

CP4000

Chemical Polishing Machine

Chemicals typically used in prime face polishing of semiconductor wafers or electronic and optoelectronic crystals, such as Bromine Methanol or acid etches, are highly aggressive and require the use of specialised corrosive resistant equipment.

The CP4000 has been designed exactly for this application, and utilises a chemical etch polishing process to produce high quality results with minimal subsurface damage.

The Logitech CP4000 is a corrosion resistant chemical polishing machine, integrated with a fume extraction enclosure. Designed for aggressive and hazardous chemical polishing operations, the CP4000 is a reliable and cost effective solution.

Corrosive Resistant Construction

The CP4000 is robustly constructed of epoxy painted rigid polyurethane, PVDF and other corrosion resistant materials, making it suitable for use with most chemical polishing agents.

The cabinet window, which can be set in various positions, is of toughened glass to provide clear visibility of the workspace and integral lighting of the cabinet workspace is also provided.

Workdecks

The left hand workdeck is modular in construction and is easily removed for cleaning and access to the lower deck. The standard deck configuration and sample containment fixturing accommodate the processing of sample material mounted onto 83mm (3.27") diameter support discs. These can be adapted to accommodate individual customer requirements on request.

The right hand deck area provides the fluid feed system, waste sump and working space for the handling and storage of chemical agents. The sump can hold up to 25 litres (5.5 gallons) of used polishing fluid which is monitored by the capacity sensor.

Polishing Plate

The CP4000 is fitted with a lift-off glass plate to which a self-adhesive polishing cloth is fixed. Plates can be supplied in the range 25.40 - 45.72cm (10-18") in diameter. Up to nine 7.62cm (3") wafers can be accommodated on the 45.72cm (18") plate and with minor adaptation to the left hand work deck area, wafers up to 20.32cm (8") diameter can be polished.



- *Minimum subsurface damage*
- *Maximum sample size - 9 of 3" wafers*
- *Robustly constructed from corrosion resistant materials*
- *Fine etch polishing of semiconductor wafers & electro-optic crystals*

Industry Standard System Architecture

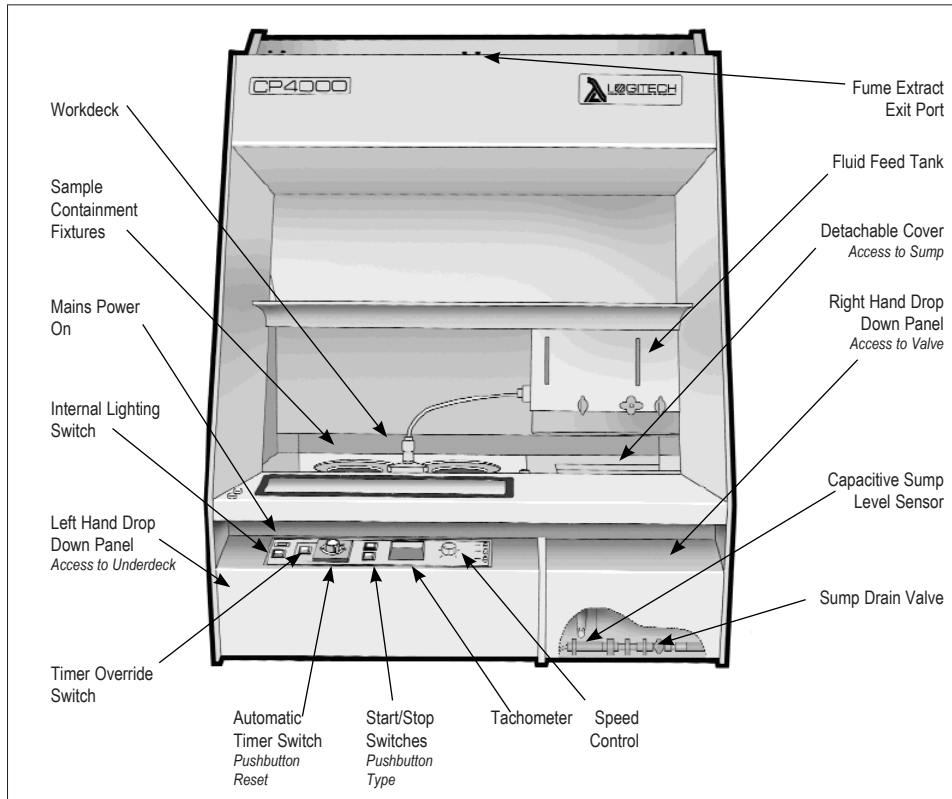
Typical applications for the CP4000 Chemical Polishing Machine are the final chemical etch polishing before device fabrication or epitaxial growth analysis of the following materials:

- Cadmium Telluride and Mercury Cadmium Telluride for use in infra-red detectors and other devices.
- Thin and ultra-thin wafers of semiconductor materials such as Gallium Arsenide, Indium Phosphide and various II-VI and III-V compounds (for ASIC's etc).
- Cadmium Sulphide and similar opto-electronic materials.

The CP4000 is ideal for all applications requiring an electronic grade polish of the highest standard with minimal stressing of the crystalline structure (for MMIC's, laser diodes etc).

CP4000

Chemical Polishing Machine



Process Route

Optimum geometric control of specimen combined with damage-free surface polishing is best achieved by using the CP4000 as the final stage in the Logitech machine system sequence.

Specimens may be thinned using the PP5 series jigs on PM5, LP50, DL1 or DL4 lapping systems, subjected to mild chemo-mechanical polishing (optional), then polished on the CP4000 machine to remove remaining traces of surface damage, thus satisfying the most stringent requirements.

When used in conjunction with the range of Logitech high precision bonding and demounting equipment, electronic wafers and similar device materials may be safely processed without fear of front side damage.

Process Route

With the cabinet frontage in a closed position the airflow is drawn in via a filter to assist with the reduction of particle contamination. For processes requiring a high degree of particle cleanliness and for optimum results and yields it is recommended that the unit be situated in a clean environment (e.g. below a filtered air shower in a clean air tent or in a clean room).

Technical Specifications

| | |
|-----------------------------------|---------------------------------|
| Power supply: | 220V/50Hz, 110/60Hz, 110V/50Hz |
| Weight: | 145kg |
| Dimensions: | 1040x760x1270mm |
| Workdesk Access Area: | 863x406mm |
| Maximum Sample Size | 9 of 762mm (3") diameter |
| Polishing Plate diameter: | 457mm (18") |
| Plate Rotation Speed: | 0-70rpm (continuously variable) |
| Timer: | 0-60 minutes |
| Universal Drive Mechanism: | 0.18kW (0.25) DC electric motor |

Ordering Information

CP4000 machine.

| | |
|--------------|-----------|
| 1CP41 | 220V/50Hz |
| 1CP42 | 110V/60Hz |

Logitech Limited

Erskine Ferry Road, Old Kilpatrick,
Glasgow G60 5EU, Scotland, U.K.

Tel: +44 (0) 1389 875444
Fax: +44 (0) 1389 890956
e-mail: info@logitech.uk.com

www.logitech.uk.com



Certificate No. FM12025