

Sales Contact: sales@semistarcorp.com

Tokyo Diamond Tools Mfg. Co., Ltd.

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Who is “Tokyo Diamond Tools” ?

By Diamond Tools, we’ve contributed Japanese “Monozukuri/Manufacturing” for more than 90 years.

We “Tokyo Diamond Tools” is located at heart of Tokyo, Japan.

And we have enormous experience at wide range of the production process regarding diamond tools, for more than 90 years.

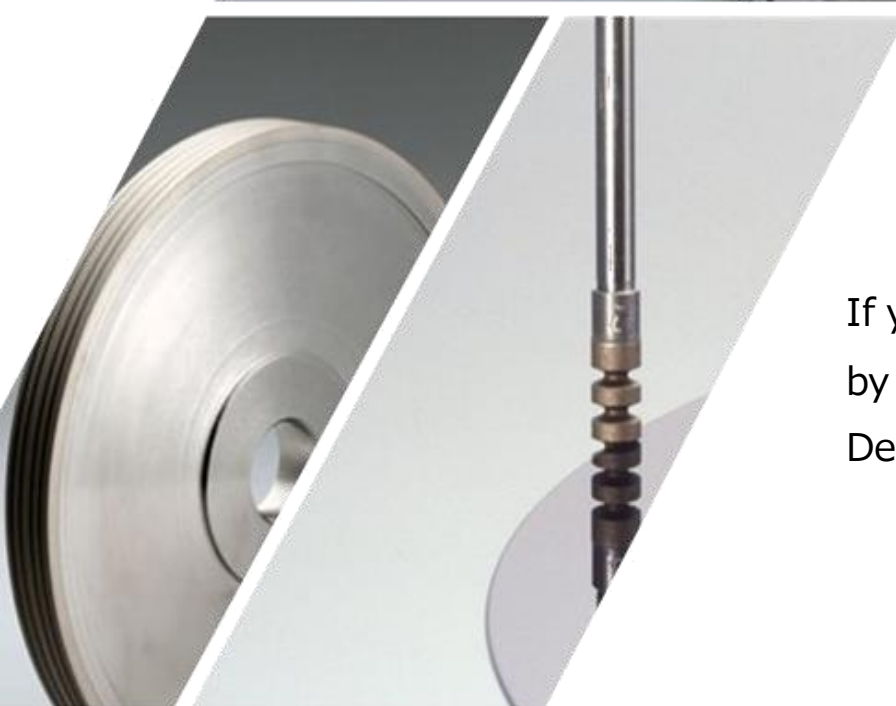
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What we can bring?

We, Tokyo diamond Tools, provide you the solution for your problems



Regarding the diamond tools which you are currently using at your production, are you facing any issues of Quality, Cost, Delivery and Service?

If you do, please kindly contact to us. It would be our pleasure to provide you the solutions by designing special equipment together with you.

Depending on your requirements, we will custom-design the product even from 1pc.

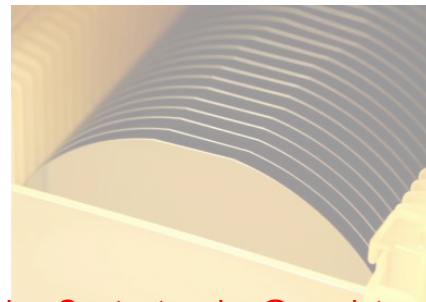
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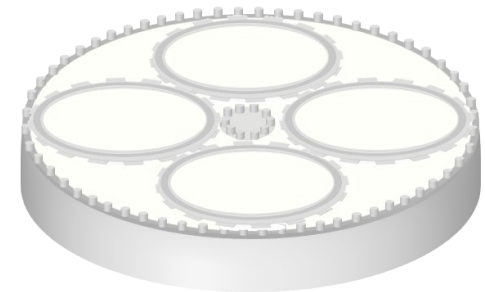
For what kind of application?

Our wheel suits for the diamond dresser of the pad dressing process

Our special designed electroplated diamond wheel have been used for the world major polishing machine manufacturers for pad dressing process



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Diamond Dresser spec introduction

- Electroplated bond Wheel -

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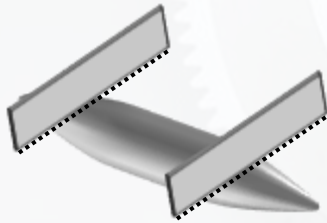
What is “Diamond dresser” for polishing process?

Former wafer process

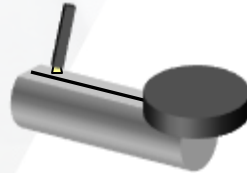
1) Wafer ingot



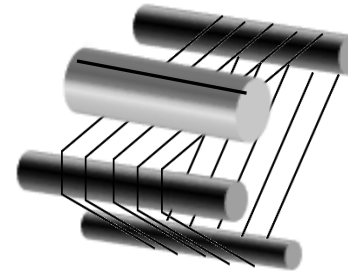
2) Side cutting



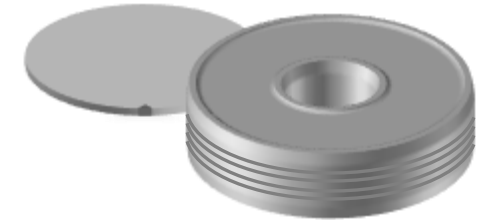
3) Notch grooving or Orientation-flat
(depending on wafer size)



4) Slicing



5) Edge grinding (Beveling)



6) Notch grinding

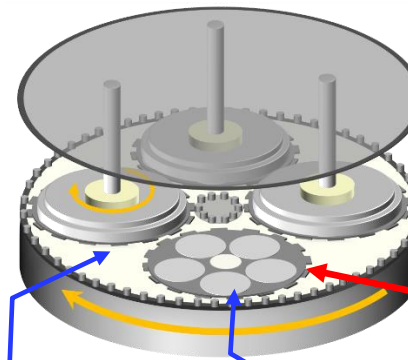


7) Wafer grinding



Grinding the surface of the wafer to flatter and manage the height (by Coarse/Fine grinding)

8) Polishing by chemical



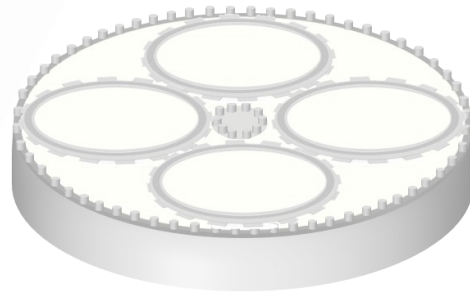
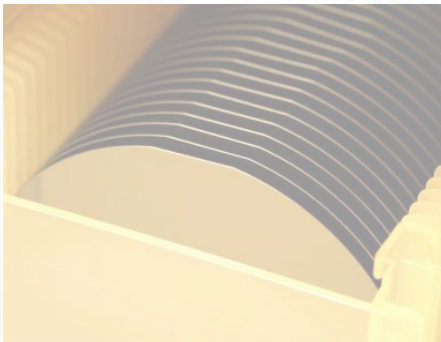
The wafer surface are made flat in this process, and given a mirror finish by mechanochemical polishing by using chemical (colloidal silica etc) and pad (urethane and others).

And the carriers for wafer have been replaced with **Diamond dressers**, to condition the urethane surface every once in a while.

Urethane pad

Wafers
on the carrier

Basic Specifications



Items	Specification
Bonding type	Electroplated
Outer diameter	~Φ750D
Base accuracy : flatness	≤ 0.3mm
Base accuracy : set tolerance	≤ 0.05mm
Base materials	SUS304, SUS420
Base coating	With or without Teflon coating
Electroplated surface	One side or both side
Abrasive grain	Blocky type diamond Semi-blocky type diamond Irregular type diamond
Particle size	#60 ~ 600 (250um ~ 30um)

*Please feel free to contact us for specifications other than the above.

Special features of our pad conditioner

- 1) Optimization of the abrasive grain
- 2) Anti acid chemical plating
- 3) Optimization of the Pad patterning

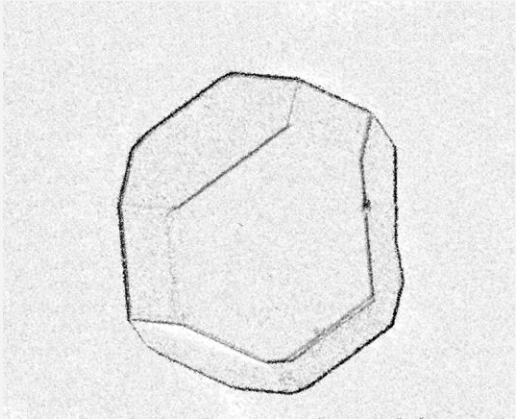
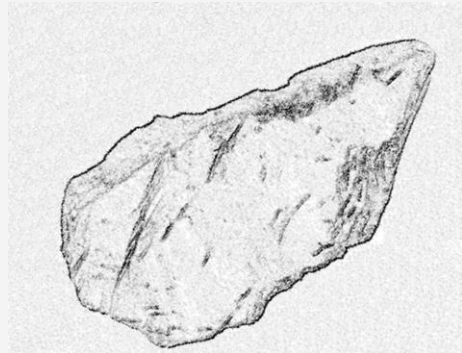
1) Optimization of the abrasive grains

Depending on the pad type, we propose the optimized abrasive grain size

Selection of diamond grain (Ave. grain diameter)	#80 (177um)	#120 (125um)	#230 (62um)	#325 (44um)	#600 (28um)
Urethane Pad	Pad planarization				
			For seasoning purpose		
Non woven Pad	Pad planarization				
			For seasoning purpose		
Suede Pad			Adjustment for pad surface hardness for seasoning purpose		

2) Optimization of the abrasive grain shape

Depending on the pad type, we select the most suitable abrasive grain shape.

Blocky type	Semi blocky type	Irregular type
Standard type : Emphasis on durability	Balanced performance	Focus on the dress rate
		

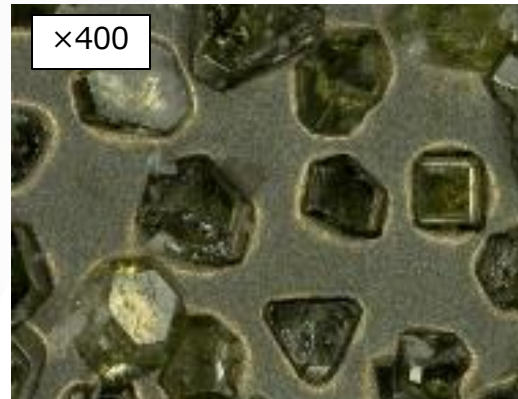
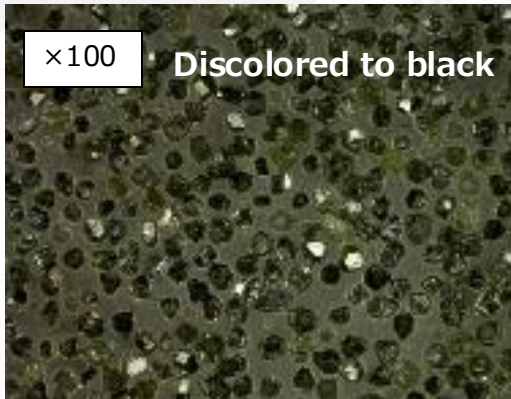
3) Anti acid chemical plating

Corrosion test for “Standard plating” vs “Anti acid chemical plating” in Nitric acid pH2 for 72h@RT

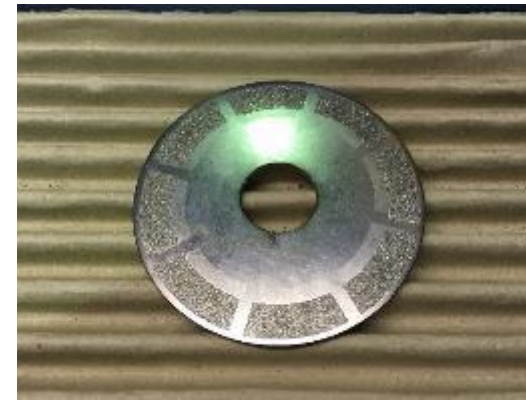
Standard plating



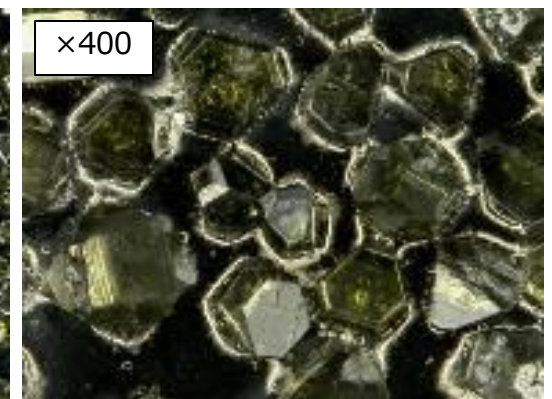
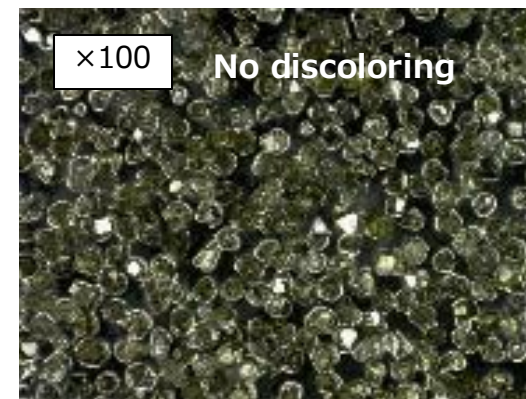
Invaded surface
by chemical.



Anti acid chemical plating

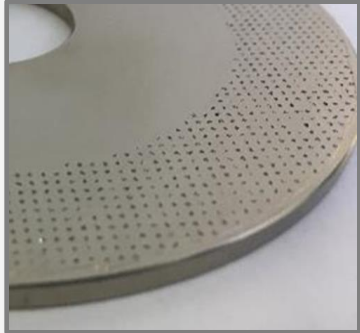
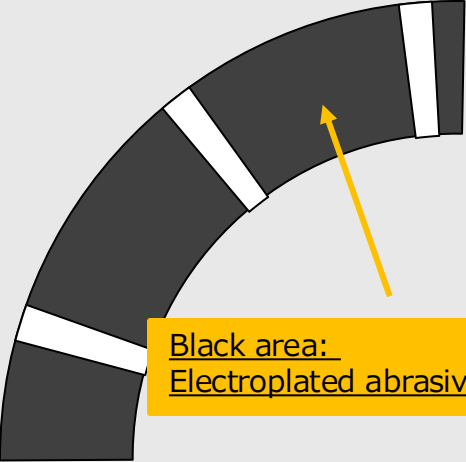
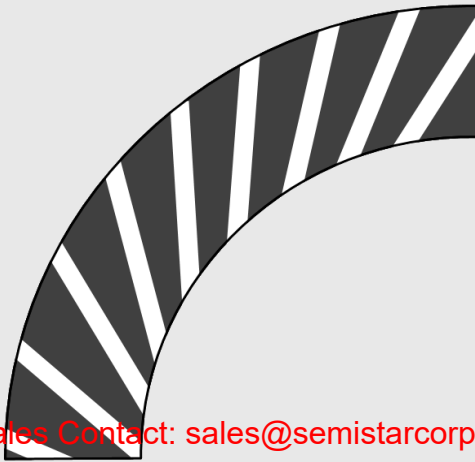
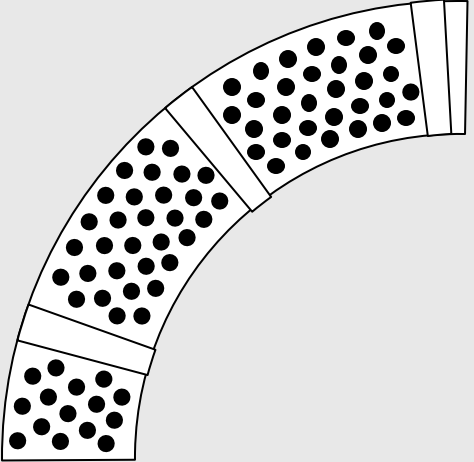


Remain glossy and
no discoloring.



4) Optimization of the Pad patterning

We customize the pad pattern, depending on your request.
Also under the development of the high-strength electroplating bond.

Standard pattern	Slit & Tornado patter	Dot pattern
Uniform pressurized type	Compressed, sheared and pressurized type	Compressed and pressurized type
		
 Black area: <u>Electroplated abrasive grain layer</u>		

We “challenge to change” with you

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Tokyo Diamond Tools Mfg. Co., Ltd.

2-3-5 Nakane, Meguro-ku, Tokyo 152-0031, Japan
Tel: +81-3-3723-8111 / Fax: +81-3-3724-8573

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