

# CARBIDE BURS & DIE GRINDERS

From BORIDE Engineered Abrasives

QUALITY.

INNOVATION.

SERVICE.



Solutions for Universal Applications  
High Quality Ensuring Reliability



Made in the USA

 **BORIDE**  
Engineered Abrasives

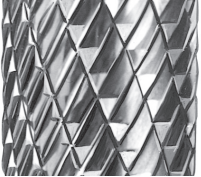
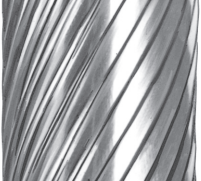
 **ISO 9001:2008**  
Certificate #0Y631-IS2

## APPLICATION TIPS

- Use lubricant or wax to prevent flute loading in soft materials.
- Using the recommended speed prevents premature wear and/or insufficient material removal rates.
- Maintain grinder concentricity to optimize material removal rates and extend bur life.
- Reduce flutes and increase speed in softer materials. Increase flutes and reduce speed in hardened materials.
- Cross cut styles (6) generally improve stock removal, control and reduce chip size.



## HOW TO SELECT YOUR BUR

APPLICATIONS	MATERIALS	CUT	
<b>Efficient Stock Removal</b> deburring, finishing, cleaning	Ferrous metals Non-ferrous metals	Double Cut - CUT 6 (D/C)	
<b>Medium Stock Removal</b> deburring, milling, cleaning, finishing	Non-hardened steel <45HRC Hardened steel >45HRC : stainless steel High temperature-resistant metals: nickel, cobalt, titanium Non-ferrous light metals: brass, copper, zinc Hardened >45HRC: cast iron	Single Cut - CUT 3 (S/C)	

Please note that all cuts available are not displayed in this product catalog. Other cuts are available upon request.

## HOW TO USE THE SPEED GUIDE (next page)

1. Select application and material group.
2. Identify the appropriate cut style. Please refer to chart above to match your application and the appropriate cutting style.
3. Identify recommended cutting speed.
4. Select bur diameter.
5. Follow maximum rotational speed.



Wear Eye Protection

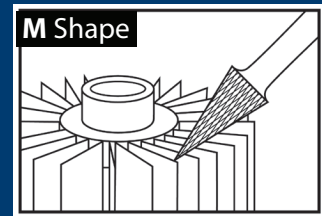
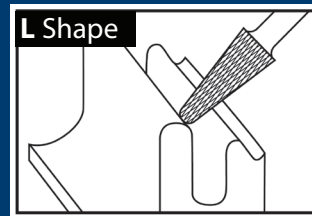
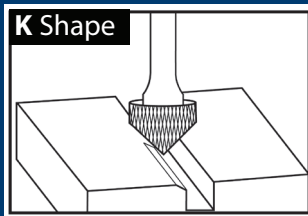
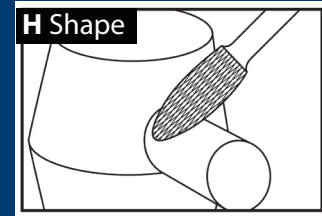
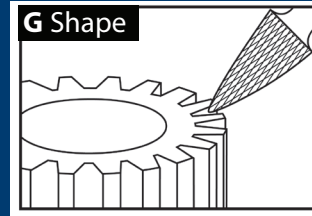
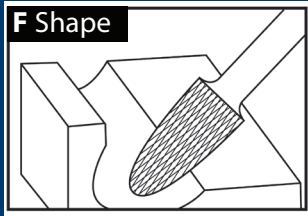
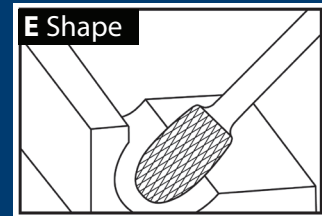
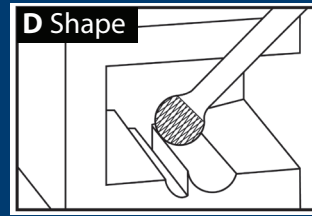
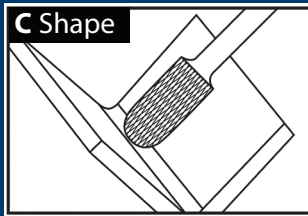
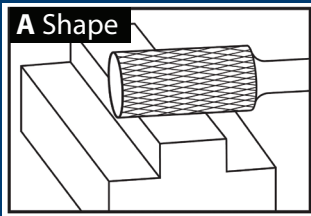


Wear Hearing Protection



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

# SHAPES



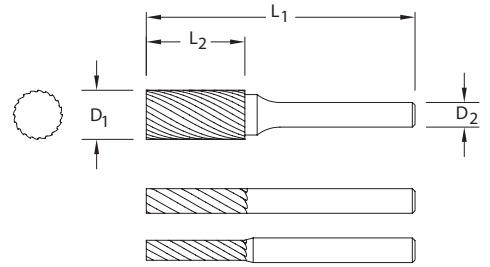
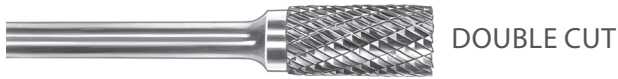
## SPEED GUIDE

MATERIAL GROUP (1)	CUT STYLES (2)										
Super Alloy Materials	Cut 3 or 6										
Hardened steel >45HRC	Cut 6										
Non-hardened steel <45HRC			Cut 6								
High temperature-resistant materials	Cut 6										
Non-ferrous light metals								Cut 6			

RECOMMENDED CUTTING SPEED (3)										
METRIC (m/min)	420	480	540	600	660	720	780	840	900	
FRACTIONAL (SFM)	1400	1600	1800	2000	2200	2400	2600	2800	3000	

BUR DIAMETER (4)		MAXIMUM ROTATIONAL SPEED (RPM) (5)									
Imperial (inch)	Metric (mm)										
<1/8	<3	45,000	53,000	60,000	66,000	73,000	79,000	86,000	92,500	100,000	
3/16	5	35,000	40,000	45,000	50,000	55,000	60,000	65,000	70,000	75,000	
1/4	6	26,000	30,000	34,000	37,500	41,500	45,000	49,000	52,500	55,000	
5/16	8	21,000	24,000	27,000	30,000	33,000	36,000	39,000	42,000	45,000	
3/8	10	17,500	20,000	22,500	25,000	27,500	30,000	32,500	35,000	37,500	
1/2	12	13,000	15,000	17,000	19,000	20,500	22,500	24,500	26,000	28,000	
5/8	15	10,500	12,000	13,500	15,000	16,500	18,000	19,500	21,000	22,500	
3/4	20	9,000	10,000	11,000	12,500	14,000	15,000	16,250	17,500	19,000	
1	25	6,500	7,500	8,500	9,500	10,500	11,000	12,000	13,000	14,000	

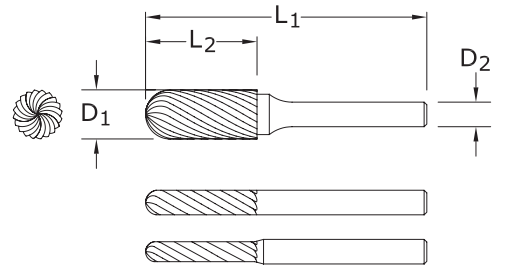
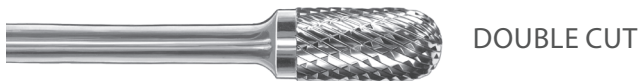
SA



SA - Cylinder Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item
SA-41	1/16	1/4	1/8	1-1/2	300061
SA-42	3/32	7/16	1/8	1-1/2	300062
SA-43	1/8	9/16	1/8	1-1/2	300063
SA-53	3/16	1/2	1/8	1-1/2	300082
SA-51	1/4	1/2	1/8	2	300089
SA-1	1/4	5/8	1/4	2	300091
SA-3	3/8	3/4	1/4	2-1/2	300092

SC



SC - Cylinder Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item	SINGLE CUT 3 Item
SC-41	3/32	7/16	1/8	1-1/2	300064	--
SC-42	1/8	9/16	1/8	1-1/2	300065	300056
SC-53	3/16	1/2	1/8	1-1/2	300086	--
SC-51	1/4	1/2	1/8	2	300085	--
SC-1	1/4	5/8	1/4	2	300093	--
SC-3	3/8	3/4	1/4	2-1/2	300094	--



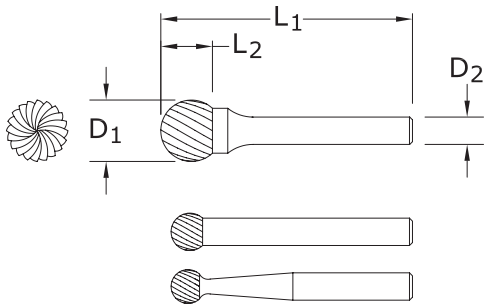
Wear Eye Protection



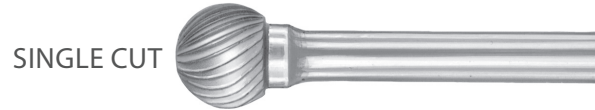
Wear Hearing Protection



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

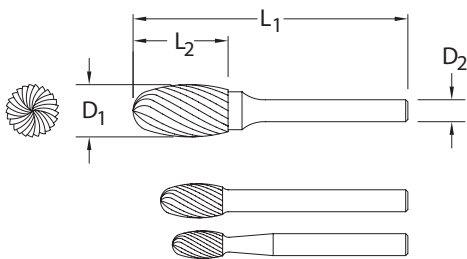


**SD**

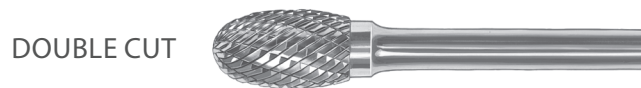


**SD - Ball Shape**

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item	SINGLE CUT 3 Item
SD-41	3/32	3/32	1/8	1-1/2	300066	--
SD-42	1/8	1/8	1/8	1-1/2	300067	--
SD-53	3/16	5/32	1/8	1-1/2	--	300057
SD-51	1/4	7/32	1/8	1-3/4	300087	
SD-1	1/4	7/32	1/4	2	300095	
SD-3	3/8	5/16	1/4	2-1/16	300096	



**SE**



**SE - Oval Shape**

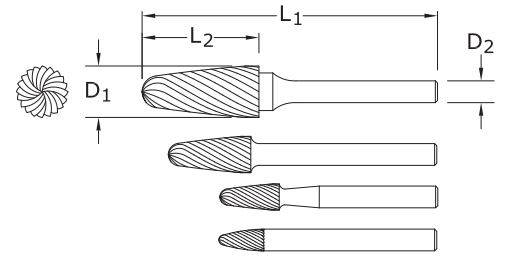
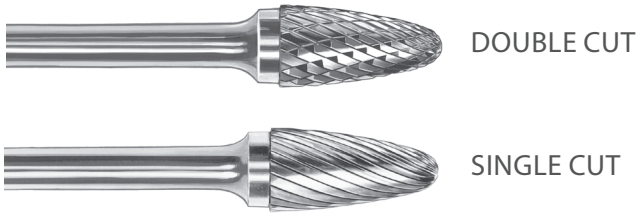
TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item	SINGLE CUT 3 Item
SE-41	1/8	7/32	1/8	1-1/2	300068	--
SE-53	3/16	9/32	1/8	1-1/2	--	300059
SE-51	1/4	3/8	1/8	1-8/9	300090	--

## Recommended Air Tools

See our selection of Die Grinders on pages 10-11. Perfect for jobs from deburring to finishing.



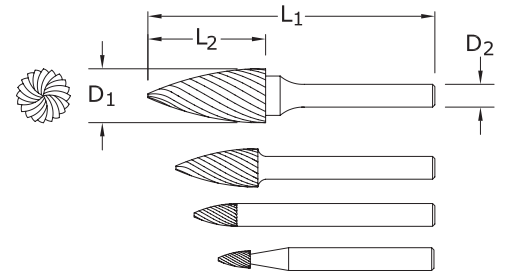
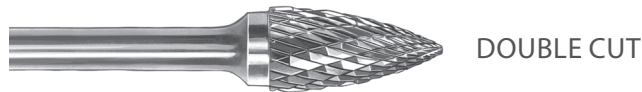
# SF



## SF - Tree Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item	SINGLE CUT 3 Item
SF-41	1/8	1/4	1/8	1-1/2	300069	--
SF-42	1/8	1/2	1/8	1-1/2	300070	300060
SF-51	1/4	1/2	1/8	2	300083	--
SF-3	3/8	3/4	1/4	2-1/2	300097	--

# SG



## SG - Tree Shape Pointed End

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item
SG-41	1/8	1/4	1/8	1-1/2	300071
SG-44	1/8	1/2	1/8	1-1/2	300072
SG-51	1/4	1/2	1/8	2	300088



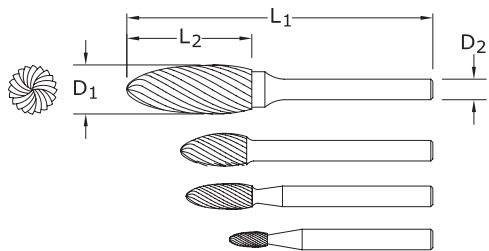
Wear Eye Protection



Wear Hearing Protection

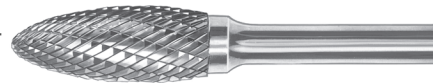


Observe the recommended rotational speed, especially when using burs with long shanks!



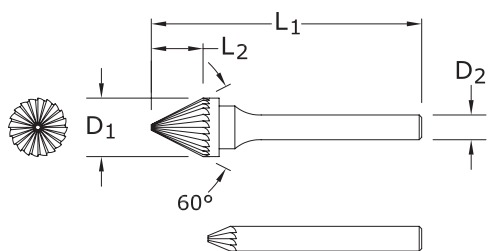
**SH**

DOUBLE CUT



SH - Flame Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item
SH-41	1/8	1/4	1/8	1-1/2	300073



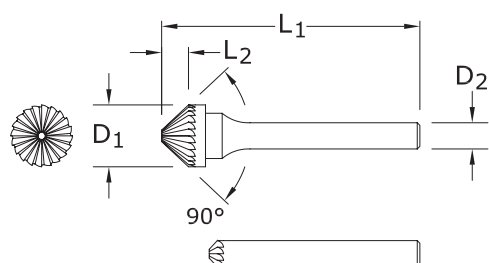
**SJ**

DOUBLE CUT



SJ - Cone Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item
SJ-42	1/8	3/32	1/8	1-1/2	300074



**SK**

DOUBLE CUT



SK - Cone Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	DOUBLE CUT 6 Item
SK-42	1/8	1/16	1/8	1-1/2	300075

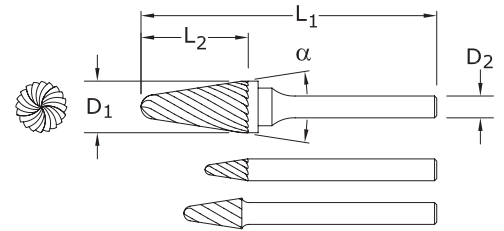
## Recommended Air Tools

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SL



DOUBLE CUT



SL - Radius End Taper Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	INCLUDED ANGLE a	DOUBLE CUT 6 Item
SL-41	1/8	3/8	1/8	1-1/2	8°	300076
SL-42	1/8	1/2	1/8	1-1/2	8°	300077

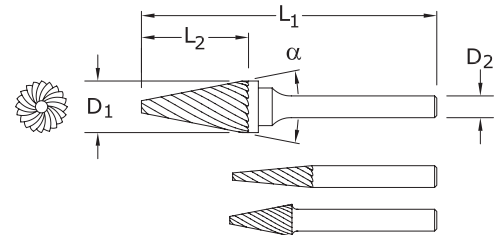
SM



DOUBLE CUT



SINGLE CUT



SM - Cone Shape

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	INCLUDED ANGLE a	DOUBLE CUT 6 Item	SINGLE CUT 3 Item
SM-41	1/8	11/32	1/8	1-1/2	12°	300078	--
SM-42	1/8	7/16	1/8	1-1/2	14°	300079	300058
SM-43	1/8	5/8	1/8	1-1/2	7°	300080	--



Wear Eye Protection

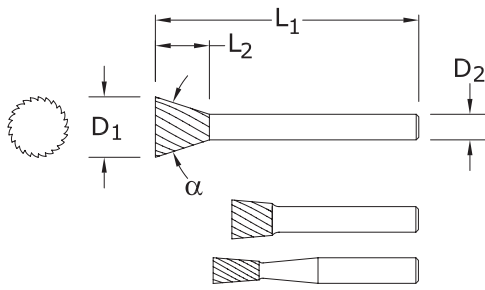


Wear Hearing Protection

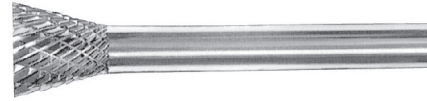


Observe the recommended rotational speed, especially when using burs with long shanks!





DOUBLE CUT



SN - Cone Shape Inverted

TOOL	CUTTER DIAMETER D1	LENGTH OF CUT L2	SHANK DIAMETER D2	OVERALL LENGTH L1	INCLUDED ANGLE a	DOUBLE CUT 6 Item
SN-42	1/8	3/16	1/8	1-1/2	10°	300081
SN-51	1/4	1/4	1/8	1-3/4	10°	300084

**Recommended Air Tools**  
See our selection of Die Grinders on pages 10-11. Perfect for jobs from deburring to finishing.

## SAFETY INSTRUCTIONS



- Use of eye, face and ear protection is strongly recommended.
- Observe the recommended rotational speed, especially when using burs with long shanks!
- Burs with shanks longer than 1-3/4 (inch) should be used at 50% of the normal speed.
- Extended shank burs are only recommended for use in well maintained handheld grinders.
- Stabilize extended shank burs by lightly contacting the workpiece prior to starting the grinder.
- Blue discoloring of steel shanks indicates excessive heat due to overuse. Continued use could cause injury.

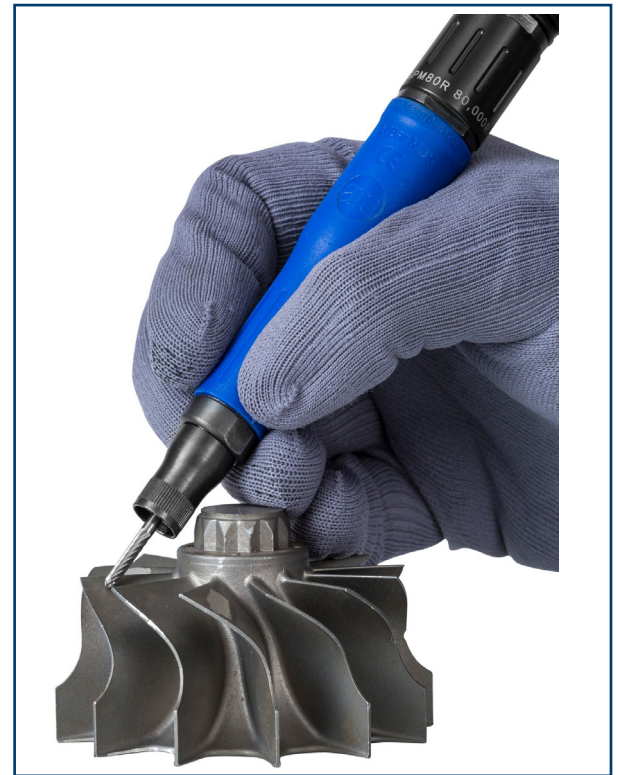
## PENCIL DIE GRINDER - SPM80R-IMP



MODEL	SPM80R-IMP
Speed (rpm)	80,000
Power (hp)	0.10
Power (watt)	80
Weight (kg)	0.17
Weight (oz)	6
Air Consumption (m3/min)	0.20
Air Consumption (cfm)	7.00
Noise Level (db.(A))	66
Standard collet (inches)	1/8
Standard collet (mm)	3
Exhaust type	Rear
Lever type	Roll

### FEATURES & BENEFITS

- Slim body design - for intricate work
- High speed - Fine finish
- Small diameter facilitates precise control
- Removable Collet guard
- Collet Guard for improved Control & Spindle Protection



RECOMMENDED CONSUMABLES	
Carbide burs	3 mm - 1/8"
Abrasives	Mounted points



*Air Tool Repair Service Available  
Repair Parts Available*



Wear Eye Protection



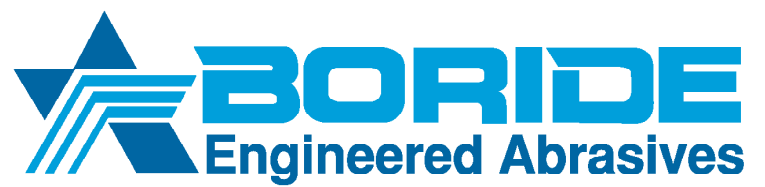
Wear Face Protection



Wear Hearing Protection



Oil



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