

Ultrasonic-wave Dicing Unit

Realizes high quality and high speed processing of difficult-to-cut materials

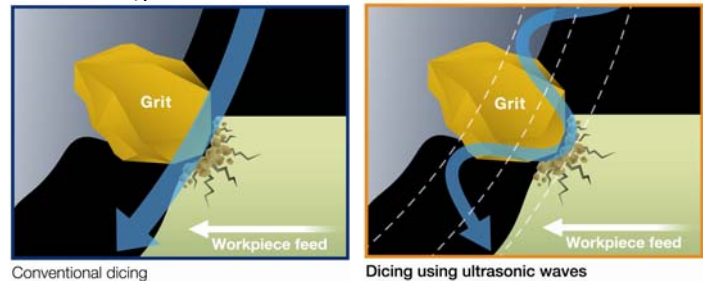
Targets for ultrasonic-wave processing

Ultrasonic-wave processing aims to achieve good processing quality and high speed dicing of difficult-to-cut materials as typified by SiC (silicon carbide), glass and alumina ceramics.

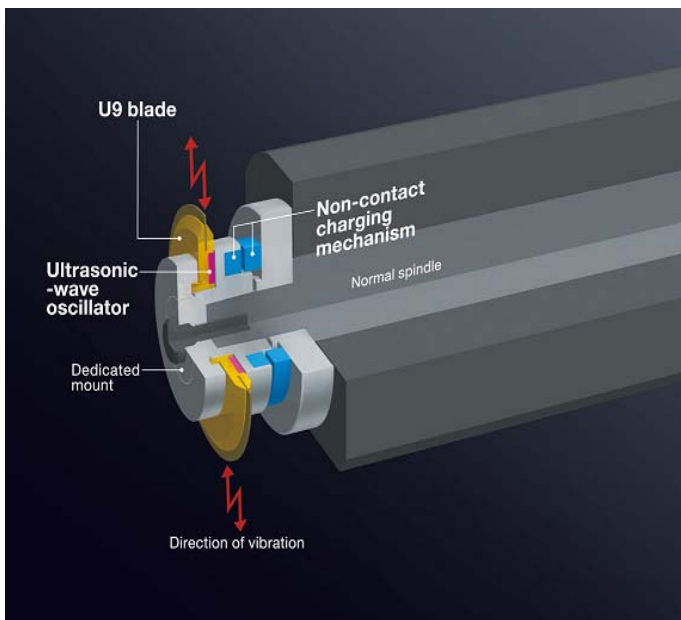
Features of ultrasonic-wave processing

Transmitting ultrasonic-wave oscillations to the blade improves water circulation at the processing point (elimination of clogging caused by the cutting dust discharge effect and cooling of the processing point) and promotes self-sharpening of the blade (elimination of blade glazing). Thus, normal blade condition can be maintained and process load can be reduced making highly efficient dicing possible.

Blade edge movement



Ultrasonic-wave oscillation mechanism



Unit configuration

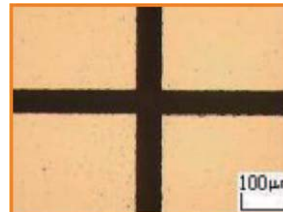
- Ultrasonic-wave amplitude generation power unit
- Dedicated mount and blade
- Ultrasonic-wave oscillation measurement sensor
- Software

Retrofit available

Since this unit can be retrofitted to already shipped dicing saws, introducing ultrasonic-wave applications to your production line is a simple process. In addition, normal blades can be used even after the retrofit.

Application example: SiC wafer

High feed speed and good processing quality can be realized

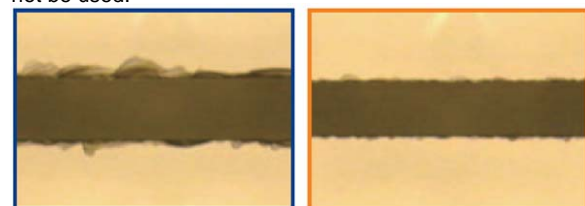


Ultrasonic wave on

Workpiece: 0.35 mm thick 4H-SiC wafer
 Blade: 50 μm thick U09ZA- SD1500
 Feed speed: 10 mm/s 1Pass

Application example: Glass

Greatly improved chipping and reduced street widths are realized by using the #2000 grit size, which previously could not be used.



Ultrasonic wave off

Ultrasonic wave on

Workpiece: 0.3 mm thick borocillicate glass
 Blade: 50 μm thick U09ZD- SD2000
 Feed speed: 3 mm/s 1Pass

U09SERIES

Specification

U09ZD - SD2000 - Y1 - 60 58 × 0.05AS × 7F - V

Type	Grit size	Bond	Concentration	O.D.	Thickness	Type of base	Others
U09Z	NBC-Z						
U09ZA	Z05						
U09ZP	ZP07						
U09ZD	Z09						
U09M	B1A						
U09R	P1A						
U09RA	R07						
U09RB	P08						

