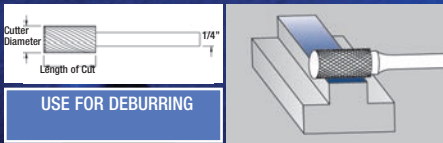
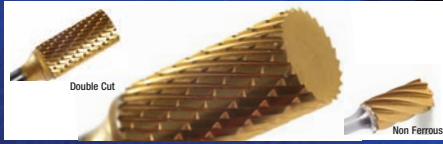


**CHAMPION**

**Carbide Burs**



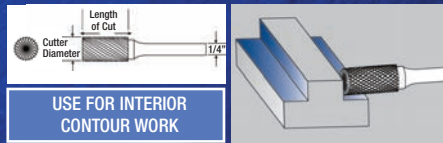
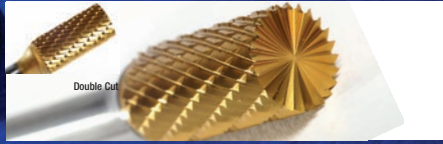
# SA Cylinder Shape



USE FOR DEBURRING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/8"	1/2"	SA11	-	-
1/8"	5/8"	SA12	-	-
5/32"	5/8"	SA13	-	-
3/16"	5/8"	SA14	-	-
1/4"	5/8"	SA1***	-	-
1/4"	1"	SA1L	-	-
1/4"	3/4"	-	SA1NF	-
1/4"	1/2"	-	-	SA1-L6*
5/16"	3/4"	SA2	-	-
3/8"	3/4"	SA3***	SA3NF	SA3-L6*
3/8"	1"	SA3L	-	-
3/8"	1-1/2"	SA3X	-	-
7/16"	1"	SA4	-	-
1/2"	1"	SA5***	SA5NF	SA5-L6*
5/8"	1"	SA6	SA6NF	-
3/4"	1/2"	SA15	-	-
3/4"	3/4"	SA16	-	-
3/4"	1"	SA7	SA7NF	-
3/4"	1"	-	SA7NF-3/8**	-
7/8"	1"	SA8	-	-
1"	1"	SA9	-	-

# SB Cylinder End Cut



USE FOR INTERIOR CONTOUR WORK

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/8"	1/2"	SB11	-	-
1/8"	5/8"	SB12	-	-
5/32"	5/8"	SB13	-	-
3/16"	5/8"	SB14	-	-
1/4"	5/8"	SB1***	-	-
1/4"	1"	SB1L	-	-
5/16"	3/4"	SB2	-	-
3/8"	3/4"	SB3***	-	-
3/8"	1"	SB3L	-	-
3/8"	1-1/2"	SB3X	-	-
7/16"	1"	SB4	-	-
1/2"	1"	SB5***	-	-
5/8"	1"	SB6***	-	-
3/4"	1/2"	SB15	-	-
3/4"	3/4"	SB16	-	-
3/4"	1"	SB7***	-	-
7/8"	1"	SB8	-	-
1"	1"	SB9	-	-

\* 6" long shank \*\* 3/8" shank  
 \*\*\* Available without Titanium Nitride Coating.  
 Specify US (uncoated) when ordering.

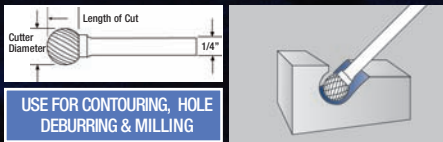
# SC Cylinder Radius End



USE FOR SURFACE MILLING & CONTOURING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/8"	1/2"	SC11***	-	-
1/8"	5/8"	SC12	-	-
5/32"	5/8"	SC13	-	-
3/16"	5/8"	SC14	-	-
1/4"	5/8"	SC1***	-	-
1/4"	1/2"	-	-	SC1-L6*
1/4"	3/4"	-	SC1NF	-
5/16"	3/4"	SC2	-	-
3/8"	3/4"	SC3***	SC3NF	SC3-L6*
3/8"	1"	SC3L	-	-
3/8"	1-1/2"	SC3X	-	-
7/16"	1"	SC4	-	-
1/2"	1"	SC5***	SC5NF	SC5-L6*
5/8"	1"	SC6	SC6NF	-
3/4"	1/2"	SC15	-	-
3/4"	3/4"	SC16	-	-
3/4"	1"	SC7***	SC7NF	-
3/4"	1"	-	SC7NF-3/8**	-
1"	1"	SC9	-	-

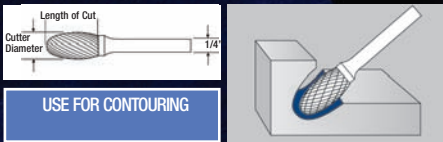
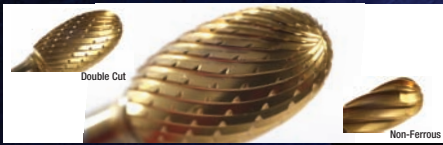
# SD Ball Shape



USE FOR CONTOURING, HOLE DEBURRING & MILLING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/8"	3/32"	SD11	-	-
3/16"	1/8"	SD14***	-	-
1/4"	7/32"	SD1***	SD1NF	SD1-L6*
5/16"	1/4"	SD2***	-	-
3/8"	5/16"	SD3***	SD3NF	SD3-L6*
7/16"	3/8"	SD4	-	-
1/2"	7/16"	SD5***	SD5NF	SD5-L6*
5/8"	9/16"	SD6	SD6NF	-
3/4"	11/16"	SD7***	SD7NF	-
3/4"	11/16"	-	SD7NF/3/8**	-
1"	15/16"	SD9	-	-

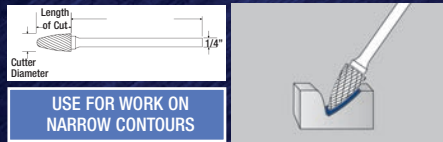
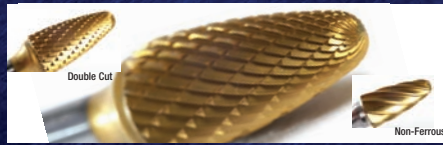
# SE Oval Shape



USE FOR CONTOURING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
3/16"	5/16"	SE11	-	-
1/4"	3/8"	SE1***	-	SE1-L6*
3/8"	5/8"	SE3***	SE3NF	SE3-L6*
1/2"	7/8"	SE5***	SE5NF	SE5-L6*
5/8"	1"	SE6***	SE6NF	-
3/4"	1"	SE7	SE7NF	-
3/4"	1"	-	SE7NF-3/8**	-

# SF Tree Shape Radius End

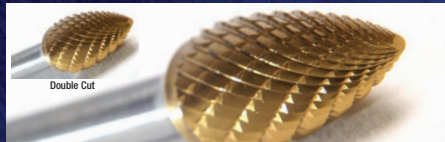


USE FOR WORK ON NARROW CONTOURS

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/8"	1/2"	SF11	-	-
1/4"	3/4"	SF1***	SF1NF	-
1/4"	1/2"	-	-	SF1-L6*
3/8"	3/4"	SF3***	SF3-NF	SF3-L6*
7/16"	1"	SF4	-	-
1/2"	3/4"	SF13	-	-
1/2"	1"	SF5***	SF5-NF	SF5-L6*
5/8"	1"	SF6	SF6-NF	-
3/4"	1"	SF7	-	-
3/4"	1-1/4"	SF14	SF14-NF	-
3/4"	1-1/4"	-	SF14-NF-3/8**	-
3/4"	1-1/2"	SF15	-	-

CHAMPION Carbide Burs

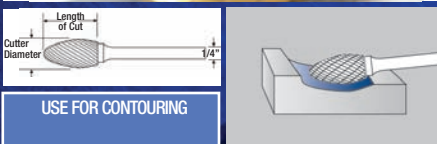
# SG Tree Shape



USE FOR NARROW CONTOURS  
WORK & MILLING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/4"	5/8"	SG1***	-	-
1/4"	1/2"	-	-	SG1-L6*
5/16"	3/4"	SG2	-	-
3/8"	3/4"	SG3***	-	SG3-L6*
1/2"	3/4"	SG13***	-	-
1/2"	1"	SG5***	-	SG5-L6*
5/8"	1"	SG6	-	-
3/4"	1"	SG7	-	-
3/4"	1-1/2"	SG15	-	-

# SH Flame Shape



USE FOR CONTOURING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/4"	5/8"	SH1***	-	-
5/16"	3/4"	SH2	-	SH2-L6*
1/2"	1-1/4"	SH5***	-	SH5-L6*
5/8"	1-7/16"	SH6	-	-
3/4"	1-5/8"	SH7***	-	-

# SL 14° Taper Radius End



USE FOR NARROW CONTOURS  
& SURFACE MACHINING

CUTTER DETAILS		LIST / EDP No.		
Cutter Diameter	Length of Cut	Double Cut	Non Ferrous	Long Series
1/4"	5/8"	SL1***	-	SL1-L6*
5/16"	7/8"	SL2	-	-
3/8"	1-1/16"	SL3***	SL3NF	SL3-L6*
1/2"	1-1/8"	SL4***	SL4NF	SL4-L6*
5/8"	1-3/16"	SL5	SL5NF	-
5/8"	1-5/16"	SL6	SF6NF	-
3/4"	1-1/2"	SL7	SF7NF	-
3/4"	1-1/2"	-	SL7NF-3/8**	-

# SM Cone Shape



CUTTER DETAILS			LIST / EDP No.		USE FOR NARROW CONTOURS / SURFACE MACHINING
Cutter Diameter	Length of Cut	Included Angle	Double Cut	Non Ferrous	
1/4"	1/2"	22°	SM1	-	
1/4"	3/4"	14°	SM2***	-	
1/4"	1"	10°	SM3***	-	
3/8"	5/8"	28°	SM4***	-	
1/2"	7/8"	28°	SM5***	-	
5/8"	1"	31°	SM6	-	

# SN Inverted Cone Shape



CUTTER DETAILS			LIST / EDP No.		EDGE MACHINING FROM THE REAR IN HARD TO REACH AREAS
Cutter Diameter	Length of Cut	Included Angle	Double Cut	Non Ferrous	
1/4"	5/16"	10°	SN1***	-	
3/8"	3/8"	13°	SN2	-	
1/2"	1/2"	28°	SN4***	-	
5/8"	3/4"	18°	SN6	-	
3/4"	5/8"	30°	SN7	-	

# SK 90° Cone Shape



CUTTER DETAILS			LIST / EDP No.		MACHINING OF ACUTE ANGLE AREAS / COUNTERSINKING
Cutter Diameter	Length of Cut	Included Angle	Double Cut	Non Ferrous	
1/4"	1/8"	90°	SK1	-	
3/8"	3/16"	90°	SK3	-	
1/2"	1/4"	90°	SK5	-	
5/8"	5/16"	90°	SK6	-	
3/4"	3/8"	90°	SK7	-	
1"	1/2"	90°	SK9	-	

# SJ 60° Cone Shape



CUTTER DETAILS			LIST / EDP No.		MACHINING OF ACUTE ANGLE AREAS / COUNTERSINKING
Cutter Diameter	Length of Cut	Included Angle	Double Cut	Non Ferrous	
1/4"	3/16"	60°	SJ1	-	
3/8"	5/16"	60°	SJ3	-	
1/2"	7/16"	60°	SJ5	-	
5/8"	9/16"	60°	SJ6	-	
3/4"	11/16"	60°	SJ7	-	
1"	15/16"	60°	SJ9	-	

# Miniature Burs



MINIATURE BURS											
1/8" SHANKS - 1-1/2" OVERALL LENGTH											
CUTTER DETAILS			LIST	CUTTER DETAILS			LIST	CUTTER DETAILS			LIST
Cut Style	Cutter Diameter	Length of Cut	Double Cut	Cut Style	Cutter Diameter	Length of Cut	Double Cut	Cut Style	Cutter Diameter	Length of Cut	Double Cut
<b>SA</b>	1/16"	1/4"	SA41	<b>SF</b>	1/16"	1/4"	SF41	<b>SM</b>	1/8"	11/32"	SM41
	3/32"	7/16"	SA42		3/32"	7/16"	SF42		1/8"	7/16"	SM42
	1/8"	9/16"	SA43		1/8"	9/16"	SF51		1/8"	5/8"	SM43
	1/4"	1/2"	SA51						1/4"	1/2"	SM51
<b>SB</b>	1/8"	1/4"	SB43	<b>SG</b>	1/8"	1/4"	SG41	<b>SN</b>	1/4"	1/4"	SN43
	3/32"	7/16"	SB-ECO		1/8"	5/16"	SG42				
	1/8"	9/16"	SB51		1/8"	3/8"	SG43				
<b>SC</b>	3/32"	7/16"	SC41	<b>SH</b>	1/8"	1/2"	SG44				
	1/8"	9/16"	SC42		1/4"	1/2"	SG51				
	1/4"	1/2"	SC51		3/32"	7/16"	SH41				
<b>SD</b>	3/32"	3/32"	SD41	<b>SJ</b>	1/8"	3/32"	SJ41				
	1/8"	1/8"	SD42								
	1/4"	7/32"	SD51								
<b>SE</b>	1/8"	7/32"	SE41	<b>SL</b>	1/8"	7/32"	SE41				
	1/4"	3/8"	SE51		1/4"	3/8"	SE51				



## Application & Speed Recommendations

SOLID CARBIDE BUR APPLICATION INFORMATION		
MATERIAL Check List	SUITABILITY	
	Double Cut	Non-Ferrous
Aluminum	—	✓
Brass	✓	✓
Bronze	✓	—
Cast Iron	✓	—
Copper	—	✓
Carbon Fiber	—	✓
Fiberglass	✓	—
Inconel	✓	—
Magnesium	—	✓
Plastics	✓	—
Hard Rubber	✓	—
Steel - 45-55Rc	✓	—
Steel - 55-60Rc	✓	—
Steel - Carbon	✓	—
Steel - Nickel Chrome	✓	—
Steel - Stainless	✓	—
Steel - Weldments	✓	—
Titanium	✓	—
Zinc	—	✓

SOLID CARBIDE BUR SPEED RECOMMENDATIONS		
BUR DIAMETER	Recommended Cutting Speed	Maximum Cutting Speed
	(RPM)	(RPM)
1/16	60,000 - 90,000	100,000
1/8	40,000 - 70,000	90,000
3/16	35,000 - 60,000	80,000
1/4	30,000 - 50,000	70,000
5/16	20,000 - 40,000	68,000
3/8	20,000 - 40,000	66,000
7/16	15,000 - 40,000	58,000
1/2	15,000 - 40,000	50,000
5/8	12,000 - 25,000	40,000
3/4	10,000 - 20,000	33,000
1	7,500 - 20,000	25,000
1-1/8	7,000 - 13,000	20,000
1-1/2	5,000 - 10,000	17,000
1-3/4	4,500 - 9,000	14,000
2	4,000 - 8,000	12,500

### Usage Guidelines

Do not use carbide burs in portable drill motors. Portable drills run much too slowly for burs.

#### Operating Speed Recommendations:

- Slower speeds for harder materials
- Higher speeds when using small burs
- Slower speeds when using long series burs

Running burs below recommended speeds may cause chipping.

Do not use worn-out tools and collets. They will cause chipping.

Running burs too fast will cause teeth to wear prematurely.

Apply constant pressure and steady action.



# Carbide Burs

## USAGE

Carbide burs are one of the most versatile metal working tools. Used in virtually every industry, burs are used in mold and pattern making, die sinking, tool making and maintenance. They are used widely in the automotive, aerospace, foundry, power station and engineering industries.

## THE BUR STYLES YOU NEED

Double Cut Burs - Non-Ferrous Burs - Miniature Burs - Long Series Burs - Bur Kits - Bur Displays

## THE QUALITY TO MEET THE MOST DEMANDING JOBS

Manufactured in the U.S.A. from C2 tungsten carbide, Champion carbide burs are precision machine ground using diamond wheels and automated CNC machinery. Producing consistent geometry, sharp cutting edges and vibration free performance.

All Champion carbide burs are Titanium Nitride coated for superior surface finish and long life - at no extra cost.

## SELECTING THE RIGHT BUR

Use the reference charts to select the best bur for your job.

### Double Cut

Machine ground chisel type cutting edges, with left and right hand spirals.

Double cut burs provide :  
Excellent stock removal  
Fine surface finish  
Excellent operator control

Applications include :  
Cast iron and steels  
Titanium  
Brass  
Copper  
Bronze

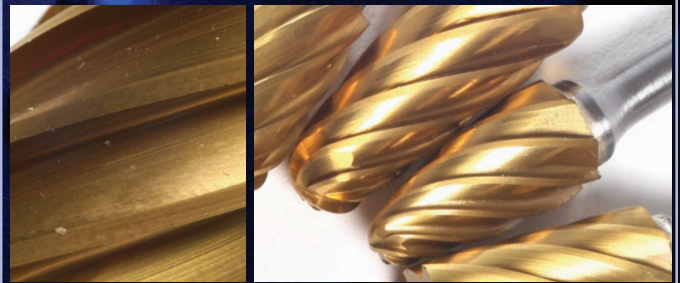


### Non Ferrous

Champion non-ferrous burs have open, aggressive cutting edges for softer materials that avoid loading.

NF burs provide :  
Easy chip flow  
Minimal clogging.

Applications Include :  
Aluminum & Magnesium  
Copper & Soft Steel  
Brass & Zinc  
Alloys & Hard Rubber  
Most Plastic and non-ferrous metals



### Miniature

Miniature burs are ideal for engraving and use in Dremel like power tools (often called pencil grinders). They have 1/8" shank diameter and 1-1/2" overall length.



### Long Series

Long series burs are ideal for hard to reach applications, like engine block work. They have 6" length shanks.



**CHAMPION**  
CUTTING TOOL CORP

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