



DISCO

Kiru · Kezuru · Migaku Technologies

Fully Automatic Polisher

DFP8140/8160

Chemical- and slurry-free stress relief



Improved Yield

Relieve wafer stress without slurry, chemicals or water. The DFP8140/8160 effectively removes the grinding induced damage layer by utilizing a dry polishing process. This process greatly reduces wafer breakage and warpage while improving die strength. The result is superior product yield, even for today's ultra-thin wafers (<100 microns).

In-Line System

The DFP8140/8160's design allows it to be integrated with Disco grinders for an in-line wafer thinning solution that grinds, dry polishes, and transports wafers safely and securely (in-line system requires optional accessories).



ISO 9001
JQA-0954



REGISTERED ORGANIZATION
No. E892-ISO 14001



Fully Automatic Polisher DFP8140/8160



LCD touch screen



Environmentally Friendly Process

Unlike chemical etching or CMP, the dry polishing process does not require costly waste treatment and disposal. Dry polishing with the DFP8140/8160 is environmentally friendly while maintaining a lower cost of ownership than other stress relief processes.

Easy Operation

The DFP8140/8160 utilizes the same operator interface and machine layout as the Disco Fully Automatic Grinder (DFG8540/8560). This ensures reduced training time for operators familiar with Disco equipment. For those new to the 8000 Series, the touch-screen graphical user interface with real-time process data makes both operation and maintenance tasks easy to learn and accomplish.



Handy panel

DFP8140/8160 Specifications

	DFP8140	DFP8160
Wafer Diameter	-	Max. $\phi 8''(\phi 4''-\phi 8'')$ Max. $\phi 300\text{mm}(\phi 8''-\phi 12'')$
Processing Method	- Anomalous In-feed grinding with water rotation	
Spindle	- Air bearing with high frequency motor	
Number of axes	- 1	
Output	kW 4.8	7.5
Revolution speed	min^{-1} 1,000~4,000	1,000~3,000
Z-axis vertical stroke	mm 100(with zero point)	72(with zero point)
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 movement	μm 0.1	
Min. Z-axis vertical movement resolution	μm 0.1	
Wafer Chuck Table	- Porous chuck table	
Chuck method	- Vacuum	
Number of revolutions	min^{-1} 0~300	
Number of chuck tables	- 1	
Chuck table cleaning	- Backflushing of water and compressed air is combined with oilstone cleaning and brush cleaning	
Water cleaning	- Water	
Internal load sensor	- Thin force sensor	
Spark Out (chuck table revolutions setting)	- 0~999	
Y-axis processing stroke	mm 420	510
Y-axis max. speed	mm/s 0.5~200	
Y-axis min. resolution	mm 0.002	
Dry Polishing Wheel	mm $\phi 300$	$\phi 450$
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 Unit	- Discharge speed m^3/h 29/36 50/60 Hz	
Achievable pressure	kPa -90 (water supply temperature 15 °C, water supply flow rate 1 L/min)	
Electric motor	kW 1.5	
Water flow rate	- When supplied water temperature is greater than 22 °C L/min 3	
	- When supplied water temperature is less than 22 °C L/min 1	
Dust Collector	- System Wet cyclone system	
Cylinder volume	m^3/min 4.0	
Motor	kW 1.0	
Water used	L/min 4.0	

	DFP8140	DFP8160
Processing Accuracy	- Variation in removal amount μm ± 1 or less (when removing 2 μm in average)	
Utilities	- Power supply 200 V AC $\pm 10\%$, 3-phase (50/60 Hz)	
Power consumption	- When processing kW 4.6 (for reference) 6.5 (for reference)	
	- During warm-up kW 2.8 (for reference) 5.0 (for reference)	
Max. power	kVA 12	19
Air pressure	- Main body MPa 0.5~0.8	
	- Dust collector MPa 0.3~0.5	
Air flow rate	- Main body L/min(ANR) 550	
	- Dust collector L/min(ANR) 50	
Water pressure	- Grinding and cleaning MPa 0.3~0.4	
	- Cooling MPa 0.2~0.3	
	- Vacuum pump MPa 0.052~0.49	
	- Dust collector MPa 0.2~0.3	
Water flow rate	- Grinding and cleaning L/min 20	
	- Cooling L/min 4	
Vacuum pump	- When supplied water temperature is greater than 22 °C L/min 3	
	- When supplied water temperature is less than 22 °C L/min 1	
	- Dust collector L/min 4	
	- Exhaust duct capacity m^3/min 4	
Machine dimensions (WxDxH)	mm 1,200 x 2,670 x 1,800	1,400 x 3,322 x 1,800
Machine weight	kg 1,900	2,400

Environmental conditions

- Use clean, oil-free air at a dew point of -15 °C or less. (Use a residual oil: 0.1 ppm Wt/Wt. Filtration rating: 0.01 $\mu\text{m}/99.5\%$ or more).
- Keep room temperature fluctuations within ± 1 °C of the set value. (Set value should be between 20~25 °C).
- Keep self-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 the pressures are described using a gauge pressure.

* The above specifications may change due to technical modifications. Please confirm when placing your order.

* For further information please contact your local sales representatives.



DISCO CORPORATION

13-11 Omori-Kita 2-chome, Ota-ku, Tokyo 143-8580, Japan
Tel:03-4590-1100 Fax:03-4590-1075 • www.disco.co.jp

ASIA :
DISCO HI-TEC (SINGAPORE) PTE., LTD.
Blk 2 Kaki Bukit Ave.1 #03-06/08 Kaki Bukit
Industrial Estate Singapore 417938
Phone:65-6747-3737 Fax: 65-6745-0266

DISCO HI-TEC (MALAYSIA) SDN. BHD.
Phone:60-3-8024-6588 Fax:60-3-8024-1311
Penang Regional Office

Phone:60-4-644-5502 Fax:60-4-645-2285
DISCO HI-TEC (THAILAND) CO., LTD.
Phone:66-2-6188441 Fax:66-2-6188440

DISCO TECHNOLOGY (SHANGHAI) CO., LTD.
Area E, 3rd Floor, Building A1 No.381 FuTeXiYi Road,
WaiGaoQiao Free Trade Zone Shanghai, P. R. China 200131
Phone:86-21-5866-2516 Fax: 86-21-5866-2517

ASIA AGENT :
New Tronics Co., Ltd.
Flat F, 11/F, Valiant Ind. Bldg. 2-12 Au Pui Wan Street,
Fotan Shantin, N.T. HONG KONG
Phone:852-26871431 Fax: 852-26874283

Happy Pole, Ltd.
8th floor, 9-1, No.41 Section 2, Roosevelt Road Taipei,
Taiwan R.O.C.
Phone:886-22-3960651 Fax: 886-22-3943943

Aurotech Systems(Phil's), Inc.
121 Buencamino Street Alabang, Muntinlupa PHILIPPINES
Phone:63-2-809-0155 Fax: 63-2-807-7419

D.I. Corporation
D.I. Building 58-6 Nonhyun-Dong Kangnam-ku, Seoul KOREA
Phone:82-2-549-5501 Fax:82-2-3446-8087

U.S.A. :
DISCO HI-TEC AMERICA, INC.
3270 Scott Blvd, Santa Clara, CA 95054-3011 U.S.A.
Phone:1-408-987-3776 Fax:1-408-987-3785

Eastern Regional Sales & Service Office
Phone:1-603-656-9019 Fax:1-603-656-9018
Southeastern Regional Sales & Service Office
Phone:1-919-468-6003 Fax:1-919-468-6004
Central Regional Sales & Service Office
Phone:1-972-267-9500 Fax:1-972-267-5612

Southwestern Regional Sales & Service Office
Phone:1-602-431-1412 Fax:1-602-431-1437
Northwest Regional Sales & Service Office
Phone:1-503-644-0323 Fax:1-503-643-8108

EUROPE : DISCO HI-TEC EUROPE GmbH
Liebigstrasse 8 D-85551 Kirchheim b.Muenchen Germany
Phone:49-89-90903-0 Fax:49-89-90903-199

DISCO HI-TEC FRANCE SARL, Provence Head Office
Phone:33-442-910020 Fax:33-442-910029

DISCO HI-TEC U.K. LTD.
Phone:44-1342-313165 Fax:44-1342-313177

DISCO HI-TEC MOROCCO SARL
Phone:212-6-136-94-04 Fax:212-22-97-38-88