



DISCO

Kiru · Kezuru · Migaku Technologies



Electroformed Bond Blades **Z09**SERIES

Electroformed blades with higher strength and variety of concentrations



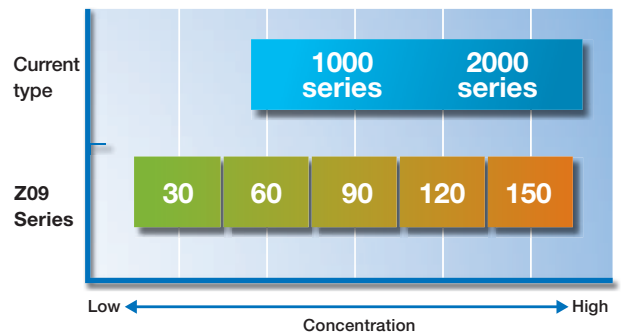
The Z09 Series adopts the newly developed high strength bond and meets various needs thanks to highly accurate concentration control technology.

The Z09 Series consists of electroformed bond blades for applications needing fine grit sizes, which require particularly high quality processing. Since there are five levels of concentration, a blade having a good balance of quality and life is selectable. Furthermore, thanks to the newly developed high strength bond realizes highly straight processing and increases the process speed.

- Increases the choices for a blade thanks to the technology realizing more detailed classification of concentration
- Reduces interval dressing by selecting a low-concentration blade
- Realizes highly straight processing and increases the process speed thanks to the high strength bond



■ Concentration range



During dicing, concentration affects both the speed of blade wear and the size of chipping. By selecting precisely a concentration* that is appropriate to the application, both wear speed and process quality can be made more stable and consistent.

*Concentration refers to the percentage of diamond grit in the abrasive portion of the blade. For example, a concentration level of 100 indicates 25 % diamond grit by volume.

Applications

PZT, LiTaO₃, Ceramics, Silicon wafers, etc.

Specifications

Electroformed Bond Blades Z09 SERIES

Grit type		Bond		O.D. ¹		I.D.		Angle		Surface treatment	
SD	Synthetic Diamond	Y1						θ		No Code	Single surface grit protruded type
										L	Lapped type
										N	Increased strength type
										V	Grains protruding on both sides

Z09 - SD 1700 - Y1 - 60 51 x 0.1 A2 x 40 x 45 E - L - S3

Grit size ¹	Concentration ¹	Thickness ¹	Thickness accuracy	Blade shape ²	Slit ³
1700 #1700	30		A1 ±0.002	E	S1 No. of slits 4 Depth 1mm
2000 #2000	60		A2 ±0.005	N	S2 No. of slits 8 Depth 1mm
3000 #3000	90		A3 ±0.010	M	S3 No. of slits 16 Depth 1mm
3500 #3500	120		A4 ±0.015	V	Small Slit No. of slits 60 Depth 1mm
4000 #4000	150		AS Optional (mm)	S	Large Slit No. of slits 12 Depth 2mm
4500 #4500					S4 No. of slits 40 Depth 1mm
4800 #4800					S5 No. of slits 40 Depth 1mm
5000 #5000					SS Optional

² Blade thickness greater than 0.1 mm are available

³ All slit widths are 0.5mm (except for the SS type)
Blade thickness greater than 0.04 mm are available

*1 Standard specification range by grit size

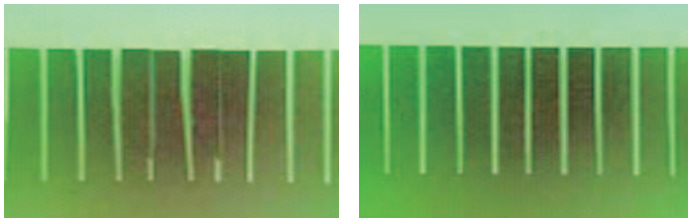
O.D. (mm)	Grit size	Thickness(mm)					Concentration				
		Surface treatment (No Code, N)		Surface treatment (V)		Surface treatment (L)	30	60	90	120	150
		0.015 - 0.024 ⁴	0.025 - 0.300	0.020 - 0.024 ⁴	0.025 - 0.300	0.100 - 0.500					
49 - 84	#1700		✓	✓	✓	✓	✓	✓	✓	✓	✓
	#2000		✓	✓	✓	✓	✓	✓	✓	✓	✓
	#3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	#3500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	#4000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	#4500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	#4800	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	#5000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

⁴ Available only for OD 49 - 59 mm

Experimental data

■ Processing of PZT

The Z09 Series enables highly straight deep grooving which was difficult with the NBC-Z blade.



NBC-Z

Z09

Workpiece: PZT

Blade: NBC-ZB 1060-V 52 × 0.03 × 40

Z09-SD1700-Y1-30 52 × 0.03A1 × 40-V

Blade exposure: 1.3 mm

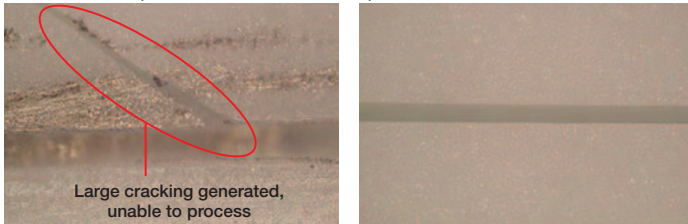
Speed: 4 mm/s

Spindle revolution: 30,000 min⁻¹

Depth: Half Cut (1 mm depth)

■ Processing of alumina ceramics

The Z09 Series processes ceramics at a speed which could not be realized with the NBC-Z blade.



Large cracking generated, unable to process

NBC-Z

Speed: 4 mm/s

Z09

Speed: 8 mm/s

Workpiece: Alumina ceramics 96 %

Work size: 70 × 60 × 0.28 mm

Blade: NBC-ZB 1060-V 52 × 0.03 × 40

Z09-SD1700-Y1-30 52 × 0.03A1 × 40-V

Blade exposure: 1.3 mm

Spindle revolution: 20,000 min⁻¹

When ordering

Please contact a DISCO representative with your product needs such as type, thickness, outer and inner diameter, and quantity.

When you place the first order with us, please explain application information such as materials to cut or grind, sizes, shape, machine, type, and other specification.

We are ready to help you to determine which is our most appropriate product type for your application.

Due to improvements in our products, it is possible that product specifications may be changed without advanced notice. Please confirm the product specifications with a DISCO representative.

⚠ To use these DISCO blades and wheels (hereafter precision tooling) safely..

Please read carefully and follow the instructions below to prevent any accidents or injuries.

- USE a safety cover (nozzle case, cover), equipped as a standard accessory, to avoid injury.
- DO NOT EXCEED the specified rpm limit indicated on the precision tooling.
- FOLLOW the instruction manual of the equipment to mount the precision tooling properly.
- DO NOT DROP OR HIT the precision tooling. This may cause breakage or injury.
- Always CHECK the precision tooling for chipping or any other damage before starting to use it. DO NOT USE the tooling if there is any damage.
- READ the operation manual of the cutting/grinding equipment before use.
- DO NOT USE the precision tooling with modified or customized equipment.
- DO NOT USE precision tooling that has a different size from the one recommended for your equipment.
- DO NOT USE the precision tooling for any other purpose than grinding, cutting, or polishing.
- Always USE water or coolant to prevent precision tooling damage.



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