New in the PFERD product range

YOU KNOW HOW. WE KNOW WOW!



New PFERD products and additions 2019–2020
to the range of the Tool Manual 23



New in the PFERD product range
Table of contents

This brochure contains all the new PFERD products and additions to the range which are not included in the PFERD Tool Manual 23. They are marked by a N!-symbol and are shown in the respective product groups in catalogue sections 1–9.

N! New in addition to the Tool Manual 23
N! New in 2020

You can find the gross prices for the new products in the 2020 price list; we would be happy to send it to you digitally.

Content	Page
Catalogue section 1 – Files	
Adjustable holders for car body files	3
Ergonomic file handle	3
Depth gauge files	3
Catalogue section 2 – Milling tools	
TC burrs	5
- for universal applications	7
- ALLROUND cut for versatile use	17
- STEEL cut for steel and cast steel	24
- INOX cut for stainless steel (INOX)	35
- ALU and NON-FERROUS cuts for aluminium/ non-ferrous metals	42
ALUMASTER High Speed Disc	45
- HSD-R type	48
- HSD-R 50 type	49
- Arbor	49
- Accessories	50
Drilling tools	51
- HSS spiral drills	52
- HSS step drills	59
- HSS step drills with HICOAT coating HC-FEP	62
Countersink tools	63
- HSS conical countersinks	63, 68
- HSS conical countersinks with HICOAT coating HC-FEP	67
- HSS flat countersinks	69
Catalogue section 3 – Mounted points	
Dressing tools	73
Catalogue section 4 – Fine grinding and polishing tools	
COMBICLICK fibre discs CC-FS	74
COMBICLICK backing pads	76
Fibre discs FS	77
COMBIDISC – DUST REMOVER	79

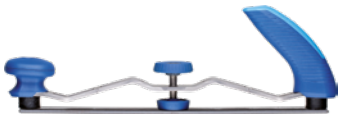
Content	Page
Belts for pneumatic drums	80
Pneumatic drum	82
Velcro-backed abrasive disc holder	83
Protective pad for velcro-backed abrasive disc holders	83
Flexible sanding sticks	84
POLINOX unitized wheels PNER	85
Catalogue section 5 – Diamond and CBN tools	
Diamond grinding points for foundries	88
Catalogue section 6 – Cutt-off wheels, flap discs and grinding wheels	
Cut-off wheels – Universal Line PSF	89
NITOCUT cutting system	90
- Cut-off wheels – Special Line SGP	91
- Pneumatic angle grinder	91
Catalogue section 8 – Industrial power brushes	
Cup brushes, knotted	92
Wheel brushes, knotted	93
Wheel brushes, crimped	94
Composite – Wheel brushes, crimped	96
Catalogue section 9 – Tool drives	
Air grinders	98
- Straight grinders	98
- NITOCUT angle grinder	100
PFERD tools with X-LOCK	
POLIVLIES grinding discs	103
Cut-off wheels	104
POLIFAN flap discs	105
Grinding wheels	108
Cup brushes	109
Wheel brushes	111



You are the professional!

You excel when it comes to the cutting and processing of surfaces. **With PFERD your results will be even better.** With individual advice and the innovative tools from PFERD, you will bring the **wow factor to your work results, economic efficiency and ergonomics.**

Adjustable holders for car body files



This ergonomic and particularly lightweight holder permits individual tensioning of car body file blades to match the surface contour of the workpiece.

Advantages:
- The bending radius of the file can be steplessly adjusted via the tensioning system.
- Particularly lightweight plastic design without plasticizer.
- Can be used in a focused manner or over a wide area as the car body file can be used curved as well as straight.
- Enables work with low levels of fatigue thanks to vibration-damping rubber pad.

PFERDVALUE:

Vibration Filter · Haptic Filter · Time Saving

Suitable for file length [mm]	Suitable for file length [inch]	EAN 4007220		Description
300	12	**N!** 111499	1	KFH 300
350	14	097915	1	KFH 350

Ergonomic file handle

Ergonomic file handle set, chain saw gauge



The set consists of an ergonomic file handle for chain saw files as well as two chain saw gauges: an angle of 25°/30° and an angle of 30°/35°. The chain saw gauge supports consistent sharpening results by providing the correct sharpening angle. It is attached to the stud of the ergonomic file handle FH 1 KSF.

Contents:
1 piece each:
- Ergonomic file handle FH 1 KSF
- Chain saw gauge KSSL 25/30
- Chain saw gauge KSSL 30/35

Ordering notes:
- The set is provided in sales-boosting individual packaging.

PFERDVALUE:

Haptic Filter

Suitable for chain saw file diameter [mm]	EAN 4007220	1	Description
4,0 / 4,5 / 4,8 / 5,16 / 5,5	**N!** 174906	1	SET FH1 KSSL 25/30-30/35

Depth gauge files

Depth gauge file for CHAIN SHARP CS-X



Rectangular file with cut on two sides. Suitable for the CHAIN SHARP CS-X chain saw sharpener.

Advantages:
- Stock removal rate is precisely tailored to the depth gauge.

Ordering notes:
- For the 1-piece packaging unit, please add "(1)" at the end of the description.

Profile	Length [mm]	Length [inch]	Cut	Packaging 1	Packaging 10	Cross section [mm]	Suitable for	Description
				EAN 4007220				
4132	200	8	2	**N!** 174951	831335	9.0 x 6.0	CS-X-3,2, CS-X-4,0, CS-X 4,8, CS-X 5,16, CS-X 5,5	4132 200

N! New in addition to the Tool Manual 23
N! New in 2020



Flat chain saw files for depth gauges

Rectangular file, tanged with two round uncut edges and cut on two sides. Shape F according to DIN 7262. Flat chain saw files are used to file the depth gauges of saw chains.

Advantages:
- Stock removal rate is precisely tailored to the depth gauge.

Ordering notes:
- For the 1-piece packaging unit, please add "(1)" at the end of the description.

Profile	Length [mm]	Length [inch]	Cut	Packaging 1	Packaging 10	Cross section [mm]	Matching handle	Description
1213 ruk	150	6	2	N! 174920	011041	16.0 x 3.0	FH 3	1213 ruk 150 H2
	200	8	2	N! 174937	011058	20.0 x 3.5	FH 4/1	1213 ruk 200 H2

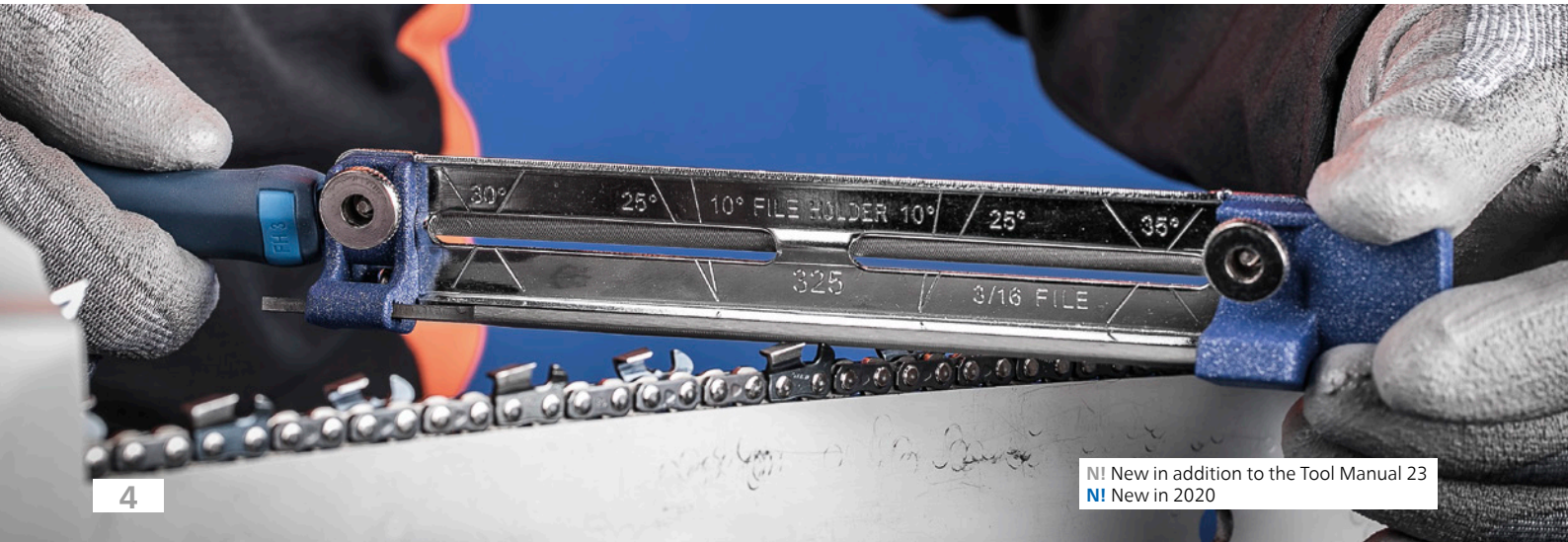


Chisel bit files

For servicing and sharpening saw chains with a square tooth base. For edge grinding saw chains. Available as a three square or flat file.

Advantages:
- The three square type is particularly suited to sharpening 3/8" chains.
- The flat type fulfills two functions: it can be used to sharpen the blade and also to reduce the depth gauge. Particularly recommended for beginners.

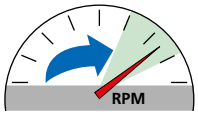
Profile	Length [mm]	Length [inch]	Cut	EAN 4007220	Cross section [mm]	Matching handle	1	Description
three square	175	7	2	N! 174968	4.6	FH 3	1	1250 DKT 175 (1)
flat	175	7	2	N! 174975	3.3 x 12.4	FH 3	1	1215 FLST 175 (1)



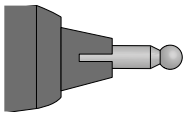
N! New in addition to the Tool Manual 23
N! New in 2020

Recommendations for use:

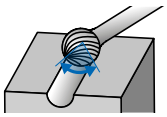
An optimum rotational speed and power output for the tool drive (pneumatic or electric grinders, flexible shaft drive) are required for cost-effective use of tungsten carbide burrs.



- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For cost-effective use of burrs with a shank diameter > 6 mm, a tool drive output of 300–500 watts is required when used at a higher rotational speed and cutting speed.
- Use the highest rotational speed possible within the recommended rotational speed and cutting speed ranges.
- For applications with low stock removal (deburring, chamfering, minor work on surfaces), the rotational speed can be increased by up to 100 % (this excludes tungsten carbide burrs with long shanks).

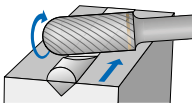


- Use only rigid clamping systems and drives as impacts on the tools and tool chatter lead to premature wear.



1/3 of the total surface

- The burr surface in contact with the workpiece must not exceed 1/3 of the total burr surface. Failure to comply with this recommendation will result in rough milling behaviour and possibly in broken teeth. If this cannot be avoided, we recommend using the TOUGH and TOUGH-S cuts.



In direction of rotation
= fine finish

- In general, burrs are used counterrotationally or with a swinging motion. To achieve fine finishes, pass the tool rapidly over the workpiece in the direction of rotation.

Safety notes:

= Wear eye protection!

= Wear hearing protection!

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

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

2

Avoiding misuse

Figure	Consequences of misuse	Solution
	The burr becomes clogged during use.	Use the correct cut for the material being machined. Use tools with a HICOAT coating or use grinding oil.
	Pronounced discolouration can be seen in the transition between the toothed section and the shank.*	Observe the recommended rotational speeds and/or reduce the contact pressure and surface contact angle.
	The toothed section detaches from the shank.	
	There are flying sparks.	Reduce the rotational speed and contact pressure and make sure that the surface contact angle is no more than 1/3 of the burr surface.
	Parts break off from the toothed section.	Avoid impact loads when using the tool.

Figure	Consequences of misuse	Solution
	The shank breaks.	Only use rigid drives and undamaged clamping systems, and replace them if necessary.
incorrect  correct 	The clamping length is incorrect.	Do not chose a burr clamping depth that is too small. **In general,** the minimum clamping depth is 2/3 of the shank length (does not apply to burrs with long shanks).
	The shank bends on burrs with a long shank.	Observe the recommended rotational speeds and safety notes for burrs with a long shank.
	Signs of wear such as rough running and strong vibrations occur, as well as increased flying sparks.	Do not use burrs beyond the end of their service life. Use a new burr instead.

* On TC burrs designed for high-performance applications, blue discolouration is extremely difficult to avoid on account of the very high stock removal rate. However, this does not constitute a safety risk.

New in the PFERD product range
TC burrs – Types with long shanks

2

Tungsten carbide burrs with a long shank are ideal for cost-effectively machining small, hard-to-reach areas on components. Long-shank versions are available with the 3 PLUS, 5, STEEL and TOUGH cuts.

Tungsten carbide burrs with a long shank can be shortened if required.
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.
GL = total length (solid tungsten carbide)
SL = shank length (long steel shank)

Safety notes:

Not suitable for robotic or stationary applications. **Risk of bending.** Use only rigid clamping systems/drives.

= Observe the prescribed rotational speed!

Safety note – maximum rotational speed [RPM] for burrs with long shanks

When working with long-shank burrs, it is crucial that the burr 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 shank failure (bending) and hence an increased risk of accidents. If continuous contact between the tool and the workpiece is not guaranteed, the ❸ **maximum idling speeds stated in the table must not be exceeded.**

For safety reasons, the maximum application speeds ❷ **with contact with the workpiece** require a reduction in the recommended speed of tungsten carbide burrs with standard shanks. The reduced speeds are stated in the table below.

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

❶ Select the required burr diameter.
❷ 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,
3 PLUS cut,
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

❶ Burr dia. [mm]	❸ Maximum idling speed [RPM] without contact with the workpiece		❷ 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 are suitable for fine and coarse stock removal on the key materials used in industrial manufacturing. They provide a good stock removal rate and are not specific to a particular material.

Advantages:

- Good stock removal rate through optimum matching of tungsten carbide, geometry, cut and available coating.
- Long tool life.
- Reduced wear on the tool drive due to impact-free work without chatter marks, thanks to the high concentricity.
- High surface quality.

Materials that can be worked:

- Steel, cast steel
- Stainless steel (INOX)
- Non-ferrous metals
- Cast iron

Applications:

- Milling out
- Levelling
- Deburring
- Cutting out holes
- Surface work
- Work on weld seams

Recommendations for use:

- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For the cost-effective use of burrs, work with higher rotational/cutting speeds. Power recommendation for tool drives:
  - Shank diameter of 3 mm: 75 to 300 watts
  - Shank diameter of 6 mm: from 300 watts
- Please observe the rotational speed recommendations.

Matching tool drives:

- Flexible shaft drive
- Straight grinder
- Robot
- Machine tools

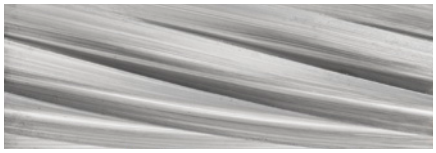
PFERDVALUE:

PFERDEFFICIENCY recommends burrs with HICOAT coating for long fatigue-free and resource-saving work with perfect results in a very short period of time.



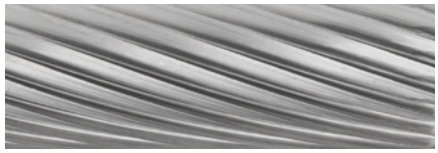


1 cut
(C according to DIN 8033)



- Machining of non-ferrous metals, steel and cast iron.
- High stock removal.

3 cut
(MY according to DIN 8033)



- Machining of cast iron, steel, stainless steel (INOX), nickel-based alloys and titanium alloys.
- High stock removal.
- Good surface.

3 PLUS cut
(MX according to DIN 8033)



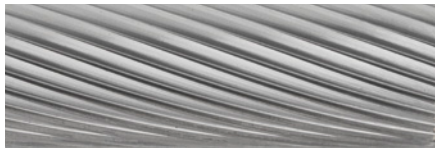
- Similar to 3 cut, but with cross cut.
- Machining of cast iron, steel, stainless steel (INOX), nickel-based alloys and titanium alloys.
- High stock removal.

4 cut
(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.

5 cut
(F according to DIN 8033)



- Fine machining of cast iron, steel, stainless steel (INOX) and high-temperature-resistant materials such as nickel-based and cobalt-based alloys.
- Good surface.

HICOAT coating HC-FEP for iron and steel materials



- High hardness and wear resistance.
- Effective chip removal through improved anti-adhesion characteristics.
- Very high resistance against thermal load.
- Increased service life.
- Also suitable for use at higher cutting speeds when compared with uncoated burrs.

2

Recommended rotational speed range [RPM]

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

❶ Select the material group to be machined.
❷ Determine the type of application.
❸ Select the cut.
❹ Establish the cutting speed range.

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

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



❶ Material group			❷ Application	❸ Cut	❹ 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, alloyed steels	Coarse stock removal	1	600–900 m/min
				3 PLUS	450–600 m/min
				HICOAT 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	
				HICOAT 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, titaniumium/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 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

Example:
TC burr,
3 PLUS cut,
burr dia. 12 mm.
Coarse stock removal on steels up to 1,200 N/mm².
Cutting speed: 450–600 m/min
Rotational speed range: 12,000–16,000 RPM

❺ Burr dia. [mm]	❻ Cutting speeds [m/min]					
	250	350	450	600	750	900
	Rotational speeds [RPM]					
1.5	53,000	74,000	95,000	127,000	159,000	191,000
2	40,000	56,000	72,000	95,000	119,000	143,000
3	27,000	37,000	48,000	64,000	80,000	95,000
4	20,000	28,000	36,000	48,000	60,000	72,000
6	13,000	19,000	24,000	32,000	40,000	48,000
8	10,000	14,000	18,000	24,000	30,000	36,000
10	8,000	11,000	14,000	19,000	24,000	29,000
12	7,000	9,000	12,000	16,000	20,000	24,000
16	5,000	7,000	9,000	12,000	15,000	18,000
20	4,000	6,000	7,000	10,000	12,000	14,000
25	3,000	4,000	6,000	8,000	10,000	11,000

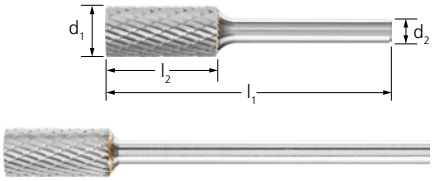
Safety note:

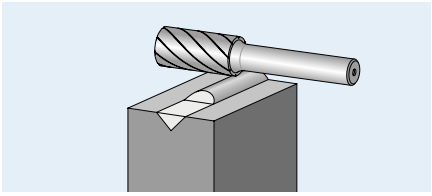
Please observe the reduced rotational speeds for long-shank versions. They can be found on page 6.

Cylindrical shape ZYA without end cut

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

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





Safety notes:

Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE**:**
HICOAT coating:

WasteSaving TimeSaving

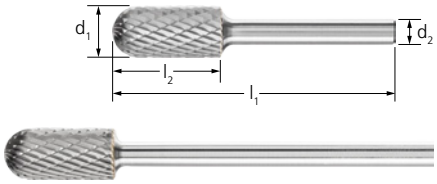
Ordering notes:

- Please complete the description with the desired cut.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
				EAN 4007220							
Shank dia. 3 mm											
2	10	3	40	-	-	233771	-	233788	233795	1	ZYA 0210/3 Z ...
3	13	3	43	-	-	233801	-	402627	233818	1	ZYA 0313/3 Z ...
6	7	3	37	-	-	233825	-	-	233832	1	ZYA 0607/3 Z ...
	13	3	43	-	-	233849	-	-	233856	1	ZYA 0613/3 Z ...
Long shank dia. of 3 mm, SL/GL 75 mm											
3	13	3	75	-	-	779699	-	-	779644	1	ZYA 0313/3 Z ... GL 75
6	13	3	88	-	-	779606	-	-	779583	1	ZYA 0613/3 Z ... SL 75
Shank dia. 6 mm											
4	13	6	55	-	-	045435	-	045459	045466	1	ZYA 0413/6 Z ...
6	16	6	55	-	045473	045480	835548	045503	045510	1	ZYA 0616/6 Z ...
8	20	6	60	-	045534	045541	-	045565	045572	1	ZYA 0820/6 Z ...
10	13	6	53	-	-	045596	-	045626	045640	1	ZYA 1013/6 Z ...
	20	6	60	045862	045855	045879	N! 222508	045916	045930	1	ZYA 1020/6 Z ...
	25	6	65	-	-	045978	-	046012	-	1	ZYA 1025/6 Z ...
12	25	6	65	045671	045657	045695	835555	045732	045756	1	ZYA 1225/6 Z ...
16	25	6	65	-	045787	045800	-	045848	-	1	ZYA 1625/6 Z ...
Long shank dia. of 6 mm, SL 150 mm											
6	16	6	172	-	-	090114	-	-	-	1	ZYA 0616/6 Z ... SL 150
8	20	6	170	-	-	617632	-	-	-	1	ZYA 0820/6 Z ... SL 150
10	20	6	170	-	-	090121	-	-	-	1	ZYA 1020/6 Z ... SL 150
12	25	6	175	-	-	617649	-	-	-	1	ZYA 1225/6 Z ... SL 150
Shank dia. 8 mm											
12	25	8	65	-	-	045701	-	-	-	1	ZYA 1225/8 Z ...
16	25	8	65	-	-	045817	-	-	-	1	ZYA 1625/8 Z ...



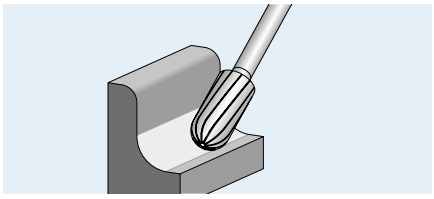
N! New in addition to the Tool Manual 23
N! New in 2020



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032 with cut conforming to DIN 8033.
Combination of cylindrical and ball-shaped geometries.

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



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:
Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE:
HICOAT coating:
WasteSaving TimeSaving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
				EAN 4007220							
Shank dia. 3 mm											
2	10	3	40	-	-	049631	-	395837	049624	1	WRC 0210/3 Z ...
3	13	3	43	-	-	049662	-	393161	049648	1	WRC 0313/3 Z ...
6	13	3	43	-	-	049693	-	393178	049679	1	WRC 0613/3 Z ...
Long shank dia. of 3 mm, SL/GL 75 mm											
3	13	3	75	-	-	779767	-	-	779750	1	WRC 0313/3 Z ... GL 75
6	13	3	88	-	-	779743	-	-	779729	1	WRC 0613/3 Z ... SL 75
Shank dia. 6 mm											
4	13	6	55	-	-	046173	-	046197	-	1	WRC 0413/6 Z ...
6	16	6	55	046227	046210	046234	835562	046258	046265	1	WRC 0616/6 Z ...
8	20	6	60	046296	046289	046302	-	046326	046333	1	WRC 0820/6 Z ...
10	20	6	60	046371	046357	046388	N! 222546	046425	046449	1	WRC 1020/6 Z ...
	25	6	65	-	046708	046715	-	046746	-	1	WRC 1025/6 Z ...
12	25	6	65	046487	046463	046500	835579	046548	046562	1	WRC 1225/6 Z ...
16	25	6	65	046623	046609	046630	-	046678	-	1	WRC 1625/6 Z ...
Long shank dia. of 6 mm, SL 150 mm											
6	16	6	172	-	-	090336	-	-	-	1	WRC 0616/6 Z ... SL 150
8	20	6	170	-	-	617656	-	-	-	1	WRC 0820/6 Z ... SL 150
10	20	6	170	-	-	090343	-	-	-	1	WRC 1020/6 Z ... SL 150
12	25	6	175	-	-	617663	-	-	-	1	WRC 1225/6 Z ... SL 150
Shank dia. 8 mm											
10	20	8	60	-	-	046395	-	-	-	1	WRC 1020/8 Z ...
12	25	8	65	-	-	046517	-	046555	-	1	WRC 1225/8 Z ...
16	25	8	65	-	-	046647	-	-	-	1	WRC 1625/8 Z ...

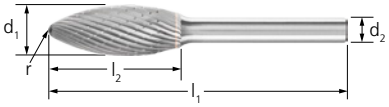


N! New in addition to the Tool Manual 23
N! New in 2020

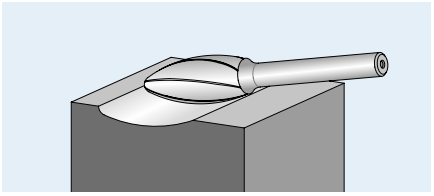
Flame shape B

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

SL = shank length (long steel shank)







Safety notes:

Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE:
HICOAT coating:

Waste Saving Time Saving

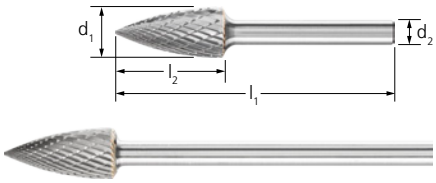
Ordering notes:

- Please complete the description with the desired cut.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 5		Description
					EAN 4007220					
Shank dia. 3 mm										
3	7	3	37	0.8	-	955482	-	049570	1	B 0307/3 Z ...
6	13	3	43	1.0	-	955499	-	049594	1	B 0613/3 Z ...
Shank dia. 6 mm										
8	20	6	60	1.5	046050	046067	-	-	1	B 0820/6 Z ...
10	25	6	65	1.7	-	955505	**N!** 222515	-	1	B 1025/6 Z ...
12	30	6	70	2.1	046098	046111	**N!** 222522	-	1	B 1230/6 Z ...
16	35	6	75	2.6	-	046142	-	-	1	B 1635/6 Z ...
Long shank dia. of 6 mm, SL 150 mm										
8	20	6	170	1.5	-	617755	-	-	1	B 0820/6 Z ... SL 150
10	25	6	175	1.7	-	090480	-	-	1	B 1025/6 Z ... SL 150
12	30	6	180	2.1	-	617779	-	-	1	B 1230/6 Z ... SL 150



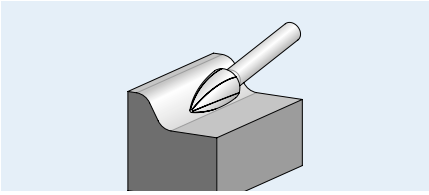
N! New in addition to the Tool Manual 23
N! New in 2020



Pointed tree shape SPG

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

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



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:

Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE:
HICOAT coating:

WasteSaving TimeSaving

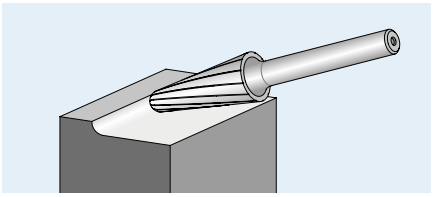
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
				EAN 4007220							
Shank dia. 3 mm											
3	7	3	37	-	-	049921	-	470626	049907	1	SPG 0307/3 Z ...
	13	3	43	-	-	049952	-	393208	049938	1	SPG 0313/3 Z ...
6	13	3	43	-	-	049983	-	393215	049969	1	SPG 0613/3 Z ...
Long shank dia. of 3 mm, SL/GL 75 mm											
3	13	3	75	-	-	779972	-	-	779965	1	SPG 0313/3 Z ... GL 75
6	13	3	88	-	-	779828	-	-	779811	1	SPG 0613/3 Z ... SL 75
Shank dia. 6 mm											
6	18	6	55	047934	047927	047941	835630	047965	047972	1	SPG 0618/6 Z ...
8	20	6	60	-	-	955512	-	-	955543	1	SPG 0820/6 Z ...
10	20	6	60	048016	047996	048023	N! 222591	048061	048085	1	SPG 1020/6 Z ...
12	25	6	65	048139	048115	048146	835654	048184	048207	1	SPG 1225/6 Z ...
	30	6	70	048368	048344	048382	-	048429	048443	1	SPG 1230/6 Z ...
16	30	6	70	048252	048238	048276	-	048313	-	1	SPG 1630/6 Z ...
Long shank dia. of 6 mm, SL 150 mm											
6	18	6	172	-	-	090497	-	-	-	1	SPG 0618/6 Z ... SL 150
8	20	6	170	-	-	955611	-	-	-	1	SPG 0820/6 Z ... SL 150
10	20	6	170	-	-	090640	-	-	-	1	SPG 1020/6 Z ... SL 150
12	25	6	175	-	-	955628	-	-	-	1	SPG 1225/6 Z ... SL 150
Shank dia. 8 mm											
10	20	8	60	-	-	048030	-	-	-	1	SPG 1020/8 Z ...
12	25	8	65	-	-	048153	-	-	-	1	SPG 1225/8 Z ...
16	30	8	70	048269	-	048283	-	-	-	1	SPG 1630/8 Z ...

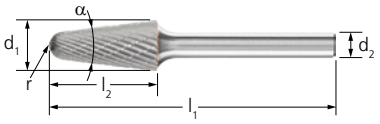


N! New in addition to the Tool Manual 23
N! New in 2020

Conical shape with radius end KEL

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





Ordering notes:
- Please complete the description with the desired cut.

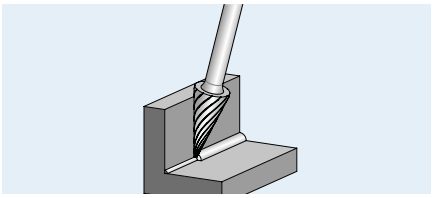
PFERDVALUE:
HICOAT coating:

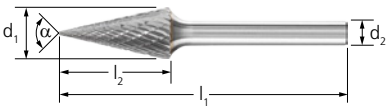
Waste Saving Time Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	r [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
						EAN 4007220							
Shank dia. 6 mm													
8	20	6	60	16°	1.25	-	-	955581	-	955604	-	1	KEL 0820/6 Z ...
10	20	6	60	14°	2.9	-	048467	048481	N! 222607	048504	-	1	KEL 1020/6 Z ...
12	25	6	65	14°	3.3	-	048528	048559	N! 222614	048597	-	1	KEL 1225/6 Z ...
	30	6	70	14°	2.6	048627	048603	048634	N! 222621	048672	048689	1	KEL 1230/6 Z ...
16	30	6	70	14°	4.8	-	-	048719	-	048733	-	1	KEL 1630/6 Z ...
Shank dia. 8 mm													
12	25	8	65	14°	3.3	-	-	048566	-	-	-	1	KEL 1225/8 Z ...
	30	8	70	14°	2.6	-	-	048641	-	-	-	1	KEL 1230/8 Z ...

Conical pointed shape SKM

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





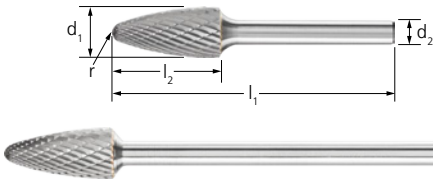
Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:
HICOAT coating:

Waste Saving Time Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
					EAN 4007220							
Shank dia. 3 mm												
3	7	3	37	21°	-	-	049839	-	-	049822	1	SKM 0307/3 Z ...
	11	3	41	14°	-	-	049853	-	451816	049846	1	SKM 0311/3 Z ...
6	13	3	43	25°	-	-	049877	-	-	049860	1	SKM 0613/3 Z ...
Shank dia. 6 mm												
6	18	6	55	18°	047286	047279	047293	N! 222553	047316	047323	1	SKM 0618/6 Z ...
10	20	6	60	28°	-	047330	047354	N! 222560	047378	047385	1	SKM 1020/6 Z ...
12	25	6	65	26°	047415	047392	047422	N! 222577	047460	047477	1	SKM 1225/6 Z ...
Shank dia. 8 mm												
12	25	8	65	26°	-	-	047439	-	-	-	1	SKM 1225/8 Z ...

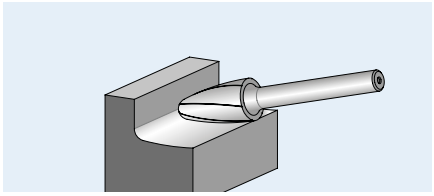
N! New in addition to the Tool Manual 23
N! New in 2020



Tree shape with radius end RBF

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

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



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:

Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE:
HICOAT coating:
WasteSaving TimeSaving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
					EAN 4007220							
Shank dia. 3 mm												
3	7	3	37	0.75	-	-	049891	-	-	049884	1	RBF 0307/3 Z ...
	13	3	43	0.75	-	-	955550	-	-	955567	1	RBF 0313/3 Z ...
6	13	3	43	1.5	-	-	050019	-	400722	049990	1	RBF 0613/3 Z ...
Long shank dia. of 3 mm, SL/GL 75 mm												
3	7	3	75	0.75	-	-	780015	-	-	780008	1	RBF 0307/3 Z ... GL 75
6	13	3	88	1.5	-	-	779996	-	-	779989	1	RBF 0613/3 Z ... SL 75
Shank dia. 6 mm												
6	18	6	55	1.5	-	047590	047606	835616	047620	047637	1	RBF 0618/6 Z ...
8	20	6	60	1.2	-	047644	047651	-	047675	-	1	RBF 0820/6 Z ...
10	20	6	60	2.5	-	047682	047705	N! 222584	047729	047736	1	RBF 1020/6 Z ...
12	25	6	65	2.5	047774	047750	047781	835623	047828	047835	1	RBF 1225/6 Z ...
16	30	6	70	3.6	-	047859	047873	-	047910	-	1	RBF 1630/6 Z ...
Long shank dia. of 6 mm, SL 150 mm												
6	18	6	172	1.5	-	-	090657	-	-	-	1	RBF 0618/6 Z ... SL 150
8	20	6	170	1.2	-	-	617731	-	-	-	1	RBF 0820/6 Z ... SL 150
10	20	6	170	2.5	-	-	090756	-	-	-	1	RBF 1020/6 Z ... SL 150
12	25	6	175	2.5	-	-	617748	-	-	-	1	RBF 1225/6 Z ... SL 150
Shank dia. 8 mm												
12	25	8	65	2.5	-	-	047798	-	-	-	1	RBF 1225/8 Z ...
16	30	8	70	3.6	-	-	047880	-	-	-	1	RBF 1630/8 Z ...

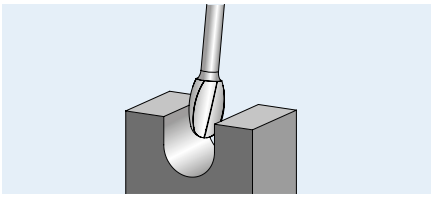


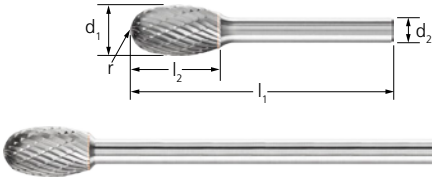
N! New in addition to the Tool Manual 23
N! New in 2020

Oval shape TRE

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

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





Safety notes:

Please observe the reduced rotational speeds for long-shank burrs. They can be found on page 6.

PFERDVALUE:
HICOAT coating:

Waste Saving Time Saving

Ordering notes:

- Please complete the description with the desired cut.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut 1	Cut 3	Cut 3 PLUS	Cut 3 PLUS HC-FEP	Cut 4	Cut 5		Description
					EAN 4007220							
Shank dia. 3 mm												
3	7	3	37	1.2	-	-	049754	-	-	049747	1	TRE 0307/3 Z ...
6	10	3	40	2.8	-	-	050040	-	-	050026	1	TRE 0610/3 Z ...
Long shank dia. of 3 mm, SL/GL 75 mm												
3	7	3	75	1.2	-	-	779804	-	-	779798	1	TRE 0307/3 Z ... GL 75
6	10	3	85	2.8	-	-	779781	-	-	779774	1	TRE 0610/3 Z ... SL 75
Shank dia. 6 mm												
6	10	6	50	2.8	-	-	048771	**N!** 222638	-	048801	1	TRE 0610/6 Z ...
8	13	6	53	3.7	-	-	048894	-	048917	048924	1	TRE 0813/6 Z ...
10	16	6	56	4.0	-	-	048832	**N!** 222669	048856	-	1	TRE 1016/6 Z ...
12	20	6	60	5.0	048955	048931	048962	**N!** 222676	049006	049020	1	TRE 1220/6 Z ...
16	25	6	65	6.5	049075	-	049099	-	049136	-	1	TRE 1625/6 Z ...
Long shank dia. of 6 mm, SL 150 mm												
6	10	6	160	2.8	-	-	090817	-	-	-	1	TRE 0610/6 Z ... SL 150
8	13	6	163	3.7	-	-	617700	-	-	-	1	TRE 0813/6 Z ... SL 150
10	16	6	166	4.0	-	-	090824	-	-	-	1	TRE 1016/6 Z ... SL 150
12	20	6	170	5.0	-	-	617724	-	-	-	1	TRE 1220/6 Z ... SL 150
Shank dia. 8 mm												
12	20	8	60	5.0	-	-	048979	-	-	-	1	TRE 1220/8 Z ...
16	25	8	65	6.5	-	-	049105	-	-	-	1	TRE 1625/8 Z ...

N! New in addition to the Tool Manual 23
N! New in 2020



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. The sturdy plastic box protects the tools from dirt and damage.

Contents:
15 tungsten carbide burrs,
shank diameter of 3 mm, cut 3 PLUS
1 piece each:

- 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
- TRE 0610/3 Z3 PLUS

Cut 3 PLUS  EAN 4007220		Description
Shank dia. 3 mm		
N! 157527	1	1503 Z3 PLUS



N! New in addition to the Tool Manual 23
N! New in 2020

With the innovative ALLROUND cut, PFERD has developed unique burrs for versatile use on key materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron. The ALLROUND cut offers all the benefits of the tried-and-tested 3 PLUS cut, but its stock removal rate is up to 30 % higher for steel. It enables comfortable working with reduced vibration and less noise. They also offer significant time savings and a high economic value. PFERD also offers tungsten carbide burrs with ALLROUND cut with a high-quality HICOAT coating.

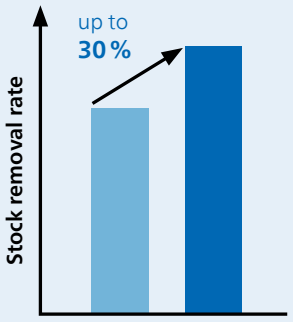
Materials that can be worked:

- Steel, cast steel
- Stainless steel (INOX)
- Non-ferrous metals
- Cast iron

Applications:

- Milling out
- Levelling
- Deburring
- Cutting out holes
- Surface work
- Work on weld seams

Performance values for applications on steel



- Conventional burrs with cross cut
- Tungsten carbide burrs, ALLROUND cut

Recommendations for use:

- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For the cost-effective use of burrs, work with higher rotational/cutting speeds. Power recommendation for tool drives: from 300 watts.
- Please observe the rotational speed recommendations.

Matching tool drives:

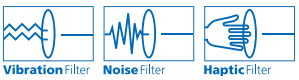
- Flexible shaft drive
- Straight grinder
- Robot
- Machine tools

Safety note:

- The very high stock removal rate can cause discolouration on the shank. This does not constitute a safety risk.

PFERDVALUE:

PFERDERGONOMICS recommends burrs with ALLROUND cut as an innovative tool solution for comfortable working with significantly reduced vibration and less noise.



PFERDEFFICIENCY recommends burrs with ALLROUND cut for long fatigue-free and resource-saving work with perfect results in a very short period of time.



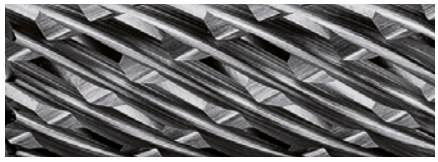
ALLROUND cut



Advantages:

- Significantly better stock removal rate than burrs with a conventional cross cut.
- Saves money and time through its very high stock removal rate on key materials.
- Comfortable working with reduced vibration and less noise.

ALLROUND cut with HICOAT coating HC-FEP



Advantages:

- High hardness and wear resistance.
- Effective chip removal through improved anti-adhesion characteristics.
- Very high resistance against thermal load.
- Increased service life.
- Also suitable for use at higher cutting speeds when compared with uncoated burrs.



2

Recommended rotational speed range [RPM]

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

❶ Select the material group to be machined.
❷ Establish the cutting speed range.

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

❸ Select the required burr diameter.
❹ The cutting speed range and the burr diameter determine the recommended rotational speed range.

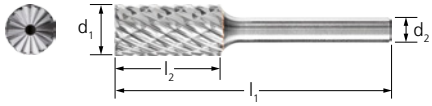
❶ Material group			Application	Cut	❷ Cutting speed
Steel, cast steel	Steels up to 1,200 N/mm² (< 38 HRC)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steel, alloyed steels	Coarse stock removal	ALLROUND	450–750 m/min
				HICOAT HC-FEP	450–900 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel	Coarse stock removal	ALLROUND	250–450 m/min
				HICOAT HC-FEP	250–600 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	ALLROUND	450–600 m/min
Non-ferrous metals	Soft non-ferrous metals	Brass, copper, zinc	Coarse stock removal	ALLROUND	450–750 m/min
				HICOAT HC-FEP	450–900 m/min
	Hard non-ferrous metals	Bronze, titaniumium/titanium alloys, hard aluminium alloys (high Si content)	Coarse stock removal	ALLROUND	450–600 m/min
				HICOAT HC-FEP	450–750 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 cast iron EN-GJMB (GTS)	Coarse stock removal	ALLROUND	450–900 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

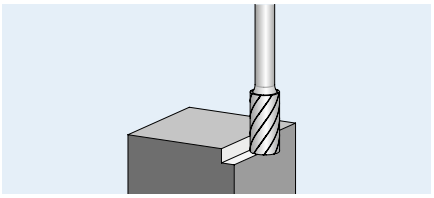
❸ Burr dia. [mm]	❹ Cutting speeds [m/min]				
	250	450	600	750	900
	Rotational speeds [RPM]				
6	13,000	24,000	32,000	40,000	48,000
8	10,000	18,000	24,000	30,000	36,000
10	8,000	14,000	19,000	24,000	29,000
12	7,000	12,000	16,000	20,000	24,000
16	5,000	9,000	12,000	15,000	18,000



Cylindrical shape ZYAS with end cut



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



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

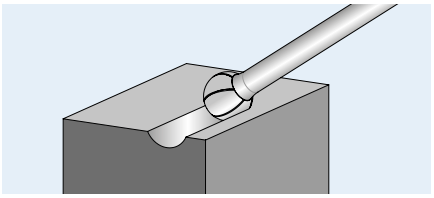
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
				EAN 4007220			
Shank dia. 6 mm							
6	16	6	55	092866	-	1	ZYAS 0616/6 ...
8	20	6	60	092897	-	1	ZYAS 0820/6 ...
10	20	6	60	092903	N! 221815	1	ZYAS 1020/6 ...
12	25	6	65	092941	N! 221860	1	ZYAS 1225/6 ...
16	25	6	65	092958	-	1	ZYAS 1625/6 ...

Ball shape KUD



Ball-shaped burr according to DIN 8032.



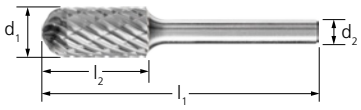
Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

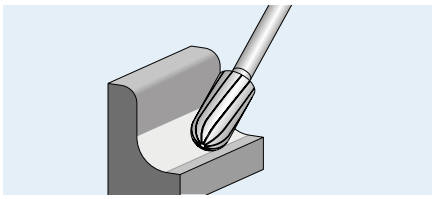
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
				EAN 4007220			
Shank dia. 6 mm							
6	5	6	45	093009	-	1	KUD 0605/6 ...
8	7	6	47	093030	-	1	KUD 0807/6 ...
10	9	6	49	093108	N! 221877	1	KUD 1009/6 ...
12	10	6	51	093115	N! 221907	1	KUD 1210/6 ...
16	14	6	54	093146	-	1	KUD 1614/6 ...

N! New in addition to the Tool Manual 23
N! New in 2020



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032. Combination of cylindrical and ball-shaped geometries.

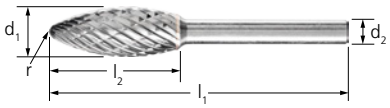


Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

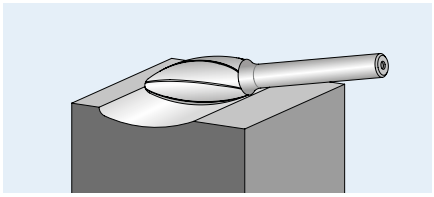
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
				EAN 4007220			
Shank dia. 6 mm							
6	16	6	55	093153	-	1	WRC 0616/6 ...
8	20	6	60	093184	-	1	WRC 0820/6 ...
10	20	6	60	093191	**N!** 221938	1	WRC 1020/6 ...
12	25	6	65	093221	**N!** 221945	1	WRC 1225/6 ...
16	25	6	65	093238	-	1	WRC 1625/6 ...



Flame shape B

Flame-shaped burr according to ISO 7755/8.



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

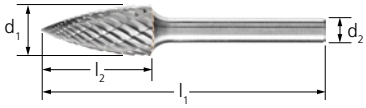
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
					EAN 4007220			
Shank dia. 6 mm								
8	20	6	60	1.5	093269	-	1	B 0820/6 ...
10	25	6	65	1.7	093276	**N!** 221952	1	B 1025/6 ...
12	30	6	70	2.1	093306	**N!** 221969	1	B 1230/6 ...
16	35	6	75	2.6	093313	-	1	B 1635/6 ...

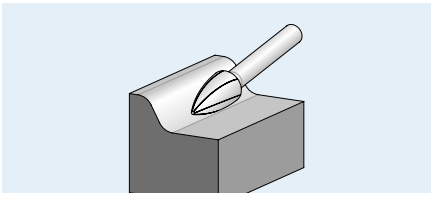


N! New in addition to the Tool Manual 23
N! New in 2020

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032, flattened tip.





Ordering notes:
- Please complete the description with the desired cut.

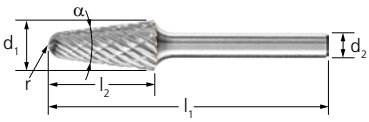
PFERDVALUE:

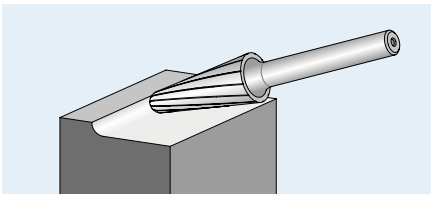
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
				EAN 4007220			
Shank dia. 6 mm							
6	18	6	55	093344	-	1	SPG 0618/6 ...
8	20	6	60	093351	-	1	SPG 0820/6 ...
10	20	6	60	093382	**N!** 221983	1	SPG 1020/6 ...
12	25	6	65	093399	**N!** 222003	1	SPG 1225/6 ...
16	30	6	70	093436	-	1	SPG 1630/6 ...

Conical shape with radius end KEL

Conical burr with radius end according to DIN 8032.



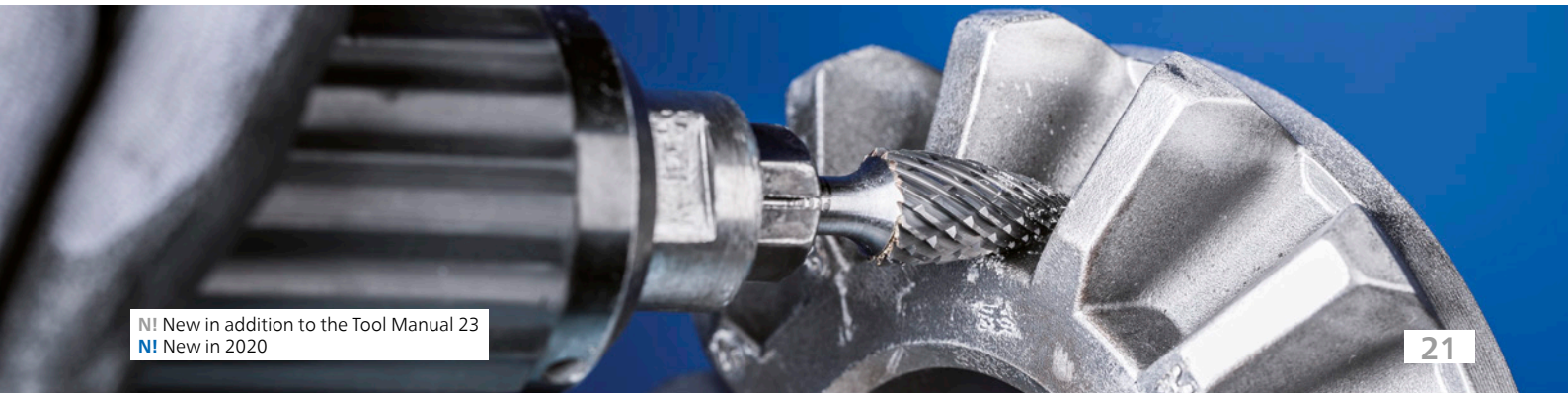


Ordering notes:
- Please complete the description with the desired cut.

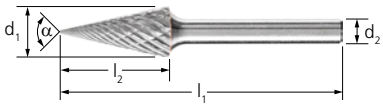
PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	r [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
						EAN 4007220			
Shank dia. 6 mm									
8	20	6	60	16°	1.25	093481	-	1	KEL 0820/6 ...
10	20	6	60	14°	2.9	093498	**N!** 222010	1	KEL 1020/6 ...
12	25	6	70	14°	3.3	093535	**N!** 222027	1	KEL 1225/6 ...
16	30	6	70	14°	4.8	093542	-	1	KEL 1630/6 ...

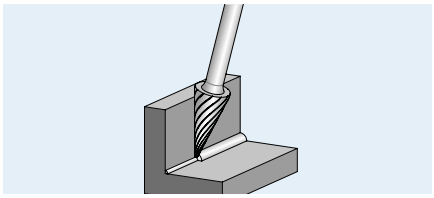


N! New in addition to the Tool Manual 23
N! New in 2020



Conical pointed shape SKM

Conical pointed burr according to DIN 8032, flattened tip.

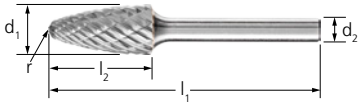


Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

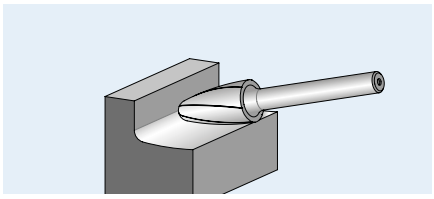
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	Cut: ALLROUND	Cut: ALLROUND HC-FEP	EAN 4007220		Description
Shank dia. 6 mm									
6	18	6	55	18°	093696	-		1	SKM 0618/6 ...
8	20	6	60	22°	093702	-		1	SKM 0820/6 ...
10	20	6	60	28°	093719	N! 222072		1	SKM 1020/6 ...
12	25	6	65	26°	093726	N! 222089		1	SKM 1225/6 ...



Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032.



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

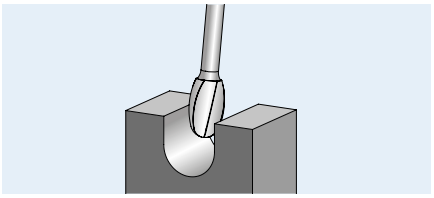
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP	EAN 4007220		Description
Shank dia. 6 mm									
6	18	6	55	1.5	093580	-		1	RBF 0618/6 ...
8	20	6	60	1.2	093641	-		1	RBF 0820/6 ...
10	20	6	60	2.5	093658	N! 222041		1	RBF 1020/6 ...
12	25	6	65	2.5	093672	N! 222065		1	RBF 1225/6 ...
16	30	6	70	3.6	093689	-		1	RBF 1630/6 ...

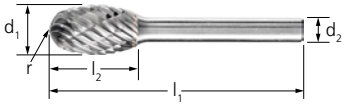


N! New in addition to the Tool Manual 23
N! New in 2020

Oval shape TRE

Oval burr according to DIN 8032.





Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut: ALLROUND	Cut: ALLROUND HC-FEP		Description
					EAN 4007220			
Shank dia. 6 mm								
6	10	6	50	2.8	093733	-	1	TRE 0610/6 ...
8	13	6	53	3.7	093740	-	1	TRE 0813/6 ...
10	16	6	56	4.0	093757	N! 222096	1	TRE 1016/6 ...
12	20	6	60	5.0	093764	N! 222133	1	TRE 1220/6 ...
16	25	6	65	6.5	093771	-	1	TRE 1625/6 ...

Set 1412 ALLROUND

Set 1412 ALLROUND contains five tungsten carbide burrs for versatile use on key materials such as steel and cast steel, stainless steel (INOX), non-ferrous metals and cast iron in the most common shapes and dimensions. The sturdy plastic box protects the tools from 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.



Contents:
5 tungsten carbide burrs,
shank dia. of 6 mm,
ALLROUND cut
1 piece each:
- ZYAS 1225/6 ALLROUND
- KUD 1210/6 ALLROUND
- WRC 1225/6 ALLROUND
- SPG 1225/6 ALLROUND
- RBF 1225/6 ALLROUND

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

Cut: ALLROUND		Description
EAN 4007220		
Shank dia. 6 mm		
N! 133576	1	1412 ALLROUND



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range

TC burrs – STEEL cut for steel and cast steel

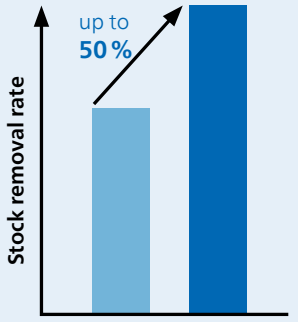
With the innovative STEEL cut, PFERD has developed unique burrs for working with steel and cast steel. They are characterized by significantly increased aggressiveness and good guidance. Thus they ensure safe and precise work. The extremely high stock removal rate makes burrs with the STEEL cut impressive, with significant time savings and a high economic value. PFERD also offers tungsten carbide burrs with STEEL cut with a high-quality HICOAT coating.

2

Applications:

- Milling out
- Levelling
- Deburring
- Cutting out holes
- Surface work
- Work on weld seams

Performance values for applications on steel and cast steel



- Conventional burrs with cross cut
- Tungsten carbide burrs, STEEL cut

Materials that can be worked:

- Steel
- Cast steel

Recommendations for use:

- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For the cost-effective use of burrs, work with higher rotational/cutting speeds. Power recommendation for tool drives: from 300 watts.
- Please observe the rotational speed recommendations.

Matching tool drives:

- Flexible shaft drive
- Straight grinder
- Robot
- Machine tools

Safety note:

- The very high stock removal rate can cause discolouration on the shank. This does not constitute a safety risk.

PFERDVALUE:

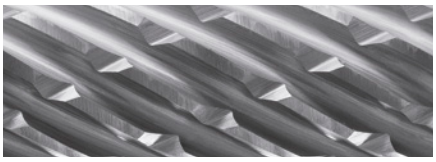
PFERDERGONOMICS recommends burrs with STEEL cut as an innovative tool solution for comfortable working with significantly reduced vibration and less noise.



PFERDEFFICIENCY recommends burrs with STEEL cut for long fatigue-free and resource-saving work with perfect results in a very short period of time.



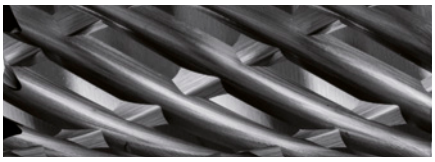
STEEL cut



Advantages:

- Up to 50 % higher stock removal rate when used on steel and cast steel in comparison to conventional cross-cut burrs.
- Significantly increased aggressiveness, large chips and very good chip removal through the innovative tooth geometry.
- Workpiece is protected through much lower thermal load.

STEEL cut with HICOAT coating HC-FEP



Advantages:

- High hardness and wear resistance.
- Effective chip removal through improved anti-adhesion characteristics.
- Very high resistance against thermal load.
- Increased service life.
- Also suitable for use at higher cutting speeds when compared with uncoated burrs.



Recommended rotational speed range [RPM]

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

❶ Refer to the table for the cutting speed.

❷ Select the required burr diameter.

❸ The cutting speed range and the burr diameter determine the recommended rotational speed range.

Safety note:

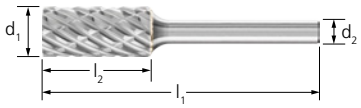
Please observe the reduced rotational speeds for burrs with a long shank. They can be found on page 6.

Material group			Application	Cut	❶ 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, alloyed steels	Coarse stock removal	STEEL	450–750 m/min
				HICOAT HC-FEP	450–900 m/min
	Hardened, heat-treated steels over 1,200 N/mm² (> 38 HRC)	Tool steels, tempering steels, alloyed steels, cast steel		STEEL	450–750 m/min
				HICOAT HC-FEP	450–900 m/min

Example:
TC burr,
STEEL cut,
burr dia. 12 mm.
Cutting speed: 450–750 m/min
Rotational speed range:
12,000–20,000 RPM

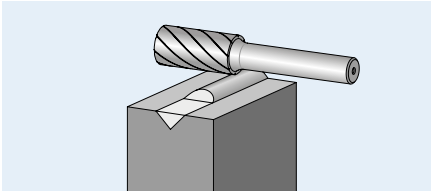
❷ Burr dia. [mm]	❸ Cutting speeds [m/min]		
	450	750	900
	Rotational speeds [RPM]		
6	24,000	40,000	48,000
8	18,000	30,000	36,000
10	14,000	24,000	29,000
12	12,000	20,000	24,000
16	9,000	15,000	18,000





Cylindrical shape ZYA without end cut

Cylindrical burr according to DIN 8032.

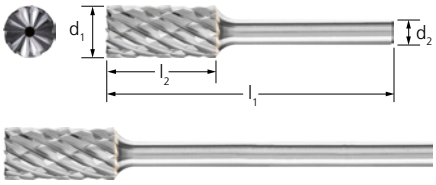


Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

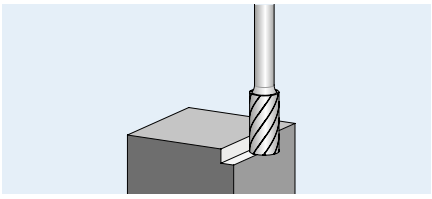
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 6 mm								
6	16	6	55	937198	-	24,000–40,000	1	ZYA 0616/6 ...
8	20	6	60	937211	-	18,000–30,000	1	ZYA 0820/6 ...
10	20	6	60	937235	N! 221662	14,000–24,000	1	ZYA 1020/6 ...
12	25	6	65	937242	N! 221655	12,000–20,000	1	ZYA 1225/6 ...
16	25	6	65	002360	-	9,000–15,000	1	ZYA 1625/6 ...



Cylindrical shape ZYAS with end cut

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

SL = shank length (long steel shank)



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

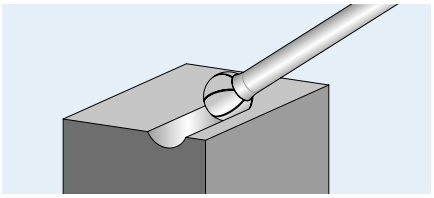
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 6 mm								
6	16	6	55	937259	-	24,000–40,000	1	ZYAS 0616/6 ...
8	20	6	60	937266	-	18,000–30,000	1	ZYAS 0820/6 ...
10	20	6	60	937310	N! 221600	14,000–24,000	1	ZYAS 1020/6 ...
12	25	6	65	937341	N! 221686	12,000–20,000	1	ZYAS 1225/6 ...
16	25	6	65	002889	-	9,000–15,000	1	ZYAS 1625/6 ...
Long shank dia. of 6 mm, SL 150 mm								
8	20	6	170	091173	-	11,000	1	ZYAS 0820/6 ... SL 150
10	20	6	170	091289	-	9,000	1	ZYAS 1020/6 ... SL 150
12	25	6	175	091982	-	7,000	1	ZYAS 1225/6 ... SL 150

N! New in addition to the Tool Manual 23
N! New in 2020

Ball shape KUD

Ball-shaped burr according to DIN 8032.

SL = shank length (long steel shank)



Ordering notes:

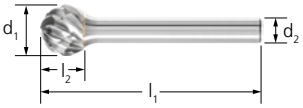
- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving



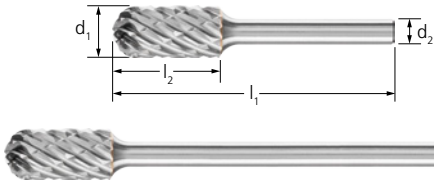


2

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 6 mm								
6	5	6	45	936832	-	24,000–40,000	1	KUD 0605/6 ...
8	7	6	47	936849	-	18,000–30,000	1	KUD 0807/6 ...
10	9	6	49	936863	**N!** 221679	14,000–24,000	1	KUD 1009/6 ...
12	10	6	51	936870	**N!** 221693	12,000–20,000	1	KUD 1210/6 ...
16	14	6	54	003008	-	9,000–15,000	1	KUD 1614/6 ...
Long shank dia. of 6 mm, SL 150 mm								
10	9	6	159	092002	-	9,000	1	KUD 1009/6 ... SL 150
12	10	6	160	087206	-	7,000	1	KUD 1210/6 ... SL 150



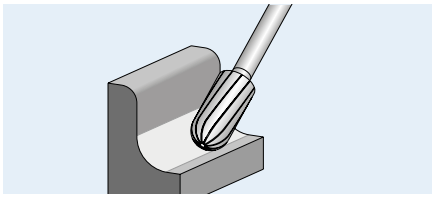
N! New in addition to the Tool Manual 23
N! New in 2020



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032. Combination of cylindrical and ball-shaped geometries.

SL = shank length (long steel shank)



Ordering notes:
- Please complete the description with the desired cut.

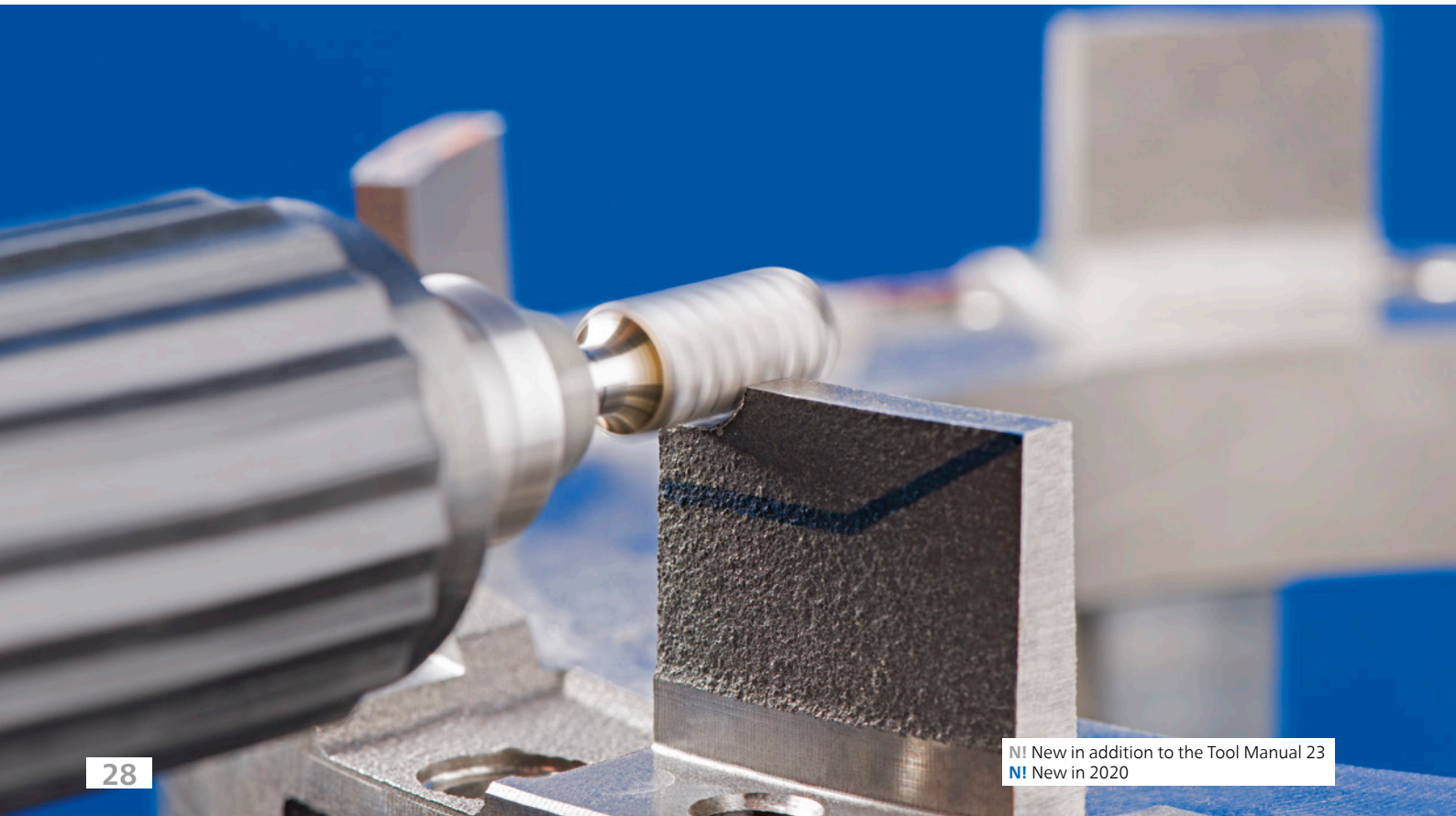
Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 6 mm								
6	16	6	55	937129	-	24,000–40,000	1	WRC 0616/6 ...
8	20	6	60	937150	-	18,000–30,000	1	WRC 0820/6 ...
10	20	6	60	937174	**N!** 222713	14,000–24,000	1	WRC 1020/6 ...
12	25	6	65	936696	**N!** 221570	12,000–20,000	1	WRC 1225/6 ...
16	25	6	65	003022	-	9,000–15,000	1	WRC 1625/6 ...
Long shank dia. of 6 mm, SL 150 mm								
8	20	6	170	092309	-	11,000	1	WRC 0820/6 ... SL 150
10	20	6	170	092422	-	9,000	1	WRC 1020/6 ... SL 150
12	25	6	175	092439	-	7,000	1	WRC 1225/6 ... SL 150

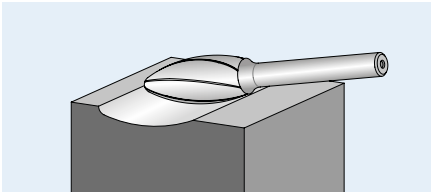


N! New in addition to the Tool Manual 23
N! New in 2020

Flame shape B

Flame-shaped burr according to ISO 7755/8.

SL = shank length (long steel shank)



Ordering notes:

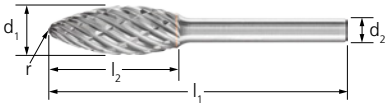
- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving



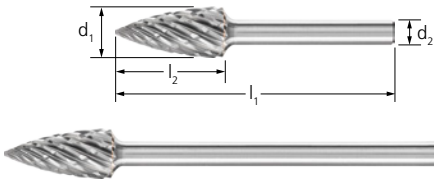


d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut: STEEL	Cut: STEEL HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 6 mm									
8	20	6	60	1.5	936719	-	18,000–30,000	1	B 0820/6 ...
10	25	6	65	1.7	092590	N! 221617	14,000–24,000	1	B 1025/6 ...
12	30	6	70	2.1	936764	N! 221624	12,000–20,000	1	B 1230/6 ...
16	35	6	75	2.6	003039	-	9,000–15,000	1	B 1635/6 ...
Long shank dia. of 6 mm, SL 150 mm									
10	25	6	175	1.7	092446	-	9,000	1	B 1025/6 ... SL 150
12	30	6	180	2.1	092453	-	7,000	1	B 1230/6 ... SL 150





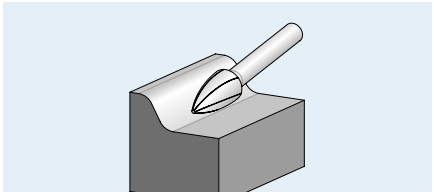
N! New in addition to the Tool Manual 23
N! New in 2020



Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032, flattened tip.

SL = shank length (long steel shank)



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: STEEL	Cut: STEEL HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 6 mm								
6	18	6	55	936979	-	24,000–40,000	1	SPG 0618/6 ...
8	20	6	60	936993	-	18,000–30,000	1	SPG 0820/6 ...
10	20	6	60	937013	N! 221716	14,000–24,000	1	SPG 1020/6 ...
12	25	6	65	937082	N! 221648	12,000–20,000	1	SPG 1225/6 ...
16	30	6	70	003046	-	9,000–15,000	1	SPG 1630/6 ...
Long shank dia. of 6 mm, SL 150 mm								
8	20	6	170	092460	-	11,000	1	SPG 0820/6 ... SL 150
10	20	6	170	092477	-	9,000	1	SPG 1020/6 ... SL 150
12	25	6	175	092484	-	7,000	1	SPG 1225/6 ... SL 150

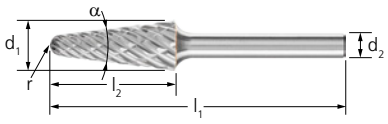


N! New in addition to the Tool Manual 23
N! New in 2020

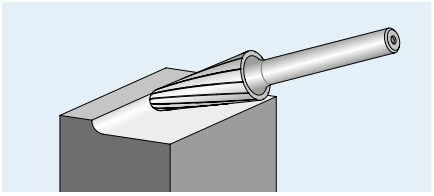
Conical shape with radius end KEL

Conical burr with radius end according to DIN 8032.

SL = shank length (long steel shank)







Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

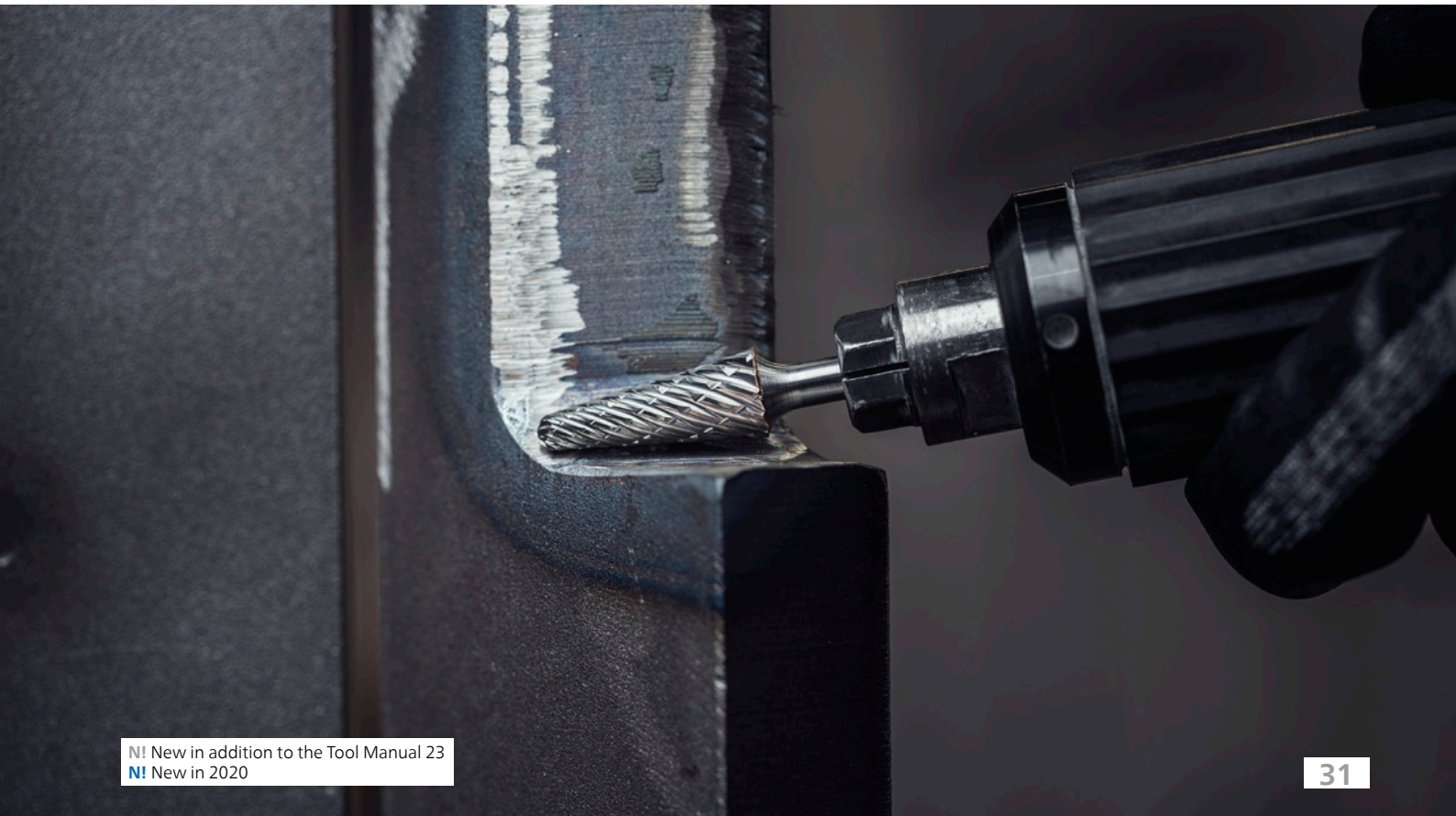
PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

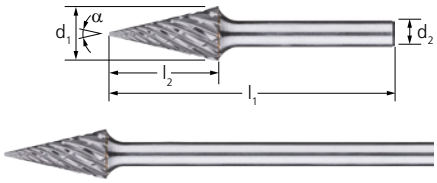
Ordering notes:

- Please complete the description with the desired cut.

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	r [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
						EAN 4007220				
Shank dia. 6 mm										
10	20	6	60	14°	2.9	936771	N! 221587	14,000–24,000	1	KEL 1020/6 ...
12	30	6	70	14°	2.6	936818	N! 222904	12,000–20,000	1	KEL 1230/6 ...
16	30	6	70	14°	4.8	003053	-	9,000–15,000	1	KEL 1630/6 ...
Long shank dia. of 6 mm, SL 150 mm										
10	20	6	170	14°	2.9	092576	-	9,000	1	KEL 1020/6 ... SL 150
12	30	6	180	14°	2.6	092583	-	7,000	1	KEL 1230/6 ... SL 150



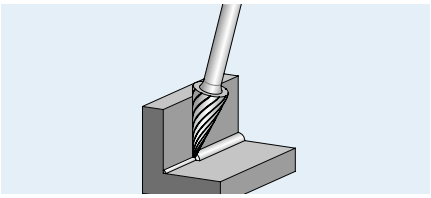
N! New in addition to the Tool Manual 23
N! New in 2020



Conical pointed shape SKM

Conical pointed burr according to DIN 8032, flattened tip.

SL = shank length (long steel shank)



Ordering notes:
- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 6 mm									
6	18	6	55	18°	092736	-	24,000–40,000	1	SKM 0618/6 ...
8	20	6	60	22°	092774	-	18,000–30,000	1	SKM 0820/6 ...
10	20	6	60	28°	092781	**N!** 221747	14,000–24,000	1	SKM 1020/6 ...
12	25	6	65	26°	092859	**N!** 221754	12,000–20,000	1	SKM 1225/6 ...
Long shank dia. of 6 mm, SL 150 mm									
10	20	6	170	28°	092545	-	9,000	1	SKM 1020/6 ... SL 150
12	25	6	175	26°	092569	-	7,000	1	SKM 1225/6 ... SL 150

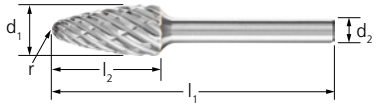


N! New in addition to the Tool Manual 23
N! New in 2020

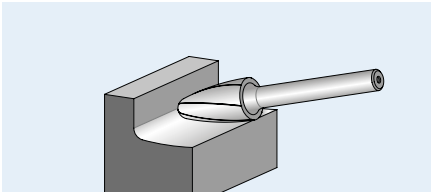
Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032.

SL = shank length (long steel shank)







Ordering notes:

- Please complete the description with the desired cut.

Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

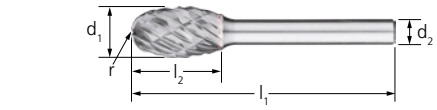
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut: STEEL	Cut: STEEL HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 6 mm									
6	18	6	55	1.5	936887	-	24,000–40,000	1	RBF 0618/6 ...
8	20	6	60	1.2	936900	-	18,000–30,000	1	RBF 0820/6 ...
10	20	6	60	2.5	936924	N! 221631	14,000–24,000	1	RBF 1020/6 ...
12	25	6	65	2.5	936931	N! 221563	12,000–20,000	1	RBF 1225/6 ...
16	30	6	70	3.6	003060	-	9,000–15,000	1	RBF 1630/6 ...
Long shank dia. of 6 mm, SL 150 mm									
8	20	6	170	1.2	092491	-	11,000	1	RBF 0820/6 ... SL 150
10	20	6	170	2.5	092507	-	9,000	1	RBF 1020/6 ... SL 150
12	25	6	175	2.5	092514	-	7,000	1	RBF 1225/6 ... SL 150



N! New in addition to the Tool Manual 23
N! New in 2020

2

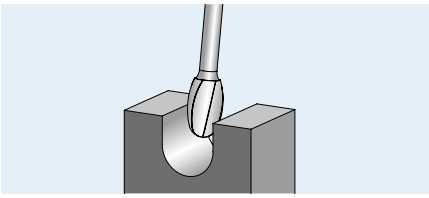




Oval shape TRE

Oval burr according to ISO 7755/8.

SL = shank length (long steel shank)



Ordering notes:
- Please complete the description with the desired cut.

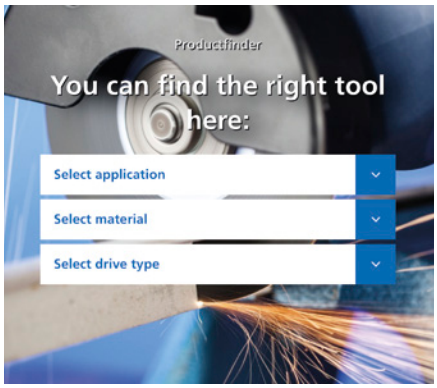
Safety notes:

The rotational speeds for long-shank burrs relate to applications where the tool is in contact with the workpiece. More safety notes can be found on page 6.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut STEEL	Cut STEEL HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 6 mm									
8	13	6	53	3.7	092637	-	18,000–30,000	1	TRE 0813/6 ...
10	16	6	56	4.0	092644	N! 221808	14,000–24,000	1	TRE 1016/6 ...
12	20	6	60	5.0	092682	N! 221778	12,000–20,000	1	TRE 1220/6 ...
16	25	6	65	6.5	092729	-	9,000–15,000	1	TRE 1625/6 ...
Long shank dia. of 6 mm, SL 150 mm									
10	16	6	160	4.0	092521	-	9,000	1	TRE 1016/6 ... SL 150
12	20	6	170	5.0	092538	-	7,000	1	TRE 1220/6 ... SL 150



Online direct search and product finder

Use the the direct search function on our website **www.pferd.com** to find suitable products for working on steel. Or use the PFERD product finder instead, where you can select suitable tools by entering the following criteria: material, drive type and application.



N! New in addition to the Tool Manual 23
N! New in 2020

With the INOX cut, PFERD has developed innovative burrs for work on stainless steel (INOX). The INOX cut is characterized by an extremely high stock removal rate on all austenitic as well as rust- and acid-resistant steels. It creates significantly less vibration than a comparable cross cut. PFERD also offers tungsten carbide burrs with INOX cut with a high-quality HICOAT coating.

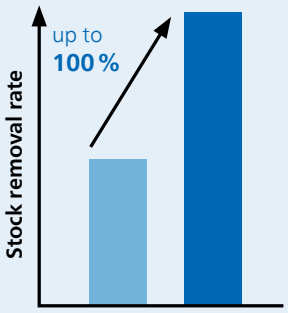
Materials that can be worked:

- Stainless steel (INOX)
- Soft titanium alloys (tensile strength < 500 N/mm²)

Applications:

- Milling out
- Levelling
- Deburring
- Cutting out holes
- Surface work
- Work on weld seams

Performance values for applications on stainless steel (INOX)



- Conventional burrs with cross cut
- Tungsten carbide burrs, INOX cut

Recommendations for use:

- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For the cost-effective use of burrs, work with higher rotational/cutting speeds. Power recommendation for tool drives:
  - Shank diameter of 3 mm: 75 to 300 watts
  - Shank diameter of 6 mm: from 300 watts
- Please observe the rotational speed recommendations.
- The RPMs shown in the product tables on the product pages are for work on stainless steel (INOX) only.

Matching tool drives:

- Flexible shaft drive
- Straight grinder
- Robot
- Machine tools

Safety note:

- The very high stock removal rate can cause discolouration on the shank. This does not constitute a safety risk.

PFERDVALUE:

PFERDERGONOMICS recommends burrs with INOX cut as an innovative tool solution for comfortable working with significantly reduced vibration and less noise.



PFERDEFFICIENCY recommends burrs with INOX cut for long fatigue-free and resource-saving work with perfect results in a very short period of time.



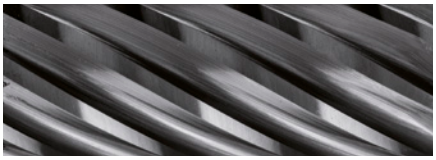
INOX cut



Advantages:

- Outstanding stock removal rate and tool life due to the innovative tooth geometry.
- Achieves high surface qualities through optimum chip formation.
- Prevents heat discolouration in the material due to the reduced heat generation.

INOX cut with HICOAT coating HC-FEP



Advantages:

- High hardness and wear resistance.
- Effective chip removal through improved anti-adhesion characteristics.
- Very high resistance against thermal load.
- Increased service life.
- Also suitable for use at higher cutting speeds when compared with uncoated burrs.



New in the PFERD product range

TC burrs – INOX cut for stainless steel (INOX)

Recommended rotational speed range [RPM]

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

❶ Select the material group to be machined.
❷ Refer to the table for the cutting speed.
❸ Select the required burr diameter.
❹ The cutting speed range and the burr diameter determine the recommended rotational speed range.

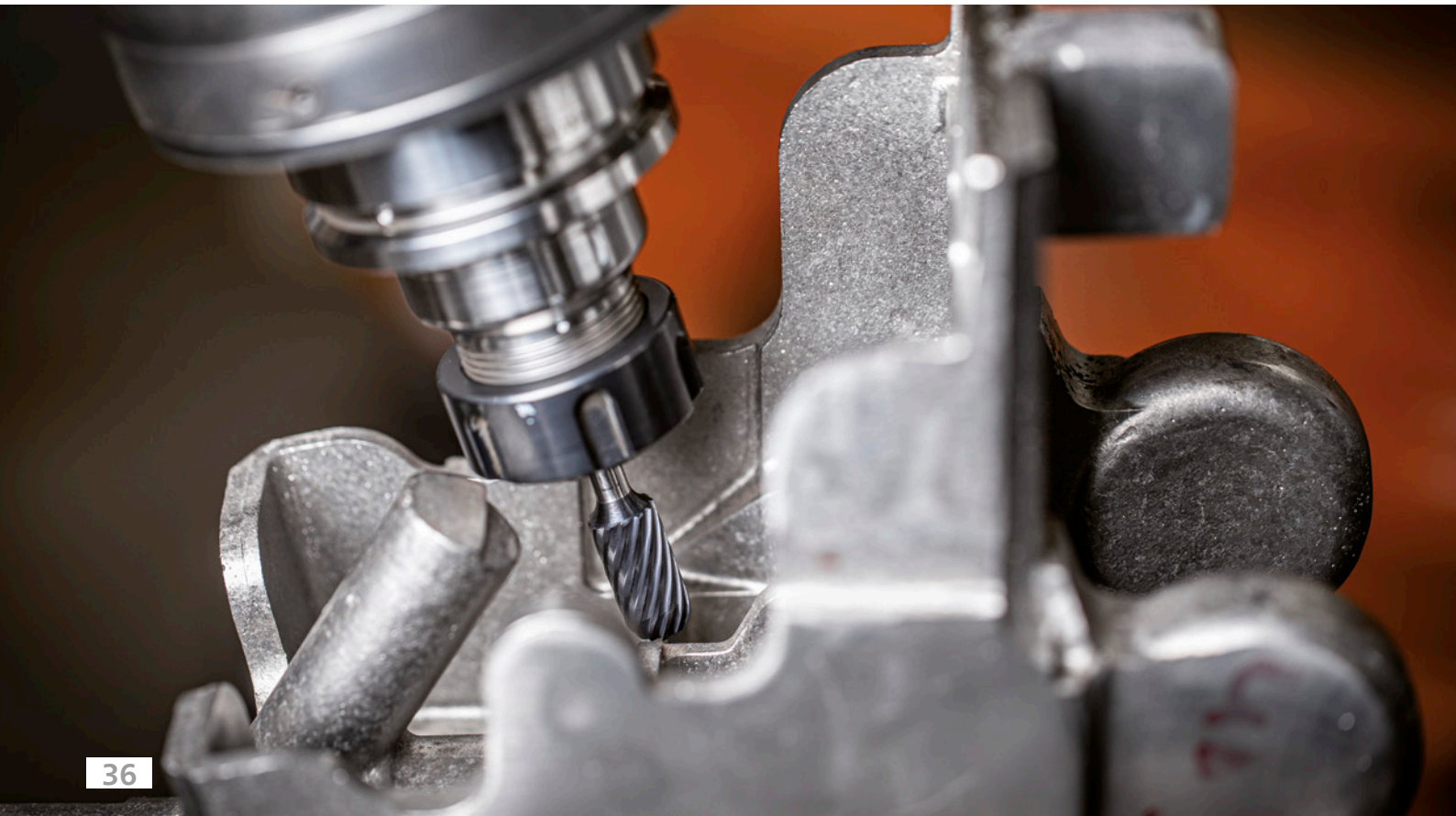


More PFERD tools and information on working with stainless steel (INOX) can be found in our PRAXIS brochure "PFERD tools for use on stainless steel (INOX)" at www.pferd.com.

❶ Material group			Application	Cut	❷ Cutting speed
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	Coarse stock removal	INOX	450–600 m/min
				HICOAT HC-FEP	450–750 m/min
Non-ferrous metals	Non-ferrous metals	Titanium/titanium alloys	Coarse stock removal	INOX	250–450 m/min
				HICOAT HC-FEP	250–600 m/min

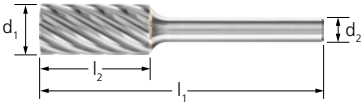
Example:
TC burr,
INOX cut,
burr dia. 12 mm.
Coarse stock removal on stainless steel (INOX).
Cutting speed: 450–600 m/min
Rotational speed range:
12,000–16,000 RPM

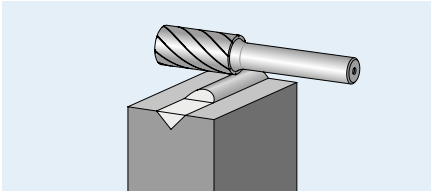
❸ Burr dia. [mm]	❹ Cutting speeds [m/min]			
	250	450	600	750
	Rotational speeds [RPM]			
3	27,000	48,000	64,000	80,000
4	20,000	36,000	48,000	72,000
5	16,000	29,000	40,000	48,000
6	13,000	24,000	32,000	40,000
8	10,000	18,000	24,000	30,000
10	8,000	14,000	19,000	24,000
12	7,000	12,000	16,000	20,000



Cylindrical shape ZYA without end cut

Cylindrical burr according to DIN 8032.





Ordering notes:
- Please complete the description with the desired cut.

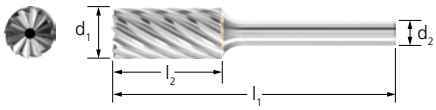
PFERDVALUE:

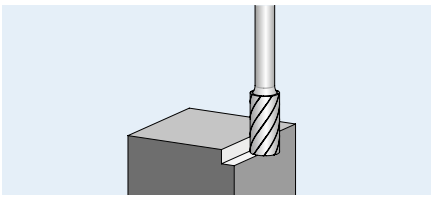
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: INOX	Cut: INOX HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 3 mm								
3	13	3	43	930380	-	27,000–64,000	1	ZYA 0313/3 ...
6	13	3	43	930403	-	13,000–32,000	1	ZYA 0613/3 ...
Shank dia. 6 mm								
6	16	6	55	900499	-	13,000–32,000	1	ZYA 0616/6 ...
8	20	6	60	952245	-	10,000–24,000	1	ZYA 0820/6 ...
10	20	6	60	952252	**N!** 222270	8,000–19,000	1	ZYA 1020/6 ...
12	25	6	65	900505	**N!** 222256	7,000–16,000	1	ZYA 1225/6 ...

Cylindrical shape ZYAS with end cut

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





Ordering notes:
- Please complete the description with the desired cut.

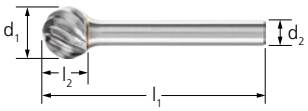
PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: INOX	Cut: INOX HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 3 mm								
3	13	3	43	034453	-	27,000–64,000	1	ZYAS 0313/3 ...
6	13	3	43	034460	-	13,000–32,000	1	ZYAS 0613/3 ...
Shank dia. 6 mm								
6	16	6	55	034477	-	27,000–64,000	1	ZYAS 0616/6 ...
12	25	6	65	034484	**N!** 222249	7,000–16,000	1	ZYAS 1225/6 ...

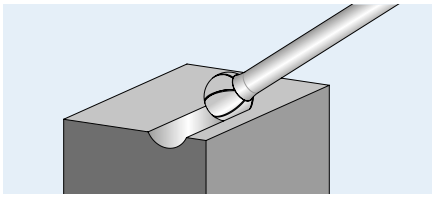
N! New in addition to the Tool Manual 23
N! New in 2020

2



Ball shape KUD

Ball-shaped burr according to DIN 8032.

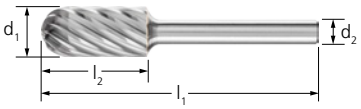


Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

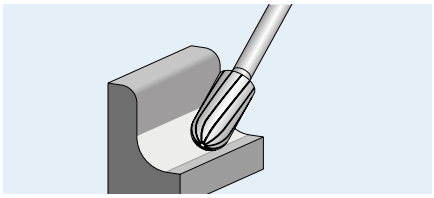
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: INOX	Cut: INOX HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 3 mm								
3	2	3	33	930434	-	27,000–64,000	1	KUD 0302/3 ...
4	3	3	34	034439	-	20,000–48,000	1	KUD 0403/3 ...
5	4	3	35	034446	-	16,000–40,000	1	KUD 0504/3 ...
6	5	3	35	930441	-	13,000–32,000	1	KUD 0605/3 ...
Shank dia. 6 mm								
6	5	6	45	900536	-	13,000–32,000	1	KUD 0605/6 ...
8	7	6	47	952269	-	10,000–24,000	1	KUD 0807/6 ...
10	9	6	49	952276	N! 222348	8,000–19,000	1	KUD 1009/6 ...
12	10	6	51	900543	N! 222362	7,000–16,000	1	KUD 1210/6 ...



Cylindrical shape with radius end WRC

Cylindrical burr with radius end according to DIN 8032. Combination of cylindrical and ball-shaped geometries.



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

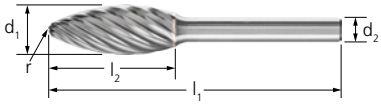
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

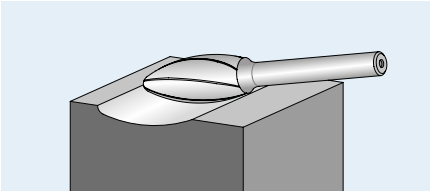
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut: INOX	Cut: INOX HC-FEP	RPM		Description
				EAN 4007220				
Shank dia. 3 mm								
3	13	3	43	930410	-	27,000–64,000	1	WRC 0313/3 ...
6	13	3	43	930427	-	13,000–32,000	1	WRC 0613/3 ...
Shank dia. 6 mm								
6	16	6	55	900512	-	13,000–32,000	1	WRC 0616/6 ...
8	20	6	60	952283	-	10,000–24,000	1	WRC 0820/6 ...
10	20	6	60	952290	N! 222317	8,000–19,000	1	WRC 1020/6 ...
12	25	6	65	900529	N! 222331	7,000–16,000	1	WRC 1225/6 ...

N! New in addition to the Tool Manual 23
N! New in 2020

Flame shape B

Flame-shaped burr according to ISO 7755/8.





Ordering notes:
- Please complete the description with the desired cut.

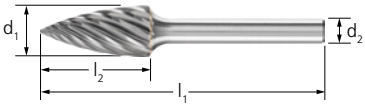
PFERDVALUE:

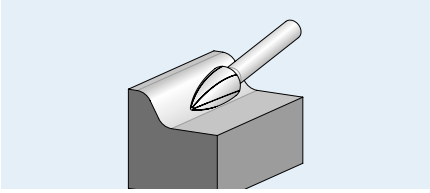
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut		RPM		Description
					INOX	INOX HC-FEP			
					EAN 4007220				
Shank dia. 6 mm									
8	20	6	60	1.5	952306	-	10,000–24,000	1	B 0820/6 ...
10	25	6	65	1.7	952313	N! 222287	8,000–19,000	1	B 1025/6 ...
12	30	6	70	2.1	930502	N! 222294	7,000–16,000	1	B 1230/6 ...

Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032, flattened tip.





Ordering notes:
- Please complete the description with the desired cut.

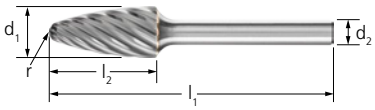
PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut		RPM		Description
				INOX	INOX HC-FEP			
				EAN 4007220				
Shank dia. 3 mm								
3	7	3	37	034491	-	27,000–64,000	1	SPG 0307/3 ...
	13	3	43	034507	-	27,000–64,000	1	SPG 0313/3 ...
6	13	3	43	034514	-	13,000–32,000	1	SPG 0613/3 ...
Shank dia. 6 mm								
6	18	6	55	936948	-	13,000–32,000	1	SPG 0618/6 ...
8	20	6	60	952320	-	10,000–24,000	1	SPG 0820/6 ...
10	20	6	60	952337	N! 222409	8,000–19,000	1	SPG 1020/6 ...
12	25	6	65	936894	N! 222430	7,000–16,000	1	SPG 1225/6 ...

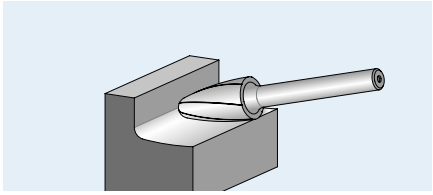


N! New in addition to the Tool Manual 23
N! New in 2020



Tree shape with radius end RBF

Tree-shaped burr with radius end according to DIN 8032.

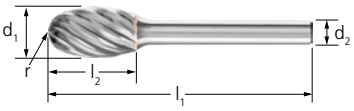


Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

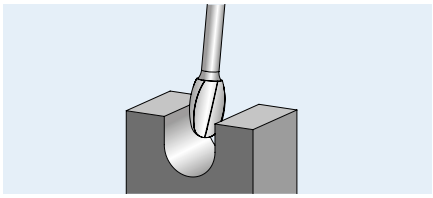
Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut INOX	Cut INOX HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 3 mm									
3	13	3	43	0.75	930472	-	27,000–64,000	1	RBF 0313/3 ...
6	13	3	43	1.5	930489	-	13,000–32,000	1	RBF 0613/3 ...
Shank dia. 6 mm									
6	18	6	55	1.5	900550	-	13,000–32,000	1	RBF 0618/6 ...
8	20	6	60	1.2	952344	-	10,000–24,000	1	RBF 0820/6 ...
10	20	6	60	2.5	952351	N! 222386	8,000–19,000	1	RBF 1020/6 ...
12	25	6	65	2.5	900567	N! 222393	7,000–16,000	1	RBF 1225/6 ...



Oval shape TRE

Oval burr according to DIN 8032.



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

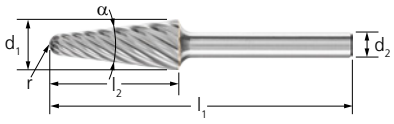
d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	r [mm]	Cut INOX	Cut INOX HC-FEP	RPM		Description
					EAN 4007220				
Shank dia. 6 mm									
8	13	6	53	3.7	952368	-	10,000–24,000	1	TRE 0813/6 ...
10	16	6	56	4.0	952375	N! 222478	8,000–19,000	1	TRE 1016/6 ...
12	20	6	60	5.0	930519	N! 222492	7,000–16,000	1	TRE 1220/6 ...

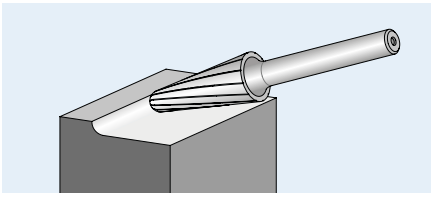


N! New in addition to the Tool Manual 23
N! New in 2020

Conical shape with radius end KEL

Conical burr with radius end according to DIN 8032.





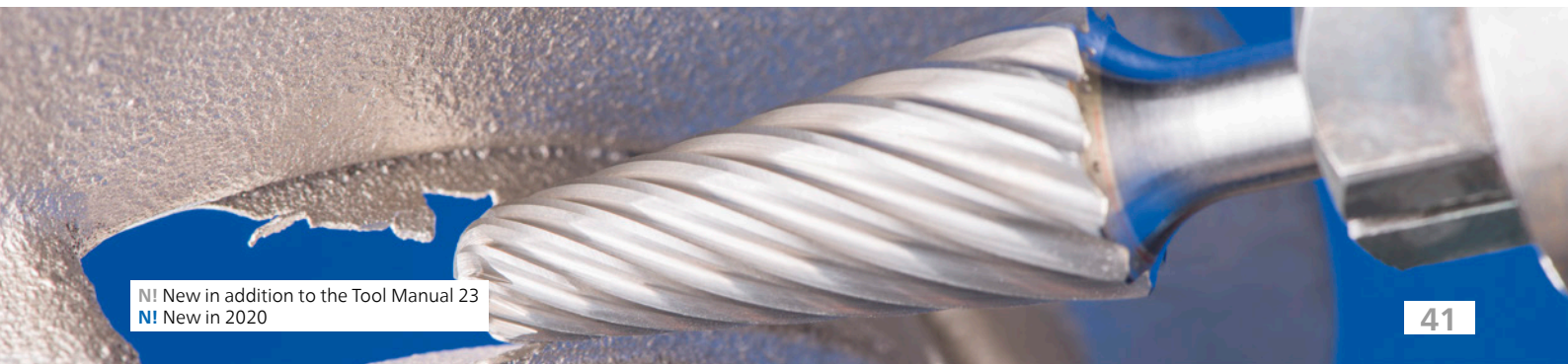
Ordering notes:

- Please complete the description with the desired cut.

PFERDVALUE:

Vibration Filter · Noise Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	α	r [mm]	Cut: INOX	Cut: INOX HC-FEP	RPM		Description
						EAN 4007220				
Shank dia. 6 mm										
8	20	6	60	16°	1.25	952382	-	10,000–24,000	1	KEL 0820/6 ...
10	20	6	60	14°	2.9	952399	**N!** 222454	8,000–19,000	1	KEL 1020/6 ...
12	30	6	70	14°	2.6	930496	**N!** 222461	7,000–16,000	1	KEL 1230/6 ...



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range

TC burrs – ALU and NON-FERROUS cuts for aluminium/non-ferrous metals

When it comes to machining aluminium and non-ferrous metals, PFERD offers two high-performance cuts and a HICOAT coating which have been designed specifically for demanding machining tasks on long-chipping and lubricating materials.

2

Applications:

- Milling out
- Levelling
- Deburring
- Cutting out holes
- Surface work
- Work on weld seams

Matching tool drives:

- Flexible shaft drive
- Straight grinder
- Robot
- Machine tools

Recommendations for use:

- If possible, use the tools on powerful drives with elastically mounted spindles to avoid vibration.
- For the cost-effective use of burrs, work with higher rotational/cutting speeds. Power recommendation for tool drives:
  - Shank diameter of 3 mm: 75 to 300 watts
  - Shank diameter of 6 mm: from 500 watts
- Please observe the rotational speed recommendations.



412 ALU grinding oil

Grinding oil can be used as an alternative to the HICOAT coating HC-NFE. **Grinding oil 412 ALU** in a 400 ml aerosol is particularly well suited: EAN 4007220**791332**. Detailed information on grinding oil 412 ALU can be found in our Tool Manual 23, catalogue section 4.

ALU cut



PFERD has further developed the ALU cut especially for stock removal on aluminium. This cut is characterized by its high stock removal rate.

Advantages:

- Extremely high stock removal rate.
- Large chips.
- Reduced material adhesion.
- Long tool life and smooth running.
- Can be used with cutting speeds of up to 1,100 m/min.

ALU cut with HICOAT coating HC-NFE



The use of burrs with the PFERD HICOAT coating HC-NFE prevents chips adhering during work on soft aluminium alloys. This increases the tool life and improves the surface quality of the workpiece.

Advantages:

- Mainly used for long-chipping and lubricating non-ferrous metals.
- Highest stock removal rate.
- Effective chip removal through improved anti-adhesion characteristics.
- Lower thermal loads.
- Longer service life.

Materials that can be worked:

- Aluminium
- Bronze
- Copper
- Brass
- Titanium
- Titanium alloys
- Zinc
- Fibre-reinforced plastics (GRP/CRP)
- Thermoplastics

PFERDVALUE:

PFERDEFFICIENCY recommends burrs with HICOAT coating for long fatigue-free and resource-saving work with perfect results in a very short period of time.



NON-FERROUS cut



PFERD has developed the NON-FERROUS cut for universal use on non-ferrous metals and fibre-reinforced plastics. This cut is characterized by its high stock removal rate.

Advantages:

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

Materials that can be worked:

- Bronze
- Copper
- Brass
- Zinc
- Fibre-reinforced plastics (GRP/CRP)
- Thermoplastics.



TC burrs with NON-FERROUS cut can be found at www.pferd.com.



Recommended rotational speed range [RPM]

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

❶ Select the material group to be machined.
❷ Determine the type of application.
❸ Select the cut.
❹ Establish the cutting speed range.

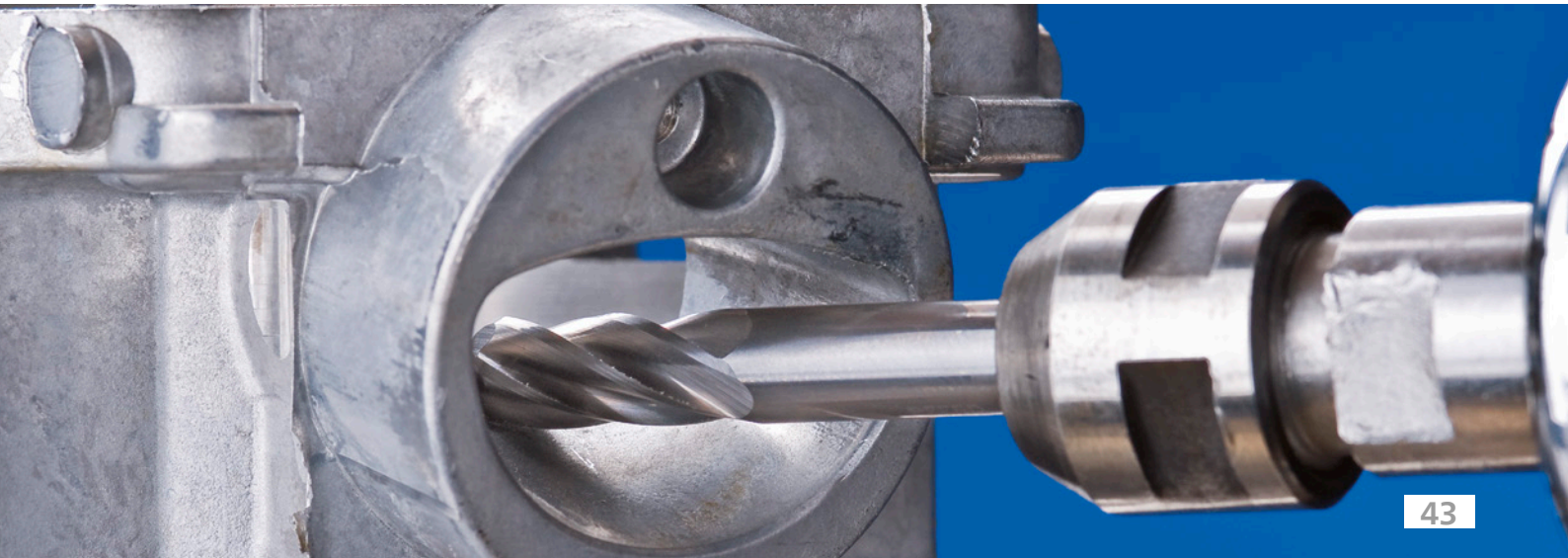
To determine the recommended rotational speed range [RPM], please proceed as follows:

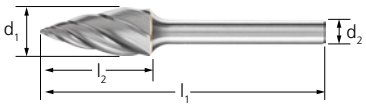
❺ Select the required burr diameter.
❻ The cutting speed range and the burr diameter determine the recommended rotational speed range.

❶ Material group			❷ Application	❸ Cut	❹ Cutting speed
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys	Coarse stock removal	ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min
			Fine stock removal	ALU	900–1,100 m/min
				HICOAT HC-NFE	900–1,300 m/min
		Brass, copper, zinc	Coarse stock removal	ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min
				NON-FERROUS	450–600 m/min
			Fine stock removal	ALU	900–1,100 m/min
				HICOAT HC-NFE	900–1,300 m/min
	Hard non-ferrous metals	Hard aluminium alloys (high Si content)	Coarse stock removal	ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min
			Fine stock removal	ALU	900–1,100 m/min
				HICOAT HC-NFE	900–1,300 m/min
		Bronze	Coarse stock removal	ALU	600–900 m/min
				HICOAT HC-NFE	600–1,100 m/min
				NON-FERROUS	600–900 m/min
			Fine stock removal	ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min
Plastics, other materials	Thermoplastics, fibre-reinforced plastics (GRP/CRP)		Coarse stock removal	NON-FERROUS ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min
			Fine stock removal	ALU	600–1,100 m/min
				HICOAT HC-NFE	600–1,300 m/min

Example:
TC burr,
ALU cut,
burr dia. 12 mm.
Coarse stock removal on hard non-ferrous metals, e.g. bronze.
Cutting speed: 600–900 m/min
Rotational speed range:
16,000–24,000 RPM

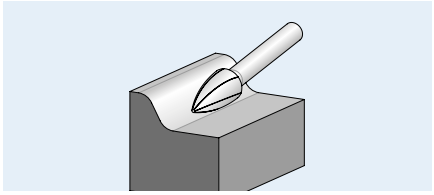
❺ Burr dia. [mm]	❻ Cutting speeds [m/min]				
	450	600	900	1,100	1,300
	Rotational speeds [RPM]				
3	48,000	64,000	95,000	117,000	138,000
6	24,000	32,000	48,000	59,000	70,000
8	18,000	24,000	36,000	44,000	52,000
10	14,000	19,000	29,000	35,000	42,000
12	12,000	16,000	24,000	30,000	35,000
16	9,000	12,000	18,000	22,000	26,000





Pointed tree shape SPG

Pointed tree-shaped burr according to DIN 8032, flattened tip.



Ordering notes:
- Please complete the description with the desired cut.

PFERDVALUE:
HICOAT coating:

WasteSaving TimeSaving

d_1 [mm]	l_2 [mm]	d_2 [mm]	l_1 [mm]	Cut ALU	Cut ALU HC-NFE		Description
				EAN 4007220			
Shank dia. 3 mm							
3	7	3	37	003350	-	1	SPG 0307/3 ...
	13	3	43	003435	-	1	SPG 0313/3 ...
6	13	3	43	003442	-	1	SPG 0613/3 ...
Shank dia. 6 mm							
6	18	6	55	003503	-	1	SPG 0618/6 ...
8	20	6	60	003534	-	1	SPG 0820/6 ...
10	20	6	60	003558	-	1	SPG 1020/6 ...
12	25	6	65	003596	**N!** 222706	1	SPG 1225/6 ...



N! New in addition to the Tool Manual 23
N! New in 2020

The innovative **ALU**MASTER High Speed Disc is a unique tool with an extremely high stock removal rate. It is ideal for processing aluminium as it does not generate hazardous or explosive dust. It consists of specially developed tungsten carbide cutting inserts, which are fixed to the High Speed Disc.



Advantages:

- Does not generate hazardous or explosive dust.
- An extraction system is not required.
- Cost-effective and eco-friendly alternative to grinding wheels and flap discs of comparable weight.
- Innovative and robust cut geometry:
  - The highest degree of safety
  - Extreme durability
  - Comfortable work
- Specially developed, turnable and replaceable tungsten carbide cutting inserts.
- Exceptionally high stock removal rate.

Materials that can be worked:

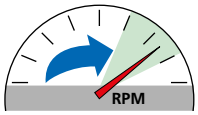
- Aluminium alloys
- Brass, copper, zinc
- Bronze
- Plastics
- Fibre-reinforced duroplastics (GRP, CRP)

Industries:

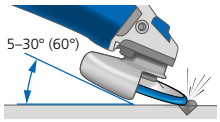
- Shipbuilding and yacht construction
- Wagon construction
- Silo and container construction
- Vehicle construction

Recommendations for use:

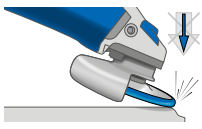
The tool has primarily been designed for use on aluminium, wrought aluminium alloys and cast aluminium. Non-ferrous metals with a relatively low strength and fibre-reinforced plastics can also be machined. This must be checked for the specific application on a case-by-case basis.



- An optimum rotational speed and power output for the tool drive are required for cost-effective use of the **ALU**MASTER High Speed Disc.
  - **HSD-F and HSD-R 115/125 types:**
    Max.13,300 RPM
    Pneumatic angle grinders: power output of 1,000 watts or more
    Electric angle grinders: rated output of 1,400 watts or more
  - **HSD-R 50 type:**
    Max. 25,000 RPM
    Pneumatic angle grinders: power output of 350 watts or more
    Pneumatic straight grinder: power output of 350 watts or more
    Electric straight grinders: rated output of 500 watts or more



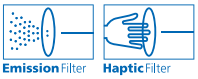
- Use the **ALU**MASTER High Speed Disc HSD-F at an angle of 5–30°, or up to 60° in special cases.
- Do not push the tool deep into the workpiece. The milling disc is not a cutting tool.



- Do not exert unnecessarily high forces on the angle grinder. The **ALU**MASTER High Speed Disc already works with low forces.
- When machining workpiece edges, cut along the edge, never across the edge.
- Do not decelerate the tool on the workpiece. The cutting inserts may break.

PFERDVALUE:

PFERDERGONOMICS recommends **ALU**MASTER High Speed Discs as an innovative tool solution for processing aluminium as they do not generate hazardous or explosive dust.

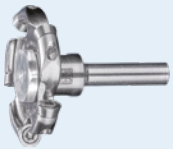


PFERDEFFICIENCY recommends **ALU**MASTER High Speed Discs for long fatigue-free and resource-saving work with perfect results in a very short period of time.





The fast way to the best tool

Description	Applications	Matching tool drives	Tool
 The **HSD-F 115/125** type was specially developed for use on angle grinders with a diameter of 115/125 mm and for flat use.	■ Milling out ■ Work on weld seams ■ Work on fillet welds ■ Work on edges/chamfering ■ Surface work	**Pneumatic angle grinder PWT 26/120 HV M14** **Ordering data:** EAN 4007220**071205**  **Electric angle grinder UWER 18/110 SI** **Ordering data:** EAN 4007220**957127** 	**ALU**MASTER High Speed Disc HSD-F 115/125  See Tool Manual 23, catalogue section 2, page 102.
 The **HSD-R 115/125 type** is a refinement of HSD-F and is also suitable for applications such as peripheral milling and milling out root welds.	■ Milling out ■ Work on weld seams ■ Work on fillet welds ■ Work on edges/chamfering ■ Surface work ■ Milling out root welds ■ Peripheral milling	**Pneumatic angle grinder PWT 26/120 HV M14** **Ordering data:** EAN 4007220**071205**  **Electric angle grinder UWER 18/110 SI** **Ordering data:** EAN 4007220**957127** 	**ALU**MASTER High Speed Disc HSD-R 115/125  See page 48.
 Due to its small size, the **HSD-R 50 type** is highly suitable for working on hard-to-reach areas and delicate components. Thanks to the specially developed holder, the **ALU**MASTER High Speed Disc HSD-R 50 cannot only be used on angle grinders (mounting dia. 10 mm), but also on straight grinders and flexible shaft drives.	■ Milling out ■ Work on weld seams ■ Work on fillet welds ■ Work on edges/chamfering ■ Surface work ■ Milling out root welds ■ Peripheral milling	**Flexible shaft drive Mammoth Electronic ME 22/240** **Ordering data:** EAN 4007220**101681**  **Pneumatic straight grinder PGAS 7/250 E-HV** **Ordering data:** EAN 4007220**948880**  **Pneumatic angle grinder PWSA 5/210 HV** **Ordering data:** EAN 4007220**177075** 	**ALU**MASTER High Speed Disc HSD-R 50  Arbor BO 8/10 HSD-R 50  **ALU**MASTER High Speed Disc HSD-R 50 in combination with BO 8/10 HSD-R 50 arbor  See page 49.

Detailed information and the matching tool drives can be found in our Tool Manual 23, catalogue section 9.

ALUMASTER with HICOAT coating

PFERD also offers the cutting inserts with a premium-quality HICOAT coating for lubricating aluminium casting alloys with a silicon content of 5–10 %, abrasive aluminium casting alloys with a silicon content of over 15 % and for other abrasive materials or non-ferrous metals. This prevents tool clogging and abrasive wear, even in use on these particularly demanding materials.



Advantages:

- Extremely hard.
- Very low friction coefficient.
- Very low tendency towards adhesion.
- Improved surface quality.
- Reduced burr formation.

Materials that can be worked:

- Lubricating aluminium casting alloys with silicon contents of 5–10 %
- Sticky, greasy materials
- Abrasive aluminium casting alloys with silicon contents of > 15 %
- Abrasive materials such as fibre-reinforced plastics (FRP)
- Non-ferrous alloys of higher strength than aluminium (bronze, brass, etc.)

Selecting suitable cutting inserts:

To determine the most suitable cutting insert, please proceed as follows:

❶ Select the material group to be machined.
❷ Select the cutting inserts.

❶ Material group			❷ Cutting inserts	
			High-performance application	Universal application
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys	HICOAT	uncoated
		Brass, copper, zinc	HICOAT	uncoated
	Hard non-ferrous metals	Hard aluminium alloys (high Si content)	HICOAT	-
		Bronze	HICOAT	-
Plastics	Fibre-reinforced plastics (GRP/CRP), thermoplastics		HICOAT	-

Safety notes:

- It is essential to tighten the flange nut using the appropriate tool, such as a face pin wrench. Clamping systems which are designed to be tightened without the use of an additional tool, i.e. which are tightened by hand, are not permissible. Suitable clamping nuts can be found in our Tool Manual 23, catalogue section 9.
- Tighten the mounting bolts of the cutting inserts using the Torx key provided. If used properly, it is designed to provide a tightening torque of around 4 Nm. Alternatively, use a torque spanner with a tightening torque of 4 Nm.
- Loose cutting inserts may break during use. Therefore, **check regularly whether they are attached securely**.
- Do not use damaged cutting inserts! They may break!
- Only use original accessories from PFERD.

= CE-marked

= Do not use if damaged!

= Do not use for cutting!

= Wear eye protection!

= Wear gloves!

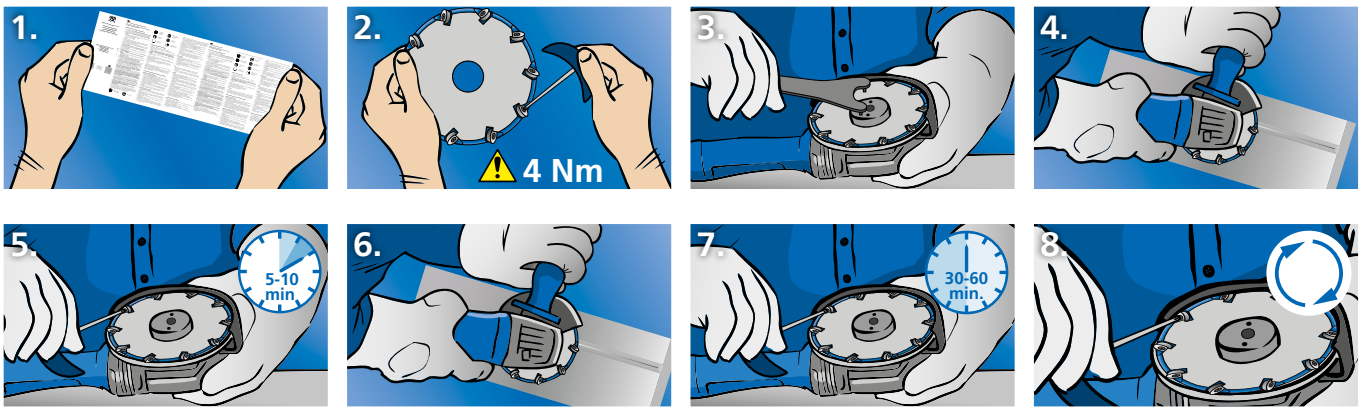
= Wear hearing protection!

= Follow the safety instructions!

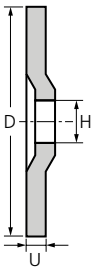
= Observe the contact angle of 5–60° (**ALU**MASTER HSD-F)!

4 Nm

Tighten the bolts!







ALUMASTER **High Speed Disc HSD-R**

Special tool for processing aluminium alloys using an angle grinder. Also suitable for peripheral milling and milling out root welds.

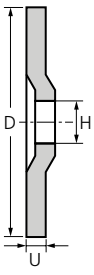
Contents:
- **ALU**MASTER High Speed Disc HSD-R 115/125 incl. mounted tungsten carbide cutting inserts
- Torx key, plastic box

PFERDVALUE:

Emission Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

D [mm]	H [mm]	U [mm]	Max. RPM	EAN 4007220		Description
115	22.23	8.0	13,300	N! 107461	1	HSD-R 115/125 ALUMASTER





ALUMASTER **High Speed Disc HSD-R HICOAT**

Special tool for processing particularly challenging aluminium alloys using an angle grinder. The cutting inserts come with a HICOAT coating. Also suitable for peripheral milling and milling out root welds.

Contents:
- **ALU**MASTER High Speed Disc HSD-R 115/125 HICOAT incl. mounted tungsten carbide cutting inserts
- Torx key, plastic box

PFERDVALUE:

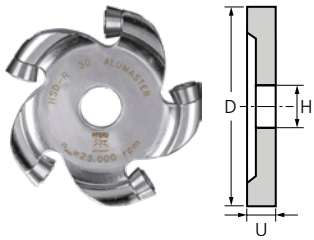
Emission Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

D [mm]	H [mm]	U [mm]	Max. RPM	EAN 4007220		Description
115	22.23	8.0	13,300	N! 107515	1	HSD-R 115/125 ALUMASTER HICOAT



N! New in addition to the Tool Manual 23
N! New in 2020

ALUMASTER High Speed Disc HSD-R 50



Special tool for processing aluminium alloys. With the specially developed arbor, it cannot only be used on angle grinders (mounting dia. 10 mm), but also on straight grinders and flexible shaft drives. It is highly suitable for working on hard-to-reach areas and delicate components. Due to the tool diameter of 49 mm, guards are not obligatory.

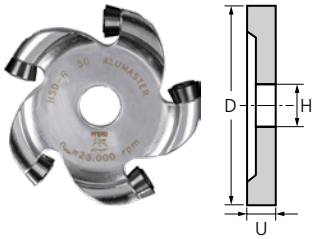
Contents:
- **ALU**MASTER High Speed Disc HSD-R 50 incl. mounted tungsten carbide cutting inserts
- Torx key, plastic box

PFERDVALUE:

Emission Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

D [mm]	H [mm]	U [mm]	Max. RPM	EAN 4007220		Description
49	10	8.0	25,000	N! 156858	1	HSD-R 50 ALUMASTER

ALUMASTER High Speed Disc HSD-R 50 HICOAT



Special tool for processing particularly challenging aluminium alloys. With the specially developed arbor, it cannot only be used on angle grinders (mounting dia. 10 mm), but also on straight grinders and flexible shaft drives. The cutting inserts come with a HICOAT coating. It is highly suitable for working on hard-to-reach areas and delicate components. Due to the tool diameter of 49 mm, guards are not obligatory.

Contents:
- **ALU**MASTER High Speed Disc HSD-R 50 HICOAT incl. mounted tungsten carbide cutting inserts
- Torx key, plastic box

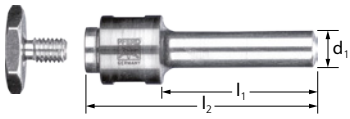
PFERDVALUE:

Emission Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

D [mm]	H [mm]	U [mm]	Max. RPM	EAN 4007220		Description
49	10	8.0	25,000	N! 156865	1	HSD-R 50 ALUMASTER HICOAT

Arbor

Arbor for ALUMASTER High Speed Disc HSD-R 50



Suitable for use on flexible shaft drives and straight grinders.

d_1 [mm]	l_1 [mm]	l_2 [mm]	Suitable for	EAN 4007220		Description
8	33	50	HSD-R 50	N! 156919	1	BO 8/10 HSD-R 50



N! New in addition to the Tool Manual 23
N! New in 2020



Cutting insert sets, HICOAT cutting insert sets

Cutting insert sets for **ALU**MASTER High Speed Disc.

Ordering notes:
- The sets are available with or without HICOAT coating.

D [mm]	Contents [pcs.]	Suitable for	EAN 4007220		Description
8	5	ALUMASTER HSD-R 50	N! 156872	1	WSP-A-8R 50 ALUMASTER
			N! 156889	1	WSP-A-8R 50 ALUMASTER HICOAT
	10	ALUMASTER HSD-R 115/125	N! 107492	1	WSP-A-8R 115/125 ALUMASTER
			N! 107522	1	WSP-A-8R 115/125 ALUMASTER HICOAT
12	10	ALUMASTER HSD-F 115/125	018583	1	WSP-A-12R 115/125 ALUMASTER
			061220	1	WSP-A-12R 115/125 ALUMASTER HICOAT



ALUMASTER service set, ALUMASTER HICOAT service set

For exchanging individual cutting inserts on the **ALU**MASTER High Speed Disc.

Set contains:
- 2 cutting inserts
- 2 bolts
- 1 TORX key

Ordering notes:
- The sets are available with or without HICOAT coating.

Suitable for	EAN 4007220		Description
ALUMASTER HSD-R 50	N! 156896	1	ASS-R8 50 ALUMASTER
	N! 156902	1	ASS-R8 50 ALUMASTER HICOAT
ALUMASTER HSD-R 115/125	N! 107539	1	ASS-R8 115/125 ALUMASTER
	N! 107546	1	ASS-R8 115/125 ALUMASTER HICOAT
ALUMASTER HSD-F 115/125	061237	1	ASS-R12 115/125 ALUMASTER
	061244	1	ASS-R12 115/125 ALUMASTER HICOAT

N! New in addition to the Tool Manual 23
N! New in 2020


HAIMER

New in the PFERD product range
Drilling tools – HSS spiral drills

2

Drilling tools with cross grinding for industrial uses. Fully ground, right-hand turning versions that produce precise drill holes thanks to their high concentricity and exact centring. PFERD offers spiral drills in the STEEL (118° point angle) and INOX (135° point angle) types.

Advantages:

- Very good chip removal.
- High concentricity.
- Exact centring and low feed force thanks to cross grinding.

Applications:

- Drilling

Recommendations for use:

- Observe the recommended rotational speed.
- When drilling metals, use a high-quality cutting oil or cooling lubricant, if possible. This facilitates smooth running and extends the drill tool life. Exception: when working on aluminium, use kerosene instead of cutting oil.
- In order to avoid corrosion, remove any particles which develop when working on stainless steel (INOX) from the workpiece. Clean the workpiece chemically or mechanically (etching/polishing, etc.).

Safety notes:

= Wear eye protection!

= Follow the safety instructions!

Matching tool drives:

- Power drills
- Column drills
- Machine tools
- Robot

HSSG (M2) STEEL 118° type



- Suitable for universal use on steel, cast steel, grey cast iron, annealed cast iron, bronze, brass, aluminium.
- Easy centring.
- Long tool life.
- Good chip removal.

HSSE Co5 (M35) INOX 135° type



- Particularly well suited for tough and hard materials, such as alloyed and high-strength steel, stainless steel (INOX).
- Robust tip profile.
- Very long tool life.
- Good chip removal.
- Very good temperature resistance due to Co content.

Example applications for STEEL/INOX HSS spiral drills

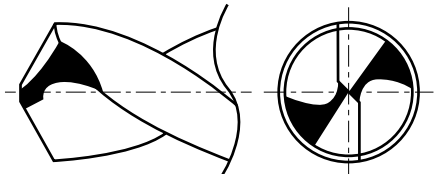
Dia. [mm]	Applications
1.6	Core hole for M2 thread
2.5	Drilled hole dia. for blind and special blind rivets dia. 2.4 mm
3.1	Drilled hole dia. for blind and special blind rivets dia. 3.0 mm
3.3	Core hole for M4 thread and drilled hole dia. for blind and special blind rivets dia. 3.2 mm
3.5	Core hole for metric fine thread MF 4 x 0.5 mm
4.0	Core hole for metric fine thread MF 4.5 x 0.5 mm
4.1	Drilled hole dia. for blind and special blind rivets dia. 4.0 mm
4.2	Core hole for M5 thread
4.5	Core hole for metric fine thread MF 5 x 0.5 mm
5.0	Core hole for M6 thread and metric fine thread MF 5.5 x 0.5 mm
5.1	Drilled hole dia. for blind and special blind rivets dia. 5.0 mm

Dia. [mm]	Applications
5.2	Drilled hole dia. for blind and special blind rivets dia. 5.1 mm
5.3	Drilled hole dia. for blind and special blind rivets dia. 5.2 mm
5.5	Core hole for metric fine thread MF 6 x 0.5 mm
6.0	Core hole for M7 thread
6.5	Core hole for metric fine thread MF 7 x 0.5 and drilled hole dia. for blind and special blind rivets dia. 6.4 mm
6.8	Core hole for M8 thread
7.0	Core hole for metric fine thread MF 8 x 1 mm
7.5	Core hole for metric fine thread MF 8 x 0.5 mm
8.0	Core hole for metric fine thread MF 9 x 1 mm
8.5	Core hole for M10 thread and metric fine thread MF 9 x 0.5 mm

Dia. [mm]	Applications
9.0	Core hole for metric fine thread MF 10 x 1 mm
9.5	Core hole for metric fine thread MF 10 x 0.5 mm
10.0	Core hole for metric fine thread MF 11 x 1 mm
10.2	Core hole for M12 thread
10.5	Core hole for metric fine thread MF 12 x 1.5 mm
11.0	Core hole for metric fine thread MF 12 x 1 mm
11.5	Core hole for metric fine thread MF 12 x 0.5 mm and metric fine thread 13 x 1.5 mm
12.0	Core hole for M14 thread and metric fine thread MF 13 x 1 mm
12.5	Core hole for metric fine thread MF 13 x 0.5 mm and metric fine thread MF 14 x 1.5 mm
13.0	Core hole for metric fine thread MF 14 x 1 mm

Fully ground spiral drill with cross grinding

PFERD drills are completely ground spiral drills: they are precision ground both in the chip flute and the guide chamfer as well as at the drill tip. They also have cross grinding. This drill is suitable for highly precise positioning on the workpiece and supports centring during drilling. This grinding finish even cuts at the centre of the drill tip and reduces the feed forces during use. Spiral drills with cross grinding are suitable for purposes including machining of difficult-to-machine materials like chromium-nickel steel.

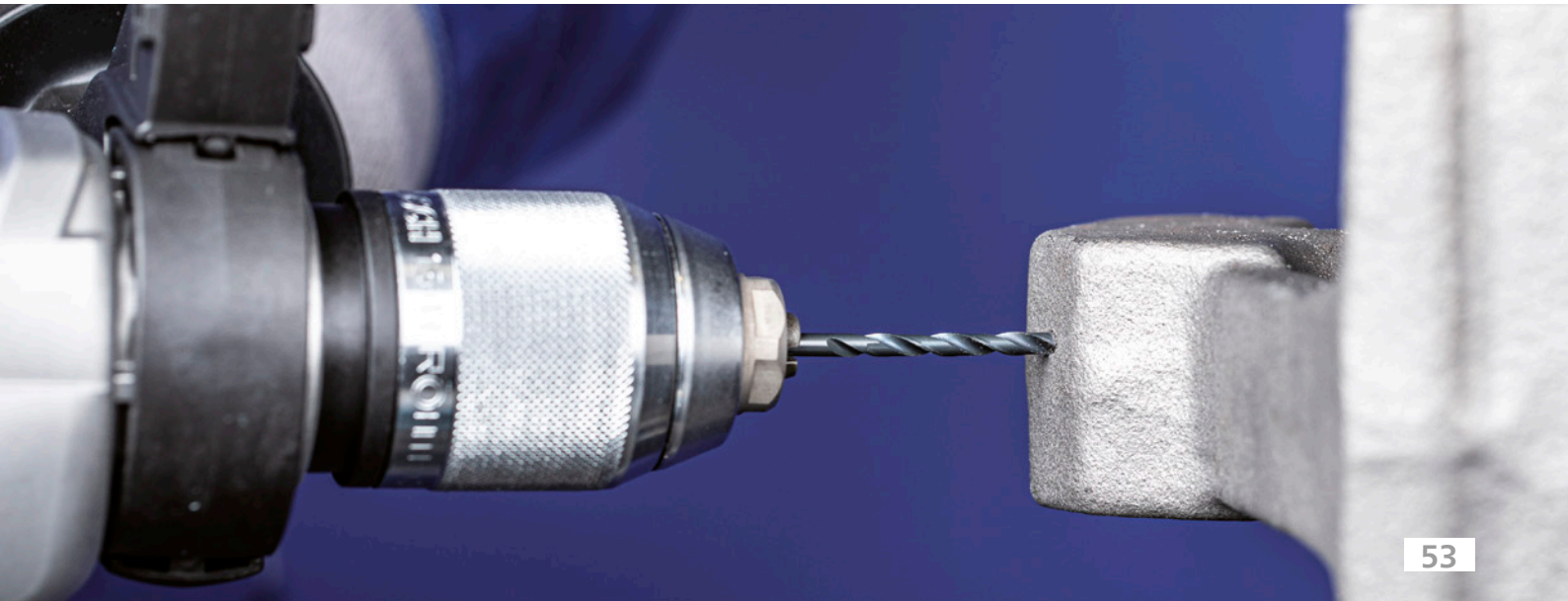


Recommended rotational speed range [RPM]

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

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

❶ Material group			❷ Type	❸ 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	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, titaniumium/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 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	

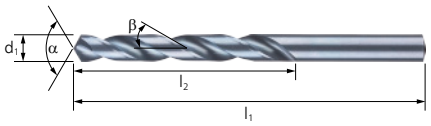


Example:
Spiral drill,
SPB DIN 338 HSSG N 12,0 STEEL,
Tool dia. 12 mm.
Steels up to 700 N/mm²
Cutting speed: 25–35 m/min.
Rotational speed range: 650–950 RPM

❹ Tool dia. [mm]	❺ Cutting speeds [m/min]								
	10	15	20	25	30	35	40	50	60
	Rotational speeds [RPM]								
1.00	3,200	4,800	6,350	7,950	9,550	11,150	12,750	15,900	19,100
1.50	2,100	3,200	4,250	5,300	6,350	7,450	8,500	10,600	12,750
1.60	2,000	3,000	4,000	5,000	6,000	7,000	8,000	10,000	12,000
2.00	1,600	2,400	3,200	4,000	4,800	5,550	6,350	7,950	9,550
2.50	1,250	1,900	2,550	3,200	3,800	4,450	5,100	6,350	7,650
3.00	1,050	1,600	2,100	2,650	3,200	3,700	4,250	5,300	6,350
3.10	1,000	1,550	2,050	2,600	3,100	3,600	4,100	5,150	6,200
3.30	950	1,450	1,950	2,400	2,900	3,400	3,850	4,850	5,800
3.40	900	1,400	1,900	2,350	2,800	3,300	3,750	4,700	5,600
3.50	900	1,350	1,800	2,300	2,750	3,200	3,650	4,550	5,450
3.60	900	1,350	1,800	2,250	2,650	3,100	3,550	4,450	5,300
4.00	800	1,200	1,600	2,000	2,400	2,800	3,200	4,000	4,800
4.10	800	1,150	1,550	1,950	2,350	2,750	3,100	3,900	4,650
4.20	800	1,150	1,550	1,900	2,300	2,650	3,050	3,800	4,550
4.40	750	1,100	1,450	1,800	2,200	2,550	2,900	3,600	4,350
4.50	700	1,050	1,400	1,750	2,100	2,500	2,850	3,550	4,250
5.00	650	950	1,250	1,600	1,900	2,250	2,550	3,200	3,800
5.10	650	950	1,250	1,550	1,900	2,200	2,500	3,150	3,750
5.20	650	950	1,250	1,550	1,850	2,150	2,450	3,050	3,700
5.30	600	900	1,200	1,500	1,800	2,100	2,400	3,000	3,600
5.50	600	850	1,150	1,450	1,750	2,050	2,300	2,900	3,450
6.00	550	800	1,050	1,350	1,600	1,850	2,100	2,650	3,200
6.50	500	750	1,000	1,250	1,450	1,700	1,950	2,450	2,950
6.80	450	700	950	1,200	1,400	1,650	1,900	2,350	2,800
7.00	450	700	900	1,150	1,350	1,600	1,800	2,300	2,750
7.50	450	650	850	1,050	1,250	1,500	1,700	2,100	2,550
8.00	400	600	800	1,000	1,200	1,400	1,600	2,000	2,400
8.50	400	550	750	950	1,100	1,300	1,500	1,850	2,250
9.00	350	550	700	900	1,050	1,250	1,400	1,750	2,100
9.50	350	500	650	850	1,000	1,150	1,350	1,700	2,000
10.00	300	500	650	800	950	1,100	1,250	1,600	1,900
10.20	300	500	650	800	950	1,100	1,250	1,600	1,900
10.50	300	450	600	750	900	1,050	1,200	1,500	1,800
11.00	300	450	600	700	850	1,000	1,150	1,450	1,750
11.50	300	400	550	700	850	1,000	1,100	1,400	1,700
12.00	250	400	550	650	800	950	1,050	1,350	1,600
12.50	250	400	500	650	800	900	1,000	1,300	1,550
13.00	250	350	500	600	750	850	1,000	1,250	1,450



DIN 338 HSSG N STEEL spiral drills



High-performance drilling tools in the STEEL in HSSG (M2) type for industrial uses.
Fully ground, right-hand turning version with cross grinding.

Materials that can be worked:
- steel, aluminium, brass, bronze, cast, plastics

d_1 [mm]	l_2 [mm]	l_1 [mm]	α	Helix angles β	Type STEEL EAN 4007220		Description
1.00	12	34	118°	25–30°	N! 164570	10	SPB DIN 338 HSSG N 1,0 STEEL
1.50	18	40	118°	25–30°	N! 166345	10	SPB DIN 338 HSSG N 1,5 STEEL
1.60	20	43	118°	25–30°	N! 169315	10	SPB DIN 338 HSSG N 1,6 STEEL
2.00	24	49	118°	25–30°	N! 166383	10	SPB DIN 338 HSSG N 2,0 STEEL
2.50	30	57	118°	25–30°	N! 166413	10	SPB DIN 338 HSSG N 2,5 STEEL
3.00	33	61	118°	25–30°	N! 166536	10	SPB DIN 338 HSSG N 3,0 STEEL
3.10	36	65	118°	25–30°	N! 166550	10	SPB DIN 338 HSSG N 3,1 STEEL
3.30	36	65	118°	25–30°	N! 166581	10	SPB DIN 338 HSSG N 3,3 STEEL
3.40	39	70	118°	25–30°	N! 166888	10	SPB DIN 338 HSSG N 3,4 STEEL
3.50	39	70	118°	25–30°	N! 166895	10	SPB DIN 338 HSSG N 3,5 STEEL
3.60	39	70	118°	25–30°	N! 166901	10	SPB DIN 338 HSSG N 3,6 STEEL
4.00	43	75	118°	25–30°	N! 166949	10	SPB DIN 338 HSSG N 4,0 STEEL
4.10	43	75	118°	25–30°	N! 166956	10	SPB DIN 338 HSSG N 4,1 STEEL
4.20	43	75	118°	25–30°	N! 166994	10	SPB DIN 338 HSSG N 4,2 STEEL
4.40	47	80	118°	25–30°	N! 167007	10	SPB DIN 338 HSSG N 4,4 STEEL
4.50	47	80	118°	25–30°	N! 167014	10	SPB DIN 338 HSSG N 4,5 STEEL
5.00	52	86	118°	25–30°	N! 167021	10	SPB DIN 338 HSSG N 5,0 STEEL
5.10	52	86	118°	25–30°	N! 167038	10	SPB DIN 338 HSSG N 5,1 STEEL
5.20	52	86	118°	25–30°	N! 167045	10	SPB DIN 338 HSSG N 5,2 STEEL
5.30	52	86	118°	25–30°	N! 167052	10	SPB DIN 338 HSSG N 5,3 STEEL
5.50	57	93	118°	25–30°	N! 167069	10	SPB DIN 338 HSSG N 5,5 STEEL
6.00	57	93	118°	25–30°	N! 167076	10	SPB DIN 338 HSSG N 6,0 STEEL
6.50	63	63	118°	25–30°	N! 167083	10	SPB DIN 338 HSSG N 6,5 STEEL
6.80	69	109	118°	25–30°	N! 167090	10	SPB DIN 338 HSSG N 6,8 STEEL
7.00	69	109	118°	25–30°	N! 167106	10	SPB DIN 338 HSSG N 7,0 STEEL
7.50	69	109	118°	25–30°	N! 167113	10	SPB DIN 338 HSSG N 7,5 STEEL
8.00	75	117	118°	25–30°	N! 167120	10	SPB DIN 338 HSSG N 8,0 STEEL
8.50	75	117	118°	25–30°	N! 167137	10	SPB DIN 338 HSSG N 8,5 STEEL
9.00	75	125	118°	25–30°	N! 167151	10	SPB DIN 338 HSSG N 9,0 STEEL
9.50	81	125	118°	25–30°	N! 167168	10	SPB DIN 338 HSSG N 9,5 STEEL
10.00	87	133	118°	25–30°	N! 167175	10	SPB DIN 338 HSSG N 10,0 STEEL
10.20	87	133	118°	25–30°	N! 167182	5	SPB DIN 338 HSSG N 10,2 STEEL
10.50	87	133	118°	25–30°	N! 167199	5	SPB DIN 338 HSSG N 10,5 STEEL
11.00	94	142	118°	25–30°	N! 167205	5	SPB DIN 338 HSSG N 11,0 STEEL
11.50	94	142	118°	25–30°	N! 167212	5	SPB DIN 338 HSSG N 11,5 STEEL
12.00	101	151	118°	25–30°	N! 167229	5	SPB DIN 338 HSSG N 12,0 STEEL
12.50	101	151	118°	25–30°	N! 167236	5	SPB DIN 338 HSSG N 12,5 STEEL
13.00	101	151	118°	25–30°	N! 167243	5	SPB DIN 338 HSSG N 13,0 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.
The sturdy plastic box protects the tools from dirt and damage.
The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents:
19 HSS spiral drills,
STEEL in HSSG (M2) type,
dia. 1.0 to 10.0 mm, graduations in 0.5 mm

Materials that can be worked:
- steel, aluminium, brass, bronze, cast, plastics

Type		Description
STEEL 		
EAN 4007220		
N! 168172	1	SET SPB DIN 338 HSSG N 1-10 STEEL 19



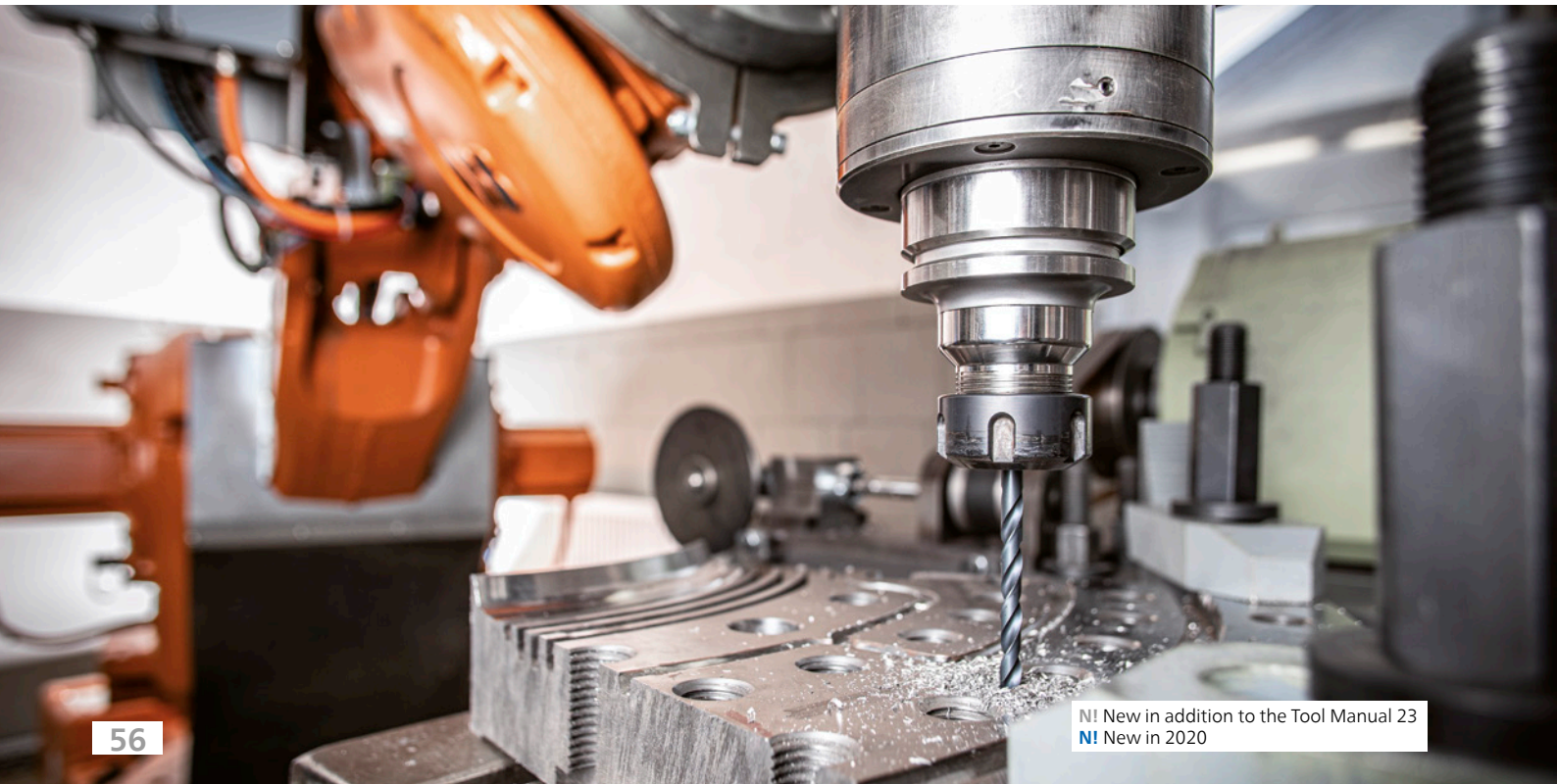
DIN 338 HSSG N STEEL spiral drills, 25-piece set

The set contains 25 HSS spiral drills in the STEEL in HSSG (M2) type for industrial uses.
The sturdy plastic box protects the tools from dirt and damage.
The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents:
25 HSS spiral drills,
STEEL in HSSG (M2) type
dia. 1.0 to 13.0 mm, graduations in 0.5 mm

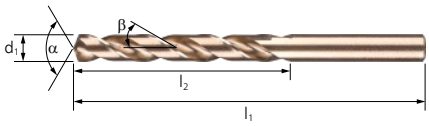
Materials that can be worked:
- steel, aluminium, brass, bronze, cast, plastics

Type		Description
STEEL 		
EAN 4007220		
N! 168189	1	SET SPB DIN 338 HSSG N 1-13 STEEL 25



N! New in addition to the Tool Manual 23
N! New in 2020

DIN 338 HSSE N INOX spiral drills



High-performance drilling tools in the INOX in HSSE-Co5 (M35) type for industrial uses.
Fully ground, right-hand turning version with cross grinding.

Materials that can be worked:
- steel, stainless steel (INOX), aluminium, brass, bronze, cast, titanium, plastics

d_1 [mm]	l_2 [mm]	l_1 [mm]	α	Helix angles β	Type INOX EAN 4007220		Description
1.00	12	34	135°	36°	N! 167267	10	SPB DIN 338 HSSE N 1,0 INOX
1.50	18	40	135°	36°	N! 167274	10	SPB DIN 338 HSSE N 1,5 INOX
1.60	20	43	135°	36°	N! 167281	10	SPB DIN 338 HSSE N 1,6 INOX
2.00	24	49	135°	36°	N! 167298	10	SPB DIN 338 HSSE N 2,0 INOX
2.50	30	57	135°	36°	N! 167304	10	SPB DIN 338 HSSE N 2,5 INOX
3.00	33	61	135°	36°	N! 167311	10	SPB DIN 338 HSSE N 3,0 INOX
3.10	36	65	135°	36°	N! 167328	10	SPB DIN 338 HSSE N 3,1 INOX
3.30	36	65	135°	36°	N! 167342	10	SPB DIN 338 HSSE N 3,3 INOX
3.40	39	70	135°	36°	N! 167366	10	SPB DIN 338 HSSE N 3,4 INOX
3.50	39	70	135°	36°	N! 167380	10	SPB DIN 338 HSSE N 3,5 INOX
3.60	39	70	135°	36°	N! 167403	10	SPB DIN 338 HSSE N 3,6 INOX
4.00	43	75	135°	36°	N! 167410	10	SPB DIN 338 HSSE N 4,0 INOX
4.10	43	75	135°	36°	N! 167441	10	SPB DIN 338 HSSE N 4,1 INOX
4.20	43	75	135°	36°	N! 167465	10	SPB DIN 338 HSSE N 4,2 INOX
4.40	47	80	135°	36°	N! 167670	10	SPB DIN 338 HSSE N 4,4 INOX
4.50	47	80	135°	36°	N! 167694	10	SPB DIN 338 HSSE N 4,5 INOX
5.00	52	86	135°	36°	N! 167717	10	SPB DIN 338 HSSE N 5,0 INOX
5.10	52	86	135°	36°	N! 167724	10	SPB DIN 338 HSSE N 5,1 INOX
5.20	52	86	135°	36°	N! 167731	10	SPB DIN 338 HSSE N 5,2 INOX
5.30	52	86	135°	36°	N! 167748	10	SPB DIN 338 HSSE N 5,3 INOX
5.50	57	93	135°	36°	N! 167755	10	SPB DIN 338 HSSE N 5,5 INOX
6.00	57	93	135°	36°	N! 167762	10	SPB DIN 338 HSSE N 6,0 INOX
6.50	63	101	135°	36°	N! 167779	10	SPB DIN 338 HSSE N 6,5 INOX
6.80	69	109	135°	36°	N! 167786	10	SPB DIN 338 HSSE N 6,8 INOX
7.00	69	109	135°	36°	N! 167984	10	SPB DIN 338 HSSE N 7,0 INOX
7.50	69	109	135°	36°	N! 167991	10	SPB DIN 338 HSSE N 7,5 INOX
8.00	75	117	135°	36°	N! 168028	10	SPB DIN 338 HSSE N 8,0 INOX
8.50	75	117	135°	36°	N! 168035	10	SPB DIN 338 HSSE N 8,5 INOX
9.00	75	125	135°	36°	N! 168042	10	SPB DIN 338 HSSE N 9,0 INOX
9.50	81	125	135°	36°	N! 168059	10	SPB DIN 338 HSSE N 9,5 INOX
10.00	87	133	135°	36°	N! 168073	10	SPB DIN 338 HSSE N 10,0 INOX
10.20	87	133	135°	36°	N! 168080	5	SPB DIN 338 HSSE N 10,2 INOX
10.50	87	133	135°	36°	N! 168097	5	SPB DIN 338 HSSE N 10,5 INOX
11.00	94	142	135°	36°	N! 168103	5	SPB DIN 338 HSSE N 11,0 INOX
11.50	94	142	135°	36°	N! 168110	5	SPB DIN 338 HSSE N 11,5 INOX
12.00	101	151	135°	36°	N! 168127	5	SPB DIN 338 HSSE N 12,0 INOX
12.50	101	151	135°	36°	N! 168141	5	SPB DIN 338 HSSE N 12,5 INOX
13.00	101	151	135°	36°	N! 168165	5	SPB DIN 338 HSSE N 13,0 INOX

N! New in addition to the Tool Manual 23
N! New in 2020



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. The sturdy plastic box protects the tools from dirt and damage. The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents:
19 HSS spiral drills,
INOX in HSSE-Co5 (M35) type,
dia. 1.0 to 10.0 mm, graduations in 0.5 mm

Materials that can be worked:
- steel, stainless steel (INOX), aluminium, brass, bronze, cast, titanium, plastics

Type INOX  EAN 4007220		Description
N! 168196	1	SET SPB DIN 338 HSSE N 1-10 INOX 19



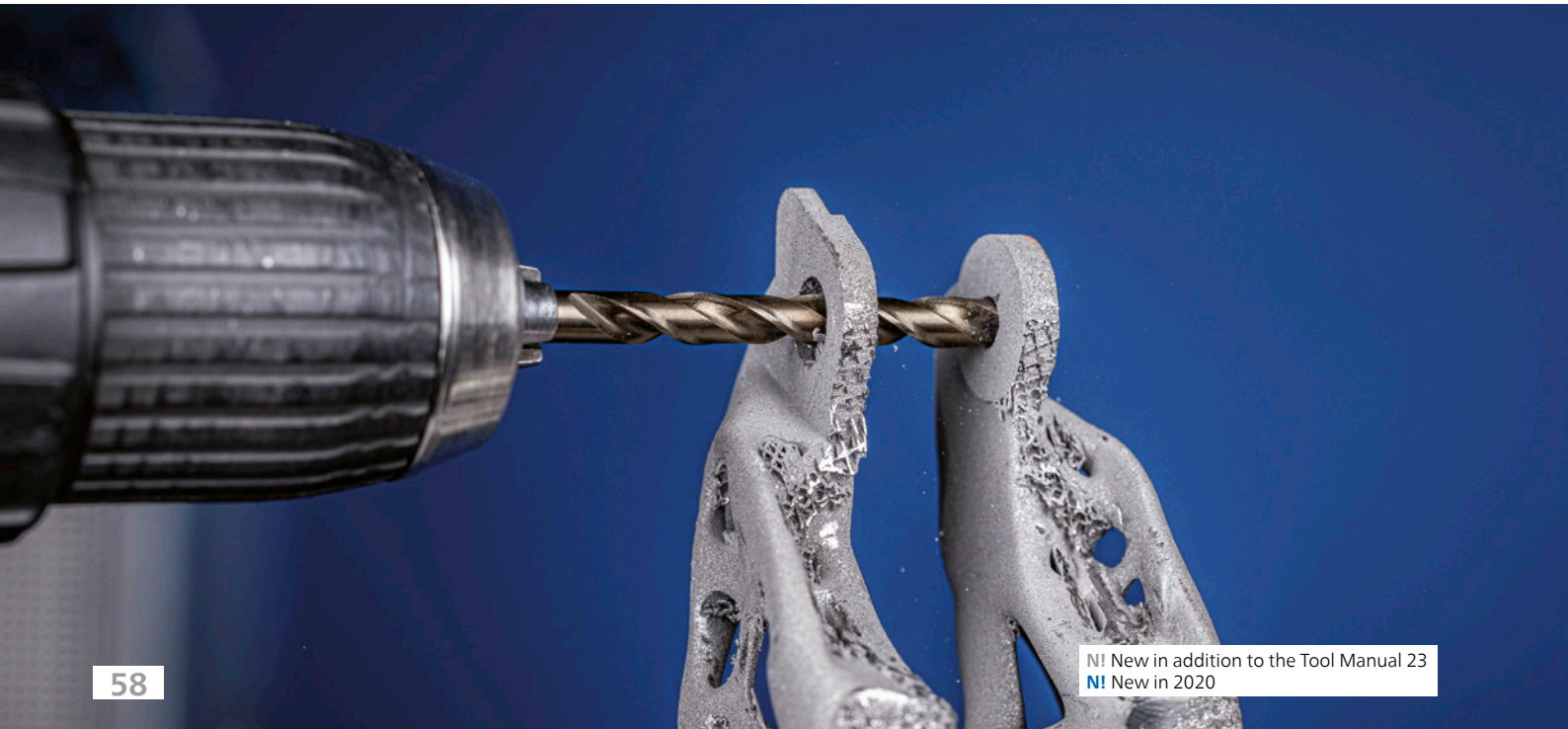
DIN 338 HSSE N INOX spiral drills, 25-piece set

The set contains 25 HSS spiral drills in the INOX in HSSE-Co5 (M35) type for industrial uses. The sturdy plastic box protects the tools from dirt and damage. The securing of the HSS spiral drills facilitates the selection and withdrawal of the tools.

Contents:
25 HSS spiral drills,
INOX in HSSE-Co5 (M35) type
dia. 1.0 to 13.0 mm, graduations in 0.5 mm

Materials that can be worked:
- steel, stainless steel (INOX), aluminium, brass, bronze, cast, titanium, plastics

Type INOX  EAN 4007220		Description
N! 168202	1	SET SPB DIN 338 HSSE N 1-13 INOX 25



N! New in addition to the Tool Manual 23
N! New in 2020

Sturdy high-performance tools for burr-free drilling and deburring of sheet metal, pipes and profiles. Materials up to 4 mm thick can be drilled and deburred easily in a single step. PFERD also offers step drills with a high-quality HICOAT coating. To ensure reliable torque transmission, all step drills have a three-surface shaft.

Advantages:

- Drilling and deburring in a single step.
- Completely smooth running and a high cutting performance.
- The high-quality drill tip ensures effortless centring and drilling.
- The tool taper makes it easier to pull back from drilled plates.
- Chips which do not break are neatly removed as with a spiral drill.
- Built-up edges and cold welding on the blades are prevented.

Materials that can be worked:

- Steel
- Cast steel
- Stainless steel (INOX)
- Non-ferrous metals
- Plastics
- Other materials

Applications:

- Drilling
- Deburring

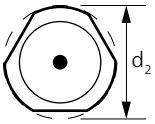
Recommendations for use:

- Use HSS step drills on sheets, pipes and profiles with a maximum thickness of 4 mm.
- Please refer to the table for the recommended rotational speeds.

Matching tool drives:

- Power drills
- Column drills

Safety note:



To ensure reliable torque transmission, step drills have a three-surface shaft.

HSS type



- Use cutting oil/compressed air as a coolant and lubricant in the case of step drills without a coating.

HSS HICOAT HC-FEP type



- Step drills with a HICOAT coating can also be used without the addition of coolants.
- Particularly suitable for work on stainless steel (INOX).



2

Recommended rotational speed range [RPM]

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

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

❶ Material group			❷ Type	❸ 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	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, titaniumium/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 drills
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

❹ Step dia. [mm]	❺ Cutting speeds [m/min]		
	10	20	30
	Rotational speeds [RPM]		
4.00	800	1,600	2,400
5.00	640	1,280	1,920
6.00	530	1,060	1,600
7.00	460	920	1,400
8.00	400	800	1,200
9.00	350	700	1,060
10.00	320	640	960
11.00	290	580	880
12.00	270	540	820
14.00	230	460	700
15.00	210	420	640
16.00	200	400	600
18.00	180	360	540
20.00	160	320	480
21.00	150	300	460
22.00	140	280	420
24.00	130	260	400
26.00	120	240	360
27.00	120	240	360
28.00	110	220	340
30.00	100	200	300
33.00	90	180	280
34.00	90	180	280
36.00	90	180	280
37.00	90	180	280
39.00	80	160	240

HSS step drills

HSS step drills for drilling and deburring thin sheets, pipes and profiles made from various materials. To ensure reliable torque transmission, all step drills have a three-surface shaft.



Drill bit dia. range [mm]	No. of drill steps	d_2 [mm]	l_1 [mm]	Type HSS  EAN 4007220		Description
4–12	9	6	65	N! 165867	1	STB HSS 04-12/6
4–20	9	8	75	N! 165874	1	STB HSS 04-20/8
4–30	14	10	100	N! 165881	1	STB HSS 04-30/10
4–39	13	10	107	N! 165898	1	STB HSS 04-39/10
6–37	12	10	100	N! 165904	1	STB HSS 06-37/10

HSS step drills, 3-piece set

The set includes 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. To ensure reliable torque transmission, all step drills have a three-surface shaft.

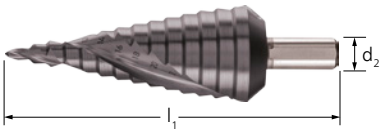
The sturdy plastic box protects the tools from dirt and damage. The securing of the HSS step drills facilitates the selection and withdrawal of the tools.



Contents [pcs.]	Type HSS  EAN 4007220		Description
3	N! 166109	1	SET STB HSS 3



N! New in addition to the Tool Manual 23
N! New in 2020



HSS step drills with HICOAT coating HC-FEP

HSS step drills with premium HICOAT coating HC-FEP are wear resistant and versatile as they can be used to process steel, stainless steel (INOX), non-ferrous metals, thermoplastics and duroplastics. To ensure reliable torque transmission, all step drills have a three-surface shaft.

Step drills with a HICOAT coating HC-FEP provide good high-temperature hardness and resistance to oxidation. They can therefore also be used on hard materials without the addition of coolants.

Drill bit dia. range [mm]	No. of drill steps	d_2 [mm]	l_1 [mm]	Type HC-FEP EAN 4007220		Description
4–12	9	6	65	**N!** 166031	1	STB HSS 04-12/6 HC-FEP
4–20	9	8	75	802755	1	STB HSS 04-20/8 HC-FEP
4–30	14	10	100	802762	1	STB HSS 04-30/10 HC-FEP
4–39	13	10	107	**N!** 166079	1	STB HSS 04-39/10 HC-FEP
6–37	12	10	100	**N!** 166086	1	STB HSS 06-37/10 HC-FEP

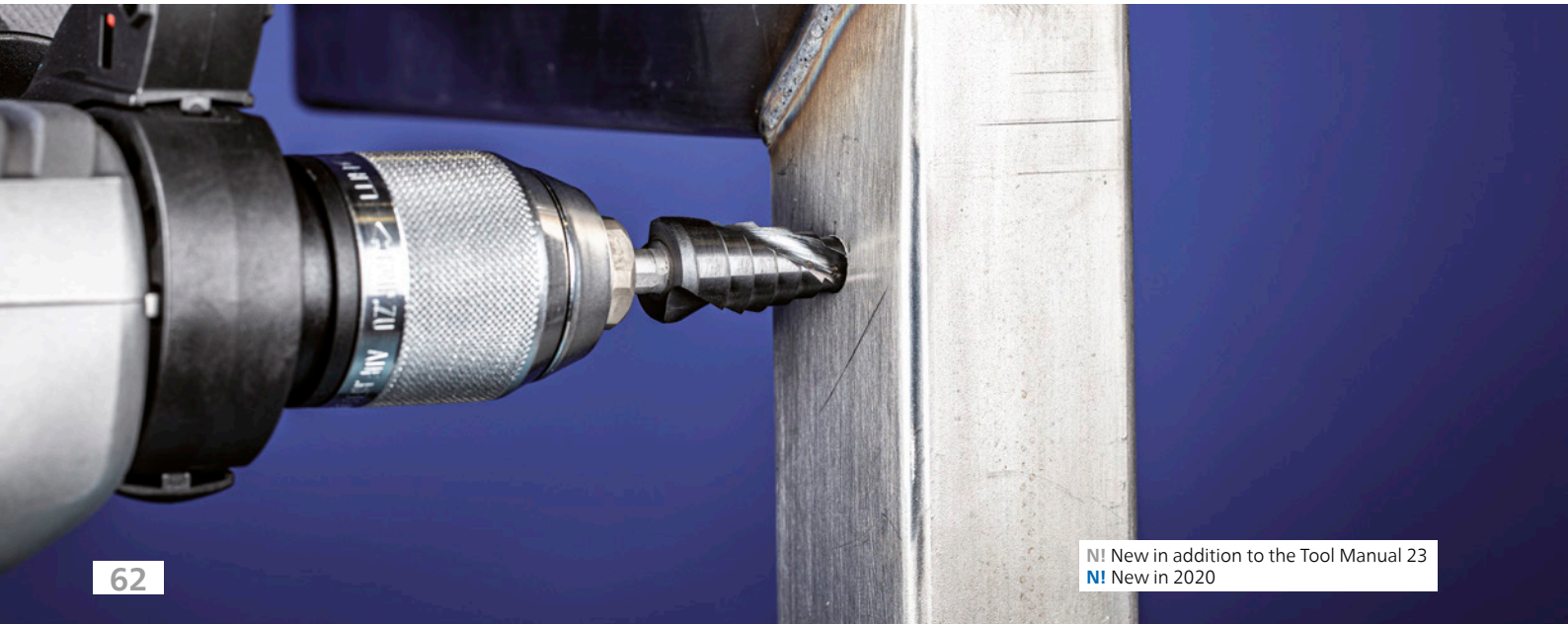


HSS step drills with HICOAT coating HC-FEP, 3-piece set

The set includes three 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. To ensure reliable torque transmission, all step drills have a three-surface shaft.

The sturdy plastic box protects the tools from dirt and damage. The securing of the HSS step drills facilitates the selection and withdrawal of the tools.

Contents [pcs.]	Type HC-FEP EAN 4007220		Description
3	**N!** 166123	1	SET STB HSS HC-FEP 3



N! New in addition to the Tool Manual 23
N! New in 2020

Conical countersinks from PFERD are characterized by their particularly sharp right-hand blades that are able to achieve very good results, even at low cutting speeds. The various types allow for countersinking and deburring when machining various types of materials, even in industrial environments. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

PFERD also offers conical countersinks with a premium HICOAT coating. Tapered countersinks with a HICOAT coating provide good high-temperature hardness and resistance to oxidation. They can therefore also be used on hard materials without the addition of coolants.

Advantages:

- Very high stock removal rate and optimum chip removal.
- Burr-free results, even with low cutting speeds.
- Long tool life.
- High surface quality of the workpiece.

Materials that can be worked:

- Steel
- Cast steel
- Stainless steel (INOX)
- Non-ferrous metals
- Cast iron
- Plastics
- Other materials

Applications:

- Chamfering
- Deburring
- Countersinking

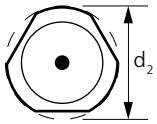
Recommendations for use:

- Select the appropriate type depending on the countersink angle required and the material to be machined.
- Use cutting oil or compressed air as a coolant and lubricant.
- Please refer to the table for the recommended rotational speeds.

Matching tool drives:

- Power drills
- Column drills
- Machine tools
- Robot

Safety note:



To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

HSS countersinks 90°



- Particularly well suited for producing countersinks for 90° screws.

HSS countersinks 60°



- Particularly well suited for countersinking and deburring.

HSS type



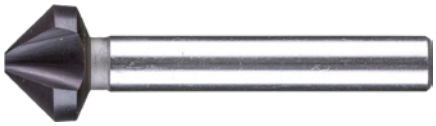
- HSS countersink that is suitable for universal use on almost all materials.

HSS E Co5 (M35) type



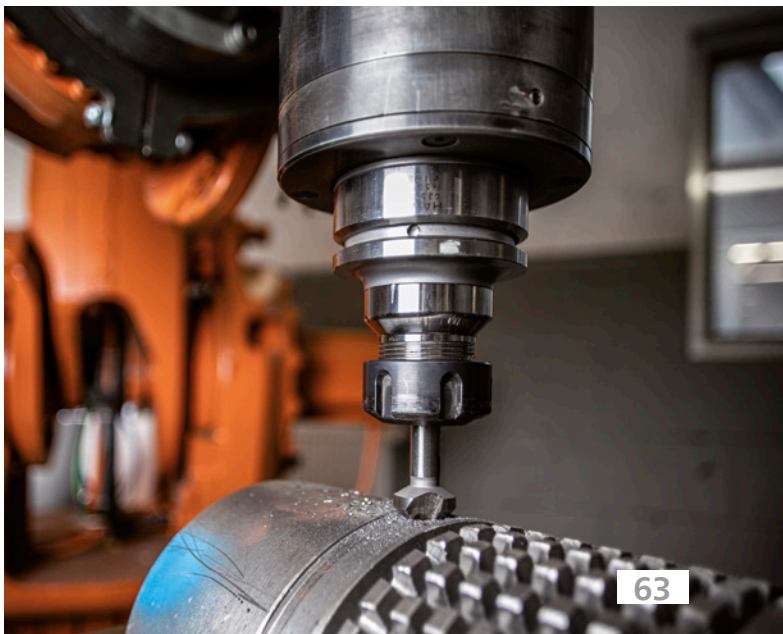
- HSS countersink that is suitable for universal use on almost all materials.
- Long tool life.
- Very good temperature resistance due to Co content.

HSS HICOAT HC-FEP type



- HSS countersink that is suitable for universal use on almost all materials.
- Very long tool life thanks to premium HICOAT coating.
- Can also be used without coolants and lubricants.





2

Recommended rotational speed range [RPM]

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

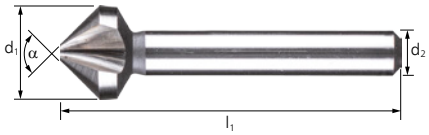
To determine the recommended rotational speed range [RPM], please proceed as follows:
❹ Select the required diameter.
❺ The cutting speed range and the diameter determine the recommended rotational speed range.

❶ Material group			❷ Type	❸ 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, alloyed steels	HSS HSSE Co5 HICOAT HC-FEP	15–20 m/min
	Alloyed construction steels over 700 N/mm²	Tool steels, tempering steels, alloyed steels, cast steel	HSSE Co5 HICOAT HC-FEP	10–15 m/min
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	HSS HSSE Co5 HICOAT HC-FEP	10–15 m/min
Non-ferrous metals	Soft non-ferrous metals	Aluminium alloys, brass, copper, zinc	HSS HSSE Co5 HICOAT HC-FEP	15–20 m/min
	Hard non-ferrous metals	Bronze, titaniumium/titanium alloys, hard aluminium alloys (high Si content)	HSSE Co5 HICOAT HC-FEP	10–20 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 cast iron EN-GJMB (GTS)	HSS HSSE Co5 HICOAT HC-FEP	10 m/min
Plastics, other materials	Fibre-reinforced thermoplastics and duroplastics, hard rubber, wood		HSS HSSE Co5 HICOAT HC-FEP	10–15 m/min

Example:
Conical countersink
KES HSS DIN 335 90°,
countersink dia. 28.0 mm.
Steels up to 700 N/mm².
Cutting speed: 15–20 m/min
Rotational speed range: 170–220 RPM

❹ Countersink dia. [mm]	❺ 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	200	300	390
16.50	190	290	380
19.00	170	260	340
20.00	160	240	320
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

HSS DIN 335 C 90° conical countersinks



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. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	l_1 [mm]	α	Type HSS  EAN 4007220		Description
4.30	4.00	40	90°	N! 164617	1	KES HSS DIN 335 C90° 4,3
5.00	4.00	40	90°	N! 166352	1	KES HSS DIN 335 C90° 5,0
5.30	4.00	40	90°	N! 166369	1	KES HSS DIN 335 C90° 5,3
6.00	5.00	45	90°	N! 166376	1	KES HSS DIN 335 C90° 6,0
6.30	5.00	45	90°	N! 166390	1	KES HSS DIN 335 C90° 6,3
7.00	6.00	50	90°	N! 166406	1	KES HSS DIN 335 C90° 7,0
8.00	6.00	50	90°	N! 166468	1	KES HSS DIN 335 C90° 8,0
8.30	6.00	50	90°	N! 166475	1	KES HSS DIN 335 C90° 8,3
10.00	6.00	50	90°	N! 166505	1	KES HSS DIN 335 C90° 10,0
10.40	6.00	50	90°	N! 166598	1	KES HSS DIN 335 C90° 10,4
11.50	8.00	56	90°	N! 166666	1	KES HSS DIN 335 C90° 11,5
12.40	8.00	56	90°	N! 166673	1	KES HSS DIN 335 C90° 12,4
15.00	10.00	60	90°	N! 166703	1	KES HSS DIN 335 C90° 15,0
16.50	10.00	60	90°	N! 166765	1	KES HSS DIN 335 C90° 16,5
19.00	10.00	63	90°	N! 166772	1	KES HSS DIN 335 C90° 19,0
20.50	10.00	63	90°	N! 166789	1	KES HSS DIN 335 C90° 20,5
23.00	10.00	67	90°	N! 166833	1	KES HSS DIN 335 C90° 23,0
25.00	10.00	67	90°	N! 166840	1	KES HSS DIN 335 C90° 25,0
28.00	12.00	71	90°	N! 166857	1	KES HSS DIN 335 C90° 28,0
31.00	12.00	71	90°	N! 166864	1	KES HSS DIN 335 C90° 31,0
37.00	12.00	90	90°	N! 166871	1	KES HSS DIN 335 C90° 37,0
40.00	15.00	80	90°	N! 166918	1	KES HSS DIN 335 C90° 40,0

HSS DIN 335 C 90° conical countersink sets



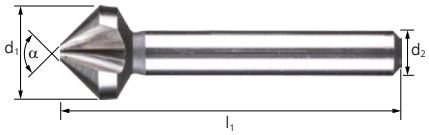
The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for all common materials such as steel, cast steel and non-ferrous metals. The sturdy plastic box protects the tools from dirt and damage.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

Ordering notes:
- Select the set depending on the number of types required.

Contents [pcs.]	Contents tool dia. [mm]	Type HSS  EAN 4007220		Description
3	6.3 / 10.4 / 16.5	N! 168523	1	SET KES HSS DIN 335 C90° 3
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	N! 168585	1	SET KES HSS DIN 335 C90° 5
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	N! 168691	1	SET KES HSS DIN 335 C90° 6

N! New in addition to the Tool Manual 23
N! New in 2020



HSSE DIN 335 C 90° conical countersinks, Co5 type

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). To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm. Long tool life and temperature-resistant type due to Co content.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	l_1 [mm]	α	Type HSSE  EAN 4007220		Description
4.30	4.00	40	90°	N! 167250	1	KES HSSE DIN 335 C90° 4,3
5.00	4.00	40	90°	N! 167335	1	KES HSSE DIN 335 C90° 5,0
5.30	4.00	40	90°	N! 167359	1	KES HSSE DIN 335 C90° 5,3
6.00	5.00	45	90°	N! 167373	1	KES HSSE DIN 335 C90° 6,0
6.30	5.00	45	90°	N! 167397	1	KES HSSE DIN 335 C90° 6,3
8.00	6.00	50	90°	N! 167427	1	KES HSSE DIN 335 C90° 8,0
8.30	6.00	50	90°	N! 167434	1	KES HSSE DIN 335 C90° 8,3
10.00	6.00	50	90°	N! 167458	1	KES HSSE DIN 335 C90° 10,0
10.40	6.00	50	90°	N! 167472	1	KES HSSE DIN 335 C90° 10,4
11.50	8.00	56	90°	N! 167687	1	KES HSSE DIN 335 C90° 11,5
12.40	8.00	56	90°	N! 168004	1	KES HSSE DIN 335 C90° 12,4
15.00	10.00	60	90°	N! 168035	1	KES HSSE DIN 335 C90° 15,0
16.50	10.00	60	90°	N! 168134	1	KES HSSE DIN 335 C90° 16,5
19.00	10.00	63	90°	N! 168219	1	KES HSSE DIN 335 C90° 19,0
20.50	10.00	63	90°	N! 168226	1	KES HSSE DIN 335 C90° 20,5
23.00	10.00	67	90°	N! 168233	1	KES HSSE DIN 335 C90° 23,0
25.00	10.00	67	90°	N! 168240	1	KES HSSE DIN 335 C90° 25,0
28.00	12.00	71	90°	N! 168257	1	KES HSSE DIN 335 C90° 28,0
31.00	12.00	71	90°	N! 168264	1	KES HSSE DIN 335 C90° 31,0



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

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). Long tool life and temperature-resistant type due to Co content. The sturdy plastic box protects the tools from dirt and damage.

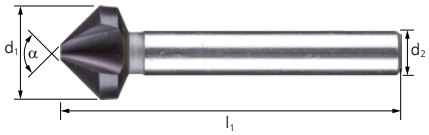
Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

Ordering notes:
- Select the set depending on the number of types required.

Contents [pcs.]	Contents tool dia. [mm]	Type HSSE  EAN 4007220		Description
3	6.3 / 10.4 / 16.5	N! 168714	1	SET KES HSSE DIN 335 C90° 3
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	N! 168738	1	SET KES HSSE DIN 335 C90° 5
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	N! 168745	1	SET KES HSSE DIN 335 C90° 6

N! New in addition to the Tool Manual 23
N! New in 2020

HSS DIN 335 C 90° conical countersinks with HICOAT coating HC-FEP



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. To ensure reliable torque transmission, conical countersinks have a three-surface shaft from a countersink diameter of 28 mm. Thanks to the HICOAT coating HC-FEP, they have high hardness and wear resistance. They are very temperature resistant and have a particularly long tool life. They can also be used in a higher cutting speed range and without coolants and lubricants.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	l_1 [mm]	α	Type HC-FEP  EAN 4007220		Description
6.30	5.00	45	90°	N! 073728	1	KES HSS DIN 335 C90° HC-FEP 6,3
8.30	6.00	50	90°	N! 168295	1	KES HSS DIN 335 C90° HC-FEP 8,3
10.40	6.00	50	90°	N! 168301	1	KES HSS DIN 335 C90° HC-FEP 10,4
12.40	8.00	56	90°	N! 168318	1	KES HSS DIN 335 C90° HC-FEP 12,4
15.00	10.00	60	90°	N! 168325	1	KES HSS DIN 335 C90° HC-FEP 15,0
16.50	10.00	60	90°	N! 168356	1	KES HSS DIN 335 C90° HC-FEP 16,5
19.00	10.00	63	90°	N! 168387	1	KES HSS DIN 335 C90° HC-FEP 19,0
20.50	10.00	63	90°	N! 168417	1	KES HSS DIN 335 C90° HC-FEP 20,5
23.00	10.00	67	90°	N! 168455	1	KES HSS DIN 335 C90° HC-FEP 23,0
25.00	10.00	67	90°	N! 168462	1	KES HSS DIN 335 C90° HC-FEP 25,0
31.00	12.00	71	90°	N! 168479	1	KES HSS DIN 335 C90° HC-FEP 31,0

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



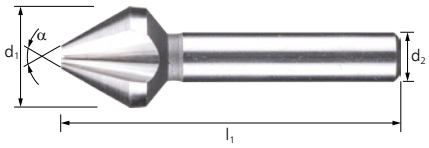
The sets include high-performance countersink tools with a countersink angle of 90° for countersinking 90° screws for particularly tough and hard materials such as alloyed and high-strength steel and stainless steel (INOX). Thanks to the HICOAT coating HC-FEP, they have high hardness and wear resistance. They are very temperature resistant and have a particularly long tool life. They can also be used in a higher cutting speed range and without coolants and lubricants. The sturdy plastic box protects the tools from dirt and damage.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

Ordering notes:
- Select the set depending on the number of types required.

Contents [pcs.]	Contents tool dia. [mm]	Type HC-FEP  EAN 4007220		Description
3	6.3 / 10.4 / 16.5	N! 168752	1	SET KES HSS DIN 335 C90° 3 HC-FEP
5	6.3 / 10.4 / 16.5 / 20.5 / 25.0	N! 168769	1	SET KES HSS DIN 335 C90° 5 HC-FEP
6	6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5	N! 168776	1	SET KES HSS DIN 335 C90° 6 HC-FEP

N! New in addition to the Tool Manual 23
N! New in 2020

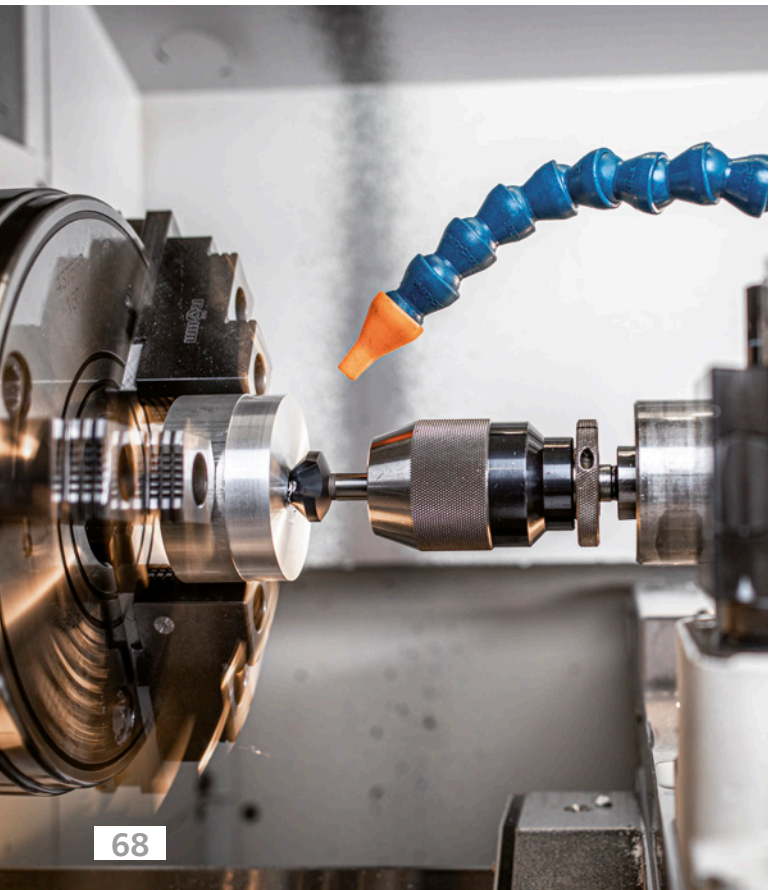


HSS DIN 334 C 60° conical countersinks

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

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	l_1 [mm]	α	Type HSS  EAN 4007220		Description
6.30	5.00	45	60°	**N!** 168783	1	KES HSS DIN 334 C60° 6,3
8.00	6.00	50	60°	**N!** 168790	1	KES HSS DIN 334 C60° 8,0
10.00	6.00	50	60°	**N!** 168806	1	KES HSS DIN 334 C60° 10,0
12.50	8.00	56	60°	**N!** 168813	1	KES HSS DIN 334 C60° 12,5
16.00	10.00	63	60°	**N!** 168837	1	KES HSS DIN 334 C60° 16,0
20.00	10.00	67	60°	**N!** 168844	1	KES HSS DIN 334 C60° 20,0
25.00	10.00	71	60°	**N!** 168851	1	KES HSS DIN 334 C60° 25,0





N! New in addition to the Tool Manual 23
N! New in 2020

High-performance flat countersinks made from HSS according to DIN 373 for countersinking cylinder head and hexagon screws as well as nuts. Flat countersinks have a cylindrical design. The cylindrical pin in the relevant quality grades of fine, medium or tapping hole ensures coaxial alignment of the countersink to the bore.

Advantages:

- Very high stock removal rate.
- Optimum chip removal.
- Burr-free results.
- Long tool life.
- Smooth operation.
- Good surface quality.

Materials that can be worked:

- Steel
- Cast steel
- Stainless steel (INOX)
- Non-ferrous metals
- Cast iron
- Plastics
- Other materials

Applications:

- Produce flat countersinks in the quality grades fine (F), medium (M) and tapping hole (GKL).

Recommendations for use:

- Please observe the recommended rotational speed.

Matching tool drives:

- Power drills
- Column drills
- Machine tools
- Robot

Quality grade fine (F)



- Flat countersinks with the quality grade of fine are suitable for producing flat countersinks at through holes or blind holes in the tolerance range of 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 of 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.



2

Recommended rotational speed range [RPM]

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

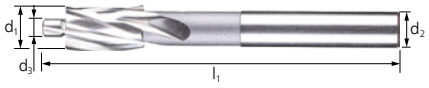
To determine the recommended rotational speed range [RPM], please proceed as follows:
❹ Select the required diameter.
❺ The cutting speed range and the diameter determine the recommended rotational speed range.

❶ Material group			❷ Type	❸ 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	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, titaniumium/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 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

❹ Countersink dia. [mm]	❺ 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 DIN 373 flat countersink quality grade fine for through hole



High-performance countersink tools for through holes with the quality grade fine (F) according to ISO 273.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	d_3 [mm]	l_1 [mm]	Type F  EAN 4007220		Description
6	5	3.2	71	**N!** 168868	1	FLS HSS DIN 373 6,0 F
8	5	4.3	71	**N!** 168912	1	FLS HSS DIN 373 8,0 F
10	8	5.3	80	**N!** 168929	1	FLS HSS DIN 373 10,0 F
11	8	6.4	80	**N!** 168936	1	FLS HSS DIN 373 11,0 F
15	12.5	8.4	100	**N!** 168943	1	FLS HSS DIN 373 15,0 F
18	12.5	10.5	100	**N!** 168950	1	FLS HSS DIN 373 18,0 F
20	12.5	13.0	100	**N!** 168981	1	FLS HSS DIN 373 20,0 F

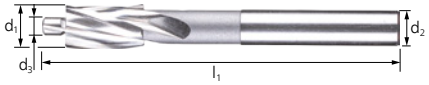
HSS DIN 373 flat countersink quality grade medium for through hole



High-performance countersink tools for through holes with the quality grade medium (M) according to ISO 273.

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	d_3 [mm]	l_1 [mm]	Type M  EAN 4007220		Description
6	5	3.4	71	**N!** 169025	1	FLS HSS DIN 373 6,0 M
8	5	4.5	71	**N!** 169087	1	FLS HSS DIN 373 8,0 M
10	8	5.5	80	**N!** 169100	1	FLS HSS DIN 373 10,0 M
11	8	6.6	80	**N!** 169124	1	FLS HSS DIN 373 11,0 M
15	12.5	9.0	100	**N!** 169155	1	FLS HSS DIN 373 15,0 M
18	12.5	11.0	100	**N!** 169162	1	FLS HSS DIN 373 18,0 M
20	12.5	13.5	100	**N!** 169179	1	FLS HSS DIN 373 20,0 M



HSS DIN 373 flat countersinks for tapping hole

High performance countersink tools with guide pins for the tapping hole (GKL).

Materials that can be worked:
- steel, cast steel, stainless steel (INOX), non-ferrous metals, cast iron, plastics, other materials

d_1 [mm]	d_2 [mm]	d_3 [mm]	l_1 [mm]	Type GKL  EAN 4007220		Description
6	5.0	2.5	71	**N!** 169186	1	FLS HSS DIN 373 6,0 GKL
8	5.0	3.3	71	**N!** 169193	1	FLS HSS DIN 373 8,0 GKL
10	8.0	4.2	80	**N!** 169209	1	FLS HSS DIN 373 10,0 GKL
11	8.0	5.0	80	**N!** 169216	1	FLS HSS DIN 373 11,0 GKL
15	12.5	6.8	100	**N!** 169223	1	FLS HSS DIN 373 15,0 GKL
18	12.5	8.5	100	**N!** 169278	1	FLS HSS DIN 373 18,0 GKL
20	12.5	10.2	100	**N!** 169308	1	FLS HSS DIN 373 20,0 GKL



N! New in addition to the Tool Manual 23
N! New in 2020

Grinding wheel dresser



Ideal accessory for PFERD bench grinding wheels if the wheel is clogged or its shape has changed.

The dressing roller consists of hardened steel discs with U-shaped teeth. Wave washers between the tooth discs make the tooth roller stable and robust. For high peripheral speeds, the dresser has a spindle with an integrated grease fitting to guarantee a long tool life.

Overall length [mm]	Roll width [mm]	Roll dia. [mm]	EAN 4007220	Max. wheel dia. [mm]	Max. wheel thickness [mm]		Description
435	39	55	N! 138700	500	63	1	AR 55x39x12

Replacement roller



The replaceable roller for the grinding wheel dresser AR 55x39x12 can be used until the teeth are worn.

Roll width [mm]	Roll dia. [mm]	EAN 4007220		Description
39	55	N! 138717	1	ER 55x39x12

Replacement spindle



The greaseable spindle for the grinding wheel dresser AR 55x39x12 is a spare part if the axle does become worn.

Roll width [mm]	Axis dia. [mm]	EAN 4007220		Description
39	12	N! 138724	1	EA 12x39

Grinding wheel dresser



The SiC grinding wheel dresser is a low-cost alternative for dressing bench grinding wheels. A stainless steel tube protects the SiC rod from breaking, making the tool more robust.

Overall length [mm]	Dia. [mm]	EAN 4007220		Description
250	22	N! 138731	1	AR 22x250



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range
COMBICLICK fibre discs CC-FS

The wide range of COMBICLICK fibre discs offers the best tool for any grinding application, from coarse to fine.

Advantages:

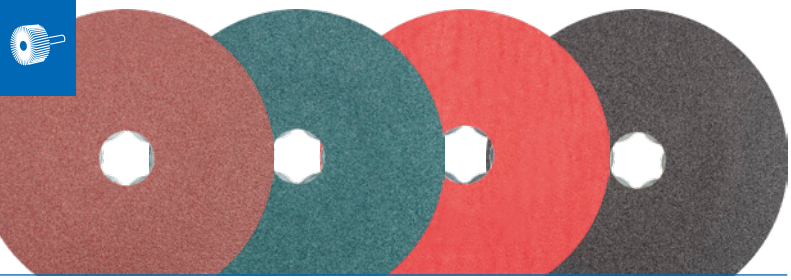
- Innovative quick-mounting system guarantees convenient handling and cool grinding.
- High profitability thanks to long tool life and very high stock removal rate.
- Consistent surface finish thanks to high-quality abrasives.

Applications:

- Levelling
- Deburring
- Surface work
- Work on edges
- Work on weld seams
- Step-by-step fine grinding

Recommendations for use:

- Use COMBICLICK fibre discs with COMBICLICK backing pads on commercially available angle grinders.
- Use grinding oil which is suitable for the material in order to considerably increase the tool life and abrasive performance of the tools. More detailed information and ordering data for grinding oils can be found in our Tool Manual 23, catalogue section 4, page 155.
- For particularly flexible performance when face-down grinding, use fibre discs with a diameter of 125 mm.



Matching tool drives:

- Angle grinders
- Cordless angle grinders

Ordering notes:

- Please order COMBICLICK backing pads separately. More detailed information and ordering data for backing pads can be found on page 76.
- When ordering, please state the EAN or the full description.
- **Ordering example:**
  EAN 4007220**217986**
  CC-FS 125 CO-ALU **60**
- **Ordering example explanation:**
  CC-FS = COMBICLICK fibre disc
  125 = Outer diameter D [mm]
  CO = Abrasive
  ALU = Bond type
  60 = Grit size

Safety notes:

- The maximum permitted peripheral speed is 80 m/s.
- For safety reasons, the specified maximum permitted rotational speed must never be exceeded.



Accessories:

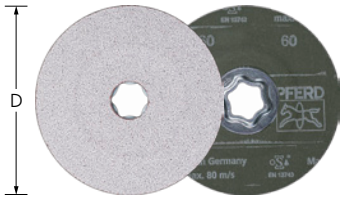
- COMBICLICK backing pads

The fast way to the best tool

Material group ▼		Abrasive ▶	Aluminium oxide A	Zirconia Alumina Z	Ceramic oxide grain CO	VICTO-GRAIN	VICTO-GRAIN COOL	Silicon carbide SiC	Aluminium oxide A-COOL	Ceramic oxide grain CO-COOL	Ceramic oxide grain CO-ALU
Steel, cast steel	Non-hardened, non-heat-treated steels	Construction steels, carbon steels, tool steels, non-alloyed steels, cast steel	●	○	●	●	○				
	Hardened, heat-treated steels	Tool steels, tempering steels, alloyed steels, cast steel	○	●	●	●	○				
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels		○		○	●		●	●	
Non-ferrous metals	Soft non-ferrous metals, non-ferrous metals	Soft aluminium alloys	○						●	○	●
		Brass, copper, zinc	○	○	○						●
	Hard non-ferrous metals	Hard aluminium alloys	○	○	○			○			●
		Bronze, titanium		○	○		●	●		●	
	High-temperature-resistant materials	Nickel-based and cobalt-based alloys		○	○		●			●	
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 cast iron EN-GJMB (GTS)	●	○	●	●					
Plastics, other materials		Fibre-reinforced plastics, thermoplastics, wood, chipboard, paintwork	●					●			

● = Highly suitable ○ = Suitable

Ceramic oxide grain CO-ALU type



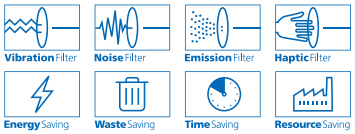
For aggressive grinding with an excellent stock removal rate for machining non-ferrous metals. Consistently high performance due to self-sharpening ceramic oxide grain.

Adhesion-reducing additives in the coating significantly reduce the chip adhesion and therefore reduce clogging of the fibre discs.

Abrasive:
Ceramic oxide grain CO-ALU

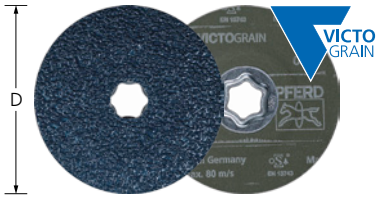
Ordering notes:
- Please complete the description with the desired grit size.

PFERDVALUE:



D [mm]	Grit size 36	Grit size 60	Grit size 80	Max. RPM		Description
	EAN 4007220					
115	N! 217931	N! 217955	N! 217962	13,300	25	CC-FS 115 CO-ALU ...
125	N! 217979	N! 217986	N! 217993	12,200	25	CC-FS 125 CO-ALU ...

VICTOGRAIN type



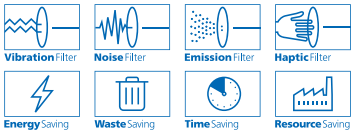
For extremely aggressive grinding with an extremely high tool life and an outstanding stock removal rate on steel and hard materials.

Outstanding, constant high performance thanks to the **VICTO**GRAIN abrasive grain.

Abrasive:
VICTOGRAIN

Recommendations for use:
- Use powerful angle grinders.

PFERDVALUE:



D [mm]	EAN 4007220	Max. RPM		Description
100	N! 176245	15,300	25	CC-FS 100 VICTOGRAIN 36
115	N! 176290	13,300	25	CC-FS 115 VICTOGRAIN 36
125	N! 176320	12,200	25	CC-FS 125 VICTOGRAIN 36
180	N! 176368	8,500	25	CC-FS 180 VICTOGRAIN 36



N! New in addition to the Tool Manual 23
N! New in 2020





New in the PFERD product range
COMBICLICK backing pads



CC-GT, CC-H-GT types

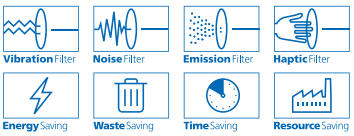
With these backing pads, COMBICLICK tools can be used on commercially available angle grinders.
The different hardnesses are colour-coded:
CC-GT (medium) = black
CC-H-GT (hard) = blue

Advantages:
- The geometry of the cooling slots significantly reduces the thermal load.
- High economic efficiency due to minimized tool change times.

Recommendations for use:
- Type CC-H-GT is mainly used to work on stainless steel (INOX). It features very high edge strength, which enables a higher contact pressure.

Safety notes:
- The maximum peripheral speed is 80 m/s.
- For backing pads with a diameter of 180 mm, do not apply too high a contact pressure in order to prevent the backing pad from overstretching.

PFERDVALUE:



4

Suitable for CC dia. [mm]	Thread	Hardness	Suitable for machine types	EAN 4007220	Max. RPM		Description
100	M10	medium	Angle grinders 100, spindle M10	836200	15,300	1	CC-GT 100 M10
115, 125	M14	medium	Angle grinders 115 / 125, spindle M14	725764	13,300	1	CC-GT 115-125 M14
	5/8	medium	Angle grinders 115 / 125, spindle 5/8"	725771	13,300	1	CC-GT 115-125 5/8
	M14	hard	Angle grinders 115 / 125, spindle M14	835869	13,300	1	CC-H-GT 115-125 M14
	5/8	hard	Angle grinders 115 / 125, spindle 5/8"	841419	13,300	1	CC-H-GT 115-125 5/8
125	M14	medium	Angle grinders 125, spindle M14	N! 223413	12,200	1	CC-GT 125 M14
	5/8	medium	Angle grinders 125, spindle 5/8"	N! 223468	12,200	1	CC-GT 125 5/8
	M14	hard	Angle grinders 125, spindle M14	N! 223451	12,200	1	CC-H-GT 125 M14
	5/8	hard	Angle grinders 125, spindle 5/8"	N! 223475	12,200	1	CC-H-GT 125 5/8
180	M14	medium	Angle grinders 180, spindle M14	725788	8,500	1	CC-GT 180 M14
	5/8	medium	Angle grinders 180, spindle 5/8"	725795	8,500	1	CC-GT 180 5/8



N! New in addition to the Tool Manual 23
N! New in 2020

The wide range of fibre discs offers the best tool for any grinding application, from coarse to fine.
PFERD fibre discs are manufactured in compliance with ISO 16057 in shape A1, type F, under the designation "vulcanized fibre disc".

Advantages:

- High profitability thanks to long tool life and very high stock removal rate.
- Consistent surface finish thanks to high-quality abrasives.
- Optimum adaptation to contours thanks to high flexibility.

Applications:

- Levelling
- Deburring
- Surface work
- Work on edges
- Work on weld seams
- Step-by-step fine grinding

Recommendations for use:

- Use fibre discs conforming to ISO 15636 with backing pads on commercially available angle grinders.
- Use grinding oil which is suitable for the material in order to considerably increase the tool life and abrasive performance of the tools.More detailed information and ordering data for grinding oils can be found in our Tool Manual 23, catalogue section 4, page 155.

Matching tool drives:

- Angle grinders
- Cordless angle grinders

Ordering notes:

- Please order backing pads separately. More detailed information and ordering data for backing pads can be found in our Tool Manual 23, catalogue section 4, page 24.
- When ordering, please state the EAN or the full description.
- **Ordering example:**
  EAN 4007220**218884**
  FS 115-22 CO-ALU **60**
- **Ordering example explanation:**
  FS = Fibre disc
  115 = Outer diameter D [mm]
  22 = Centre hole diameter H [mm]
  CO = Abrasive
  ALU = Bond type
  60 = Grit size

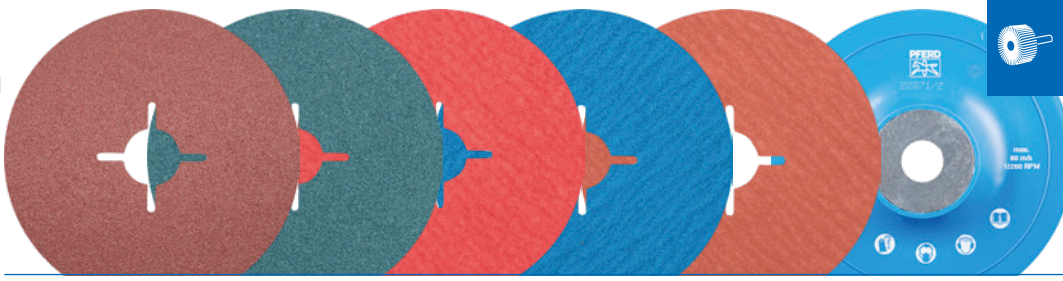
Safety notes:

- The maximum permitted peripheral speed is 80 m/s.
- For safety reasons, the specified maximum permitted rotational speed must never be exceeded.



Accessories:

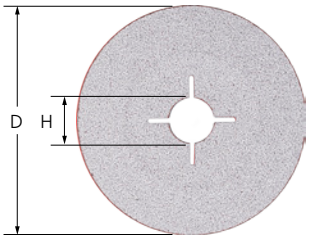
- Backing pads



The fast way to the best tool

Material group ▼		Abrasive ▶	Alu-minium oxide A	Zirco-nia Alu-mina Z	Ceramic oxide grain CO	VICTO-GRAIN	VICTO-GRAIN COOL	Alu-minium oxide A-COOL	Zirco-nia Alu-mina Z-COOL	Ceramic oxide grain CO-COOL	Ceramic oxide grain CO-ALU
Steel, cast steel	Non-hardened, non-heat-treated steels	Construction steels, carbon steels, tool steels, non-alloyed steels, cast steel	●	○	●	●	○				
	Hardened, heat-treated steels	Tool steels, tempering steels, alloyed steels, cast steel	○	●	●	●	○				
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels		○		○	●	●	●	●	
Non-ferrous metals	Soft non-ferrous metals, non-ferrous metals	Soft aluminium alloys	○					●	○	○	●
		Brass, copper, zinc	○	○	○						●
	Hard non-ferrous metals	Hard aluminium alloys	○	○	○						●
		Bronze, titanium		○	○		●		●	●	
	High-temper-ature-resistant materials	Nickel-based and cobalt-based alloys		○	○		●		●	●	
Gusseisen	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 cast iron EN-GJMB (GTS)	●	○	●	●					
Plastics, other materials		Fibre-reinforced plastics, thermoplastics, wood, chipboard, paintwork	●								

● = Highly suitable ○ = Suitable



Ceramic oxide grain CO-ALU type

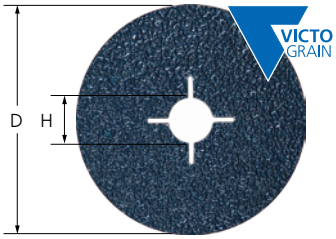
For aggressive grinding with excellent stock removal rate for machining non-ferrous metals. Consistently high performance due to self-sharpening ceramic oxide grain.

Adhesion-reducing additives in the coating significantly reduce the chip adhesion and therefore reduce clogging of the fibre discs.

Abrasive:
Ceramic oxide grain CO-ALU

Ordering notes:
- Please complete the description with the desired grit size.

D [mm]	H [mm]	Grit size			Max. RPM		Description
		36	60	80			
		EAN 4007220					
100	16	N! 218839	N! 218846	N! 218853	15,300	25	FS 100-16 CO-ALU ...
115	22	N! 218860	N! 218884	N! 218891	13,300	25	FS 115-22 CO-ALU ...
125	22	N! 218907	N! 218945	N! 218983	12,200	25	FS 125-22 CO-ALU ...
180	22	N! 219003	N! 219058	N! 219065	8,500	25	FS 180-22 CO-ALU ...



VICTOGRAIN type

For extremely aggressive grinding with an extremely high tool life and an outstanding stock removal rate on steel and hard materials.

Outstanding, constant high performance thanks to the **VICTO**GRAIN abrasive grain.

Abrasive:
VICTOGRAIN

D [mm]	H [mm]	EAN 4007220	Max. RPM		Description
100	16	N! 176191	15,300	25	FS 100-16 VICTOGRAIN 36
115	22	N! 176207	13,300	25	FS 115-22 VICTOGRAIN 36
125	22	N! 176214	12,200	25	FS 125-22 VICTOGRAIN 36
180	22	N! 176238	8,500	25	FS 180-22 VICTOGRAIN 36



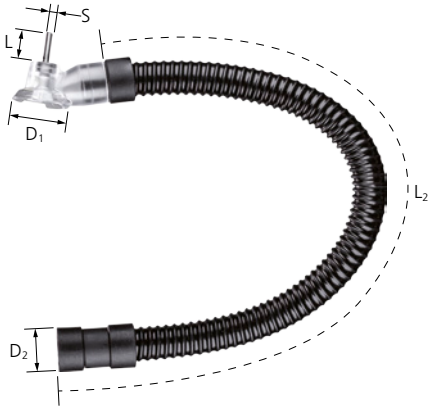




N! New in addition to the Tool Manual 23
N! New in 2020

DUST REMOVER

With the COMBIDISC DUST REMOVER, grinding dust can be extracted very effectively from places where something is ground. It can be universally used with all dust extraction systems (portable or stationary). The DUST REMOVER can be used with CD and CDR backing pads.



Advantages:
- Clean work environment with less dust.
- Compatible with all drive systems.
- Flexible tube for easy accessibility.

Recommendations for use:
- To guarantee effective extraction, the volumetric flow rate has to be at least 300 m^3/h.
- Reducing the rotational speed increases the effectiveness of extraction.

Matching tool drives:
- Flexible shaft drives
- Straight grinders
- Angle grinders
- Cordless angle grinders

Ordering notes:
- Please order arbors or COMBIDISC abrasive disc holders separately.
  More detailed information and ordering data can be found in our Tool Manual 23, catalogue section 4, page 43.
- When ordering, please state the EAN or the full description.

Safety notes:
- The maximum permitted peripheral speed is 50 m/s.
- For safety reasons, the specified maximum permitted rotational speed must never be exceeded.



Accessories:
- CD and CDR abrasive disc holders with a diameter of 50 mm or 75 mm.

D_1 [mm]	S [mm]	L [mm]	Thread	D_2 [mm]	L_2 [mm]	EAN 4007220	Suitable arbors		Description
50	6	27	1/4-20 UNC	37	600	N! 158074	CD/CDR 50	1	CD DUST REMOVER CD-DR 50
75	6	27	1/4-20 UNC	37	600	N! 158081	CD/CDR 75	1	CD DUST REMOVER CD-DR 75



For more detailed information about the COMBIDISC product range, please refer to our brochure "COMBIDISC grinding tools" at www.pferd.com.



Fine grinding and polishing tools can be found at www.pferd.com.



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range
Belts for pneumatic drums

The comprehensive range of pneumatic drum belts offers the best solutions for many applications, from aggressive grinding to fine grinding and also for polishing.

Advantages:

- Excellent economic efficiency due to high abrasive performance and long tool life.
- High tear strength with optimum flexibility.
- The rubber tube of the grinding drum yields flexibly under higher contact pressure, which reduces heat build-up and wear of the abrasive belts.

Applications:

- Structuring surfaces
- Polishing
- Step-by-step fine grinding

Recommendations for use:

- Short belts of the non-woven type perform best at a recommended cutting speed of 5–15 m/s.

Matching tool drives:

- Drum grinders

Ordering notes:

- Please complete the description with the desired grit size.

Safety notes:

- Observe the safety notes "Safety notes for the correct use of abrasive belts" provided by the German Abrasives Association (VDS). You can find this information at www.pferd.com.

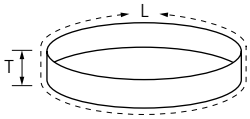


Accessories:

- Pneumatic drum







Aluminium oxide A compact grain type

Outstandingly suited to fine and very fine grinding, and for step-by-step preparations for polishing.

The self-sharpening compact grain facilitates a very long tool life and achieves consistent surface roughness throughout the entire tool life.

Abrasive:
Aluminium oxide A compact grain

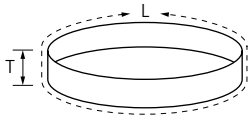
Ordering notes:
- Please complete the description with the desired grit size.

L [mm]	T [mm]	Grit size										Description
		120	180	240	320	400	600	800	1000	1200		
		EAN 4007220										
282	100	N! 149447	N! 149836	N! 149843	N! 149850	N! 149867	N! 149874	N! 149881	N! 149898	N! 149904	5	BA 100/282 A ... CK

N! New in addition to the Tool Manual 23
N! New in 2020

Zirconia alumina Z type





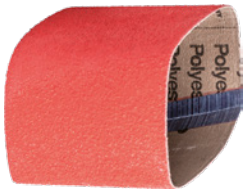
For coarse grinding work with a high stock removal rate and a long tool life.

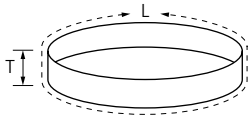
Abrasive:
Zirconia alumina Z

Ordering notes:
- Please complete the description with the desired grit size.

L [mm]	T [mm]	Grit size				Description
		40	60	80		
		EAN 4007220				
282	100	N! 149416	N! 149423	N! 149430	5	BA 100/282 Z ...

Ceramic oxide grain CO-COOL type





For aggressive grinding with the highest stock removal rates on hard materials which do not conduct heat well. Consistently high performance due to self-sharpening ceramic oxide grain.

Active grinding additives in the coating substantially improve the stock removal rate, prevent clogging and result in cooler grinding.

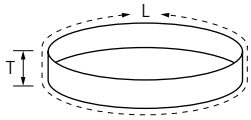
Abrasive:
Ceramic oxide grain CO-COOL

Ordering notes:
- Please complete the description with the desired grit size.

L [mm]	T [mm]	Grit size				Description
		40	60	80	120	
		EAN 4007220				
282	100	N! 149300	N! 786307	N! 788295	N! 786314	5	BA 100/282 CO-COOL ...

Non-woven type





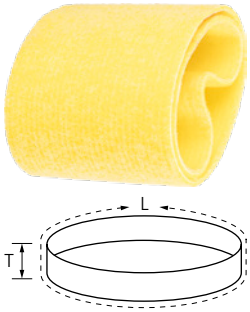
Suitable for universal work on surfaces such as metal constructions, e.g. removal of rough grinding traces, removal of oxidation and light deburring work. Achieve matt and satin-finished surfaces.

Abrasive:
Aluminium oxide A
Available POLIVLIES grit sizes:
100 G = coarse (yellow-brown)
180 M = medium (red-brown)
240 F = fine (blue)

Recommendations for use:
- For the best results, use at a recommended cutting speed of 5–15 m/s.

Ordering notes:
- Please complete the description with the desired grit size.

L [mm]	T [mm]	Grit size			Description
		100 G	180 M	240 F	
		EAN 4007220			
282	100	N! 146415	N! 146422	N! 146910	2	VB 100/282 A ...



Felt type

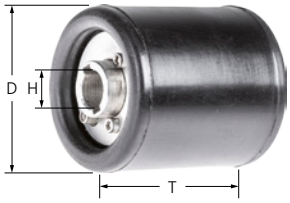
Suitable for polishing with polishing paste bars and grinding pastes on large surfaces.

Recommendations for use:
- For the polishing process, apply pre-polishing and high-gloss polishing successively.
- When changing the polishing paste, also replace the polishing belt in order not to introduce any contaminants from the previous work step.
- For the best results, use at a recommended cutting speed of 5–15 m/s.

Accessories:
- Grinding and polishing pastes

L [mm]	T [mm]	EAN 4007220		Description
282	100	N! 146408	2	P-BA 100/282

Pneumatic drum



Pneumatic drum

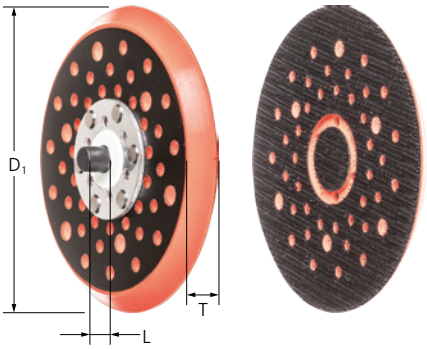
The pneumatic grinding drum is suitable for short belts with a width of 100 mm and a length of 282 mm. The rubber tube of the grinding drum yields under higher contact pressure, which is why the abrasive belt adapts very well to the surface to be machined and the contact area increases.

Suitable for short belts [mm]	D [mm]	T [mm]	H [mm]	EAN 4007220	Max. RPM		Description
100 x 282	90	100	19	N! 158142	3,800	1	PSW 90x100



N! New in addition to the Tool Manual 23
N! New in 2020

Velcro-backed abrasive disc holder



Grinding dust can be extracted very effectively thanks to multiple holes in the velcro-backed abrasive disc holder. It can be used on many different eccentric orbital sanders with a 5/16" thread. This backing pad offers special advantages when used with velcro-backed abrasive discs of the NET type.

Advantages:
- Clean work environment with less dust.
- Versatile thanks to multiple holes.
- Compatible with many eccentric orbital sanders and velcro-backed abrasive discs.
- Extremely strong and durable hook-and-loop fastening system.

Recommendations for use:
- Using the protective pad for KSS-PP velcro-backed abrasive disc holders is recommended in order to increase the tool life of the backing pad.

Matching tool drives:
- Eccentric orbital sanders

Ordering notes:
- When ordering, please state the EAN or the full description.

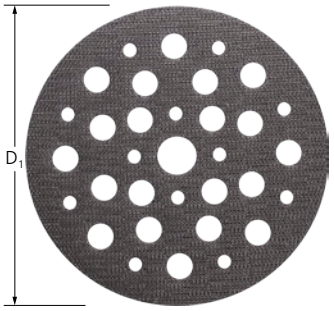
Safety notes:
- Read the safety notes of the drive system.



Accessories:
- Protective pad for KSS-PP velcro-backed abrasive disc holders

D_1 [mm]	T [mm]	L [mm]	Thread	EAN 4007220	Suitable for velcro-backed abrasive disc dia. [mm]		Description
125	10	9	5/16 -24 UNF	N! 158098	125	1	KSS-H 125-5/16
150	10	9	5/16 -24 UNF	N! 158104	150	1	KSS-H 150-5/16

Protective pad for velcro-backed abrasive disc holders



This protective pad protects backing pads against premature wear and can be universally used for all velcro-backed abrasive disc backing pads. Thanks to multiple holes in the protective pad for velcro-backed abrasive disc holders, grinding dust can be extracted very effectively.

Advantages:
- Protects backing pads against premature wear.
- Clean work environment with less dust.
- Versatile thanks to multiple holes.
- Compatible with many eccentric orbital sanders and velcro-backed abrasive discs.
- Extremely strong and durable hook-and-loop fastening system.

Recommendations for use:
- Replace this protective pad in good time to increase the tool life of the backing pad.

Matching tool drives:
- Eccentric orbital sanders

Ordering notes:
- When ordering, please state the EAN or the full description.

Safety notes:
- Read the safety notes of the drive system.



Accessories:
- Velcro-backed abrasive disc holder

D_1 [mm]	EAN 4007220	Suitable for velcro-backed abrasive disc dia. [mm]		Description
125	N! 158111	125	5	KSS-PP 125
150	N! 158128	150	5	KSS-PP 150

New in the PFERD product range
Flexible sanding sticks

Flexible sanding sticks are very well suited for machining components with lots of contours, hard-to-reach areas and narrow slots. They are excellently suited for use in engine construction and turbine construction as well as in tool and mould-making. The range consists of an extensive selection of grits from grit size 80 to 1,000, meaning that different surface qualities from rough to very fine can be successively achieved.



Advantages:

- Highly flexible, enabling optimum adjustment to the contour.

Materials that can be worked:

- Can be used on nearly all materials.

Applications:

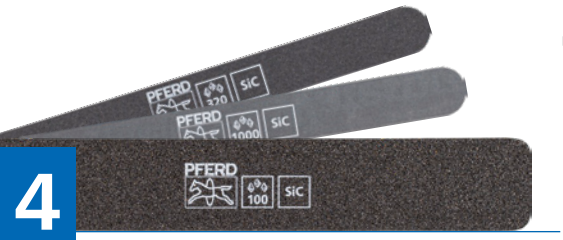
- Roughening
- Deburring
- Surface work
- Step-by-step fine grinding

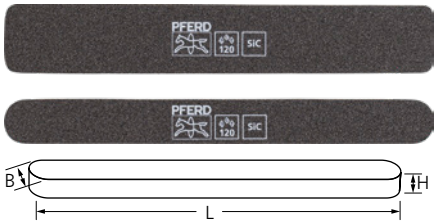
Recommendations for use:

- Use the flexible sanding sticks with moderate pressure.
- They are optimally suited if only SiC is approved for machining, for example for drive parts in the aviation industry.

Ordering notes:

- When ordering, please state the EAN or the full description.
- **Ordering example:**
  EAN 4007220**172896**
  SF-R 180-19-5 SiC **80**
- **Ordering example explanation:**
  SF-R = Sanding stick with radius
  180-19-5 = Dimensions
  SiC = Abrasive
  80 = Grit size





Flexible sanding sticks SF/SF-R

For machining components with lots of contours, hard-to-reach areas and narrow slots.

Abrasive:
Silicon carbide SiC

Ordering notes:
- Please complete the description with the desired grit size.

L x B x H [mm]	Grit size								Description
	80	100	120	180	240	320	1000		
	EAN 4007220								
SF-R – with radius									
147 x 15 x 5	N! 172988	N! 173015	N! 173022	N! 173039	N! 173053	N! 173060	N! 173077	10	SF-R 147-15-5 SiC ...
180 x 19 x 5	N! 172896	N! 172902	N! 172926	N! 172933	N! 172957	N! 172964	N! 172971	10	SF-R 180-19-5 SiC ...
SF – without radius									
180 x 19 x 5	N! 173084	N! 173107	N! 173114	N! 173121	N! 173145	N! 173152	N! 173169	10	SF 180-28-5 SiC ...





N! New in addition to the Tool Manual 23
N! New in 2020

POLINOX unitized wheels PNER and unitized discs PNER consist of multiple heavily compressed, non-woven layers, which are bonded together by a special grain/resin system.

This particular bond results in non-woven products with a very good surface finish, high stock removal rate and long tool life. These properties are particularly apparent when deburring, blending, finishing and polishing soft metals, alloyed and high-alloy steels, in addition to titanium alloys.



Four different types are available:

Type	Colour code	Properties
Soft	W	Soft variant with outstanding adaptability. At the same time, durability, abrasive performance and very high surface quality are all maintained. Ideally suited to machining contours.
Medium-soft	MW	Medium-soft variant with increased edge strength and extended tool life, for tough blending and polishing applications. Well suited to machining contours.
Medium-hard	MH	Medium-hard variant with increased edge strength and extended tool life, for tough deburring and cleaning applications.
Hard	H	Hard variant with very high stock removal rate, good edge strength and long tool life, for tough deburring and polishing applications.

Comparison table

PFERD PNER				3M	Standard Abrasives	Norton	BIBIELLE
Type	Colour code	Abrasive	Grain				
Soft	W	SiC	Fine	EXL 2S fine	532	UW1-2SF or Nex-2SF	BUH 2SF
		A	Coarse	EXL 2A medium	521	UW1-2AM or Nex-2AM	BUH 2AM
Medium-soft	MW	SiC	Fine	EXL 4S fine or SST 3S fine	632	UW1-4SF	BUH 3SF
		A	Fine	EXL 4A fine or SST 3A fine	631	UW1-4AF	-
Medium-hard	MH	A	Fine	Cut & polish 5A fine or SST 5A fine	731	UW1-6AF or Nex-6AF	-
Hard	H	A	Fine	Cut & polish 7A medium or 9A medium	821	UW1-8AM or Nex-8AM	BUH 6AM
		A	Coarse	Cut & polish 7A coarse or 9A coarse	811	UW1-8AC or Nex-8AC	BUH 8AC



New in the PFERD product range
POLINOX unitized wheels PNER

Advantages:

- High profitability thanks to high abrasive performance and long tool life.
- For achieving very good surface quality standards.
- Perfect adaptation to contours thanks to free profiling.

Applications:

Cleaning
- Universal cleaning before painting.
- Removal of rust, scratches, coatings, heavy scaling, oxide layers of aluminium and heat discolouration.

Deburring
- Deburring of gear components, aircraft wing spars and turbine blade edges.
- Removal of heavy burrs, in addition to moderate blemishes and scratches.
- Edge breaking and rounding.

Blending
- Blending and finishing work on engine blade surfaces, turbine blades and rotor blades.
- Removal of smaller blemishes, scratches and joints on cast workpieces.

Polishing
- Polishing of fillet welds on turbine blades and aircraft parts.
- Polishing of soft metals before the coating process, and of hardened steel when repairing moulds and dies.
- Polishing and finishing of surgical instruments and implants.

Recommendations for use:

- Considerably reduce cutting speed for work on materials with poor heat-conducting properties, e.g. titanium and stainless steel.
- For best performance, use with a recommended cutting speed of 15–35 m/s. This provides an ideal compromise between stock removal rate, surface quality, thermal load on the workpiece and tool wear.

Matching tool drives:

- Flexible shaft drives
- Straight grinders
- Bench grinders

Ordering notes:

- When ordering, please state the EAN or the full description.
- **Ordering example:**
  EAN 4007220**355473**
  PNER-H 7506-6 A G
- **Ordering example explanation:**

PNER	= POLINOX unitized wheels
H	= Type
7506	= Outer diameter D x width T [mm]
6	= Centre hole diameter H [mm]
A	= Abrasive
G	= Grit size

Safety notes:

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

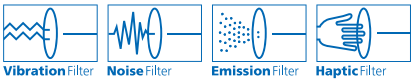


Accessories:

- Arbor for POLINOX unitized wheels

PFERDVALUE:

PFERDERGONOMICS recommends POLINOX unitized wheels PNER to sustainably reduce vibration, noise and dust levels produced by tools and to improve working comfort.





Recommended rotational speed range

Example:
PNER-H 7506-6 A G
Cutting speed: 25 m/s
Rotational speed: 6,300 RPM

Tool dia. [mm]	Cutting speed [m/s]						
	15	20	25	30	32	35	50
	Rotational speeds [RPM]						
25	11,400	15,200	19,000	22,900	24,400	26,700	38,100
50	5,700	7,600	9,500	11,400	12,200	13,300	19,000
75	3,800	5,000	6,300	7,600	8,100	8,900	12,700
100	2,800	3,800	4,700	5,700	6,100	6,600	9,500
115	2,400	3,300	4,100	4,900	5,300	5,800	8,300
125	2,200	3,000	3,800	4,500	4,800	5,300	7,600
150	1,900	2,500	3,100	3,800	4,000	4,400	6,300

PNER type

Type for straight grinders, flexible shafts and bench grinders:
Particularly suitable for work on smaller surfaces.

Type for speed-adjustable angle grinders and fillet weld grinders:
They are especially suitable for work on fillet welds and very hard-to-reach slots or indentations.



Abrasive:
Aluminium oxide A
Silicon carbide SiC

Recommendations for use:
- Grinding wheels with a diameter of 150 mm can also be used on bench grinders, for reworking surgical instruments, for example.

Ordering notes:
- An adapter is included with the 150 x 25 mm diameter grinding wheels, which allows the centre hole diameter to be reduced from 25.4 mm to 20 mm.
- Please complete the description with the desired hardness grade.

PFERDVALUE:
Vibration Filter · Noise Filter · Emission Filter · Haptic Filter

D [mm]	T [mm]	H [mm]	Grit size	Abra-sives	Type W (soft)	Type MW (medium-soft)	Type MH (medium-hard)	Type H (hard)	Opt. RPM	Max. RPM	Suitable arbors		Description
					EAN 4007220								
Type for straight grinders, flexible shafts and bench grinders													
25	25	6	coarse	A	-	-	-	440438	19,000	30,500	BO PNER 25 S6	10	PNER-... 2525-6 A G
			fine	A	-	-	440452	440445	19,000	30,500	BO PNER 25 S6	10	PNER-... 2525-6 A F
50	3	6	fine	A	-	-	-	505700	9,500	15,300	BO 6/6 3-10	10	PNER-... 5003-6 A F
75	3	6	coarse	A	N! 136775	-	-	N! 136812	6,400	10,200	BO 6/6 3-10	10	PNER-... 7503-6 A G
			fine	A	-	-	N! 136805	505717	6,400	10,200	BO 6/6 3-10	10	PNER-... 7503-6 A F
				SiC	N! 136782	N! 136799	-	-	6,400	10,200	BO 6/6 3-10	10	PNER-... 7503-6 SiC F
	6	6	coarse	A	476307	-	-	355473	6,400	10,200	BO 6/6 3-10	5	PNER-... 7506-6 A G
			fine	A	-	355534	355503	-	6,400	10,200	BO 6/6 3-10	5	PNER-... 7506-6 A F
				SiC	355626	355558	-	-	6,400	10,200	BO 6/6 3-10	5	PNER-... 7506-6 SiC F
	13	6	coarse	A	476314	-	-	355480	6,400	10,200	BO 6/6 3-10	5	PNER-... 7513-6 A G
			fine	A	-	355565	355510	-	6,400	10,200	BO 6/6 3-10	5	PNER-... 7513-6 A F
				SiC	476338	355589	-	-	6,400	10,200	BO 6/6 3-10	5	PNER-... 7513-6 SiC F
150	25	25.4	coarse	A	-	-	-	355497	3,200	5,100	BO 12/20 10-50	1	PNER-... 15025-25,4 A G
			fine	A	-	476291	355527	-	3,200	5,100	BO 12/20 10-50	1	PNER-... 15025-25,4 A F
				SiC	355633	355602	-	-	3,200	5,100	BO 12/20 10-50	1	PNER-... 15025-25,4 SiC F
Type for angle grinders and fillet weld grinders													
125	6	22.23	coarse	A	-	-	-	833179	4,500	6,100	-	5	PNER-... 12506-22,2 A G
			fine	A	-	833148	833155	833162	4,500	6,100	-	5	PNER-... 12506-22,2 A F
				SiC	-	833131	-	-	4,500	6,100	-	5	PNER-... 12506-22,2 SiC F
150	3	25.4	fine	A	-	-	-	895733	3,800	5,100	-	5	PNER-... 15003-25,4 A F
				SiC	-	895719	895726	-	3,800	5,100	-	5	PNER-... 15003-25,4 SiC F
	6	25.4	fine	A	-	-	-	895764	3,800	5,100	-	5	PNER-... 15006-25,4 A F
				SiC	895740	895757	-	-	3,800	5,100	-	5	PNER-... 15006-25,4 SiC F

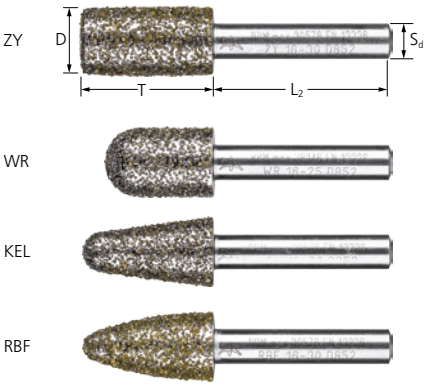






N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range
Diamond grinding points for foundries



Diamond grinding points for grey and nodular cast iron

Diamond grinding points with grit size D 852 are exceptionally well suited to machining grey cast iron and nodular cast iron (GG and GGG or GJL and GJS).

Advantages:
- Outstanding tool life.
- Fast, aggressive grinding with the highest possible stock removal rate.
- Easy and quick elimination of metal contamination thanks to diamond as a super-hard abrasive.
- Low dust load due to the dimensional stability of the grinding tool (no tool wear).

Materials that can be worked:
grey/nodular cast iron (GG/GJL, GGG/GJS)

Applications:
grinding out, weld dressing, deburring

Recommendations for use:
- Dry grinding: 30–50 m/s

Matching tool drives:
flexible shaft drive, straight grinder, stationary machines

PFERDVALUE:
Emission Filter
Energy Saving
Waste Saving
Time Saving
Resource Saving

D x T [mm]	S_d [mm]	L_2 [mm]	Grit size D 852 EAN 4007220		Description
Cylindrical shape ZY					
16.0 x 30	8	40	103708	1	DZY-N 16-30/8 D 852
20.0 x 30	8	40	103753	1	DZY-N 20-30/8 D 852
24.0 x 30	8	40	N! 157435	1	DZY-N 24-30/8 D 852
Cylindrical shape with radius end WR					
10.0 x 20	6	40	097366	1	DWR-N 10-20/6 D 852
12.0 x 25	6	40	097373	1	DWR-N 12-25/6 D 852
16.0 x 25	8	40	097472	1	DWR-N 16-25/8 D 852
20.0 x 30	8	40	N! 157503	1	DWR-N 20-30/8 D 852
24.0 x 30	8	40	N! 157510	1	DWR-N 24-30/8 D 852
Conical shape with radius end KEL					
12.0 x 25	6	40	N! 157541	1	DKEL-N 12-25/6 D 852
16.0 x 30	8	40	097489	1	DKEL-N 16-30/8 D 852
20.0 x 30	8	40	N! 157534	1	DKEL-N 20-30/8 D852
24.0 x 30	8	40	N! 157565	1	DKEL-N 24-30/8 D 852
Tree shape with radius end RBF					
12.0 x 25	6	40	102800	1	DRBF-N 12-25/6 D 852
16.0 x 30	8	40	103692	1	DRBF-N 16-30/8 D 852
20.0 x 30	8	40	N! 157572	1	DRBF-N 20-30/8 D 852



N! New in addition to the Tool Manual 23
N! New in 2020

PSF STEELOX ★★☆☆

Cut-off wheel for steel and stainless steel (INOX) with high cutting performance and long tool life.

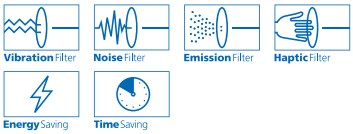


Advantages:
- Universally suitable for steel and stainless steel (INOX).
- Fast work progress thanks to high cutting performance.
- High economic efficiency due to long tool life.
- Thin cut-off wheels are ideal for cordless angle grinders.
- N! Packaging unit of 10 pieces in a handy cardboard box.

Applications:
cutting of sheet metal, profiles and solid material, cutting out holes

Abrasive:
Aluminium oxide A

PFERDVALUE:
Thin cut-off wheels:



Materials that can be worked:
steel, stainless steel (INOX)

D [mm]	T/U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Flat type EHT (shape 41)						
76	0.8	060889	10.0	20,100	25	EHT 76-0,8 PSF STEELOX/10,0
	1.0	060940	10.0	20,100	25	EHT 76-1,0 PSF STEELOX/10,0
105	1.0	098493	16.0	14,500	25	EHT 105-1,0 PSF STEELOX/16,0
115	1.0	560266	22.23	13,300	25	EHT 115-1,0 PSF STEELOX
		N! 152973	22.23	13,300	10	EHT 115-1,0 PSF STEELOX (10)
	1.6	538135	22.23	13,300	25	EHT 115-1,6 PSF STEELOX
	2.4	523025	22.23	13,300	25	EHT 115-2,4 PSF STEELOX
125	1.0	560372	22.23	12,200	25	EHT 125-1,0 PSF STEELOX
		N! 153185	22.23	12,200	10	EHT 125-1,0 PSF STEELOX (10)
	1.6	538142	22.23	12,200	25	EHT 125-1,6 PSF STEELOX
	2.0	667958	22.23	12,200	25	EHT 125-2,0 PSF STEELOX
	2.4	523049	22.23	12,200	25	EHT 125-2,4 PSF STEELOX
150	1.6	581223	22.23	10,200	25	EHT 150-1,6 PSF STEELOX
180	1.6	581230	22.23	8,500	25	EHT 180-1,6 PSF STEELOX
	2.5	523063	22.23	8,500	25	EHT 180-2,5 PSF STEELOX
230	1.9	581216	22.23	6,600	25	EHT 230-1,9 PSF STEELOX
	2.0	702239	22.23	6,600	25	EHT 230-2,0 PSF STEELOX
	2.5	523087	22.23	6,600	25	EHT 230-2,5 PSF STEELOX
Depressed-centre type EH (shape 42)						
100	2.4	523018	16.0	15,300	25	EH 100-2,4 PSF STEELOX/16,0
115	2.4	523032	22.23	13,300	25	EH 115-2,4 PSF STEELOX
125	2.4	523056	22.23	12,200	25	EH 125-2,4 PSF STEELOX
180	2.5	523070	22.23	8,500	25	EH 180-2,5 PSF STEELOX
230	2.5	523094	22.23	6,600	25	EH 230-2,5 PSF STEELOX



N! New in addition to the Tool Manual 23
N! New in 2020

NITOCUT

NITOCUT is the first manual cutting system in the world for a peripheral speed of 100 m/s. The cut-off wheel developed by PFERD is characterized by its top cutting performance and outstanding tool life. The NITOCUT cutting system allows faster working and up to four times more cuts as well as a higher insertion depth than the cut-off wheels common on the market with the dimensions 125 x 1.0 mm. The unique cutting system meets the highest quality and safety standards.



Advantages:

- Ultimate cutting performance and tool life due to significantly increased cutting speed.
- High insertion depth.
- Unique, convenient cutting experience.
- Extremely high cut-off wheel reliability thanks to innovative fibreglass reinforcement.

Recommendations for use:

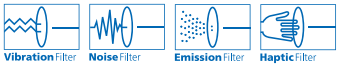
- The 100 m/s cutting system can be used like any conventional angle grinders.

Safety notes:

- Common cut-off wheels achieve a peripheral speed of a maximum of 80 m/s. They must not be used on the NITOCUT angle grinder.
- In order to prevent misuse, the specially produced angle grinder only allows the assembly of NITOCUT cut-off wheels.

PFERDVALUE:

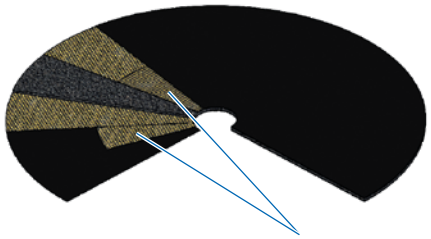
PFERDERGONOMICS recommends the NITOCUT cutting system in order to sustainably reduce the vibration, noise and dust development that result during use and improve working comfort.



PFERDEFFICIENCY recommends the NITOCUT cutting system for working for long periods with low levels of fatigue, whilst saving resources and achieving perfect results as quickly as possible.









Additional fibreglass reinforcement in the flange area

6



INNOVATION

CERAMIC SGP NITOCUT STEELOX ★★★★

High-performance cut-off wheel for steel and stainless steel (INOX) with ultimate cutting performance and an excellent tool life.

Materials that can be worked:
steel, stainless steel (INOX)

Applications:
cutting of large cross sections, cutting of profiles and solid material, cutting of thin sheet metal, cutting out holes

Abrasive:
Ceramic oxide grain CO

PFERDVALUE:
Vibration Filter · Noise Filter · Emission Filter · Haptic Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving



D [mm]	T/U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Flat type EHT (shape 41)						
150	1.6	**N!** 219942	25.4	12,800	25	EHT 150-1,6 CERAMIC SGP NITOCUT STEELOX/25,4

NITOCUT pneumatic angle grinder

Oil

Special features:
- Only suitable for 150 mm NITOCUT cut-off wheels.
- Very powerful turbine motor.
- Constant power delivery due to the centrifugal governor.
- Spindle lock pin for tool change with one key.

Included in delivery:
1/2" female connecting thread, 2 keys, 1 clamping nut, 1 clamping flange, guard, anti-vibration handle.

PWT 26/150 HV NITOCUT

12,000 RPM / 2,600 watts



PFERDVALUE:
Emission Filter · Haptic Filter · Time Saving

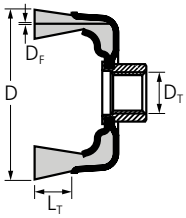
Description	EAN 4007220	Exhaust direction	Throttle type	Air consumption at idling speed [m³/min]	Air consumption under load [m³/min]	Spindle thread	Inner dia. of air supply hose [mm]	Tool mounting [mm]	Net weight [kg]
PWT 26/150 HV NITOCUT	**N!** 224038	bottom	lever	0.90	2.25	M14	16	25.4	2.200

You can find further information on the PWT 26/150 HV NITOCUT angle grinder on page 100.



N! New in addition to the Tool Manual 23
N! New in 2020





TBG

Aggressive brush. Excellent for heavy-duty brushing such as deburring, cleaning and derusting on large surfaces.

Advantages:
- Aggressive brushing effect due to the very stiff wire knots.

Recommendations for use:
- For optimum results, use on powerful angle grinders.

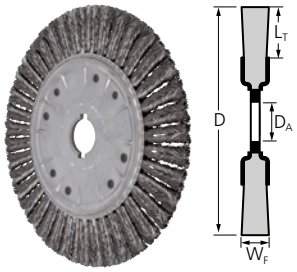
Ordering notes:
- For the 5-piece packaging unit, please specify the description without "POS".
- DIA type brushes are supplied with 1 piece per PU.
- Grit size DIA 270 = D 64, Grit size DIA 400 = D 46

D [mm]	L_T [mm]	D_T	D_F [mm]	Knots [pcs.]	Packaging 1 EAN 4007220	Packaging 5 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)									
65	22	M14x2	0.35	18	153437	955079	6,300–12,500	12,500	POS TBG 65/M14 ST 0,35
			0.50	18	579121	955086	6,300–12,500	12,500	POS TBG 65/M14 ST 0,50
			0.80	18	579138	-	6,300–12,500	12,500	POS TBG 65/M14 ST 0,80
80	20	M14x2	0.50	20	806654	955093	5,000–10,000	10,000	POS TBG 80/M14 ST 0,50
100	25	M14x2	0.50	24	806661	955109	4,500–9,000	9,000	POS TBG 100/M14 ST 0,50
Stainless steel wire (INOX) All INOX brushes are degreased.									
65	22	M14x2	0.35	18	220740	955116	5,000–12,500	12,500	POS TBG 65/M14 INOX 0,35
			0.50	18	598016	955123	5,000–12,500	12,500	POS TBG 65/M14 INOX 0,50
80	20	M14x2	0.35	20	806678	955130	4,000–10,000	10,000	POS TBG 80/M14 INOX 0,35
			0.50	20	003671	003688	4,000–10,000	10,000	POS TBG 80/M14 INOX 0,50
100	25	M14x2	0.35	24	806685	955147	3,600–9,000	9,000	POS TBG 100/M14 INOX 0,35
			0.50	24	003701	003718	3,600–9,000	9,000	POS TBG 100/M14 INOX 0,50
Stainless steel wire (INOX) Diamant (DIA)									
65	22	M14x2	0.50	18	-	N! 160121	1,500– 3,700	12,500	TBG 65/M14 INOX 0,50 DIA 270
100	38	M14x2	0.50	24	-	107881	1,000–2,400	9,000	TBG 100/M14 INOX 0,50 DIA 270
					-	107874	1,000–2,400	9,000	TBG 100/M14 INOX 0,50 DIA 400



N! New in addition to the Tool Manual 23
N! New in 2020

RBG CT, COMBITWIST, stationary





Very aggressive and robust brush that is able to withstand high mechanical loads. Suitable for all heavy-duty stationary and automated brushing, e.g. deburring work.

Advantages:

- Aggressive brushing effect due to the very stiff wire knots.
- Can be used with all common stationary drive systems and bench grinders thanks to the variable arbor hole diameter.
- Maximum economic efficiency due to extremely high tool life as well as increased stock removal.
- High level of comfort thanks to smooth running with no brush recoiling.
- Suitable for work on corners and edges as the knots are less likely to unravel.

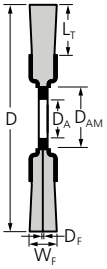
D [mm]	W_F [mm]	L_T [mm]	D_A [mm]	Knots [pcs.]	D_F [mm]	Keyway [mm]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST) – COMBITWIST type										
350	20	56	50.8	80	0.50	6.3 x 12.7	**N!** 223758	700–3,000	3,600	RBG 35020/50,8 CT ST 0,50
380	20	67	50.8	80	0.50	6.3 x 12.7	**N!** 223765	700–3,000	3,600	RBG 38020/50,8 CT ST 0,50



Adapter pair AM 50,8/...:
Reduces the arbor hole diameters to the required dimensions. Suitable for wheel brushes with a brush diameter as from 150 mm in the wide and composite types.

For more information:
Detailed information on accessories can be found in our Tool Manual 23, catalogue section 8.





RBU, slim

Excellent for medium-duty hand-held or automated brushing of workpieces with large surfaces.

Advantages:
- Can be used with all common stationary drive systems and bench grinders thanks to the variable arbor hole diameter.
- Can be packed as wide rollers without gaps because of their special design.
- Highly flexible, enabling optimal adjustment to the workpiece contour.

Ordering notes:
- Please order adapter set AK 32 separately.
- Wheel brushes with arbor hole diameter 31.8 mm can be used with adapter set AK 32.

D [mm]	W_F [mm]	L_T [mm]	D_A [mm]	D_{AM} [mm]	D_F [mm]	Packaging 2	Packaging 1	Opt. RPM	Max. RPM	Description
						EAN 4007220				
Steel wire (ST)										
100	12	24	14.0	-	0.15	597866	-	4,000–6,000	8,000	RBU 10012/14,0 ST 0,15
					0.30	597873	-	4,000–6,000	8,000	RBU 10012/14,0 ST 0,30
125	12	32	14.0	-	0.30	806791	-	4,000–6,000	8,000	RBU 12512/14,0 ST 0,30
150	12	28	22.2	31.8	0.25	530412	-	3,000–4,500	6,000	RBU 15012/22,2 ST 0,25
180	12	43	22.2	31.8	0.30	658734	-	3,000–4,500	6,000	RBU 18012/22,2 ST 0,30
200	16	44	22.2	31.8	0.25	530436	-	3,000–4,500	6,000	RBU 20016/22,2 ST 0,25
250	20	70	22.2	31.8	0.25	530443	-	1,800–2,700	3,600	RBU 25020/22,2 ST 0,25
Stainless steel wire (INOX) All INOX brushes are degreased.										
125	12	32	14.0	-	0.30	806807	-	3,200–5,200	8,000	RBU 12512/14,0 INOX 0,30
150	12	28	22.2	31.8	0.30	597880	-	2,400–3,900	6,000	RBU 15012/22,2 INOX 0,30
180	12	43	22.2	31.8	0.30	658796	-	2,400–3,900	6,000	RBU 18012/22,2 INOX 0,30
200	16	44	22.2	31.8	0.30	597910	-	2,400–3,900	6,000	RBU 20016/22,2 INOX 0,30
250	20	70	22.2	31.8	0.30	597927	-	1,400–2,300	3,600	RBU 25020/22,2 INOX 0,30
Silicon carbide (SiC) plastic filament										
100	12	22	12.0	-	1.00	597903	-	3,200–5,200	8,000	RBU 10012/12,0 SiC 80 1,00
					0.90	220870	-	3,200–5,200	8,000	RBU 10012/12,0 SiC 180 0,90
150	16	32	12.0	31.8	1.00	530467	-	2,400–3,900	8,000	RBU 15016/12,0 SiC 80 1,00
					0.90	220894	-	2,400–3,900	8,000	RBU 15016/12,0 SiC 180 0,90
200	16	32	22.2	31.8	1.00	530474	-	1,800–2,900	4,500	RBU 20016/22,2 SiC 80 1,00
					0.90	220917	-	1,800–2,900	4,500	RBU 20016/22,2 SiC 180 0,90
250	16	38	22.2	31.8	1.00	530481	-	1,400–2,300	3,600	RBU 25016/22,2 SiC 80 1,00
					0.90	220948	-	1,400–2,300	3,600	RBU 25016/22,2 SiC 180 0,90
Ceramic oxide grain (CO) plastic filament										
100	12	22	12.0	-	1.10	837269	-	3,200–5,200	8,000	RBU 10012/12,0 CO 120 1,10
150	16	28	12.0	31.8	1.10	837276	-	2,400–3,900	6,000	RBU 15016/12,0 CO 120 1,10
200	16	38	22.2	31.8	1.10	837283	-	1,800–2,900	4,500	RBU 20016/22,2 CO 120 1,10
Diamond (DIA) plastic filament										
100	12	19	16	-	0.35	-	N! 159293	2,000–5,000	12,000	RBU 10012/16,0 DIA 600 0,35
150	12	29	31.8	-	0.35	-	N! 159859	1,000–3,500	6,000	RBU 15012/31,8 DIA 600 0,35
200	12	38	50.8	-	0.35	-	N! 159866	900–1,500	4,500	RBU 20012/50,8 DIA 600 0,35
Nylon plastic filament										
100	12	22	12.0	-	0.40	899298	-	3,200–5,200	8,000	RBU 10012/12,0 Nylon 0,40
150	16	32	12.0	31.8	0.40	899304	-	3,200–5,200	8,000	RBU 15016/12,0 Nylon 0,40
200	16	32	22.2	31.8	0.40	899311	-	2,400–3,900	6,000	RBU 20016/22,2 Nylon 0,40

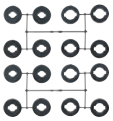


Arbor BO 8/12-14 100-125
(EAN 4007220**107843**): For crimped wheel brushes with a diameter of 100–125 mm and a D_A / D_{AM} of 12 mm and 14 mm.

BO 12/22,2 150-180
(EAN 4007220**107850**):
For knotted and crimped wheel brushes with a diameter of 150–180 mm and a D_A of 22.2 mm.



BO 12/22,2 200
(EAN 4007220**107867**):
For knotted and crimped wheel brushes with a diameter of 200 mm and a D_A of 22.2 mm.



Adapter set AK 32
(EAN 4007220**608593**):
Arbor hole diameters contained in the set in mm (inch): 20 / 18 / 14 / 12 / 25.4 (1) / 22.2 (7/8) / 16 (5/8) / 12.7 (1/2).

For more information:
Detailed information on accessories can be found in our Tool Manual 23, catalogue section 8.

N! New in addition to the Tool Manual 23
N! New in 2020

RBU, wide, universal use

Excellent for medium-duty hand-held or automated brushing of workpieces with large surfaces. Developed for universal use in the workshop.

Advantages:
- Can be used with all common stationary drive systems and bench grinders thanks to the variable arbor hole diameter.

Ordering notes:
- Diameters of 150–250 mm are supplied together with adapter set AK 32-2.
- Diameters of 100–125 mm are supplied with a variable arbor hole.



D [mm]	W_F [mm]	L_T [mm]	D_A [mm]	D_{AM} [mm]	D_F [mm]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)									
100	20	25	12/14/18/22.2/25.4	30.0	0.30	956236	4,000–6,000	8,000	POS RBU 10020/14,0 ST 0,30
	28	25	12/14/18/22.2/25.4	30.0	0.30	956243	4,000–6,000	8,000	POS RBU 10028/14,0 ST 0,30
125	20	30	12/14/18/22.2/25.4	30.0	0.30	956250	3,000–4,500	6,000	POS RBU 12520/14,0 ST 0,30
	28	30	12/14/18/22.2/25.4	30.0	0.30	956274	3,000–4,500	6,000	POS RBU 12528/14,0 ST 0,30
150	25	25	AK 32-2	50.8	0.20	956281	3,000–4,500	6,000	POS RBU 15025/AK32-2 ST 0,20
	25	25	AK 32-2	50.8	0.30	956304	3,000–4,500	6,000	POS RBU 15025/AK32-2 ST 0,30
	38	25	AK 32-2	50.8	0.20	956298	3,000–4,500	6,000	POS RBU 15038/AK32-2 ST 0,20
	38	25	AK 32-2	50.8	0.30	956311	3,000–4,500	6,000	POS RBU 15038/AK32-2 ST 0,30
180	25	40	AK 32-2	50.8	0.20	956335	3,000–4,500	6,000	POS RBU 18025/AK32-2 ST 0,20
	25	40	AK 32-2	50.8	0.30	956342	3,000–4,500	6,000	POS RBU 18025/AK32-2 ST 0,30
	38	40	AK 32-2	50.8	0.30	956359	3,000–4,500	6,000	POS RBU 18038/AK32-2 ST 0,30
200	25	50	AK 32-2	50.8	0.20	956366	2,300–3,400	4,500	POS RBU 20025/AK32-2 ST 0,20
	25	50	AK 32-2	50.8	0.30	956373	2,300–3,400	4,500	POS RBU 20025/AK32-2 ST 0,30
	38	50	AK 32-2	50.8	0.30	956380	2,300–3,400	4,500	POS RBU 20038/AK32-2 ST 0,30
250	30	46	AK 32-2	50.8	0.20	N! 224229	1,400–2,300	3,600	POS RBU 25030/AK32-2 ST 0,20
	30	46	AK 32-2	50.8	0.30	N! 224267	1,400–2,300	3,600	POS RBU 25030/AK32-2 ST 0,30
Stainless steel wire (INOX)									
100	20	25	12/14/18/22.2/25.4	30.0	0.30	956397	3,200–5,200	8,000	POS RBU 10020/14,0 INOX 0,30
	28	25	12/14/18/22.2/25.4	30.0	0.30	956403	3,200–5,200	8,000	POS RBU 10028/14,0 INOX 0,30
125	20	30	12/14/18/22.2/25.4	30.0	0.30	956410	2,400–3,900	6,000	POS RBU 12520/14,0 INOX 0,30
	28	30	12/14/18/22.2/25.4	30.0	0.30	956434	2,400–3,900	6,000	POS RBU 12528/14,0 INOX 0,30
150	25	25	AK 32-2	50.8	0.20	956441	2,400–3,900	6,000	POS RBU 15025/AK32-2 INOX 0,20
	25	25	AK 32-2	50.8	0.30	956465	2,400–3,900	6,000	POS RBU 15025/AK32-2 INOX 0,30
	38	25	AK 32-2	50.8	0.20	956458	2,400–3,900	6,000	POS RBU 15038/AK32-2 INOX 0,20
	38	25	AK 32-2	50.8	0.30	956472	2,400–3,900	6,000	POS RBU 15038/AK32-2 INOX 0,30
180	25	40	AK 32-2	50.8	0.20	956489	2,400–3,900	6,000	POS RBU 18025/AK32-2 INOX 0,20
	25	40	AK 32-2	50.8	0.30	956496	2,400–3,900	6,000	POS RBU 18025/AK32-2 INOX 0,30
	38	40	AK 32-2	50.8	0.30	956502	2,400–3,900	6,000	POS RBU 18038/AK32-2 INOX 0,30
200	25	50	AK 32-2	50.8	0.20	956519	1,800–2,900	4,500	POS RBU 20025/AK32-2 INOX 0,20
	25	50	AK 32-2	50.8	0.30	956526	1,800–2,900	4,500	POS RBU 20025/AK32-2 INOX 0,30
	38	50	AK 32-2	50.8	0.30	956533	1,800–2,900	4,500	POS RBU 20038/AK32-2 INOX 0,30
250	30	46	AK 32-2	50.8	0.20	N! 224298	1,400–2,300	3,600	POS RBU 25030/AK32-2 INOX 0,20
	30	46	AK 32-2	50.8	0.30	N! 224311	1,400–2,300	3,600	POS RBU 25030/AK32-2 INOX 0,30
Silicon carbide (SiC) plastic filament									
150	25	25	AK 32-2	50.8	0.55	069707	2,400–3,900	6,000	POS RBU 15025/AK32-2 SiC 120 0,55
					1.10	069691	2,400–3,900	6,000	POS RBU 15025/AK32-2 SiC 120 1,10
					0.55	069714	2,400–3,900	6,000	POS RBU 15025/AK32-2 SiC 320 0,55
200	25	50	AK 32-2	50.8	1.10	069721	2,400–3,900	6,000	POS RBU 20025/AK32-2 SiC 120 1,10
250	30	46	AK 32-2	50.8	1.10	N! 224328	1,400–2,300	3,600	POS RBU 25030/AK32-2 SiC 120 1,10

Suitable arbors can be found on page 94.

Adapter set AK 32-2 (EAN 4007220**806890**): Arbor hole dia. contained in the set in mm (inch): 31.75 / 20 / 18 / 14 / 12 / 25.4 (1) / 22.2 (7/8) / 19.2 (.750) / 16 (5/8) / 12.7 (1/2).

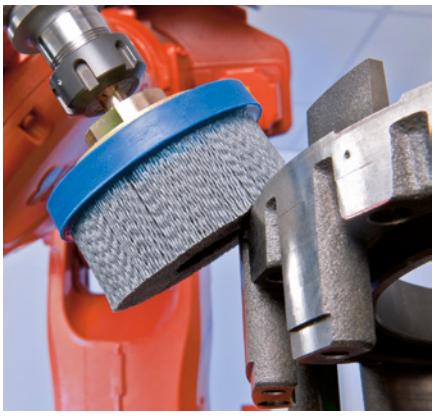
Note: Adapter pairs AM 50,8 for brushes with a D_{AM} of 50.8 mm can be used in applications involving high levels of heat and forces.

N! New in addition to the Tool Manual 23
N! New in 2020

Composite brushes from PFERD have been specifically developed for industrial, automated use. They are suitable for a variety of applications and their variable clamping options mean that they can be used on many different drive systems. This offers the advantage that the workpiece can be produced and finished on the same machine. As a result, labour-intensive, manual work is reduced and reproducible results are achieved with short cycle times.

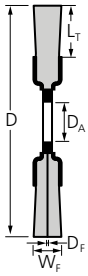
The standard type of composite brushes is suitable for tasks requiring aggressive brushing behaviour. The FLEX type is more flexible than the standard type due to its longer trim length on wheel brushes and the special arrangement of the filament on composite disc brushes, and it is particularly well suited to work on irregular surfaces.

For efficient use, numerous application parameters such as the processing time and feed rate must be coordinated with each other and the suitable brush must be selected. PFERD offers a wide range of products for the various applications. Our experienced sales representatives and technical advisers will be happy to help or visit you. Our worldwide sales addresses can be found at: www.pferd.com



Composite – Wheel brushes, crimped





RBUP

Particularly aggressive brush. Its plastic filament makes this product particularly suitable for deburring complicated components such as cylinder heads or gear toothing. Developed specially for industrial use.

Advantages:
- Long tool life and aggressive brushing effect due to a very high filament density.
- Extremely smooth operation due to even distribution of the filament material.

Recommendations for use:
- Use CO as the filament material for particularly aggressive work and a high workpiece surface quality.
- Select the REC type (rectangular filament) for aggressive work with SiC as the filament material.

Ordering notes:
- Please complete the description with the desired grit size and filament material diameter (D_F).
- Please order adapter pairs APM 50,8 separately.

PFERDVALUE:

Vibration Filter

Time Saving

D [mm]	W_F [mm]	L_T [mm]	D_A [mm]	Grit size / D_F [mm]					Opt. RPM	Max. RPM	IP	Description
				80 1.10	80 1.14	120 0.55	120 1.10	320 0.55				
				EAN 4007220								
Silicon carbide (SiC) plastic filament												
150	25	32	50.8	-	956588	-	-	-	900–1,500	3,600	1	RBUP 15025/50,8 REC SiC …
				956618	-	-	956649	956670	900–1,500	3,600	1	RBUP 15025/50,8 SiC …
200	25	32	50.8	-	956595	-	-	-	900–1,500	3,600	1	RBUP 20025/50,8 REC SiC …
				956625	-	-	956656	956687	900–1,500	3,600	1	RBUP 20025/50,8 SiC …
250	25	38	50.8	-	956601	-	-	-	900–1,500	3,600	1	RBUP 25025/50,8 REC SiC …
				956632	-	039175	956663	956694	900–1,500	3,600	1	RBUP 25025/50,8 SiC …
Ceramic oxide grain (CO) plastic filament												
150	13	32	50.8	N! 159873	-	-	N! 159880	-	900–1,500	3,600	1	RBUP 15013/50,8 CO …
	25	32	50.8	956700	-	-	-	-	900–1,500	3,600	1	RBUP 15025/50,8 CO …
200	13	32	50.8	N! 159910	-	-	N! 159941	-	900–1,500	3,600	1	RBUP 20013/50,8 CO …
	25	32	50.8	956717	-	-	-	-	900–1,500	3,600	1	RBUP 20025/50,8 CO …
250	25	38	50.8	956724	-	-	-	-	900–1,500	3,600	1	RBUP 25025/50,8 CO …



Arbor BO 12/22,2 150-180 (EAN 4007220**107850**)**:** For knotted and crimped wheel brushes with a diameter of 150–180 mm and a D_A of 22.2 mm.



BO 12/22,2 200 (EAN 4007220**107867**)**:** For knotted and crimped wheel brushes with a diameter of 200 mm and a D_A of 22.2 mm.

Note: Adapter pair AM 50,8/22,2 (EAN 4007220**806906**) is required to use the product with arbors.



Adapter pair AM 50,8/...: Reduces the arbor hole diameters to the required dimensions. Suitable for wheel brushes with a brush diameter as from 150 mm in the wide and composite types.

N! New in addition to the Tool Manual 23
N! New in 2020

RBUP, FLEX



Particularly flexible brush. Its plastic filament makes this product particularly suitable for deburring complicated components such as cylinder heads or gear toothing. Developed specially for industrial use.

Advantages:
- Long tool life and aggressive brushing effect due to a very high filament density.
- Extremely smooth operation due to even distribution of the filament material.
- Highly flexible, enabling optimal adjustment to the workpiece contour and less heat build-up.

Recommendations for use:
- Use CO as the filament material for particularly aggressive work and a high workpiece surface quality.
- Select the REC type (rectangular filament) for aggressive work with SiC as the filament material.

Ordering notes:
- Please complete the description with the desired grit size and filament material diameter (D_F).
- Packaging unit: 1 piece
- Brushes with the addition of REC have a wire thickness of 1.14 mm x 2.3 mm.

PFERDVALUE:

Vibration Filter

Time Saving

D [mm]	W_F [mm]	L_T [mm]	D_A [mm]	Keyway [mm]	Grit size / D_F [mm] 80 1.10	120 0.55	120 1.10	180 0.90	320 0.55	Opt. RPM	Max. RPM	Description
					EAN 4007220							
Silicon carbide (SiC) plastic filament – FLEX type												
200	25	57	50.8	-	039298	-	-	-	-	900–1,500	3,600	RBUP 20025/50,8 REC SiC…FLEX
					038840	-	039151	-	038895	900–1,500	3,600	RBUP 20025/50,8 SiC … FLEX
250	25	83	50.8	-	038505	-	-	-	-	900–1,500	3,600	RBUP 25025/50,8 REC SiC…FLEX
					038499	-	038871	-	039168	900–1,500	3,600	RBUP 25025/50,8 SiC … FLEX
		70	50.8	6.3 x 12.7	-	-	-	038666	-	900–1,500	3,600	RBUP 25025/50,8 SiC … FLEX
300	13	60	50.8	6.3 x 12.7	-	-	-	-	N! 160053	500–800	1,800	RBUP 30013/50,8 SiC … FLEX
	25	60	50.8	6.3 x 12.7	038772	-	038765	038741	-	500–800	1,800	RBUP 30025/50,8 SiC … FLEX
350	25	89	50.8	6.3 x 12.7	038710	-	-	038680	-	500–800	1,800	RBUP 35025/50,8 SiC … FLEX
Ceramic oxide grain (CO) plastic filament – FLEX type												
200	13	57	50.8	-	N! 159897	-	N! 159903	-	-	900–1,500	3,600	RBUP 20013/50,8 CO … FLEX
250	13	70	50.8	6.3 x 12.7	N! 159965	N! 159972	N! 159989	-	-	900–1,500	3,600	RBUP 25013/50,8 CO … FLEX
300	13	60	50.8	6.3 x 12.7	N! 159996	-	N! 160022	-	-	500–800	1,800	RBUP 30013/50,8 CO … FLEX
	25	60	50.8	6.3 x 12.7	038796	-	038802	-	-	500–800	1,800	RBUP 30025/50,8 CO … FLEX
350	13	89	50.8	6.3 x 12.7	N! 160060	-	N! 160077	-	-	500–800	1,800	RBUP 35013/50,8 CO … FLEX
	25	89	50.8	6.3 x 12.7	038826	-	038819	-	-	500–800	1,800	RBUP 35025/50,8 CO … FLEX



BO 12/22,2 200
(EAN 4007220**107867**):
For knotted and crimped wheel brushes with a diameter of 200 mm and a D_A of 22.2 mm.

Note:
Adapter pair AM 50,8/22,2
(EAN 4007220**806906**) is required to use the product with arbors.



Adapter pair AM 50,8/...:
Reduces the arbor hole diameters to the required dimensions. Suitable for wheel brushes with a brush diameter as from 150 mm in the wide and composite versions.

For more information:
Detailed information on accessories can be found in our Tool Manual 23, catalogue section 8.

8

N! New in addition to the Tool Manual 23
N! New in 2020

PGAS 2/600 E-DV
60,000 RPM / 100 watts

PGAS 2/600 E-HV
60,000 RPM / 100 watts



1 Oil /min

Special features:
- Light and easy to handle.
- Elastically suspended spindle.
- Low-vibration use.
- Is held like a pen.

PGAS 2/600 E-HV
- Dead man's switch using safety lever valve.

Included in delivery:
0.75 m exhaust hose and 2 m air supply hose with 1/4" male threaded connection and threaded quick coupling (STGI), 3 mm collet, 2 keys.

PFERDVALUE:
Vibration Filter · Noise Filter · Energy Saving · Waste Saving · Time Saving · Resource Saving

Description	EAN 4007220	Exhaust direction	Throttle type	Air consumption at idling speed [m³/min]	Air consumption under load [m³/min]	Collet group	Inner dia. of air supply hose [mm]	Net weight [kg]
PGAS 2/600 E-DV	N! 221402	rear	ring	0.30	0.18	15	5	0.120
PGAS 2/600 E-HV	N! 221419	rear	lever	0.30	0.18	15	5	0.160

Collets



Group	For shank dia.		
	3 mm	3/32 inch	1/8 inch
	EAN 4007220		
15	851814	851838	851821

Dimensions of the collets can be found in our Tool Manual 23, catalogue section 9, page 116.

Keys



Description	EAN 4007220
DM SW 6/8 mm	851791

Connecting set



Description	EAN 4007220
AS 1	351109

Further information on connecting sets can be found in our Tool Manual 23, catalogue section 9, page 67.

In-line fine filter



Description	EAN 4007220
SF 24 STG-IG 1/4	953259

Further information on in-line fine filters can be found in our Tool Manual 23, catalogue section 9, page 67.

Suitable PFERD tools

Catalogue section 2	Catalogue section 3*	Catalogue section 4*	Catalogue section 5
TC burrs **Cut 3 PLUS, 4, 5, ALU, INOX, MICRO** Dia. up to 3 mm Shank dia. 3 mm	**Mounted points** Shank dia. 3 mm: Dia. up to 5 mm Dia. 5 to 6 mm mm Width ≤ 13 mm Dia 6 to 10 mm Width ≤ 10 mm	**Poliflex fine grinding points** Shank dia. 3 mm Bonds: **GHR** Dia. up to 4 mm **LR, TX** Dia. up to 6 mm	**Diamond grinding points** Dia. up to 4,5 mm Shank dia. 3 mm **CBN grinding points** Dia. up to 5,5 mm Shank dia. 3 mm

***Catalogue sections 3/4:** This data applies to an unsupported shank length of 10 mm and the max. stated mounted point dimensions.

Note: Please observe the recommended cutting speeds and the max. permitted rotational speeds in the Tool Manual 23, catalogue sections 2–8.

N! New in addition to the Tool Manual 23
N! New in 2020

1 Oil /min

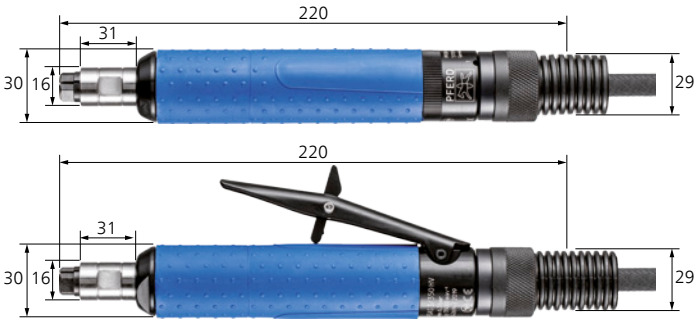
Special features:
- Very easy to handle and guide.
- Good power transmission in the axial direction.
- High performance with compact design.

PGAS 3/350 HV
- Dead man's switch using safety lever valve.

Included in delivery:
1 m exhaust hose and 2.5 m air supply hose with 1/4" male threaded connection and threaded quick coupling (STGI), 6 mm collet, 2 keys.

PGAS 3/350 DV
35,000 RPM / 290 watts

PGAS 3/350 HV
35,000 RPM / 290 watts



PFERDVALUE:

HapticFilter

Description	EAN 4007220	Exhaust direction	Throttle type	Air consumption at idling speed [m³/min]	Air consumption under load [m³/min]	Collet group	Inner dia. of air supply hose [mm]	Net weight [kg]
PGAS 3/350 DV	N! 221440	rear	ring	0.70	0.45	6	8	0.360
PGAS 3/350 HV	N! 221457	rear	lever	0.70	0.45	6	8	0.400

Collets



Group	For shank dia.					
	3 mm	6 mm	8 mm	3/32 inch	1/8 inch	1/4 inch
	EAN 4007220					
6	212875	212851	212936	234969	212882	212868

Dimensions of the collets can be found in our Tool Manual 23, catalogue section 9, page 116.

Keys



Description	EAN 4007220
EM SW 11 mm	206812
EM SW 14 mm	206836

Connecting set



Description	EAN 4007220
AS 2	351116

Further information on connecting sets can be found in our Tool Manual 23, catalogue section 9, page 67.

In-line fine filter



Description	EAN 4007220
SF 24 STG-IG 1/4	953259

Further information on in-line fine filters can be found in our Tool Manual 23, catalogue section 9, page 67.

Suitable PFERD tools

Catalogue section 2	Catalogue section 3*	Catalogue section 4*	Catalogue section 5	Catalogue section 6
TC burrs **Cut 3, 3 PLUS, 4, 5, STEEL, INOX, NON-FERROUS, CAST, MICRO, FVK, FVKS, PLAST, ALLROUND** Dia. 4 to 6 mm **HSS rotary cutters** **Special cuts** Dia. up to 2.3 mm	**Mounted points** Shank dia. 3 mm: Dia. up to 20 mm Dia. 20 to 25 mm Width ≤ 6 mm Shank dia. 6 mm: Dia. up to 13 mm Dia. 13 to 16 mm Width ≤ 40 mm Dia. 16 to 25 mm Width ≤ 25 mm	**Poliflex fine grinding points** Shank dia. 3 + 6 mm Bonds: **GR, PUR** Dia. up to 8 mm **GHR, LR, TX** Dia. up to 16 mm **LHR** Dia. up to 20 mm **Abrasive spiral bands and rubber drum holders** Dia. up to 15 mm	**Diamond grinding points** Dia. 4.5 to 10.0 mm Shank dia. 3 + 6 mm **CBN grinding points** Dia. 8.0 to 14.0 mm Shank dia. 3 + 6 mm	**Cut-off wheels EHT** Dia. up to 40 mm matching **arbor** **BO SPG 6/6 0-10** **Snagging wheels ER** Dia. up to 40 mm matching **arbor** **BO SPG 6/6 0-10**

If no shank diameter is given, the shank dia. of 6 mm applies.

***Catalogue sections 3/4:** This data applies to an unsupported shank length of 10 mm and the max. stated mounted point dimensions.
Note: Please observe the recommended cutting speeds and the max. permitted rotational speeds in the Tool Manual 23, catalogue sections 2–8.

N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range
Air grinders – NITOCUT angle grinder

PWT 26/150 HV NITOCUT

12,000 RPM / 2,600 watts



NITOCUT 100m/sec.

PFERDVALUE:

Emission Filter · Haptic Filter · Time Saving

Special features:
- Only suitable for 150 mm NITOCUT cut-off wheels.
- Very powerful turbine motor.
- Constant power delivery due to the centrifugal governor.
- Spindle lock pin for tool change with one key.

Included in delivery:
1/2" female connecting thread, 2 keys, 1 clamping nut, 1 clamping flange, guard, anti-vibration handle.

Description	EAN 4007220	Exhaust direction	Throttle type	Air consumption at idling speed [m³/min]	Air consumption under load [m³/min]	Spindle thread	Inner dia. of air supply hose [mm]	Tool mounting [mm]	Net weight [kg]
PWT 26/150 HV NITOCUT	N! 224038	bottom	lever	0.90	2.25	M14	16	25.4	2.200

Keys



Description	EAN 4007220
STL SW 35 x 5 mm	193853
SKS SW 5 mm	204467

In-line fine filter



Description	EAN 4007220
SF 35 IG 1/2-IG 1/2	072103

See Tool Manual 23, catalogue section 9, page 67.

Revolving nozzle



See Tool Manual 23, catalogue section 9, page 66.

Conversion set NITOCUT

Description	EAN 4007220
SH NITOCUT SET	N! 224007

Conversion set for PWT 26/120 HV incl. NITOCUT protective cover and NITOCUT clamping flange.

Suitable PFERD tools

Catalogue section 6
Cut-off wheels CERAMIC SGP NITOCUT STEELOX (see page 91)



N! New in addition to the Tool Manual 23
N! New in 2020



New in the PFERD product range

PFERD tools with X-LOCK – Just one Click

X-LOCK from Bosch is the world's first quick-changing system for angle grinders: position the tool in the X-LOCK holder, click it into place – and you're done. It's never been so easy to change accessories on angle grinders. X-LOCK creates a new standard, makes professionals' work easier and increases the productivity. Bosch Power Tools relies on strong partners like PFERD. PFERD has developed the principle for connecting the X-LOCK punched part with bonded abrasives, flap wheels and brushes and created the conditions to enable them to be produced industrially.

Technology by BOSCH

With the Bosch X-LOCK system for angle grinders, you can change tools quickly and comfortably. Instead of a round centre hole, the X-LOCK system features an X-shaped contour, which allows the tool to be fixed on the angle grinder in a form-fitting manner. This guarantees that different tools can be mounted securely and comfortably in the shortest possible time. The unique system meets the highest quality and safety standards and even withstands tough and challenging operating conditions.

Advantages:

- Quick and comfortable tool changes.
- Tools are fixed securely since they audibly click into place.
- Tools with X-LOCK can also be used on conventional angle grinders with an M14 and 5/8"-11 thread (exception: cup brushes).

Recommendations for use:

- Place the tool on the X-LOCK quick-change system of your angle grinder and secure it by lightly pressing it down. The tool will audibly click into place.

How it works:



Place the tool on the X-LOCK holder in a form-fitting manner.



Lightly press the tool down until it audibly clicks into place.



Release the tool by using the lever.



PFERD supplies POLIVLIES flap discs in various grit sizes, diameters and types. These are particularly suited to work on large surfaces made from stainless steel (INOX).

Advantages:

- High profitability thanks to high abrasive performance and long tool life.
- Creates a consistently high surface quality throughout the entire tool life as new, sharp abrasive material is constantly freed up.
- Optimum adaptation to contours thanks to high flexibility.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:

- Can be used on nearly all materials.

Matching tool drives:

- Angle grinders
- Cordless angle grinders

Ordering notes:

- When ordering, please state the EAN or the full description. Please complete the description with the desired grit size.
- **Ordering example:**
  EAN 4007220**119846**
  PVL 115-X-LOCK A **180 M**
- **Ordering example explanation:**
  PVL = POLIVLIES flap discs
  115 = Outer diameter D [mm]
  X-LOCK = Quick-change system
  A = Abrasive
  180 M = Grit size

Safety notes:

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



Flap discs PVL

For universal coarse to fine grinding applications in industry and professional trades.

Abrasive:
Aluminium oxide A
Available POLIVLIES grit sizes:
100 G = coarse (yellow-brown)
180 M = medium (red-brown)
240 F = fine (blue)

Recommendations for use:
- For the best results, use at a recommended cutting speed of 30–35 m/s.

Ordering notes:
- Please complete the description with the desired grit size.

PFERDVALUE:

TimeSaving



D [mm]	T [mm]	H [mm]	Grit size			Opt. RPM	Max. RPM		Description
			100 G	180 M	240 F				
			EAN 4007220						
115	18	X-LOCK (22.23)	N! 119839	N! 119846	N! 119853	5,000–5,800	13,300	5	PVL 115-X-LOCK A ...
125	18	X-LOCK (22.23)	N! 119860	N! 119907	N! 119914	4,600–5,300	12,200	5	PVL 125-X-LOCK A ...

N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range

Cut-off wheels with X-LOCK – Universal Line PSF ★★☆☆



PSF STEELOX ★★☆☆

Cut-off wheel for steel and stainless steel (INOX) with high cutting performance and long tool life.

Advantages:
- Universally suitable for steel and stainless steel (INOX).
- Fast work progress thanks to high cutting performance.
- High economic efficiency due to long tool life.
- Thin cut-off wheels are ideal for cordless angle grinders.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:
steel, stainless steel (INOX)

Applications:
cutting of sheet metal, profiles and solid material, cutting out holes

Abrasive:
Aluminium oxide A

PFERDVALUE:
Thin cut-off wheels:

Vibration Filter · Noise Filter · Emission Filter · Haptic Filter · Energy Saving · Time Saving

D [mm]	T/U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Flat type EHT (shape 41)						
115	1.0	N! 113400	X-LOCK (22.23)	13,300	25	EHT 115-1,0 PSF STEELOX/X-LOCK
	1.6	N! 113417	X-LOCK (22.23)	13,300	25	EHT 115-1,6 PSF STEELOX/X-LOCK
125	1.0	N! 113431	X-LOCK (22.23)	12,200	25	EHT 125-1,0 PSF STEELOX/X-LOCK
	1.6	N! 113455	X-LOCK (22.23)	12,200	25	EHT 125-1,6 PSF STEELOX/X-LOCK
Depressed-centre type EH (shape 42)						
115	2.4	N! 113424	X-LOCK (22.23)	13,300	25	EH 115-2,4 PSF STEELOX/X-LOCK
125	2.4	N! 113448	X-LOCK (22.23)	12,200	25	EH 125-2,4 PSF STEELOX/X-LOCK

Cut-off wheels with X-LOCK – Performance Line SG ★★★☆



SG STEELOX ★★★☆

Cut-off wheel for steel and stainless steel (INOX) with high cutting performance and very long tool life.

Advantages:
- Universally suitable for steel and stainless steel (INOX).
- Fast work progress thanks to high cutting performance.
- Maximum economic efficiency due to very long tool life.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:
steel, stainless steel (INOX)

Applications:
cutting of sheet metal, profiles and solid material, cutting out holes

Abrasive:
High-performance aluminium oxide A

PFERDVALUE:
Thin cut-off wheels:

Vibration Filter · Noise Filter · Emission Filter · Haptic Filter · Energy Saving · Time Saving

D [mm]	T/U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Flat type EHT (shape 41)						
115	1.0	N! 113486	X-LOCK (22.23)	13,300	25	EHT 115-1,0 SG STEELOX/X-LOCK
	1.6	N! 113509	X-LOCK (22.23)	13,300	25	EHT 115-1,6 SG STEELOX/X-LOCK
125	1.0	N! 113585	X-LOCK (22.23)	12,200	25	EHT 125-1,0 SG STEELOX/X-LOCK
	1.6	N! 113592	X-LOCK (22.23)	12,200	25	EHT 125-1,6 SG STEELOX/X-LOCK
Depressed-centre type EH (shape 42)						
115	2.4	N! 113479	X-LOCK (22.23)	13,300	25	EH 115-2,4 SG STEELOX/X-LOCK
125	2.4	N! 113493	X-LOCK (22.23)	12,200	25	EH 125-2,4 SG STEELOX/X-LOCK

N! New in addition to the Tool Manual 23
N! New in 2020

Z PSF STEELOX ★★☆☆

POLIFAN flap disc with aggressive stock removal rate and long tool life.



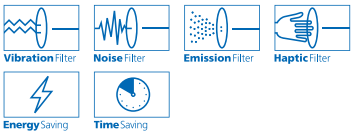
Advantages:
- Fast work progress and high economic efficiency thanks to the aggressive stock removal rate.
- Long tool life.
- Also suitable for low-power angle grinders.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:
steel, stainless steel (INOX)

Applications:
surface grinding, weld dressing, chamfering, deburring

Abrasive:
Zirconia alumina Z

PFERDVALUE:



D [mm]	Grit size 40	Grit size 60	Grit size 80	H [mm]	Max. RPM		Description
	EAN 4007220						
Conical type PFC							
115	N! 113608	N! 113615	N! 113622	X-LOCK (22.23)	13,300	10	PFC 115 Z ... PSF STEELOX/X-LOCK
125	N! 113639	N! 113646	N! 113653	X-LOCK (22.23)	12,200	10	PFC 125 Z ... PSF STEELOX/X-LOCK

POLIFAN flap discs with X-LOCK – Performance Line SG ★★★☆

Z SG POWER STEELOX ★★★☆

The POLIFAN Z SG POWER flap disc stands out due to its aggressive stock removal rate and excellent tool life while achieving the highest level of efficiency. It is the best conventional flap disc for steel.



Advantages:
- Fast work progress and maximum economic efficiency thanks to the aggressive stock removal rate.
- Maximum aggressiveness over the entire tool life.
- Fewer tool changes due to the excellent tool life.
- With X-LOCK quick-change system for comfortable and quick tool changes.

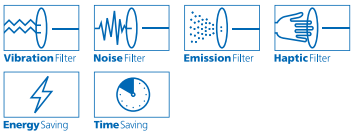
Materials that can be worked:
steel, stainless steel (INOX)

Applications:
weld dressing, chamfering, deburring

Abrasive:
Zirconia alumina Z

Recommendations for use:
- Also suitable for surface grinding on steel.

PFERDVALUE:



D [mm]	Grit size 40	Grit size 60	Grit size 80	H [mm]	Max. RPM		Description
	EAN 4007220						
Conical type PFC							
115	N! 113677	N! 113684	N! 113691	X-LOCK (22.23)	13,300	10	PFC 115 Z ... SG POWER STEELOX/X-LOCK
125	N! 113707	N! 113714	N! 113721	X-LOCK (22.23)	12,200	10	PFC 125 Z ... SG POWER STEELOX/X-LOCK

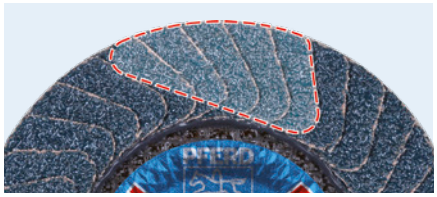


N! New in addition to the Tool Manual 23
N! New in 2020



New in the PFERD product range

POLIFAN flap discs with X-LOCK – Special Line SGP ★★★★





Long, compactly arranged flaps

POLIFAN-STRONG STEEL

The innovative POLIFAN-STRONG flap disc is a unique tool with a particularly high performance level. Due to its patented design, it offers significantly higher efficiency compared to conventional flap discs.

Advantages:

- Fast grinding through constant grinding aggressiveness down to the last abrasive grit.
- Ultimate economic efficiency thanks to maximum stock removal per time unit and less wear on discs.
- Extremely long tool life.
- With X-LOCK quick-change system for comfortable and quick tool changes.



Z SGP STRONG STEEL ★★★★

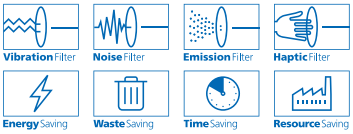
Materials that can be worked:
steel

Applications:
weld dressing, chamfering, deburring

Abrasive:
Zirconia alumina Z

Recommendations for use:
- Grit size 36 is ideal for a high stock removal rate, e.g. during work on weld seams.
- Grit size 50 is ideal for work on edges, e.g. chamfering or for producing a fine finish.

PFERDVALUE:



D [mm]	Grit size 36	Grit size 50	H [mm]	Max. RPM		Description
	EAN 4007220					
Conical type PFC						
115	N! 113738	N! 113745	X-LOCK (22.23)	13,300	10	PFC 115 Z ... SGP STRONG STEEL/X-LOCK
125	N! 113752	N! 113769	X-LOCK (22.23)	12,200	10	PFC 125 Z ... SGP STRONG STEEL/X-LOCK



N! New in addition to the Tool Manual 23
N! New in 2020

POLIFAN-CURVE

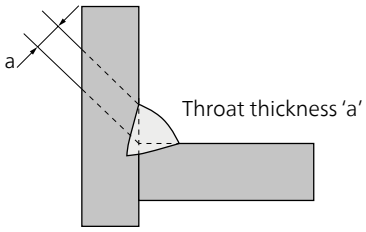
The patented POLIFAN-CURVE flap disc has been specially developed for work on fillet welds. It is the only flap disc in the world that has flaps on both the grinding side and on the rear side, as well as on the radius.

Advantages:

- High stock removal rate ensures fast work progress and therefore significant wage cost savings.
- Outstanding tool life when working on fillet welds.
- Precise and optimum grinding of the fillet weld geometry.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Recommendations for use:

- Type M:
  For fillet weld radii over 5 mm or throat thickness up to 6 mm with 90° joint, width at the radius: 11 mm.
- Type L:
  For fillet weld radii over 8 mm or throat thickness over 6 mm with 90° joint, width at the radius: 14 mm.



Z SGP CURVE STEELOX ★★★★

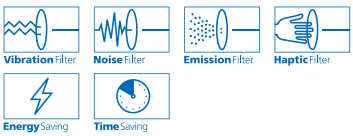
High-performance flap disc for maximum stock removal on steel and stainless steel (INOX).

Materials that can be worked:
steel, stainless steel (INOX)

Applications:
work on fillet welds, weld dressing, chamfering, deburring

Abrasive:
Zirconia alumina Z

PFERDVALUE:





D [mm]	Fillet weld radius [mm]	Grit size 40 EAN 4007220	Width	H [mm]	Max. RPM		Description
Radial type PFR							
115	> 5	N! 113776	M (11 mm)	X-LOCK (22.23)	13,300	10	PFR 115-M Z 40 SGP CURVE STEELOX/X-LOCK
	> 8	N! 113783	L (14 mm)	X-LOCK (22.23)	13,300	10	PFR 115-L Z 40 SGP CURVE STEELOX/X-LOCK
125	> 5	N! 113790	M (11 mm)	X-LOCK (22.23)	12,200	10	PFR 125-M Z 40 SGP CURVE STEELOX/X-LOCK
	> 8	N! 113806	L (14 mm)	X-LOCK (22.23)	12,200	10	PFR 125-L Z 40 SGP CURVE STEELOX/X-LOCK



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range

Grinding wheels with X-LOCK – Universal Line PSF ★★☆☆



PSF STEEL ★★☆☆

Grinding wheel for steel with high grinding performance and long tool life.

Advantages:
- Fast work progress and high economic efficiency thanks to the high grinding performance.
- Long tool life.
- Also suitable for low-power angle grinders. Soft grinding characteristics, achieves particularly high stock removal rates even at low contact pressure.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:
steel, cast iron

Applications:
surface grinding, weld dressing, work on fillet welds, grouting, chamfering, deburring

Abrasive:
Aluminium oxide A

PFERDVALUE:
Time Saving

D [mm]	U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Depressed-centre type E (shape 27)						
115	7.2	N! 113516	X-LOCK (22.23)	13,300	10	E 115-7 PSF STEEL/X-LOCK
125	7.2	N! 113523	X-LOCK (22.23)	12,200	10	E 125-7 PSF STEEL/X-LOCK

Grinding wheels with X-LOCK – Performance Line SG ★★★☆



SG STEEL ★★★☆

Grinding wheel for steel with high grinding performance and very long tool life.

Advantages:
- Fast work progress and maximum economic efficiency thanks to the high grinding performance.
- Fewer tool changes due to the very long tool life.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Materials that can be worked:
steel

Applications:
surface grinding, weld dressing, work on fillet welds, grouting, chamfering, deburring

Abrasive:
Special aluminium oxide A

Recommendations for use:
- Width of 4.1 mm is ideal for work on root seams.

PFERDVALUE:
Time Saving

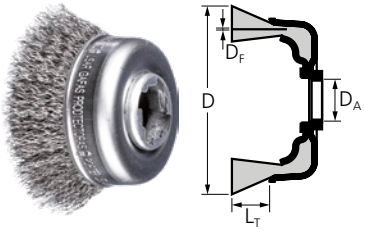
D [mm]	U [mm]	EAN 4007220	H [mm]	Max. RPM		Description
Depressed-centre type E (shape 27)						
115	4.1	N! 113530	X-LOCK (22.23)	13,300	10	E 115-4,1 SG STEEL/X-LOCK
	7.2	N! 113554	X-LOCK (22.23)	13,300	10	E 115-7 SG STEEL/X-LOCK
125	4.1	N! 113547	X-LOCK (22.23)	12,200	10	E 125-4,1 SG STEEL/X-LOCK
	7.2	N! 113561	X-LOCK (22.23)	12,200	10	E 125-7 SG STEEL/X-LOCK



N! New in addition to the Tool Manual 23
N! New in 2020

TBU

Excellent for medium-duty brushing such as deburring, cleaning and derusting on large surfaces.



Advantages:
- Highly flexible, enabling optimal adjustment to the workpiece contour.
- Creates fine surfaces.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Recommendations for use:
- For optimum results, use on speed-adjustable angle grinders.

PFERDVALUE:

TimeSaving

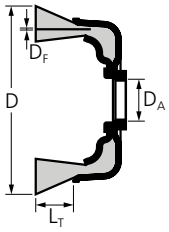
D [mm]	L_T [mm]	D_A	D_F [mm]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)							
60	20	X-LOCK	0.30	N! 119150	6,300–9,400	12,500	POS TBU 60/X-LOCK ST 0,30
75	25	X-LOCK	0.30	N! 119327	6,300–9,400	12,500	POS TBU 75/X-LOCK ST 0,30
Stainless steel wire (INOX) All INOX brushes are degreased.							
60	20	X-LOCK	0.30	N! 119198	5,000–8,100	12,500	POS TBU 60/X-LOCK INOX 0,30
75	25	X-LOCK	0.30	N! 119440	5,000–8,100	12,500	POS TBU 75/X-LOCK INOX 0,30



N! New in addition to the Tool Manual 23
N! New in 2020

New in the PFERD product range
Threaded cup brushes with X-LOCK, knotted





TBG

Aggressive brush. Excellent for heavy-duty brushing such as deburring, cleaning and derusting on large surfaces.

Advantages:
- Aggressive brushing effect due to the very stiff wire knots.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Recommendations for use:
- For optimum results, use on powerful angle grinders.

PFERDVALUE:

Time Saving

D [mm]	L_T [mm]	D_A	D_F [mm]	Knots [pcs.]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)								
65	22	X-LOCK	0.35	18	N! 119457	6,300–12,500	12,500	POS TBG 65/X-LOCK ST 0,35
			0.50	18	N! 119532	6,300–12,500	12,500	POS TBG 65/X-LOCK ST 0,50
80	20	X-LOCK	0.50	20	N! 119686	5,000–10,000	11,500	POS TBG 80/X-LOCK ST 0,50
Stainless steel wire (INOX) All INOX brushes are degreased.								
65	22	X-LOCK	0.35	18	N! 119624	5,000–12,500	12,500	POS TBG 65/X-LOCK INOX 0,35
			0.50	18	N! 119631	5,000–12,500	12,500	POS TBG 65/X-LOCK INOX 0,50
80	20	X-LOCK	0.50	20	N! 119730	4,000–10,000	11,500	POS TBG 80/X-LOCK INOX 0,50

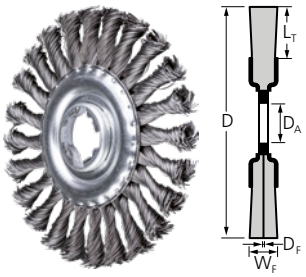




N! New in addition to the Tool Manual 23
N! New in 2020

RBG

Aggressive brush. Suitable for heavy-duty brushing in metalwork such as descaling, derusting, deburring, cleaning of weld seams and removal of adhesive residues.



Advantages:
- Aggressive brushing effect due to the very stiff wire knots.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Recommendations for use:
- For optimum results, use on powerful angle grinders.

PFERDVALUE:

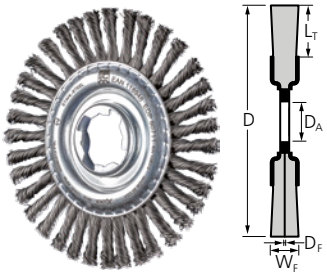
TimeSaving

D [mm]	W_F [mm]	L_T [mm]	D_A	D_F [mm]	Knots [pcs.]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)									
115	12	22	X-LOCK (22.23)	0.50	24	N! 118559	6,300–12,500	12,500	POS RBG 11512/X-LOCK ST 0,50
125	12	28	X-LOCK (22.23)	0.50	24	N! 118764	5,500–12,500	12,500	POS RBG 12512/X-LOCK ST 0,50
Stainless steel wire (INOX) All INOX brushes are degreased.									
115	12	22	X-LOCK (22.23)	0.50	24	N! 118757	5,000–12,500	12,500	POS RBG 11512/X-LOCK INOX 0,50
125	12	28	X-LOCK (22.23)	0.50	24	N! 118771	4,400–12,500	12,500	POS RBG 12512/X-LOCK INOX 0,50

Wheel brushes with X-LOCK, Pipeline

RBG PIPE, Pipeline

Aggressive and robust brush that is able to withstand high mechanical loads. Perfect for heavy-duty brushing in pipeline and container construction.



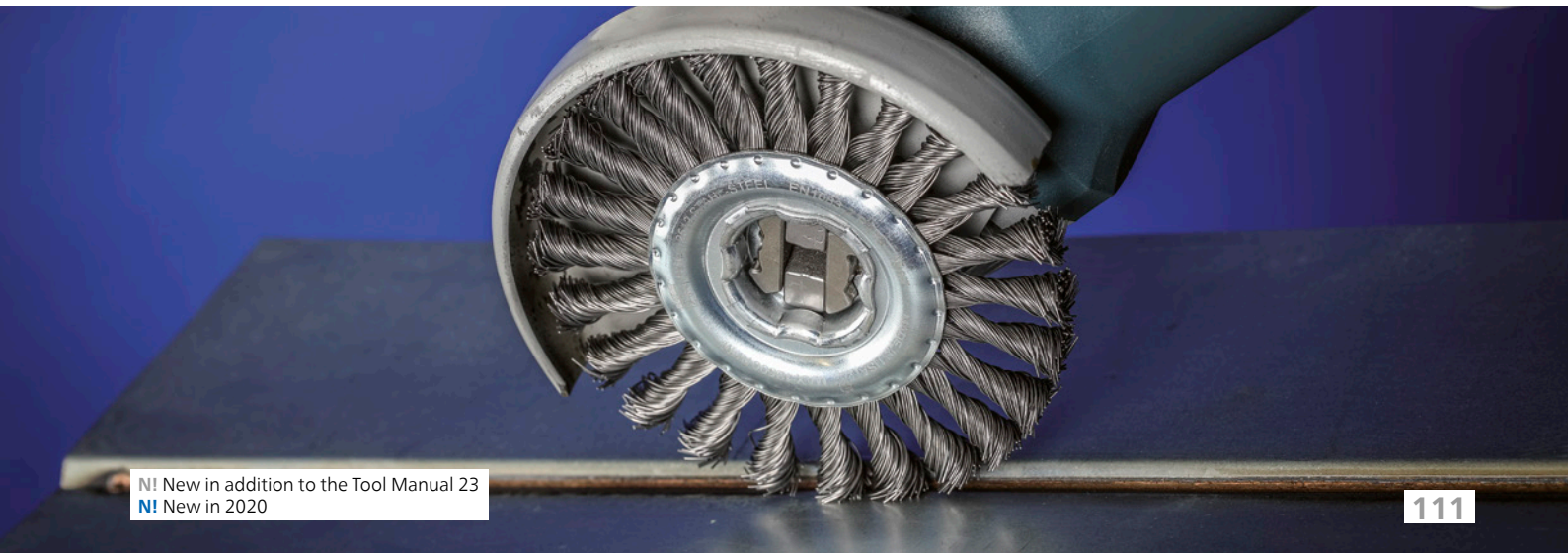
Advantages:
- Extra-slim design enables optimal access to hard-to-reach areas such as root weld seams.
- Aggressive brushing effect due to the very stiff wire knots.
- With X-LOCK quick-change system for comfortable and quick tool changes.

Recommendations for use:
- For optimum results, use on powerful angle grinders.

PFERDVALUE:

TimeSaving

D [mm]	W_F [mm]	L_T [mm]	D_A	Knots [pcs.]	D_F [mm]	Packaging 1 EAN 4007220	Opt. RPM	Max. RPM	Description
Steel wire (ST)									
115	6	21	X-LOCK (22.23)	36	0.50	N! 118948	6,300–12,500	12,500	POS RBG 11506/X-LOCK PIPE ST 0,50
125	6	18	X-LOCK (22.23)	48	0.50	N! 119136	6,300–12,500	12,500	POS RBG 12506/X-LOCK PIPE ST 0,50



N! New in addition to the Tool Manual 23
N! New in 2020



Printed in Germany.
Subject to technical modifications.
02/2020
817 155

PFERD

www.pferd.com · info@pferd.com
PFERD quality certified according to ISO 9001.