Kiru Kezuru Migaku

DISCO

Electroformed Bond Hub Blades

ZHZZ SERIES

Ultrathin hub blades for stable dicing of narrow street wafers

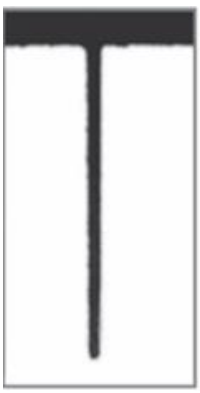
The thinnest hub blades in the industry: only 10 µm wide. A new high-strength bond, the H1 bond, reduces blade breakage and wavy cutting when dicing with thin kerfs.

ZHZZ series hub blades were developed with a focus on narrow street dicing and other processing methods that use thin blades. The newly developed high-strength H1 bond is utilized to improve quality when cutting thin kerfs, while also achieving stable processing. The lineup includes a 10 µm wide blade that is the thinnest in the industry, contributing to the drive for narrower streets.

- Reduces blade breakage and wavy cutting for thin kerfs.
- Enables stable processing of narrow streets.
- Ultrathin 10 µm hub blade.

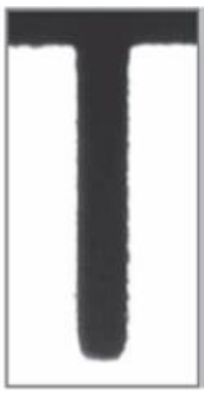
■Photographs of Processed Grooves

The ZHZZ series can produce a 10 µm kerf. This is an extremely thin blade compared to 20 to 40 µm blades, and has been proven to be able to cut straight grooves.



ZHZZ
Kerf: 10 µm

Current
Kerf: 20 µm



Current
Kerf: 40 µm

Applications
Silicon wafers and compound semiconductor (GaAs, Gap, etc.) wafers, etc.

Specifications

ZHZZ – SD 4800 – H1 – 70 – A**** A A

Grit type	Grit size	Concentration	Exposure		Kerf width	
SD	2000	50	Z	0.25 - 0.38	Z	0.010 - 0.015
	3000	70	A	0.38 - 0.51	A	0.015 - 0.020
	3500	90	B	0.51 - 0.64	B	0.020 - 0.025
	4000	110	C	0.64 - 0.76		(mm)
	4500			(mm)		
	4800					

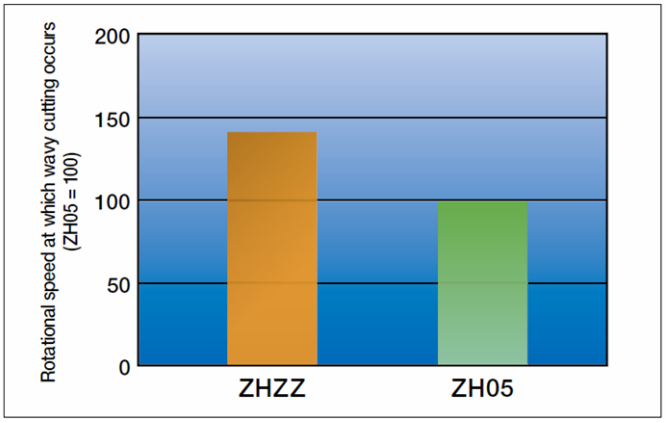
Bond type: H1

User-specified specification

Experimental Data

■Wavy Cutting Rotation Speed Comparison

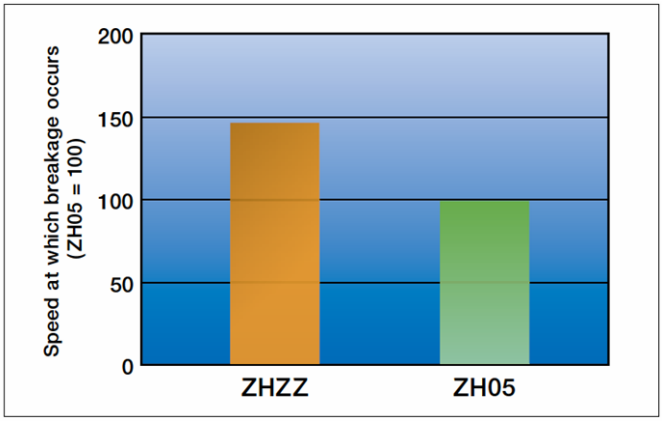
The ZHZZ series does not exhibit wavy cutting until very high rotation speeds are reached. Compared to previous products, wavy cutting occurs less frequently.



Evaluation was performed using the tendency of wavy cutting to occur more easily at higher rotation speeds. The rotation speed was gradually increased to determine the rotation speed at which wavy cutting began to occur.

Workpiece : Si, ø6”
Depth : 400 µm (half cut)
Feed speed : 90 mm/s
Blades : ZHZZ-SD3500-H1-70
ZH05-SD3500-N1-70

ZHZZ series blades can be pushed to higher feed speeds. Only then does traditional breakage occur. This means that compared to standard blades, breakage will occur less frequently.



Evaluation was performed using the tendency of blade breakage to occur more easily at higher feed speeds. The feed speed was increased rapidly to determine the feed speed at which breakage occurred.

Workpiece : Si, ø8”
Depth : 680 µm
Spindle revolution speed : 35,000 min^{-1}
Blades : ZHZZ-SD3000-H1-50
ZH05-SD3000-N1-50

When ordering

Please contact a DISCO representative with any product needs such as type, wheel size, and quantity.

When you place the first order with us, please provide application information such as materials to grind, sizes, machine, type, and other specifications.

We are ready to help you to determine which of our products is most appropriate 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 tools) 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 tools.
- FOLLOW the equipment’s instruction manual to mount the precision tools properly.
- DO NOT DROP OR HIT the precision tools. This may cause breakage or injury.
- Always CHECK the precision tools for chipping or any other damage before starting to use it. DO NOT USE the tools if there is any damage.
- READ the operation manual for the cutting/grinding equipment before use.
- DO NOT USE the precision tools with modified or customized equipment.
- DO NOT USE precision tools that are a different size from the one recommended for your equipment.
- DO NOT USE the precision tools for any other purpose than grinding, cutting, or polishing.
- Always USE water or coolant to prevent damage to the precision tools.