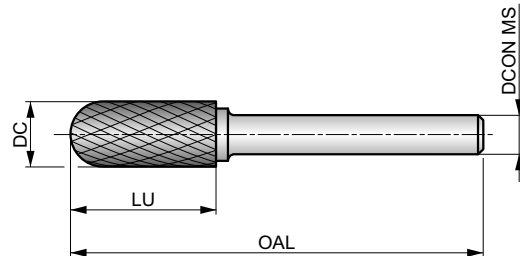


# P805



## Rotary Burr - Ball Nosed Cylinder, Shape C, Bright Finish

DC double cut flute style with close spaced edges for trimming and deburring contours and circular arcs. Carbide design for cutting diameter up to 6 mm; above 6 mm carbide head with toughened and hardened steel shank.



HM		Bright
DC		



Workpiece material group suitability. Recommended operating speed (RPM) on page 6.

P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	P4.3	M1.1	M1.2
■	■	■	■	■	■	■	■	■	■	■	■	■	■
M2.1	M2.2	M2.3	M3.1	M3.2	M3.3	M4.1	M4.2	K1.1	K1.2	K1.3	K2.1	K2.2	K2.3
■	■	■	■	■	■	■	■	■	■	■	■	■	■
K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	N3.1	N3.2	N3.3
■	■	■	■	■	■	■	■	■	■	■	■	■	■
S1.1	S1.2	S1.3	S2.1	S2.2	S3.1	S3.2	S4.1	S4.2	H1.1	H2.1	H2.2	H3.1	H3.2
■	■	■	■	■	■	■	■	■	■	■	■	■	■
H4.1	H4.2												
■	■												

DC≤6.00 mm: DCON MS tolerance h6; DC>6.00 mm: Brazed on steel shank with DCON MS tolerance h7.

Products from this series are also available in set. Please see P880 or P890.

Product	DC	DCON MS	LU	OAL
	[mm]	[mm]	[mm]	[mm]
P8053.0X3.0	3.00	3.00	14.00	38.0
P8056.3X3.0	6.30	3.00	12.70	45.0
P8056.0X6.0	6.00	6.00	18.00	50.0
P8058.0X6.0	8.00	6.00	19.00	64.0
P8059.6X6.0	9.60	6.00	19.00	64.0
P80512.7X6.0	12.70	6.00	25.00	70.0
P80516.0X6.0	16.00	6.00	25.00	70.0

## ROTARY BURRS – ICONS OVERVIEW














### General Icons

	Primary use
	Possible use

### Material Code (BMC)

<b>HM</b>	Hard Material (Solid Carbide)
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### Burr Shape

<b>A</b> 	Cylinder Shape without endcut	<b>F</b> 	Ball Nosed Tree Shape	<b>L</b> 	Ball Nosed Cone Shape
<b>B</b> 	Cylinder Shape with endcut	<b>G</b> 	Pointed Tree Shape	<b>M</b> 	Cone Shape
<b>C</b> 	Ball Nosed Cylinder Shape	<b>H</b> 	Flame Shape	<b>N</b> 	Inverted Cone Shape
<b>D</b> 	Ball Shape	<b>J</b> 	60° Countersink Shape		
<b>E</b> 	Oval Shape	<b>K</b> 	90° Countersink Shape		

### Burr End Shot

	Drill Point Burr End
	End Cut Burr End
	End Mill Burr End

### Coating

 Bright	Bright (uncoated)
 TiAlN	Titanium Aluminium Nitride Coating

## ROTARY BURRS – ICONS OVERVIEW


### Application Angle

 60° Countersink	 Drill Point 135°	 Spot Drill Point 150°
 90° Countersink	 Drill Point 180°	













### Burr Cut Flute Style (BTC)

<b>DC</b> Double Cut Geometry	<b>AL</b> Aluminium Cut Geometry	<b>AS</b> Superalloy Cut Geometry
<b>ST</b> Steel Cut Geometry	<b>GRP</b> Fibreglass and Composite Materials Cut Geometry	
<b>VA</b> Stainless Steel Cut Geometry	<b>BR</b> Bolt Removal Cut Geometry	


### Basic Standard Group (BSG)

 Dormer Standards
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### Operations Deburring


 Deburring - Bolt removal operation 1	 Curved surface deburring and carving	 Inverted back deburring
 Deburring - Bolt removal operation 2	 Fillet radii deburring	 Plain surface deburring
 Closed groove deburring and carving	 Free hand deburring and carving	 Shoulder deburring
 Composite fibre routing	 Chamfer deburring	 V-groove deburring

### Other Icons


 Bolt size
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## ROTARY BURRS – SURFACE AND TREATMENTS COATINGS NAVIGATOR

### Surface Treatments


<b>Bright (uncoated)</b>	 Bright	Bright finish (uncoated surface) improves chip flow in soft or non-ferrous materials and maintains sharp cutting edges in abrasive materials.
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### Surface Coatings

<b>Titanium Aluminium Nitride Coating (TiAlN)</b>	 TiAlN	Titanium Aluminium Nitride is a multi layer ceramic coating applied by PVD coating technology, which exhibits high toughness and oxidation stability. These properties make it ideal for higher speeds and feeds, while at the same time improving tool life. TiAlN is used in drilling, tapping, and milling applications and can be suitable for use when machining without coolant.
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## ROTARY BURRS – TOOL MATERIALS NAVIGATOR

### HM materials

<b>Carbide Materials (or Hard Materials)</b>	 HM	<p>A sintered powder metallurgy substrate, consisting of a metallic carbide composite with binder metal. The most central raw material is tungsten carbide (WC). Tungsten carbide contributes to the hardness of the material. Tantalum carbide (TaC), titanium carbide (TiC) and niobium carbide (NbC) complements WC and adjusts the properties to what is desired. These three materials are called cubic carbides. Cobalt (Co) acts as a binder and keeps the material together.</p> <p>Carbide materials are often characterised by high compression strength, high hardness and therefore high wear resistance, but also by limited flexural strength and toughness. Carbide is used in taps, reamers, milling cutters, drills and thread milling cutters.</p>
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# WMG (WORK MATERIAL GROUP)

ISO group	WMG (Work Material Group)			Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)		
P	P1	P1.1	Free machining steel (carbon steels with increased machinability)	Sulfurized	< 240 HB	≤ 830	
		P1.2		Sulfurized and phosphorized	< 180 HB	≤ 620	
		P1.3		Sulfurized/phosphorized and leaded	< 180 HB	≤ 620	
	P2	P2.1	Plain carbon steel (steels comprised of mainly iron and carbon)	Containing <0.25 % C	< 180 HB	≤ 620	
		P2.2		Containing <0.55 % C	< 240 HB	≤ 830	
		P2.3		Containing >0.55 % C	< 300 HB	≤ 1030	
	P3	P3.1	Alloy steel (carbon steels with an alloying content ≤ 10%)	Annealed	< 180 HB	≤ 620	
		P3.2		Hardened and tempered	180 – 260 HB	> 620 ≤ 900	
		P3.3			260 – 360 HB	> 900 ≤ 1240	
	P4	P4.1	Tool steel (special alloy steel for tools, dies and molds)	Annealed	< 26 HRC	≤ 900	
		P4.2		Hardened and tempered	26 – 39 HRC	> 900 ≤ 1240	
		P4.3			39 – 45 HRC	> 1240 ≤ 1450	
M	M1	M1.1	Ferritic stainless steel (straight chromium non-hardenable alloys)		< 160 HB	≤ 520	
		M1.2			160 – 220 HB	> 520 ≤ 700	
	M2	M2.1	Martensitic stainless steel (straight chromium hardenable alloys)	Annealed	< 200 HB	≤ 670	
		M2.2		Quenched and tempered	200 – 280 HB	> 670 ≤ 950	
	M3	M2.3	Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys)	Precipitation-hardened	280 – 380 HB	> 950 ≤ 1300	
		M3.1			< 200 HB	≤ 750	
		M3.2			200 – 260 HB	> 750 ≤ 870	
	M4	M3.3	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel		260 – 300 HB	> 870 ≤ 1040	
		M4.1			< 300 HB	≤ 990	
		M4.2			300 – 380 HB	≤ 1320	
K	K1	K1.1	Gray iron or Automotive Gray iron (GG) (iron-carbon castings with a lamellar graphite microstructure)	Ferritic or ferritic-pearlitic	< 180 HB	≤ 190	
		K1.2		Ferritic-pearlitic or pearlitic	180 – 240 HB	> 190 ≤ 310	
		K1.3		Pearlitic	240 – 280 HB	> 310 ≤ 390	
	K2	K2.1	Malleable iron (GTS/GTW) (iron-carbon castings with a graphite-free microstructure)	Ferritic	< 160 HB	≤ 400	
		K2.2		Ferritic or pearlitic	160 – 200 HB	> 400 ≤ 550	
		K2.3		Pearlitic	200 – 240 HB	> 550 ≤ 660	
	K3	K3.1	Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure)	Ferritic	< 180 HB	≤ 560	
		K3.2		Ferritic or pearlitic	180 – 220 HB	> 560 ≤ 680	
		K3.3		Pearlitic	220 – 260 HB	> 680 ≤ 800	
	K4	K4.1	Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure)		< 180 HB	≤ 190	
		K4.2			< 240 HB	≤ 740	
		K4.3		Austempered ductile iron (ASTM A897) (iron-carbon alloy castings with an ausferrite microstructure)	< 280 HB	> 840 ≤ 980	
		K4.4			280 – 320 HB	> 980 ≤ 1130	
		K4.5			320 – 360 HB	> 1130 ≤ 1280	
	K5	K5.1	Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure)	Ferritic	< 180 HB	≤ 400	
K5.2		Ferritic-pearlitic		180 – 220 HB	> 400 ≤ 450		
K5.3		Pearlitic		220 – 260 HB	> 450 ≤ 500		
N	N1	N1.1	Commercially pure wrought aluminium		< 60 HB	≤ 240	
		N1.2		Half hard tempered	60 – 100 HB	> 240 ≤ 400	
		N1.3		Full hard tempered	100 – 150 HB	> 400 ≤ 590	
	N2	N2.1	Cast aluminium alloys		< 75 HB	≤ 240	
		N2.2		75 – 90 HB	> 240 ≤ 270		
		N2.3		90 – 140 HB	> 270 ≤ 440		
	N3	N3.1	Free-cutting copper-alloys materials with excellent machining properties		–	–	
		N3.2		Short-chip copper-alloys with good to moderate machining properties		–	–
		N3.3		Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties		–	–
	N4	N4.1	Thermoplastic polymers		–	–	
N4.2		Thermosetting polymers			–	–	
N4.3		Reinforced polymers or composites			–	–	
N5	N5.1	Graphite		–	–		
S	S1	S1.1	Titanium or titanium alloys		< 200 HB	≤ 660	
		S1.2		200 – 280 HB	> 660 ≤ 950		
		S1.3		280 – 360 HB	> 950 ≤ 1200		
	S2	S2.1	Fe-based high-temperature alloys	< 200 HB	≤ 690		
		S2.2		200 – 280 HB	> 690 ≤ 970		
	S3	S3.1	Ni-based high-temperature alloys	< 280 HB	≤ 940		
		S3.2		280 – 360 HB	> 940 ≤ 1200		
	S4	S4.1	Co-based high-temperature alloys	< 240 HB	≤ 800		
S4.2		240 – 320 HB		> 800 ≤ 1070			
H	H1	H1.1	Chilled cast iron		< 440 HB	–	
	H2	H2.1	Hardened cast iron		< 55 HRC	–	
		H2.2		> 55 HRC	–		
	H3	H3.1	Hardened steel <55 HRC		< 51 HRC	–	
		H3.2		51 – 55 HRC	–		
	H4	H4.1	Hardened steel >55 HRC		55 – 59 HRC	–	
H4.2		> 59 HRC		–			

RECOMMENDED OPERATING SPEED (RPM)

AL		DC						
ISO		RPM						
		DC [mm]						
		3	6	8	10	12	16	20
P	min	64 000	32 000	24 000	20 000	16 000	12 000	10 000
	max	83 000	42 000	32 000	25 000	21 000	16 000	13 000
M	min	45 000	23 000	17 000	14 000	12 000	9 000	7 000
	max	64 000	32 000	24 000	20 000	16 000	12 000	10 000
K	min	58 000	29 000	22 000	19 000	15 000	11 000	9 000
	max	77 000	39 000	29 000	23 000	20 000	15 000	12 000
N	min	64 000	32 000	24 000	20 000	16 000	12 000	10 000
	max	96 000	48 000	36 000	29 000	24 000	18 000	15 000
S	min	45 000	23 000	17 000	14 000	12 000	9 000	7 000
	max	58 000	29 000	22 000	18 000	15 000	11 000	9 000
H	min	51 000	26 000	20 000	16 000	13 000	10 000	8 000
	max	71 000	36 000	27 000	22 000	18 000	14 000	11 000

ST		BR				
ISO		RPM				
		DC [mm]				
		3	6	8	10	12
P	min	100 000	65 000	60 000	55 000	35 000
	max	60 000	45 000	35 000	30 000	20 000

VA		BR				
ISO		RPM				
		DC [mm]				
		3	6	8	10	12
M	min	100 000	65 000	60 000	55 000	35 000
	max	60 000	30 000	25 000	20 000	15 000

GRP				
ISO		RPM		
		DC [mm]		
		3	6	8
N4	min	25 000	20 000	18 000
	max	30 000	25 000	22 000

AS		
ISO		RPM
		DC [mm]
		3
S	min	60 000
	max	80 000