AVANTI 472

REMANUFACTURED BY AXUS TECHNOLOGY

Axus Technology
7001 W. Erie St., Suite 1
Chandler, AZ 85226

ph: (480)705-8000
fax: (480)705-8011
www.axustech.com

THE WORLD'S MOST POPULAR, FULLY AUTOMATED CMP TOOL.

The AVANTI 472 is IPEC-Planar's third generation Chemical Mechanical Planarization (CMP) product. It incorporates production proven CMP process performance with fully automated control and improved reliability.

OXIDE AND METAL PLANARIZATION

Designed for both oxide and metal planarization processes, the AVANTI 472 offers single wafer, two-step polishing for wafers up to 200mm. A Flat Panel Display operator interface, mounted on an ergonomic articulating arm, provides user-friendly, push button control with adjustable display positioning.

APP1000 PAD PROFILER

The AVANTI 472 utilizes the APP1000 pad conditioner to condition the primary polishing pad. The APP1000 pad conditioner allows user-defined rotation rates and dwell times of the end effector in ten separate radial segments. "Pad profiling" reduces removal rate variation from wafer to wafer, improves within wafer non-uniformity and extends pad life. The APP1000's concurrent pad conditioning minimizes non-process cycle time, thereby increasing throughput.

SYSTEM FLEXIBILITY FOR INCREASED PRODUCTIVITY

The flexible system design of the AVANTI 472 hardware and software ensures its applicability to conventional inter-level dielectric CMP processes as well as various metal CMP processes.

Other features include:

- ***Material compatibility for medium and low pH slurries (2 - 12)***
- ***Corrosion resistance***
- ***Down force up to 750lbs.***
  Adjustable wafer back pressure
- ***Enhanced slurry pump capacity up to 1000 ml/min.***

Planarization of wafer on primary platen with concurrent pad conditioning.

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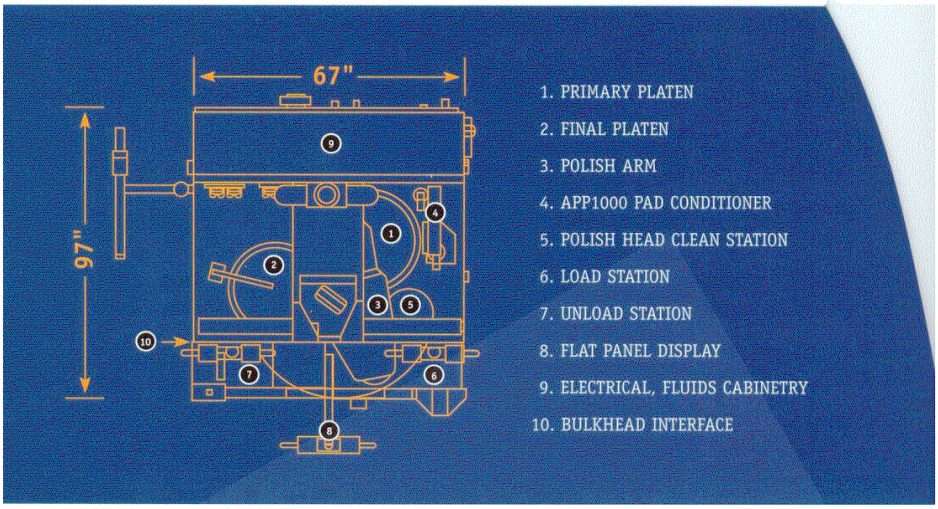
AVANTI 472 chemical mechanical planarization tool footprint



CONTROL SYSTEM TYPE

- *Pentium P54C, 200MHz computer processor (Available with software version > 3.0)*

OPERATOR INTERFACE

- *Ergonomic flat panel color display*
- *Soft touch key pad*
- *Three user-configurable access levels*
- *Optional remote user console*

PROCESS CONTROL

- *Two platen process for post polish buff*
- *Multiple slurry dispense*
- *Closed loop platen temperature control*
- *Platen rotation rate*
- *Polishing oscillation control*
- *Carrier rotation rate*
- *Polish down-force control*

PROCESS MONITORING

Over 15 parameters automatically monitor available end pointing techniques:

- *Time-based*
- *Temperature-based*
- *External interface for user-supplied end point capability*
  - *Luxtron, in situ metrology for metal polishing*
  - *Nova, in-line metrology for oxide polishing (Available through Nova Measuring Instruments, Ltd.)*

APP1000 PAD CONDITIONER

- *User-definable pad profiling (10 radial segments)*
- *Interchangeable end effector design*
- *End effector rotation rate/duration control*
- *Down-force control*

DIAGNOSTICS

- *Natural language alarms and alerts*
- *Automatic dialog boxes*
- *Over 174 system diagnostic indicators*

SYSTEM FEATURES

EQUIPMENT MAINTAINABILITY

- *Easy access front shelf pneumatics and relays for load and unload servicing*
- *Pull out shelves for fluids cabinet valves*
- *Flaretek® fittings plumbing*
- *Improved electrical fluids cabinet valves*
- *Improved calibration and alignment capabilities*
- *Manual operation mode*
- *Polish head clean station*

EQUIPMENT SAFETY

- *S2-93 Compliant*
- *EC Certified*
- *Five emergency stop buttons*
- *Keyed interlock protection of all enclosures*
- *Optional custom platen hoist*

RECIPE PROGRAMMING

- *Up to 255 different process programs can be stored*
- *Hard disk/floppy disk storage for long-term back-up and storage*
- *SRAM with battery back-up offers real time storage of critical control data for:*
  Calibration settings
  Wafer status
  Recipe parameters
  Global machine configuration settings
- *Flexible recipe programming*
- *User-guided data entry*
- *Recipe check functions*
- *Six programmable process phases per platen*

WAFER STATISTICS

- *Three programmable counters and timers used to track the number of wafers processed and tool usage*
- *User-configurable labels available for each counter*
- *Optional SECS I/II, GEM host interface communication (Available with software version > 3.0)*

FACILITIES

- *Power: 208 VAC, 3-PH, 50/60Hz*
- *DI Water:*
  Average flow = 6gpm (22.7 l/min)
  Pressure = 25-30psi, minimum
- *Chilled water:*
  Peak Flow = 5gpm (18.9 l/min)
- *Compressed air:*
  Peak flow = 6 standard cubic feet per minute(SCFM) (170 SLM)
- *Nitrogen:*
  Peak flow = 10 SCFM (283 SLM)

DIMENSIONS

- *Footprint width: 67" (170cm)*
- *Maintenance width: 164" (417cm)*
- *Footprint depth: 97" (246cm)*
- *Maintenance depth: 132" (335cm)*
- *Height: 92" (234cm)*
- *Weight: approx. 7500lbs (3410kg)*

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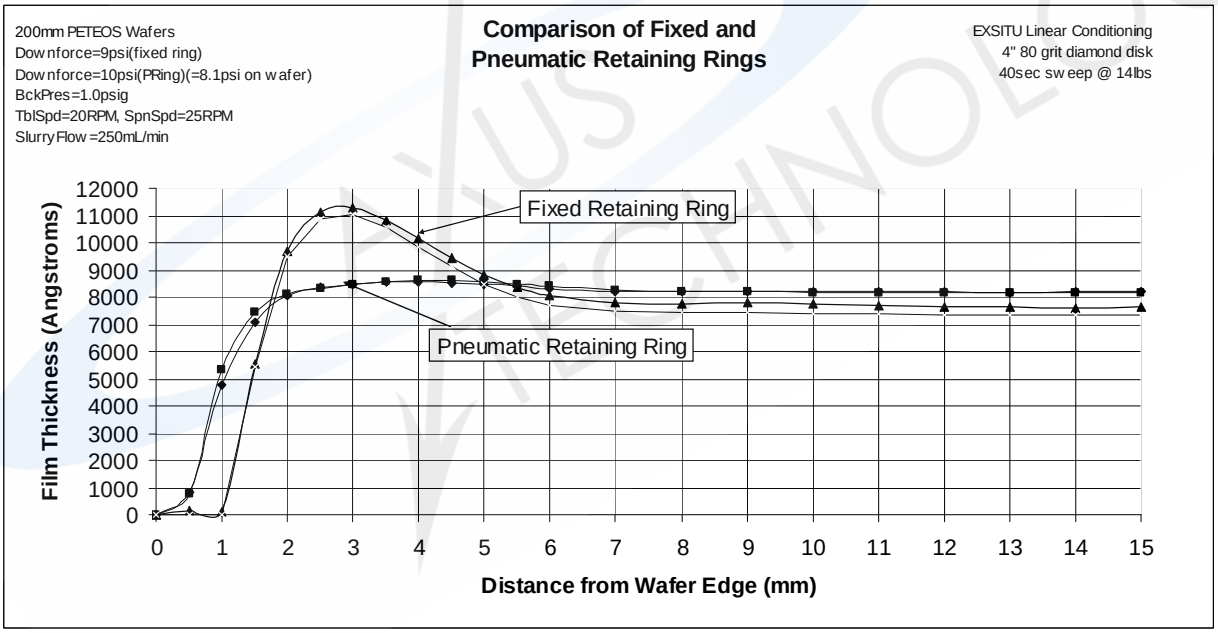
ViPPR II® Carrier Upgrade for IPEC 472

Axus Technology and Strasbaugh announce ViPPR II carrier upgrade for the IPEC 472.

The IPEC 472 is one of the most popular and durable CMP tools ever made. This tool is still much sought after by semiconductor fabs, research laboratories, and other CMP users. Strasbaugh recently released their field-proven ViPPR IV® technology for use on IPEC platforms. Working with Axus Technology, the principal supplier of support for legacy IPEC tools, the ViPRR carrier retrofit has been designed for installation on the IPEC tools.

The retrofit is form compatible with any peripherals used on the IPEC tools, such as measurement systems and robotic handlers, and is typically installed on the tool within one or two days. Along with a pneumatic retaining ring, the ViPPR® IV carrier delivers multi-zone back pressure and reduces the edge exclusion to 3mm or less (see figure, below).



The ViPRR carrier was a significant improvement over fixed ring carriers and became the standard Strasbaugh carrier. New tools and field upgrades resulted in more than 400 units having been installed and used in production. This same technology is now available for use on 200mm and 150mm IPEC CMP tools, delivering process performance that is comparable with current new tools being delivered by OEMs.

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