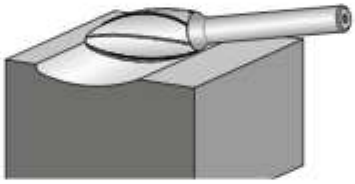
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
12	25	6	65	4	1	21105346	WRC 1225/6 Z4	-
				5	1	21105356	WRC 1225/6 Z5	-
16	25	6	65	1	1	21105416	WRC 1625/6 Z1	-
				3	1	21105406	WRC 1625/6 Z3	-
				3 PLUS	1	21105426	WRC 1625/6 Z3 PLUS	-
				4	1	21105446	WRC 1625/6 Z4	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
6	16	6	172	3 PLUS	1	21105027	WRC 0616/6 Z3 PLUS SL 150	-
8	20	6	170	3 PLUS	1	21105127	WRC 0820/6 Z3 PLUS SL 150	-
10	20	6	170	3 PLUS	1	21105227	WRC 1020/6 Z3 PLUS SL 150	-
12	25	6	175	3 PLUS	1	21105327	WRC 1225/6 Z3 PLUS SL 150	-
Shank diameter 8 mm								
10	20	8	60	3 PLUS	1	21105228	WRC 1020/8 Z3 PLUS	-
12	25	8	65	3 PLUS	1	21105328	WRC 1225/8 Z3 PLUS	-
				4	1	21105348	WRC 1225/8 Z4	-
16	25	8	65	3 PLUS	1	21105428	WRC 1625/8 Z3 PLUS	-

Flame-shaped B

Flame-shaped burr according to ISO 7755/8 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

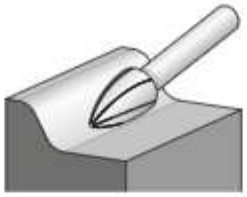
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	0.8	3 PLUS	1	21202533	B 0307/3 Z3 PLUS	-
					5	1	21202553	B 0307/3 Z5	-
6	13	3	43	1	3 PLUS	1	21203633	B 0613/3 Z3 PLUS	-
					5	1	21203653	B 0613/3 Z5	-
Shank diameter 6 mm									
8	20	6	60	1.5	3	1	21103106	B 0820/6 Z3	-
					3 PLUS	1	21103126	B 0820/6 Z3 PLUS	-
10	25	6	65	1.7	3 PLUS	1	21103226	B 1025/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21103224	B 1025/6 Z3 PLUS HC-FEP	-
12	30	6	70	2.1	3	1	21103306	B 1230/6 Z3	-
					3 PLUS	1	21103326	B 1230/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21103324	B 1230/6 Z3 PLUS HC-FEP	-
16	35	6	75	2.6	3 PLUS	1	21103426	B 1635/6 Z3 PLUS	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
8	20	6	170	1.5	3 PLUS	1	21103127	B 0820/6 Z3 PLUS SL 150	-
10	25	6	175	1.7	3 PLUS	1	21103287	B 1025/6 Z3 PLUS SL 150	-
12	30	6	180	2.1	3 PLUS	1	21103327	B 1230/6 Z3 PLUS SL 150	-

TC burrs for universal applications

For fine and coarse stock removal

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with cut conforming to DIN 8033 and flattened tip for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:

- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	7	3	37	3 PLUS	1	21222583	SPG 0307/3 Z3 PLUS	-
				4	1	21222543	SPG 0307/3 Z4	-
				5	1	21222553	SPG 0307/3 Z5	-
	13	3	43	3 PLUS	1	21222683	SPG 0313/3 Z3 PLUS	-
				4	1	21222643	SPG 0313/3 Z4	-
				5	1	21222653	SPG 0313/3 Z5	-
6	13	3	43	3 PLUS	1	21222783	SPG 0613/3 Z3 PLUS	-
				4	1	21222743	SPG 0613/3 Z4	-
				5	1	21222753	SPG 0613/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)								
3	13	3	75	3 PLUS	1	21222687	SPG 0313/3 Z3 PLUS GL 75	-
				5	1	21222657	SPG 0313/3 Z5 GL 75	-
6	13	3	88	3 PLUS	1	21222787	SPG 0613/3 Z3 PLUS SL 75	-
				5	1	21222757	SPG 0613/3 Z5 SL 75	-
Shank diameter 6 mm								
6	18	6	55	1	1	21122516	SPG 0618/6 Z1	-
				3	1	21122506	SPG 0618/6 Z3	-
				3 PLUS	1	21122526	SPG 0618/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21122524	SPG 0618/6 Z3 PLUS HC-FEP	-
				4	1	21122546	SPG 0618/6 Z4	-
				5	1	21122556	SPG 0618/6 Z5	-
8	20	6	60	3 PLUS	1	21122589	SPG 0820/6 Z3 PLUS	-
				5	1	21122595	SPG 0820/6 Z5	-
10	20	6	60	1	1	21122616	SPG 1020/6 Z1	-
				3	1	21122606	SPG 1020/6 Z3	-
				3 PLUS	1	21122626	SPG 1020/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21122624	SPG 1020/6 Z3 PLUS HC-FEP	-
				4	1	21122646	SPG 1020/6 Z4	-
				5	1	21122656	SPG 1020/6 Z5	-
12	25	6	65	1	1	21122716	SPG 1225/6 Z1	-
				3	1	21122706	SPG 1225/6 Z3	-
				3 PLUS	1	21122726	SPG 1225/6 Z3 PLUS	-
				3 PLUS HC-FEP	1	21122724	SPG 1225/6 Z3 PLUS HC-FEP	-
				4	1	21122746	SPG 1225/6 Z4	-
				5	1	21122756	SPG 1225/6 Z5	-
	30	6	70	1	1	21123416	SPG 1230/6 Z1	-
				3	1	21123406	SPG 1230/6 Z3	-
				3 PLUS	1	21123426	SPG 1230/6 Z3 PLUS	-
				4	1	21123446	SPG 1230/6 Z4	-
				5	1	21123456	SPG 1230/6 Z5	-
16	30	6	70	1	1	21122816	SPG 1630/6 Z1	-

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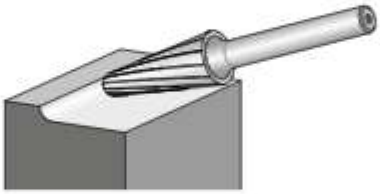
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
16	30	6	70	3	1	21122806	SPG 1630/6 Z3	-
				3 PLUS	1	21122826	SPG 1630/6 Z3 PLUS	-
				4	1	21122846	SPG 1630/6 Z4	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
6	18	6	172	3 PLUS	1	21122527	SPG 0618/6 Z3 PLUS SL 150	-
8	20	6	170	3 PLUS	1	21122597	SPG 0820/6 Z3 PLUS SL 150	-
10	20	6	170	3 PLUS	1	21122627	SPG 1020/6 Z3 PLUS SL 150	-
12	25	6	175	3 PLUS	1	21122727	SPG 1225/6 Z3 PLUS SL 150	-
Shank diameter 8 mm								
10	20	8	60	3 PLUS	1	21122628	SPG 1020/8 Z3 PLUS	-
12	25	8	65	3 PLUS	1	21122728	SPG 1225/8 Z3 PLUS	-
16	30	8	70	1	1	21122818	SPG 1630/8 Z1	-
				3 PLUS	1	21122828	SPG 1630/8 Z3 PLUS	-

Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 and cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

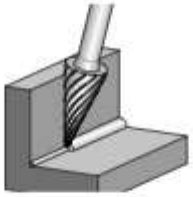
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	20	6	60	16	1.25	3 PLUS	1	21124996	KEL 0820/6 Z3 PLUS	-
						4	1	21124994	KEL 0820/6 Z4	-
10	20	6	60	14	2.9	3	1	21125006	KEL 1020/6 Z3	-
						3 PLUS	1	21125026	KEL 1020/6 Z3 PLUS	-
						3 PLUS HC-FEP	1	21125024	KEL 1020/6 Z3 PLUS HC-FEP	-
						4	1	21125046	KEL 1020/6 Z4	-
12	25	6	65	14	3.3	3	1	21125106	KEL 1225/6 Z3	-
						3 PLUS	1	21125126	KEL 1225/6 Z3 PLUS	-
						3 PLUS HC-FEP	1	21125124	KEL 1225/6 Z3 PLUS HC-FEP	-
						4	1	21125146	KEL 1225/6 Z4	-
	30	6	70	14	2.6	1	1	21125216	KEL 1230/6 Z1	-
						3	1	21125206	KEL 1230/6 Z3	-
						3 PLUS	1	21125226	KEL 1230/6 Z3 PLUS	-
						3 PLUS HC-FEP	1	21125224	KEL 1230/6 Z3 PLUS HC-FEP	-
						4	1	21125246	KEL 1230/6 Z4	-
						5	1	21125256	KEL 1230/6 Z5	-
16	30	6	70	14	4.8	3 PLUS	1	21125326	KEL 1630/6 Z3 PLUS	-
						4	1	21125346	KEL 1630/6 Z4	-
Shank diameter 8 mm										
12	25	8	65	14	3.3	3 PLUS	1	21125128	KEL 1225/8 Z3 PLUS	-
	30	8	70	14	2.6	3 PLUS	1	21125228	KEL 1230/8 Z3 PLUS	-

TC burrs for universal applications

For fine and coarse stock removal

Conical pointed shape SKM

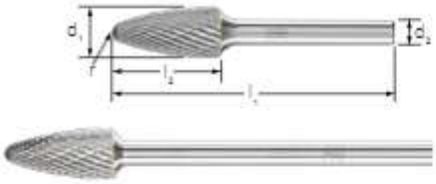
Conical pointed burr according to DIN 8032 with cut conforming to DIN 8033 and flattened tip for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:

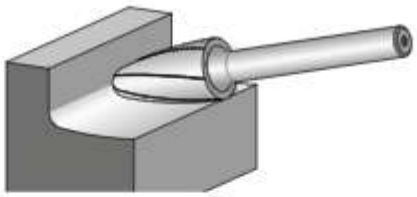
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	21	3 PLUS	1	21214083	SKM 0307/3 Z3 PLUS	-
					5	1	21214053	SKM 0307/3 Z5	-
	11	3	41	14	3 PLUS	1	21214183	SKM 0311/3 Z3 PLUS	-
					4	1	21214143	SKM 0311/3 Z4	-
					5	1	21214153	SKM 0311/3 Z5	-
6	13	3	43	25	3 PLUS	1	21215083	SKM 0613/3 Z3 PLUS	-
					5	1	21215053	SKM 0613/3 Z5	-
Shank diameter 6 mm									
6	18	6	55	18	1	1	21115016	SKM 0618/6 Z1	-
					3	1	21115006	SKM 0618/6 Z3	-
					3 PLUS	1	21115026	SKM 0618/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21115024	SKM 0618/6 Z3 PLUS HC-FEP	-
					4	1	21115046	SKM 0618/6 Z4	-
					5	1	21115056	SKM 0618/6 Z5	-
10	20	6	60	28	3	1	21115106	SKM 1020/6 Z3	-
					3 PLUS	1	21115126	SKM 1020/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21115124	SKM 1020/6 Z3 PLUS HC-FEP	-
					4	1	21115146	SKM 1020/6 Z4	-
					5	1	21115156	SKM 1020/6 Z5	-
12	25	6	65	26	1	1	21115216	SKM 1225/6 Z1	-
					3	1	21115206	SKM 1225/6 Z3	-
					3 PLUS	1	21115226	SKM 1225/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21115224	SKM 1225/6 Z3 PLUS HC-FEP	-
					4	1	21115246	SKM 1225/6 Z4	-
					5	1	21115256	SKM 1225/6 Z5	-
Shank diameter 8 mm									
12	25	8	65	26	3 PLUS	1	21115228	SKM 1225/8 Z3 PLUS	-



Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

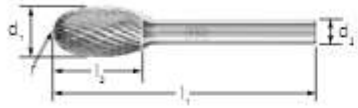
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	0.75	3 PLUS	1	21217583	RBF 0307/3 Z3 PLUS	-
					5	1	21217553	RBF 0307/3 Z5	-
	13	3	43	0.75	3 PLUS	1	21218133	RBF 0313/3 Z3 PLUS	-
					5	1	21218155	RBF 0313/3 Z5	-
6	13	3	43	1.5	3 PLUS	1	21230083	RBF 0613/3 Z3 PLUS	-
					4	1	21230043	RBF 0613/3 Z4	-
					5	1	21230053	RBF 0613/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)									
3	7	3	75	0.75	3 PLUS	1	21217587	RBF 0307/3 Z3 PLUS GL 75	-
					5	1	21217557	RBF 0307/3 Z5 GL 75	-
6	13	3	88	1.5	3 PLUS	1	21230087	RBF 0613/3 Z3 PLUS SL 75	-
					5	1	21230057	RBF 0613/3 Z5 SL 75	-
Shank diameter 6 mm									
6	18	6	55	1.5	3	1	21117306	RBF 0618/6 Z3	-
					3 PLUS	1	21117326	RBF 0618/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21117324	RBF 0618/6 Z3 PLUS HC-FEP	-
					4	1	21117346	RBF 0618/6 Z4	-
					5	1	21117356	RBF 0618/6 Z5	-
8	20	6	60	1.2	3	1	21117606	RBF 0820/6 Z3	-
					3 PLUS	1	21117626	RBF 0820/6 Z3 PLUS	-
					4	1	21117646	RBF 0820/6 Z4	-
10	20	6	60	2.5	3	1	21117706	RBF 1020/6 Z3	-
					3 PLUS	1	21117726	RBF 1020/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21117724	RBF 1020/6 Z3 PLUS HC-FEP	-
					4	1	21117746	RBF 1020/6 Z4	-
					5	1	21117756	RBF 1020/6 Z5	-
12	25	6	65	2.5	1	1	21117816	RBF 1225/6 Z1	-
					3	1	21117806	RBF 1225/6 Z3	-
					3 PLUS	1	21117826	RBF 1225/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21117824	RBF 1225/6 Z3 PLUS HC-FEP	-
					4	1	21117846	RBF 1225/6 Z4	-
					5	1	21117856	RBF 1225/6 Z5	-
16	30	6	70	3.6	3	1	21117906	RBF 1630/6 Z3	-
					3 PLUS	1	21117926	RBF 1630/6 Z3 PLUS	-
					4	1	21117946	RBF 1630/6 Z4	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
6	18	6	172	1.5	3 PLUS	1	21117327	RBF 0618/6 Z3 PLUS SL 150	-
8	20	6	170	1.2	3 PLUS	1	21117627	RBF 0820/6 Z3 PLUS SL 150	-
10	20	6	170	2.5	3 PLUS	1	21117727	RBF 1020/6 Z3 PLUS SL 150	-
12	25	6	175	2.5	3 PLUS	1	21117827	RBF 1225/6 Z3 PLUS SL 150	-

Continued on next page

TC burrs for universal applications

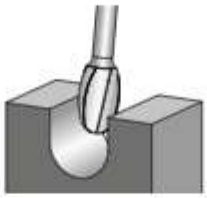
For fine and coarse stock removal

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 8 mm									
12	25	8	65	2.5	3 PLUS	1	21117828	RBF 1225/8 Z3 PLUS	-
16	30	8	70	3.6	3 PLUS	1	21117928	RBF 1630/8 Z3 PLUS	-



Oval shape TRE

Oval burr according to DIN 8032 with cut conforming to DIN 8033 for general use on all materials. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



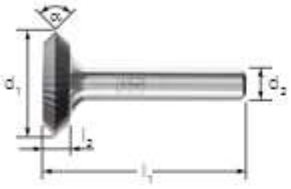
Special features:

- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- Cut 3 PLUS is also available with the high-quality HICOAT coating for a much higher stock removal rate.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	1.2	3 PLUS	1	21210083	TRE 0307/3 Z3 PLUS	-
					5	1	21210053	TRE 0307/3 Z5	-
6	10	3	40	2.8	3 PLUS	1	21235083	TRE 0610/3 Z3 PLUS	-
					5	1	21235053	TRE 0610/3 Z5	-
Long shank diameter of 3 mm, shank length SL 75 mm (long steel shank)/total length GL 75 mm (solid tungsten carbide)									
3	7	3	75	1.2	3 PLUS	1	21210087	TRE 0307/3 Z3 PLUS GL 75	-
					5	1	21210057	TRE 0307/3 Z5 GL 75	-
6	10	3	85	2.8	3 PLUS	1	21235087	TRE 0610/3 Z3 PLUS SL 75	-
					5	1	21235057	TRE 0610/3 Z5 SL 75	-
Shank diameter 6 mm									
6	10	6	50	2.8	3 PLUS	1	21134826	TRE 0610/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21134824	TRE 0610/6 Z3 PLUS HC-FEP	-
					5	1	21134856	TRE 0610/6 Z5	-
8	13	6	53	3.7	3 PLUS	1	21135026	TRE 0813/6 Z3 PLUS	-
					4	1	21135046	TRE 0813/6 Z4	-
					5	1	21135056	TRE 0813/6 Z5	-
10	16	6	56	4	3 PLUS	1	21134926	TRE 1016/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21134924	TRE 1016/6 Z3 PLUS HC-FEP	-
					4	1	21134946	TRE 1016/6 Z4	-
12	20	6	60	5	1	1	21135116	TRE 1220/6 Z1	-
					3	1	21135106	TRE 1220/6 Z3	-
					3 PLUS	1	21135126	TRE 1220/6 Z3 PLUS	-
					3 PLUS HC-FEP	1	21135124	TRE 1220/6 Z3 PLUS HC-FEP	-
					4	1	21135146	TRE 1220/6 Z4	-
					5	1	21135156	TRE 1220/6 Z5	-
16	25	6	65	6.5	1	1	21135216	TRE 1625/6 Z1	-
					3 PLUS	1	21135226	TRE 1625/6 Z3 PLUS	-
					4	1	21135246	TRE 1625/6 Z4	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
6	10	6	160	2.8	3 PLUS	1	21134827	TRE 0610/6 Z3 PLUS SL 150	-
8	13	6	163	3.7	3 PLUS	1	21135027	TRE 0813/6 Z3 PLUS SL 150	-
10	16	6	166	4	3 PLUS	1	21134927	TRE 1016/6 Z3 PLUS SL 150	-
12	20	6	170	5	3 PLUS	1	21135127	TRE 1220/6 Z3 PLUS SL 150	-

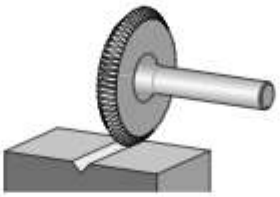
Continued on next page

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 8 mm									
12	20	8	60	5	3 PLUS	1	21135128	TRE 1220/8 Z3 PLUS	-
16	25	8	65	6.5	3 PLUS	1	21135228	TRE 1625/8 Z3 PLUS	-



Rim shape N

Rim-shaped burr, circumferential cut is 90° and symmetric, tapered tip. The rim shape is particularly well suited to producing and processing prism-shaped keyways. A good stock removal rate is achieved through optimum matching of tungsten carbide, geometry, cut and available coating.



Special features:
- Long tool life and high surface quality.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 8 mm									
25	3	8	43	90	3	1	21134038	N 2503/8 Z3	-
	6	8	46	90	3	1	21134338	N 2506/8 Z3	-

Set 1500 cuts 3 PLUS and 5

Set 1500 – cuts 3 PLUS (shank dia. 6 mm) and 5 (shank dia. 3 mm) – contains 22 tungsten carbide burrs in the most common shapes and dimensions for general applications.

Contents:
The set comprises one each of the following: ZYAS 0616/6 Z3 PLUS, ZYAS 1013/6 Z3 PLUS, ZYAS 1225/6 Z3 PLUS, KUD 0605/6 Z3 PLUS, KUD 0807/6 Z3 PLUS, KUD 1210/6 Z3 PLUS, KUD 1614/6 Z3 PLUS, WRC 0616/6 Z3 PLUS, WRC 1225/6 Z3 PLUS, SPG 0618/6 Z3 PLUS, SPG 1020/6 Z3 PLUS, SPG 1225/6 Z3 PLUS, SKM 0618/6 Z3 PLUS and SKM 1020/6 Z3 PLUS, as well as one each of the following: ZYAS 0210/3 Z5, ZYAS 0313/3 Z5, WRC 0210/3 Z5, WRC 0313/3 Z5, SPG 0307/3 Z5, RBF 0307/3 Z5, TRE 0307/3 Z5 and WKN 0307/3 Z5.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 and 6 mm				
3 PLUS, 5	1	21901500	1500 Z3 PLUS/Z5	-

Set 1501 cut 5

Set 1501 – cut 5 – contains 15 small tungsten carbide burrs in the most common shapes and dimensions for general applications.

Contents:
The set comprises one each of the following: ZYAS 0210/3 Z5, ZYAS 0313/3 Z5, ZYAS 0607/3 Z5, ZYAS 0613/3 Z5, B 0307/3 Z5, KUD 0403/3 Z5, WRC 0210/3 Z5, WRC 0313/3 Z5, SPG 0307/3 Z5, SKM 0613/3 Z5, RBF 0307/3 Z5, RBF 0613/3 Z5, TRE 0307/3 Z5, TRE 0610/3 Z5 and WKNS 0307/3 Z5 with a shank diameter of 3 mm, cut 5.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm				
5	1	21901501	1501 Z5	-

Set 1503 cut 3 PLUS

Set 1503 – cut 3 PLUS – contains 15 small tungsten carbide burrs in the most common shapes and dimensions for general applications.

Contents:
The set comprises one each of the following: ZYAS 0313/3 Z3 PLUS, ZYAS 0613/3 Z3 PLUS, KUD 0302/3 Z3 PLUS, KUD 0403/3 Z3 PLUS, KUD 0605/3 Z3 PLUS, WRC 0313/3 Z3 PLUS, WRC 0613/3 Z3 PLUS, SPG 0313/3 Z3 PLUS, SPG 0613/3 Z3 PLUS, SKM 0311/3 Z3 PLUS, SKM 0613/3 Z3 PLUS, RBF 0307/3 Z3 PLUS, RBF 0613/3 Z3 PLUS, TRE 0307/3 Z3 PLUS and TRE 0610/3 Z3 PLUS with a shank diameter of 3 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm				
3 PLUS	1	21901505	1503 Z3 PLUS	-

Set 1504 cut 3 PLUS

Set 1504 – cut 3 PLUS – contains three small tungsten carbide burrs in the most common shapes and dimensions for applications in the workshop.

Contents:
The set comprises one each of the following: ZYAS 0313/3 Z3 PLUS, WRC 0313/3 Z3 PLUS and RBF 0313/3 Z3 PLUS with a shank diameter of 3 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm				
3 PLUS	1	21901504	1504 Z3 PLUS	-

Set 1505 cut 3 PLUS

Set 1505 – cut 3 PLUS – contains three tungsten carbide burrs in the most common shapes and dimensions for applications in the workshop.

Contents:
The set comprises one each of the following: ZYAS 0616/6 Z3 PLUS, WRC 0616/6 Z3 PLUS and RBF 0618/6 Z3 PLUS with a shank diameter of 6 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3 PLUS	1	21901508	1505 Z3 PLUS 3TLG	-

Set 1507 cut 3 PLUS

Set 1507 – cut 3 PLUS – contains three tungsten carbide burrs in the most common shapes and dimensions for applications in the workshop.

Contents:
The set comprises one each of the following: ZYAS 1225/6 Z3 PLUS, WRC 1225/6 Z3 PLUS and RBF 1225/6 Z3 PLUS with a shank diameter of 6 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3 PLUS	1	21901507	1507 Z3 PLUS 3TLG	-

Set 1506 cut 3 PLUS

Set 1506 – cut 3 PLUS – contains five tungsten carbide burrs in the most common shapes and dimensions for applications in the workshop.

Contents:
The set comprises one each of the following: ZYA 0616/6 Z3 PLUS, KUD 0605/6 Z3 PLUS, WRC 0616/6 Z3 PLUS, SPG 0618/6 Z3 PLUS and RBF 0618/6 Z3 PLUS with a shank diameter of 6 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further unused slots are available for other burrs.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3 PLUS	1	21901506	1506 Z3 PLUS	-

Set 1512 cut 3 PLUS

Set 1512 – cut 3 PLUS – contains five tungsten carbide burrs in the most common shapes and dimensions for applications in the workshop.

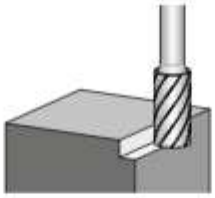
Contents:
The set comprises one each of the following: ZYA 1225/6 Z3 PLUS, KUD 1210/6 Z3 PLUS, WRC 1225/6 Z3 PLUS, SPG 1225/6 Z3 PLUS and RBF 1225/6 Z3 PLUS with a shank diameter of 6 mm, cut 3 PLUS.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further unused slots are available for other burrs.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3 PLUS	1	21901512	1512 Z3 PLUS	-

Cylindrical shape ZYAS with end cut

Cylindrical burrs according to DIN 8032 with circumferential and end cut for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.

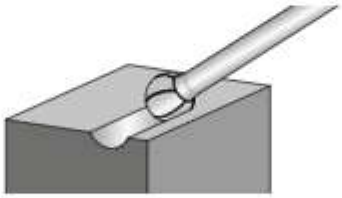


Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	ALLROUND	1	21001061	ZYAS 0313/3 ALLROUND	-
6	13	3	43	ALLROUND	1	21001062	ZYAS 0613/3 ALLROUND	-
Shank diameter 6 mm								
6	16	6	55	ALLROUND	1	21001000	ZYAS 0616/6 ALLROUND	-
8	20	6	60	ALLROUND	1	21001001	ZYAS 0820/6 ALLROUND	-
10	20	6	60	ALLROUND	1	21001002	ZYAS 1020/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001043	ZYAS 1020/6 ALLROUND HC-FEP	-
12	25	6	65	ALLROUND	1	21001003	ZYAS 1225/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001044	ZYAS 1225/6 ALLROUND HC-FEP	-
16	25	6	65	ALLROUND	1	21001004	ZYAS 1625/6 ALLROUND	-

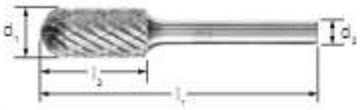
Ball shape KUD

Ball-shaped burr according to DIN 8032 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.



Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	2	3	33	ALLROUND	1	21001063	KUD 0302/3 ALLROUND	-
4	3	3	34	ALLROUND	1	21001064	KUD 0403/3 ALLROUND	-
6	5	3	35	ALLROUND	1	21001065	KUD 0605/3 ALLROUND	-
Shank diameter 6 mm								
6	5	6	45	ALLROUND	1	21001005	KUD 0605/6 ALLROUND	-
8	7	6	47	ALLROUND	1	21001006	KUD 0807/6 ALLROUND	-
10	9	6	49	ALLROUND	1	21001007	KUD 1009/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001045	KUD 1009/6 ALLROUND HC-FEP	-
12	10	6	51	ALLROUND	1	21001008	KUD 1210/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001046	KUD 1210/6 ALLROUND HC-FEP	-
16	14	6	54	ALLROUND	1	21001009	KUD 1614/6 ALLROUND	-

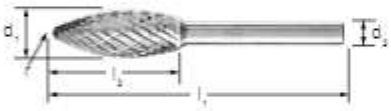


Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.

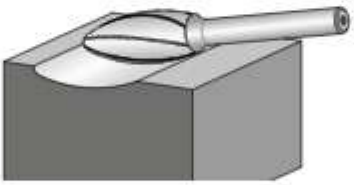
Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	ALLROUND	1	21001066	WRC 0313/3 ALLROUND	-
6	13	3	43	ALLROUND	1	21001067	WRC 0613/3 ALLROUND	-
Shank diameter 6 mm								
6	16	6	55	ALLROUND	1	21001010	WRC 0616/6 ALLROUND	-
8	20	6	60	ALLROUND	1	21001011	WRC 0820/6 ALLROUND	-
10	20	6	60	ALLROUND	1	21001012	WRC 1020/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001047	WRC 1020/6 ALLROUND HC-FEP	-
12	25	6	65	ALLROUND	1	21001013	WRC 1225/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001048	WRC 1225/6 ALLROUND HC-FEP	-
16	25	6	65	ALLROUND	1	21001014	WRC 1625/6 ALLROUND	-



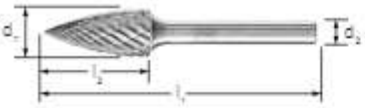
Flame-shaped B

Flame-shaped burr according to ISO 7755/8 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.



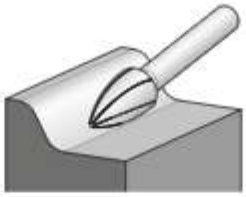
Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	0.8	ALLROUND	1	21001068	B 0307/3 ALLROUND	-
6	13	3	43	1	ALLROUND	1	21001069	B 0613/3 ALLROUND	-
Shank diameter 6 mm									
8	20	6	60	1.5	ALLROUND	1	21001015	B 0820/6 ALLROUND	-
10	25	6	65	1.7	ALLROUND	1	21001016	B 1025/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001049	B 1025/6 ALLROUND HC-FEP	-
12	30	6	70	2.1	ALLROUND	1	21001017	B 1230/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001050	B 1230/6 ALLROUND HC-FEP	-
16	35	6	75	2.6	ALLROUND	1	21001018	B 1635/6 ALLROUND	-



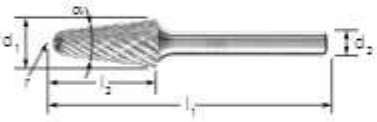
Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.



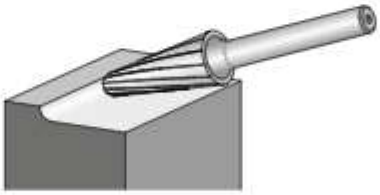
Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	7	3	37	ALLROUND	1	21001070	SPG 0307/3 ALLROUND	-
	13	3	43	ALLROUND	1	21001071	SPG 0313/3 ALLROUND	-
6	13	3	43	ALLROUND	1	21001072	SPG 0613/3 ALLROUND	-
Shank diameter 6 mm								
6	18	6	55	ALLROUND	1	21001019	SPG 0618/6 ALLROUND	-
8	20	6	60	ALLROUND	1	21001020	SPG 0820/6 ALLROUND	-
10	20	6	60	ALLROUND	1	21001021	SPG 1020/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001051	SPG 1020/6 ALLROUND HC-FEP	-
12	25	6	65	ALLROUND	1	21001022	SPG 1225/6 ALLROUND	-
				ALLROUND HC-FEP	1	21001052	SPG 1225/6 ALLROUND HC-FEP	-
16	30	6	70	ALLROUND	1	21001023	SPG 1630/6 ALLROUND	-



Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.

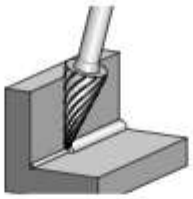


Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	20	6	60	16	1.25	ALLROUND	1	21001025	KEL 0820/6 ALLROUND	-
10	20	6	60	14	2.9	ALLROUND	1	21001026	KEL 1020/6 ALLROUND	-
						ALLROUND HC-FEP	1	21001053	KEL 1020/6 ALLROUND HC-FEP	-
12	25	6	65	14	3.3	ALLROUND	1	21001027	KEL 1225/6 ALLROUND	-
			70	14	3.3	ALLROUND HC-FEP	1	21001054	KEL 1225/6 ALLROUND HC-FEP	-
16	30	6	70	14	4.8	ALLROUND	1	21001028	KEL 1630/6 ALLROUND	-

Conical pointed shape SKM

Conical pointed burr according to DIN 8032 with flattened tip for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.

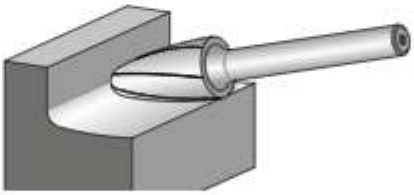


Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	21	ALLROUND	1	21001073	SKM 0307/3 ALLROUND	-
	11	3	41	14	ALLROUND	1	21001074	SKM 0311/3 ALLROUND	-
6	13	3	43	25	ALLROUND	1	21001075	SKM 0613/3 ALLROUND	-
Shank diameter 6 mm									
6	18	6	55	18	ALLROUND	1	21001034	SKM 0618/6 ALLROUND	-
8	20	6	60	22	ALLROUND	1	21001035	SKM 0820/6 ALLROUND	-
10	20	6	60	28	ALLROUND	1	21001036	SKM 1020/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001057	SKM 1020/6 ALLROUND HC-FEP	-
12	25	6	65	26	ALLROUND	1	21001037	SKM 1225/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001058	SKM 1225/6 ALLROUND HC-FEP	-

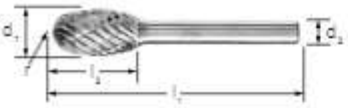
Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.



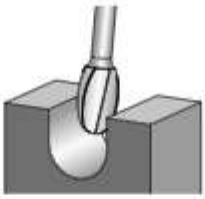
Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	0.75	ALLROUND	1	21001076	RBF 0307/3 ALLROUND	-
	13	3	43	0.75	ALLROUND	1	21001077	RBF 0313/3 ALLROUND	-
6	13	3	43	1.5	ALLROUND	1	21001078	RBF 0613/3 ALLROUND	-
Shank diameter 6 mm									
6	18	6	55	1.5	ALLROUND	1	21001029	RBF 0618/6 ALLROUND	-
8	20	6	60	1.2	ALLROUND	1	21001030	RBF 0820/6 ALLROUND	-
10	20	6	60	2.5	ALLROUND	1	21001031	RBF 1020/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001055	RBF 1020/6 ALLROUND HC-FEP	-
12	25	6	65	2.5	ALLROUND	1	21001032	RBF 1225/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001056	RBF 1225/6 ALLROUND HC-FEP	-
16	30	6	70	3.6	ALLROUND	1	21001033	RBF 1630/6 ALLROUND	-



Oval shape TRE

Oval burr according to DIN 8032 for versatile, economical and time-saving use on steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. Also available with wear-resistant HICOAT coating.



Special features:
- 30% higher stock removal rate when used on steel than conventional cross-cut burrs.
- Comfortable working thanks to reduced vibration and less noise.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	1.2	ALLROUND	1	21001079	TRE 0307/3 ALLROUND	-
6	10	6	40	2.8	ALLROUND	1	21001080	TRE 0610/3 ALLROUND	-
Shank diameter 6 mm									
6	10	6	50	2.8	ALLROUND	1	*21001038*	TRE 0610/6 ALLROUND	-
8	13	6	53	3.7	ALLROUND	1	21001039	TRE 0813/6 ALLROUND	-
10	16	6	56	4	ALLROUND	1	21001040	TRE 1016/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001059	TRE 1016/6 ALLROUND HC-FEP	-
12	20	6	60	5	ALLROUND	1	21001041	TRE 1220/6 ALLROUND	-
					ALLROUND HC-FEP	1	21001060	TRE 1220/6 ALLROUND HC-FEP	-
16	25	6	65	6.5	ALLROUND	1	21001042	TRE 1625/6 ALLROUND	-

Set 1412 ALLROUND

Set 1412 ALLROUND contains five versatile tungsten carbide burrs for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 ALLROUND, KUD 1210/6 ALLROUND, WRC 1225/6 ALLROUND, SPG 1225/6 ALLROUND and RBF 1225/6 ALLROUND with a shank diameter of 6 mm, cut ALLROUND.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further unused slots are available for other burrs.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	ALLROUND	1	21901412	1412 ALLROUND	-

Set 1403 ALLROUND

Set 1403 ALLROUND contains three versatile small tungsten carbide burrs for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0313/3 ALLROUND, WRC 0313/3 ALLROUND and RBF 0313/3 ALLROUND with a shank diameter of 3 mm, cut ALLROUND.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm					
3	ALLROUND	1	21901403	1403 ALLROUND	-

Set 1404 ALLROUND

Set 1404 ALLROUND contains three versatile small tungsten carbide burrs for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0613/3 ALLROUND, WRC 0613/3 ALLROUND and RBF 0613/3 ALLROUND with a shank diameter of 3 mm, cut ALLROUND.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm					
3	ALLROUND	1	21901404	1404 ALLROUND	-

Set 1406 ALLROUND

Set 1406 ALLROUND contains three versatile tungsten carbide burrs for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0616/6 ALLROUND, WRC 0616/6 ALLROUND and RBF 0618/6 ALLROUND with a shank diameter of 6 mm, cut ALLROUND.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	ALLROUND	1	21901406	1406 ALLROUND	-

Set 1414 ALLROUND

Set 1414 ALLROUND contains three versatile tungsten carbide burrs for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 ALLROUND, WRC 1225/6 ALLROUND and RBF 1225/6 ALLROUND with a shank diameter of 6 mm, cut ALLROUND.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	ALLROUND	1	21901414	1414 ALLROUND	-

Set 1414 ALLROUND HC-FEP

Set 1414 ALLROUND HC-FEP contains three versatile tungsten carbide burrs with high-quality HICOAT coating for use on important materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 ALLROUND HC-FEP, WRC 1225/6 ALLROUND HC-FEP and RBF 1225/6 ALLROUND HC-FEP with a shank diameter of 6 mm, cut ALLROUND.

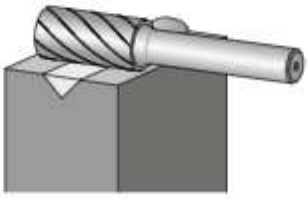
Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	ALLROUND HC-FEP	1	21901415	1414 ALLROUND HC-FEP	-

STEEL cut for steel and cast steel

Cylindrical shape ZYA without end cut

Cylindrical burrs according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	STEEL	1	21101687	ZYA 0616/6 STEEL	-
8	20	6	60	STEEL	1	21101787	ZYA 0820/6 STEEL	-
10	20	6	60	STEEL	1	21102187	ZYA 1020/6 STEEL	-

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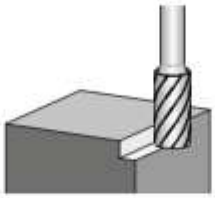
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
10	20	6	60	STEEL HC-FEP	1	21102190	ZYA 1020/6 STEEL HC-FEP	-
12	25	6	65	STEEL	1	21101987	ZYA 1225/6 STEEL	-
				STEEL HC-FEP	1	21101990	ZYA 1225/6 STEEL HC-FEP	-
16	25	6	65	STEEL	1	21102037	ZYA 1625/6 STEEL	-
10	20	6	60	STEEL HC-FEP	1	21100490	ZYAS 1020/6 STEEL HC-FEP	-

Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.

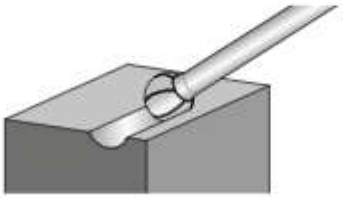


Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	STEEL	1	21100287	ZYAS 0616/6 STEEL	-
8	20	6	60	STEEL	1	21100387	ZYAS 0820/6 STEEL	-
10	20	6	60	STEEL	1	21100487	ZYAS 1020/6 STEEL	-
12	25	6	65	STEEL	1	21100587	ZYAS 1225/6 STEEL	-
				STEEL HC-FEP	1	21100590	ZYAS 1225/6 STEEL HC-FEP	-
16	25	6	65	STEEL	1	21100687	ZYAS 1625/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
8	20	6	170	STEEL	1	21100327	ZYAS 0820/6 STEEL SL 150	-
10	20	6	170	STEEL	1	21100727	ZYAS 1020/6 STEEL SL 150	-
12	25	6	175	STEEL	1	21100527	ZYAS 1225/6 STEEL SL 150	-

Ball shape KUD

Ball-shaped burr according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	5	6	45	STEEL	1	21112587	KUD 0605/6 STEEL	-
8	7	6	47	STEEL	1	21112687	KUD 0807/6 STEEL	-
10	9	6	49	STEEL	1	21112787	KUD 1009/6 STEEL	-
				STEEL HC-FEP	1	21112790	KUD 1009/6 STEEL HC-FEP	-

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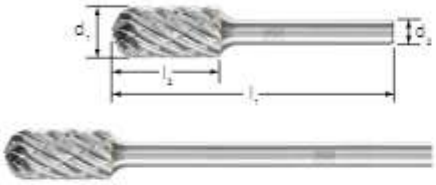
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
12	10	6	51	STEEL	1	21112887	KUD 1210/6 STEEL	-
				STEEL HC-FEP	1	21112890	KUD 1210/6 STEEL HC-FEP	-
16	14	6	54	STEEL	1	21112987	KUD 1614/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
10	9	6	159	STEEL	1	21112789	KUD 1009/6 STEEL SL 150	-
12	10	6	160	STEEL	1	21112889	KUD 1210/6 STEEL SL 150	-

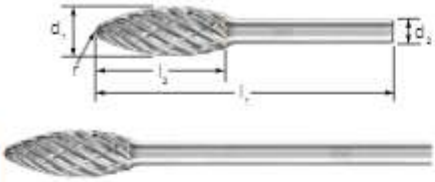


Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.

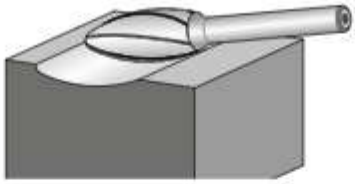
Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	STEEL	1	21105087	WRC 0616/6 STEEL	-
8	20	6	60	STEEL	1	21105187	WRC 0820/6 STEEL	-
10	20	6	60	STEEL	1	21105287	WRC 1020/6 STEEL	-
				STEEL HC-FEP	1	21105290	WRC 1020/6 STEEL HC-FEP	-
12	25	6	65	STEEL	1	21105387	WRC 1225/6 STEEL	-
				STEEL HC-FEP	1	21105390	WRC 1225/6 STEEL HC-FEP	-
16	25	6	65	STEEL	1	21105487	WRC 1625/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
8	20	6	170	STEEL	1	21105186	WRC 0820/6 STEEL SL 150	-
10	20	6	170	STEEL	1	21105286	WRC 1020/6 STEEL SL 150	-
12	25	6	175	STEEL	1	21105389	WRC 1225/6 STEEL SL 150	-



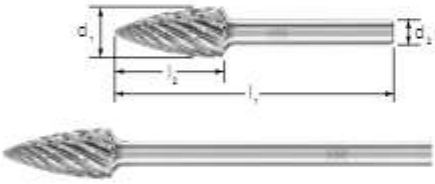
Flame-shaped B

Flame-shaped burr according to ISO 7755/8 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



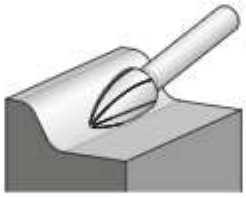
Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	20	6	60	1.5	STEEL	1	21103187	B 0820/6 STEEL	-
10	25	6	65	1.7	STEEL	1	21103286	B 1025/6 STEEL	-
					STEEL HC-FEP	1	21103290	B 1025/6 STEEL HC-FEP	-
12	30	6	70	2.1	STEEL	1	21103387	B 1230/6 STEEL	-
					STEEL HC-FEP	1	21103390	B 1230/6 STEEL HC-FEP	-
16	35	6	75	2.6	STEEL	1	21103436	B 1635/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
10	25	6	175	1.7	STEEL	1	21103227	B 1025/6 STEEL SL 150	-
12	30	6	180	2.1	STEEL	1	21103386	B 1230/6 STEEL SL 150	-



Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.

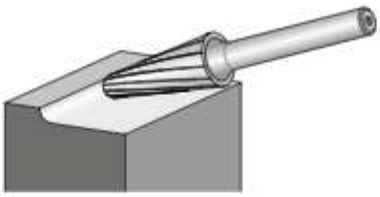


Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	18	6	55	STEEL	1	21122587	SPG 0618/6 STEEL	-
8	20	6	60	STEEL	1	21122588	SPG 0820/6 STEEL	-
10	20	6	60	STEEL	1	21122687	SPG 1020/6 STEEL	-
				STEEL HC-FEP	1	21122690	SPG 1020/6 STEEL HC-FEP	-
12	25	6	65	STEEL	1	21122787	SPG 1225/6 STEEL	-
				STEEL HC-FEP	1	21122790	SPG 1225/6 STEEL HC-FEP	-
16	30	6	70	STEEL	1	21122887	SPG 1630/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
8	20	6	170	STEEL	1	*21122586*	SPG 0820/6 STEEL SL 150	-
12	25	6	175	STEEL	1	*21122788*	SPG 1225/6 STEEL SL 150	-

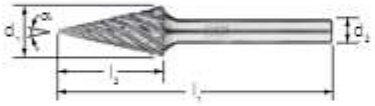
Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



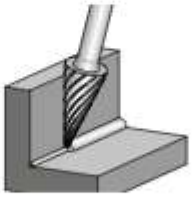
Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
10	20	6	60	14	2.9	STEEL	1	21125087	KEL 1020/6 STEEL	-
						STEEL HC-FEP	1	21125090	KEL 1020/6 STEEL HC-FEP	-
12	30	6	70	14	2.6	STEEL	1	21125287	KEL 1230/6 STEEL	-
						STEEL HC-FEP	1	21125290	KEL 1230/6 STEEL HC-FEP	-
16	30	6	70	14	4.8	STEEL	1	21125387	KEL 1630/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)										
10	20	6	170	14	2.9	STEEL	1	21125089	KEL 1020/6 STEEL SL 150	-
12	30	6	180	14	2.6	STEEL	1	21125289	KEL 1230/6 STEEL SL 150	-



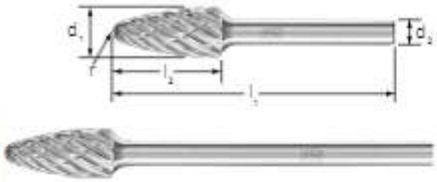
Conical pointed shape SKM

Conical pointed burr according to DIN 8032 with flattened tip for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



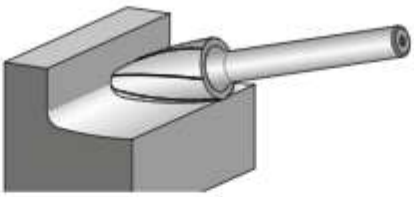
Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
6	18	6	55	18	STEEL	1	21115077	SKM 0618/6 STEEL	-
8	20	6	60	22	STEEL	1	21115087	SKM 0820/6 STEEL	-
10	20	6	60	28	STEEL	1	21115187	SKM 1020/6 STEEL	-
					STEEL HC-FEP	1	21115190	SKM 1020/6 STEEL HC-FEP	-
12	25	6	65	26	STEEL	1	21115287	SKM 1225/6 STEEL	-
					STEEL HC-FEP	1	21115290	SKM 1225/6 STEEL HC-FEP	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
10	20	6	170	28	STEEL	1	*21115189*	SKM 1020/6 STEEL SL 150	-
12	25	6	175	26	STEEL	1	*21115289*	SKM 1225/6 STEEL SL 150	-



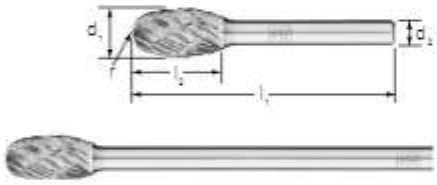
Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



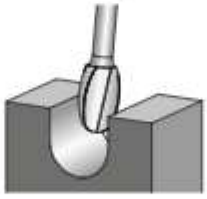
Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
6	18	6	55	1.5	STEEL	1	21117387	RBF 0618/6 STEEL	-
8	20	6	60	1.2	STEEL	1	21117687	RBF 0820/6 STEEL	-
10	20	6	60	2.5	STEEL	1	21117787	RBF 1020/6 STEEL	-
					STEEL HC-FEP	1	21117790	RBF 1020/6 STEEL HC-FEP	-
12	25	6	65	2.5	STEEL	1	21117887	RBF 1225/6 STEEL	-
					STEEL HC-FEP	1	21117890	RBF 1225/6 STEEL HC-FEP	-
16	30	6	70	3.6	STEEL	1	21117987	RBF 1630/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
8	20	6	170	1.2	STEEL	1	*21117689*	RBF 0820/6 STEEL SL 150	-
12	25	6	175	2.5	STEEL	1	*21117889*	RBF 1225/6 STEEL SL 150	-



Oval shape TRE

Oval burr according to DIN 8032 for machining steel and cast steel. Tangibly more aggressive combined with good guidance, guaranteeing safe and precise work. Also available with wear-resistant HICOAT coating.



Special features:
- Up to 50% higher stock removal rate when used on steel and cast steel than conventional cross-cut burrs.
- Workpieces are protected through significantly lower thermal load.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	13	6	53	3.7	STEEL	1	21135087	TRE 0813/6 STEEL	-
10	16	6	56	4	STEEL	1	21134987	TRE 1016/6 STEEL	-
					STEEL HC-FEP	1	21134990	TRE 1016/6 STEEL HC-FEP	-
12	20	6	60	5	STEEL	1	21135187	TRE 1220/6 STEEL	-
					STEEL HC-FEP	1	21135190	TRE 1220/6 STEEL HC-FEP	-
16	25	6	65	6.5	STEEL	1	21135287	TRE 1625/6 STEEL	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
10	16	6	160	4	STEEL	1	21134988	TRE 1016/6 STEEL SL 150	-
12	20	6	170	5	STEEL	1	21135189	TRE 1220/6 STEEL SL 150	-

Set 1812 STEEL

Set 1812 STEEL contains five tungsten carbide burrs for processing steel and cast steel in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYA 1225/6 STEEL, KUD 1210/6 STEEL, WRC 1225/6 STEEL, SPG 1225/6 STEEL and RBF 1225/6 STEEL with a shank diameter of 6 mm, cut STEEL.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further slots are available for other burrs.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	STEEL	1	21901812	1812 STEEL	-

Set 1806 STEEL

Set 1806 STEEL contains three tungsten carbide burrs for processing steel and cast steel in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0616/6 STEEL, WRC 0616/6 STEEL and RBF 0618/6 STEEL with a shank diameter of 6 mm, cut STEEL.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	STEEL	1	21901806	1806 STEEL 3TLG	-

Set 1807 STEEL

Set 1807 STEEL contains three tungsten carbide burrs for processing steel and cast steel in the most common shapes and dimensions.

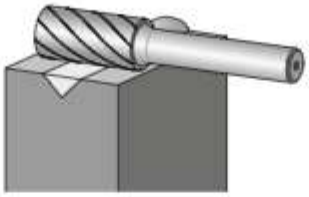
Contents:
The set comprises one each of the following: ZYAS 1225/6 STEEL, WRC 1225/6 STEEL and RBF 1225/6 STEEL with a shank diameter of 6 mm, cut STEEL.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	STEEL	1	21901807	1807 STEEL 3TLG	-

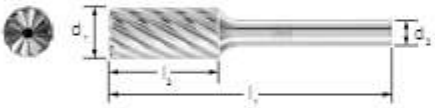
Cylindrical shape ZYA without end cut

Cylindrical burrs according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.



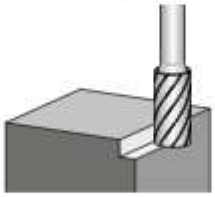
Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	INOX	1	21201282	ZYA 0313/3 INOX	-
6	13	3	43	INOX	1	21201482	ZYA 0613/3 INOX	-
Shank diameter 6 mm								
6	16	6	55	INOX	1	21101682	ZYA 0616/6 INOX	-
8	20	6	60	INOX	1	21101782	ZYA 0820/6 INOX	-
10	20	6	60	INOX	1	21102182	ZYA 1020/6 INOX	-
				INOX HC-FEP	1	21102181	ZYA 1020/6 INOX HC-FEP	-
12	25	6	65	INOX	1	21101982	ZYA 1225/6 INOX	-
				INOX HC-FEP	1	21101981	ZYA 1225/6 INOX HC-FEP	-



Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.

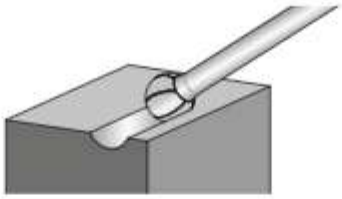


Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	INOX	1	21200282	ZYAS 0313/3 INOX	-
6	13	3	43	INOX	1	21200482	ZYAS 0613/3 INOX	-
Shank diameter 6 mm								
6	16	6	55	INOX	1	21100282	ZYAS 0616/6 INOX	-
12	25	6	65	INOX	1	21100582	ZYAS 1225/6 INOX	-
				INOX HC-FEP	1	21100581	ZYAS 1225/6 INOX HC-FEP	-

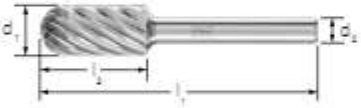
Ball shape KUD

Ball-shaped burr according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.



Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	2	3	33	INOX	1	21211082	KUD 0302/3 INOX	-
4	3	3	34	INOX	1	21212582	KUD 0403/3 INOX	-
5	4	3	35	INOX	1	21212682	KUD 0504/3 INOX	-
6	5	3	35	INOX	1	21213082	KUD 0605/3 INOX	-
Shank diameter 6 mm								
6	5	6	45	INOX	1	21112582	KUD 0605/6 INOX	-
8	7	6	47	INOX	1	21112682	KUD 0807/6 INOX	-
10	9	6	49	INOX	1	21112782	KUD 1009/6 INOX	-
				INOX HC-FEP	1	21112781	KUD 1009/6 INOX HC-FEP	-
12	10	6	51	INOX	1	21112882	KUD 1210/6 INOX	-
				INOX HC-FEP	1	21112881	KUD 1210/6 INOX HC-FEP	-

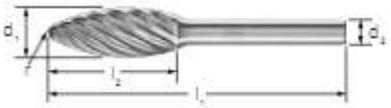


Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.

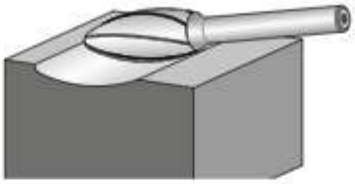
Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	INOX	1	21205182	WRC 0313/3 INOX	-
6	13	3	43	INOX	1	21205282	WRC 0613/3 INOX	-
Shank diameter 6 mm								
6	16	6	55	INOX	1	21105082	WRC 0616/6 INOX	-
8	20	6	60	INOX	1	21105182	WRC 0820/6 INOX	-
10	20	6	60	INOX	1	21105282	WRC 1020/6 INOX	-
				INOX HC-FEP	1	21105281	WRC 1020/6 INOX HC-FEP	-
12	25	6	65	INOX	1	21105382	WRC 1225/6 INOX	-
				INOX HC-FEP	1	21105381	WRC 1225/6 INOX HC-FEP	-



Flame-shaped B

Flame-shaped burr according to ISO 7755/8 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.

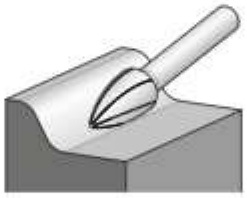


Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	20	6	60	1.5	INOX	1	21103182	B 0820/6 INOX	-
10	25	6	65	1.7	INOX	1	21103282	B 1025/6 INOX	-
					INOX HC-FEP	1	21103281	B 1025/6 INOX HC-FEP	-
12	30	6	70	2.1	INOX	1	21103382	B 1230/6 INOX	-
					INOX HC-FEP	1	21103381	B 1230/6 INOX HC-FEP	-

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.

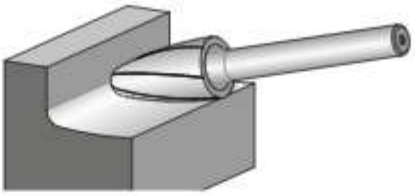


Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	7	3	37	INOX	1	21222582	SPG 0307/3 INOX	-
	13	3	43	INOX	1	21222682	SPG 0313/3 INOX	-
6	13	3	43	INOX	1	21222782	SPG 0613/3 INOX	-
Shank diameter 6 mm								
6	18	6	55	INOX	1	21122582	SPG 0618/6 INOX	-
8	20	6	60	INOX	1	21122592	SPG 0820/6 INOX	-
10	20	6	60	INOX	1	21122682	SPG 1020/6 INOX	-
				INOX HC-FEP	1	21122681	SPG 1020/6 INOX HC-FEP	-
12	25	6	65	INOX	1	21122782	SPG 1225/6 INOX	-
				INOX HC-FEP	1	21122780	SPG 1225/6 INOX HC-FEP	-

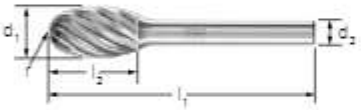
Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.



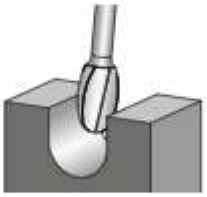
Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	13	3	43	0.75	INOX	1	21218132	RBF 0313/3 INOX	-
6	13	3	43	1.5	INOX	1	21230082	RBF 0613/3 INOX	-
Shank diameter 6 mm									
6	18	6	55	1.5	INOX	1	21117382	RBF 0618/6 INOX	-
8	20	6	60	1.2	INOX	1	21117682	RBF 0820/6 INOX	-
10	20	6	60	2.5	INOX	1	21117782	RBF 1020/6 INOX	-
					INOX HC-FEP	1	21117781	RBF 1020/6 INOX HC-FEP	-
12	25	6	65	2.5	INOX	1	21117882	RBF 1225/6 INOX	-
					INOX HC-FEP	1	21117881	RBF 1225/6 INOX HC-FEP	-



Oval shape TRE

Oval burr according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.

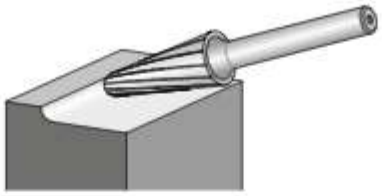


Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	13	6	53	3.7	INOX	1	21135082	TRE 0813/6 INOX	-
10	16	6	56	4	INOX	1	21134982	TRE 1016/6 INOX	-
					INOX HC-FEP	1	21134981	TRE 1016/6 INOX HC-FEP	-
12	20	6	60	5	INOX	1	21135182	TRE 1220/6 INOX	-
					INOX HC-FEP	1	21135181	TRE 1220/6 INOX HC-FEP	-

Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for machining stainless steel (INOX). The cut impresses with an extremely high stock removal rate and long tool life as well as much lower vibration than comparable cross cuts. Also available with wear-resistant HICOAT coating.



Special features:
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to reduced heat production.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	20	6	60	16	1.25	INOX	1	21124982	KEL 0820/6 INOX	-
10	20	6	60	14	2.9	INOX	1	21125082	KEL 1020/6 INOX	-
						INOX HC-FEP	1	21125081	KEL 1020/6 INOX HC-FEP	-
12	30	6	70	14	2.6	INOX	1	21125282	KEL 1230/6 INOX	-
						INOX HC-FEP	1	21125281	KEL 1230/6 INOX HC-FEP	-

Set 1912 INOX

Set 1912 INOX contains five tungsten carbide burrs for processing stainless steel (INOX) in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYA 1225/6 INOX, KUD 1210/6 INOX, WRC 1225/6 INOX, RBF 1225/6 INOX and SPG 1225/6 INOX with a shank diameter of 6 mm, cut INOX.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further slots are available for other burrs.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	INOX	1	21901912	1912 INOX	-

Set 1907 INOX

Set 1907 INOX contains five tungsten carbide burrs for processing stainless steel (INOX) in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 INOX, WRC 1225/6 INOX and RBF 1225/6 INOX with a shank diameter of 6 mm, cut INOX.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	INOX	1	21901907	1907 INOX 3TLG	-

TC burrs for high-performance applications

INOX cut for stainless steel (INOX)

Set 1906 INOX

Set 1906 INOX contains five tungsten carbide burrs for processing stainless steel (INOX) in the most common shapes and dimensions

Contents:
The set comprises one each of the following: ZYAS 0616/6 INOX, WRC 0616/6 INOX and RBF 0618/6 INOX with a shank diameter of 6 mm, cut INOX.

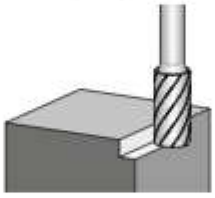
Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	INOX	1	21901906	1906 INOX 3TLG	-

ALU cut for aluminium/non-ferrous metals

Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.



Special features:
- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

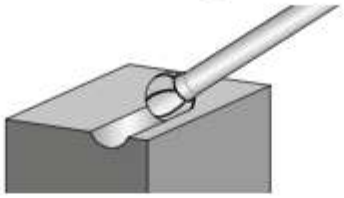
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	ALU	1	21200295	ZYAS 0313/3 ALU	-
6	13	3	43	ALU	1	21200495	ZYAS 0613/3 ALU	-
Shank diameter 6 mm								
6	16	6	55	ALU	1	21100986	ZYAS 0616/6 ALU	-
8	20	6	60	ALU	1	21100388	ZYAS 0820/6 ALU	-
10	20	6	60	ALU	1	21100786	ZYAS 1020/6 ALU	-
12	25	6	65	ALU	1	21100586	ZYAS 1225/6 ALU	-
				ALU HC-NFE	1	21100595	ZYAS 1225/6 ALU HC-NFE	-
16	25	6	65	ALU	1	21100658	ZYAS 1625/6 ALU	-
Shank diameter 8 mm								
12	25	8	65	ALU	1	21100588	ZYAS 1225/8 ALU	-

TC burrs for high-performance applications

ALU cut for aluminium/non-ferrous metals

Ball shape KUD

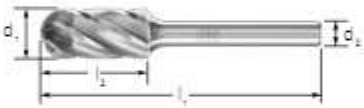
Ball-shaped burr according to DIN 8032 with circumferential and end cut for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.



Special features:

- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	2	3	33	ALU	1	21211095	KUD 0302/3 ALU	-
6	5	3	35	ALU	1	21213095	KUD 0605/3 ALU	-
Shank diameter 6 mm								
6	5	6	45	ALU	1	21112586	KUD 0605/6 ALU	-
8	7	6	47	ALU	1	21112686	KUD 0807/6 ALU	-
10	9	6	49	ALU	1	21112788	KUD 1009/6 ALU	-
12	10	6	51	ALU	1	21112886	KUD 1210/6 ALU	-
				ALU HC-NFE	1	21112901	KUD 1210/6 ALU HC-NFE	-
16	14	6	54	ALU	1	21112978	KUD 1614/6 ALU	-



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.

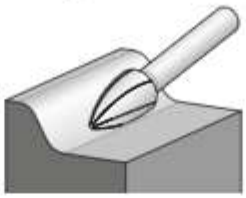
Special features:

- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	13	3	43	ALU	1	21205195	WRC 0313/3 ALU	-
6	13	3	43	ALU	1	21205295	WRC 0613/3 ALU	-
Shank diameter 6 mm								
6	16	6	55	ALU	1	21105786	WRC 0616/6 ALU	-
8	20	6	60	ALU	1	21105188	WRC 0820/6 ALU	-
10	20	6	60	ALU	1	21105288	WRC 1020/6 ALU	-
12	25	6	65	ALU	1	21105386	WRC 1225/6 ALU	-
				ALU HC-NFE	1	21105401	WRC 1225/6 ALU HC-NFE	-
16	25	6	65	ALU	1	21105458	WRC 1625/6 ALU	-
Shank diameter 8 mm								
12	25	8	65	ALU	1	21105388	WRC 1225/8 ALU	-

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032, flattened tip for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.

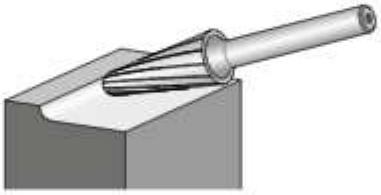


Special features:
- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	7	3	37	ALU	1	21222563	SPG 0307/3 ALU	-
	13	3	43	ALU	1	21222663	SPG 0313/3 ALU	-
6	13	3	43	ALU	1	21222763	SPG 0613/3 ALU	-
Shank diameter 6 mm								
6	18	6	55	ALU	1	21122566	SPG 0618/6 ALU	-
8	20	6	60	ALU	1	21122596	SPG 0820/6 ALU	-
10	20	6	60	ALU	1	21122676	SPG 1020/6 ALU	-
12	25	6	65	ALU	1	21122766	SPG 1225/6 ALU	-
				ALU HC-NFE	1	21122767	SPG 1225/6 ALU HC-NFE	-

Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.



Special features:
- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

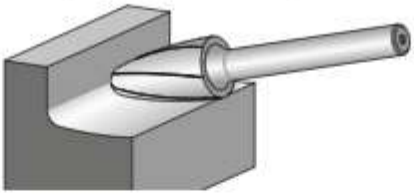
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	20	6	60	16	1.25	ALU	1	21124988	KEL 0820/6 ALU	-
10	20	6	60	14	2.9	ALU	1	21125088	KEL 1020/6 ALU	-
12	30	6	70	14	2.6	ALU	1	21125286	KEL 1230/6 ALU	-
						ALU HC-NFE	1	21125285	KEL 1230/6 ALU HC-NFE	-
16	30	6	70	14	4.8	ALU	1	21125358	KEL 1630/6 ALU	-
Shank diameter 8 mm										
12	30	8	70	14	2.6	ALU	1	21125288	KEL 1230/8 ALU	-

TC burrs for high-performance applications

ALU cut for aluminium/non-ferrous metals

Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for an extremely high stock removal rate, long tool life and smooth operation when machining aluminium.



Special features:

- Large chips and reduced material adhesion.
- Can be used with cutting speeds of up to 1,100 m/min (HC-NFE: up to 1,300 m/min).
- HC-NFE coating prevents material adhesion when working on long-chipping and lubricating non-ferrous metals.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	13	3	43	0.75	ALU	1	21218135	RBF 0313/3 ALU	-
6	13	3	43	1.5	ALU	1	21230095	RBF 0613/3 ALU	-
Shank diameter 6 mm									
6	18	6	55	1.5	ALU	1	21117386	RBF 0618/6 ALU	-
8	20	6	60	1.2	ALU	1	21117688	RBF 0820/6 ALU	-
10	20	6	60	2.5	ALU	1	21117788	RBF 1020/6 ALU	-
12	25	6	65	2.5	ALU	1	21117886	RBF 1225/6 ALU	-
					ALU HC-NFE	1	21117885	RBF 1225/6 ALU HC-NFE	-
16	30	6	70	3.6	ALU	1	21117958	RBF 1630/6 ALU	-
Shank diameter 8 mm									
12	25	8	65	2.5	ALU	1	21117888	RBF 1225/8 ALU	-

Set 1603 ALU

Set 1603 ALU contains ten small tungsten carbide burrs for processing aluminium in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0313/3 ALU, ZYAS 0613/3 ALU, KUD 0302/3 ALU, KUD 0605/3 ALU, WRC 0313/3 ALU, WRC 0613/3 ALU, RBF 0313/3 ALU, RBF 0613/3 ALU, SPG 0313/3 ALU and SPG 0613/3 ALU with a shank diameter of 3 mm, cut ALU.

Special features:

- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm					
3	ALU	1	21901603	1603 ALU	-

Set 1612 ALU

Set 1612 ALU contains five tungsten carbide burrs for processing aluminium in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 ALU, KUD 1210/6 ALU, WRC 1225/6 ALU, RBF 1225/6 ALU and KEL 1230/6 ALU with a shank diameter of 6 mm, cut ALU.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- Five further slots are available for other burrs.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	ALU	1	21901612	1612 ALU	-

NON-FERROUS cut for non-ferrous metals

Cylindrical shape ZYA without end cut

Cylindrical burr according to DIN 8032 for general-purpose use on non-ferrous metals and fibre-reinforced plastics.

Special features:
- Very good stock removal rate when used on non-ferrous metals such as brass and copper, plastics and fibre-reinforced plastics.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	NON-FERROUS	1	21101696	ZYA 0616/6 NON-FERROUS	-
12	25	6	65	NON-FERROUS	1	21101996	ZYA 1225/6 NON-FERROUS	-
Shank diameter 8 mm								
12	25	8	65	NON-FERROUS	1	21101998	ZYA 1225/8 NON-FERROUS	-

Ball shape KUD

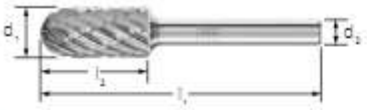
Ball-shaped burr according to DIN 8032 for general-purpose use on non-ferrous metals and fibre-reinforced plastics.

Special features:
- Very good stock removal rate when used on non-ferrous metals such as brass and copper, plastics and fibre-reinforced plastics.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
8	7	6	47	NON-FERROUS	1	21112696	KUD 0807/6 NON-FERROUS	-
12	10	6	51	NON-FERROUS	1	21112896	KUD 1210/6 NON-FERROUS	-

TC burrs for high-performance applications

NON-FERROUS cut for non-ferrous metals



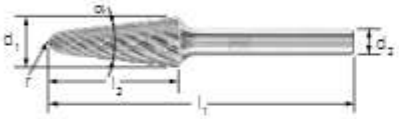
Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for general-purpose use on non-ferrous metals and fibre-reinforced plastics.

Special features:

- Very good stock removal rate when used on non-ferrous metals such as brass and copper, plastics and fibre-reinforced plastics.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	NON-FERROUS	1	21105096	WRC 0616/6 NON-FERROUS	-
12	25	6	65	NON-FERROUS	1	21105396	WRC 1225/6 NON-FERROUS	-



Conical shape with radius end KEL

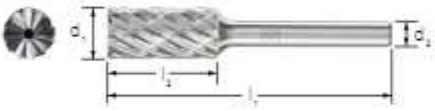
Conical burr with round radius end according to DIN 8032 for general-purpose use on non-ferrous metals and fibre-reinforced plastics.

Special features:

- Very good stock removal rate when used on non-ferrous metals such as brass and copper, plastics and fibre-reinforced plastics.

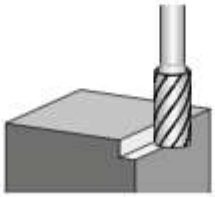
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
10	20	6	60	14	2.9	NON-FERROUS	1	21125096	KEL 1020/6 NON-FERROUS	-
12	30	6	70	14	2.6	NON-FERROUS	1	21125296	KEL 1230/6 NON-FERROUS	-
Shank diameter 8 mm										
16	30	8	70	14	4.8	NON-FERROUS	1	21125398	KEL 1630/8 NON-FERROUS	-

CAST cut for cast iron



Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



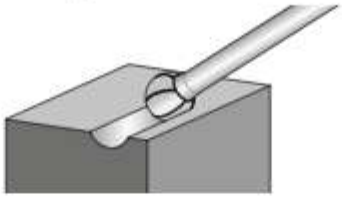
Special features:

- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	CAST	1	21100283	ZYAS 0616/6 CAST	-
10	20	6	60	CAST	1	21100483	ZYAS 1020/6 CAST	-
12	25	6	65	CAST	1	21100583	ZYAS 1225/6 CAST	-
Shank diameter 8 mm								
12	25	8	65	CAST	1	21100585	ZYAS 1225/8 CAST	-

Ball shape KUD

Ball-shaped burr according to DIN 8032 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
10	9	6	49	CAST	1	*21112783*	KUD 1009/6 CAST	-
12	10	6	51	CAST	1	*21112883*	KUD 1210/6 CAST	-
Shank diameter 8 mm								
12	10	8	51	CAST	1	*21112885*	KUD 1210/8 CAST	-

Cylindrical shape with radius end WRC

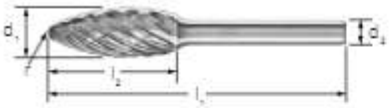
Cylindrical burr with radius end according to DIN 8032 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	CAST	1	21105083	WRC 0616/6 CAST	-
10	20	6	60	CAST	1	21105283	WRC 1020/6 CAST	-
12	25	6	65	CAST	1	21105383	WRC 1225/6 CAST	-
Shank diameter 8 mm								
12	25	8	65	CAST	1	21105385	WRC 1225/8 CAST	-

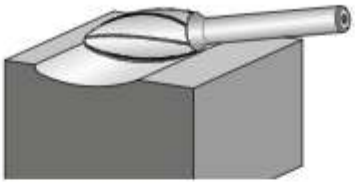
TC burrs for high-performance applications

CAST cut for cast iron



Flame-shaped B

Flame-shaped burr according to ISO 7755/8 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



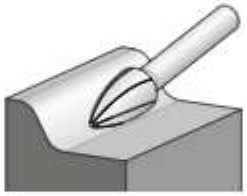
Special features:

- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
12	30	6	70	2.1	CAST	1	21103383	B 1230/6 CAST	-
Shank diameter 8 mm									
12	30	8	70	2.1	CAST	1	21103384	B 1230/8 CAST	-

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



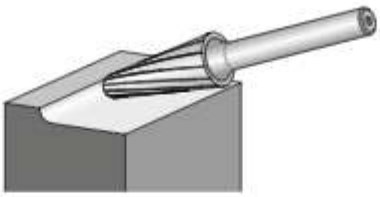
Special features:

- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	18	6	55	CAST	1	*21122583*	SPG 0618/6 CAST	-
10	20	6	60	CAST	1	21122683	SPG 1020/6 CAST	-
12	25	6	70	CAST	1	21122783	SPG 1225/6 CAST	-
Shank diameter 8 mm								
12	25	8	70	CAST	1	*21122781*	SPG 1225/8 CAST	-

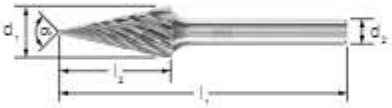
Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



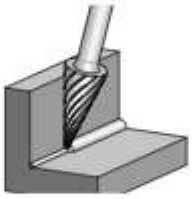
Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
12	30	6	70	14	2.6	CAST	1	21125283	KEL 1230/6 CAST	-
Shank diameter 8 mm										
12	30	8	70	14	2.6	CAST	1	21125284	KEL 1230/8 CAST	-



Conical pointed shape SKM

Conical pointed burr according to DIN 8032 with flattened tip for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

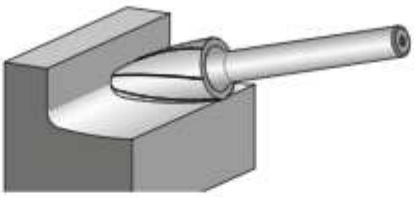


Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
12	25	6	65	26	CAST	1	21115283	SKM 1225/6 CAST	-

Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

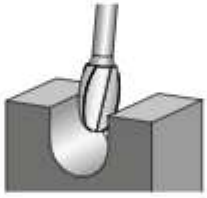


Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
6	18	6	55	1.5	CAST	1	21117383	RBF 0618/6 CAST	-
10	20	6	60	2.5	CAST	1	21117783	RBF 1020/6 CAST	-
12	25	6	65	2.5	CAST	1	21117883	RBF 1225/6 CAST	-
Shank diameter 8 mm									
12	25	8	65	2.5	CAST	1	21117877	RBF 1225/8 CAST	-

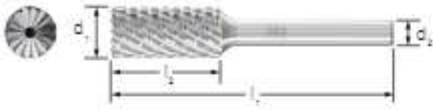
Oval shape TRE

Oval burr according to DIN 8032 for machining cast iron. The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



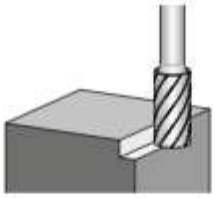
Special features:
- Up to 100% higher stock removal rate on cast iron when compared with conventional cross cuts.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
12	20	6	60	5	CAST	1	21135183	TRE 1220/6 CAST	-



Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for work on hard titanium materials (tensile strength > 500 N/mm²). The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

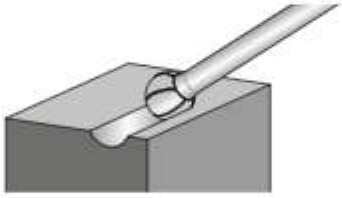


Special features:
- Excellent stock removal rate and tool life due to innovative tooth geometry.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	13	3	43	TITANIUM	27,000 – 48,000	1	21200284	ZYAS 0313/3 TITANIUM	-
6	13	3	43	TITANIUM	13,000 – 24,000	1	21200484	ZYAS 0613/3 TITANIUM	-
Shank diameter 6 mm									
6	16	6	55	TITANIUM	13,000 – 24,000	1	21100284	ZYAS 0616/6 TITANIUM	-
12	25	6	65	TITANIUM	7,000 – 12,000	1	21100584	ZYAS 1225/6 TITANIUM	-

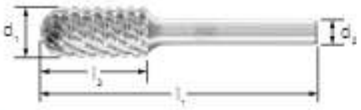
Ball shape KUD

Ball-shaped burr according to DIN 8032 for work on hard titanium materials (tensile strength > 500 N/mm²). The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



Special features:
- Excellent stock removal rate and tool life due to innovative tooth geometry.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	2	3	33	TITANIUM	27,000 – 48,000	1	21211084	KUD 0302/3 TITANIUM	-
4	3	3	34	TITANIUM	20,000 – 36,000	1	21212584	KUD 0403/3 TITANIUM	-
5	4	3	35	TITANIUM	16,000 – 29,000	1	21212684	KUD 0504/3 TITANIUM	-
6	5	3	35	TITANIUM	13,000 – 24,000	1	21213084	KUD 0605/3 TITANIUM	-
Shank diameter 6 mm									
6	5	6	45	TITANIUM	13,000 – 24,000	1	21112584	KUD 0605/6 TITANIUM	-
12	10	6	51	TITANIUM	7,000 – 12,000	1	21112884	KUD 1210/6 TITANIUM	-

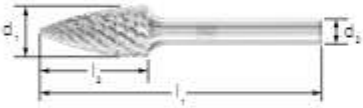


Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 for work on hard titanium materials (tensile strength > 500 N/mm²). The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

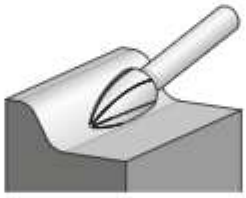
Special features:
- Excellent stock removal rate and tool life due to innovative tooth geometry.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	13	3	43	TITANIUM	27,000 – 48,000	1	21205184	WRC 0313/3 TITANIUM	-
6	13	3	43	TITANIUM	13,000 – 24,000	1	21205284	WRC 0613/3 TITANIUM	-
Shank diameter 6 mm									
6	16	6	55	TITANIUM	13,000 – 24,000	1	21105084	WRC 0616/6 TITANIUM	-
12	25	6	65	TITANIUM	7,000 – 12,000	1	21105384	WRC 1225/6 TITANIUM	-



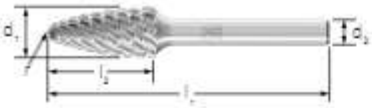
Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for work on hard titanium materials (tensile strength > 500 N/mm²). The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.



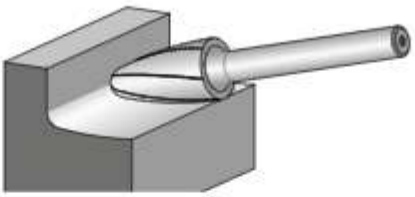
Special features:
- Excellent stock removal rate and tool life due to innovative tooth geometry.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	TITANIUM	27,000 – 48,000	1	21222584	SPG 0307/3 TITANIUM	-
	13	3	43	TITANIUM	27,000 – 48,000	1	21222684	SPG 0313/3 TITANIUM	-
6	13	3	43	TITANIUM	13,000 – 24,000	1	21222784	SPG 0613/3 TITANIUM	-
Shank diameter 6 mm									
6	18	6	55	TITANIUM	13,000 – 24,000	1	21122584	SPG 0618/6 TITANIUM	-
12	25	6	65	TITANIUM	7,000 – 12,000	1	21122784	SPG 1225/6 TITANIUM	-



Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for work on hard titanium materials (tensile strength > 500 N/mm²). The cut impresses with its smooth milling performance with considerably reduced vibration and less noise.

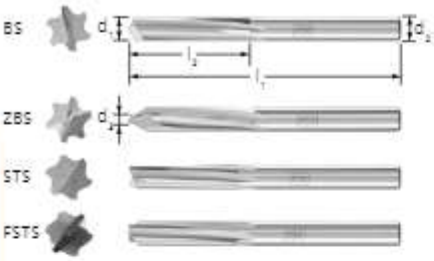


Special features:
- Excellent stock removal rate and tool life due to innovative tooth geometry.
- Tangibly more aggressive, large chips and very good chip removal.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm										
3	13	3	43	0.75	TITANIUM	27,000 – 48,000	1	21218184	RBF 0313/3 TITANIUM	-
6	13	3	43	1.5	TITANIUM	13,000 – 24,000	1	21230084	RBF 0613/3 TITANIUM	-
Shank diameter 6 mm										
6	18	6	55	1.5	TITANIUM	13,000 – 24,000	1	21117384	RBF 0618/6 TITANIUM	-
12	25	6	65	2.5	TITANIUM	7,000 – 12,000	1	21117884	RBF 1225/6 TITANIUM	-

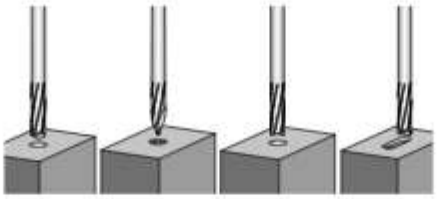
TC burrs for high-performance applications

PLAST cut for GRP/CRP



Cylindrical shape ZYA

Cylindrical burr for use on less hard duroplastics (GRP and CRP ≤ 40% fibre content) and fibre-reinforced thermoplastics. The cut minimizes delamination and fraying and enables very low resistance and high feed rates.

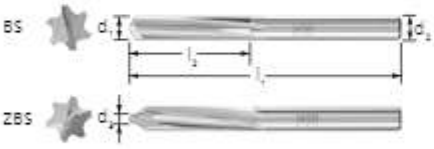


Special features:

- Particularly suitable for use on machines and on robots.
- Drill cut BS and centre drill ZBS for combined drilling and milling work in manual, machine and robot applications.
- The versions with an end cut (STS) and flat end cut (FSTS) are suitable only for machine and robot applications.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Centre drill diameter d_3 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm with drill cut (BS)									
6	25	6	65	-	PLAST	1	21455696	ZYA 0625/6 PLAST BS	-
Shank diameter 8 mm with drill cut (BS)									
8	25	8	65	-	PLAST	1	21455896	ZYA 0825/8 PLAST BS	-
Shank diameter of 6 mm with centre drill (ZBS)									
6	25	6	65	2.5	PLAST	1	21456696	ZYA 0625/6 PLAST ZBS	-
Shank diameter 6 mm with end cut (STS)									
6	25	6	65	-	PLAST	1	*21454596*	ZYA 0625/6 PLAST STS	-
Shank diameter 8 mm with end cut (STS)									
8	25	8	65	-	PLAST	1	*21455596*	ZYA 0825/8 PLAST STS	-
Shank diameter 6 mm with flat end cut (FSTS)									
6	25	6	65	-	PLAST	1	*21456596*	ZYA 0625/6 PLAST FSTS	-
Shank diameter 8 mm with flat end cut (FSTS)									
8	25	8	65	-	PLAST	1	*21457596*	ZYA 0825/8 PLAST FSTS	-

FVK and FVKS cuts for GRP/CRP



Cylindrical shape ZYA

Cylindrical burr for general use on hard duroplastics (also GRP and CRP with > 40% fibre content).

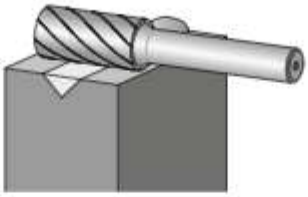
Special features:

- The FVKS cut for use on machines and robots with high feed rates.
- The FVKS cut produces smooth edges and enables smooth milling.
- Drill cut BS and centre drill ZBS for combined drilling and milling work in manual, machine and robot applications.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut	RPM		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm with drill cut (BS)									
6	25	6	65	FVK	24,000 – 48,000	1	21458696	ZYA 0625/6 FVK BS	-
				FVKS	24,000 – 48,000	1	21458697	ZYA 0625/6 FVKS BS	-
Shank diameter 8 mm with drill cut (BS)									
8	25	8	65	FVK	18,000 – 36,000	1	21458898	ZYA 0825/8 FVK BS	-
				FVKS	18,000 – 36,000	1	21458897	ZYA 0825/8 FVKS BS	-
Shank diameter of 6 mm with centre drill (ZBS)									
6	25	6	65	FVK	24,000 – 48,000	1	21457696	ZYA 0625/6 FVK ZBS	-
				FVKS	24,000 – 48,000	1	21457697	ZYA 0625/6 FVKS ZBS	-

Cylindrical shape ZYA without end cut

Cylindrical burr according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.

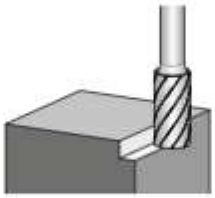


Special features:
- Type TOUGH enables aggressive milling with high stock removal, whereas type TOUGH-S is characterized by smooth milling and high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
8	20	6	60	TOUGH	1	21000013	ZYA 0820/6 TOUGH	-
10	20	6	60	TOUGH	1	21000015	ZYA 1020/6 TOUGH	-
12	25	6	65	TOUGH	1	21000016	ZYA 1225/6 TOUGH	-
				TOUGH-S	1	21000017	ZYA 1225/6 TOUGH-S	-

Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.

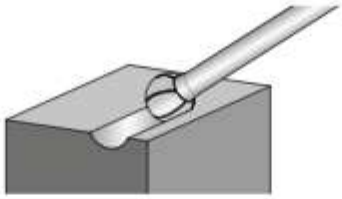


Special features:
- Type TOUGH enables aggressive milling with high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
8	20	6	60	TOUGH	1	21000003	ZYAS 0820/6 TOUGH	-
10	20	6	60	TOUGH	1	21000005	ZYAS 1020/6 TOUGH	-
12	25	6	65	TOUGH	1	21000007	ZYAS 1225/6 TOUGH	-
Shank diameter 8 mm								
12	25	8	65	TOUGH	1	21000006	ZYAS 1225/8 TOUGH	-

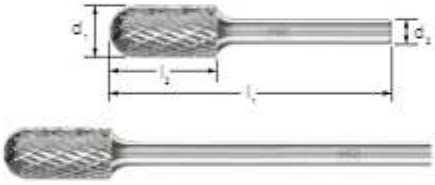
Ball shape KUD

Ball-shaped burr according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.



Special features:
- Type TOUGH enables aggressive milling with high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
8	7	6	47	TOUGH	1	21000054	KUD 0807/6 TOUGH	-
12	10	6	51	TOUGH	1	21000056	KUD 1210/6 TOUGH	-



Cylindrical shape with radius end WRC

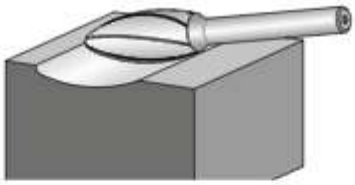
Cylindrical burr with radius end according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.

Special features:
- Type TOUGH enables aggressive milling with high stock removal, whereas type TOUGH-S is characterized by smooth milling and high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
8	20	6	60	TOUGH	1	21000033	WRC 0820/6 TOUGH	-
10	20	6	60	TOUGH	1	21000035	WRC 1020/6 TOUGH	-
12	25	6	65	TOUGH	1	21000036	WRC 1225/6 TOUGH	-
				TOUGH-S	1	21000038	WRC 1225/6 TOUGH-S	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
12	25	6	175	TOUGH	1	21000130	WRC 1225/6 TOUGH SL 150	-
Shank diameter 8 mm								
12	25	8	65	TOUGH	1	21000037	WRC 1225/8 TOUGH	-

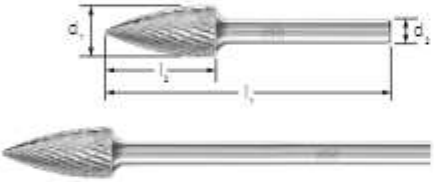
Flame-shaped B

Flame-shaped burr according to ISO 7755/8 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.



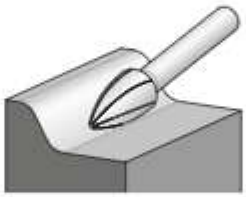
Special features:
- Type TOUGH enables aggressive milling with high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	20	6	60	1.5	TOUGH	1	21000023	B 0820/6 TOUGH	-
12	30	6	70	2.1	TOUGH	1	21000026	B 1230/6 TOUGH	-
Shank diameter 8 mm									
12	30	8	70	2.1	TOUGH	1	21000027	B 1230/8 TOUGH	-



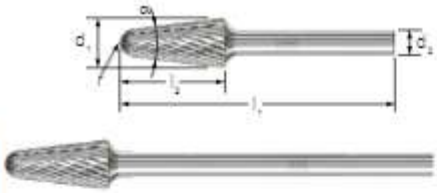
Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.



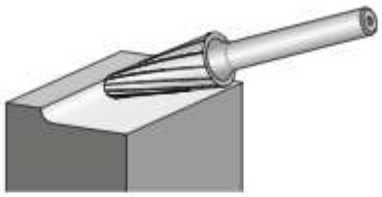
Special features:
- Type TOUGH enables aggressive milling with high stock removal, whereas type TOUGH-S is characterized by smooth milling and high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
10	20	6	60	TOUGH	1	21000095	SPG 1020/6 TOUGH	-
				TOUGH-S	1	21000096	SPG 1020/6 TOUGH-S	-
12	25	6	65	TOUGH	1	21000097	SPG 1225/6 TOUGH	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)								
12	25	6	175	TOUGH	1	*21000128*	SPG 1225/6 TOUGH SL 150	-
Shank diameter 8 mm								
12	25	8	65	TOUGH	1	21000098	SPG 1225/8 TOUGH	-



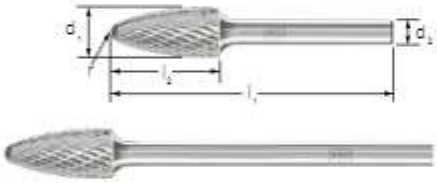
Conical shape with radius end KEL

Conical burr with round radius end according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.



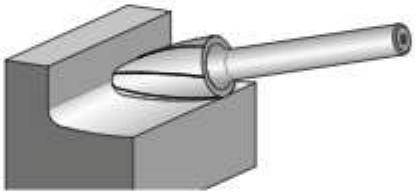
Special features:
- Type TOUGH enables aggressive milling with high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
12	25	6	65	14	3.3	TOUGH	1	21000116	KEL 1225/6 TOUGH	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)										
12	25	6	175	14	3.3	TOUGH	1	21000131	KEL 1225/6 TOUGH SL 150	-
Shank diameter 8 mm										
12	25	8	65	14	3.3	TOUGH	1	21000117	KEL 1225/8 TOUGH	-



Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.

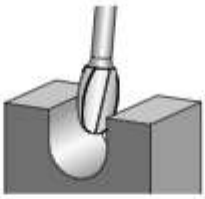


Special features:
- Type TOUGH enables aggressive milling with high stock removal, whereas type TOUGH-S is characterized by smooth milling and high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
8	20	6	60	1.2	TOUGH	1	21000073	RBF 0820/6 TOUGH	-
10	20	6	60	2.5	TOUGH	1	21000075	RBF 1020/6 TOUGH	-
12	25	6	65	2.5	TOUGH	1	21000076	RBF 1225/6 TOUGH	-
					TOUGH-S	1	21000078	RBF 1225/6 TOUGH-S	-
16	25	6	65	4.9	TOUGH	1	21000080	RBF 1625/6 TOUGH	-
Long shank diameter of 6 mm, shank length SL 150 mm (long steel shank)									
12	25	6	175	2.5	TOUGH	1	21000129	RBF 1225/6 TOUGH SL 150	-
Shank diameter 8 mm									
12	25	8	65	2.5	TOUGH	1	21000077	RBF 1225/8 TOUGH	-
					TOUGH-S	1	21000079	RBF 1225/8 TOUGH-S	-

Oval shape TRE

Oval burr according to DIN 8032 for tough applications in dockyards, foundries and steel construction. The extremely impact-resistant cut minimizes tooth chipping/breakage, splintering and burr failure. Ideal for use as long-shank variants.



Special features:
- Type TOUGH enables aggressive milling with high stock removal.
- Can also be used in low rotational speed ranges.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
10	16	6	56	4	TOUGH	1	21000124	TRE 1016/6 TOUGH	-
12	20	6	60	5	TOUGH	1	21000126	TRE 1220/6 TOUGH	-

Set 1712 TOUGH

Set 1712 TOUGH contains five tungsten carbide burrs for tough applications in the most common shapes and dimensions.

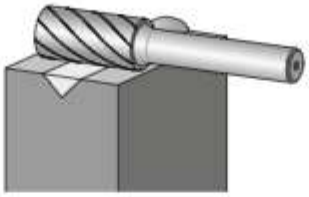
Contents:
The set comprises one each of the following: WRC 1225/6 TOUGH, SPG 1225/6 TOUGH, RBF 1225/6 TOUGH, KEL 1225/6 TOUGH and TRE 1220/6 TOUGH with a shank diameter of 6 mm, cut TOUGH.

Special features:
- Five further unused slots are available for other burrs.
- The sturdy plastic box protects the tools against dirt and damage.
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	TOUGH	1	21901712	1712 TOUGH	-

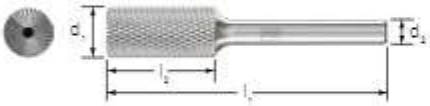
Cylindrical shape ZYA without end cut

Cylindrical burr according to DIN 8032 for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.



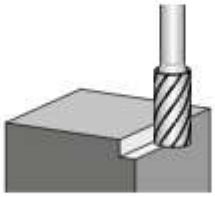
Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	10	3	40	MICRO	1	21201173	ZYA 0210/3 MICRO	-
3	13	3	43	MICRO	1	21201273	ZYA 0313/3 MICRO	-
4	13	3	43	MICRO	1	21201303	ZYA 0413/3 MICRO	-
6	13	3	43	MICRO	1	21201473	ZYA 0613/3 MICRO	-
Shank diameter 6 mm								
6	16	6	55	MICRO	1	21101676	ZYA 0616/6 MICRO	-
8	20	6	60	MICRO	1	21101776	ZYA 0820/6 MICRO	-
10	20	6	60	MICRO	1	21102176	ZYA 1020/6 MICRO	-
12	25	6	65	MICRO	1	21101976	ZYA 1225/6 MICRO	-



Cylindrical shape ZYAS with end cut

Cylindrical burr according to DIN 8032 with circumferential and end cut for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.

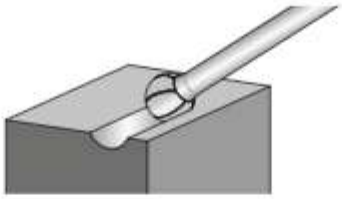


Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm								
6	16	6	55	MICRO	1	21100276	ZYAS 0616/6 MICRO	-
8	20	6	60	MICRO	1	21100376	ZYAS 0820/6 MICRO	-
10	20	6	60	MICRO	1	21100776	ZYAS 1020/6 MICRO	-
12	25	6	65	MICRO	1	21100576	ZYAS 1225/6 MICRO	-

Ball shape KUD

Ball-shaped burr according to DIN 8032 for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.



Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	1.5	3	33	MICRO	1	21211033	KUD 021,5/3 MICRO	-
3	2	3	33	MICRO	1	21211073	KUD 0302/3 MICRO	-
4	3	3	34	MICRO	1	21212573	KUD 0403/3 MICRO	-
6	5	3	35	MICRO	1	21213073	KUD 0605/3 MICRO	-
Shank diameter 6 mm								
6	5	6	45	MICRO	1	21112576	KUD 0605/6 MICRO	-
8	7	6	47	MICRO	1	21112676	KUD 0807/6 MICRO	-
10	9	6	49	MICRO	1	21112776	KUD 1009/6 MICRO	-
12	10	6	51	MICRO	1	21112876	KUD 1210/6 MICRO	-

Cylindrical shape with radius end WRC

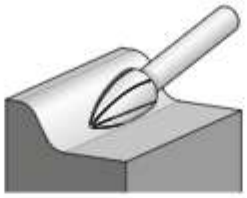
Cylindrical burr with radius end according to DIN 8032 for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.

Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
2	10	3	40	MICRO	1	21205073	WRC 0210/3 MICRO	-
3	13	3	43	MICRO	1	21205173	WRC 0313/3 MICRO	-
6	13	3	43	MICRO	1	21205273	WRC 0613/3 MICRO	-
Shank diameter 6 mm								
6	16	6	55	MICRO	1	21105076	WRC 0616/6 MICRO	-
8	20	6	60	MICRO	1	21105176	WRC 0820/6 MICRO	-
10	20	6	60	MICRO	1	21105276	WRC 1020/6 MICRO	-
12	25	6	65	MICRO	1	21105376	WRC 1225/6 MICRO	-

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032 with flattened tip for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.

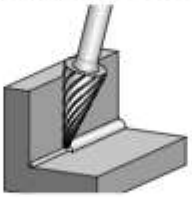


Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm								
3	7	3	37	MICRO	1	21222573	SPG 0307/3 MICRO	-
	13	3	43	MICRO	1	21222673	SPG 0313/3 MICRO	-
6	13	3	43	MICRO	1	21222773	SPG 0613/3 MICRO	-
Shank diameter 6 mm								
6	18	6	55	MICRO	1	21122573	SPG 0618/6 MICRO	-
8	20	6	60	MICRO	1	21122593	SPG 0820/6 MICRO	-
10	20	8	60	MICRO	1	21122673	SPG 1020/6 MICRO	-
12	25	6	65	MICRO	1	21122773	SPG 1225/6 MICRO	-

Conical pointed shape SKM

Conical pointed burr according to DIN 8032 with flattened tip for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.

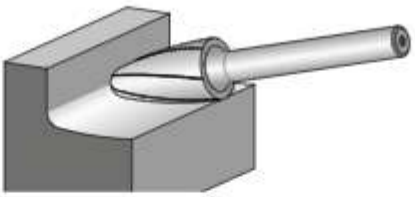


Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	21	MICRO	1	21214073	SKM 0307/3 MICRO	-
	11	3	41	14	MICRO	1	21214173	SKM 0311/3 MICRO	-
6	13	3	43	25	MICRO	1	21215073	SKM 0613/3 MICRO	-
Shank diameter 6 mm									
6	18	6	55	18	MICRO	1	21115076	SKM 0618/6 MICRO	-
8	20	6	60	22	MICRO	1	21115086	SKM 0820/6 MICRO	-
10	20	6	60	28	MICRO	1	21115176	SKM 1020/6 MICRO	-
12	25	6	65	26	MICRO	1	21115276	SKM 1225/6 MICRO	-

Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032 for fine stock removal. Burrs with the MICRO cut offer a higher stock removal rate and a high surface quality compared with conventionally milled surfaces. They also operate with low vibration and little noise.



Special features:
- Unlike with mounted grinding points, there is no change in geometry due to wear and tear.
- Use on almost all materials up to 68 HRC.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	0.75	MICRO	1	21217593	RBF 0307/3 MICRO	-
	13	3	43	0.75	MICRO	1	21218173	RBF 0313/3 MICRO	-
6	13	3	43	1.5	MICRO	1	21230073	RBF 0613/3 MICRO	-
Shank diameter 6 mm									
6	18	6	55	1.5	MICRO	1	21157205	RBF 0618/6 MICRO	-
8	20	6	60	1.2	MICRO	1	21157208	RBF 0820/6 MICRO	-
10	20	6	60	2.5	MICRO	1	21157210	RBF 1020/6 MICRO	-
12	25	6	65	2.5	MICRO	1	21117876	RBF 1225/6 MICRO	-

Set 1502 MICRO

Set 1502 MICRO contains ten small tungsten carbide burrs for finishing work in the most common shapes and dimensions.

Contents:
The set comprises one each of the following:
ZYA 0210/3 MICRO, ZYA 0313/3 MICRO, ZYA 0613/3 MICRO, WRC 0210/3 MICRO, WRC 0313/3 MICRO, WRC 0613/3 MICRO, KUD 0302/3 MICRO, KUD 0605/3 MICRO, RBF 0307/3 MICRO and RBF 0613/3 MICRO with a shank diameter of 3 mm, cut MICRO.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm					
3	MICRO	1	21901502	1502 MICRO	-

Set 1303 MICRO

Set 1303 MICRO contains three small tungsten carbide burrs for finishing work in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYA 0313/3 MICRO, WRC 0313/3 MICRO and RBF 0313/3 MICRO with a shank diameter of 3 mm, cut MICRO.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm					
3	MICRO	1	21901303	1303 MICRO	-

Set 1306 MICRO

Set 1306 MICRO contains three tungsten carbide burrs for finishing work in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 0616/6 MICRO, WRC 0616/6 MICRO and RBF 0618/6 MICRO with a shank diameter of 6 mm, cut MICRO.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	MICRO	1	21901306	1306 MICRO	-

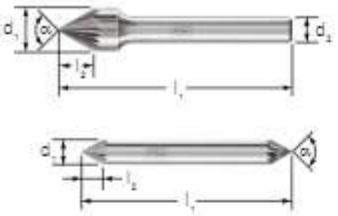
Set 1312 MICRO

Set 1312 MICRO contains three tungsten carbide burrs for finishing work in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: ZYAS 1225/6 MICRO, WRC 1225/6 MICRO and RBF 1225/6 MICRO with a shank diameter of 6 mm, cut MICRO.

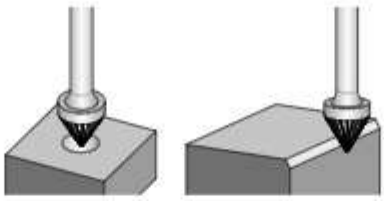
Special features:
- The sturdy plastic box protects the tools against dirt and damage.

d_2 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm					
6	MICRO	1	21901312	1312 MICRO	-



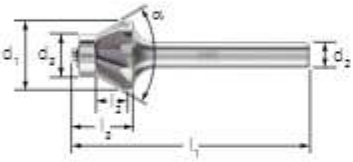
Conical counterbore shape KSJ and conical counterbore shape KSJ (double-ended)

Conical counterbore burr according to DIN 8032 with cut conforming to DIN 8033, with point angle (60°). The KSJ 0605/6 (double-ended) design is cut and usable on both sides. Suitable for flexible counterboring and chamfering.



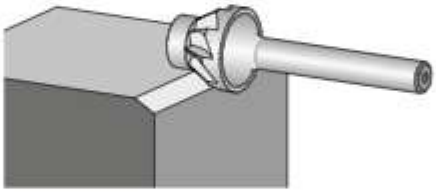
Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
6	5	6	50	60	3	1	21115536	KSJ 0605/6 Z3	-
10	8	6	53	60	3	1	21115736	KSJ 1008/6 Z3	-
16	13	6	56	60	3	1	21115336	KSJ 1613/6 Z3	-
					5	1	21115356	KSJ 1613/6 Z5	-



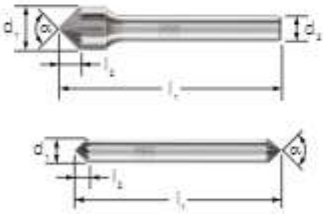
Conical counterbore shape KSJ EDGE

Conical counterbore burr for producing precisely defined 30° chamfer angles.



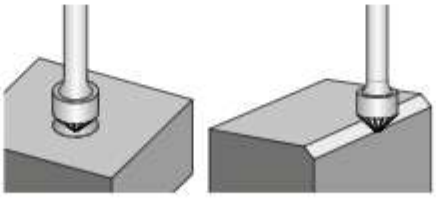
Special features:
- Special design for precise guidance, without damaging the workpiece.
- Safe and comfortable to guide thanks to design with ball bearings.
- Creates exact edge shapes in one single step.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	d_3 [mm]	l_3 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm											
16	5	6	54	10	14	60	EDGE	1	21115366	KSJ 1605/6 EDGE 30°	-
							EDGE ALU	1	21115367	KSJ 1605/6 EDGE ALU 30°	-



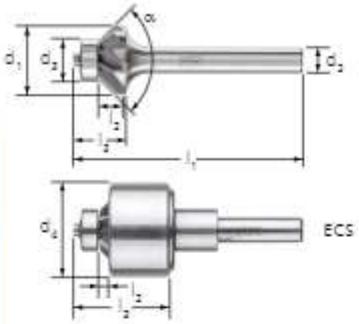
Conical counterbore shape KSK and conical counterbore shape KSK (double-ended)

Conical counterbore 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. Suitable for flexible counterboring and chamfering.



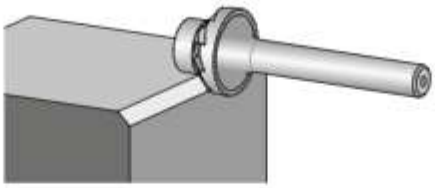
Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm									
6	3	6	50	90	3	1	21115636	KSK 0603/6 Z3	-
10	5	6	50	90	3	1	21115836	KSK 1005/6 Z3	-
16	8	6	53	90	3	1	21115436	KSK 1608/6 Z3	-
					5	1	21115456	KSK 1608/6 Z5	-



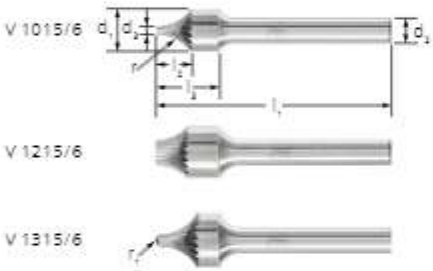
Conical counterbore shape KSK EDGE

Conical counterbore burr for producing precisely defined 45° chamfer angles. The EDGE Cutting System (ECS) allows for chamfers that are 1.2 mm wide (+/- 0.2 mm). The ECS burr can be reordered and replaced. Matching burr: KSK 1603/6 EDGE (ALU) 45°.



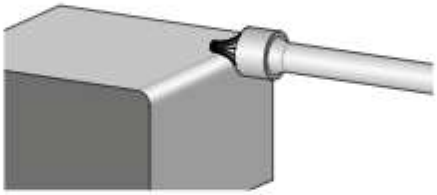
Special features:
- Special design for precise guidance, without damaging the workpiece.
- Safe and comfortable to guide thanks to design with ball bearings.
- Creates exact edge shapes in one single step.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	d_3 [mm]	l_3 [mm]	d_4 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm												
16	3	6	52	10	12	-	90	EDGE	1	21115466	KSK 1603/6 EDGE 45°	-
	1	6	52	10	24	25	90	EDGE	1	21115467	KSK 1603/6 EDGE 45° ECS	-
	3	6	52	10	12	-	90	EDGE ALU	1	21115469	KSK 1603/6 EDGE ALU 45°	-
	1	6	52	10	24	25	90	EDGE ALU	1	*21115468*	KSK 1603/6 EDGE ALU 45° ECS	-



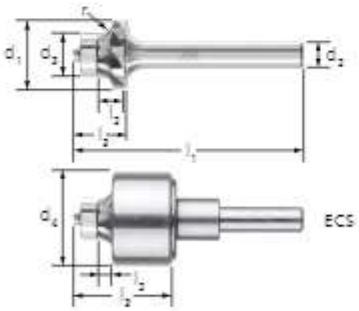
Concave radius burrs V

Concave radius burrs with concave end shape, cut conforming to DIN 8033. Suitable for the production and processing of outer radii and rounded edges.



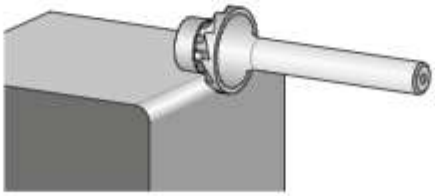
Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	d_3 [mm]	l_3 [mm]	r [mm]	r_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm												
10	8	6	55	2	15	10	-	3	1	21152536	V 1015/6 Z3	-
12	7	6	55	6	15	10	-	3	1	21152836	V 1215/6 Z3	-
13	10	6	55	3	15	10	1.5	3	1	21152736	V 1315/6 Z3	-



Concave radius burrs V EDGE

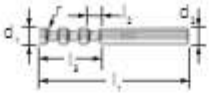
Concave radius burrs for the production of precise radii. Suitable for the production and processing of 3 mm outer radii. The ECS burr can be reordered and replaced. Matching burr: V 1612/6 EDGE R3,0.



Special features:
- Special design for precise guidance, without damaging the workpiece.
- Safe and comfortable to guide thanks to design with ball bearings.
- Creates exact edge shapes in one single step.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	d_3 [mm]	l_3 [mm]	d_4 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm												
16	3	6	52	10	12	-	3	EDGE	1	21152936	V 1612/6 EDGE R3,0	-
					24	25	3	EDGE	1	21152946	V 1612/6 EDGE R3,0 ECS	-

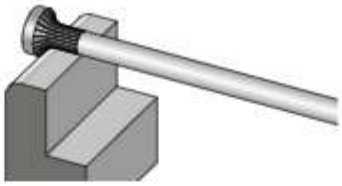
R 0625/6
R 0830/8



R 1618/8

Radius burrs R

Radius burrs with a concave shape and special cut. Suitable for the production and processing of outer radii and rounded edges.

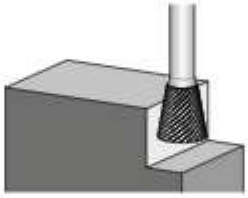


Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.
- Available in two versions: Cylindrical with triple concave contour; or with concave shape, tapered towards shank.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	l_3 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
6	5	6	65	25	3	Special cut (SP)	1	21143086	R 0625/6 SP	-
Shank diameter 8 mm										
8	5	8	65	27	3	Special cut (SP)	1	21143288	R 0830/8 SP	-
16	12	8	118	18	6	Special cut (SP)	1	21143588	R 1618/8 SP	-

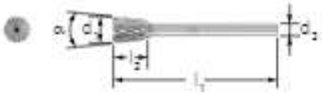
Inverted cones WKN without end cut

Inverted cone-shaped rotary cutter, tapered towards the shank according to DIN 8032 with cut conforming to DIN 8033. Suitable for work on hard-to-reach, reverse-side edges.



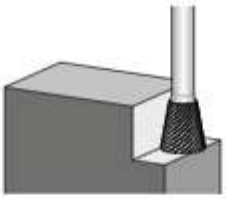
Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	8	3 PLUS	1	21208583	WKN 0307/3 Z3 PLUS	-
					5	1	21208553	WKN 0307/3 Z5	-
6	7	3	37	10	3 PLUS	1	21208683	WKN 0607/3 Z3 PLUS	-
					5	1	21208653	WKN 0607/3 Z5	-
Shank diameter 6 mm									
10	13	6	53	10	3	1	21155036	WKN 1013/6 Z3	-
12	13	6	53	20	3	1	21155136	WKN 1213/6 Z3	-
16	13	6	53	20	3	1	21155236	WKN 1613/6 Z3	-



Inverted cones WKNS with end cut

Inverted cone-shaped rotary cutter, tapered towards the shank according to DIN 8032 with cut conforming to DIN 8033. Shape WKNS with end cut. Suitable for work on hard-to-reach, reverse-side edges.



Special features:
- Can be guided as desired.
- Extremely flexible for use in hard-to-reach areas.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
3	7	3	37	8	3 PLUS	1	21207583	WKNS 0307/3 Z3 PLUS	-
					5	1	21207553	WKNS 0307/3 Z5	-
6	7	3	37	10	3 PLUS	1	21207683	WKNS 0607/3 Z3 PLUS	-
					5	1	21207653	WKNS 0607/3 Z5	-

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group 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 range [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.

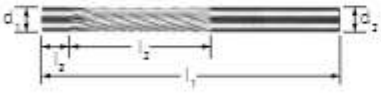
Cutting speeds – TC copy milling burrs

① Material group			② Used for	③ Cut	④ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal	4	450–600 m/min
			Fine stock removal	MICRO	600–750 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal	4	250–350 m/min
			Fine stock removal	MICRO	450–600 m/min

Example:
TC copy milling burr,
MICRO cut,
burr dia. 8 mm.
Fine stock removal on steels up to 1,200 N/mm².
Cutting speed: 600–750 m/min
Rotational speed range:
24,000–30,000 RPM

⑤ Burr dia. [mm]	⑥ Cutting speeds [m/min]				
	250	350	450	600	750
	Rotational speeds [RPM]				
3	27,000	37,000	48,000	64,000	80,000
6	13,000	19,000	24,000	32,000	40,000
8	10,000	14,000	18,000	24,000	30,000

Universal cut KSF 4

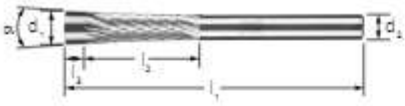


Cylindrical shape ZYA without end cut

Cylindrical burr for levelling elevations such as weld seams and for repairing cutting and punching blades in tool and mould-making. The uncut area provides optimum contour guidance and protects the workpiece against damage.

Special features:
- Cut 4 for coarse stock removal on steel and cast steel, tool steels as well as hardened and heat-treated steels over 1,200 N/mm².
- Long tool life and high surface quality.
- Reduced machining time.

d_1 [mm]	l_2 [mm]	l_3 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm									
3	25	7	3	65	4	1	21201289	ZYA 0325/3 Z4 7MM KFS	-
Shank diameter 6 mm									
6	30	7	6	70	4	1	21101699	ZYA 0630/6 Z4 7MM KFS	-
8	30	7	6	77	4	1	21101789	ZYA 0830/6 Z4 7MM KFS	-



Inverted cones WKN without end cut

Inverted cone-shaped burr, tapered towards the shank for work on punching tools. The uncut area provides optimum contour guidance and protects the workpiece against damage.

Special features:
- Cut 4 for coarse stock removal on steel and cast steel, tool steels as well as hardened and heat-treated steels over 1,200 N/mm².
- Long tool life and high surface quality.
- Reduced machining time.

d_1 [mm]	l_2 [mm]	l_3 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	26	7	6	73	4	4	1	21155009	WKN 0826/6 Z4 7MM KFS	-

MICRO cut for finishing work

Cylindrical shape ZYA without end cut

Cylindrical burr for levelling elevations such as weld seams and for repairing cutting and punching blades in tool and mould-making. The uncut area provides optimum contour guidance and protects the workpiece against damage.

Special features:
- MICRO cut for fine stock removal on almost all materials up to a hardness of 68 HRC.
- Long tool life and high surface quality.
- Reduced machining time.

d_1 [mm]	l_2 [mm]	l_3 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm									
3	25	7	3	65	MICRO	1	21201288	ZYA 0325/3 MICRO 7 mm KFS	-
Shank diameter 6 mm									
6	30	7	6	30	MICRO	1	21101698	ZYA 0630/6 MICRO 7MM KFS	-
8	30	7	6	30	MICRO	1	21101788	ZYA 0830/6 MICRO 7 mm KFS	-

Inverted cones WKN without end cut

Inverted cone-shaped burr, tapered towards the shank for work on punching tools. The uncut area provides optimum contour guidance and protects the workpiece against damage.

Special features:
- MICRO cut for fine stock removal on almost all materials up to a hardness of 68 HRC.
- Long tool life and high surface quality.
- Reduced machining time.

d_1 [mm]	l_2 [mm]	l_3 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
8	26	7	6	73	4	MICRO	1	21155008	WKN 0826/6 MICRO 7 mm KFS	-

PZF 0622/6-60


PZF 0622/6-80


PZF 0422/6-60


PZF 0422/6-70

Cylindrical shape

Cylindrical burr with drill tip and cut cutting surfaces for time-saving milling of profile cylinders with pull protection. The integrated drill tip enables accurate centring for drilling with pin-point precision.

Special features:
- Enormous time savings thanks to very high stock removal rate.
- Less susceptible to breakage, as tool jamming is minimized.
- Good tool life, optimum chip removal and easy to use.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
4	22	6	60	MICRO	1	26007712	PZF 0422/6-60	-
			70	MICRO	1	26007713	PZF 0422/6-70	-
6	22	6	60	MICRO	1	26007674	PZF 0622/6-60	-
			80	MICRO	1	26007711	PZF 0622/6-80	-

Strike plate burrs SBF

Strike plate burrs SBF

Cylindrical burr with radius end according to DIN 8032 for milling strike plates (e.g. facings or security covers) in order to expose the profile cylinder behind it.

Special features:
- Specially developed burr geometry prevents built-up edges and tool clogging when working on particularly soft aluminium materials.
- Perfectly complements the profile cylinder burrs PZF.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/ unit GBP
6	20	6	80	ALU	1	26007714	SBF 0620/6-80	-

Overview of cuts

ALU cut
- Machining of soft non-ferrous metals, brass, copper, aluminium alloys, plastics, fibre-reinforced plastics and rubber.
- Rotational speed range of 4,000 to 6,000 RPM depending on the burr diameter.

Cut 1
- Machining of stainless steel (INOX), soft non-ferrous metals and plastics.
- Rotational speed range of 1,200 to 23,900 RPM depending on the burr diameter.

Cut 2 with chip breaker
- Machining of steel, cast steel and cast iron, stainless steel (INOX), non-ferrous metals and plastics.
- Rotational speed range of 1,200 to 13,200 RPM depending on the burr diameter.

Cut 3 with chip breaker
- Machining of steel, cast steel and cast iron.
- Rotational speed range of 1,200 to 7,900 RPM depending on the burr diameter.

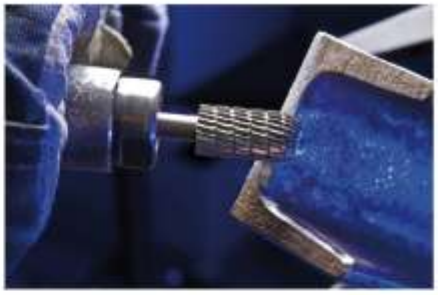
Explanation of the code system

d_1 = Burr dia.
l_2 = Cut length
d_2 = Shank dia.
l_1 = Total length
α = Angle

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group 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 range [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.



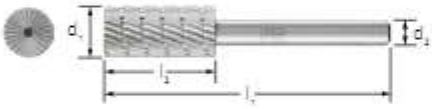
Cutting speeds – HSS rotary cutters

① Material group			② Used for	③ Cut	④ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	Coarse stock removal	2	60–80 m/min
				3	
				SP	
			Fine stock removal	3	80–100 m/min
				SP	
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	1	60–80 m/min
			Fine stock removal	1	80–100 m/min
				2	60–80 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys, brass, copper, zinc	Coarse stock removal	ALU	200–300 m/min
				1	
			Fine stock removal	2	200–250 m/min
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Coarse stock removal	2	60–80 m/min
				3	
				SP	
			Fine stock removal	3	80–100 m/min
				SP	
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		Coarse stock removal	ALU	200–300 m/min
				1	
			Fine stock removal	1	250–300 m/min
				2	200–250 m/min

Example:
HSS rotary cutter,
Cut 2,
Burr dia. 12 mm.
Coarse stock removal on steels up to 1,200 N/mm².
Cutting speed: 60–80 m/min
Rotational speed range: 1.600–2.200 RPM

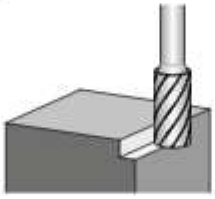
Burr dia. [mm]	Cutting speeds [m/min]					
	60	80	100	200	250	300
	Rotational speeds [RPM]					
1.6	12,000	16,000	19,900	39,800	49,800	59,700
2.3	8,400	11,100	13,900	27,700	34,600	41,600
3.0	6,000	8,000	10,000	19,900	24,900	29,900
3.2	6,000	8,000	10,000	19,900	24,900	29,900
4.0	4,800	6,400	8,000	16,000	19,900	23,900
4.2	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
5.2	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
6.2	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
8.2	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
20.0	900	1,300	1,600	3,200	4,000	4,800

For fine and coarse stock removal



Cylindrical shape with end cut A-ST

The cylindrical HSS rotary cutters with end cut and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

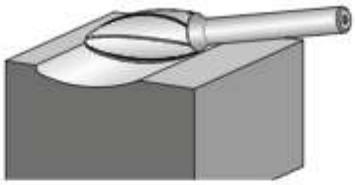


Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm								
4	13	6	60	3	1	22404336	HSS A 0413ST/6 Z3	-
6	16	6	60	1	1	22404716	HSS A 0616ST/6 Z1	-
				2	1	22404726	HSS A 0616ST/6 Z2	-
				3	1	22404736	HSS A 0616ST/6 Z3	-
8	20	6	60	3	1	22405036	HSS A 0820ST/6 Z3	-
10	13	6	53	1	1	22405316	HSS A 1013ST/6 Z1	-
				2	1	22405326	HSS A 1013ST/6 Z2	-
				3	1	22405336	HSS A 1013ST/6 Z3	-
	20	6	60	3	1	22405436	HSS A 1020ST/6 Z3	-
12	25	6	65	1	1	22405516	HSS A 1225ST/6 Z1	-
				2	1	22405526	HSS A 1225ST/6 Z2	-
				3	1	22405536	HSS A 1225ST/6 Z3	-
16	25	6	65	ALU	1	22405916	HSS A 1625ST/6 ALU	-
				2	1	22405826	HSS A 1625ST/6 Z2	-
				3	1	22405836	HSS A 1625ST/6 Z3	-

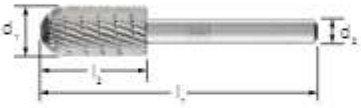
Flame-shaped B

The flame-shaped HSS rotary cutters with special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.



Special features:
- Suitable for use on steel, cast steel and cast iron.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
8	20	6	60	1.5	3	1	22407136	HSS B 0820/6 Z3	-
12	30	6	70	2	3	1	22407436	HSS B 1230/6 Z3	-
16	35	6	75	2.6	3	1	22407836	HSS B 1635/6 Z3	-



Cylindrical shape with radius end C

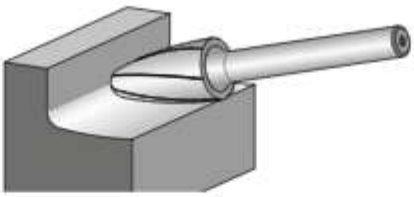
Cylindrical HSS rotary cutter with radius end, end cut and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm								
6	16	6	60	1	1	22410716	HSS C 0616/6 Z1	-
				2	1	22410726	HSS C 0616/6 Z2	-
				3	1	22410736	HSS C 0616/6 Z3	-
8	20	6	60	3	1	22411036	HSS C 0820/6 Z3	-
10	20	6	60	3	1	22411336	HSS C 1020/6 Z3	-
12	25	6	65	1	1	22411516	HSS C 1225/6 Z1	-
				2	1	22411526	HSS C 1225/6 Z2	-
				3	1	22411536	HSS C 1225/6 Z3	-
16	25	6	65	ALU	1	22411816	HSS C 1625/6 ALU	-
				3	1	22411836	HSS C 1625/6 Z3	-

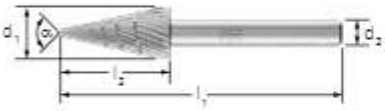
Tree shape with radius end H

Tree-shaped HSS rotary cutter with radius end, end cut and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.



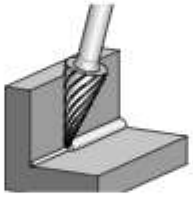
Special features:
- Suitable for use on steel, cast steel and cast iron.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
8	20	6	60	1.2	3	1	22431836	HSS H 0820/6 Z3	-
10	20	6	60	2.5	3	1	22432436	HSS H 1020/6 Z3	-
12	25	6	65	2.5	3	1	22433036	HSS H 1225/6 Z3	-
16	30	6	70	3.6	3	1	22434536	HSS H 1630/6 Z3	-



Conical pointed shape G

Conical pointed burr with flattened tip and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

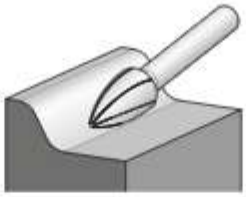


Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), cast iron, non-ferrous metals and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
6	18	6	60	14	3	1	22422736	HSS G 0618/6 Z3	-
10	20	6	60	28	1	1	22423316	HSS G 1020/6 Z1	-
					2	1	22423326	HSS G 1020/6 Z2	-
					3	1	22423336	HSS G 1020/6 Z3	-
12	25	6	65	27	1	1	22423516	HSS G 1225/6 Z1	-
					2	1	22423526	HSS G 1225/6 Z2	-
					3	1	22423536	HSS G 1225/6 Z3	-

Pointed tree shape K

Pointed tree-shaped burr with flattened tip and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

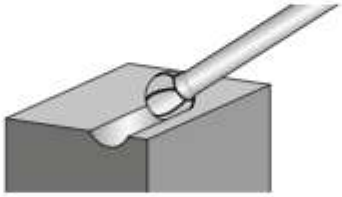


Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), cast iron, non-ferrous metals and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm								
6	18	6	60	2	1	22440726	HSS K 0618/6 Z2	-
				3	1	22440736	HSS K 0618/6 Z3	-
10	20	6	60	3	1	22441336	HSS K 1020/6 Z3	-
12	25	6	65	1	1	22441516	HSS K 1225/6 Z1	-
				3	1	22441536	HSS K 1225/6 Z3	-
	30	6	70	1	1	22441616	HSS K 1230/6 Z1	-
				2	1	22441626	HSS K 1230/6 Z2	-
				3	1	22441636	HSS K 1230/6 Z3	-
16	30	6	70	ALU	1	22441816	HSS K 1630/6 ALU	-
				2	1	22441826	HSS K 1630/6 Z2	-
				3	1	22441836	HSS K 1630/6 Z3	-

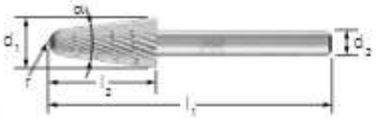
Ball shape F

Ball-shaped burr with special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.



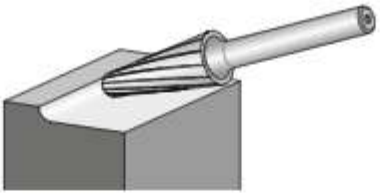
Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), cast iron, non-ferrous metals and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm								
4	3	6	55	3	1	22418836	HSS F 0403/6 Z3	-
6	5	6	55	3	1	22419736	HSS F 0605/6 Z3	-
8	7	6	55	1	1	22420016	HSS F 0807/6 Z1	-
				3	1	22420036	HSS F 0807/6 Z3	-
10	9	6	49	3	1	22420336	HSS F 1009/6 Z3	-
12	10	6	51	1	1	22420516	HSS F 1210/6 Z1	-
				3	1	22420536	HSS F 1210/6 Z3	-
16	14	6	54	1	1	22420816	HSS F 1614/6 Z1	-
				2	1	22420826	HSS F 1614/6 Z2	-
				3	1	22420836	HSS F 1614/6 Z3	-



Conical shape with radius end L

Conical burr with radius end and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

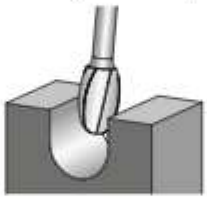


Special features:
- Suitable for use on steel, cast steel, cast iron, non-ferrous metals and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 6 mm										
10	20	6	60	14	2.9	3	1	22450136	HSS L 1020/6 Z3	-
12	25	6	65	14	3.3	3	1	22450736	HSS L 1225/6 Z3	-
	30	6	70	14	2.6	3	1	22451236	HSS L 1230/6 Z3	-
16	30	6	70	14	4.8	ALU	1	22451816	HSS L 1630/6 ALU	-
						3	1	22451836	HSS L 1630/6 Z3	-

Oval shape O

Oval burr with special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.

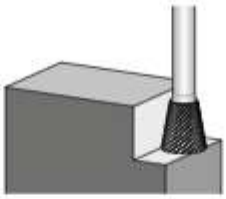


Special features:
- Suitable for use on steel, cast steel, stainless steel (INOX), cast iron, non-ferrous metals and plastics.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
6	10	6	55	2.8	3	1	22460136	HSS O 0610/6 Z3	-
10	16	6	56	4	3	1	22460836	HSS O 1016/6 Z3	-
12	20	6	60	5	3	1	22461436	HSS O 1220/6 Z3	-
16	25	6	65	6.5	ALU	1	22461816	HSS O 1625/6 ALU	-
					3	1	22461836	HSS O 1625/6 Z3	-

Inverted cone with end cut W-ST

Inverted cone-shaped burr, tapered towards the shank, with end cut and special tooth geometry, manufactured to a high quality. The burrs can also be used cost-effectively with low-power tool drives at low rotational speeds.



Special features:
- Suitable for use on steel, cast steel and cast iron.
- Highly aggressive.
- There is reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
12	13	6	53	20	3	1	22471236	HSS W 1213ST/6 Z3	-

Set 81 HSS

Set 81 HSS contains 10 HSS rotary cutters in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: HSS A 0616ST/6 Z3, HSS A 1013ST/6 Z3, HSS A 1225ST/6 Z3, HSS C 0616/6 Z3, HSS C 1225/6 Z3, HSS K 0618/6 Z3, HSS K 1230/6 Z3, HSS K 1630/6 Z3, HSS F 1210/6 Z3 and HSS L 1630/6 Z3 with a shank diameter of 6 mm, cut 3.

Special features:
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3	1	22900813	81 HSS	-

Set 82 HSS

Set 82 HSS contains 10 HSS rotary cutters in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: HSS A 1013ST/6 Z3, HSS A 1625ST/6 Z3, HSS K 1630/6 Z3, HSS F 1614/6 Z3, HSS G 1020/6 Z3, HSS L 1020/6 Z3, HSS L 1630/6 Z3, HSS O 1625/6 Z3, HSS W 1213ST/6 Z3 and HSS 45/6 Z3 with a shank diameter of 6 mm, cut 3.

Special features:
- The burrs are secured at the shanks, facilitating the selection and withdrawal of the tools.
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3	1	22900823	82 HSS	-

Set 83 HSS

Set 83 HSS contains 18 HSS rotary cutters in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: HSS A 0616ST/6 Z3, HSS A 1225ST/6 Z3, HSS C 0616/6 Z3, HSS C 1225/6 Z3, HSS K 0618/6 Z3, HSS K 1225/6 Z3, HSS K 1230/6 Z3, HSS F 0403/6 Z3, HSS F 0807/6 Z3, HSS F 1210/6 Z3, HSS F 1614/6 Z3, HSS G 0618/6 Z3, HSS G 1225/6 Z3, HSS O 0610/6 Z3, HSS O 1220/6 Z3, HSS 55/6 Z3, HSS 63/6 Z3 and HSS 64/6 Z3 with a shank diameter of 6 mm, cut 3.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3	1	22900833	83 HSS	-

Set 85 Z3

Set 85 Z3 contains three HSS rotary cutters for fine and coarse stock removal in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: A 0616ST/6 Z3, C 0616/6 Z3 and K 0618/6 Z3 with a shank diameter of 6 mm, cut 3.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3	1	22900810	85 Z3	-

Set 86 Z3

Set 86 Z3 contains three HSS rotary cutters for fine and coarse stock removal in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: A 1225ST/6 Z3, C 1225/6 Z3 and K 1225/6 Z3 with a shank diameter of 6 mm, cut 3.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm				
3	1	22900811	86 Z3	-

HSS 45/6

HSS 55/6

HSS 63ST/6

HSS 64/6

Special shapes shank dia. 6 mm

Rotary cutters in 4 special shapes with a shank diameter of 6 mm.

Special features:
- Suited to a range of milling work due to their different shapes.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/unit GBP
Shank diameter 6 mm									
12	18	6	58	-	3	1	22104536	HSS 45/6 Z3	-
6	20	6	60	-	3	1	22105536	HSS 55/6 Z3	-
12	30	6	70	7	3	1	22106336	HSS 63ST/6 Z3	-
				-	3	1	22106436	HSS 64/6 Z3	-

HSS edge trimming cutter

Due to the 3 identical cutting areas, this HSS edge trimming cutter provides three milling areas. Cylindrical rotary cutter with triple, concave contour and special cut, with a shank diameter of 6 mm. Cutting speed range of 60–80 m/min, rotational speed range of 3,100–4,200 RPM. When using the smallest burr diameter: max. 9,000 RPM.

Special features:
- Suitable for edge breaking to a defined radius.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 8 mm									
8	30	6	70	5	Special cut (SP)	1	22215656	HSS 156/6 SP	-

HSS 119

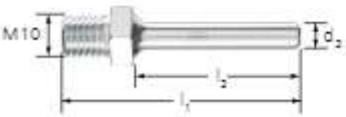
HSS 120

HSS rotary cutters for light metals with female thread

Multi-purpose HSS rotary cutters, similar to the tree shape. For work on soft non-ferrous metals: Cutting speed range of 200–300 m/min, rotational speed range of 3,100–4,700 RPM. For work on aluminium, up to max. 9.000 RPM.

Special features:
- Available in two different special cuts, with female thread M10.
- HSS 120 with chip breaker.

d_1 [mm]	l_1 [mm]	l_2 [mm]	Female thread DIN	Suitable arbors	Cut		Item no.	Designation	Price/ unit GBP
20	62	53	M10	BO 6/10, BO 8/10	Special cut (SP)	1	22211989	HSS 119 M10 SP	-
	54	45	M10	BO 6/10, BO 8/10	Special cut (SP)	1	22212089	HSS 120 M10 SP	-



Arbor for tools with female thread

Suitable for tools with female thread M10.

d_2 [mm]	l_2 [mm]	l_1 [mm]	Thread	Suitable for		Item no.	Designation	Price/unit GBP
6	40	57	M10	HSS 119, HSS 120	1	23600610	BO 6/10 M10	-
8	40	57	M10	HSS 119, HSS 120	1	23600810	BO 8/10 M10	-

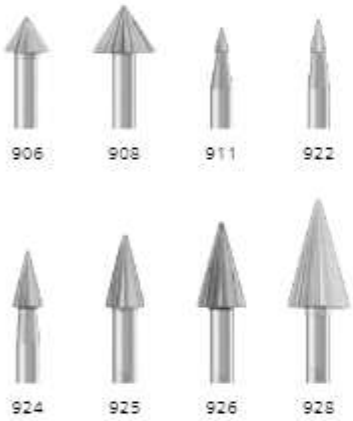
HSS engraving cutters

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

Special features:
- Available with special cut and in various shapes and dimensions.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 8 mm									
3	2.7	6	60	-	Special cut (SP)	1	22230156	301/6 SP	-
	4.5	6	60	34	Special cut (SP)	1	22230656	306/6 SP	-
6	5.6	6	60	-	Special cut (SP)	1	22231156	311/6 SP	-

HSS finishing cutters



906-928

Tools designed specifically for fine stock removal.

Special features:
- Available with special cut, 9 different rotary cutter shapes and dimensions, a shank diameter of 3 mm and a shank length of 30 mm.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
6	4.2	3	34.2	71	Special cut (SP)	1	22390653	906/3 SP	-
8	5.6	3	35.6	71	Special cut (SP)	1	22390853	908/3 SP	-
1.6	2.8	3	32.8	28	Special cut (SP)	1	22391153	911/3 SP	-
2.3	4	3	34	29	Special cut (SP)	1	22392253	922/3 SP	-
3.2	5.6	3	35.6	30	Special cut (SP)	1	22392353	923/3 SP	-
4.2	7	3	37	32	Special cut (SP)	1	22392453	924/3 SP	-
5.2	8.7	3	38.7	32	Special cut (SP)	1	22392553	925/3 SP	-
6.2	10.5	3	40.5	32	Special cut (SP)	1	22392653	926/3 SP	-
8.2	14	3	44	32	Special cut (SP)	1	22392853	928/3 SP	-

941–954

Tools designed specifically for fine stock removal.

Special features:

- Available with special cut, 12 different rotary cutter shapes and dimensions, a shank diameter of 3 mm and a shank length of 30 mm.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm									
1.6	1.4	3	31.4	-	Special cut (SP)	1	22394153	941/3 SP	-
2.3	1.7	3	31.7	-	Special cut (SP)	1	22394253	942/3 SP	-
3.2	2.2	3	32.2	-	Special cut (SP)	1	22394353	943/3 SP	-
4	2.9	3	32.9	-	Special cut (SP)	1	22394453	944/3 SP	-
5	4.4	3	34.4	-	Special cut (SP)	1	22394553	945/3 SP	-
6	5	3	35	-	Special cut (SP)	1	22394653	946/3 SP	-
7	6	3	36	-	Special cut (SP)	1	22394753	947/3 SP	-
8	7	3	37	-	Special cut (SP)	1	22394853	948/3 SP	-
	2	3	32	9.5	Special cut (SP)	1	22395153	951/3 SP	-
10	2.5	3	32.5	11.5	Special cut (SP)	1	22395253	952/3 SP	-
12	3	3	33	14	Special cut (SP)	1	22395353	953/3 SP	-
14	3.5	3	33.5	15.5	Special cut (SP)	1	22395453	954/3 SP	-

961–987

Tools designed specifically for fine stock removal.

Special features:
- Available with special cut, 10 different rotary cutter shapes and dimensions, a shank diameter of 3 mm and a shank length of 30 mm.
- HSS finishing cutters 987 with chip breaker.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α [°]	r [mm]	Cut		Item no.	Designation	Price/ unit GBP
Shank diameter 3 mm										
8	2	3	32	-	1.1	Special cut (SP)	1	22396153	961/3 SP	-
10	2.3	3	32.3	-	1.15	Special cut (SP)	1	22396253	962/3 SP	-
12	2.6	3	32.6	-	1.3	Special cut (SP)	1	22396353	963/3 SP	-
14	3	3	33	-	1.5	Special cut (SP)	1	22396453	964/3 SP	-
6	1	3	31	-	-	Special cut (SP)	1	22397153	971/3 SP	-
8	1	3	31	-	-	Special cut (SP)	1	22397253	972/3 SP	-
10	1	3	31	-	-	Special cut (SP)	1	22397353	973/3 SP	-

Set 84 HSS

Set 84 HSS contains 15 HSS finishing cutters for fine stock removal in the most common shapes and dimensions.

Contents:
The set comprises one each of the following: 923, 928, 943, 946, 952, 924, 941, 944, 947, 954, 926, 942, 945, 951 and 973 with a shank diameter of 3 mm, special cut.

Special features:
- The tools are suitable for fine stock removal in small and hard-to-reach places.
- The sturdy plastic box protects the tools against dirt and damage.

Cut		Item no.	Designation	Price/unit GBP
Shank diameter 3 mm				
Special cut (SP)	1	22900845	84 HSS	-

High Speed Disc ALUMASTER
HSD-F 115/125
Type HSD-F 115/125 was developed specifically for use on angle grinders with a diameter of 115/125 mm and for flat working.

Matching tool drives:
Compressed-air angle grinder
PWT 26/120 HV M14
Electric angle grinder UWER 18/110 SI

Applications:
- Milling out
- Work on weld seams
- Work on fillet welds
- Work on edges/chamfering
- Surface work

High Speed Disc ALUMASTER
HSD-R 115/125
Type HSD-R 115/125 has taken the HSD-F one step further and is also suitable for applications such as peripheral milling and milling out root seams.

Matching tool drives:
Compressed-air angle grinder
PWT 26/120 HV M14
Electric angle grinder UWER 18/110 SI

Applications:
- Milling out
- Work on weld seams
- Work on fillet welds
- Work on edges/chamfering
- Surface work
- Milling out root seams
- Circumferential milling

High Speed Disc ALUMASTER
HSD-R 50
Due to its small design, type HSD-R 50 is very well-suited to work in hard-to-reach places and on delicate components. Thanks to its specially developed arbor, the High Speed Disc **ALU**MASTER HSD-R 50 can also be used on straight grinders and flexible shafts as well as angle grinders (mount dia. 10 mm).

Matching tool drives:
Flexible shaft drive Mammoth Electronic ME 22/240
Compressed-air straight grinder
PGAS 4/250 E-HV
Compressed-air angle grinder
PWSA 4/200 HV

Applications:
- Milling out
- Work on weld seams
- Work on fillet welds
- Work on edges/chamfering
- Surface work
- Milling out root seams
- Circumferential milling

High Speed Torus Cutter
HSC-T 20 RS8
Thanks to its specially developed design, the High Speed Torus Cutter HSC-T 20 is suitable for work on grooves, pockets and narrow radii and contours, particularly in robot applications. The Cutter can also be used face down and perfectly complements the **ALU**MASTER High Speed Disc in the HSD-R 50 version and burrs with the ALU cut.

Matching tool drives:
Air-powered spindle PGAS 4/280 RS
Air-powered spindle PGAS 4/220 RS

Applications:
- Milling out
- Deburring
- Work on weld seams
- Work on fillet welds
- Work on edges/chamfering
- Surface work
- Circumferential milling
- Face milling
- Cleaning cast aluminium

Selecting suitable cutting inserts

- Uncoated cutting inserts are suitable for general use on soft non-ferrous metals (aluminium alloys, brass, copper, zinc).
- PFERD recommends cutting inserts with the high-quality HICOAT coating for high-performance applications on soft non-ferrous metals (aluminium alloys, brass, copper, zinc), hard non-ferrous metals (hard aluminium alloys with high Si content, bronze) as well as fibre-reinforced plastics (GRP/CRP) and thermoplastics.

ALUMASTER High Speed Disc

ALUMASTER HSD-R High Speed Disc

High-performance tool for peripheral milling and milling out root seams using an angle grinder. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on aluminium alloys.

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-R 115/125 incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- An extraction system is not required as no hazardous or explosive dust is generated.
- Innovative, robust cut geometry for maximum safety, extreme durability and ease of work.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
115	22.23	8	13,300	1	22000019	HSD-R 115/125 ALUMASTER	-

ALUMASTER HSD-R HICOAT High Speed Disc

High-performance tool for peripheral milling and milling out root seams using an angle grinder. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on aluminium alloys.

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-R 115/125 HICOAT incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- Cutting inserts with HICOAT coating for reduced material adhesion and a longer tool life.
- An extraction system is not required as no hazardous or explosive dust is generated.
- Innovative, robust cut geometry for maximum safety, extreme durability and ease of work.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
115	22.23	8	13,300	1	22000021	HSD-R 115/125 ALUMASTER HICOAT	-

ALUMASTER HSD-F High Speed Disc

High-performance tool for surface work with an angle grinder. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on aluminium alloys.

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-F 115/125 incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- An extraction system is not required as no hazardous or explosive dust is generated.
- Innovative, robust cut geometry for maximum safety, extreme durability and ease of work.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
115	22.23	13	13,300	1	22000009	HSD-F 115/125 ALUMASTER	-

ALUMASTER HSD-F HICOAT High Speed Disc

High-performance tool for surface work with an angle grinder. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on aluminium alloys.

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-F 115/125 HICOAT incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- Cutting inserts with HICOAT coating for reduced material adhesion and a longer tool life.
- An extraction system is not required as no hazardous or explosive dust is generated.
- Innovative, robust cut geometry for maximum safety, extreme durability and ease of work.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
115	22.23	13	13,300	1	22000012	HSD-F 115/125 ALUMASTER HICOAT	-

High Speed Disc ALUMASTER HSD-R 50

High-performance tool for hard-to-reach areas and delicate components. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on aluminium alloys. A guard is not needed (tool diameter = 49 mm).

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-R 50 incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- Can be used on angle grinders (mount dia. 10 mm), straight grinders and flexible shafts in conjunction with specially developed arbor.
- An extraction system is not required as no hazardous or explosive dust is generated.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
49	10	8	25,000	1	22000025	HSD-R 50 ALUMASTER	-

High Speed Disc ALUMASTER HSD-R 50 HICOAT

High-performance tool for hard-to-reach areas and delicate components. The specially developed, turnable and replaceable tungsten carbide cutting inserts enable an extremely high stock removal rate on very challenging aluminium alloys. A guard is not needed (tool diameter = 49 mm).

Contents:
The delivery includes the High Speed Disc **ALU**MASTER HSD-R 50 HICOAT incl. pre-mounted tungsten carbide cutting inserts, a TORX wrench and a plastic box.

Special features:
- Cutting inserts with HICOAT coating for reduced material adhesion and a longer tool life.
- Can be used on angle grinders (mount dia. 10 mm), straight grinders and flexible shafts in conjunction with specially developed arbor.
- An extraction system is not required as no hazardous or explosive dust is generated.

D [mm]	H [mm]	U [mm]	Max. RPM		Item no.	Designation	Price/unit GBP
49	10	8	25,000	1	22000027	HSD-R 50 ALUMASTER HICOAT	-

Arbor for High Speed Disc ALUMASTER HSD-R 50

For use on flexible shaft drives and straight grinders.

d_1 [mm]	l_1 [mm]	l_2 [mm]	Suitable for		Item no.	Designation	Price/unit GBP
8		50	ALUMASTER HSD-R 50	1	22000011	BO 8/10 HSD-R 50	-

Cutting insert sets, HICOAT cutting insert sets

Cutting insert set for **ALU**MASTER High Speed Disc. Each set is available with or without the HICOAT coating.

D [mm]	Contents [Piece]	Suitable for		Item no.	Designation	Price/unit GBP
8	5	ALUMASTER HSD-R 50	1	22000026	WSP-A-8R 50 ALUMASTER	-
				22000028	WSP-A-8R 50 ALUMASTER HICOAT	-
	10	ALUMASTER HSD-R 115/125	1	22000020	WSP-A-8R 115/125 ALUMASTER	-
				22000022	WSP-A-8R 115/125 ALUMASTER HICOAT	-
12	10	ALUMASTER HSD-F	1	22000008	WSP-A-12R 115/125 ALUMASTER	-
				22000013	WSP-A-12R 115/125 ALUMASTER HICOAT	-

Bolt sets for cutting inserts

Bolt set for PFERD cutting inserts.

Suitable for cutting inserts	Contents [Piece]		Item no.	Designation	Price/unit GBP
EF-WSP-F, EF-WSP-R3	5	1	22000007	WSP-S-M4S	-

ALUMASTER service set, **ALU**MASTER **HICOAT** service set

For replacing individual cutting inserts on the **ALU**MASTER High Speed Disc. Each set is available with or without the HICOAT coating.

Contents:
The delivery includes two cutting inserts, two screws and a TORX wrench.

Suitable for		Item no.	Designation	Price/unit GBP
ALUMASTER HSD-R 50	1	22000029	ASS-R8 50 ALUMASTER	-
		22000030	ASS-R8 50 ALUMASTER HICOAT	-
ALUMASTER HSD-R 115/125	1	22000023	ASS-R8 115/125 ALUMASTER	-
		22000024	ASS-R8 115/125 ALUMASTER HICOAT	-
ALUMASTER HSD-F	1	22000014	ASS-R12 115/125 ALUMASTER	-
		22000015	ASS-R12 115/125 ALUMASTER HICOAT	-

Torque spanner and spare blade

WIHA torque spanner with a tightening torque of 4 Nm for optimally and securely mounting cutting inserts on the **ALU**MASTER High Speed Disc.

	Item no.	Designation	Price/unit GBP
Torque spanner for ALUMASTER			
1	22000017	DSWK WIHA Torque 4,0	-
Spare blade for torque spanner			
1	22000018	TWK WIHA Torque T15	-

High Speed Torus Cutter HSC-T 20

High Speed Torus Cutter including two mounting bolts. The tool for robot applications is used with two turnable and replaceable tungsten carbide cutting inserts and offers an extremely high stock removal rate on aluminium materials. The cutting inserts are not included in delivery.

Special features:
- Specially developed design for work on grooves, pockets and narrow radii and contours. Can also be used face down.
- An extraction system is not required as no hazardous or explosive dust is generated.
- Reduced vibration thanks to small contact surface.

d_1 [mm]	l_1 [mm]	d_2 [mm]	Suitable for cutting insert diameter [mm]	RPM [mm]		Item no.	Designation	Price/unit GBP
20	60	8	10	20,000 – 30,000	1	23000047	HSC-T 20 RS8	-

Cutting insert set

Cutting insert set for High Speed Torus Cutter HSC-T 20.

D [mm]	Contents [Piece]	Suitable for		Item no.	Designation	Price/unit GBP
10	4	High Speed Torus Cutter HSC-T 20 RS8	1	23000048	WSP-T 10R ALU	-

Bolt set for cutting inserts

Bolt set for the PFERD cutting inserts of the High Speed Torus Cutter HSC-T 20.

Suitable for cutting inserts	Contents [Piece]		Item no.	Designation	Price/unit GBP
WSP-T 10R ALU	4	1	23000049	WSP-S M4 HSC-T	-

High Speed Torus Cutter service set

For replacing individual cutting inserts on the High Speed Torus Cutter HSC-T 20.

Contents:
The delivery includes one cutting insert, one screw and a TORX wrench TX 15.

Suitable for		Item no.	Designation	Price/unit GBP
High Speed Torus Cutter HSC-T 20 RS8	1	23000050	TSS-10R ALU	-


EF-WSP-R3 EF-WSP-F

Cutting insert set with 3 mm radius, cutting insert set with chamfer

Cutting insert sets for the EDGE FINISH system for work on edges (see catalogue section 9).

Special features:
- Available as type STEEL, INOX and ALU for creating 30° and 45° chamfers.
- Radius version for steel for preparing for corrosion protection and for producing a defined radius of 3 mm.
- The best possible stock removal rate and a long tool life thanks to specially coated cutting inserts.

Suitable for cutting insert mounting	α [°]	r [mm]	Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
Cutting insert set with 3 mm radius								
EF-WSP-A R3/45°	-	3	3	STEEL	1	22000001	EF-WSP-R3	-
Cutting inset set chamfer								
EF-WSP-A 30°, EF-WSP-A R3/45°	45	-	3	ALU	1	*22000010*	EF WSP-F ALU	-
				INOX	1	22000016	EF WSP-F INOX	-
				STEEL	1	22000002	EF-WSP-F STEEL	-


EF-WSP-A R3/45° EF-WSP-A 30°

Cutting insert holder with 3 mm radius/45° chamfer, cutting insert holder with 30° chamfer

Cutting insert holders for the EDGE FINISH system for work on edges. The cutting inserts and matching bolt set are not included in delivery. Please order them separately.

Suitable for cutting inserts	Suitable for machine types	α [°]	r [mm]		Item no.	Designation	Price/unit GBP
Cutting insert holder with 3 mm radius/45° chamfer							
EF-WSP-F, EF-WSP-R3	UWER 18/110 EF	45	3	1	22000006	EF-WSP-A R3/45°	-
Cutting insert holder with 30° chamfer							
EF-WSP-F	UWER 18/110 EF	30	-	1	22000005	EF-WSP-A 30°	-


EF-FL-R3/45° EF-FL-30°

Guide bearing with 3 mm radius/45° chamfer, guide bearing with 30° chamfer

Guide bearings for the EDGE FINISH system for work on edges. Delivery includes MG INOX locking nut.

Special features:
- Optimally guided along the edge to be machined.

Suitable for cutting insert mounting		Item no.	Designation	Price/unit GBP
Guide bearing with 3 mm radius/45° chamfer				
EF-WSP-A R3/45°	1	22000004	EF-FL-R3/45°	-
Guide bearing with 30° chamfer				
EF-WSP-A 30°	1	22000003	EF-FL-30°	-

Bolt set for cutting inserts

Bolt set for PFERD cutting inserts.

Suitable for cutting inserts	Contents [Piece]		Item no.	Designation	Price/unit GBP
EF-WSP-F, EF-WSP-R3	5	1	22000007	WSP-S-M4S	-

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group to be machined.
② Select the type.
③ Establish the cutting speed range.

To determine the recommended rotational speed range [RPM], please proceed as follows:
④ Select the required diameter.
⑤ The cutting speed range and the diameter determine the recommended rotational speed range.

① Material group			② Design	③ Cutting speed
Steel, cast steel	Steels up to 700 N/mm² (< 220 HB)	Construction steels, carbon steels, tool steels, alloyed and non-alloyed steels, case-hardened steels, cast steel, tempering steels	STEEL	25–35 m/min
	Steels over 700 N/mm² (> 220 HB)		STEEL	20–25 m/min
			INOX	
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	INOX	10–20 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys Brass, copper, zinc	STEEL	30–60 m/min
			INOX	
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard aluminium alloys (high Si content)	STEEL	25–50 m/min
			INOX	
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	STEEL	10–25 m/min
			INOX	
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		STEEL	15–40 m/min
			INOX	

Example:
Spiral drill,
SPB DIN 338 HSSG N 12.0 STEEL,
Tool dia. 12 mm.
Steels up to 700 N/mm².
Cutting speed: 25–35 m/min
Rotational speed range: 650–950 RPM

④ Tool dia. [mm]	⑤ Cutting speeds [m/min]								
	10	15	20	25	30	35	40	50	60
	Rotational speeds [RPM]								
1	3,185	4,777	6,369	7,962	9,554	11,146	12,739	15,924	19,108
1.1	2,895	4,343	5,790	7,238	8,686	10,133	11,581	14,476	17,371
1.2	2,654	3,981	5,308	6,635	7,962	9,289	10,616	13,270	15,924
1.3	2,450	3,675	4,900	6,124	7,349	8,574	9,799	12,249	14,699
1.4	2,275	3,412	4,550	5,687	6,824	7,962	9,099	11,374	13,649
1.5	2,123	3,185	4,246	5,308	6,369	7,431	8,493	10,616	12,739
1.6	1,990	2,986	3,981	4,976	5,971	6,967	7,962	9,952	11,943
1.7	1,873	2,810	3,747	4,683	5,620	6,557	7,493	9,367	11,240
1.8	1,769	2,654	3,539	4,423	5,308	6,192	7,077	8,846	10,616
1.9	1,676	2,514	3,352	4,190	5,028	5,867	6,705	8,381	10,057
2	1,592	2,389	3,185	3,981	4,777	5,573	6,369	7,962	9,554
2.1	1,517	2,275	3,033	3,791	4,550	5,308	6,066	7,583	9,099
2.2	1,448	2,171	2,895	3,619	4,343	5,067	5,790	7,238	8,686
2.3	1,385	2,077	2,769	3,462	4,154	4,846	5,539	6,923	8,308
2.4	1,327	1,990	2,654	3,317	3,981	4,644	5,308	6,635	7,962
2.5	1,274	1,911	2,548	3,185	3,822	4,459	5,096	6,369	7,643
2.6	1,225	1,837	2,450	3,062	3,675	4,287	4,900	6,124	7,349
2.7	1,180	1,769	2,359	2,949	3,539	4,128	4,718	5,898	7,077
2.8	1,137	1,706	2,275	2,843	3,412	3,981	4,550	5,687	6,824
2.9	1,098	1,647	2,196	2,745	3,295	3,844	4,393	5,491	6,589
3	1,062	1,592	2,123	2,654	3,185	3,715	4,246	5,308	6,369
3.1	1,027	1,541	2,055	2,568	3,082	3,596	4,109	5,137	6,164
3.2	995	1,493	1,990	2,488	2,986	3,483	3,981	4,976	5,971
3.3	965	1,448	1,930	2,413	2,895	3,378	3,860	4,825	5,790
3.4	937	1,405	1,873	2,342	2,810	3,278	3,747	4,683	5,620
3.5	910	1,365	1,820	2,275	2,730	3,185	3,640	4,550	5,460
3.6	885	1,327	1,769	2,212	2,654	3,096	3,539	4,423	5,308
3.7	861	1,291	1,721	2,152	2,582	3,013	3,443	4,304	5,164
3.8	838	1,257	1,676	2,095	2,514	2,933	3,352	4,190	5,028
3.9	817	1,225	1,633	2,041	2,450	2,858	3,266	4,083	4,900
4	796	1,194	1,592	1,990	2,389	2,787	3,185	3,981	4,777
4.5	708	1,062	1,415	1,769	2,123	2,477	2,831	3,539	4,246
5	637	955	1,274	1,592	1,911	2,229	2,548	3,185	3,822
5.5	579	869	1,158	1,448	1,737	2,027	2,316	2,895	3,474
6	531	796	1,062	1,327	1,592	1,858	2,123	2,654	3,185
6.5	490	735	980	1,225	1,470	1,715	1,960	2,450	2,940
7	455	682	910	1,137	1,365	1,592	1,820	2,275	2,730
7.5	425	637	849	1,062	1,274	1,486	1,699	2,123	2,548
8	398	597	796	995	1,194	1,393	1,592	1,990	2,389
8.5	375	562	749	937	1,124	1,311	1,499	1,873	2,248
9	354	531	708	885	1,062	1,238	1,415	1,769	2,123
9.5	335	503	670	838	1,006	1,173	1,341	1,676	2,011
10	318	478	637	796	955	1,115	1,274	1,592	1,911
10.5	303	455	607	758	910	1,062	1,213	1,517	1,820
11	290	434	579	724	869	1,013	1,158	1,448	1,737
11.5	277	415	554	692	831	969	1,108	1,385	1,662
12	265	398	531	663	796	929	1,062	1,327	1,592
12.5	255	382	510	637	764	892	1,019	1,274	1,529
13	245	367	490	612	735	857	980	1,225	1,470
13.5	236	354	472	590	708	826	944	1,180	1,415
14	227	341	455	569	682	796	910	1,137	1,365
14.5	220	329	439	549	659	769	879	1,098	1,318
15	212	318	425	531	637	743	849	1,062	1,274
15.5	205	308	411	514	616	719	822	1,027	1,233
16	199	299	398	498	597	697	796	995	1,194

DIN 338 HSSG N STEEL spiral drill

High-performance drilling tools in the STEEL in HSSG (M2) version for universal industrial use on steel, aluminium, brass, bronze, cast material and plastics. Fully ground, right-hand turning version with cross grinding.

Special features:
- Long tool life and easy centring.
- Good chip removal and high concentricity.

d_1 [mm]	l_2 [mm]	l_1 [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
1	12	34	118	25 – 30	STEEL	10	25203510	SPB DIN 338 HSSG N 1,0 STEEL	-
1.1	14	36	118	25 – 30	STEEL	10	25203586	SPB DIN 338 HSSG N 1,1 STEEL	-
1.2	16	38	118	25 – 30	STEEL	10	25203587	SPB DIN 338 HSSG N 1,2 STEEL	-
1.3	16	38	118	25 – 30	STEEL	10	25203588	SPB DIN 338 HSSG N 1,3 STEEL	-
1.4	18	40	118	25 – 30	STEEL	10	25203589	SPB DIN 338 HSSG N 1,4 STEEL	-
1.5	18	40	118	25 – 30	STEEL	10	25203511	SPB DIN 338 HSSG N 1,5 STEEL	-
1.6	20	43	118	25 – 30	STEEL	10	25203512	SPB DIN 338 HSSG N 1,6 STEEL	-
1.7	20	43	118	25 – 30	STEEL	10	25203590	SPB DIN 338 HSSG N 1,7 STEEL	-
1.8	22	46	118	25 – 30	STEEL	10	25203591	SPB DIN 338 HSSG N 1,8 STEEL	-
1.9	22	46	118	25 – 30	STEEL	10	25203592	SPB DIN 338 HSSG N 1,9 STEEL	-
2	24	49	118	25 – 30	STEEL	10	25203513	SPB DIN 338 HSSG N 2,0 STEEL	-
2.1	24	49	118	25 – 30	STEEL	10	25203593	SPB DIN 338 HSSG N 2,1 STEEL	-
2.2	27	53	118	25 – 30	STEEL	10	25203594	SPB DIN 338 HSSG N 2,2 STEEL	-
2.3	27	53	118	25 – 30	STEEL	10	25203595	SPB DIN 338 HSSG N 2,3 STEEL	-
2.4	30	57	118	25 – 30	STEEL	10	25203596	SPB DIN 338 HSSG N 2,4 STEEL	-
2.5	30	57	118	25 – 30	STEEL	10	25203514	SPB DIN 338 HSSG N 2,5 STEEL	-
2.6	30	57	118	25 – 30	STEEL	10	25203597	SPB DIN 338 HSSG N 2,6 STEEL	-
2.7	33	61	118	25 – 30	STEEL	10	25203598	SPB DIN 338 HSSG N 2,7 STEEL	-
2.8	33	61	118	25 – 30	STEEL	10	25203599	SPB DIN 338 HSSG N 2,8 STEEL	-
2.9	33	61	118	25 – 30	STEEL	10	25203650	SPB DIN 338 HSSG N 2,9 STEEL	-
3	33	61	118	25 – 30	STEEL	10	25203515	SPB DIN 338 HSSG N 3,0 STEEL	-
3.1	36	65	118	25 – 30	STEEL	10	25203516	SPB DIN 338 HSSG N 3,1 STEEL	-
3.2	36	65	118	25 – 30	STEEL	10	25203651	SPB DIN 338 HSSG N 3,2 STEEL	-
3.3	36	65	118	25 – 30	STEEL	10	25203517	SPB DIN 338 HSSG N 3,3 STEEL	-
3.4	39	70	118	25 – 30	STEEL	10	25203518	SPB DIN 338 HSSG N 3,4 STEEL	-
3.5	39	70	118	25 – 30	STEEL	10	25203519	SPB DIN 338 HSSG N 3,5 STEEL	-
3.6	39	70	118	25 – 30	STEEL	10	25203520	SPB DIN 338 HSSG N 3,6 STEEL	-
3.7	39	70	118	25 – 30	STEEL	10	25203652	SPB DIN 338 HSSG N 3,7 STEEL	-
3.8	43	75	118	25 – 30	STEEL	10	25203653	SPB DIN 338 HSSG N 3,8 STEEL	-
3.9	43	75	118	25 – 30	STEEL	10	25203654	SPB DIN 338 HSSG N 3,9 STEEL	-
4	43	75	118	25 – 30	STEEL	10	25203521	SPB DIN 338 HSSG N 4,0 STEEL	-
4.1	43	75	118	25 – 30	STEEL	10	25203522	SPB DIN 338 HSSG N 4,1 STEEL	-
4.2	43	75	118	25 – 30	STEEL	10	25203523	SPB DIN 338 HSSG N 4,2 STEEL	-
4.3	47	80	118	25 – 30	STEEL	10	25203655	SPB DIN 338 HSSG N 4,3 STEEL	-
4.4	47	80	118	25 – 30	STEEL	10	25203524	SPB DIN 338 HSSG N 4,4 STEEL	-
4.5	47	80	118	25 – 30	STEEL	10	25203525	SPB DIN 338 HSSG N 4,5 STEEL	-
4.6	47	80	118	25 – 30	STEEL	10	25203656	SPB DIN 338 HSSG N 4,6 STEEL	-
4.7	47	80	118	25 – 30	STEEL	10	25203657	SPB DIN 338 HSSG N 4,7 STEEL	-
4.8	53	86	118	25 – 30	STEEL	10	25203658	SPB DIN 338 HSSG N 4,8 STEEL	-
4.9	53	86	118	25 – 30	STEEL	10	25203659	SPB DIN 338 HSSG N 4,9 STEEL	-
5	52	86	118	25 – 30	STEEL	10	25203526	SPB DIN 338 HSSG N 5,0 STEEL	-
5.1	52	86	118	25 – 30	STEEL	10	25203527	SPB DIN 338 HSSG N 5,1 STEEL	-
5.2	52	86	118	25 – 30	STEEL	10	25203528	SPB DIN 338 HSSG N 5,2 STEEL	-
5.3	52	86	118	25 – 30	STEEL	10	25203529	SPB DIN 338 HSSG N 5,3 STEEL	-
5.4	57	93	118	25 – 30	STEEL	10	25203660	SPB DIN 338 HSSG N 5,4 STEEL	-
5.5	57	93	118	25 – 30	STEEL	10	25203530	SPB DIN 338 HSSG N 5,5 STEEL	-
5.6	57	93	118	25 – 30	STEEL	10	25203661	SPB DIN 338 HSSG N 5,6 STEEL	-

Continued on next page

d_1 [mm]	l_2 [mm]	l_1 [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
5.7	57	93	118	25 – 30	STEEL	10	25203662	SPB DIN 338 HSSG N 5,7 STEEL	-
5.8	57	93	118	25 – 30	STEEL	10	25203663	SPB DIN 338 HSSG N 5,8 STEEL	-
5.9	57	93	118	25 – 30	STEEL	10	25203664	SPB DIN 338 HSSG N 5,9 STEEL	-
6	57	93	118	25 – 30	STEEL	10	25203531	SPB DIN 338 HSSG N 6,0 STEEL	-
6.1	63	101	118	25 – 30	STEEL	10	25203665	SPB DIN 338 HSSG N 6,1 STEEL	-
6.2	63	101	118	25 – 30	STEEL	10	25203666	SPB DIN 338 HSSG N 6,2 STEEL	-
6.3	63	101	118	25 – 30	STEEL	10	25203667	SPB DIN 338 HSSG N 6,3 STEEL	-
6.4	63	101	118	25 – 30	STEEL	10	25203668	SPB DIN 338 HSSG N 6,4 STEEL	-
6.5	63	101	118	25 – 30	STEEL	10	25203532	SPB DIN 338 HSSG N 6,5 STEEL	-
6.6	63	101	118	25 – 30	STEEL	10	25203669	SPB DIN 338 HSSG N 6,6 STEEL	-
6.7	63	101	118	25 – 30	STEEL	10	25203670	SPB DIN 338 HSSG N 6,7 STEEL	-
6.8	69	109	118	25 – 30	STEEL	10	25203533	SPB DIN 338 HSSG N 6,8 STEEL	-
6.9	69	109	118	25 – 30	STEEL	10	25203671	SPB DIN 338 HSSG N 6,9 STEEL	-
7	69	109	118	25 – 30	STEEL	10	25203534	SPB DIN 338 HSSG N 7,0 STEEL	-
7.1	69	109	118	25 – 30	STEEL	10	25203672	SPB DIN 338 HSSG N 7,1 STEEL	-
7.2	69	109	118	25 – 30	STEEL	10	25203673	SPB DIN 338 HSSG N 7,2 STEEL	-
7.3	69	109	118	25 – 30	STEEL	10	25203674	SPB DIN 338 HSSG N 7,3 STEEL	-
7.4	69	117	118	25 – 30	STEEL	10	25203675	SPB DIN 338 HSSG N 7,4 STEEL	-
7.5	69	109	118	25 – 30	STEEL	10	25203535	SPB DIN 338 HSSG N 7,5 STEEL	-
7.6	75	117	118	25 – 30	STEEL	10	25203676	SPB DIN 338 HSSG N 7,6 STEEL	-
7.7	75	117	118	25 – 30	STEEL	10	25203677	SPB DIN 338 HSSG N 7,7 STEEL	-
7.8	75	117	118	25 – 30	STEEL	10	25203678	SPB DIN 338 HSSG N 7,8 STEEL	-
7.9	75	117	118	25 – 30	STEEL	10	25203679	SPB DIN 338 HSSG N 7,9 STEEL	-
8	75	117	118	25 – 30	STEEL	10	25203536	SPB DIN 338 HSSG N 8,0 STEEL	-
8.1	75	117	118	25 – 30	STEEL	10	25203680	SPB DIN 338 HSSG N 8,1 STEEL	-
8.2	75	117	118	25 – 30	STEEL	10	25203681	SPB DIN 338 HSSG N 8,2 STEEL	-
8.3	75	117	118	25 – 30	STEEL	10	25203682	SPB DIN 338 HSSG N 8,3 STEEL	-
8.4	75	117	118	25 – 30	STEEL	10	25203683	SPB DIN 338 HSSG N 8,4 STEEL	-
8.5	75	117	118	25 – 30	STEEL	10	25203537	SPB DIN 338 HSSG N 8,5 STEEL	-
8.6	81	125	118	25 – 30	STEEL	10	25203684	SPB DIN 338 HSSG N 8,6 STEEL	-
8.7	81	125	118	25 – 30	STEEL	10	25203685	SPB DIN 338 HSSG N 8,7 STEEL	-
8.8	81	125	118	25 – 30	STEEL	10	25203686	SPB DIN 338 HSSG N 8,8 STEEL	-
8.9	81	125	118	25 – 30	STEEL	10	25203687	SPB DIN 338 HSSG N 8,9 STEEL	-
9	75	125	118	25 – 30	STEEL	10	25203538	SPB DIN 338 HSSG N 9,0 STEEL	-
9.1	81	125	118	25 – 30	STEEL	10	25203688	SPB DIN 338 HSSG N 9,1 STEEL	-
9.2	81	125	118	25 – 30	STEEL	10	25203689	SPB DIN 338 HSSG N 9,2 STEEL	-
9.3	81	125	118	25 – 30	STEEL	10	25203690	SPB DIN 338 HSSG N 9,3 STEEL	-
9.4	81	125	118	25 – 30	STEEL	10	25203691	SPB DIN 338 HSSG N 9,4 STEEL	-
9.5	81	125	118	25 – 30	STEEL	10	25203539	SPB DIN 338 HSSG N 9,5 STEEL	-
9.6	87	133	118	25 – 30	STEEL	10	25203692	SPB DIN 338 HSSG N 9,6 STEEL	-
9.7	87	133	118	25 – 30	STEEL	10	25203693	SPB DIN 338 HSSG N 9,7 STEEL	-
9.8	87	133	118	25 – 30	STEEL	10	25203694	SPB DIN 338 HSSG N 9,8 STEEL	-
9.9	87	133	118	25 – 30	STEEL	10	25203695	SPB DIN 338 HSSG N 9,9 STEEL	-
10	87	133	118	25 – 30	STEEL	10	25203540	SPB DIN 338 HSSG N 10,0 STEEL	-
10.1	87	133	118	25 – 30	STEEL	5	25203696	SPB DIN 338 HSSG N 10,1 STEEL	-
10.2	87	133	118	25 – 30	STEEL	5	25203541	SPB DIN 338 HSSG N 10,2 STEEL	-
10.3	87	133	118	25 – 30	STEEL	5	25203697	SPB DIN 338 HSSG N 10,3 STEEL	-
10.4	87	133	118	25 – 30	STEEL	5	25203698	SPB DIN 338 HSSG N 10,4 STEEL	-
10.5	87	133	118	25 – 30	STEEL	5	25203542	SPB DIN 338 HSSG N 10,5 STEEL	-
10.6	94	133	118	25 – 30	STEEL	5	25203699	SPB DIN 338 HSSG N 10,6 STEEL	-
10.7	94	142	118	25 – 30	STEEL	5	25203700	SPB DIN 338 HSSG N 10,7 STEEL	-
10.8	87	142	118	25 – 30	STEEL	5	25203706	SPB DIN 338 HSSG N 10,8 STEEL	-
10.9	94	142	118	25 – 30	STEEL	5	25203707	SPB DIN 338 HSSG N 10,9 STEEL	-
11	94	142	118	25 – 30	STEEL	5	25203543	SPB DIN 338 HSSG N 11,0 STEEL	-

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d_1 [mm]	l_2 [mm]	l_1 [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
11.1	94	142	118	25 – 30	STEEL	5	25203708	SPB DIN 338 HSSG N 11,1 STEEL	-
11.2	94	142	118	25 – 30	STEEL	5	25203709	SPB DIN 338 HSSG N 11,2 STEEL	-
11.3	94	142	118	25 – 30	STEEL	5	25203710	SPB DIN 338 HSSG N 11,3 STEEL	-
11.4	94	142	118	25 – 30	STEEL	5	25203711	SPB DIN 338 HSSG N 11,4 STEEL	-
11.5	94	142	118	25 – 30	STEEL	5	25203544	SPB DIN 338 HSSG N 11,5 STEEL	-
11.6	94	142	118	25 – 30	STEEL	5	25203712	SPB DIN 338 HSSG N 11,6 STEEL	-
11.7	94	142	118	25 – 30	STEEL	5	25203713	SPB DIN 338 HSSG N 11,7 STEEL	-
11.8	94	142	118	25 – 30	STEEL	5	25203714	SPB DIN 338 HSSG N 11,8 STEEL	-
11.9	101	151	118	25 – 30	STEEL	5	25203715	SPB DIN 338 HSSG N 11,9 STEEL	-
12	101	151	118	25 – 30	STEEL	5	25203545	SPB DIN 338 HSSG N 12,0 STEEL	-
12.1	101	151	118	25 – 30	STEEL	5	25203716	SPB DIN 338 HSSG N 12,1 STEEL	-
12.2	101	151	118	25 – 30	STEEL	5	25203717	SPB DIN 338 HSSG N 12,2 STEEL	-
12.3	101	151	118	25 – 30	STEEL	5	25203718	SPB DIN 338 HSSG N 12,3 STEEL	-
12.4	101	151	118	25 – 30	STEEL	5	25203719	SPB DIN 338 HSSG N 12,4 STEEL	-
12.5	101	151	118	25 – 30	STEEL	5	25203546	SPB DIN 338 HSSG N 12,5 STEEL	-
12.6	101	151	118	25 – 30	STEEL	5	25203720	SPB DIN 338 HSSG N 12,6 STEEL	-
12.7	101	151	118	25 – 30	STEEL	5	25203721	SPB DIN 338 HSSG N 12,7 STEEL	-
12.8	101	151	118	25 – 30	STEEL	5	25203722	SPB DIN 338 HSSG N 12,8 STEEL	-
12.9	101	151	118	25 – 30	STEEL	5	25203818	SPB DIN 338 HSSG N 12,9 STEEL	-
13	101	151	118	25 – 30	STEEL	5	25203547	SPB DIN 338 HSSG N 13,0 STEEL	-
13.5	108	160	118	25 – 30	STEEL	1	25203723	SPB DIN 338 HSSG N 13,5 STEEL	-
14	108	160	118	25 – 30	STEEL	1	25203724	SPB DIN 338 HSSG N 14,0 STEEL	-
14.5	114	169	118	25 – 30	STEEL	1	25203725	SPB DIN 338 HSSG N 14,5 STEEL	-
15	114	169	118	25 – 30	STEEL	1	25203726	SPB DIN 338 HSSG N 15,0 STEEL	-
15.5	120	178	118	25 – 30	STEEL	1	25203727	SPB DIN 338 HSSG N 15,5 STEEL	-
16	120	178	118	25 – 30	STEEL	1	25203728	SPB DIN 338 HSSG N 16,0 STEEL	-

DIN 338 HSSG N STEEL spiral drills, 19-piece set

The set contains 19 HSS spiral drills in the STEEL in HSSG (M2) type for industrial uses.

Contents:
The set consists of 19 HSS spiral drills in the STEEL in HSSG (M2) version with dia. 1.0 to 10.0 mm, in increments of 0.5 mm.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
19	STEEL	1	25203701	SET SPB DIN 338 HSSG N 1-10 STEEL 19TLG	-

DIN 338 HSSG N STEEL spiral drills, 25-piece set

The set contains 25 HSS spiral drills in the STEEL in HSSG (M2) type for industrial uses.

Contents:
The set consists of 25 HSS spiral drills with dia. 1.0 to 13.0 mm, in increments of 0.5 mm.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
25	STEEL	1	25203702	SET SPB DIN 338 HSSG N 1-13 STEEL 25TLG	-

DIN 338 HSSE N INOX spiral drill

High-performance drilling tools in the INOX in HSSE-Co5 (M35) version for industrial uses on tough and hard materials such as alloyed and high-strength steel and stainless steel (INOX). Fully ground, right-hand turning version with cross grinding.

Special features:
- Very good temperature resistance due to Co content as well as robust tip profile.
- Very long tool life and easy centring.
- Good chip removal and high concentricity.

d_1 [mm]	l_2 [mm]	l_1 [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
1	12	34	135	36	INOX	10	25203548	SPB DIN 338 HSSE N 1,0 INOX	-
1.1	14	36	135	36	INOX	10	25203729	SPB DIN 338 HSSE N 1,1 INOX	-
1.2	16	38	135	36	INOX	10	25203730	SPB DIN 338 HSSE N 1,2 INOX	-
1.3	16	38	135	36	INOX	10	25203731	SPB DIN 338 HSSE N 1,3 INOX	-
1.4	18	40	135	36	INOX	10	25203732	SPB DIN 338 HSSE N 1,4 INOX	-
1.5	18	40	135	36	INOX	10	25203549	SPB DIN 338 HSSE N 1,5 INOX	-
1.6	20	43	135	36	INOX	10	25203550	SPB DIN 338 HSSE N 1,6 INOX	-
1.7	20	43	135	36	INOX	10	25203733	SPB DIN 338 HSSE N 1,7 INOX	-
1.8	22	46	135	36	INOX	10	25203734	SPB DIN 338 HSSE N 1,8 INOX	-
1.9	22	46	135	36	INOX	10	25203735	SPB DIN 338 HSSE N 1,9 INOX	-
2	24	49	135	36	INOX	10	25203551	SPB DIN 338 HSSE N 2,0 INOX	-
2.1	24	49	135	36	INOX	10	25203736	SPB DIN 338 HSSE N 2,1 INOX	-
2.2	27	53	135	36	INOX	10	25203737	SPB DIN 338 HSSE N 2,2 INOX	-
2.3	27	53	135	36	INOX	10	25203738	SPB DIN 338 HSSE N 2,3 INOX	-
2.4	30	57	135	36	INOX	10	25203739	SPB DIN 338 HSSE N 2,4 INOX	-
2.5	30	57	135	36	INOX	10	25203552	SPB DIN 338 HSSE N 2,5 INOX	-
2.6	30	57	135	36	INOX	10	25203740	SPB DIN 338 HSSE N 2,6 INOX	-
2.7	33	53	135	36	INOX	10	25203741	SPB DIN 338 HSSE N 2,7 INOX	-
2.8	33	61	135	36	INOX	10	25203742	SPB DIN 338 HSSE N 2,8 INOX	-
2.9	33	61	135	36	INOX	10	25203743	SPB DIN 338 HSSE N 2,9 INOX	-
3	33	61	135	36	INOX	10	25203553	SPB DIN 338 HSSE N 3,0 INOX	-
3.1	36	65	135	36	INOX	10	25203554	SPB DIN 338 HSSE N 3,1 INOX	-
3.2	36	65	135	36	INOX	10	25203744	SPB DIN 338 HSSE N 3,2 INOX	-
3.3	36	65	135	36	INOX	10	25203555	SPB DIN 338 HSSE N 3,3 INOX	-
3.4	39	70	135	36	INOX	10	25203556	SPB DIN 338 HSSE N 3,4 INOX	-
3.5	39	70	135	36	INOX	10	25203557	SPB DIN 338 HSSE N 3,5 INOX	-
3.6	39	70	135	36	INOX	10	25203558	SPB DIN 338 HSSE N 3,6 INOX	-
3.7	39	70	135	36	INOX	10	25203745	SPB DIN 338 HSSE N 3,7 INOX	-

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d, [mm]	l, [mm]	l, [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
3.8	43	75	135	36	INOX	10	25203746	SPB DIN 338 HSSE N 3,8 INOX	-
3.9	43	75	135	36	INOX	10	25203747	SPB DIN 338 HSSE N 3,9 INOX	-
4	43	75	135	36	INOX	10	25203559	SPB DIN 338 HSSE N 4,0 INOX	-
4.1	43	75	135	36	INOX	10	25203560	SPB DIN 338 HSSE N 4,1 INOX	-
4.2	43	75	135	36	INOX	10	25203561	SPB DIN 338 HSSE N 4,2 INOX	-
4.3	47	80	135	36	INOX	10	25203748	SPB DIN 338 HSSE N 4,3 INOX	-
4.4	47	80	135	36	INOX	10	25203562	SPB DIN 338 HSSE N 4,4 INOX	-
4.5	47	80	135	36	INOX	10	25203563	SPB DIN 338 HSSE N 4,5 INOX	-
4.6	47	80	135	36	INOX	10	25203749	SPB DIN 338 HSSE N 4,6 INOX	-
4.7	47	86	135	36	INOX	10	25203750	SPB DIN 338 HSSE N 4,7 INOX	-
4.8	53	86	135	36	INOX	10	25203751	SPB DIN 338 HSSE N 4,8 INOX	-
4.9	53	86	135	36	INOX	10	25203752	SPB DIN 338 HSSE N 4,9 INOX	-
5	52	86	135	36	INOX	10	25203564	SPB DIN 338 HSSE N 5,0 INOX	-
5.1	52	86	135	36	INOX	10	25203565	SPB DIN 338 HSSE N 5,1 INOX	-
5.2	52	86	135	36	INOX	10	25203566	SPB DIN 338 HSSE N 5,2 INOX	-
5.3	52	86	135	36	INOX	10	25203567	SPB DIN 338 HSSE N 5,3 INOX	-
5.4	57	93	135	36	INOX	10	25203753	SPB DIN 338 HSSE N 5,4 INOX	-
5.5	57	93	135	36	INOX	10	25203568	SPB DIN 338 HSSE N 5,5 INOX	-
5.6	57	93	135	36	INOX	10	25203754	SPB DIN338 HSSE N 5,6 INOX	-
5.7	57	93	135	36	INOX	10	25203755	SPB DIN 338 HSSE N 5,7 INOX	-
5.8	57	93	135	36	INOX	10	25203756	SPB DIN 338 HSSE N 5,8 INOX	-
5.9	57	93	135	36	INOX	10	25203757	SPB DIN 338 HSSE N 5,9 INOX	-
6	57	93	135	36	INOX	10	25203569	SPB DIN 338 HSSE N 6,0 INOX	-
6.1	63	101	135	36	INOX	10	25203758	SPB DIN 338 HSSE N 6,1 INOX	-
6.2	63	101	135	36	INOX	10	25203759	SPB DIN 338 HSSE N 6,2 INOX	-
6.3	63	101	135	36	INOX	10	25203760	SPB DIN 338 HSSE N 6,3 INOX	-
6.4	63	101	135	36	INOX	10	25203761	SPB DIN 338 HSSE N 6,4 INOX	-
6.5	63	101	135	36	INOX	10	25203570	SPB DIN 338 HSSE N 6,5 INOX	-
6.6	63	101	135	36	INOX	10	25203762	SPB DIN 338 HSSE N 6,6 INOX	-
6.7	63	101	135	36	INOX	10	25203763	SPB DIN 338 HSSE N 6,7 INOX	-
6.8	69	109	135	36	INOX	10	25203571	SPB DIN 338 HSSE N 6,8 INOX	-
6.9	69	109	135	36	INOX	10	25203764	SPB DIN 338 HSSE N 6,9 INOX	-
7	69	109	135	36	INOX	10	25203572	SPB DIN 338 HSSE N 7,0 INOX	-
7.1	69	109	135	36	INOX	10	25203765	SPB DIN 338 HSSE N 7,1 INOX	-
7.2	69	109	135	36	INOX	10	25203766	SPB DIN 338 HSSE N 7,2 INOX	-
7.3	69	109	135	36	INOX	10	25203767	SPB DIN 338 HSSE N 7,3 INOX	-
7.4	69	109	135	36	INOX	10	25203768	SPB DIN 338 HSSE N 7,4 INOX	-
7.5	69	109	135	36	INOX	10	25203573	SPB DIN 338 HSSE N 7,5 INOX	-
7.6	75	117	135	36	INOX	10	25203769	SPB DIN 338 HSSE N 7,6 INOX	-
7.7	75	117	135	36	INOX	10	25203770	SPB DIN 338 HSSE N 7,7 INOX	-
7.8	75	117	135	36	INOX	10	25203771	SPB DIN 338 HSSE N 7,8 INOX	-
7.9	75	117	135	36	INOX	10	25203772	SPB DIN 338 HSSE N 7,9 INOX	-
8	75	117	135	36	INOX	10	25203574	SPB DIN 338 HSSE N 8,0 INOX	-
8.1	75	117	135	36	INOX	10	25203773	SPB DIN 338 HSSE N 8,1 INOX	-
8.2	75	117	135	36	INOX	10	25203774	SPB DIN 338 HSSE N 8,2 INOX	-
8.3	75	117	135	36	INOX	10	25203775	SPB DIN 338 HSSE N 8,3 INOX	-
8.4	75	117	135	36	INOX	10	25203776	SPB DIN 338 HSSE N 8,4 INOX	-
8.5	75	117	135	36	INOX	10	25203575	SPB DIN 338 HSSE N 8,5 INOX	-
8.6	81	125	135	36	INOX	10	25203777	SPB DIN 338 HSSE N 8,6 INOX	-
8.7	81	125	135	36	INOX	10	25203778	SPB DIN 338 HSSE N 8,7 INOX	-
8.8	81	125	135	36	INOX	10	25203779	SPB DIN 338 HSSE N 8,8 INOX	-
8.9	81	125	135	36	INOX	10	25203780	SPB DIN 338 HSSE N 8,9 INOX	-
9	75	125	135	36	INOX	10	25203576	SPB DIN 338 HSSE N 9,0 INOX	-
9.1	81	125	135	36	INOX	10	25203781	SPB DIN 338 HSSE N 9,1 INOX	-

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d_1 [mm]	l_2 [mm]	l_1 [mm]	α [°]	Spiral angle β [°]	Version		Item no.	Designation	Price/ unit GBP
9.2	81	125	135	36	INOX	10	25203782	SPB DIN 338 HSSE N 9,2 INOX	-
9.3	81	125	135	36	INOX	10	25203783	SPB DIN 338 HSSE N 9,3 INOX	-
9.4	81	125	135	36	INOX	10	25203784	SPB DIN 338 HSSE N 9,4 INOX	-
9.5	81	125	135	36	INOX	10	25203577	SPB DIN 338 HSSE N 9,5 INOX	-
9.6	87	133	135	36	INOX	10	25203785	SPB DIN 338 HSSE N 9,6 INOX	-
9.7	87	133	135	36	INOX	10	25203786	SPB DIN 338 HSSE N 9,7 INOX	-
9.8	87	133	135	36	INOX	10	25203787	SPB DIN 338 HSSE N 9,8 INOX	-
9.9	87	133	135	36	INOX	10	25203788	SPB DIN 338 HSSE N 9,9 INOX	-
10	87	133	135	36	INOX	10	25203578	SPB DIN 338 HSSE N 10,0 INOX	-
10.1	87	133	135	36	INOX	5	25203789	SPB DIN 338 HSSE N 10,1 INOX	-
10.2	87	133	135	36	INOX	5	25203579	SPB DIN 338 HSSE N 10,2 INOX	-
10.3	87	133	135	36	INOX	5	25203790	SPB DIN 338 HSSE N 10,3 INOX	-
10.4	87	133	135	36	INOX	5	25203791	SPB DIN 338 HSSE N 10,4 INOX	-
10.5	87	133	135	36	INOX	5	25203580	SPB DIN 338 HSSE N 10,5 INOX	-
10.6	87	133	135	36	INOX	5	25203792	SPB DIN 338 HSSE N 10,6 INOX	-
10.7	94	142	135	36	INOX	5	25203793	SPB DIN 338 HSSE N 10,7 INOX	-
10.8	94	142	135	36	INOX	5	25203794	SPB DIN 338 HSSE N 10,8 INOX	-
10.9	94	142	135	36	INOX	5	25203795	SPB DIN 338 HSSE N 10,9 INOX	-
11	94	142	135	36	INOX	5	25203581	SPB DIN 338 HSSE N 11,0 INOX	-
11.1	94	142	135	36	INOX	5	25203796	SPB DIN 338 HSSE N 11,1 INOX	-
11.2	94	142	135	36	INOX	5	25203797	SPB DIN 338 HSSE N 11,2 INOX	-
11.3	94	142	135	36	INOX	5	25203798	SPB DIN 338 HSSE N 11,3 INOX	-
11.4	94	142	135	36	INOX	5	25203799	SPB DIN 338 HSSE N 11,4 INOX	-
11.5	94	142	135	36	INOX	5	25203582	SPB DIN 338 HSSE N 11,5 INOX	-
11.6	94	142	135	36	INOX	5	25203800	SPB DIN 338 HSSE N 11,6 INOX	-
11.7	94	142	135	36	INOX	5	25203801	SPB DIN 338 HSSE N 11,7 INOX	-
11.8	94	142	135	36	INOX	5	25203802	SPB DIN 338 HSSE N 11,8 INOX	-
11.9	101	151	135	36	INOX	5	25203803	SPB DIN 338 HSSE N 11,9 INOX	-
12	101	151	135	36	INOX	5	25203583	SPB DIN 338 HSSE N 12,0 INOX	-
12.1	101	151	135	36	INOX	5	25203804	SPB DIN 338 HSSE N 12,1 INOX	-
12.2	101	151	135	36	INOX	5	25203805	SPB DIN 338 HSSE N 12,2 INOX	-
12.3	101	151	135	36	INOX	5	25203806	SPB DIN 338 HSSE N 12,3 INOX	-
12.4	101	151	135	36	INOX	5	25203807	SPB DIN 338 HSSE N 12,4 INOX	-
12.5	101	151	135	36	INOX	5	25203584	SPB DIN 338 HSSE N 12,5 INOX	-
12.6	101	151	135	36	INOX	5	25203808	SPB DIN 338 HSSE N 12,6 INOX	-
12.7	101	151	135	36	INOX	5	25203809	SPB DIN 338 HSSE N 12,7 INOX	-
12.8	101	151	135	36	INOX	5	25203810	SPB DIN 338 HSSE N 12,8 INOX	-
12.9	101	151	135	36	INOX	5	25203811	SPB DIN 338 HSSE N 12,9 INOX	-
13	101	151	135	36	INOX	5	25203585	SPB DIN 338 HSSE N 13,0 INOX	-
13.5	108	160	135	36	INOX	1	25203812	SPB DIN 338 HSSE N 13,5 INOX	-
14	108	160	135	36	INOX	1	25203813	SPB DIN 338 HSSE N 14,0 INOX	-
14.5	114	169	135	36	INOX	1	25203814	SPB DIN 338 HSSE N 14,5 INOX	-
15	114	169	135	36	INOX	1	25203815	SPB DIN 338 HSSE N 15,0 INOX	-
15.5	120	178	135	36	INOX	1	25203816	SPB DIN 338 HSSE N 15,5 INOX	-
16	120	178	135	36	INOX	1	25203817	SPB DIN 338 HSSE N 16,0 INOX	-

DIN 338 HSSE N INOX spiral drills, 19-piece set

The set contains 19 HSS spiral drills in the INOX in HSSE-Co5 (M35) type for industrial uses.

Contents:
The set consists of 19 HSS spiral drills with dia. 1.0 to 10.0 mm, in increments of 0.5 mm.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
19	INOX	1	25203703	SET SPB DIN 338 HSSE N 1-10 INOX 19TLG	-

DIN 338 HSSE N INOX spiral drills, 25-piece set

The set contains 25 HSS spiral drills in the INOX in HSSE-Co5 (M35) type for industrial uses.

Contents:
The set consists of 25 HSS spiral drills with dia. 1.0 to 13.0 mm, in increments of 0.5 mm.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
25	INOX	1	25203704	SET SPB DIN 338 HSSE N 1-13 INOX 25TLG	-

HSS step drills

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group to be machined.
② Select the type.
③ Establish the cutting speed range.

To determine the recommended rotational speed range [RPM], please proceed as follows:
④ Select the required diameter.
⑤ The cutting speed range and the diameter determine the recommended rotational speed range.

① Material group			② Design	③ Cutting speed
Steel, cast steel	Steels up to 700 N/mm²	Construction steels, carbon steels, tool steels, alloyed and non-alloyed steels, case-hardened steels, cast steel, tempering steels	HSS	20–30 m/min
			HICOAT HC-FEP	
	Steels over 700 N/mm²		HICOAT HC-FEP	10–20 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	HICOAT HC-FEP	10–20 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys, brass, copper, zinc	HSS	20–30 m/min
			HICOAT HC-FEP	
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard aluminium alloys (high Si content)	HICOAT HC-FEP	
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		HSS	10–20 m/min
			HICOAT HC-FEP	

Example:
HSS step drill
STB HSS 04-30/10,
step dia. 4–30 mm.
Steels up to 700 N/mm².
Cutting speed: 20–30 m/min
Rotational speed range: 2.400–200 RPM

③ Step dia. [mm]	④ Cutting speeds [m/min]		
	10	20	30
	Rotational speeds [RPM]		
4	800	1,600	2,400
5	640	1,280	1,920
6	530	1,060	1,600
7	460	920	1,400
8	400	800	1,200
9	350	700	1,060
10	320	640	960
11	290	580	880
12	270	540	820
14	230	460	700
15	210	420	640
16	200	400	600
18	180	360	540
20	160	320	480
21	150	300	460
22	140	280	420
24	130	260	400
26	120	240	360
27	120	240	360
28	110	220	340
30	100	200	300
33	90	180	280
34	90	180	280
36	90	180	280
37	90	180	280
39	80	160	240

HSS step drills

Very smooth-running and sturdy high-performance tools for burr-free drilling and deburring of materials measuring up to 4 mm thick in just one work step. To ensure reliable torque transmission, all step drills have a three-surface shaft.

Special features:
- The high-quality drill tip ensures effortless centring and drilling, and the tool taper makes it easier to pull back.
- Chips which do not break are neatly removed as with a spiral drill.
- Use HSS type with cutting oil/compressed air where possible.

Drilling steps	d_2 [mm]	l_1 [mm]	Version		Item no.	Designation	Price/ unit GBP
4.0/5.0/6.0/7.0/8.0/9.0/10.0/11.0/12.0	6	65	HSS	1	25201036	STB HSS 04-12/6	-
4.0/6.0/8.0/10.0/12.0/14.0/16.0/18.0/20.0	8	75	HSS	1	25201037	STB HSS 04-20/8	-
4.0/6.0/8.0/10.0/12.0/14.0/16.0/18.0/20.0/ 22.0/24.0/26.0/28.0/30.0	10	100	HSS	1	25201038	STB HSS 04-30/10	-
4.0/6.0/9.0/12.0/15.0/18.0/21.0/24.0/27.0/ 30.0/33.0/36.0/39.0	10	107	HSS	1	25201039	STB HSS 04-39/10	-
6.0/9.0/12.5/15.2/18.6/20.4/22.5/26.0/ 28.3/30.5/34.0/37.0	10	100	HSS	1	25201040	STB HSS 06-37/10	-

HSS step drill, 3-piece set

The set contains three HSS step drills in the versions 4–12 mm (9 steps), 4–20 mm (9 steps), 4–30 mm (14 steps) for industrial uses.

Special features:
- To ensure reliable torque transmission, all step drills have a three-surface shaft.
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS step drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
3	HSS	1	25201046	SET STB HSS 3TLG	-

HSS step drill with HICOAT coating HC-FEP

Very smooth-running and sturdy high-performance tools for burr-free drilling and deburring of materials measuring up to 4 mm thick in just one work step. To ensure reliable torque transmission, all step drills have a three-surface shaft.

Special features:
- Thanks to the HICOAT coating, especially well-suited to use on stainless steel (INOX) and can be used without adding coolant.
- The high-quality drill tip ensures effortless centring and drilling, and the tool taper makes it easier to pull back.

Drilling steps	d_2 [mm]	l_1 [mm]	Version		Item no.	Designation	Price/ unit GBP
4.0/5.0/6.0/7.0/8.0/9.0/10.0/11.0/12.0	6	65	HC-FEP	1	25201041	STB HSS 04-12/6 HC-FEP	-
4.0/6.0/8.0/10.0/12.0/14.0/16.0/18.0/20.0	8	75	HC-FEP	1	25201042	STB HSS 04-20/8 HC-FEP	-
4.0/6.0/8.0/10.0/12.0/14.0/16.0/18.0/20.0/ 22.0/24.0/26.0/28.0/30.0	10	100	HC-FEP	1	25201043	STB HSS 04-30/10 HC-FEP	-
4.0/6.0/9.0/12.0/15.0/18.0/21.0/24.0/27.0/ 30.0/33.0/36.0/39.0	10	107	HC-FEP	1	25201044	STB HSS 04-39/10 HC-FEP	-
6.0/9.0/12.5/15.2/18.6/20.4/22.5/26.0/ 28.3/30.5/34.0/37.0	10	100	HC-FEP	1	25201045	STB HSS 06-37/10 HC-FEP	-

HSS step drill with HICOAT coating HC-FEP, 3-piece set

The set contains 3 HSS step drills in the versions 4–12 mm (9 steps), 4–20 mm (9 steps), 4–30 mm (14 steps) with a premium HICOAT coating HC-FEP for industrial uses.

Special features:
- To ensure reliable torque transmission, all step drills have a three-surface shaft.
- The sturdy plastic box protects the tools against dirt and damage.
- The securing of the HSS step drills facilitates the selection and withdrawal of the tools.

Contents [Piece]	Version		Item no.	Designation	Price/unit GBP
3	HC-FEP	1	25201047	SET STB HSS HC-FEP 3TLG	-

Countersink tools
General information

The range of PFERD countersinking tools comprises conical countersinks and flat countersinks of a high-quality industrial standard. PFERD also offers conical countersinks in the HSS Co5 type or with the high-quality HICOAT coating HC-FEP for working on particularly complex materials.

Types

Conical countersink

HSS countersink 90°
- Particularly well suited to producing countersinks for 90° screws.

HSS countersink 90° UGT
- Particularly well suited to producing exact countersinks.
- Smooth running.
- Low countersinking force and a good surface quality.
- Specially developed geometry with wide flutes for optimal chip removal and heat dissipation.
- Particularly well suited to robotic and stationary applications.

HSS countersink 60°
- Particularly well suited to countersinking and deburring.

Flat countersink

Quality grade fine (F)
- Flat countersinks with the quality grade "fine" are suitable for producing flat countersinks at through holes or blind holes in the tolerance range "fine" with high mounting accuracy.

Quality grade medium (M)
- Flat countersinks with the quality grade "medium" are suitable for producing flat countersinks at through holes or blind holes in the tolerance range "medium" with extended mounting accuracy.

For tapping hole (GKL)
- Flat countersinks for the tapping hole are suitable for producing flat countersinks at core holes for female threads.

Recommended rotational speed range [RPM]

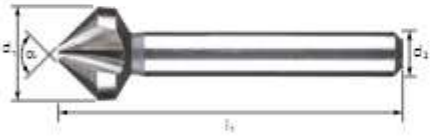
To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group to be machined.
② Select the type.
③ Establish the cutting speed range.

To determine the recommended rotational speed range [RPM], please proceed as follows:
④ Select the required diameter.
⑤ The cutting speed range and the diameter determine the recommended rotational speed range.

① Material group			② Design	③ Cutting speed
Steel, cast steel	Non-alloyed construction steels up to 700 N/mm²	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, tempering steels	HSS	15–20 m/min
			HSSE Co5	
			HICOAT HC-FEP	
	Alloyed construction steels over 700 N/mm²	Tool steels, tempering steels, alloyed steels, cast steel	HSSE Co5	10–15 m/min
			HICOAT HC-FEP	
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	HSS	10–15 m/min
			HSSE Co5	
			HICOAT HC-FEP	
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys Brass, copper, zinc	HSS	15–20 m/min
			HSSE Co5	
			HICOAT HC-FEP	
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard aluminium alloys (high Si content)	HSSE Co5	10–20 m/min
			HICOAT HC-FEP	
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	HSS	10 m/min
			HSSE Co5	
			HICOAT HC-FEP	
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		HSS	10–15 m/min
			HSSE Co5	
			HICOAT HC-FEP	

Example:
Conical countersink
KES HSS DIN 335 C90°,
Countersink dia. 28.0 mm.
Steels up to 700 N/mm².
Cutting speed: 15–20 m/min
Rotational speed range: 170–220 RPM

④ Countersink dia. [mm]	⑤ Cutting speeds [m/min]		
	10	15	20
	Rotational speeds [RPM]		
4.30	800	1,200	1,600
5.00	640	960	1,280
5.30	640	960	1,280
6.00	530	800	1,060
6.30	530	800	1,060
7.00	460	680	920
8.00	400	600	800
8.30	400	600	800
10.00	320	470	640
10.40	320	470	640
11.50	280	420	560
12.40	260	390	520
12.50	260	390	520
15.00	210	320	420
16.00	190	290	380
16.50	190	290	380
19.00	170	260	340
20.00	150	230	300
20.50	150	230	300
23.00	140	210	280
25.00	130	200	260
28.00	110	170	220
31.00	100	150	200
37.00	90	140	180
40.00	80	120	160



Conical countersink HSS DIN 335 C 90°

High-performance tool with a countersink angle of 90° for countersinking 90° screws for all common materials such as steel, cast steel and non-ferrous metals. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Special features:
- High stock removal rate and optimum chip removal.
- Burr-free results even at low cutting speeds.
- High workpiece surface quality and long tool life.

d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
4.3	4	40	90	HSS	1	25202100	KES HSS DIN 335 C90° 4,3	-
5	4	40	90	HSS	1	25202101	KES HSS DIN 335 C90° 5,0	-
5.3	4	40	90	HSS	1	25202102	KES HSS DIN 335 C90° 5,3	-
6	5	45	90	HSS	1	25202103	KES HSS DIN 335 C90° 6,0	-
6.3	5	45	90	HSS	1	25202104	KES HSS DIN 335 C90° 6,3	-
7	6	50	90	HSS	1	25202105	KES HSS DIN 335 C90° 7,0	-
8	6	50	90	HSS	1	25202106	KES HSS DIN 335 C90° 8,0	-
8.3	6	50	90	HSS	1	25202107	KES HSS DIN 335 C90° 8,3	-
10	6	50	90	HSS	1	25202108	KES HSS DIN 335 C90° 10,0	-
10.4	6	50	90	HSS	1	25202109	KES HSS DIN 335 C90° 10,4	-
11.5	8	56	90	HSS	1	25202110	KES HSS DIN 335 C90° 11,5	-
12.4	8	56	90	HSS	1	25202111	KES HSS DIN 335 C90° 12,4	-
15	10	60	90	HSS	1	25202112	KES HSS DIN 335 C90° 15,0	-
16.5	10	60	90	HSS	1	25202113	KES HSS DIN 335 C90° 16,5	-
19	10	63	90	HSS	1	25202114	KES HSS DIN 335 C90° 19,0	-

Continued on next page

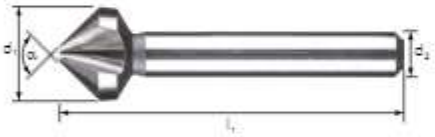
d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
20.5	10	63	90	HSS	1	25202115	KES HSS DIN 335 C90° 20,5	-
23	10	67	90	HSS	1	25202116	KES HSS DIN 335 C90° 23,0	-
25	10	67	90	HSS	1	25202117	KES HSS DIN 335 C90° 25,0	-
28	12	71	90	HSS	1	25202118	KES HSS DIN 335 C90° 28,0	-
31	12	71	90	HSS	1	25202119	KES HSS DIN 335 C90° 31,0	-
37	12	90	90	HSS	1	25202120	KES HSS DIN 335 C90° 37,0	-
40	15	80	90	HSS	1	25202121	KES HSS DIN 335 C90° 40,0	-

Conical countersink sets HSS DIN 335 C 90°

The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for all common materials such as steel, cast steel and non-ferrous metals.

Special features:
- The sturdy plastic box protects the tools against dirt and damage.

Contents [Piece]	Contents tool diameter [mm]	Version		Item no.	Designation	Price/unit GBP
3	6.3 / 10.4 / 16.5	HSS	1	25202152	SET KES HSS DIN 335 C90° 3TLG	-
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	HSS	1	25202153	SET KES HSS DIN 335 C90° 5TLG	-
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	HSS	1	25202154	SET KES HSS DIN 335 C90° 6TLG	-



Conical countersink with unequal pitch UGT HSS DIN 335 C 90°

High-performance tool with a countersink angle of 90° for precise countersinking of 90° screws for all common materials such as steel, cast steel and non-ferrous metals. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Special features:
- Optimum chip removal and heat dissipation, smooth running and optimum results due to unequal pitch (UGT).
- Burr-free results even at low cutting speeds.
- Low countersinking force and a good surface quality as well as a long tool life.

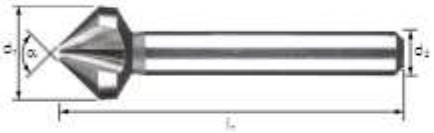
d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
6.3	5	45	90	HSS UGT	1	25202168	UGT HSS DIN 335 C90° 6,3	-
8.3	6	50	90	HSS UGT	1	25202169	UGT HSS DIN 335 C90° 8,3	-
10.4	6	50	90	HSS UGT	1	25202170	UGT HSS DIN 335 C90° 10,4	-
12.4	8	56	90	HSS UGT	1	25202171	UGT HSS DIN 335 C90° 12,4	-
15	10	60	90	HSS UGT	1	25202172	UGT HSS DIN 335 C90° 15,0	-
16.5	10	60	90	HSS UGT	1	25202173	UGT HSS DIN 335 C90° 16,5	-
19	10	63	90	HSS UGT	1	25202174	UGT HSS DIN 335 C90° 19,0	-
20.5	10	63	90	HSS UGT	1	25202175	UGT HSS DIN 335 C90° 20,5	-
23	10	67	90	HSS UGT	1	25202176	UGT HSS DIN 335 C90° 23,0	-
25	10	67	90	HSS UGT	1	25202177	UGT HSS DIN 335 C90° 25,0	-
31	12	71	90	HSS UGT	1	25202178	UGT HSS DIN 335 C90° 31,0	-

Conical countersink sets with unequal pitch UGT HSS DIN 335 C 90°

The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for all common materials such as steel, cast steel and non-ferrous metals.

Special features:
- Optimum chip removal and heat dissipation, smooth running and optimum results due to unequal pitch (UGT).
- The sturdy plastic box protects the tools against dirt and damage.

Contents [Piece]	Contents tool diameter [mm]	Version		Item no.	Designation	Price/ unit GBP
3	6.3 / 10.4 / 16.5	HSS UGT	1	25202190	SET UGT HSS DIN 335 C90° 3TLG	-
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	HSS UGT	1	25202191	SET UGT HSS DIN 335 C90° 5TLG	-
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	HSS UGT	1	25202192	SET UGT HSS DIN 335 C90° 6TLG	-



Conical countersink HSSE DIN 335 C 90°, type Co5

High-performance tool with a countersink angle of 90° for countersinking 90° screws with temperature-resistant Co content for particularly tough and hard materials. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Special features:
- High stock removal rate and optimum chip removal.
- Burr-free results even at low cutting speeds.
- High workpiece surface quality and long tool life.

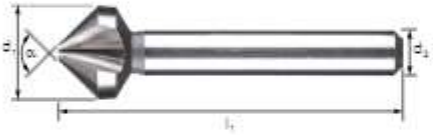
d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
4.3	4	40	90	HSSE	1	25202122	KES HSSE DIN 335 C90° 4,3	-
5	4	40	90	HSSE	1	25202123	KES HSSE DIN 335 C90° 5,0	-
5.3	4	40	90	HSSE	1	25202124	KES HSSE DIN 335 C90° 5,3	-
6	5	45	90	HSSE	1	25202125	KES HSSE DIN 335 C90° 6,0	-
6.3	5	45	90	HSSE	1	25202126	KES HSSE DIN 335 C90° 6,3	-
8	6	50	90	HSSE	1	25202127	KES HSSE DIN 335 C90° 8,0	-
8.3	6	50	90	HSSE	1	25202128	KES HSSE DIN 335 C90° 8,3	-
10	6	50	90	HSSE	1	25202129	KES HSSE DIN 335 C90° 10,0	-
10.4	6	50	90	HSSE	1	25202130	KES HSSE DIN 335 C90° 10,4	-
11.5	8	56	90	HSSE	1	25202131	KES HSSE DIN 335 C90° 11,5	-
12.4	8	56	90	HSSE	1	25202132	KES HSSE DIN 335 C90° 12,4	-
15	10	60	90	HSSE	1	25202133	KES HSSE DIN 335 C90° 15,0	-
16.5	10	60	90	HSSE	1	25202134	KES HSSE DIN 335 C90° 16,5	-
19	10	63	90	HSSE	1	25202135	KES HSSE DIN 335 C90° 19,0	-
20.5	10	63	90	HSSE	1	25202136	KES HSSE DIN 335 C90° 20,5	-
23	10	67	90	HSSE	1	25202137	KES HSSE DIN 335 C90° 23,0	-
25	10	67	90	HSSE	1	25202138	KES HSSE DIN 335 C90° 25,0	-
28	12	71	90	HSSE	1	25202139	KES HSSE DIN 335 C90° 28,0	-
31	12	71	90	HSSE	1	25202140	KES HSSE DIN 335 C90° 31,0	-

Conical countersink sets HSSE DIN 335 C 90°, type Co5

The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for particularly tough and hard materials such as alloyed and high-strength steel and stainless steel (INOX).

Special features:
- Long tool life and temperature-resistant version due to Co content.
- The sturdy plastic box protects the tools against dirt and damage.

Contents [Piece]	Contents tool diameter [mm]	Version		Item no.	Designation	Price/ unit GBP
3	6.3 / 10.4 / 16.5	HSSE	1	25202155	SET KES HSSE DIN 335 C90° 3TLG	-
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	HSSE	1	25202156	SET KES HSSE DIN 335 C90° 5TLG	-
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	HSSE	1	25202157	SET KES HSSE DIN 335 C90° 6TLG	-



Conical countersink with unequal pitch UGT HSS DIN 335 C 90°, type Co5

High-performance tool with a countersink angle of 90° for countersinking 90° screws with temperature-resistant Co content for particularly tough and hard materials. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Special features:
- Optimum chip removal and heat dissipation, smooth running and optimum results due to unequal pitch (UGT).
- Burr-free results even at low cutting speeds.
- Low countersinking force and a good workpiece surface quality as well as a long tool life.

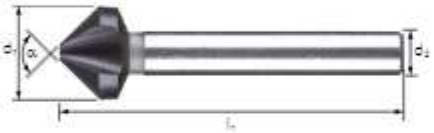
d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
6.3	5	45	90	HSSE UGT	1	25202179	UGT HSSE DIN 335 C90° 6,3	-
8.3	6	50	90	HSSE UGT	1	25202180	UGT HSSE DIN 335 C90° 8,3	-
10.4	6	50	90	HSSE UGT	1	25202181	UGT HSSE DIN 335 C90° 10,4	-
12.4	8	56	90	HSSE UGT	1	25202182	UGT HSSE DIN 335 C90° 12,4	-
15	10	60	90	HSSE UGT	1	25202183	UGT HSSE DIN 335 C90° 15,0	-
16.5	10	60	90	HSSE UGT	1	25202184	UGT HSSE DIN 335 C90° 16,5	-
19	10	63	90	HSSE UGT	1	25202185	UGT HSSE DIN 335 C90° 19,0	-
20.5	10	63	90	HSSE UGT	1	25202186	UGT HSSE DIN 335 C90° 20,5	-
23	10	67	90	HSSE UGT	1	25202187	UGT HSSE DIN 335 C90° 23,0	-
25	10	67	90	HSSE UGT	1	25202188	UGT HSSE DIN 335 C90° 25,0	-
31	12	71	90	HSSE UGT	1	25202189	UGT HSSE DIN 335 C90° 31,0	-

Conical countersink sets with unequal pitch UGT HSSE DIN 335 C 90°, type Co5

The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for particularly tough and hard materials such as alloyed and high-strength steel and stainless steel (INOX).

Special features:
- Long tool life and temperature-resistant version due to Co content.
- Optimum chip removal and heat dissipation, smooth running and optimum results due to unequal pitch (UGT).
- The sturdy plastic box protects the tools against dirt and damage.

Contents [Piece]	Contents tool diameter [mm]	Version		Item no.	Designation	Price/ unit GBP
3	6.3 / 10.4 / 16.5	HSSE UGT	1	25202193	SET UGT HSSE DIN 335 C90° 3TLG	-
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	HSSE UGT	1	25202194	SET UGT HSSE DIN 335 C90° 5TLG	-
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	HSSE UGT	1	25202195	SET UGT HSSE DIN 335 C90° 6TLG	-



Conical countersink HSS DIN 335 C 90° with HICOAT coating HC-FEP

High-performance tool with a countersink angle of 90° for countersinking 90° screws for particularly tough and hard materials. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Special features:
- High stock removal rate, optimum chip removal, high hardness and wear resistance thanks to HICOAT coating.
- Burr-free results even at low cutting speeds.
- High workpiece surface quality as well as particularly long tool life and high temperature resistance.

d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
6.3	5	45	90	HC-FEP	1	25202141	KES HSS DIN 335 C90° HC-FEP 6,3	-
8.3	6	50	90	HC-FEP	1	25202142	KES HSS DIN 335 C90° HC-FEP 8,3	-
10.4	6	50	90	HC-FEP	1	25202143	KES HSS DIN 335 C90° HC-FEP 10,4	-
12.4	8	56	90	HC-FEP	1	25202144	KES HSS DIN 335 C90° HC-FEP 12,4	-
15	10	60	90	HC-FEP	1	25202145	KES HSS DIN 335 C90° HC-FEP 15,0	-
16.5	10	60	90	HC-FEP	1	25202146	KES HSS DIN 335 C90° HC-FEP 16,5	-
19	10	63	90	HC-FEP	1	25202147	KES HSS DIN 335 C90° HC-FEP 19,0	-
20.5	10	63	90	HC-FEP	1	25202148	KES HSS DIN 335 C90° HC-FEP 20,5	-
23	10	67	90	HC-FEP	1	25202149	KES HSS DIN 335 C90° HC-FEP 23,0	-
25	10	67	90	HC-FEP	1	25202150	KES HSS DIN 335 C90° HC-FEP 25,0	-
31	12	71	90	HC-FEP	1	25202151	KES HSS DIN 335 C90° HC-FEP 31,0	-

Conical countersink sets HSS DIN 335 C 90° with HICOAT coating HC-FEP

The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for particularly tough and hard materials such as alloyed and high-strength steel and stainless steel (INOX). High hardness and wear resistance thanks to HICOAT coating.

Special features:
- Particularly long tool life and very temperature-resistant.
- Can also be used in a higher cutting speed range and without coolants and lubricants.
- The sturdy plastic box protects the tools against dirt and damage.

Contents [Piece]	Contents tool diameter [mm]	Version		Item no.	Designation	Price/ unit GBP
3	6.3 / 10.4 / 16.5	HC-FEP	1	25202158	SET KES HSS DIN 335 C90° 3TLG HC-FEP	-
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	HC-FEP	1	25202159	SET KES HSS DIN 335 C90° 5TLG HC-FEP	-
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	HC-FEP	1	25202160	SET KES HSS DIN 335 C90° 6TLG HC-FEP	-

Conical countersink HSS DIN 334 C 60°

High-performance countersink tools with a countersink angle of 60° for deburring all common materials such as steel, cast steel and non-ferrous metals.

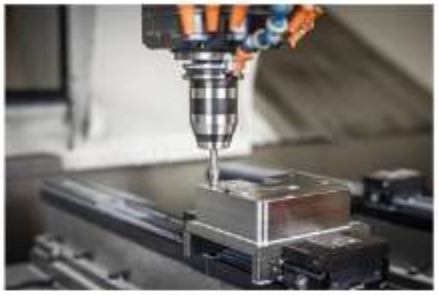
Special features:
- High stock removal rate and optimum chip removal.
- Burr-free results even at low cutting speeds.
- High workpiece surface quality and long tool life.

d_1 [mm]	d_2 [mm]	l_1 [mm]	α [°]	Version		Item no.	Designation	Price/unit GBP
6.3	5	45	60	HSS	1	25202161	KES HSS DIN 334 C60° 6,3	-
8	6	50	60	HSS	1	25202162	KES HSS DIN 334 C60° 8,0	-
10	6	50	60	HSS	1	25202163	KES HSS DIN 334 C60° 10,0	-
12.5	8	56	60	HSS	1	25202164	KES HSS DIN 334 C60° 12,5	-
16	10	63	60	HSS	1	25202165	KES HSS DIN 334 C60° 16,0	-
20	10	67	60	HSS	1	25202166	KES HSS DIN 334 C60° 20,0	-
25	10	71	60	HSS	1	25202167	KES HSS DIN 334 C60° 25,0	-

Recommended rotational speed range [RPM]

To determine the recommended cutting speed range [m/min], please proceed as follows:
① Select the material group to be machined.
② Select the type.
③ Establish the cutting speed range.

To determine the recommended rotational speed range [RPM], please proceed as follows:
④ Select the required diameter.
⑤ The cutting speed range and the diameter determine the recommended rotational speed range.



① Material group			② Design	③ Cutting speed
Steel, cast steel	Steels up to 700 N/mm²	Construction steels, carbon steels, tool steels, alloyed and non-alloyed steels, case-hardened steels, cast steel, tempering steels	Fine (F)	10–20 m/min
			Medium (M)	
			Tapping hole (GKL)	
	Steels over 700 N/mm²		Fine (F)	10–15 m/min
			Medium (M)	
			Tapping hole (GKL)	
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Fine (F)	10–15 m/min
			Medium (M)	
			Tapping hole (GKL)	
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys Brass, copper, zinc	Fine (F)	15–20 m/min
			Medium (M)	
			Tapping hole (GKL)	
	Hard non-ferrous metals	Bronze, titanium/titanium alloys, hard aluminium alloys (high Si content)	Fine (F)	10–20 m/min
			Medium (M)	
			Tapping hole (GKL)	
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite EN-GJL (GG), with nodular graphite/nodular cast iron EN-GJS (GGG), white annealed cast iron EN-GJMW (GTW), black annealed cast iron EN-GJMB (GTS)	Fine (F)	10 m/min
			Medium (M)	
			Tapping hole (GKL)	
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		Fine (F)	10–15 m/min
			Medium (M)	
			Tapping hole (GKL)	

Example:
Flat countersink
FLS HSS DIN 373 15.0 F,
Flat countersink dia. 15 mm.
Steels up to 700 N/mm².
Cutting speed: 10–20 m/min
Rotational speed range: 220–440 RPM

④ Countersink dia. [mm]	⑤ Cutting speeds [m/min]		
	10	15	20
	Rotational speeds [RPM]		
6.00	530	795	1,060
8.00	400	600	800
10.00	320	480	640
11.00	290	435	580
15.00	220	330	440
18.00	180	270	360
20.00	160	240	320

HSS flat countersink DIN 373 quality grade fine for through hole

High-performance flat countersink made of HSS according to DIN 373 with the quality grade of fine for producing flat countersinks at through holes or blind holes in the tolerance range of fine with high mounting accuracy. For through holes with the quality grade fine (F) according to ISO 273.

Special features:
- Optimum chip removal and smooth running.
- Burr-free results and good surface quality.
- Long tool life and very high stock removal rate.

d_1 [mm]	d_2 [mm]	d_3	l_1 [mm]	Version		Item no.	Designation	Price/unit GBP
6	5	3.2	71	F	1	25203100	FLS HSS DIN 373 6,0 F	-
8	5	4.3	71	F	1	25203101	FLS HSS DIN 373 8,0 F	-
10	8	5.3	80	F	1	25203102	FLS HSS DIN 373 10,0 F	-
11	8	6.4	80	F	1	25203103	FLS HSS DIN 373 11,0 F	-
15	12.5	8.4	100	F	1	25203104	FLS HSS DIN 373 15,0 F	-
18	12.5	10.5	100	F	1	25203105	FLS HSS DIN 373 18,0 F	-
20	12.5	13	100	F	1	25203106	FLS HSS DIN 373 20,0 F	-

HSS flat countersink DIN 373 quality grade medium for through hole

High-performance flat countersink made of HSS according to DIN 373 with the quality grade of medium for producing flat countersinks at through holes or blind holes in the tolerance range of medium with extended mounting accuracy. For through holes with the quality grade medium (M) according to ISO 273.

Special features:
- Optimum chip removal and smooth running.
- Burr-free results and good surface quality.
- Long tool life and very high stock removal rate.

d_1 [mm]	d_2 [mm]	d_3	l_1 [mm]	Version		Item no.	Designation	Price/unit GBP
6	5	3.4	71	M	1	25203107	FLS HSS DIN 373 6,0 M	-
8	5	4.5	71	M	1	25203108	FLS HSS DIN 373 8,0 M	-
10	8	5.5	80	M	1	25203109	FLS HSS DIN 373 10,0 M	-
11	8	6.6	80	M	1	25203110	FLS HSS DIN 373 11,0 M	-
15	12.5	9	100	M	1	25203111	FLS HSS DIN 373 15,0 M	-
18	12.5	11	100	M	1	25203112	FLS HSS DIN 373 18,0 M	-
20	12.5	13.5	100	M	1	25203113	FLS HSS DIN 373 20,0 M	-

HSS flat countersink DIN 373 for thread core hole

High-performance flat countersink with guide pin for tapping hole (GKL) made of HSS according to DIN 373 for producing flat countersinks at core holes for female threads.

Special features:
- Optimum chip removal and smooth running.
- Burr-free results and good surface quality.
- Long tool life and very high stock removal rate.

d_1 [mm]	d_2 [mm]	d_3	l_1 [mm]	Version		Item no.	Designation	Price/unit GBP
6	5	2.5	71	GKL	1	25203114	FLS HSS DIN 373 6,0 GKL	-
8	5	3.3	71	GKL	1	25203115	FLS HSS DIN 373 8,0 GKL	-
10	8	4.2	80	GKL	1	25203116	FLS HSS DIN 373 10,0 GKL	-
11	8	5	80	GKL	1	25203117	FLS HSS DIN 373 11,0 GKL	-
15	12.5	6.8	100	GKL	1	25203118	FLS HSS DIN 373 15,0 GKL	-
18	12.5	8.5	100	GKL	1	25203119	FLS HSS DIN 373 18,0 GKL	-
20	12.5	10.2	100	GKL	1	25203120	FLS HSS DIN 373 20,0 GKL	-

HSS hole saws

Hole saws made of tough, shatter-proof, sturdy HSS bimetal for cost-effectively cutting out holes. The saw teeth are made of high-quality M42 (Co8) material.

Special features:
- High concentricity, and chattering during sawing is prevented by the alternating tooth pitch.
- Good chip removal.
- The hole saw is conveniently centred and guided via the replaceable HSS pilot drill.

d, [mm]	Max. cutting depth [mm]	Opt. RPM steel	Opt. RPM stainless steel (INOX)	Opt. RPM non-ferrous metals	Opt. RPM plastics		Item no.	Designa-tion	Price/unit GBP
Thread version 1/2-20 UNF, suitable arbors LSS 1, LSS 4 or quick-mounting system PSL									
14	34	620	310	1,000	1,000	1	25100114	LS 14	-
16	34	550	275	880	880	1	25100116	LS 16	-
17	36	520	260	820	820	1	25100117	LS 17	-
19	36	460	230	740	740	1	25100119	LS 19	-
20	36	425	210	700	700	1	25100220	LS 20	-
21	36	410	205	670	670	1	25100221	LS 21	-
22	36	390	195	640	640	1	25100322	LS 22	-
24	36	360	180	580	580	1	25100424	LS 24	-
25	36	350	175	560	560	1	25100425	LS 25	-
27	36	325	160	520	520	1	25100527	LS 27	-
29	36	300	150	480	480	1	25100629	LS 29	-
30	36	285	145	470	470	1	25100730	LS 30	-
Thread version 5/8-18 UNF, suitable arbor LSS 2 or quick-mounting system PSL									
32	36	275	140	440	440	1	25100832	LS 32	-
33	36	260	135	420	420	1	25100933	LS 33	-
35	36	250	125	400	400	1	25101035	LS 35	-
37	36	235	115	370	370	1	25101137	LS 37	-
38	36	230	115	370	370	1	25101138	LS 38	-
40	36	215	110	350	350	1	25101240	LS 40	-
41	36	210	105	340	340	1	25101241	LS 41	-
43	31	200	100	330	330	1	25101343	LS 43	-
44	31	195	95	320	320	1	25101344	LS 44	-
46	31	185	90	300	300	1	25101346	LS 46	-
48	31	180	90	290	290	1	25101448	LS 48	-
51	31	170	85	270	270	1	25101551	LS 51	-
52	31	165	80	270	270	1	25101552	LS 52	-
54	31	160	80	260	260	1	25101654	LS 54	-
57	31	150	75	250	250	1	25101757	LS 57	-
59	31	145	70	240	240	1	25101859	LS 59	-
60	31	140	70	230	230	1	25101860	LS 60	-
64	31	135	65	220	220	1	25101963	LS 64	-
65	31	135	65	220	220	1	25101965	LS 65	-
67	31	130	65	210	210	1	25102067	LS 67	-
68	31	130	65	210	210	1	25102068	LS 68	-
70	31	125	60	200	200	1	25102170	LS 70	-
73	31	120	60	190	190	1	25102273	LS 73	-
76	31	115	55	180	180	1	25102376	LS 76	-
79	31	110	55	180	180	1	25102479	LS 79	-

Continued on next page

d_1 [mm]	Max. cutting depth [mm]	Opt. RPM steel	Opt. RPM stainless steel (INOX)	Opt. RPM non-ferrous metals	Opt. RPM plastics		Item no.	Designa-tion	Price/unit GBP
83	31	105	50	170	170	1	25102583	LS 83	-
86	31	100	50	160	160	1	25102586	LS 86	-
89	31	95	45	160	160	1	25102689	LS 89	-
92	31	95	45	150	150	1	25102792	LS 92	-
95	31	90	45	150	150	1	25102895	LS 95	-
98	31	90	45	140	140	1	25102898	LS 98	-
102	31	85	40	140	140	1	25102912	LS 102	-
105	31	80	40	130	130	1	25103015	LS 105	-
111	31	75	35	130	130	1	25103111	LS 111	-
114	31	75	35	120	120	1	25103114	LS 114	-
121	31	70	35	120	120	1	25103221	LS 121	-
127	31	65	30	110	110	1	25103227	LS 127	-
140	31	60	30	100	100	1	25103440	LS 140	-
152	31	55	25	90	90	1	25103552	LS 152	-
160	31	52	23	85	85	1	25103010	LS 160	-
168	31	50	23	82	82	1	25103011	LS 168	-
177	31	47	22	77	77	1	25103012	LS 177	-
210	31	40	18	65	65	1	25103013	LS 210	-

HSS hole saw sets

Set for tradespeople

The set contains five HSS hole saws in the most common diameters, including accessories, for use in professional trades. Operating instructions are included.

Contents:
The set consists of five HSS hole saws LS 22, LS 25, LS 29, LS 32 and LS 38, a hole saw arbor LSS 4, an LSA adapter for hole saw arbor LSS 4, an Allen key 4 mm and an ejection spring.

Special features:
- It is possible to use hole saws LS 32 and LS 38 with the LSA adapter and washer.
- Supplied in well-arranged plastic box which protects against dirt and damage.

L [mm]	B [mm]	H [mm]		Item no.	Designation	Price/unit GBP
168	116	57	1	25900700	LS-SO 7 H	-

Set for fitters

The set contains six HSS hole saws in the most common diameters, including accessories, for plumbers and sanitary engineers. Operating instructions are included.

Contents:
The set consists of six HSS hole saws: LS 19, LS 22, LS 29, LS 38, LS 44 and LS 57, two hole saw arbors: LSS 2 and LSS 4, an LSA adapter for hole saw arbor LSS 4, an Alley key 4 mm and an ejection spring.

Special features:
- It is possible to use hole saw LS 38 with the LSA adapter and washer.
- Supplied in well-arranged plastic box which protects against dirt and damage.

L [mm]	B [mm]	H [mm]		Item no.	Designation	Price/unit GBP
219	156	60	1	25900920	LS-SO 9 I	-

Set for electricians (international standard sizes)

The set contains six HSS hole saws in the most common international diameters, including accessories, for electricians. Operating instructions are included.

Contents:
The set consists of six HSS hole saws: LS 22, LS 29, LS 35, LS 44, LS 51 and LS 64, two hole saw arbors: LSS 2 and LSS 4, an LSA adapter for hole saw arbor LSS 4, an Allen key 4 mm and an ejection spring.

Special features:
- It is possible to use hole saw LS 35 with the LSA adapter and washer.
- Supplied in well-arranged plastic box which protects against dirt and damage.

L [mm]	B [mm]	H [mm]		Item no.	Designation	Price/unit GBP
219	156	60	1	25900910	LS-SO 9 E-1	-

Set for electricians (German standard sizes)

The set contains nine HSS hole saws in the most common diameters, including accessories, for electricians in Germany. Operating instructions are included.

Contents:
The set consists of nine HSS hole saws: LS 19, LS 22, LS 25, LS 32, LS 38, LS 44, LS 51, LS 60 and LS 68, two hole saw arbors: LSS 2 and LSS 4, an LSA adapter for hole saw arbor LSS 4, a pilot drill LSB 6/90, an Allen key 4 mm and an ejection spring.

Special features:
- It is possible to use hole saws LS 32 and LS 38 with the LSA adapter and washer.
- Supplied in well-arranged plastic box which protects against dirt and damage.

L [mm]	B [mm]	H [mm]		Item no.	Designation	Price/unit GBP
219	156	60	1	25900010	LS-SO 13 E-2	-

Set for mechanics

The set contains nine HSS hole saws in the most common diameters, including accessories, for mechanics in the construction, container and pipeline industries. Operating instructions are included.

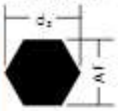
Contents:
The set consists of nine HSS hole saws: LS 19, LS 22, LS 29, LS 35, LS 38, LS 44, LS 51, LS 57 and LS 64, two hole saw arbors: LSS 2 and LSS 4, a pilot drill LSB 6/90, an LSA adapter for hole saw arbor LSS 4, an Allen key 4 mm and an ejection spring.

Special features:
- It is possible to use hole saws LS 35 and LS 38 with the LSA adapter and washer.
- Supplied in well-arranged plastic box which protects against dirt and damage.

L [mm]	B [mm]	H [mm]		Item no.	Designation	Price/unit GBP
219	180	66	1	25901300	LS-SO 13 M	-

Shank dimensions [mm]

Hexagonal



Round

Hole saw arbors LSS

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

Special features:
- Hole saw arbors LSS 1 and LSS 2 are supplied with the HSS pilot drill LSB 6/60 and an ejection spring.
- The hole saw arbor LSS 4 is supplied with the HSS pilot drill LSB 6/90 and an ejection spring.
- The spring can easily be removed manually without the help of tools.

Suitable for hole saws	d_2 [mm]	Size [mm]	Shank type	Thread		Item no.	Designation	Price/unit GBP
LS 14-30	10.5	9.53	hexagonal	1/2–20 UNF	1	25200111	LSS 1	-
LS 32-210	10.5	9.53	hexagonal	5/8–18 UNF	1	25200211	LSS 2	-
LS 14-30	6.35	-	round	1/2–20 UNF	1	25200407	LSS 4	-

Quick-mounting system for hole saws, adapters

Clamping system for easily and quickly using and changing HSS hole saws on conventional power drills. Adapter AD-PSL 14-30 for LS 14–30 mm, adapter AD-PSL 32-210 for LS 32–98 mm and adapter AD-PSL 32-210 HEAVY DUTY for LS 102–210 mm.

Special features:
- After the application is completed, the hole saw and quick-mounting system can be separated without the use of additional tools by simply pressing a button.
- Interchangeable HSS pilot drill.
- Due to the high torque levels involved, when using large hole saws PFERD recommends the use of the PSL quick-mounting systems in conjunction with the AD-PSL 102-210 HEAVY DUTY adapter.

Suitable for hole saws	Shank type	d_2 [mm]	Size [mm]		Item no.	Designation	Price/unit GBP
LS 14–210	hexagonal	9.3	8.5	1	25200901	PSL 8,5	-
		12.2	11	1	25200900	PSL 11	-
LS 14-30	-	-	-	1	25200910	AD-PSL 14-30	-
LS 32-210	-	-	-	1	25200920	AD-PSL 32-210	-
LS 102–210	-	-	-	3	25200921	AD-PSL 102-210 HEAVY DUTY	-

HSS pilot drill LSB

HSS pilot drills for HSS hole saw arbors and quick-mounting systems for hole saws.

Special features:
- Hole saw arbors LSS 1 and LSS 2 are supplied with the HSS pilot drill LSB 6/60.
- The hole saw arbor LSS 4 is supplied with the HSS pilot drill LSB 6/90.
- The HSS pilot drill LSB 6/90 can be used for the quick-mounting system PSL 11.

Suitable for hole saws	Suitable shanks	d_2 [mm]	l_1 [mm]	Shank type		Item no.	Designation	Price/unit GBP
LS 14–210	LSS 1; LSS 2	6.35	60	round	1	25202005	LSB 6/60	-
	LSS 4	6.35	90	round	1	25202007	LSB 6/90	-

Repair set for hole saw arbors

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

Contents:
The repair set consists of two ejection springs, two hexagon socket head screws and an SW 4 hexagon socket wrench.

	Item no.	Designation	Price/unit GBP
1	25200515	RSL-5	-

LSA adapter

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

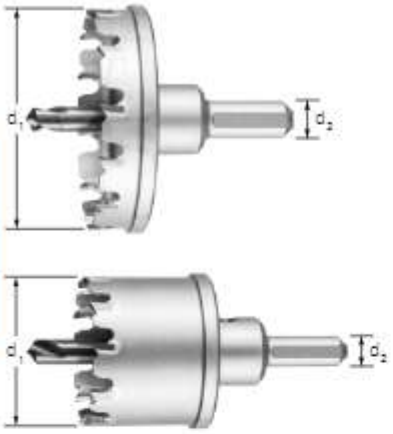
Suitable for hole saws	Suitable shanks		Item no.	Designation	Price/unit GBP
LS 32-38	LSS 1, LSS 4	1	25203001	LSA	-

Arbor extension for hole saws

Arbor extension SVL-300 for extending HSS hole saw arbors LSS 1 and LSS 2 to provide the necessary distance between the drive and work area.

Special features:
- Suitable for working on components that are difficult to access and for work on hollow walls.
- Avoids damage to the workpiece and machine.
- Dust is not drawn into the tool drive during sawing.

Suitable shanks	Shank type	Hexagon socket d_1 [mm]	l_1 [mm]	d_2 [mm]	Size [mm]		Item no.	Designation	Price/unit GBP
LSS 1, LSS 2	hexagonal	9.53	300	12.2	11	1	25200516	SVL-300	-



TC hole cutter

Tungsten carbide hole cutter with sharp teeth made of high-quality tungsten carbide and interchangeable HSS pilot drill for quick, precise creation of cut-outs. Suitable for working on steels, stainless steel (INOX), non-ferrous metals and plastics.

Special features:
- **Flat type**: 8 mm tool height for work on flat material (max. material thickness: 4 mm). Available diameters: 16 to 105 mm.
- **Deep type**: 35 mm tool height (max. cutting depth: 32 mm) for work on pipes and curved surfaces. Available diameters: 16 to 60 mm.
- High concentricity, as the cutting head and shank are produced in one piece.

d_1 [mm]	d_2 [mm]	Opt. RPM steel	Opt. RPM stainless steel (INOX)	Opt. RPM non-ferrous metals	Opt. RPM plastics	Suitable drills		Item no.	Designation	Price/ unit GBP
Flat type, tool height of 8 mm										
16	7	790 – 1,200	400 – 1,000	400 – 1,000	880 – 1,310	LOSB 6/48	1	25401608	LOS HM 1608	-
18	7	710 – 1,060	350 – 880	350 – 880	780 – 1,170	LOSB 6/48	1	25401808	LOS HM 1808	-
19	7	670 – 1,000	330 – 840	330 – 840	740 – 1,110	LOSB 6/48	1	25401908	LOS HM 1908	-
20	7	630 – 950	320 – 800	320 – 800	700 – 1,050	LOSB 6/48	1	25402008	LOS HM 2008	-
22	7	580 – 870	290 – 720	290 – 720	640 – 950	LOSB 6/48	1	25402208	LOS HM 2208	-
23	10	550 – 830	280 – 690	280 – 690	610 – 910	LOSB 6/48	1	25402308	LOS HM 2308	-
24	10	530 – 800	270 – 660	270 – 660	580 – 880	LOSB 6/48	1	25402408	LOS HM 2408	-
25	10	510 – 760	260 – 640	260 – 640	560 – 840	LOSB 6/48	1	25402508	LOS HM 2508	-
27	10	470 – 710	240 – 590	240 – 590	520 – 780	LOSB 6/48	1	25402708	LOS HM 2708	-
28	10	455 – 680	230 – 570	230 – 570	500 – 750	LOSB 6/48	1	25402808	LOS HM 2808	-
30	10	425 – 635	210 – 530	210 – 530	470 – 700	LOSB 6/48	1	25403008	LOS HM 3008	-
32	10	400 – 600	200 – 500	200 – 500	440 – 660	LOSB 6/48	1	25403208	LOS HM 3208	-
34	10	375 – 560	185 – 470	185 – 470	410 – 620	LOSB 6/48	1	25403408	LOS HM 3408	-
35	10	365 – 545	180 – 450	180 – 450	400 – 600	LOSB 6/48	1	25403508	LOS HM 3508	-
38	10	335 – 505	170 – 420	170 – 420	370 – 550	LOSB 6/48	1	25403808	LOS HM 3808	-
40	10	320 – 480	160 – 400	160 – 400	350 – 530	LOSB 6/48	1	25404008	LOS HM 4008	-
42	10	305 – 455	150 – 380	150 – 380	330 – 500	LOSB 6/48	1	25404208	LOS HM 4208	-
43	10	295 – 445	150 – 370	150 – 370	330 – 490	LOSB 6/48	1	25404308	LOS HM 4308	-
45	10	285 – 425	140 – 355	140 – 355	310 – 470	LOSB 6/48	1	25404508	LOS HM 4508	-
48	10	265 – 400	135 – 330	135 – 330	290 – 440	LOSB 6/48	1	25404808	LOS HM 4808	-
50	10	255 – 380	125 – 320	125 – 320	280 – 420	LOSB 6/48	1	25405008	LOS HM 5008	-
52	10	245 – 370	120 – 305	120 – 305	270 – 400	LOSB 6/48	1	25405208	LOS HM 5208	-
54	10	235 – 355	120 – 295	120 – 295	260 – 390	LOSB 6/48	1	25405408	LOS HM 5408	-
55	10	230 – 350	115 – 290	115 – 290	250 – 380	LOSB 6/48	1	25405508	LOS HM 5508	-
60	12	210 – 320	105 – 265	105 – 265	230 – 350	LOSB 8/48	1	25406008	LOS HM 6008	-
65	12	195 – 295	100 – 245	100 – 245	220 – 320	LOSB 8/48	1	25406508	LOS HM 6508	-
68	12	190 – 280	95 – 235	95 – 235	210 – 310	LOSB 8/48	1	25406808	LOS HM 6808	-
70	12	180 – 270	90 – 230	90 – 230	200 – 300	LOSB 8/48	1	25407008	LOS HM 7008	-
75	12	170 – 255	85 – 215	85 – 215	190 – 280	LOSB 8/48	1	25407508	LOS HM 7508	-
80	12	160 – 240	80 – 200	80 – 200	180 – 260	LOSB 8/48	1	25408008	LOS HM 8008	-
90	12	140 – 210	70 – 180	70 – 180	160 – 230	LOSB 8/48	1	25409008	LOS HM 9008	-
100	12	125 – 190	65 – 160	65 – 160	140 – 210	LOSB 8/48	1	25410008	LOS HM 10008	-
105	12	120 – 180	60 – 150	60 – 150	130 – 200	LOSB 8/48	1	25410508	LOS HM 10508	-
Deep type, tool height of 35 mm										
16	7	790 – 1,200	400 – 1,000	400 – 1,000	880 – 1,310	LOSB 6/69	1	25461635	LOS HM 1635	-
17	7	750 – 1,130	370 – 930	370 – 930	820 – 1,240	LOSB 6/69	1	25461735	LOS HM 1735	-
18	7	710 – 1,060	350 – 880	350 – 880	780 – 1,170	LOSB 6/69	1	25461835	LOS HM 1835	-

Continued on next page

d_1 [mm]	d_2 [mm]	Opt. RPM steel	Opt. RPM stainless steel (INOX)	Opt. RPM non-ferrous metals	Opt. RPM plastics	Suitable drills		Item no.	Designation	Price/ unit GBP
19	7	670 – 1,000	330 – 840	330 – 840	740 – 1,110	LOSB 6/69	1	25461935	LOS HM 1935	-
20	7	630 – 950	320 – 800	320 – 800	700 – 1,050	LOSB 6/69	1	25462035	LOS HM 2035	-
21	7	600 – 910	300 – 760	300 – 760	670 – 1,000	LOSB 6/69	1	*25462135*	LOS HM 2135	-
22	7	580 – 870	290 – 720	290 – 720	640 – 950	LOSB 6/69	1	25462235	LOS HM 2235	-
24	10	530 – 800	270 – 660	270 – 660	580 – 880	LOSB 8/69	1	25462435	LOS HM 2435	-
25	10	510 – 760	260 – 640	260 – 640	560 – 840	LOSB 8/69	1	25462535	LOS HM 2535	-
26	10	490 – 740	250 – 610	250 – 610	540 – 810	LOSB 8/69	1	25462635	LOS HM 2635	-
27	10	470 – 710	240 – 590	240 – 590	520 – 780	LOSB 8/69	1	25462735	LOS HM 2735	-
28	10	455 – 680	230 – 570	230 – 570	500 – 750	LOSB 8/69	1	25462835	LOS HM 2835	-
30	10	425 – 635	210 – 530	210 – 530	470 – 700	LOSB 8/69	1	25463035	LOS HM 3035	-
32	10	400 – 600	200 – 500	200 – 500	440 – 660	LOSB 8/69	1	25463235	LOS HM 3235	-
35	10	365 – 545	180 – 450	180 – 450	400 – 600	LOSB 8/69	1	25463535	LOS HM 3535	-
38	10	335 – 505	170 – 420	170 – 420	370 – 550	LOSB 8/69	1	25463835	LOS HM 3835	-
40	10	320 – 480	160 – 400	160 – 400	350 – 530	LOSB 8/69	1	25464035	LOS HM 4035	-
42	10	305 – 455	150 – 380	150 – 380	330 – 500	LOSB 8/69	1	25464235	LOS HM 4235	-
43	10	295 – 445	150 – 370	150 – 370	330 – 490	LOSB 8/69	1	25464335	LOS HM 4335	-
45	10	285 – 425	140 – 355	140 – 355	310 – 470	LOSB 8/69	1	25464535	LOS HM 4535	-
48	10	265 – 400	135 – 330	135 – 330	290 – 440	LOSB 8/69	1	25464835	LOS HM 4835	-
50	10	255 – 380	125 – 320	125 – 320	280 – 420	LOSB 8/69	1	25465035	LOS HM 5035	-
52	10	245 – 370	120 – 305	120 – 305	270 – 400	LOSB 8/69	1	25465235	LOS HM 5235	-
55	10	230 – 350	115 – 290	115 – 290	250 – 380	LOSB 8/69	1	25465535	LOS HM 5535	-
60	12	210 – 320	105 – 265	105 – 265	230 – 350	LOSB 8/94	1	25466035	LOS HM 6060	-

HSS pilot drill for TC hole cutters

HSS pilot drill LOSB

The HSS pilot drill is replaceable.

Suitable for tungsten carbide hole cutter	Tool height [mm]		Item no.	Designation	Price/unit GBP
LOS HM 16–55	8	1	*25500648*	LOSB 6/48	-
LOS HM 16–22	35	1	25500669	LOSB 6/69	-
LOS HM 60–105	8	1	25500848	LOSB 8/48	-
LOS HM 24–55	35	1	25500869	LOSB 8/69	-
Deep type, tool height of 60 mm					
LOS HM 60	60	1	25500894	LOSB 8/94	-

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Stay up to date and discover our new products digitally and online. Our new products have **blue** item numbers in the Tool Manual.