

Electroformed Bond Blades with HUB ZHRF SERIES

Strengthens rigidity and prevents slant or wavy cutting



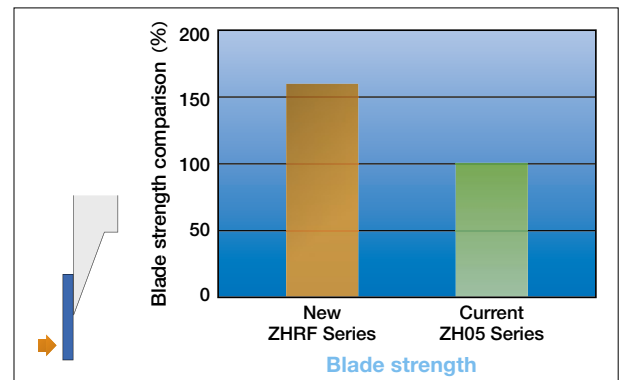
The ZHRF Series provides stable quality even in high load processing, due to improved blade strength.

By employing new technologies, the blade strength is further improved compared to previous hub-blades. The ZHRF minimizes blade slant cutting even under high load conditions such as for high speed processing, thick wafer cutting or wafers that have a lot metal on the streets. It also achieves a stable processing result. In addition, by combining a ZHRF blade with laser grooving for the processing of low dielectric constant (Low-k) layer wafers, backside chipping and peeling are eliminated and high speed processing is possible.

- Shows stable processing performance in high load processing.
- Realizes high speed wafer cutting after laser grooving.



Blade Strength comparison



Compared to the previous series, the ZHRF Series is seen to have improved strength.

Applications

Silicon wafers, etc.

Specifications

Grit type		Bond type	
SD		N1	
ZHRF - SD 2000 - N1 - 110 - D D			
Grit Size	Concentration	Exposure	Kerf Width
2000	50	A 0.380~0.510	A 0.015~0.020
3000	70	B 0.510~0.640	B 0.020~0.025
3500	90	C 0.640~0.760	C 0.025~0.030
	110	D 0.760~0.890	D 0.030~0.035
	130	E 0.890~1.020	E 0.035~0.040
		F 1.020~1.150	F 0.040~0.050
		G 1.150~1.280	G 0.050~0.060
		(mm)	(mm)

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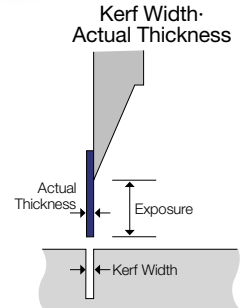
Standard blade types*

Kerf Width	Exposure	Actual Thickness							
		A	B	C	D	E	F	G	
A	0.015 ~0.020	AA	BA						
B	0.020 ~0.025	AB	BB	CB	DB				
C	0.025 ~0.030		BC	CC	DC	EC			
D	0.030 ~0.035		BD	CD	DD	ED	FD		
E	0.035 ~0.040				CE	DE	EE	FE	GE
F	0.040 ~0.050				CF	DF	EF	FF	GF
G	0.050 ~0.060				CG	DG	EG	FG	GG

* Please contact a Disco representative for details.

Standard specification range by grit size

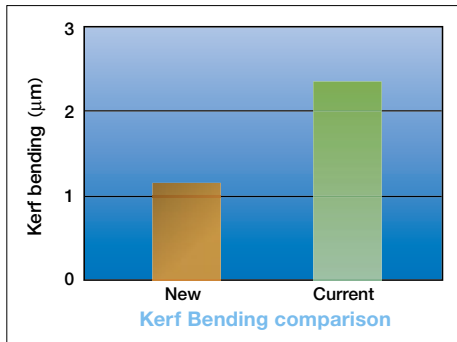
Grit Size	Concentration				
	50	70	90	110	130
#2000	✓	✓	✓	✓	✓
#3000	✓	✓	✓	✓	✓
#3500	✓	✓	✓	✓	✓



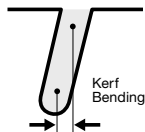
Experimental Data

The ZHRF Series, compared to the previous blade series, controls slant cutting even in high load processing and makes stable processing possible, due to the improved blade strength.

Slant cut amount comparison



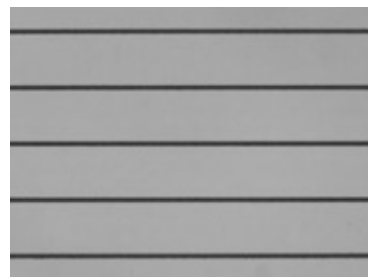
Measurement point



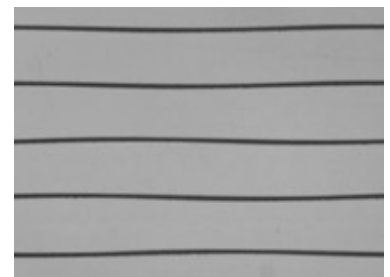
Wafer : Si + Cu layer 2µm
Depth : 200µm (half cut)
Speed : 150mm/s

Lowers the occurrence of wavy cut

The ZHRF Series controls wavy cuts under a condition of high load and high rotation, and it also controls slant cutting. This makes stable processing possible.



New



Current

Wafer : Si
Depth : 400µm (half cut)
Speed : 80mm/s
Spindle rpm : 55000rpm

* This evaluation was conducted under conditions which intentionally tend to cause wavy cut.

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 wheels 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 maximum rpm if it is specified.
- FOLLOW the instruction manual of the machine to mount wheel properly.
- DO NOT DROP OR HIT wheels. this may cause wheel breakage or injury.
- Always CHECK the wheel for chipping or any other wheel damage before starting to use the wheel. DO NOT USE the wheel if there is any damage.
- READ the operation manual of the cutting/ grinding equipment before use.
- DO NOT USE a wheel with a modified or customized equipment.
- DO NOT USE a wheel that has a different size from the one recommended for your machine.
- DO NOT USE a wheel for any other purpose than Grinding, Cutting, or Polishing.
- Always USE water or coolant to prevent wheel breakage.

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