

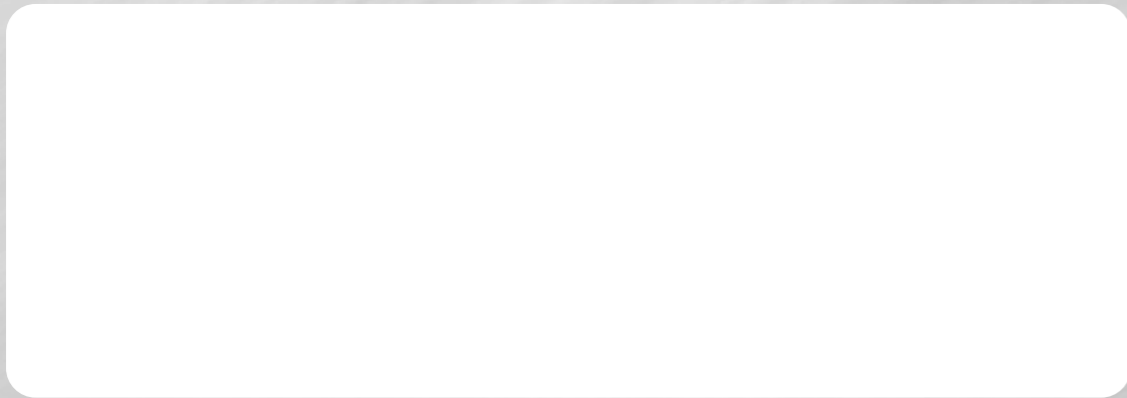


Better Cutter, Better Work

# Cutting Tool (I)

## Carbide Burrs

High Performance Quality For Industrial Applications



## Introduction

Tec-Spiral, with state-of-the-art technology, manufactures a full range of high performance quality carbide tungsten burrs in China.

With the spirit of Continual Innovation, unceasing improvement, we are able to provide not only various standard carbide burrs, but also customized burrs.

Speedway burrs are our patented products, with the unique combination design of coarse teeth and fine teeth on one burr. The coarse teeth enable big chip space and fast stock removal, and the fine teeth ensure very fine surface finish. The combination of the two brings stable, smooth and efficient performance by eliminating chipping and flaking. Immediately after the launch on the market, Speedway received favorable comments from customers worldwide, more and more customers have been experiencing the greatness of speedway.

We are always following the strictest international standard in our production, inspection and quality control. The ISO9001-2008 certification granted by LRQA resulted from our strict quality control system and excellent business management. We never stop the pursuit of constant improvement.

By using high quality carbide raw material and advanced CNC machine, we are manufacturing first class carbide burrs in modern plant. With remarkable manufacture ability and abundant inventory we can meet customers' various demands in very short time.

Our staff members all bear in mind the importance of customer satisfaction. Advanced technology, stable quality and quick response are the keys to our customer satisfaction.

We are a leading pioneer in the field of carbide burr in China. Our products are widely used in the global fields of aviation, shipbuilding, railway construction, automotive industry, heavy industry, mould making, etc. We are providing the best solutions for deburring on metal and nonmetal. Great passion is always our inspiration to fulfill the desire of mutual development with our customers and to meet the new challenges.

Warmly welcome your visit at Tec-spiral. We will be at your service at anywhere and any time!



## Product Features

- ◆ Made by high quality tungsten carbide material. High wear resistance and long tool life.
- ◆ Grinded by high quality diamond grinding wheel. Sharp cutting edge and very fine finish.
- ◆ Manufactured by advanced CNC machine. High consistency and quality assurance.
- ◆ 100 testing on welding strength, assurance for users' safety.
- ◆ Well-designed cutter angle for optimum cutting efficiency and stability.
- ◆ Ball nosed end with divisional interlaced teeth to ensure high efficiency for every cutting area.
- ◆ Strong R&D capability enables special design and solutions according to customers' specific requirements.

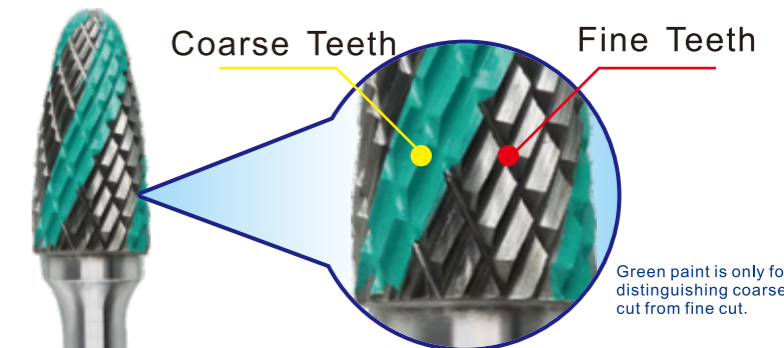


### Patent :

*Speedway* Burr

### Granted Patent :

In USA  
Europe  
China



Coarse teeth: big chip space allows fast stock removal with high efficiency.

Fine teeth: Fine-machining of a glabrous surface.

Combination of the above eliminates flaking, 30% more efficiency and higher brightness than normal double cut rotary burrs.

Type&Application

Head Shape & Photo	Head styles	DIN8033 Standard	Head Code	Application	Diagram
	Cylindrical Plain End	ZYA	A	Suitable for contour finishing	
	Cylindrical With End Cut	ZYA-S	B	Suitable for finishing contour and right angled corners	
	Cylindrical Ball Nose	WRC	C	Suitable for machining contour and circular arc surface	
	Ball	KUD	D	Suitable for rounded edge processing, end deburring and end pre-machining before welding	
	Oval	TRE	E	Suitable for rounded edge processing	
	Arch Ball Nose	RBF	F	Suitable for processing rounded edge in small places	
	Arch Pointed Nose	SPG	G	Suitable for processing small places, and acute angled contour	
	Flame	—	H	Suitable for rounded edge processing	
	60° Cone	KSJ	J	Suitable for counterboring and chamfering bores with 60° angle	
	90° Cone	KSK	K	Suitable for counterboring and chamfering bores with 90° angle	
	Conical Ball Nose	KEL	L	Suitable for processing rounded edge and surface in small places	
	Conical Pointed Nose	SKM	M	Suitable for processing rounded edge and surface in small places	
	Inverted Cone	WKN	N	Suitable for rearside chamfering	

Flute Styles&Application

Flute Styles	Code	Flute Photo	Features	Materials for processing
Diamond Cut	Q		Designed for creating extremely small powder-like chip. Excellent operation control. For materials requiring a fine finish	Fiberglass reinforced plastics, carbon fiber reinforced plastics, thermoplastic plastics, hard rubber, ceramics, hardened steels HRC40-60, Nickel based alloy steel.
Aluma Cut	W		Large chip space and sharp cutting edge allows fast chip removal	Aluminum, Aluminum alloys, light metal, plastic, hard rubber, wood
Coarse Cut	C		Large chip space, enables big cutting allowance. Coarse machining	light metal, non-ferrous metal, plastic, hard rubber, wood, non-ferrous metal, cast iron
Single Cut	P		Regular cut which produces long chips	Cast iron, cast steel, steel part (<HRC60), Bronze, Hardened Aluminum alloys, Nickel based alloy steel, stainless steel, Titanium alloys.
Double Cut	X		General cut, designed for creating small chips and excellent work piece finishes. Exceedingly convenient application by user	Cast iron, cast steel, steel parts (<HRC60), Nickel based alloys, Nickel-Cobalt alloys, Austenitic stainless steel, Titanium alloys
Speedway Cut	V		Patented product-Speedway. Coarse teeth and fine teeth are interlaced by reasonable grouping and allocation, resulted in a sound combination of high efficiency of coarse teeth and high brightness of fine teeth polishing. Eliminates chipping and flaking when using	Cast iron, cast steel, steel parts (<HRC60), Nickel based alloys, Nickel-Cobalt alloys, Austenitic stainless steel, Titanium alloys
Chipbreaker Cut	Y		Produces small chips with chip breaker. Convenient application by users	Steel with high malleability, Cast iron, cast steel, steel parts (<HRC60), Nickel based alloys, Nickel-Cobalt alloys, Austenitic stainless steel, Titanium alloys
Fine Cut	S		Creating a fine surface finish	Hardened steel (HRC40-60), heat resisting metals, Nickel based alloys, Cobalt based alloys, stainless steel

Cut Selection & Application Guidance:

To achieve the best effect, follow these steps :

Steps	1	2	3	4	5	6
Content	Choose materials machined	Define the processing requirement	Select appropriate cut	Obtain the recommended range of cutting speed	Determine the cutter diameter per processing space and requirement	Find out the recommended RPM per cutter diameter and recommended speed in step 4
Table look up	Table 1	Table 1	Table 1	Table 1	Table 2	Table 2

Table 1

1 Material Categories		2 Processing Regiments	3 Cut	4 Cutting Speed (m/min)		
Steel and steel castings	Non-head, Treated Steels (<40HRC) Constructional Steels, Carbon steels tool steels Non-alloyed Steels, Cast steels	Rough Finish	Coarse Cut (C)	600-900		
			Single Cut (P)	450-600		
			Double Cut (X)	450-600		
		Fine Finish	Single Cut (P)	500-600		
			Speedway Cut (V)	500-600		
			Single Cut (P)	250-350		
Steel, 40-60Rc Tool steels\ Tempering steels\ Alloyed steels\ Steel castings	Rough Finish	Double Cut (X)	250-350			
		Speedway Cut (V)	250-350			
		Fine Cut (S)	350-450			
	Fine Finish	Diamond Cut (Q)	350-450			
		Coarse Cut (C)	300-450			
		Single Cut (P)	250-350			
Stainless steels	Austenitic eg: 301, 302, 303, 304, 304L, 316, 316L, 321, 317 Ferritic high-grade steels eg: 409, 410L, 430, 439, 441, 434, 436, 444, 446, 445, 447	Rough Finish	Double Cut (X)	250-350		
			Speedway Cut (V)	250-350		
			Fine Cut (S)	350-450		
		Fine Finish	Diamond Cut (Q)	350-450		
			Coarse Cut (C)	600-900		
			Aluma Cut (W)	800-1100		
Non-ferrous metals	Soft non-ferrous metals: Aluminium\ Aluminium alloys\ Brass\Copper\Zn	Rough Finish	Single Cut (P)	250-350		
			Double Cut (X)	250-350		
			Speedway Cut (V)	250-350		
	Hard non-ferrous metals: Bronze\ Titanium\ Titanium alloys\ very hard aluminium alloys	Rough Finish	Single Cut (P)	300-450		
			Double Cut (X)	300-450		
			Speedway Cut (V)	300-450		
Heat resisting alloys Nickel based alloys\Cobalt based alloys (aircraft engine and turbine construction)	Rough Finish	Chipbreaker Cut (Y)	300-450			
		Fine Cut (S)	350-500			
		Diamond Cut (Q)	350-500			
Cast iron	Grey cast iron \ Spheroidal graphite cast iron	Rough Finish	Coarse Cut (C)	600-900		
			Single Cut (P)	450-600		
			Double Cut (X)	450-600		
			Speedway Cut (V)	450-600		
		Fine Finish	Single Cut (P)	500-600		
			Diamond Cut (Q)	500-900		
Plastics\ Other materials	Thermoplastics\ Hard rubber\ Wood	Rough Finish	Coarse Cut (C)	500-900		
			Aluma Cut (W)	500-1100		
			Diamond Cut (Q)	500-900		
	Glass fiber reinforced plastics\ Carbon fiber reinforced plastics	Rough Finish	Diamond Cut (Q)	500-900		
			Ceramics	Rough Finish	Diamond Cut (Q)	500-900

Table 2

5 Diameter (mm)	4 Cutting Speed (m/min)								
	250	300	350	400	450	500	600	900	1100
	6 RPM (m/min)								
2	40,000	48,000	56,000	64,000	72,000	80,000	95,000	143,000	175,000
3	27,000	32,000	37,000	42,000	48,000	53,000	64,000	95,000	117,000
4	20,000	24,000	28,000	32,000	36,000	40,000	48,000	72,000	88,000
5	16,000	19,000	22,000	25,000	29,000	32,000	38,000	57,000	70,000
6	13,000	16,000	19,000	21,000	24,000	27,000	32,000	48,000	59,000
8	10,000	12,000	14,000	16,000	18,000	20,000	24,000	36,000	44,000
10	8,000	10,000	11,000	13,000	14,000	16,000	19,000	29,000	35,000
12	7,000	8,000	9,000	11,000	12,000	13,000	16,000	24,000	30,000
16	5,000	6,000	7,000	8,000	9,000	10,000	12,000	18,000	22,000
19	4,000	5,000	6,000	6,000	7,000	8,000	10,000	14,000	18,500
25	3,000	4,000	4,000	5,000	6,000	6,000	8,000	11,000	14,000

For longer tool life and better chip removal ability, different coatings are available for different materials.

TiN

General purpose coating, high cost-effective, makes the cutter long tool life. Provides cutter surface with a higher degree of hardness and high temperature stability meanwhile lower friction coefficient. Suitable for processing steel and cast iron.



TiCN

Higher hardness and wear resistance than TiN coating. Good flexibility and shock resistance, high temperature stability. Suitable for processing alloyed steels, stainless steels and wear resisting casting iron.



TiAlN

High performance coating with a high degree of hardness, high wear resistance and low heat conductivity. Good chemical stability and oxidation resistance and wear resistance. Suitable for processing heat resisting alloys, high-alloy steel, stainless steel, Titanium alloys and NiCo alloys.



DLC

A high degree of hardness, good wear resistance and low friction coefficient provide better chip removal ability. Strong adhesion to cutter body, excellent corrosion preventive. Suitable for processing non-ferrous metals like Aluminum alloys



Operaton Cautions

1. Work with maximum RPM in the recommended cutting speed. Do not use speeds below 3,000 RPM except in special cases. Running below the optimum speed will encourages chipping and premature wear.
2. The larger head and shank diameter is recommended from the appropriate list for higher efficiency.
3. Adopt correct chuck to clamp cutter shank. Chucks and collets must be absolutely concentric to avoid chipping and premature wear.
4. Over two-thirds of length of shank must be clamped to ensure safety.
5. Extra long shank burrs shall be performed at lower speed. Turn on the power or air tools after the burrs touch the work piece for safety reasons. Do not move the cutter from the work piece when using, and turn off the power or air tools before any movements.
6. Avoid reciprocation in processing which may cause cutting edge breaking and premature wear. Follow the order from right to left.
7. Reduce RPM when processing on one location continuously or materials with low heat conductivity. Never let the shank and head become discolored blue due to overheat, which will result in lower welding strength.
8. When machining very sticky materials, the use of a suitable lubricant is recommended to prevent blocking in chip space.

Safety Appliances:



Safety Glasses



Safety Facial Mask



Safety Earflap



Safety Gloves

### High-performance burrs

The general application burrs conform to the standard DIN cuts and can be used on nearly all types of material. High-performance burrs were designed for specific machining tasks for the below different material and offer significant advantages over general application burrs. For more information please contact our sales representatives.

- For steel
- For stainless steel (INOX)
- For aluminium
- For cast iron
- For heavy-duty applications
- For edge chamfering

### Customized Burrs

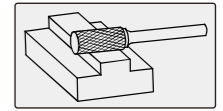
If you cannot find the solution for your particular application in our catalogue, we can produce customized burrs to meet your special requirements. Please do not hesitate to contact us, our sales representatives and engineers will assist you in the analysis of your tasks.

### Examples of Tec-Spiral Customized Burrs

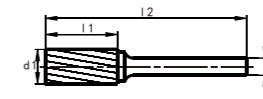


### Cylindrical Plain End

Shape: A, ZYA, SA



Suitable for contour finishing.



#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>3mm Shank</b>							
A0314	ZYA0313	3	14	3	38	14BA00098	14BA00585
A0613	ZYA0613	6	13	3	53	14BA00583	14BA00584
<b>6mm Shank</b>							
A0618	—	6	18	6	50	14BA00131	14BA00586
A0818	—	8	18	6	63	14BA00187	14BA00587
A1020	ZYA1020	10	20	6	65	14BA00241	14BA00588
A1225	ZYA1225	12	25	6	70	14BA00274	14BA00590
A1625	ZYA1625	16	25	6	70	14BA00307	14BA00592
A1925	—	19	25	6	70	14BA00319	14BA00593
<b>8mm Shank</b>							
A1225	ZYA1225	12	25	8	70	14BA00589	14BA00591

#### Imperial

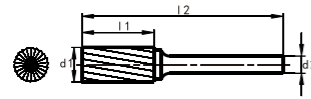
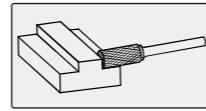
ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SA-1NF	1/4	3/4	1/4	2	14BA00395	14BA00648
SA-3NF	3/8	3/4	1/4	2-3/4	14BA00443	14BA00649
SA-5NF	1/2	1	1/4	3	14BA00552	14BA00650
SA-6NF	5/8	1	1/4	3	14BA00485	14BA00651
SA-7NF	3/4	1	1/4	3	14BA00491	14BA00652

Remark: Non standard Size Available

### Cylindrical With End Cut

Shape: B, ZYAS, SB

Suitable for finishing contour and right angled corners.



#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Coating	
						Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>3mm Shank</b>							
B0314	ZYAS0313	3	14	3	38	14BB00092	14BB00524
B0613	ZYAS0613	6	13	3	53	14BB00525	14BB00526
<b>6mm Shank</b>							
B0618	—	6	18	6	56	14BB00140	14BB00527
B0818	—	8	18	6	63	14BB00200	14BB00528
B1020	ZYAS1020	10	20	6	65	14BB00260	14BB00529
B1225	ZYAS1225	12	25	6	70	14BB00284	14BB00531
B1625	ZYAS1625	16	25	6	70	14BB00314	14BB00533
B1925	—	19	25	6	70	14BB00326	14BB00534
<b>8mm Shank</b>							
B1225	ZYAS1225	12	25	8	70	14BB00530	14BB00532

#### Imperial

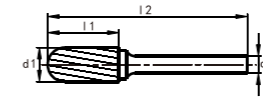
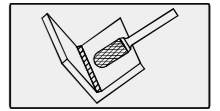
ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Coating	
					Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SB-1NF	1/4	3/4	1/4	2	14BB00386	14BB00577
SB-3NF	3/8	3/4	1/4	2-3/4	14BB00440	14BB00578
SB-5NF	1/2	1	1/4	3	14BB00470	14BB00579
SB-6NF	5/8	1	1/4	3	14BB00488	14BB00580
SB-7NF	3/4	1	1/4	3	14BB00494	14BB00581

Remark: Non standard Size Available

### Cylindrical Ball Nose

Shape: C, WRC, SC

Suitable for machining contour and circular arc surface



#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Coating	
						Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>3mm Shank</b>							
C0314	WRC0313	3	14	3	38	14BC00090	14BC00554
C0613	WRC0613	6	13	3	53	14BC00555	14BC00556
<b>6mm Shank</b>							
C0618	—	6	18	6	50	14BC00518	14BC00557
C0818	—	8	18	6	63	14BC00191	14BC00558
C1020	WRC1020	10	20	6	65	14BC00257	14BC00559
C1225	WRC1225	12	25	6	70	14BC00284	14BC00561
C1625	WRC1625	16	25	6	70	14BC00317	14BC00563
C1925	—	19	25	6	70	14BC00329	14BC00564
<b>8mm Shank</b>							
C1225	WRC1225	12	25	8	70	14BC00560	14BC00562

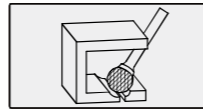
#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Coating	
					Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SC-1NF	1/4	3/4	1/4	2	14BC00392	14BC00669
SC-3NF	3/8	3/4	1/4	2-3/4	14BC00433	14BC00670
SC-5NF	1/2	1	1/4	3	14BC00463	14BC00671
SC-6NF	5/8	1	1/4	3	14BC00481	14BC00672
SC-7NF	3/4	1	1/4	3	14BC00493	14BC00673

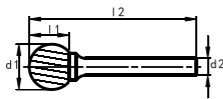
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### Ball

Shape: D, KUD, SD



Suitable for rounded edge processing, end deburring and end pre-machining before welding



Shiny

DLC

#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>3mm Shank</b>							
D0302	KUD0302	3	2.8	3	38	14BD00036	14BD00409
D0605	KUD0605	6	5.4	3	45	14BD00104	14BD00410
<b>6mm Shank</b>							
D0605	KUD0605	6	5.4	6	50	14BD00063	14BD00411
D0807	KUD0807	8	7.2	6	52	14BD00119	14BD00412
D1009	KUD1009	10	9	6	54	14BD00137	14BD00413
D1211	KUD1210	12	10.8	6	56	14BD00173	14BD00415
D1614	KUD1614	16	14.4	6	59	14BD00206	14BD00417
D1916	—	19	17.1	6	62	14BD00218	14BD00418
<b>8mm Shank</b>							
D1211	KUD1210	12	10.8	8	50	14BD00414	14BD00416

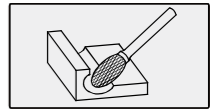
#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SD-1NF	1/4	7/32	1/4	2	14BD00269	14BD00473
SD-3NF	3/8	5/16	1/4	2-5/16"	14BD00305	14BD00474
SD-5NF	1/2	7/16	1/4	2-7/16"	14BD00329	14BD00475
SD-6NF	5/8	9/16	1/4	2-9/16"	14BD00347	14BD00476
SD-7NF	3/4	11/16	1/4	2-11/16"	14BD00353	14BD00477

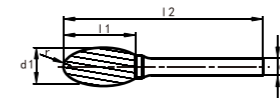
Remark: Non standard Size Available

### Oval

Shape: E, TRE, SE



Suitable for rounded edge processing



Shiny

DLC

#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Ball nose radius r	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>6mm Shank</b>								
E0610	TRE0610	6	10	6	50	2.4	14BE00047	14BE00290
E0813	TRE0813	8	13	6	58	3.7	14BE00071	14BE00291
E1016	TRE1016	10	16	6	61	4.0	14BE00092	14BE00292
E1220	TRE1220	12	20	6	65	4.0	14BE00101	14BE00293
E1625	TRE1625	16	25	6	70	6.3	14BE00134	14BE00294
E1925	—	19	25	6	70	8.0	14BE00140	14BE00295

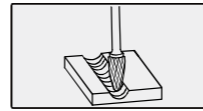
#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SE-3NF	3/8	5/8	1/4	2-5/8"	5/32	14BE00211	14BE00341
SE-5NF	1/2	7/8	1/4	2-7/8"	13/64	14BE00229	14BE00342
SE-6NF	5/8	1	1/4	3"	1/4	14BE00247	14BE00343
SE-7NF	3/4	1	1/4	3"	5/16	14BE00253	14BE00344

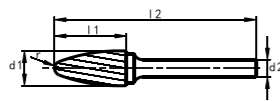
Remark: Non standard Size Available

### Arch Ball Nose

Shape: F, RBF, SF



Suitable for processing rounded edge in small places



Shiny

DLC

#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Ball nose radius r	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>3mm Shank</b>								
F0313	RBF0313	3	13	3	38	0.9	14BF00018	14BF00449
F0613	RBF0613	6	13	3	53	1.6	14BF00104	14BF00450
<b>6mm Shank</b>								
F0618	RBF0618	6	18	6	50	1.6	14BF00071	14BF00451
F0818	—	8	18	6	63	1.8	14BF00116	14BF00452
F1020	RBF1020	10	20	6	65	2.4	14BF00143	14BF00453
F1225	RBF1225	12	25	6	70	3.0	14BF00158	14BF00454
F1625	—	16	25	6	70	3.5	14BF00194	14BF00456
F1925	—	19	25	6	70	4.7	14BF00200	14BF00457
<b>8mm Shank</b>								
F1225	RBF1225	12	25	8	70	3.0	14BF00407	14BF00455

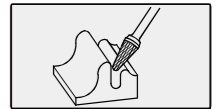
#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SF-1NF	1/4	3/4	1/4	2	1/16	14BF00268	14BF00512
SF-3NF	3/8	3/4	1/4	2-3/4	3/32	14BF00298	14BF00513
SF-5NF	1/2	1	1/4	3	1/8	14BF00328	14BF00514
SF-6NF	5/8	1	1/4	3	9/64	14BF00352	14BF00515
SF-14NF	3/4	1 1/4	1/4	3-1/4	3/16	14BF00364	14BF00516

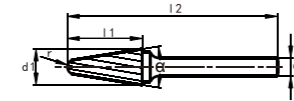
Remark: Non standard Size Available

### Conical Ball Nose

Shape: L, KEL, SL



Suitable for processing rounded edge and surface in small places



Shiny

DLC

#### Metric

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Ball nose radius r	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
<b>6mm Shank</b>								
L0616	—	6	16	6	50	1.2	14BK00069	14BK00403
L0822	—	8	22	6	67	1.4	14BK00138	14BK00404
L1027	—	10	27	6	72	1.6	14BK00165	14BK00405
L1230	KEL1230	12	30	6	75	3.2	14BK00180	14BK00407
L1630	KEL1630	16	30	6	75	4.8	14BK00240	14BK00410
L1938	—	19	38	6	83	5.6	14BK00252	14BK00412
<b>8mm Shank</b>								
L1230	KEL1230	12	30	8	75	3.2	14BK00406	14BK00408
L1630	KEL1630	16	30	8	75	4.8	14BK00409	14BK00411

#### Imperial

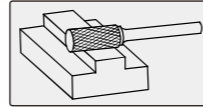
ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Aluma cut uncoated Order Number	Aluma cut DLC coated Order Number
SL-3NF	3/8	1 1/16	1/4	3-1/16	1/16	14BK00321	14BK00459
SL-4NF	1/2	1 1/8	1/4	3-1/8	1/8	14BK00333	14BK00460
SL-5NF	5/8	1 3/16	1/4	3-1/8	3/16	14BK00351	14BK00461
SL-7NF	3/4	1 1/2	1/4	3-1/2	7/32	14BK00369	14BK00462

Remark: Non standard Size Available

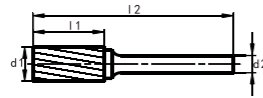


### Cylindrical Plain End

Shape: A, ZYA, SA



Suitable for contour finishing.



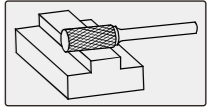
Patent

#### Metric

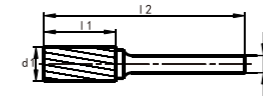
Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3mm Shank</b>													
A1.5*6		1.5	6	3	38		14BA00002						
A0210	ZYA0210	2	10	3	38		14BA00020						
A2.5*11		2.5	11	3	38		14BA00026						
A0314	ZYA0313	3	14	3	38	14BA00093	14BA00094				14BA00096	14BA00097	14BA00095
A0413	ZYA0413	4	13	3	53	14BA00158	14BA00159				14BA00161	14BA00162	14BA00160
A0513		5	13	3	53	14BA00170	14BA00171				14BA00173	14BA00174	14BA00172
A0613	ZYA0613	6	13	3	53	14BA00556	14BA00628				14BA00630	14BA00631	14BA00629
<b>6mm Shank</b>													
A0312	ZYA0313	3	12	6	50	14BA00043	14BA00044	14BA00608		14BA00634	14BA00046	14BA00047	14BA00045
A0416		4	16	6	50	14BA00077	14BA00069	14BA00609		14BA00635	14BA00078	14BA00074	14BA00075
A0516		5	16	6	50	14BA00089	14BA00085			14BA00636	14BA00090	14BA00086	14BA00087
A0616	ZYA0616	6	16	6	50	14BA00114	14BA00115	14BA00610		14BA00606	14BA00117	14BA00118	14BA00116
A0819	ZYA0820	8	19	6	64	14BA00194	14BA00195	14BA00611	14BA00627	14BA00637	14BA00197	14BA00198	14BA00196
A1020	ZYA1020	10	20	6	65	14BA00236	14BA00237	14BA00229	14BA00612	14BA00638	14BA00239	14BA00240	14BA00238
A1125		11	25	6	70	14BA00248	14BA00249			14BA00607	14BA00251	14BA00252	14BA00250
A1225	ZYA1225	12	25	6	70	14BA00269	14BA00270	14BA00262	14BA00260	14BA00639	14BA00272	14BA00273	14BA00271
A1325		12.7	25	6	70	14BA00287	14BA00288			14BA00640	14BA00290	14BA00391	14BA00289
A1625	ZYA1625	16	25	6	70	14BA00302	14BA00303	14BA00295	14BA00293	14BA00641	14BA00305	14BA00306	14BA00304
A1925		19	25	6	70	14BA00314	14BA00315			14BA00642	14BA00317	14BA00318	14BA00316
A2525		25	25	6	70	14BA00326	14BA00327			14BA00643	14BA00329	14BA00330	14BA00328
<b>8mm Shank</b>													
A1225	ZYA1225	12	25	8	70	14BA00615	14BA00616	14BA00614	14BA00613	14BA00644	14BA00618	14BA00619	14BA00617
A1625	ZYA1625	16	25	8	70	14BA00622	14BA00623	14BA00621	14BA00620	14BA00645	14BA00625	14BA00626	14BA00624

### Cylindrical Plain End

Shape: A, ZYA, SA



Suitable for contour finishing.



Patent

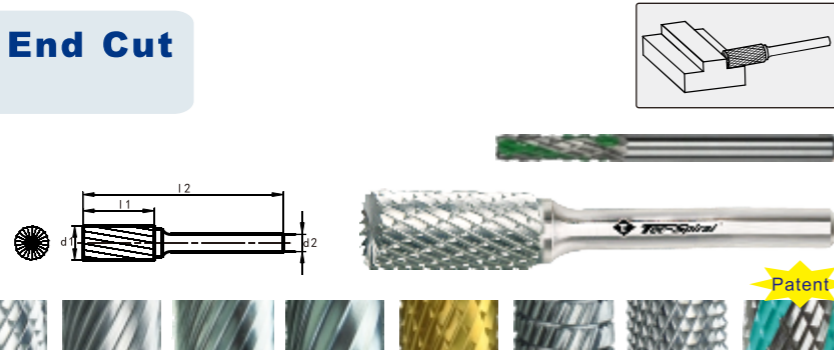
#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3/32 Shank</b>										
SA-61	1/16	1/4	3/32	1-1/2	14BA00681	14BA00704	14BA00655	14BA00705	14BA00706	
SA-63	3/32	3/8	3/32	1-1/2	14BA00682	14BA00708	14BA00656	14BA00709	14BA00710	
<b>1/8 Shank</b>										
SA-41	1/16	1/4	1/8	1-1/2	14BA00336	14BA00337	14BA00654	14BA00339	14BA00340	
SA-42	3/32	7/16	1/8	1-1/2	14BA00354	14BA00355	14BA00657	14BA00357	14BA00358	
SA-12	1/8	1/2	1/8	2	14BA00724	14BA00725	14BA00660	14BA00727	14BA00728	14BA00726
SA-43	1/8	9/16	1/8	1-1/2	14BA00372	14BA00373	14BA00659	14BA00374	14BA00376	14BA00375
SA-52	5/32	1/2	1/8	1-1/2	14BA00396	14BA00397	14BA00661	14BA00399	14BA00400	14BA00398
SA-53	3/16	1/2	1/8	1-1/2	14BA00402	14BA00403	14BA00664	14BA00405	14BA00406	14BA00404
SA-50	1/4	3/16	1/8	1-11/16	14BA00414	14BA00415	14BA00666	14BA00417	14BA00418	14BA00416
SA-51	1/4	1/2	1/8	2	14BA00408	14BA00409	14BA00667	14BA00411	14BA00412	14BA00410
<b>1/4 Shank</b>										
SA-11	1/8	1/2	1/4	2	14BA00360	14BA00361	14BA00658	14BA00363	14BA00364	14BA00362
SA-13	5/32	5/8	1/4	2	14BA00366	14BA00367	14BA00662	14BA00369	14BA00370	14BA00368
SA-14	3/16	5/8	1/4	2	14BA00684	14BA00729	14BA00665	14BA00731	14BA00732	14BA00730
SA-1	1/4	3/4	1/4	2	14BA00390	14BA00391	14BA00668	14BA00393	14BA00394	14BA00392
SA-1A	1/4	1	1/4	2	14BA00384	14BA00385	14BA00669	14BA00387	14BA00388	14BA00386
SA-2	5/16	3/4	1/4	2-3/4	14BA00432	14BA00433	14BA00670	14BA00435	14BA00436	14BA00434
SA-3	3/8	3/4	1/4	2-3/4	14BA00438	14BA00439	14BA00671	14BA00441	14BA00442	14BA00440
SA-3A	3/8	1	1/4	3	14BA00444	14BA00445	14BA00672	14BA00447	14BA00448	14BA00446
SA-3X	3/8	1-1/2	1/4	3	14BA00685	14BA00733	14BA00673	14BA00735	14BA00736	14BA00734
SA-4	7/16	1	1/4	3	14BA00468	14BA00469	14BA00674	14BA00471	14BA00472	14BA00470
SA-5	1/2	1	1/4	3	14BA00547	14BA00548	14BA00675	14BA00550	14BA00551	14BA00549
SA-6	5/8	1	1/4	3	14BA00480	14BA00481	14BA00676	14BA00483	14BA00484	14BA00482
SA-15	3/4	1/2	1/4	3	14BA00686	14BA00741	14BA00677	14BA00743	14BA00744	14BA00742
SA-16	3/4	3/4	1/4	3	14BA00687	14BA00745	14BA00678	14BA00747	14BA00748	14BA00746
SA-7	3/4	1	1/4	3	14BA00486	14BA00487	14BA00679	14BA00489	14BA00490	14BA00488
SA-9	1	1	1/4	3	14BA00492	14BA00493	14BA00680	14BA00495	14BA00496	14BA00494

### Cylindrical With End Cut

Shape: B, ZYAS, SB

Suitable for finishing contour and right angled corners.



#### Metric



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3mm Shank

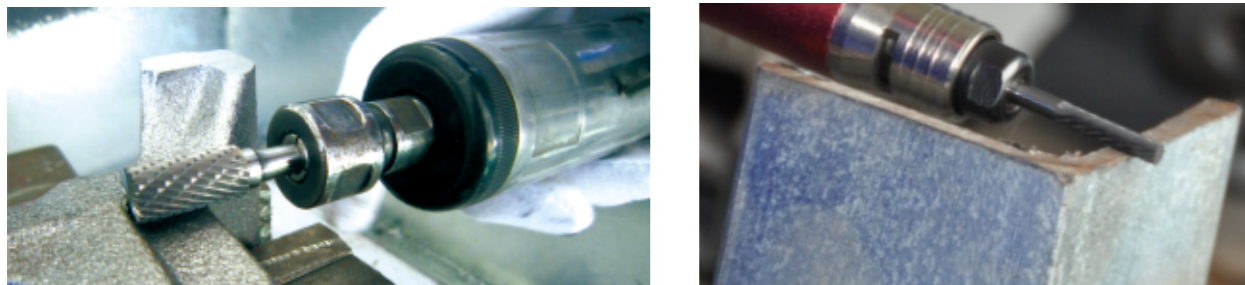
B1.5*6		1.5	6	3	38		14BB00002						
B0210 ZYAS0210	2	10	3	38			14BB00021						
B2.5*11		2.5	11	3	38		14BB00027						
B0314 ZYAS0313	3	14	3	38		14BB00087	14BB00088				14BB00090	14BB00091	14BB00089
B0613 ZYAS0613	6	13	3	53		14BB00189	14BB00190				14BB00192	14BB00193	14BB00191

#### 6mm Shank

B0312 ZYAS0313	3	12	6	50		14BB00045	14BB00046	14BB00538		14BB00565	14BB00048	14BB00049	14BB00047
B0413 ZYAS0413	4	13	6	50		14BB00540	14BB00541	14BB00539		14BB00566	14BB00543	14BB00544	14BB00542
B0513		5	13	6	50	14BB00545	14BB00546			14BB00567	14BB00548	14BB00549	14BB00547
B0619		6	19	6	50	14BB00141	14BB00142	14BB00550		14BB00568	14BB00144	14BB00145	14BB00143
B0819 ZYAS0820	8	19	6	64		14BB00207	14BB00208	14BB00552	14BB00551	14BB00569	14BB00210	14BB00211	14BB00209
B1020 ZYAS1020	10	20	6	65		14BB00255	14BB00256	14BB00553	14BB00537	14BB00570	14BB00258	14BB00259	14BB00257
B1125		11	25	6	70	14BB00267	14BB00268			14BB00571	14BB00270	14BB00271	14BB00269
B1225 ZYAS1225	12	25	6	70		14BB00279	14BB00280	14BB00555	14BB00554	14BB00572	14BB00282	14BB00283	14BB00281
B1325		12.7	25	6	70	14BB00297	14BB00298			14BB00573	14BB00300	14BB00301	14BB00299
B1625 ZYAS1625	16	25	6	70		14BB00309	14BB00310	14BB00557	14BB00556	14BB00574	14BB00312	14BB00313	14BB00311
B1925		19	25	6	70	14BB00321	14BB00322			14BB00575	14BB00324	14BB00325	14BB00323
B2525		25	25	6	70	14BB00333	14BB00334			14BB00576	14BB00336	14BB00337	14BB00335

#### 8mm Shank

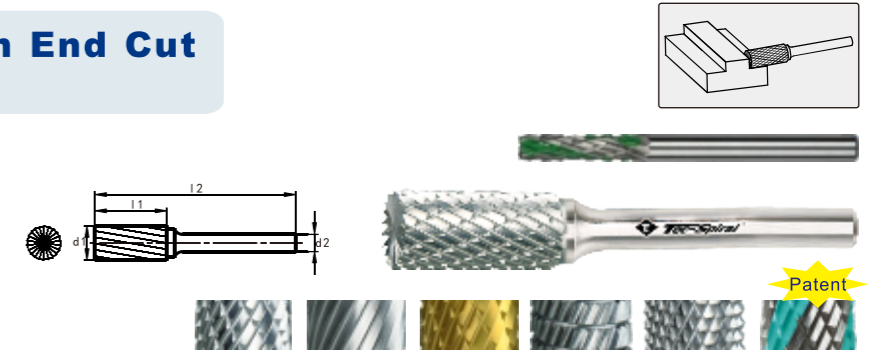
B1225 ZYAS1225	12	25	8	70		14BB00560	14BB00561	14BB00559	14BB00558	14BB00577	14BB00563	14BB00564	14BB00562
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### Cylindrical With End Cut

Shape: B, ZYAS, SB

Suitable for finishing contour and right angled corners.



#### Imperial



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 1/8 Shank

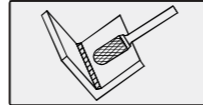
SB-40	1/8	1/8	1/8	1-1/2	14BB00611	14BB00638	14BB00582	14BB00640	14BB00641	14BB00639
SB-41	1/16	1/4	1/8	1-1/2	14BB00612	14BA00337	14BB00583	14BA00338	14BA00339	
SB-42	3/32	7/16	1/8	1-1/2	14BB00351	14BB00352	14BB00584	14BB00354	14BB00355	
SB-43	1/8	9/16	1/8	1-1/2	14BB00369	14BB00370	14BB00588	14BB00372	14BB00373	14BB00371
SB-50	1/4	3/16	1/8	1-11/16	14BB00614	14BB00406	14BB00591	14BB00408	14BB00409	14BB00407
SB-51	1/4	1/2	1/8	2	14BB00399	14BB00400	14BB00592	14BB00402	14BB00403	14BB00401
SB-52	5/32	1/2	1/8	1-1/2	14BB00387	14BB00388	14BB00593	14BB00390	14BB00391	14BB00389
SB-53	3/16	1/2	1/8	1-1/2	14BB00393	14BB00394	14BB00594	14BB00396	14BB00397	14BB00395

#### 1/4 Shank

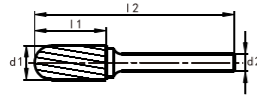
SB-11	1/8	1/2	1/4	2	14BB00357	14BB00358	14BB00586	14BB00360	14BB00361	14BB00359
SB-12	1/8	5/8	1/4	2	14BB00642	14BB00643	14BB00587	14BB00645	14BB00646	14BB00644
SB-13	5/32	5/8	1/4	2	14BB00613	14BB00647	14BB00589	14BB00649	14BB00650	14BB00648
SB-14	3/16	5/8	1/4	2	14BB00363	14BB00364	14BB00590	14BB00366	14BB00367	14BB00365
SB-0	1/4	5/8	1/4	2	14BB00521	14BB00651	14BB00596	14BB00653	14BB00654	14BB00652
SB-1	1/4	3/4	1/4	2	14BB00381	14BB00382	14BB00597	14BB00384	14BB00385	14BB00383
SB-1L	1/4	1	1/4	2	14BB00399	14BB00424	14BB00598	14BB00426	14BB00427	14BB00425
SB-2	5/16	3/4	1/4	2-3/4	14BB00429	14BB00430	14BB00599	14BB00432	14BB00433	14BB00431
SB-3	3/8	3/4	1/4	2-3/4	14BB00435	14BB00436	14BB00600	14BB00438	14BB00439	14BB00437
SB-3L	3/8	1	1/4	3	14BB00441	14BB00442	14BB00601	14BB00444	14BB00445	14BB00443
SB-3X	3/8	1-1/2	1/4	3	14BB00615	14BB00655	14BB00602	14BB00657	14BB00658	14BB00656
SB-4	7/16	1	1/4	3	14BB00459	14BB00460	14BB00603	14BB00462	14BB00463	14BB00461
SB-5	1/2	1	1/4	3	14BB00465	14BB00466	14BB00604	14BB00468	14BB00469	14BB00467
SB-6	5/8	1	1/4	3	14BB00483	14BB00484	14BB00605	14BB00486	14BB00487	14BB00485
SB-15	3/4	1/2	1/4	3	14BB00616	14BB00659	14BB00606	14BB00661	14BB00662	14BB00660
SB-16	3/4	3/4	1/4	3	14BB00617	14BB00663	14BB00607	14BB00665	14BB00666	14BB00664
SB-7	3/4	1	1/4	3	14BB00489	14BB00490	14BB00608	14BB00492	14BB00493	14BB00491
SB-8	7/8	1	1/4	3	14BB00618	14BB00667	14BB00609	14BB00669	14BB00670	14BB00668
SB-9	1	1	1/4	3	14BB00619	14BB00671	14BB00610	14BB00673	14BB00674	14BB00672

### Cylindrical Ball Nose

Shape: C, WRC, SC



Suitable for machining contour and circular arc surface



Patent

#### Metric

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3mm Shank

C0210	WRC0210	2	10	3	38	14BC00026							
C2.5*11		2.5	11	3	38	14BC00034							
C0314	WRC0313	3	14	3	38	14BC00085	14BC00086				14BC00088	14BC00089	14BC00087
C0512		5	12	3	52	14BC00520	14BC00512				14BC00509	14BC00510	14BC00513
C0613	WRC0613	6	13	3	53	14BC00174	14BC00175				14BC00177	14BC00178	14BC00176

#### 6mm Shank

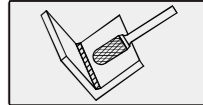
C0312	WRC0313	3	12	6	50	14BC00045	14BC00046	14BC00612		14BC00647	14BC00048	14BC00049	14BC00047
C0416		4	16	6	50	14BC00071	14BC00067	14BC00613		14BC00648	14BC00072	14BC00068	14BC00069
C0516		5	16	6	50	14BC00083	14BC00079			14BC00649	14BC00084	14BC00080	14BC00081
C0616	WRC0616	6	16	6	50	14BC00118	14BC00119	14BC00614		14BC00623	14BC00121	14BC00122	14BC00120
C0619		6	19	6	50	14BC00616	14BC00617	14BC00615		14BC00650	14BC00619	14BC00620	14BC00618
C0819	WRC0820	8	19	6	64	14BC00198	14BC00199	14BC00622	14BC00621	14BC00651	14BC00201	14BC00202	14BC00200
C1020	WRC1020	10	20	6	65	14BC00252	14BC00253	14BC00245	14BC00243	14BC00652	14BC00255	14BC00256	14BC00254
C1125		11	25	6	70	14BC00264	14BC00265			14BC00653	14BC00267	14BC00268	14BC00266
C1225	WRC1225	12	25	6	70	14BC00279	14BC00280	14BC00272	14BC00270	14BC00624	14BC00282	14BC00283	14BC00281
C1325		12.7	25	6	70	14BC00297	14BC00298			14BC00654	14BC00300	14BC00301	14BC00299
C1625	WRC1625	16	25	6	70	14BC00312	14BC00313	14BC00305	14BC00303	14BC00655	14BC00315	14BC00316	14BC00314
C1925		19	25	6	70	14BC00324	14BC00325			14BC00656	14BC00327	14BC00328	14BC00326
C2525		25	25	6	70	14BC00336	14BC00337			14BC00657	14BC00339	14BC00340	14BC00338

#### 8mm Shank

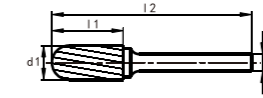
C1020	WRC1020	10	20	8	65	14BC00627	14BA00315	14BC00626	14BC00625	14BC00658	14BC00630	14BC00631	14BC00629
C1225	WRC1225	12	25	8	70	14BC00634	14BA00327	14BC00633	14BC00632	14BC00659	14BC00637	14BC00638	14BC00636
C1625	WRC1625	16	25	8	70	14BC00641	14BC00642	14BC00640	14BC00639	14BC00660	14BC00644	14BC00645	14BC00643

### Cylindrical Ball Nose

Shape: C, WRC, SC



Suitable for machining contour and circular arc surface



Patent

#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3/32 Shank

SC-61	3/32	3/8	3/32	1-1/2	14BC00699	14BC00715	14BC00674	14BC00717	14BC00718	
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#### 1/8 Shank

SC-41	3/32	7/16	1/8	1-1/2	14BC00351	14BC00352	14BC00675	14BC00354	14BC00355	
SC-42	1/8	9/16	1/8	1-1/2	14BC00369	14BC00370	14BC00677	14BC00372	14BC00373	14BC00371
SC-12	1/8	5/8	1/8	1-1/2	14BC00700	14BC00719	14BC00678	14BC00721	14BC00722	14BC00720
SC-52	5/32	1/2	1/8	1-1/2	14BC00399	14BC00400	14BC00679	14BC00402	14BC00403	14BC00401
SC-53	3/16	1/2	1/8	1-1/2	14BC00703	14BC00723	14BC00682	14BC00725	14BC00726	14BC00724
SC-51	1/4	1/2	1/8	2	14BC00405	14BC00406	14BC00684	14BC00408	14BC00409	14BC00407

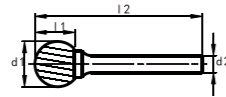
#### 1/4 Shank

SC-11	1/8	1/2	1/4	2	14BC00357	14BC00358	14BC00676	14BC00360	14BC00361	14BC00359
SC-13	5/32	5/8	1/4	2	14BC00701	14BC00727	14BC00680	14BC00729	14BC00730	14BC00728
SC-14	3/16	5/8	1/4	2	14BC00363	14BC00364	14BC00683	14BC00366	14BC00367	14BC00365
SC-16	3/4	3/4	1/4	2-3/4	14BC00482	14BC00483	14BC00685	14BC00485	14BC00486	14BC00484
SC-1	1/4	3/4	1/4	2	14BC00387	14BC00388	14BC00686	14BC00390	14BC00391	14BC00389
SC-1A	1/4	1	1/4	2	14BC00393	14BC00394	14BC00687	14BC00396	14BC00397	14BC00395
SC-2	5/16	3/4	1/4	2-3/4	14BC00422	14BC00423	14BC00688	14BC00425	14BC00426	14BC00424
SC-3	3/8	3/4	1/4	2-3/4	14BC00428	14BC00429	14BC00689	14BC00431	14BC00432	14BC00430
SC-3A	3/8	1	1/4	3	14BC00434	14BC00435	14BC00690	14BC00437	14BC00438	14BC00436
SC-3X	3/8	1-1/2	1/4	3	14BC00704	14BC00731	14BC00691	14BC00733	14BC00734	14BC00732
SC-4	7/16	1	1/4	3	14BC00452	14BC00453	14BC00692	14BC00455	14BC00456	14BC00454
SC-5	1/2	1	1/4	3	14BC00458	14BC00459	14BC00693	14BC00461	14BC00462	14BC00460
SC-6	5/8	1	1/4	3	14BC00476	14BC00477	14BC00694	14BC00479	14BC00480	14BC00478
SC-15	3/4	1/2	1/4	2-3/4	14BC00705	14BC00735	14BC00695	14BC00737	14BC00738	14BC00736
SC-16	3/4	3/4	1/4	2-3/4	14BC00482	14BC00483	14BC00696	14BC00485	14BC00486	14BC00484
SC-7	3/4	1	1/4	3	14BC00488	14BC00489	14BC00697	14BC00491	14BC00492	14BC00490
SC-9	1	1	1/4	3	14BC00706	14BC00739	14BC00698	14BC00741	14BC00742	14BC00740

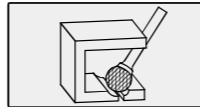
**Ball**

Shape: D, KUD, SD

Suitable for rounded edge processing, end deburring and end pre-machining before welding



Patent



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3mm Shank**

D02*1.8	KUD0201	2	1.8	3	38	14BD00001							
D2.5*2.3		2.5	2.3	3	38	14BD00004							
D0302	KUD0302	3	2.7	3	38	14BD00031	14BD00032				14BD00034	14BD00035	14BD00033
D0403	KUD0403	4	3.6	3	43	14BD00072	14BD00073				14BD00075	14BD00076	14BD00074
D0504		5	4.5	3	44	14BD00078	14BD00079				14BD00081	14BD00082	14BD00080

**6mm Shank**

D03*2.8	KUD0302	3	2.8	6	50	14BD00011	14BD00012	14BD00010		14BD00460	14BD00014	14BD00015	14BD00013
D0504	KUD0504	5	4.5	6	50	14BD00023	14BD00025			14BD00461	14BD00024	14BD00026	14BD00027
D0605	KUD0605	6	5.4	6	50	14BD00058	14BD00059	14BD00430		14BD00462	14BD00061	14BD00062	14BD00060
D0807	KUD0807	8	7.2	6	52	14BD00433	14BD00392	14BD00431	14BD00432	14BD00434	14BD00435	14BD00436	14BD00367
D1009	KUD1009	10	9	6	54	14BD00132	14BD00133	14BD00140	14BD00138	14BD00437	14BD00135	14BD00136	14BD00134
D1211	KUD1210	12	10.8	6	56	14BD00226	14BD00169	14BD00160	14BD00159	14BD00463	14BD00171	14BD00172	14BD00170
D1311		12.7	11.7	6	50	14BD00186	14BD00187			14BD00464	14BD00189	14BD00190	14BD00188
D1614	KUD1614	16	14.4	6	59	14BD00201	14BD00202	14BD00194	14BD00192	14BD00465	14BD00204	14BD00205	14BD00203
D1916		19	17.1	6	61	14BD00213	14BD00214			14BD00466	14BD00216	14BD00217	14BD00215
D2523		25	22.5	6	68	14BD00219	14BD00220			14BD00467	14BD00222	14BD00223	14BD00221

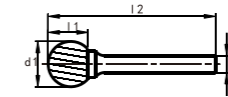
**8mm Shank**

D1211	KUD1210	12	10.8	8	56	14BD00440	14BD00441	14BD00439	14BD00438	14BD00468	14BD00443	14BD00444	14BD00442
D1614	KUD1614	16	14.4	8	59	14BD00447	14BD00448	14BD00446	14BD00445	14BD00469	14BD00450	14BD00451	14BD00449
D1916		19	17.1	8	61	14BD00452	14BD00453			14BD00470	14BD00455	14BD00456	14BD00454

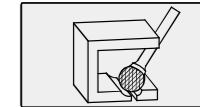
**Ball**

Shape: D, KUD, SD

Suitable for rounded edge processing, end deburring and end pre-machining before welding



Patent



**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3/32 Shank**

SD-61	3/32	1/16	3/32	1-1/2	14BD00495	14BD00507	14BD00479	14BD00509	14BD00510	
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**1/8 Shank**

SD-41	3/32	1/16	1/8	1-1/2	14BD00228	14BD00229	14BD00478	14BD00231	14BD00232	
SD-42	1/8	3/32	1/8	1-1/2	14BD00246	14BD00247	14BD00481	14BD00249	14BD00250	14BD00248
SD-52	5/32	5/32	1/8	1-1/2	14BD00496	14BD00511	14BD00482	14BD00513	14BD00514	14BD00512
SD-53	3/16	1/8	1/8	1-1/2	14BD00270	14BD00247	14BD00485	14BD00249	14BD00250	14BD00248
SD-51	1/4	7/32	1/8	1-11/16	14BD00276	14BD00277	14BD00487	14BD00279	14BD00280	14BD00278

**1/4 Shank**

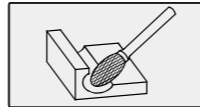
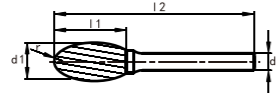
SD-1	1/4	7/32	1/4	2	14BD00264	14BD00265	14BD00486	14BD00267	14BD00268	14BD00266
SD-14	3/16	5/32	1/4	2	14BD00240	14BD00241	14BD00483	14BD00243	14BD00244	14BD00242
SD-11	1/8	3/32	1/4	2	14BD00234	14BD00235	14BD00480	14BD00237	14BD00238	14BD00236
SD-2	5/16	1/4	1/4	2-1/4	14BD00294	14BD00295	14BD00488	14BD00297	14BD00298	14BD00296
SD-3	3/8	5/16	1/4	2-5/16	14BD00300	14BD00301	14BD00489	14BD00303	14BD00304	14BD00302
SD-4	7/16	3/8	1/4	2-3/8	14BD00318	14BD00319	14BD00490	14BD00321	14BD00322	14BD00320
SD-5	1/2	7/16	1/4	2-7/16	14BD00324	14BD00325	14BD00491	14BD00327	14BD00328	14BD00326
SD-6	5/8	9/16	1/4	2-9/16	14BD00342	14BD00343	14BD00492	14BD00345	14BD00346	14BD00344
SD-7	3/4	11/16	1/4	2-11/16	14BD00348	14BD00348	14BD00493	14BD00350	14BD00351	14BD00349
SD-9	1	15/16	1/4	2-15/16	14BD00498	14BD00355	14BD00494	14BD00357	14BD00358	14BD00356



**Oval**

Shape: E, TRE, SE

Suitable for rounded edge processing



Patent



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	r	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3mm Shank**

E0306	TRE0307	3	6	3	38	1.2	14BE00015	14BE00016				14BE00018	14BE00019	14BE00017
E0507		5	7	3	46	2.4	14BE00054	14BE00055				14BE00057	14BE00058	14BE00056
E0609	TRE0610	6	9	3	50	2.4	14BE00277	14BE00328				14BE00330	14BE00331	14BE00329

**6mm Shank**

E0610	TRE0610	6	10	6	50	2.4	14BE00042	14BE00043	14BE00313		14BE00332	14BE00045	14BE00046	14BE00044
E0813	TRE0813	8	13	6	58	3.7	14BE00066	14BE00067	14BE00065	14BE00063	14BE00333	14BE00069	14BE00070	14BE00068
E1016	TRE1016	10	16	6	61	4.0	14BE00087	14BE00088	14BE00086	14BE00084	14BE00334	14BE00090	14BE00091	14BE00089
E1220	TRE1220	12	20	6	65	4.0	14BE00096	14BE00097	14BE00095	14BE00093	14BE00335	14BE00099	14BE00100	14BE00098
E1322		12.7	22	6	67	5.0	14BE00114	14BE00115			14BE00336	14BE00117	14BE00118	14BE00116
E1625	TRE1625	16	25	6	70	6.3	14BE00129	14BE00130	14BE00122	14BE00120	14BE00337	14BE00132	14BE00133	14BE00131
E1925		19	25	6	70	8.0	14BE00141	14BE00142			14BE00338	14BE00144	14BE00145	14BE00143

**8mm Shank**

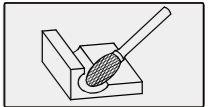
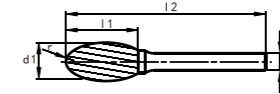
E1220	TRE1220	12	20	8	65	4.0	14BE00316	14BE00317	14BE00315	14BE00314	14BE00339	14BE00319	14BE00320	14BE00318
E1625	TRE1625	16	25	8	70	6.3	14BE00323	14BE00324	14BE00322	14BE00321	14BE00340	14BE00326	14BE00327	14BE00325



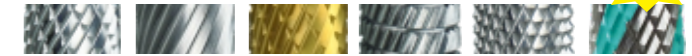
**Oval**

Shape: E, TRE, SE

Suitable for rounded edge processing



Patent



**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3/32 Shank**

SE-61	3/32	1/8	3/32	1-1/2	1/32	14BE00357	14BE00367	14BE00345	14BE00369	14BE00370	
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**1/8 Shank**

SE-41	1/8	7/32	1/8	1-1/2	3/64	14BE00146	14BE00147	14BE00346	14BE00149	14BE00150	14BE00148
SE-53	3/16	3/8	1/8	1-1/2	3/58	14BE00176	14BE00177	14BE00348	14BE00179	14BE00180	14BE00178
SE-51	1/4	3/8	1/8	1-7/8	1/8	14BE00182	14BE00183	14BE00351	14BE00185	14BE00186	14BE00184

**1/4 Shank**

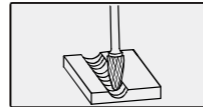
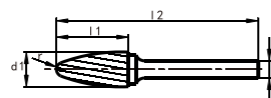
SE-11	3/16	5/16	1/4	2	3/32	14BE00164	14BE00165	14BE00349	14BE00167	14BE00168	14BE00166
SE-1	1/4	3/8	1/4	2	3/32	14BE00170	14BE00171	14BE00350	14BE00173	14BE00174	14BE00172
SE-2	5/16	5/8	1/4	2-5/8	1/8	14BE00200	14BE00201	14BE00352	14BE00203	14BE00204	14BE00202
SE-3	3/8	5/8	1/4	2-5/8	5/32	14BE00206	14BE00207	14BE00353	14BE00209	14BE00210	14BE00208
SE-5	1/2	7/8	1/4	2-7/8	13/64	14BE00224	14BE00225	14BE00354	14BE00227	14BE00228	14BE00226
SE-6	5/8	1	1/4	3	1/4	14BE00242	14BE00243	14BE00355	14BE00245	14BE00246	14BE00244
SE-7	3/4	1	1/4	3	5/16	14BE00248	14BE00249	14BE00356	14BE00251	14BE00252	14BE00250



**Arch Ball Nose**

Shape: F, RBF, SF

Suitable for processing rounded edge in small places



Patent

**Metric**



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	r	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3mm Shank**

F0306	RBF0307	3	13	3	38	0.9	14BF00021	14BF00022				14BF00024	14BF00025	14BF00023
F0313	RBF0313	3	13	3	38	0.6	14BF00013	14BF00014				14BF00016	14BF00017	14BF00015
F0513	—	5	13	3	53	1.2	14BF00084	14BF00085				14BF00087	14BF00088	14BF00086
F0613	RBF0613	6	13	3	53	1.6	14BF00099	14BF00100				14BF00102	14BF00103	14BF00101

**6mm Shank**

F0618	RBF0618	6	18	6	50	1.6	14BF00066	14BF00067	14BF00474	—	14BF00497	14BF00069	14BF00070	14BF00068
F0818	—	8	18	6	63	1.8	14BF00111	14BF00112	14BF00476	14BF00475	14BF00498	14BF00114	14BF00115	14BF00113
F1020	RBF1020	10	20	6	65	2.4	14BF00138	14BF00139	14BF00137	14BF00135	14BF00499	14BF00141	14BF00142	14BF00140
F1125	—	11	25	6	70	2.4	14BF00477	14BF00479	—	—	14BF00500	14BF00481	14BF00482	14BF00480
F1225	RBF1225	12	25	6	70	3.0	14BF00153	14BF00154	14BF00146	14BF00144	14BF00478	14BF00156	14BF00157	14BF00155
F1325	—	12.7	25	6	70	3.2	14BF00177	14BF00178	—	—	14BF00501	14BF00180	14BF00181	14BF00179
F1625	—	16	25	6	70	3.5	14BF00189	14BF00190	—	—	14BF00502	14BF00192	14BF00193	14BF00191
F1925	—	19	25	6	70	4.7	14BF00201	14BF00202	—	—	14BF00503	14BF00204	14BF00205	14BF00203

**8mm Shank**

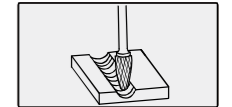
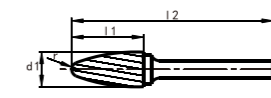
F1225	RBF1225	12	25	8	70	3.0	14BF00420	14BF00485	14BF00484	14BF00483	14BF00504	14BF00487	14BF00488	14BF00486
F1625	—	16	25	8	70	3.5	14BF00491	14BF00492	14BF00490	14BF00489	14BF00505	14BF00494	14BF00495	14BF00493



**Arch Ball Nose**

Shape: F, RBF, SF

Suitable for processing rounded edge in small places



Patent

**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3/32 Shank**

SF-61	3/32	1/4	3/32	1-1/2	1/64	14BF00533	14BF00543	14BF00517	14BF00545	14BF00546	—
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**1/8 Shank**

SF-41	1/8	1/4	1/8	1-1/2	1/32	14BF00245	14BF00246	14BF00518	14BF00248	14BF00249	14BF00247
SF-42	1/8	1/2	1/8	1-1/2	1/42	14BF00251	14BF00547	14BF00520	14BF00548	14BF00549	14BF00386
SF-53	3/16	1/2	1/8	1-1/2	3/64	14BF00269	14BF00270	14BF00522	14BF00272	14BF00273	14BF00271
SF-51	1/4	1/2	1/8	2	1/16	14BF00275	14BF00276	14BF00523	14BF00278	14BF00279	14BF00277

**1/4 Shank**

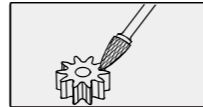
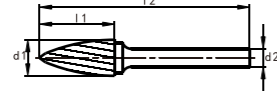
SF-11	1/8	1/2	1/4	2	1/42	14BF00239	14BF00240	14BF00519	14BF00242	14BF00243	14BF00241
SF-1	1/4	3/4	1/4	2	1/16	14BF00263	14BF00264	14BF00524	14BF00266	14BF00267	14BF00265
SF-3	3/8	3/4	1/4	2-3/4	3/32	14BF00293	14BF00294	14BF00525	14BF00296	14BF00297	14BF00295
SF-4	7/16	1	1/4	3	3/32	14BF00311	14BF00312	14BF00526	14BF00314	14BF00315	14BF00313
SF-13	1/2	3/4	1/4	2-3/4	1/8	14BF00317	14BF00318	14BF00527	14BF00320	14BF00321	14BF00319
SF-5	1/2	1	1/4	3	1/8	14BF00323	14BF00324	14BF00528	14BF00326	14BF00327	14BF00325
SF-6	5/8	1	1/4	3	9/64	14BF00347	14BF00348	14BF00529	14BF00350	14BF00351	14BF00349
SF-7	3/4	1	1/4	3	3/16	14BF00353	14BF00354	14BF00530	14BF00356	14BF00357	14BF00355
SF-14	3/4	1-1/4	1/4	3-1/4	3/16	14BF00359	14BF00360	14BF00531	14BF00362	14BF00363	14BF00361
SF-15	3/4	1-1/2	1/4	3-1/2	3/16	14BF00365	14BF00366	14BF00532	14BF00368	14BF00369	14BF00367



### Arch Pointed Nose

Shape: G, SPG, SG

Suitable for processing small places, and acute angled contour



Patent



#### Metric

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3mm Shank

G0306	SPG0307	3	6	3	38	14BG00001	14BG00002	—	—	—	14BG00004	14BG00005	14BG00003
G0311	—	3	11	3	38	14BG00437	14BG00438	—	—	—	14BG00440	14BG00441	14BG00439
G0313	SPG0313	3	13	3	38	14BG00031	14BG00032	—	—	—	14BG00034	14BG00035	14BG00033
G0513	—	5	13	3	53	14BG00064	14BG00065	—	—	—	14BG00067	14BG00068	14BG00066
G0613	SPG0613	6	13	3	53	14BG00085	14BG00086	—	—	—	14BG00088	14BG00089	14BG00087

#### 6mm Shank

G0618	SPG0618	6	18	6	50	14BG00058	14BG00059	14BG00442	—	14BG00443	14BG00061	14BG00062	14BG00060
G0818	—	8	19	6	64	14BG00109	14BG00110	14BG00407	14BG00406	14BG00444	14BG00112	14BG00113	14BG00111
G1020	SPG1020	10	20	6	65	14BG00136	14BG00137	14BG00129	14BG00127	14BG00445	14BG00139	14BG00140	14BG00138
G1225	SPG1225	12	25	6	70	14BG00151	14BG00152	14BG00144	14BG00142	14BG00408	14BG00154	14BG00155	14BG00153
G1325	—	12.7	25	6	70	14BG00409	14BG00410	—	—	14BG00446	14BG00412	14BG00413	14BG00411
G1625	—	16	25	6	70	14BG00181	14BG00182	14BG00415	14BG00414	14BG00447	14BG00184	14BG00185	14BG00183
G1925	—	19	25	6	70	14BG00193	14BG00194	—	—	14BG00448	14BG00196	14BG00197	14BG00195

#### 8mm Shank

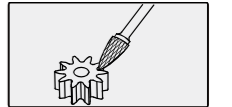
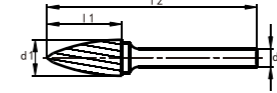
G1020	SPG1020	10	20	8	65	14BG00418	14BG00419	14BG00417	14BG00416	14BG00449	14BG00421	14BG00422	14BG00420
G1225	SPG1225	12	25	8	70	14BG00425	14BG00426	14BG00424	14BG00423	14BG00450	14BG00428	14BG00429	14BG00427
G1625	—	16	25	8	70	14BG00432	14BG00433	14BG00431	14BG00430	14BG00451	14BG00435	14BG00436	14BG00434



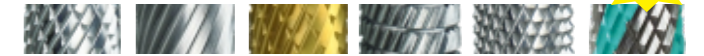
### Arch Pointed Nose

Shape: G, SPG, SG

Suitable for processing small places, and acute angled contour



Patent



#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3/32 Shank

SG-61	3/32	1/4	3/32	1-1/2	14BG00468	14BG00479	14BG00452	14BG00481	14BG00482	—
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#### 1/8 Shank

SG-41	1/8	1/4	1/8	1-1/2	14BG00218	14BG00219	14BG00453	14BG00221	14BG00222	14BG00220
SG-42	1/8	5/16	1/8	1-1/2	14BG00224	14BG00225	14BG00454	14BG00227	14BG00228	14BG00226
SG-43	1/8	3/8	1/8	1-1/2	14BG00230	14BG00231	14BG00455	14BG00233	14BG00234	14BG00232
SG-44	1/8	1/2	1/8	1-1/2	14BG00236	14BG00237	14BG00456	14BG00239	14BG00240	14BG00238
SG-53	3/16	1/2	1/8	1-1/2	14BG00260	14BG00261	14BG00458	14BG00263	14BG00264	14BG00262
SG-51	1/4	1/2	1/8	2	14BG00266	14BG00267	14BG00460	14BG00269	14BG00270	14BG00268

#### 1/4 Shank

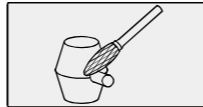
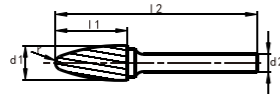
SG-1	1/4	3/4	1/4	2	14BG00254	14BG00255	14BG00459	14BG00257	14BG00258	14BG00256
SG-2	5/16	3/4	1/4	2-3/4	14BG00302	14BG00303	14BG00461	14BG00305	14BG00306	14BG00304
SG-3	3/8	3/4	1/4	2-3/4	14BG00284	14BG00285	14BG00462	14BG00287	14BG00288	14BG00286
SG-13	1/2	3/4	1/4	2-3/4	14BG00470	14BG00483	14BG00463	14BG00485	14BG00486	14BG00484
SG-5	1/2	1	1/4	3	14BG00308	14BG00309	14BG00464	14BG00311	14BG00312	14BG00310
SG-6	5/8	1	1/4	3	14BG00326	14BG00327	14BG00465	14BG00329	14BG00330	14BG00328
SG-7	3/4	1	1/4	3	14BG00338	14BG00339	14BG00466	14BG00341	14BG00342	14BG00340
SG-15	3/4	1-1/2	1/4	3-1/2	14BG00332	14BG00333	14BG00467	14BG00335	14BG00336	14BG00334



**Flame**

Shape: H, SH

Suitable for rounded edge processing



Patent

**Metric**



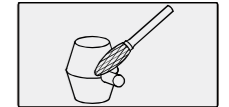
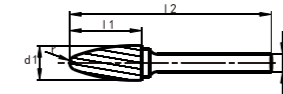
Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	r	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3mm Shank</b>														
H0307		3	7	3	38	0.8	14BH00263	14BH00264				14BH00266		14BH00265
H05*9.5		5	9.5	3	50	0.8	14BH00056	14BH00057				14BH00059		14BH00058
<b>6mm Shank</b>														
H0618		6	18	6	50	1.0	14BH00269	14BH00297	14BH00298		14BH00302	14BH00299	14BH00300	14BH00301
H0819		8	19	6	64	1.6	14BH00071	14BH00072	14BH00292	14BH00291	14BH00303	14BH00074	14BH00075	14BH00073
H1025		10	25	6	70	2.0	14BH00095	14BH00096	14BH00094	14BH00092	14BH00304	14BH00098	14BH00099	14BH00097
H1232		12	32	6	77	2.4	14BH00101	14BH00102	14BH00294	14BH00293	14BH00305	14BH00104	14BH00105	14BH00103
H1332		13	32	6	77	2.4	14BH00131	14BH00132			14BH00306	14BH00134	14BH00135	14BH00133
H1636		16	36	6	81	3.0	14BH00137	14BH00138	14BH00296	14BH00295	14BH00307	14BH00140	14BH00141	14BH00139
H1941		19	41	6	86	4.0	14BH00155	14BH00156			14BH00308	14BH00158	14BH00159	14BH00157



**Flame**

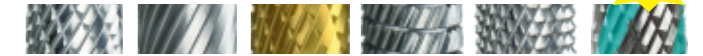
Shape: H, SH

Suitable for rounded edge processing



Patent

**Imperial**



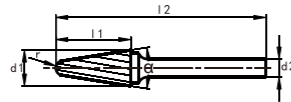
ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Ball nose radius r Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3/32 Shank</b>											
SH-61	3/32	1/4	3/32	1-1/2	1/32	14BH00318	14BH00325	14BH00309	14BH00327	14BH00328	
<b>1/8 Shank</b>											
SH-41	1/8	1/4	1/8	1-1/2	1/32	14BH00168	14BH00169	14BH00310	14BH00171	14BH00172	14BH00170
SH-53	3/16	3/8	1/8	1-1/2	1/32	14BH00192	14BH00193	14BH00311	14BH00195	14BH00196	14BH00194
<b>1/4 Shank</b>											
SH-1	1/4	5/8	1/4	2	3/64	14BH00259	14BH00329	14BH00312	14BH00331	14BH00332	14BH00330
SH-2	5/16	3/4	1/4	2-3/4	1/16	14BH00204	14BH00205	14BH00313	14BH00207	14BH00208	14BH00206
SH-3	3/8	1	1/4	2-3/4	5/64	14BH00198	14BH00199	14BH00314	14BH00201	14BH00202	14BH00200
SH-5	1/2	1-1/4	1/4	3-1/4	3/32	14BH00222	14BH00223	14BH00315	14BH00225	14BH00226	14BH00224
SH-6	5/8	1-7/16	1/4	3-7/16	1/8	14BH00240	14BH00241	14BH00316	14BH00243	14BH00244	14BH00242
SH-7	3/4	1-5/8	1/4	3-5/8	5/32	14BH00246	14BH00247	14BH00317	14BH00249	14BH00250	14BH00248



### Conical Ball Nose

Shape: L, KEL, SL

Suitable for processing rounded edge and surface in small places



Patent

#### Metric

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	$\alpha$	r	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3mm Shank

L0313	—	3	13	3	38	14°	0.6	14BK00019	14BK00020	—	—	—	14BK00022	—	14BK00021
L0513	—	5	13	3	53	14°	1.0	14BK00106	14BK00107	—	—	—	14BK00109	—	14BK00108
L0612	—	6	12	3	52	14°	1.2	14BK00439	14BK00440	—	—	—	14BK00442	—	14BK00441
L0619	—	6	19	3	59	14°	1.2	14BK00443	14BK00444	—	—	—	14BK00445	—	14BK00392

#### 6mm Shank

L0612	—	6	12	6	50	14°	1.2	14BK00049	14BK00050	14BK00424	—	14BK00448	14BK00052	14BK00053	14BK00051
L0616	—	6	16	6	50	14°	1.2	14BK00064	14BK00065	14BK00425	—	14BK00449	14BK00067	14BK00068	14BK00066
L0822	—	8	22	6	67	14°	1.4	14BK00133	14BK00134	14BK00126	14BK00124	14BK00450	14BK00136	14BK00137	14BK00135
L1027	—	10	27	6	72	14°	1.6	14BK00160	14BK00161	14BK00427	14BK00426	14BK00451	14BK00163	14BK00164	14BK00162
L1230	KEL1230	12	30	6	75	14°	3.2	14BK00175	14BK00176	14BK00429	14BK00428	14BK00452	14BK00178	14BK00179	14BK00177
L1328	—	12.7	28	6	73	14°	3.2	14BK00199	14BK00200	—	—	14BK00453	14BK00202	14BK00203	14BK00201
L1630	KEL1630	16	30	6	75	14°	4.8	14BK00235	14BK00236	14BK00431	14BK00430	14BK00454	14BK00238	14BK00239	14BK00237
L1938	—	19	38	6	83	14°	5.6	14BK00253	14BK00254	—	—	14BK00455	14BK00256	14BK00257	14BK00255

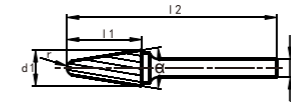
#### 8mm Shank

L1230	KEL1230	12	30	8	75	14°	3.2	14BK00434	14BK00435	14BK00433	14BK00432	14BK00456	14BK00437	14BK00438	14BK00436
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### Conical Ball Nose

Shape: L, KEL, SL

Suitable for processing rounded edge and surface in small places



Patent

#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	$\alpha$	Ball nose radius r Inch	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 1/8 Shank

SL-41	1/8	3/8	1/8	1-1/2	10°	1/32	14BK00268	14BK00269	14BK00464	14BK00271	14BK00272	14BK00270
SL-42	1/8	1/2	1/8	1-1/2	8°	1/32	14BK00286	14BK00287	14BK00465	14BK00289	14BK00290	14BK00288
SL-53	3/16	1/2	1/8	1-1/2	14°	3/64	14BK00298	14BK00299	14BK00467	14BK00301	14BK00302	14BK00300

#### 1/4 Shank

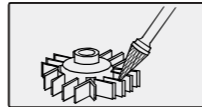
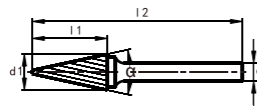
SL-1	1/4	5/8	1/4	2	14°	3/64	14BK00292	14BK00293	14BK00468	14BK00295	14BK00296	14BK00294
SL-2	5/16	7/8	1/4	2-7/8	14°	1/16	14BK00322	14BK00323	14BK00469	14BK00325	14BK00326	14BK00324
SL-3	3/8	1-1/16	1/4	3-1/16	14°	1/16	14BK00316	14BK00317	14BK00470	14BK00319	14BK00320	14BK00318
SL-4	1/2	1-1/8	1/4	3-1/8	14°	1/8	14BK00328	14BK00329	14BK00471	14BK00331	14BK00332	14BK00330
SL-5	5/8	1-3/16	1/4	3-3/16	14°	3/16	14BK00346	14BK00347	14BK00472	14BK00349	14BK00350	14BK00348
SL-6	5/8	1-5/16	1/4	3-5/16	14°	3/16	14BK00476	14BK00497	14BK00473	14BK00499	14BK00500	14BK00498
SL-7	3/4	1-1/2	1/4	3-1/2	14°	7/32	14BK00364	14BK00365	14BK00474	14BK00367	14BK00368	14BK00366



### Conical Pionted Nose

Shape: M, SKM, SM

Suitable for processing rounded edge and surface in small places



#### Metric

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	$\alpha$	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3mm Shank

M0311	SKM0311	3	11	3	38	14°	14BL00001	14BL00002				14BL00004		14BL00003
M0316		3	16	3	38	7°	14BL00299	14BL00348				14BL00350		14BL00349
M0513		5	13	3	53	16°	14BL00100	14BL00101				14BL00103		14BL00102
M0613	SKM0613	6	13	3	53	22°	14BL00106	14BL00107				14BL00109		14BL00108

#### 6mm Shank

M0618	SKM0618	6	18	6	50	14°	14BL00329	14BL00330	14BL00328		14BL00351	14BL00332	14BL00333	14BL00331
M0820		8	20	6	65	28°	14BL00127	14BL00128	14BL00335	14BL00334	14BL00352	14BL00130	14BL00131	14BL00129
M1020	SKM1020	10	20	6	65	25°	14BL00148	14BL00149	14BL00147	14BL00145	14BL00353	14BL00151	14BL00152	14BL00150
M1225	SKM1225	12	25	6	70	25°	14BL00163	14BL00164	14BL00162	14BL00160	14BL00354	14BL00166	14BL00167	14BL00165
M1325		12.7	25	6	70	28°	14BL00336	14BL00337			14BL00355	14BL00339	14BL00340	14BL00338
M1625		16	25	6	70	31°	14BL00190	14BL00191	14BL00183	14BL00181	14BL00356	14BL00193	14BL00194	14BL00192

#### 8mm Shank

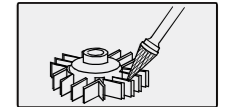
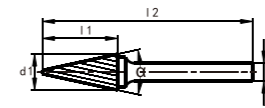
M1225	SKM1225	12	25	8	70	25°	14BL00343	14BL00344	14BL00342	14BL00341	14BL00357	14BL00346	14BL00347	14BL00345
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### Conical Pionted Nose

Shape: M, SKM, SM

Suitable for processing rounded edge and surface in small places



#### Imperial

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	$\alpha$	Double Cut (X) Order Number	Single Cut (P) Order Number	TIN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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#### 3/32 Shank

SM-61	3/32	1/4	3/32	1-1/2	10°	14BG00382	14BL00395	14BL00370	14BL00397	14BL00398	
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#### 1/8 Shank

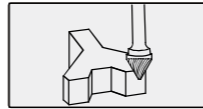
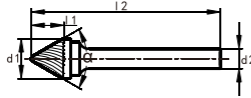
SM-41	1/8	11/32	1/8	1-1/2	12°	14BL00227	14BL00228	14BL00371	14BL00230	14BL00231	14BL00229
SM-42	1/8	7/16	1/8	1-1/2	14°	14BL00233	14BL00234	14BL00372	14BL00236	14BL00237	14BL00235
SM-43	1/8	5/8	1/8	1-1/2	7°	14BL00239	14BL00240	14BL00373	14BL00242	14BL00243	14BL00241
SM-53	3/16	1/2	1/8	1-1/2	16°	14BL00245	14BL00264	14BL00374	14BL00266	14BL00267	14BL00265
SM-51	1/4	1/2	1/8	2	22°	14BL00269	14BL00270	14BL00376	14BL00272	14BL00273	14BL00271

#### 1/4 Shank

SM-1	1/4	1/2	1/4	2	22°	14BL00246	14BL00246	14BL00375	14BL00248	14BL00249	14BL00247
SM-2	1/4	3/4	1/4	2	14°	14BL00251	14BL00252	14BL00377	14BL00254	14BL00255	14BL00253
SM-3	1/4	1	1/4	2	10°	14BL00257	14BL00258	14BL00378	14BL00260	14BL00261	14BL00259
SM-4	3/8	5/8	1/4	2-5/8	28°	14BL00275	14BL00276	14BL00379	14BL00278	14BL00279	14BL00277
SM-5	1/2	7/8	1/4	2-7/8	28°	14BL00281	14BL00282	14BL00380	14BL00284	14BL00285	14BL00283
SM-6	5/8	1	1/4	3	31°	14BL00287	14BL00288	14BL00381	14BL00290	14BL00291	14BL00289

**60° Cone**  
Shape: J, KSJ, SJ

Suitable for counterboring and chamfering bores with 60° angle



**Metric**



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	α	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3mm Shank**

J03*2.5		3	2.5	3	38	60°	14BI00003	14BI00004						
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**6mm Shank**

J0604	KSJ0605	6	4	6	50	60°	14BI00012	14BI00013	14BI00205		14BI00226	14BI00015	14BI00016	14BI00014
J0807		8	7	6	52	60°	14BI00039	14BI00040	14BI00207	14BI00206	14BI00227	14BI00042	14BI00043	14BI00041
J1008	KSJ1008	10	8	6	58	60°	14BI00066	14BI00067	14BI00209	14BI00208	14BI00228	14BI00069	14BI00070	14BI00068
J1210		12	10	6	60	60°	14BI00197	14BI00198	14BI00213	14BI00212	14BI00229	14BI00210	14BI00211	14BI00187
J1311		12.7	11	6	61	60°	14BI00087	14BI00088			14BI00230	14BI00090	14BI00091	14BI00089
J1614	KSJ1613	16	14	6	64	60°	14BI00214	14BI00215	14BI00095	14BI00093	14BI00231	14BI00188	14BI00216	14BI00192
J1916		19	16	6	66	60°	14BI00217	14BI00218			14BI00232	14BI00220	14BI00221	14BI00219
J2521		25	21	6	71	60°	14BI00222	14BI00223			14BI00233	14BI00224	14BI00225	

**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	α	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**1/8 Shank**

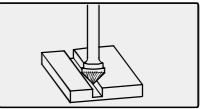
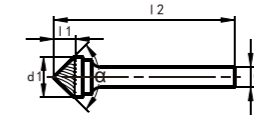
SJ-42	1/8	3/32	1/8	1-1/2	60°	14BI00132	14BI00133	14BI00234	14BI00135	14BI00136	14BI00134
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**1/4 Shank**

SJ-81	3/16	3/16	1/4	2	60°	14BI00144	14BI00145	14BI00235	14BI00147	14BI00148	14BI00146
SJ-1	1/4	3/16	1/4	2	60°	14BI00242	14BI00243	14BI00236	14BI00245	14BI00246	14BI00244
SJ-3	3/8	5/16	1/4	2-7/16	60°	14BI00150	14BI00151	14BI00237	14BI00153	14BI00154	14BI00152
SJ-5	1/2	7/16	1/4	2-9/16	60°	14BI00156	14BI00157	14BI00238	14BI00159	14BI00160	14BI00158
SJ-6	5/8	9/16	1/4	2-11/16	60°	14BI00162	14BI00163	14BI00239	14BI00165	14BI00166	14BI00164
SJ-7	3/4	11/16	1/4	2-13/16	60°	14BI00168	14BI00169	14BI00240	14BI00171	14BI00172	14BI00170
SJ-9	1	15/16	1/4	2-15/16	60°	14BI00174	14BI00175	14BI00241	14BI00177	14BI00178	14BI00176

**90° Cone**  
Shape: K, KSK, SK

Suitable for counterboring and chamfering bores with 90° angle



**Metric**



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	α	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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**3mm Shank**

K0302		3	2	3	38	90°	14BJ00009	14BJ00010						
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**6mm Shank**

K0603	KSK0603	6	3	6	50	90°	14BJ00018	14BJ00019	14BJ00017	14BJ00015	14BJ00191	14BJ00021	14BJ00022	14BJ00020
K0804		8	4	6	54	90°	14BJ00033	14BJ00034	14BJ00177	14BJ00185	14BJ00192	14BJ00036	14BJ00037	14BJ00035
K1005	KSK1005	10	5	6	55	90°	14BJ00060	14BJ00061	14BJ00059	14BJ00057	14BJ00193	14BJ00063	14BJ00064	14BJ00062
K1206		12	6	6	56	90°	14BJ00069	14BJ00070	14BJ00068	14BJ00066	14BJ00194	14BJ00072	14BJ00073	14BJ00071
K13*63		12.7	6.3	6	57	90°	14BJ00081	14BJ00082			14BJ00195	14BJ00084	14BJ00085	14BJ00083
K1608	KSK1608	16	8	6	58	90°	14BJ00090	14BJ00091	14BJ00089	14BJ00087	14BJ00196	14BJ00093	14BJ00094	14BJ00092
K1910		19	10	6	60	90°	14BJ00186	14BJ00187			14BJ00197	14BJ00189	14BJ00190	14BJ00188
K2513		25	13	6	63	90°	14BJ00120	14BJ00121			14BJ00198	14BJ00123	14BJ00124	14BJ00122

**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	α	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
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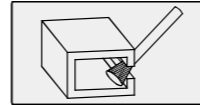
**1/8 Shank**

SK-42	1/8	1/16	1/8	1-1/2	90°	14BJ00126	14BJ00127	14BJ00199	14BJ00129	14BJ00130	14BJ00128
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**1/4 Shank**

SK-81	3/16	1/8	1/4	2	90°	14BJ00132	14BJ00133	14BJ00200	14BJ00135	14BJ00136	14BJ00134
SK-1	1/4	1/8	1/4	2	90°	14BJ00138	14BJ00139	14BJ00201	14BJ00141	14BJ00142	14BJ00140
SK-3	3/8	3/16	1/4	2-5/16	90°	14BJ00144	14BJ00145	14BJ00202	14BJ00147	14BJ00148	14BJ00146
SK-5	1/2	1/4	1/4	2-3/8	90°	14BJ00150	14BJ00151	14BJ00203	14BJ00153	14BJ00154	14BJ00152
SK-6	5/8	5/16	1/4	2-1/2	90°	14BJ00156	14BJ00157	14BJ00204	14BJ00159	14BJ00160	14BJ00158
SK-7	3/4	3/8	1/4	2-9/16	90°	14BJ00162	14BJ00163	14BJ00205	14BJ00165	14BJ00166	14BJ00164
SK-9	1	1/2	1/4	2-11/16	90°	14BJ00168	14BJ00169	14BJ00206	14BJ00171	14BJ00172	14BJ00170

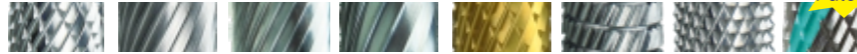
**Inverted Cone**  
Shape: N, WKN, SN



Suitable for rearside chamfering



**Metric**



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	α	Double Cut (X) Order Number	Single Cut (P) Order Number	Fine cut (F) Order Number	Coarse Cut (C) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3mm Shank</b>														
N0304	—	3	4	3	38	10°	14BM00014	14BM00013	—	—	—	—	—	14BM00015
N0307	WKN0307	3	7	3	38	10°	14BM00019	14BM00020	—	—	—	—	—	14BM00021
N0505	—	5	5	3	45	10°	14BM00034	14BM00033	—	—	—	—	—	14BM00035
N0606	WKN0607	6	6	3	46	10°	14BM00046	14BM00045	—	—	—	—	—	14BM00047

<b>6mm Shank</b>														
N0608	WKN0607	6	8	6	50	10°	14BM00200	14BM00189	14BM00203	—	14BM00209	14BM00190	14BM00202	14BM00201
N1010	—	10	10	6	55	13°	14BM00075	14BM00076	14BM00205	14BM00204	14BM00210	14BM00078	14BM00079	14BM00077
N1313	—	12.7	12.7	6	58	28°	14BM00096	14BM00097	—	—	14BM00211	14BM00099	14BM00100	14BM00098
N1619	—	16	19	6	64	18°	14BM00105	14BM00106	14BM00207	14BM00206	14BM00212	14BM00108	14BM00109	14BM00107
N1916	—	19	16	6	61	30°	14BM00123	14BM00124	—	—	14BM00213	14BM00126	14BM00127	14BM00125

**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	α	Double Cut (X) Order Number	Single Cut (P) Order Number	TiN Coated (X) Order Number	ChipbreakerCut (Y) Order Number	Diamond Cut (Q) Order Number	Speedway Cut (V) Order Number
<b>3/32 Shank</b>											
SN-61	3/32	1/8	3/32	1-1/2	10°	14BM00229	14BM00235	14BM00216	14BM00237	14BM00238	14BM00236

<b>1/8 Shank</b>											
SN-41	3/32	1/8	1/8	1-1/2	10°	14BM00135	14BM00136	14BM00215	14BM00138	14BM00139	14BM00137
SN-42	1/8	3/16	1/8	1-1/2	10°	14BM00230	14BM00239	14BM00217	14BM00241	14BM00242	14BM00240
SN-53	3/16	1/4	1/8	1-1/2	10°	14BM00147	14BM00148	14BM00219	14BM00150	14BM00151	14BM00149
SN-51	1/4	1/4	1/8	1-3/4	10°	14BM00153	14BM00154	14BM00220	14BM00156	14BM00157	14BM00155

<b>1/4 Shank</b>											
SN-1	1/4	5/16	1/4	2	10°	14BM00141	14BM00142	14BM00221	14BM00144	14BM00145	14BM00143
SN-2	3/8	3/8	1/4	2-3/8	13°	14BM00159	14BM00160	14BM00222	14BM00162	14BM00163	14BM00161
SN-3	1/2	1/2	1/4	2-1/2	16°	14BM00232	14BM00243	14BM00224	14BM00245	14BM00246	14BM00244
SN-4	1/2	1/2	1/4	2-1/2	28°	14BM00165	14BM00166	14BM00224	14BM00168	14BM00169	14BM00167
SN-5	5/8	5/8	1/4	2-5/8	19°	14BM00171	14BM00172	14BM00225	14BM00174	14BM00175	14BM00173
SN-6	5/8	3/4	1/4	2-3/4	18°	14BM00233	14BM00247	14BM00226	14BM00249	14BM00250	14BM00248
SN-7	3/4	5/8	1/4	2-5/8	30°	14BM00234	14BM00251	14BM00227	14BM00253	14BM00254	14BM00252
SN-8	3/4	3/4	1/4	2-3/4	21°	14BM00177	14BM00178	14BM00228	14BM00180	14BM00181	14BM00179

**5pcs Aluma Cut Carbide Burrs Set**  
(6mm shank)

- ◆ Group of 5pcs common size aluminum cut burrs with 6mm shank
- ◆ For contour machining on aluminum alloys.
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	Cutter Diameter d1 mm	Length of cut l1 mm	Shank Diameter d2 mm	Overall Length l2 mm	Kit Order Number
<b>6mm Shank</b>						
C1020	WRC1020	10	20	6	65	27AR00026
C1225	WRC1225	12	25	6	70	
F0618	RBF0618	6	18	6	50	
F1020	RBF1020	10	20	6	65	
F1225	RBF1225	12	25	6	70	

**10pcs TiN Coated Double Cut Carbide Burr Sets**  
(6mm shank)



- ◆ Group of 10 pcs common size double cut burrs with 6mm shank & TiN coating
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A1225	ZYA1225	12	25	6	70	27AR00058
C0616	WRC0616	6	16	6	50	
C1225	WRC1225	12	25	6	70	
D1211	KUD1210	12	10.8	6	56	
D0605	KUD0605	6	5.4	6	50	
F0618	RBF0618	6	18	6	50	
F1225	RBF1225	12	25	6	70	
G0618	SPG0618	6	18	6	50	
L1230	KEL1230	12	30	6	75	
M0618	SKM0618	6	18	6	50	

**10pcs Double Cut Carbide Burr Sets**  
(6mm shank)



- ◆ Group of 10pcs common size double cut burrs with 6mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A1225	ZYA1225	12	25	6	70	27AR00028
C0616	WRC0616	6	16	6	50	
C1225	WRC1225	12	25	6	70	
D1211	KUD1210	12	10.8	6	56	
D0605	KUD0605	6	5	6	50	
F0618	RBF0618	6	18	6	50	
F1225	RBF1225	12	25	6	70	
G0618	SPG0618	6	18	6	50	
L1230	KEL1230	12	30	6	75	
M0618	SKM0618	6	18	6	50	

### 10pcs Single Cut Carbide Burr Sets (6mm shank)



- ◆ Group of 10pcs common size single cut burrs with 6mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
B1225	ZYAS1225	12	25	6	70	27AR00033
B0619	ZYAS0619	6	19	6	50	
C0616	WRC0616	6	16	6	50	
D0605	KUD0605	6	5.4	6	50	
D1211	KUD1210	12	10.8	6	56	
F0618	RBF0618	6	18	6	50	
F1225	RBF1225	12	25	6	70	
G0616	SPG0616	6	16	6	50	
G1225	SPG1225	12	25	6	70	
L1230	KEL1230	12	30	6	75	

### 5pcs Double Cut Carbide Burr Sets (6mm shank)



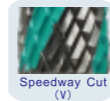
- ◆ Group of 5pcs common size double cut burrs with 6mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
D1009	KUD1009	10	9	6	53	27AR00029
E1220	TRE1220	12	20	6	65	
F1225	RBF1225	12	25	6	70	
G1225	SPG1225	12	25	6	70	
M1225	SKM1225	12	25	6	70	

### 8pcs Speedway Cut Carbide Burr Sets (6mm shank)



Patent

- ◆ Group of 8pcs patented speedway burrs with 6mm shank
- ◆ For general applications
- ◆ Plastic box with EVA foam protects cutting edges and convenient for picking and storage



Contents :

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A1020	ZYA1020	10	20	6	65	20AR00039
B1020	ZYAS1020	10	20	6	65	
C1020	WRC1020	10	20	6	65	
D0605	KUD0605	6	5.4	6	50	
F1020	RBF1020	10	20	6	65	
G1020	SPG1020	10	20	6	65	
M0618	SKM0618	6	18	6	50	
L1027	—	10	27	6	72	

### 8pcs Double Cut Carbide Burr Sets (6mm shank)



- ◆ Group of 8pcs patented speedway burrs with 6mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents :

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A0616	ZYA0616	6	16	6	50	27AR00040
B0619	ZYAS0619	6	19	6	50	
C0616	WRC0616	6	16	6	50	
D0605	KUD0605	6	5	6	50	
E0610	TRE0610	6	10	6	50	
F0618	RBF0618	6	18	6	50	
G0618	SPG0618	6	18	6	50	
L0616	—	6	16	6	50	

**8pcs Double Cut Carbide Burr Sets  
(6mm shank)**



- ◆ Group of 8pcs common size double cut burrs with 6mm shank
- ◆ For general applications
- ◆ Wooden box protects cutting edges and convenient for picking and storage



**Contents:**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A1225	ZYA1225	12	25	6	70	27AR00037
C0819	WRC0820	8	19	6	64	
C1225	WRC1225	12	25	6	70	
D1009	KUD1009	10	9	6	53	
F0818	—	8	18	6	63	
F1225	RBF1225	12	25	6	70	
G0818	—	8	18	6	64	
L1230	KEL1230	12	30	6	75	

**5pcs Chip Breaker Carbide Burr Set  
(6mm shank)**



- ◆ Group of 5pcs common size chip breaker burrs with 6mm shank
- ◆ For general applications
- ◆ Wooden box protects cutting edges and convenient for picking and storage

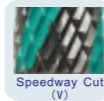


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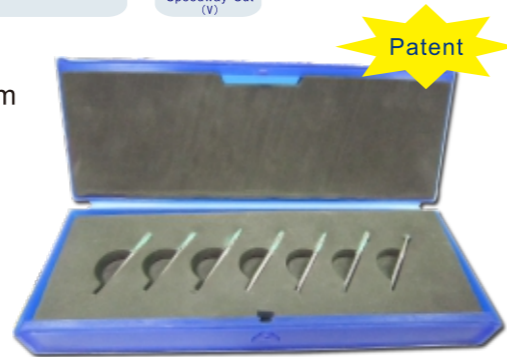
Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A1225	ZYA1225	12	25	6	70	27AR00030
B1225	ZYAS1225	12	25	6	70	
C1225	WRC1225	12	25	6	70	
D1009	KUD1009	10	9	6	53	
F1225	RBF1225	12	25	6	70	



### 7pcs Speedway Cut Carbide Burr Sets (3mm shank)



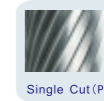
- ◆ Group of 7pcs patented speedway burrs with 3mm shank
- ◆ For general applications
- ◆ Plastic box with EVA foam protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A0314	ZYA0313	3	14	3	38	27AR00036
B0314	ZYA0313	3	14	3	38	
C0314	WRC0313	3	14	3	38	
D0303	KUD0302	3	2.7	3	38	
F0313	RBF0313	3	13	3	38	
G0313	SPG0313	3	13	3	38	
M0311	SKM0311	3	11	3	38	

### 8pcs Single Cut Carbide Burr Sets (6mm shank)



- ◆ Group of 8pcs common size single cut burrs with 3mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents:

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A0314	ZYA0313	3	14	3	38	27AR00034
B0314	ZYAS0313	3	14	3	38	
C0314	WRC0313	3	14	3	38	
D0303	KUD0302	3	2.7	3	38	
E0306	TRE0307	3	6	3	38	
F0306	RBF0307	3	6	3	38	
G0306	SPG0307	3	6	3	38	
L0310	—	3	10	3	38	

### 8pcs Double Cut Carbide Burr Sets (3mm shank)

- ◆ Group of 8pcs common size double cut burrs with 3mm shank
- ◆ For general applications
- ◆ German Rose plastic box packaging protects cutting edges and convenient for picking and storage



Contents :

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
A0314	ZYA0313	3	14	3	38	27AR00035
B0314	ZYAS0313	3	14	3	38	
C0314	WRC0313	3	14	3	38	
D0303	KUD0302	3	2.7	3	38	
E0306	TRE0307	3	6	3	38	
F0306	RBF0307	3	6	3	38	
G0306	SPG0307	3	6	3	38	
L0310	—	3	10	3	38	

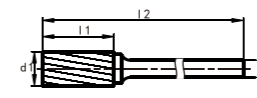
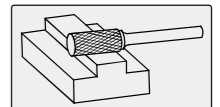
### Tungsten Carbide Burrs With Extra Long Shank

- ◆ Suitable for small and hard-to-reach places
- ◆ Special cutter head shape, diameter and cut as well as shank diameter and length available by customized manufacture
- ◆ Extra long shank tools require lower speed as per following form
- ◆ For safety reasons, tools must be placed on the workpiece before the power source is switched on. Make sure the burrs are kept in contact with workpiece in procession before machine is turned off

Cutter Diameter (mm)	3			6		8	10	12
Overall Length (mm)	50	75	150	90	150	150	150	150
RPM (m/min)	35000	31000	25000	18000	15000	12000	11000	7000

### Cylindrical Plain End With Extra Long Shank Shape: A, ZYA, SA

Suitable for contour finishing in deep places

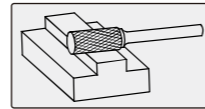


Metric

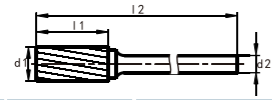
Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
<b>3mm Shank</b>							
A0314	ZYA0313	3	14	3	50	14BA00099	14BA00100
A0314	ZYA0313	3	14	3	75	14BA00105	14BA00106
A0314	ZYA0313	3	14	3	150	14BA00594	14BA00595
A0613	ZYA0613	6	13	3	88	14BA00596	14BA00597
<b>6mm Shank</b>							
A0618	—	6	18	6	150	14BA00598	14BA00599
A0818	—	8	18	6	150	14BA00600	14BA00601
A1020	ZYA1020	10	20	6	150	14BA00602	14BA00603
A1225	ZYA1225	12	25	6	150	14BA00604	14BA00605

**Cylindrical Plain End  
With Extra Long Shank**  
Shape: A, ZYA, SA

Suitable for contour finishing in deep places



**Imperial**



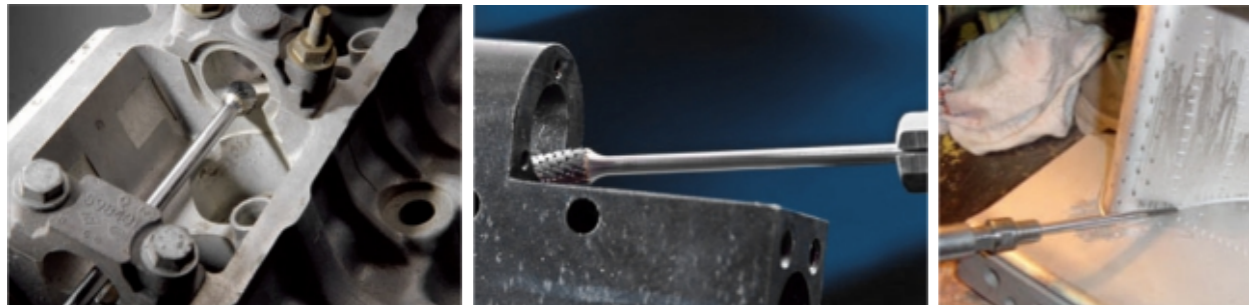
ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

SA-41L2	1/16	1/4	1/8	2	14BA00342	14BA00343
SA-41L3	1/16	1/4	1/8	3	14BA00348	14BA00349
SA-42L2	3/32	7/16	1/8	2	14BA00690	14BA00716
SA-42L3	3/32	7/16	1/8	3	14BA00691	14BA00720
SA-43L2	1/8	9/16	1/8	2	14BA00378	14BA00379
SA-43L3	1/8	9/16	1/8	3	14BA00503	14BA00712

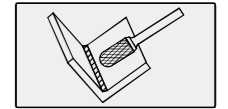
**1/4 Shank**

SA-1L4	1/4	1/2	1/4	4-1/2	14BA00420	14BA00421
SA-1L6	1/4	1/2	1/4	6-1/2	14BA00426	14BA00427
SA-3L4	3/8	3/4	1/4	4-3/4	14BA00456	14BA00457
SA-3L6	3/8	3/4	1/4	6-3/4	14BA00462	14BA00463
SA-5L4	1/2	1	1/4	5	14BA00474	14BA00475
SA-5L6	1/2	1	1/4	7	14BA00702	14BA00737

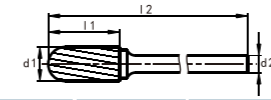


**Cylindrical Ball Nose  
With Extra Long Shank**  
Shape: C, WRC, SC

Suitable for contour and rounded edge finishing in deep places



**Metric**



Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
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**3mm Shank**

C0314	WRC0313	3	14	3	50	14BC00595	14BC00596
C0314	WRC0313	3	14	3	75	14BC00091	14BC00092
C0314	WRC0313	3	14	3	150	14BC00597	14BC00598
C0613	WRC0613	3	13	3	88	14BC00599	14BC00600

**6mm Shank**

C0618	---	6	18	6	150	14BC00601	14BC00602
C0820	WRC0820	8	20	6	80	14BC00603	14BC00604
C0820	WRC0820	8	20	6	150	14BC00605	14BC00606
C1020	WRC1020	10	20	6	150	14BC00607	14BC00608
C1225	WRC1225	12	25	6	150	14BC00609	14BC00610

**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

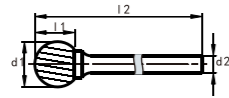
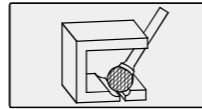
SC-42L2	1/8	9/16	1/8	2	14BC00375	14BC00376
SC-42L3	1/8	9/16	1/8	3	14BC00381	14BC00382

**1/4 Shank**

SC-1L4	1/4	1/2	1/4	4-1/2	14BC00410	14BC00411
SC-1L6	1/4	1/2	1/4	6-1/2	14BC00416	14BC00417
SC-3L4	3/8	3/4	1/4	4-3/4	14BC00440	14BC00441
SC-3L6	3/8	3/4	1/4	6-3/4	14BC00446	14BC00447
SC-5L4	1/2	1	1/4	5	14BC00464	14BC00465
SC-5L6	1/2	1	1/4	7	14BC00470	14BC00471

**Ball**  
**With Extra Long Shank**  
Shape: D, KUD, SD

Suitable for rounded edge machining, end deburring and end pre-machining in deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
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**3mm Shank**

D0303	KUD0302	3	2.8	3	50	14BD00037	14BD00038
D0303	KUD0302	3	2.8	3	75	14BD00043	14BD00044
D0303	KUD0302	3	2.8	3	150	14BD00428	14BD00429
D0605	KUD0605	6	5.4	3	80	14BD00419	14BD00420

**6mm Shank**

D0605	KUD0605	6	5.4	6	150	14BD00421	14BD00379
D0807	KUD0807	8	7.2	6	150	14BD00422	14BD00423
D1009	KUD1009	10	9	6	150	14BD00424	14BD00425
D1211	KUD1210	12	10.8	6	150	14BD00426	14BD00427



**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

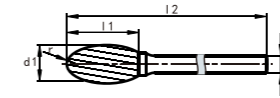
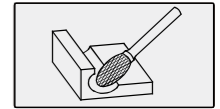
SD-42L2	1/8	3/32	1/8	2	14BD00252	14BD00253
SD-42L3	1/8	3/32	1/8	3	14BD00258	14BD00259

**1/4 Shank**

SD-1L4	1/4	7/32	1/4	4-1/8	14BD00282	14BD00283
SD-1L6	1/4	7/32	1/4	6-1/8	14BD00288	14BD00289
SD-3L4	3/8	5/16	1/4	4-1/4	14BD00306	14BD00307
SD-3L6	3/8	5/16	1/4	6-1/4	14BD00312	14BD00313
SD-5L4	1/2	7/16	1/4	4-3/8	14BD00330	14BD00331
SD-5L6	1/2	7/16	1/4	6-3/8	14BD00336	14BD00337

**Oval**  
**With Extra Long Shank**  
Shape: E, TRE, SE

Suitable for processing rounded edge in deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	r	Double Cut (X) Order Number	Single Cut (P) Order Number
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**3mm Shank**

E0306	TRE0307	3	7	3	50	1.2	14BE00296	14BE00297
E0306	TRE0307	3	7	3	75	1.2	14BE00298	14BE00299
E0306	TRE0307	3	7	3	150	1.2	14BE00300	14BE00301
E0610	TRE0610	6	10	3	85	2.4	14BE00302	14BE00303

**6mm Shank**

E0610	TRE0610	6	10	6	150	2.4	14BE00304	14BE00305
E0813	TRE0813	8	13	6	150	3.7	14BE00306	14BE00307
E1016	TRE1016	10	16	6	150	4.0	14BE00308	14BE00309
E1220	TRE1220	12	20	6	150	4.0	14BE00310	14BE00311



**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	r	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

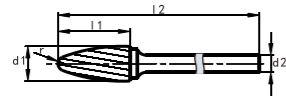
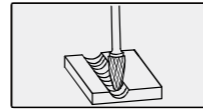
SE-41L2	1/8	7/32	1/8	2	3/64	14BE00152	14BE00153
SE-41L3	1/8	7/32	1/8	3	3/64	14BE00158	14BE00159

**1/4 Shank**

SE-1L4	1/4	3/8	1/4	4-3/8	3/32	14BE00188	14BE00189
SE-1L6	1/4	3/8	1/4	6-3/8	3/32	14BE00194	14BE00195
SE-3L4	3/8	5/8	1/4	4-5/8	5/32	14BE00212	14BE00213
SE-3L6	3/8	5/8	1/4	6-5/8	5/32	14BE00218	14BE00219
SE-5L4	1/2	7/8	1/4	4-7/8	13/64	14BE00230	14BE00231
SE-5L6	1/2	7/8	1/4	6-7/8	13/64	14BE00236	14BE00237

**Arch Ball Nose  
With Extra Long Shank**  
Shape: F, RBF, SF

Suitable for processing rounded edge in small and deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	r	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
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**3mm Shank**

F0313	RBF0313	3	13	3	0.9	50	14BF00458	14BF00459
F0313	RBF0313	3	13	3	0.9	75	14BF00460	14BF00461
F0313	RBF0313	3	13	3	0.9	150	14BF00462	14BF00463
F0613	RBF0613	6	13	3	1.6	88	14BF00464	14BF00465

**6mm Shank**

F0618	RBF0618	6	18	6	1.6	150	14BF00466	14BF00467
F0818	—	8	18	6	1.8	150	14BF00468	14BF00469
F1020	RBF1020	10	20	6	2.4	150	14BF00470	14BF00471
F1225	RBF1225	12	25	6	3.0	150	14BF00472	14BF00473

**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	r	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

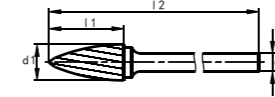
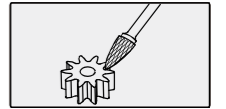
SF-42L2	1/8	1/2	1/8	2	1/32	14BF00251	14BF00252
SF-42L3	1/8	1/2	1/8	3	1/32	14BF00257	14BF00258

**1/4 Shank**

SF-1L4	1/4	1/2	1/4	4-1/2	1/16	14BF00281	14BF00282
SF-1L6	1/4	1/2	1/4	6-1/2	1/16	14BF00287	14BF00288
SF-3L4	3/8	3/4	1/4	4-3/4	3/32	14BF00299	14BF00300
SF-3L6	3/8	3/4	1/4	6-3/4	3/32	14BF00305	14BF00306
SF-5L4	1/2	1	1/4	5	1/8	14BF00329	14BF00330
SF-5L6	1/2	1	1/4	7	1/8	14BF00335	14BF00336

**Arch Pointed Nose  
With Extra Long Shank**  
Shape: G, SPG, SG

Suitable for processing rounded and acute angled edges in small and deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
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**3mm Shank**

G0313	SPG0313	3	13	3	50	14BG00391	14BG00392
G0313	SPG0313	3	13	3	75	14BG00393	14BG00394
G0313	SPG0313	3	13	3	150	14BG00395	14BG00396
G0613	SPG0613	6	13	3	88	14BG00397	14BG00398

**6mm Shank**

G0618	SPG0618	6	18	6	150	14BG00399	14BG00400
G1020	SPG1020	10	20	6	150	14BG00401	14BG00402
G1225	SPG1225	12	25	6	150	14BG00403	14BG00404

**Imperial**

ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	Double Cut (X) Order Number	Single Cut (P) Order Number
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**1/8 Shank**

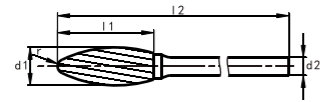
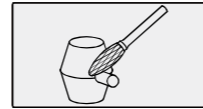
SG-44L2	1/8	1/2	1/8	2	14BG00242	14BG00243
SG-44L3	1/8	1/2	1/8	3	14BG00248	14BG00249

**1/4 Shank**

SG-1L4	1/4	1/2	1/4	4-1/2	14BG00272	14BG00273
SG-1L6	1/4	1/2	1/4	6-1/2	14BG00278	14BG00279
SG-3L4	3/8	3/4	1/4	4-3/4	14BG00290	14BG00291
SG-3L6	3/8	3/4	1/4	6-3/4	14BG00296	14BG00297
SG-5L4	1/2	1	1/4	5	14BG00314	14BG00315
SG-5L6	1/2	1	1/4	7	14BG00320	14BG00321

**Flame**  
**With Extra Long Shank**  
Shape: H, SH

Suitable for processing rounded edge in deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	r	l2 mm	Double Cut (X) Order Number	Single Cut (P) Order Number
H0313	—	3	13	3	0.8	50	14BH00280	14BH00281
H0313	—	3	13	3	0.8	75	14BH00282	14BH00283
H0618	—	6	18	6	1.0	150	14BH00284	14BH00285
H0820	—	8	20	6	1.6	150	14BH00286	14BH00287
H1232	—	12	32	6	2.4	150	14BH00288	14BH00289

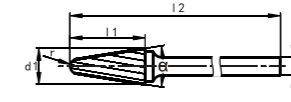
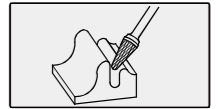
**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	r	Double Cut (X) Order Number	Single Cut (P) Order Number
<b>1/8 Shank</b>							
SH-41L2	1/8	1/4	1/8	2	1/32	14BH00174	14BH00175
SH-41L3	1/8	1/4	1/8	3	1/32	14BH00180	14BH00181
<b>1/4 Shank</b>							
SH-2L4	5/16	3/4	1/4	4-3/4	1/16	14BH00210	14BH00211
SH-2L6	5/16	3/4	1/4	6-3/4	1/16	14BH00216	14BH00217
SH-5L4	1/2	1-1/4	1/4	5-1/4	3/32	14BH00228	14BH00229
SH-5L6	1/2	1-1/4	1/4	7-1/4	3/32	14BH00234	14BH00235

**Conical Ball Nose**  
**With Extra Long Shank**  
Shape: L, KEL, SL

Suitable for contour and rounded edge finishing in deep places



**Metric**

Size	DIN8033 Standard	d1 mm	l1 mm	d2 mm	l2 mm	r	Double Cut (X) Order Number	Single Cut (P) Order Number
<b>3mm Shank</b>								
L0313	—	3	13	3	50	0.6	14BK00413	14BK00414
L0313	—	3	13	3	75	0.6	14BK00415	14BK00416
L0313	—	3	13	3	150	0.6	14BK00417	14BK00418
<b>6mm Shank</b>								
L0616	—	6	16	6	150	1.2	14BK00419	14BK00397
L1027	—	10	27	6	150	1.6	14BK00420	14BK00421
L1230	KEL1230	12	30	6	150	3.2	14BK00422	14BK00423

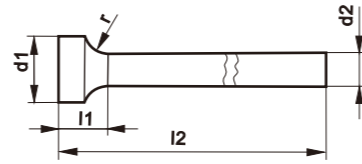
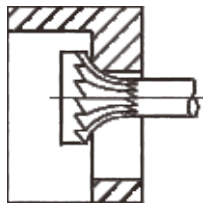
**Imperial**



ANSI	Cutter Diameter d1 Inch	Length of cut l1 Inch	Shank Diameter d2 Inch	Overall Length l2 Inch	r	Double Cut (X) Order Number	Single Cut (P) Order Number
<b>1/8 Shank</b>							
SL-42L2	1/8	1/2	1/8	2	1/32	14BK00274	14BK00275
SL-42L3	1/8	1/2	1/8	3	1/32	14BK00280	14BK00281
<b>1/4 Shank</b>							
SL-1L4	1/4	5/8	1/4	4-5/8	3/64	14BK00304	14BK00305
SL-1L6	1/4	5/8	1/4	6-5/8	3/64	14BK00310	14BK00311
SL-3L4	3/8	1-1/16	1/4	5-1/16	1/16	14BK00481	14BK00489
SL-3L6	3/8	1-1/16	1/4	7-1/16	1/16	14BK00482	14BK00493
SL-4L4	1/2	1-1/8	1/4	5-1/8	1/8	14BK00334	14BK00335
SL-4L6	1/2	1-1/8	1/4	7-1/8	1/8	14BK00340	14BK00341
SL-5L4	5/8	1-3/16	1/4	5-3/16	3/16	14BK00352	14BK00353
SL-5L6	5/8	1-3/16	1/4	7-3/16	3/16	14BK00358	14BK00359

### Trimming Burr (Internal)

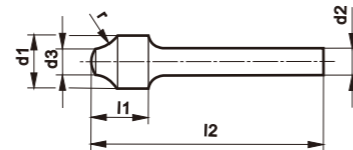
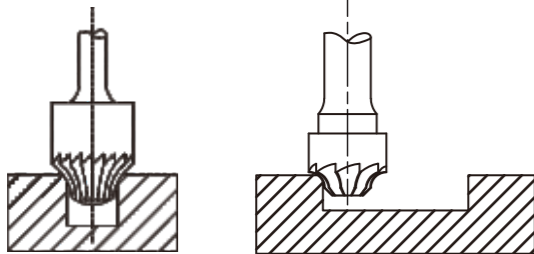
Suitable for internal fillet chamfering  
Size r can be made from r1 to r10 according to requirements.



Size	d1 mm	l1 mm	d2 mm	r	l2 mm	Order Number
S1618P06T120	16	18	6	6	120	14BZ00001
S2218P08T120	22	18	8	10	120	14BZ00002

### Trimming Burr (External)

Suitable for external fillet chamfering  
Size r can be made from r1 to r10 according to requirements.



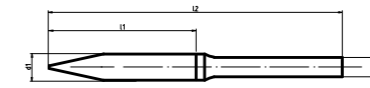
Size	d1 mm	l1 mm	d2 mm	r	l2 mm	Order Number
R1015P06T55	10	15	6	8	55	14BZ00003
R1215P08T55	12	15	8	8	55	14BZ00004

### Carbide Wire Cutting Tool

- ◆ To remove excess rubber and smooth jagged or cut ruptured steel wire in tire repair areas at high efficiency
- ◆ Round shank or three-flatted shank available
- ◆ Use with power drill or air tool
- ◆ Recommended RPM: not exceed 500RPM



Three Flat Shank      Round Shank



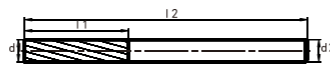
#### Metric

Size	d1 mm	l1 mm	d2 mm	l2 mm	Round Shank Order Number	Three Flat Shank Order Number
M0331X03I65	3	31	3	65	14BL00308	14BL00324
M0452X04I75	4	52	4	75	14BL00309	14BL00325
M0652X06I80	6	52	6	80	14BL00310	14BL00321
M0852X08I100	8	52	8	100	14BL00311	14BL00322
M1065X9.5T110	10	65	9.5	110	14BL00312	14BL00326
M1378X9.5T125	13	78	9.5	125	14BL00313	14BL00327



## Fiberglass Router

- ◆ For finishing and contour milling fiberglass reinforced plastics, carbon fiber reinforced plastics, thermoplastic plastics and hard rubber
- ◆ Plain End used for edge routing or when the end of the router will not come in contact with the work piece.
- ◆ Burr End used for bottom cutting to leave a smooth, even surface with a square corner.
- ◆ Drill End used before the routing operation to plunge through the work piece.
- ◆ End Mill End used for bottom cutting for a smooth bottom surface with a square corner.
- ◆ Recommended RPM:20000-36000RPM



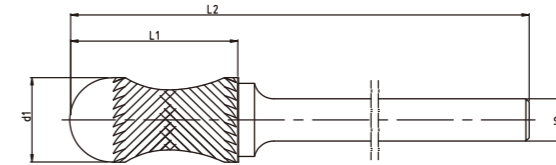
### Metric

Size	d1 mm	l1 mm	d2 mm	l2 mm	Plain End Order Number	Burr End Order Number	Drill End Order Number	End Mill End Order Number
P0313Q03I40	3	13	3	40	14BZ00009	14BZ00007	14BZ00008	14BZ00022
P0620Q06I50	6	20	6	50	14BZ00012	14BZ00010	14BZ00011	14BZ00023
P0825Q08I80	8	25	8	80	14BZ00015	14BZ00013	14BZ00014	14BZ00024
P1025Q10I80	10	25	10	80	14BZ00018	14BZ00016	14BZ00017	14BZ00025
P1230Q12I80	12	30	12	80	14BZ00021	14BZ00019	14BZ00020	14BZ00026



## Radius Burr

- ◆ Multi application burrs cover almost all your general metal removal work.
- ◆ Unique inverted curve, ideal for creating a smooth radius on sharp corners.
- ◆ Unique guide system, ease of control on sharp edges.
- ◆ Special tooth geometry, smooth cutting action using all faces and rapid material removal.
- ◆ Versatile application, can be used on a wide variety of material e.g. titanium, bronze, stainless steel, cast iron, brass, etc.
- ◆ A variety of shapes and sizes available.



### Metric

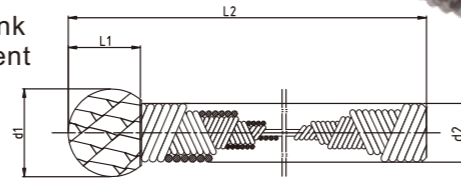
Size	d1 mm	l1 mm	d2 mm	l2 mm	Order Number
Q1325X06T70	12.7	25	6	70	14BQ00001
Q1325X6.35T70	12.7	25	6.35	70	14BQ00002





### Flexible Burr

- ◆ Designed to effectively remove material in difficult to reach component features that simply cannot be addressed by a solid shank burr.
- ◆ Ideal for managing complex deburring operations found in many challenging castings such as impellers, pump casings, turbine blade assemblies and engine blocks.
- ◆ Excellent for the cleaning of burnt sand, welds, fins and various blending operations.
- ◆ Available in a variety of fractional and metric shank diameters, shanks up to 24" in length, and different shapes and cuts available.



#### Metric

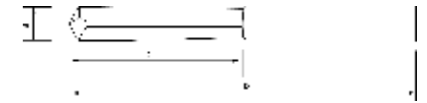
Size	d1 mm	l1 mm	d2 mm	l2 mm	Cut	Order Number
C1020	10	20	8	300	double cut	14BZ00051
C1225	12	25	6	500	aluma cut	14BZ00052
D02*1.8	2	1.8	2.2	245	double cut	14BZ00053
D1211	12	11	8	300	double cut	14BZ00054
E0507	5	7	3	160	Speedway	14BZ00055
E0610	6	10	4	160	Speedway	14BZ00056
E1220	12	20	8	300	double cut	14BZ00057
F1225	12	25	8	300	double cut	14BZ00058
G1625	16	25	8	300	double cut	14BZ00059
L1225	12	25	8	300	double cut	14BZ00060

#### Imperial

Size	d1 inch	l1 inch	d2 inch	Cut	Order Number l2=6"	Order Number l2=12"	Order Number l2=18"	Order Number l2=24"
SC-3	3/8"	3/4"	1/4"	double cut	14BZ00061	14BZ00072	14BZ00083	/
SD-1	1/4"	7/32"	1/4"	double cut	14BZ00062	14BZ00073	14BZ00084	/
SD-2	5/16"	1/4"	1/4"	double cut	/	/	/	14BZ00094
SD-3	3/8"	5/16"	1/4"	double cut	14BZ00063	14BZ00074	14BZ00085	/
SD-5	1/2"	7/16"	1/4"	double cut	14BZ00064	14BZ00075	14BZ00086	/
SD-6	5/8"	9/16"	1/4"	double cut	14BZ00065	14BZ00076	14BZ00087	/
SE-1	1/4"	3/8"	1/4"	double cut	14BZ00066	14BZ00077	14BZ00088	/
SE-3	3/8"	5/8"	1/4"	double cut	14BZ00067	14BZ00078	14BZ00089	/
SE-5	1/2"	7/8"	1/4"	double cut	14BZ00068	14BZ00079	14BZ00090	/
SE-6	5/8"	1"	1/4"	double cut	14BZ00069	14BZ00080	14BZ00091	/
SF-3	3/8"	3/4"	1/4"	double cut	14BZ00070	14BZ00081	14BZ00092	/
SL-3	3/8"	1-1/16"	1/4"	double cut	14BZ00071	14BZ00082	14BZ00093	/

### Solid Carbide Broken Taps Drill

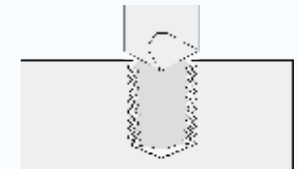
- ◆ Easily remove any broken taps or bolts without damaging the component surface
- ◆ By drilling the core of a tap it is possible to remove the remaining pieces with a scriber
- ◆ Select broken taps drill as per taps diameter
- ◆ Steady manual feed component and spindle ability are vital.
- ◆ Should be running between 1200 to 3500 revs/min.No cutting fluid required.
- ◆ Applicable for remove any style of High Speed Steel Taps, Straight Flute, Spiral Flute, even Forming / Roll Taps.
- ◆ Also suitable for drilling other hard materials including: hardened steels, glass, stellite etc.



Simple to use in four easy steps.



Step 1: Remove as much as practical of any uneven broken top surface of the tap, creating a reasonably flat surface for the Omegadrill to drill into.



Step 2: Clamp the part securely. Use as large a diameter Broken Taps Drill as possible to spot the broken tap. Drill at 1,200 to 2,500 RPM on a rigid and stable machine tool.



Step 3: Using the suitable size Broken Taps Drill, drill down through the broken tap. No cutting fluid required. Peck the drill and flush chips out frequently with an air blast. When reaching the bottom of the broken tap, a slight vibration will be felt. It is best to stop drilling at this point.



Step 4: Using either a scriber, or the picks and pin vise remove the remnants of the broken tap flutes

#### Metric

Size d1 mm	Flute Length l1 mm	Overall Length l2 mm	Order Number
2mm for M3	10	31	14ZJ00017
3mm for M4 - M5	14	40	14ZJ00018
4mm for M6 - M7	20	46	14ZJ00019
5mm for M8 - M10	24	50	14ZJ00020
6mm for M10 - M12	30	60	14ZJ00021

#### Imperial

Size d1 Inch	Flute Length l1 Inch	Overall Length l2 Inch	Order Number
1/8"	3/8"	2-1/2"	14ZJ00009
3/16"	3/4"	3"	14ZJ00010
1/4"	3/4"	3"	14ZJ00011
5/16"	1"	4"	14ZJ00012