Kiru Kezuru Migaku

DISCO
Kiru·Kezuru·Migaku Technologies

Fully Automatic Grinder/Polisher
DGP8760

Ultra-Thin Grinding and Stress Relief Combined

Grinding and Stress Relief Unified

DGP8760 unifies 300 mm wafer grinding and advanced stress relief options in one low-footprint system.

Advanced 3-Spindle 4-Chuck Design

Featuring 3 spindles, DGP8760 combines ultra-thin grinding and stress relief into one complete and uninterrupted process. By keeping each wafer on the same chuck table from start to finish, the efficient turntable-based design minimizes wafer handling and increases process stability for 50 μm finishing and other vanguard applications.

Reduced Footprint

Owing to its 3-spindle 4-chuck design and compact wafer transfer system, DPG8760's footprint is more than 36% smaller than that of DFG8560 and DFP8160 combined. Additionally, the vacuum unit is completely contained within the machine case for extra compactness.

ISO 9001
JQA-0954

REGISTERED ORGANIZATION
No. E892 - ISO 14001

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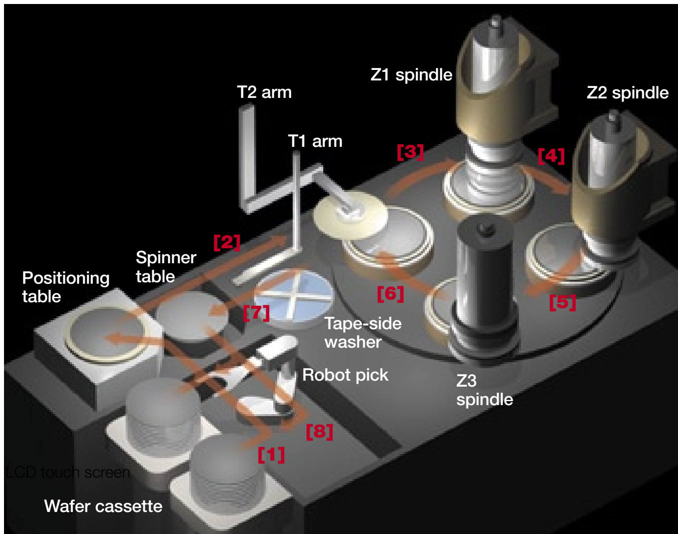


DGP8760 Workpiece Flow System

- **[1]** The robot pick removes the wafer from the cassette and places on the positioning table, where centering takes place.
- **[2]** The T1 arm places the wafer on the chuck table.
- **[3]** The wafer proceeds to Z1 for rough grinding.
- **[4]** The wafer proceeds to Z2 for fine grinding.
- **[5]** The wafer proceeds to Z3 for dry polishing (or ultra-high-mesh wheel grinding).
- **[6]** The T2 arm removes the wafer from the chuck table and places it on the spinner table, where washing and drying take place.
- **[8]** Finally, the robot pick removes the wafer from the spinner table and places it in the cassette.

Robust Applications Support

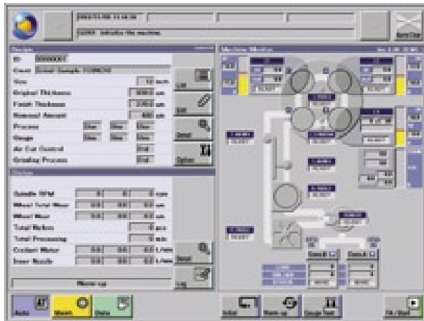
Rough grinding, fine grinding, and stress relief-because it supports all three functions, DGP8760's portfolio of applications is large and robust. Stress relief options include both dry polishing and Poligrind grinding.

In-line Expandability

DGP8760 can be configured in-line with DFM2700 for DAF lamination and other tape functions. It is also configurable with Disco's DBG (Dicing Before Grinding) system and with a wide variety of other machines: tape mounter, tape remover, etc.

Disco 8000 Series Compatibility

DGP8760's grinding wheels, polishing wheels, dresser boards, spindles, and chuck tables are all compatible with Disco 8000 Series machines. In addition, operation method and GUI (Graphical User Interface) are based on proven 8000 Series technology.



LCD touch screen

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 grinding water and cleaning 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.

*** All pressures specified above are gauge pressures.**
*** As the above specification may change due to technical modifications. Please confirm when placing your order.**
*** For further information, please contact your local sales representative.**

DGP8760 Specifications

Category	Item	Sub-item	Unit	Value
Wafer Diameter			mm	Max. ø300 (ø8" - ø12")
Grinding Method	Z1and Z2 axis		-	In-feed grinding with wafer rotation
	Z3 axis		-	Anomalous in-feed polishing with wafer rotation
Spindle	Type		-	Air bearing with high frequency motor
	Number of axes		-	3
	Output	Z1 and Z2 axes	kW	4.8
		Z3 axis	kW	7.5
	Revolution speed	Z1 and Z2 axes	min^{-1}	1,000 - 4,000
		Z3 axis	min^{-1}	1,000 - 3,000
	Z-axis vertical stroke	Z1 and Z2 axes	mm	120 (with zero point)
		Z3 axis	mm	50
	Z-axis vertical grinding feed speed		mm/s	0.0001~0.08
	Z-axis vertical fast feed speed		mm/s	50
	Min. Z-axis vertical movemnet		µm	0.1
	Min. Z-axis vertical movement resolution		µm	0.1
Wafer Chuck Table	Chuck table type		-	Porous chuck table
	Holding method		-	Vacuum
	Number of revolutions		min^{-1}	0 - 300
	Number of chuck tables		-	4
	Chuck table cleaning		-	Backflushing of water and compressed air is combined with oilstone cleaning and brush cleaning
	Wafer cleaning		-	Water washing by atomizing nozzle
	Spark out (chuck table revolutions setting)		-	0 - 999
Grinding Wheels	Diamond wheel	Z1 and Z2 axes	mm	ø300
	Dry polishing wheel	Z3 axis	mm	ø450
Wafer Handling Section/Wafer Cleaning Section				
	Cassette storage quantity		-	2
	Cassette flow		-	Same flow and open flow
	Spinner unit		-	Water washing by atomizing nozzle and drying
Vacuum	Discharge speed	Pump	-	26/34 m^3/h, 50/60 Hz
		Vacuum Unit	-	20/28 m^3/h, 50/60 Hz (at -70 kPa)
	Achievable pressure		kPa	-90 (at water supply temperature 15 °C and flow rate 1 L/min)
	Electric motor		kW	1.5
	Water flow rate		L/min	2.0 (when water supply temperature is less than 30 °C) 1.5 (when water supply temperature is less than 25 °C) 1.0 (when water supply temperature is less than 20 °C)
Grinding Accuracy (when grinding ø300 mm wafers with included chuck tables)				
	Thickness variation within one wafer		µm	less than 3.0 (less than 3.0 when using only Z1 and Z2)
	Thickness variation between wafers		µm	±3.0 (±3.0 when using only Z1 and Z2)
	Finish surface roughness		µm	Ra less than 0.005 [when using only Z1 and Z2 Ry approx 0.13 (#2000 fine grinding) Ry approx 0.15 (#1400 fine grinding)]
Utilities	Power supply		-	200 ~ 240 V AC±10 %, 3-phase (50/60 Hz) For other than the above voltages, a transformer is necessary
	Power comsuption	During processing	kW	8.4 (for reference)
		During warm-up	kW	2.8 (for reference)
	Max. power		kVA	26
	Air pressure	Main body	MPa	0.6 - 0.8
		Polishing residue collector	MPa	0.3 - 0.5
	Air flow rate	Main body	L/min (ANR)	During max. flow: 1,300 or less Average during processing: 700 or less During warming up: 450 or less
		Polishing residue collector	L/min (ANR)	50
	Water pressure	Grinding and cleaning	MPa	0.3 - 0.4
		Cooling water and vaccum pump	MPa	0.2 - 0.3
		Vacuum pump	MPa	0.05 - 0.45
		Polishing residue collector	MPa	0.2 - 0.3
	Water flow	Grinding and cleaning	L/min	25 or higher
		Cooling water	L/min	9.5 or higher
		Vacuum pump	L/min	2.0 (when water supply temperature is less than 30 °C) 1.5 (when water supply temperature is less than 25 °C) 1.0 (when water supply temperature is less than 20 °C)
		Polishing residue collector	L/min	4
	Exhaust duct capacity		m^3/min	4
	Machine dimensions (W x D x H)		mm	1,690 x 3,450 x 1,800
	Machine weight		kg	5,700

A vacuum unit and polishing residue collector are installed as standard.

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