



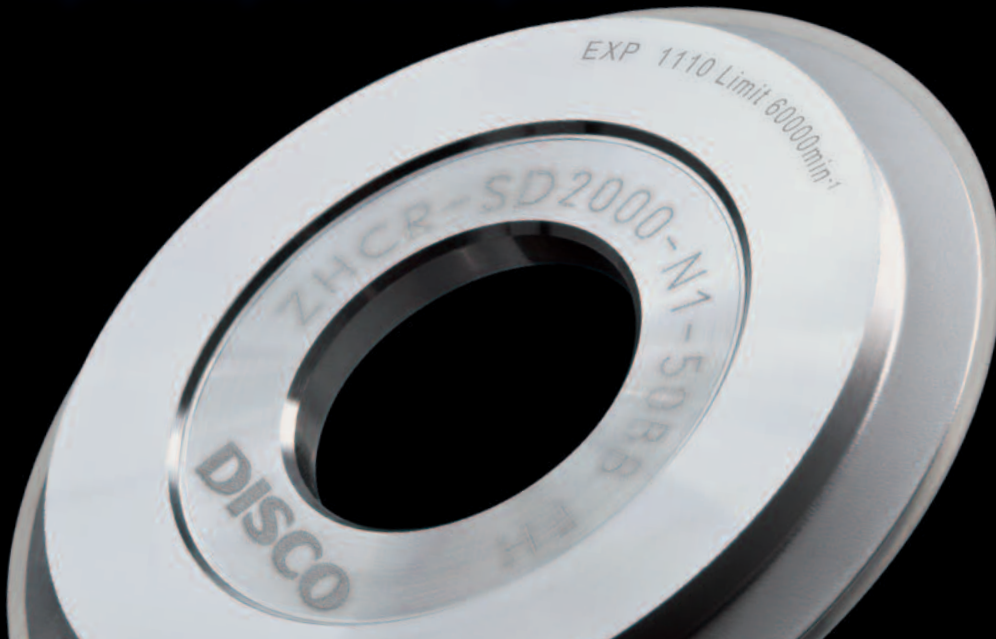
DISCO

Kiru · Kezuru · Migaku Technologies



Electroformed Bond Hub Blades **ZHCR SERIES**

Realizes stable processing by restraining blade tip shape collapse



The ZHCR Series realizes a special blade structure, restrains tip shape collapse for blades exceeding 60 μm thickness, and provides stable processing using DISCO unique technology.

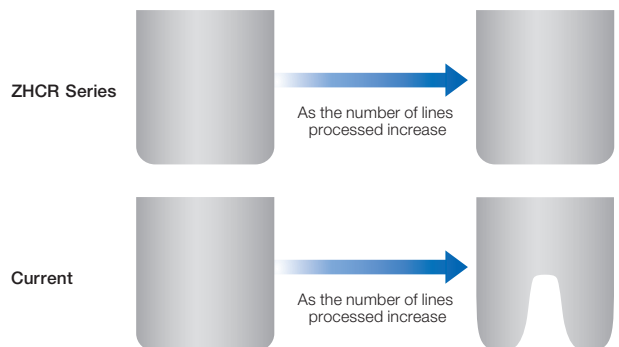
For relatively thick blades in excess of 60 μm, only the blade tip midsection may wear as the number of cut lines increase. This blade tip shape collapse causes quality deterioration such as widening of the kerf and sporadic chipping. The ZHCR Series restrains the collapse of the blade tip shape and realizes stable processing without deterioration using a special blade structure based on unique technology. The ZHCR Series proves its worth in the following processes where blade tip shape collapse easily occurs.

- Processes that use blades with thicknesses exceeding 60 μm
- Processing of wafers with a lot of TEG on the street
- Blade dicing after laser grooving



■ Image of the blade tip shape

The ZHCR has properties that maintain regular blade shape for cutting processes where only the blade tip midsection wears easily.



Applications

Silicon wafers, etc.

Specifications

Grit type Bond Structure indication Kerf width *1 Maximum kerf width of 0.2 mm are available

ZHCR - SD 2000 - N1 - 50 BB - A** G H**

Grit size	Concentration	Exposure	Kerf width*1
2000 #2000	50	C 0.64 - 0.76	F 0.040 - 0.050
3000 #3000	70	D 0.76 - 0.89	G 0.050 - 0.060
3500 #3500	90	E 0.89 - 1.02	H 0.060 - 0.070
		F 1.02 - 1.15	I 0.070 - 0.080
		G 1.15 - 1.28	J 0.080 - 0.090
		(mm)	K 0.090 - 0.100

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Standard sizes*2

Kerf width	Exposure	Kerf width				
		C	D	E	F	G
	mm	0.64 - 0.76	0.76 - 0.89	0.89 - 1.02	1.02 - 1.15	1.15 - 1.28
F	0.040 - 0.050	CF	DF	EF	FF	
G	0.050 - 0.060	CG	DG	EG	FG	GG
H	0.060 - 0.070	CH	DH	EH	FH	GH
I	0.070 - 0.080	CI	DI	EI	FI	GI
J	0.080 - 0.090	CJ	DJ	EJ	FJ	GJ
K	0.090 - 0.100	CK	DK	EK	FK	GK

Standard concentrations

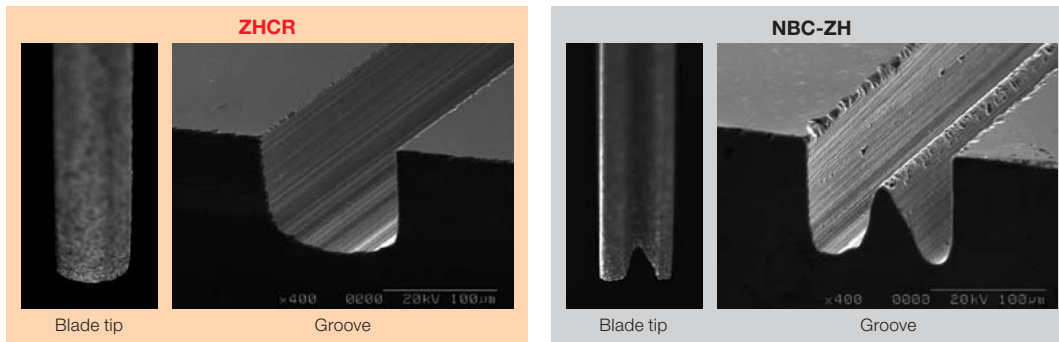
Grit size	Concentration		
	50	70	90
#2000	✓	✓	✓
#3000	✓	✓	✓
#3500	✓	✓	✓

*2 Please contact a DISCO representative for details.

Experimental data

Tip shape and groove comparison (SEM Image)

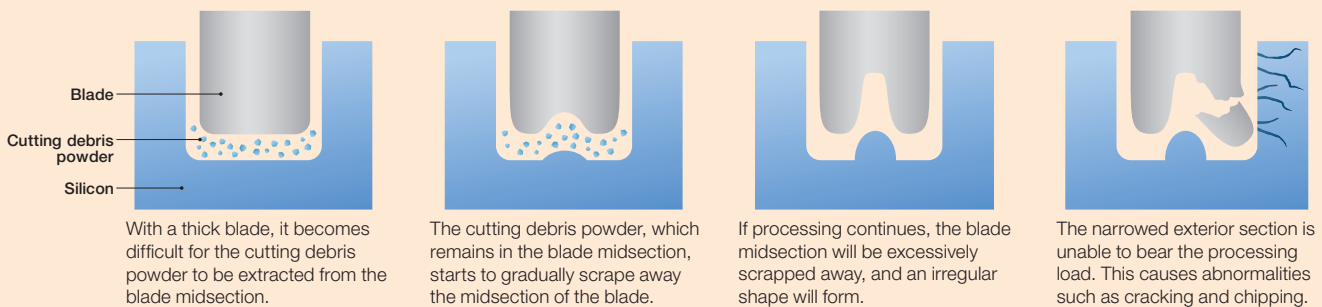
As the cutting process progresses, the midsection of a regular blade becomes uneven and chipping increases. With the ZHCR, the normal shape of the blade is maintained.



Blade:
ZHCR-SD2000-N1-50BD FN
NBC-ZH205F-SE 27HEFN

Reference) Image of gradual blade tip shape collapse

These images show that when the tip shape of a thick blade collapses, it leads to quality deterioration. The ZHCR Series has properties that maintain a functional blade tip shape.



Quality deterioration caused by the collapse of the blade tip shape include kerf widening, sudden chipping, curving of 2-axes step cut and workpiece damage.

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.



DISCO CORPORATION

13-11 Omori-Kita 2-chome, Ota-ku, Tokyo 143-8580, Japan
Phone: 03-4590-1100 Fax: 03-4590-1075 • www.disco.co.jp