

DL81/DL82 PRECISION LAPPING & POLISHING SYSTEM



High-speed lapping and polishing system, processing a range of specimens with high geometric precision, for use in environments from research through to production

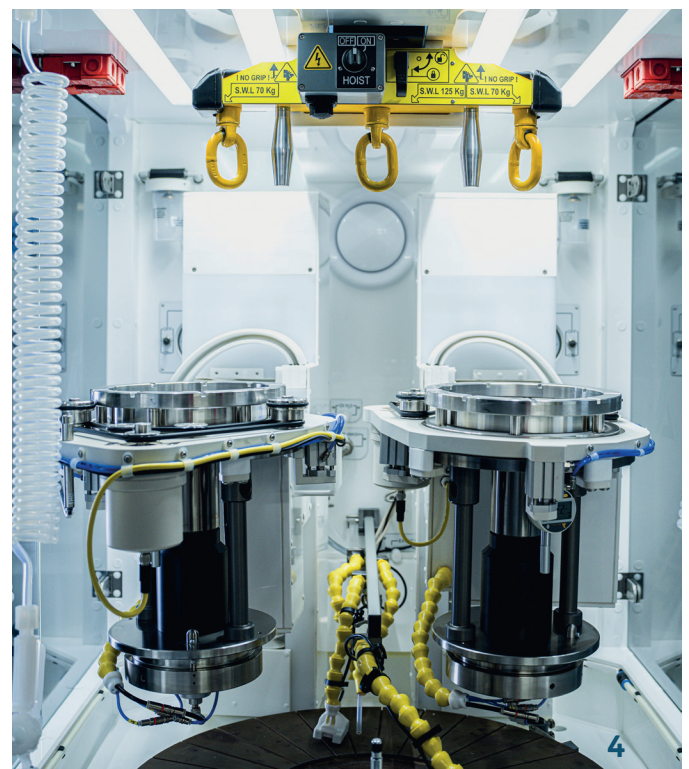
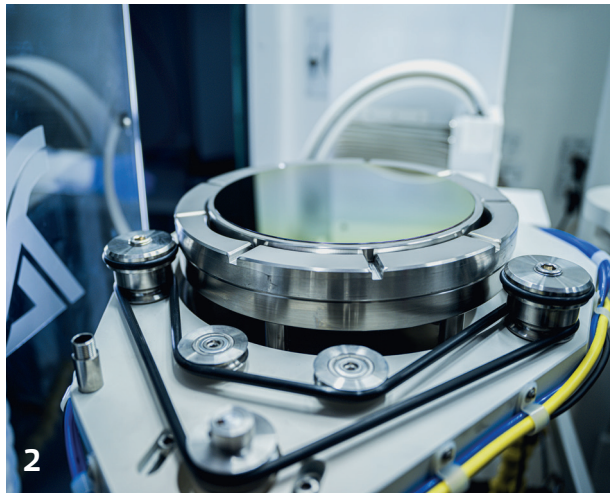
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DL81/DL82 Precision Lapping and Polishing System

Delivering the ultimate in processing innovations, the DL series is Logitech's newest, highly automated, and intelligent sample preparation system. Featuring dynamic load control with Logitech's intelligent air jigs, the system ensures fast, reliable, and highly accurate results across a wide range of materials used in semiconductor wafer processing, from soft, friable materials like Indium Phosphide (InP) and Gallium Arsenide (GaAs) to very hard materials such as Silicon Carbide (SiC) and Diamond.

The advanced automation significantly reduces setup and cleanup time, while the integrated software offers a user-friendly platform for precise, controlled processing. Logitech's intelligent air-driven jigs utilize air pressure to apply up to 40kg of downforce on the chuck, achieving rotational speeds of up to 100 rpm, ensuring optimal sample load application. This enables high geometric accuracy, consistent sample rotation, and excellent wafer uniformity, resulting in repeatable, high-quality results throughout the process.



Key Features & Functionality

- Available in two configurations: the DL82 option, which features two automatic workstations, and the DL81, which includes one automatic and one manual workstation.
- Stand-alone system with up to 700 mm diameter plate(s). Capacity for up to two precision air jigs operating simultaneously to process large single samples or multiple smaller samples.
- Jig-held samples up to 8"/200 mm inch or free lapping of samples up to 12"/300 mm.
- Air jigs have adjustable load capacities, ranging from 2 kg to 40 kg (47 kg option available), and can be controlled via the software interface.
- In-situ load cells allow for automatic jig load calibration.
- Bluetooth automatic-plate-flatness control provides continuous in-situ measurement of the plate flatness, automatically correcting any deviation from the target set by the user.
- The Bluetooth digital gauge provides real-time feedback from the digital indicator on the air jigs, allowing greater end-point thickness control for increased accuracy.
- The automated jig handling system lifts and inverts the jig once the target material removal is reached, preventing over-processing and ensuring efficient sample handling, unloading, and cleaning.
- The system includes a service hoist for safe handling of lapping and polishing plates, supporting up to 125 kg for plates and 70 kg for each left-hand side and right-hand side jig, with a 580 mm extension beyond the machine's footprint.
- 15" Display and touch-screen user interface with USB port for data extraction.
- As an optional add-on to the 200mm air jig, a confocal angle setting tool allows you to set precise angles on the jig's chuck face in situ, aligned to a reference point on the sample, with an impressive accuracy of 36 arc seconds.
- Capacity of up to four cylinders for multi-stage processing. The increased capacity 3.8 ltr cylinders means longer, uninterrupted processes, which can be utilised for both lapping and polishing slurries.
- The metered abrasive feed unit with peristaltic pumps allows flow rates from 5-100 ml per minute, enhancing result quality and accuracy while reducing wastage and operational costs.
- The system is fully enclosed and sealed, with exhaust port (150 mm Ø), allowing an extraction connection to be fitted for processing hazardous materials such as gallium arsenide (GaAs) or indium phosphide (InP).
- Real-time analysis and control of process parameters via the system's Graphical User Interface (GUI), including plate flatness target and real-time plate flatness measurement, sample thickness target and real-time sample thickness measurement, and sample material removal rate (MMR) measurements.
- The integrated Logiwaste system efficiently removes slurry waste, with a sealed sediment tank to prevent gas escape and easy disconnect for disposal.
- The recipe mode allows operators to create, save, and recall multi-stage process recipes, ensuring each process completely repeatable, even across different operators.
- Internationally recognised EtherCAT protocols are utilised to allow for communication with the main drive units, determining parameters useful for machine monitoring and diagnostics, while an industry traffic light tower provides machine status alerts.

Technical Specifications

Jig Capacity DL81	1 x Air Jig - up to 8"/200 mm capacity
Jig Capacity DL82	2 x Air Jigs simultaneously - each up to 8"/200 mm capacity
Jig Options	AJ200 - 8"/200 mm AJ150 - 6"/150 mm AJ100 - 4"/100 mm
Jig Speed	100 rpm
Height	1975 mm
Jig Load Range	2 - 40 kg
Width	1639 mm
Depth	1141 mm
Power Supply	Single Phase, Earth ac. 220-240V 32 Amps
Plate Diameter	Up to 700 mm
Plate Speed	100 rpm
Plate Direction	CCW
Slurry Flow Rate	5-100 ml/per minute
Wafer Sizes	2", 3", 4", 6" and 8" single
Exhaust Port	150 mm OD
Slurry Waste	Logiwaste Integrated Sealed System

1. Logitech DL82 with two workstations
2. Jig-held samples up to 8"/200mm inch or free lapping of samples up to 12"/300mm.
3. Logitech DL81 with single workstation
4. Capacity for up to 2 air jigs operating simultaneously on the DL82



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