AC 2000-P³ / -PPG

LAPMASTER® WOLTERS

THE COMPREHENSIVE SOLUTION FOR 200 MM (8"), 300 MM (12") AND 450 MM (18") PRIME WAFER PROCESSING

CUSTOMIZED SOLUTIONS FOR THE SEMICONDUCTOR INDUSTRY

LAPMASTER WOLTERS is a well known, reliable partner for semiconductor customers in the Prime Wafer and LED Wafer manufacturing sectors.
LAPMASTER WOLTERS is offering customized solutions for high-precision surface processing technology of wafers and substrates. Industries served are silicon, sapphire, gallium arsenide, silicon carbide, and other materials used for manufacturing microelectronic, microoptical and micro-mechanical devices.
Our grinding, lapping, and polishing machines for all substrates up to 450 mm (18") provide process results defining the leading edge in terms of local and global geometries. "Made by LAPMASTER WOLTERS" signifies the highest quality in the international marketplace for machine tools.

FROM SILICON TO WAFERS – THE AC 2000 FROM LAPMASTER WOLTERS

With its third generation microLine© AC 2000, LAPMASTER WOLTERS is offering solutions for double-side grinding and polishing of wafers from a diameter of 200 mm (8") up to 450 mm (18"). As a result of its unique machine concept, AC 2000 is the most flexible machine for supporting all future wafer requirements.
We are constantly setting a new benchmark in precision, quality, efficiency, and cost of ownership.

FIRST-CLASS CUSTOMER SUPPORT AND CONSUMABLES

LAPMASTER WOLTERS offers customers first-class support for the entire lifecycle of their machine; for the highest machine availability and productivity as well as process, planning, and security backed by our worldwide network of qualified technicians and service specialists.
Our customers benefit from an extensive selection of consumables including diamond grinding pads, diamond fine grinding wheels, polishing agents like dressing tools, polishing pads, slurries, work piece carriers as well as a complete range of spare parts.

AC 2000-PPG PRIME WAFER PLANETARY PAD GRINDING SYSTEM

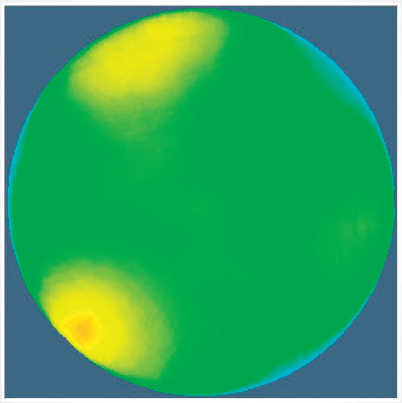
The unique and primary patented UPAC (Upper Platen Adaptive Control) system is the feature needed to maintain a parallel and stable gap profile between the upper and lower working wheel while processing wafers.

Only the UPAC technology provides accuracy in gap adjustment to compensate for any wheel deflection caused by thermal expansion or force induced stress that is required to successfully perform Planetary Pad Grinding on double side machining tools.

A large contact zone between wafer and grinding surfaces result in reduced local stress and a uniform grinding pattern. No center marks as known from conventional cup wheel grinders are created. The improved local and global wafer flatness after PPG, in combination with reduced sub surface damages result in shorter polishing times compared to conventional lapping or grinding.

Using the same tool platform for PPG and DSP helps reduce costs for operator training and maintenance.

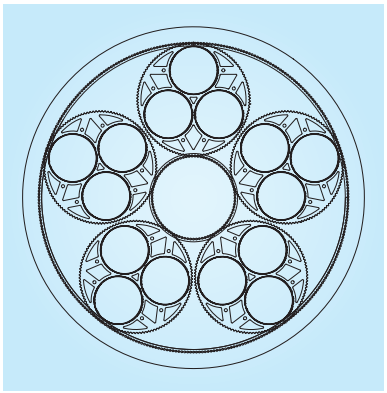
Surface geometry of wafer processed with LAPMASTER WOLTERS' Planetary Pad Grinding Technology



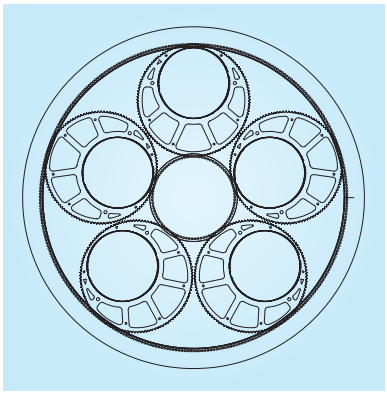
SFQR (after grinding) ≈ 100 nm
GBIR (after grinding) ≈ 500 nm

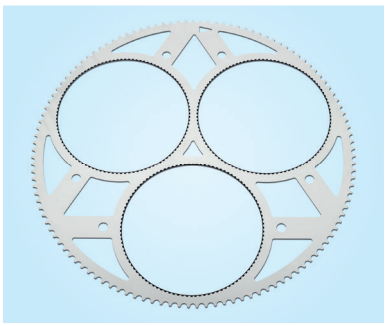
TECHNICAL DATA	AC 2000-PPG / AC 2000-P³
Wheel diameter (mm/in)	1935 mm (76.1809")
Ring width (mm/in)	689 mm (27.1259")
Max. load pressure (daN)	3500
Upper wheel, lower wheel	
Drive [kW]	46
RPM [min^{-1}]	40
Inner work piece drive	
Drive [kW]	7.5
RPM [min^{-1}]	40
Outer work piece drive	
Drive [kW]	7.5
RPM [min^{-1}]	12
Dimensions excl. switch cabinet H × W × D (mm / in)	2900 × 3825 × 3823 mm (114.173 × 150.590 × 150.511")
Weight (kg / lbs)	22000 kg / 48502 lbs
Load capacity	
450 mm (18") Wafer	5 pieces
300 mm (12") Wafer	15 pieces
200 mm (8") Wafer	30 pieces

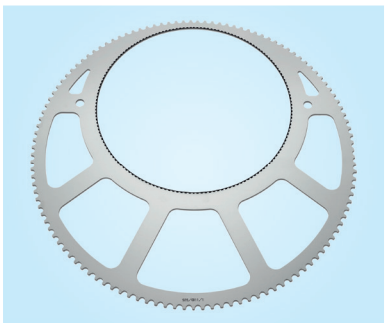
Carrier for 300 mm wafers



Carrier for 450 mm wafers







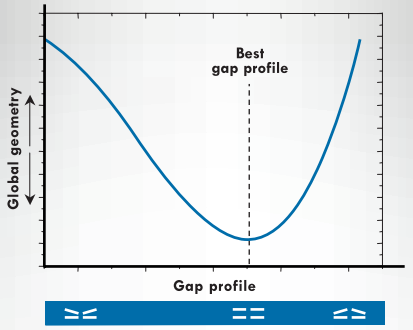
AC 2000-P3 PRIME WAFER DOUBLE-SIDE POLISHING SYSTEM

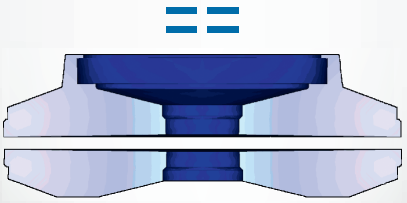
Polishing results and wafer flatness are strongly influenced by the gap profile between the upper and lower working wheels of a DSP tool.

The unique and patented UPAC (Upper Platen Adaptive Control) System from LAPMASTER WOLTERS allows for accurate adjustment of the gap profile offering a much greater flexibility during process optimization. Closed loop control keeps the selected gap profile stable throughout the polishing process and compensates for any wheel deflection caused by thermal expansion or force induced stress.

Polishing results achieved with AC 2000-P³ already exceed requirements for the latest technology nodes and beyond.

The importance of the gap – Perfect wafer flatness requires gap adjustment





Zero gap

Gap profile in detail

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