

## Increase Productivity • Work Efficiently • Optimize Tool Performance

Burs are rotary cutting tools that are used to form, reduce, shape smooth or clean metals and non-ferrous materials. Champion's burs are made of high quality tungsten carbide and feature ultra-sharp cutting edges for vibration-free performance and long tool life. Available in hundreds of shapes and sizes, carbide burs are used in virtually every industry for mold and pattern making, die sinking, tool making, maintenance, weld removal, and casting flash removal. Popular industries include - automotive, aerospace, foundry, power station, ship building, engineering, and steel fabrication.

### Choosing The Right Bur

- > What is the shape of the work piece being de-burred?
- > What is the size of the area being de-burred?
- > What type of material needs to be de-burred?

### Bur Styles

#### DOUBLE CUT

- > Flutes are cross-cut for enhanced operator control and efficient material removal
- > Application: Ferrous Metals - Steel, Cast Iron, Titanium, Brass, Copper, Bronze

\*Champion's High Performance Burs Are TiN (Titanium Nitride) Coated For Enhanced Tool Performance And Life

#### NON-FERROUS

- > Single, wide flute peels away softer materials
- > Application: Non-Ferrous Metals- Aluminum, Brass, Carbon Fiber, Copper, Magnesium, Zinc

#### MINIATURE

- > Double cut flutes for efficient material removal
- > Application: Small size is ideal for engraving or etching
- > For use In Dremel like power tools (pencil grinders)

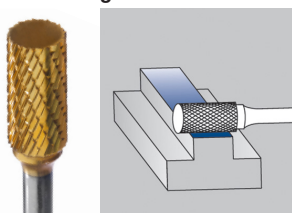
#### EXTRA-LONG

- > 6" overall length for when extra reach is needed
- > Double cut flutes for efficient material removal
- > Application: Ferrous Metals- Steel, Cast Iron, Titanium, Brass, Copper, Bronze

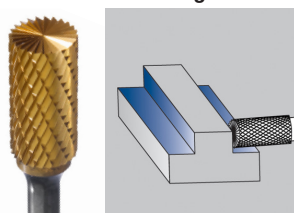


### Bur Shapes & Applications

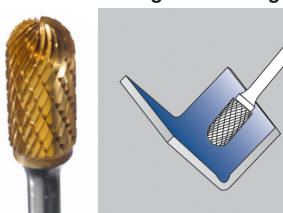
**SA Cylinder Shape**  
Deburring



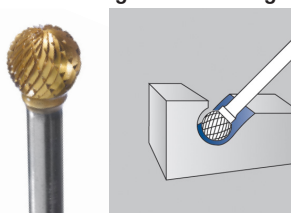
**SB Cylinder End Cut**  
Interior contouring



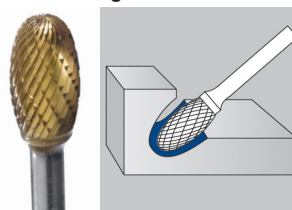
**SC Cylinder Radius End**  
Surface milling/contouring



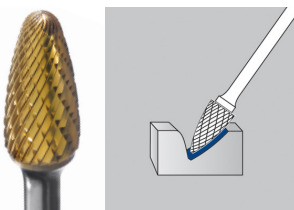
**SD Ball Shape**  
Contouring/hole deburring/milling



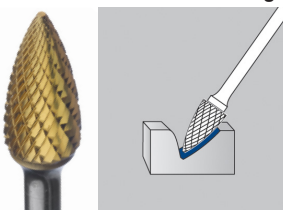
**SE Oval Shape**  
Contouring



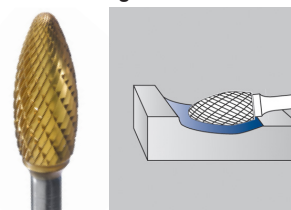
**SF Tree Shape Radius End**  
Work on narrow contours



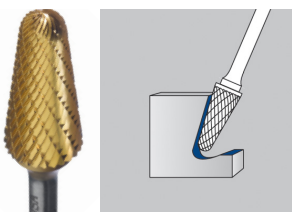
**SG Tree Shape**  
Narrow contours & milling



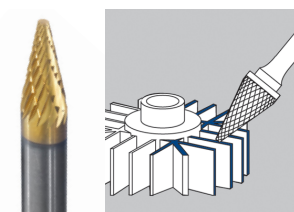
**SH Flame Shape**  
Contouring



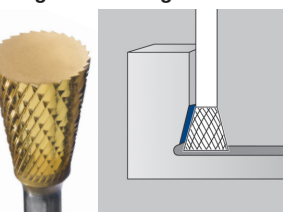
**SL 14° Taper Radius End**  
Narrow contours/surface machining



**SM Cone Shape**  
Narrow contours/surface machining



**SN Inverted Cone Shape**  
Edge machining



**Die Grinder**



## Bur Material Applications

### CARBIDE BUR APPLICATION INFORMATION

Material	Double Cut Suitability	Non Ferrous Suitability
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		✓

## Bur Speed Recommendations

### CARBIDE BUR SPEED RECOMMENDATIONS

Bur Diameter	Recommended Cutting Speed (RPM)	Maximum Cutting Speed (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

## Proper Use & Care

### > Do

- Use burs in rotary die grinders
- Operate using recommended operating speeds
- Apply constant pressure and movements

### > Do Not

- Run burs in portable power drills- they run too slow
- Operate burs too slow- will cause chipping
- Operate burs too fast- teeth will wear prematurely
- Use worn out tools and collets- will cause chipping