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DISCO

Surface Planer

DFS8910/8960 & DAS8920/8930

Advanced planarization

Ultrahigh-precision planarization technology using a diamond bit

The DISCO surface planer provides solutions for high-precision planarization of ductile materials such as metals, resins, and their composites as well as solutions for reducing bump height variation and surface roughness.

DFS8960 DAS8920

Processability by workpiece material

	Metal	Resin	Others
Good processability	Au Cu Other	Photoresist (positive & negative) Polymide	Composites of materials stated on the left
Difficult processability	Ni(electrolysis) Fe	Reinforced resin	Si Glass Ceramics

Note: Actual processability varies depending on the workpiece. Please contact your DISCO sales representative for details.

Support for a variety of workpiece types

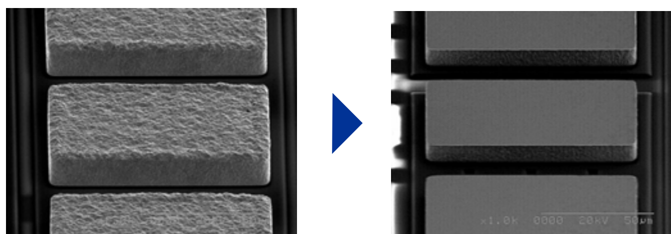
Three models for a variety of applications

	Wafer diameter	Features
DFS8910	ϕ8”	Fully-automatic workpiece handling, processing, and cleaning
DFS8960	ϕ300/200 mm	
DAS8920	ϕ8”	Simple and compact semi-automatic model
DAS8930	ϕ300 mm	

Optional support is also available for irregularly shaped workpieces, including substrates, die, or square workpieces.

[Processing example 1] Bump planarization

The planarization process reduces Au bump height variation and stress (temperature and load) when bonding Au-Au interfaces for use in next generation SiP solutions.



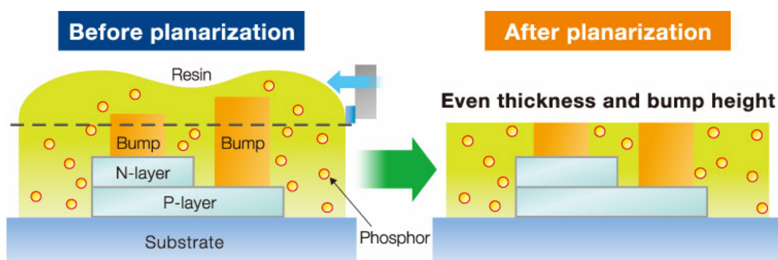
Before planarization After planarization

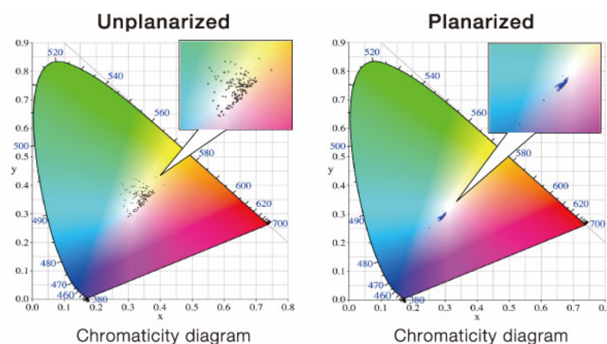
Bump height variation	1.7 µm	0.5 µm
Bump surface roughness (Rz)	1.373 µm	0.039 µm

DFS8910/8960 DAS8920/8930

[Processing example 2] LED phosphor resin planarization

Variations in resin thickness of the LED emission unit is the cause of color irregularities. Planarization of the resin and bumps with high accuracy using a diamond bit can contribute towards the stabilization of LED color emissions.

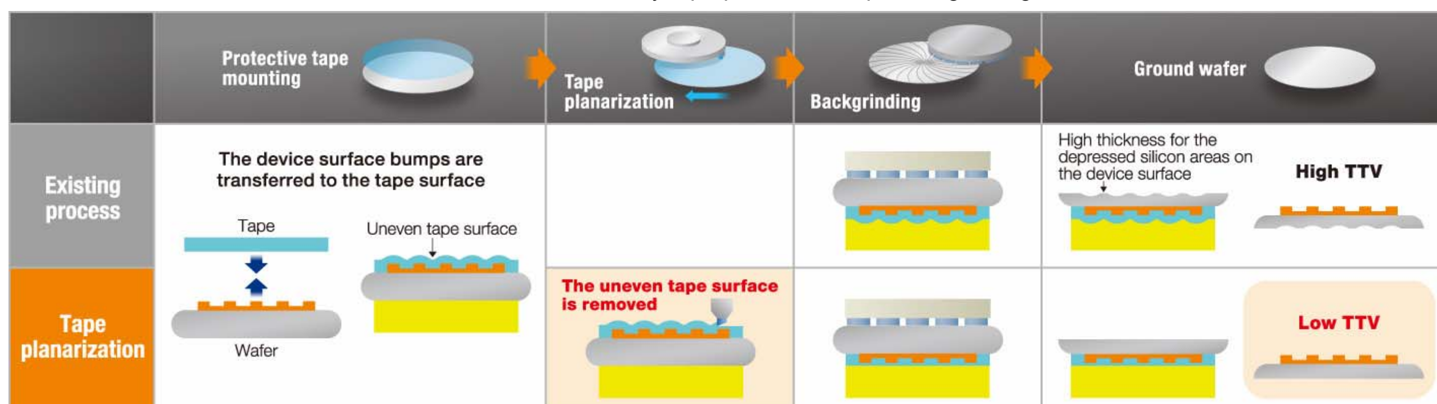




The even surface thickness results in uniform LED color distribution

[Processing example 3] Protective tape planarization

Backgrinding of wafers with large bumps can result in high wafer thickness variation.
The final wafer surface thickness variation can be reduced by tape planarization prior to grinding.



DFS8910/8960, DAS8920/8930 Specifications

			DFS8910	DFS8960	DAS8920	DAS8930
Wafer diameter		-	ø8*	ø300/200 mm	ø8	ø300 mm
Number of spindles		-	1	2	1	1
Number of chuck tables		-	1	2	1	1
Transport/Cleaning	-	-	With	With	Without	Without
Process precision	TTV	μm	Less than 2.0	Less than 3.0	Less than 2.0	Less than 3.0
	surface roughness	μm	Within Ra 0.02	Within Ra 0.02	Within Ra 0.02	Within Ra 0.02
Utilities	Machine dimensions (W × D × H)	mm	1,200 X 2,670 X 1,800	1,400X3,312X1,870	500 X 1,235 X 1,800	730 X 1,570 X 1,800
	Machine weight	kg	Approx. 2,400	Approx.5,000	Approx. 800	Approx. 1,600

* For customers who would like to process workpieces greater than ø8" in diameter, please contact your local DISCO sales representative.

Environmental conditions

- Use clean, oil-free air at a dew point of −15 °C or less. (Use a residual oil: 0.1 ppm. Filtration rating: 0.01 μm/99.5 % or more).
- Keep room temperature fluctuations within ±1 °C of the set value. (Set value should be between 20 − 25 °C).
- Keep cutting water 2 °C above room temperature (fluctuations within 1 °C over one hour).
- Keep spindle cooling water temperature between 20 − 25 °C (fluctuations within 2 °C over an hour).
- The machines should be used in an environment, free from external vibration. Do not install machine near a ventilation opening, heat generation equipment or oil mist generating parts.
- This machine uses water. In case of water leakage, please install the machine on the floor with sufficient waterproofing and drainage treatments.

* The above specifications may change due to technical modifications. Please confirm when placing your order.
* For further information please contact your local sales representatives.
* When using any substance other than deionized water, please contact your local representatives.