NOTION SYSTEMS

n.unixx-series

SEMI-AUTOMATIC SINGLE WAFER SYSTEMS

RESIST COATER/DEVELOPER SYSTEMS

SEMI-AUTOMATED SYSTEMS WITH VARIOUS TYPES OF PROCESSING MODULES

- Applications: Priming, spin/spray coating, developing and baking/cooling
- Wafer sizes up to Ø 300 mm and square substrates up to 230 mm x 230 mm (9" x 9")
- Selectable process modules:
  - Spin coater (covered chuck or open bowl module)
  - Spray coater (ultrasonic nozzle)
  - Developer (spray or puddle developing)
  - Temperature module for hot- & cool-plates or HMDS-priming hotplates
- 10"/22" color touch screen for easy operation
- Up to two electric media arms with different types of nozzles
- PR dispense systems for low and high viscosity
- Exchangeable process bowl with splash ring
- Customized full-contact or low-contact chucks
- Manual loading and unloading
- External media cabinets for different chemicals

SYSTEM DESIGN

- System frame made of powder-coated stainless steel
- Transparent protective cover or doors for the process area
- Emergency stop button for safety
- Start-stop buttons on the device or via the control unit
- Adjustable leveling feet and transport wheels
- General design to meet ISO class 4

IDEAL FOR BASIC RESEARCH, RECIPE DEVELOPMENT, AND SMALL-BATCH VOLUMES PRODUCTION

LABORATORY LITHOGRAPHY EQUIPMENT DESIGNED FOR INDUSTRY AND RESEARCH APPLICATIONS

CONTROL UNIT

EQUIPPED WITH OUR IN-HOUSE CLS (CLUSTER SOFTWARE) FOR SUPERIOR PROCESS CONTROL.

- User-friendly operator interface GUI with 10" or 22" touch screen monitor
- Programmable process parameters: dispense arm motion, media flow, spin speed
- Recipe editor to write, edit and manage user recipes
- Recipe storage function on flash drive or memory stick
- Log file and error tracking history
- Automatic engineering process and servicemode
- User management with different password levels

Optional: SCES/GEM integration or to any other software management.

SPIN COATER MODULE

OPEN-BOWL OR WITH COVERED CHUCK TECHNOLOGY

- Up to two dispense arms, each for up to max. 6 media lines
- Different types of nozzles:
  PR, solvent puddle & EBR nozzle
- Customized full-contact or low-contact chucks

BENEFITS OF COVER CHUCK TECHNOLOGY

- Optimized coating for uniformity, resist consumption and eliminated cotton candy effect
- Potential applications in: thick, very thick and negative photoresist, SOG, Polymer and BCB bumping material
- Excellently suited for square substrates
- Backside protection process

DEVELOPER MODULE

AUTOMATIC SPLASH RING LIFT OR STANDARD

- For various wafers and compound materials
- Up to two dispense arms for max. 6 media lines
- Different types of nozzles:
  multiple puddle-, spray-, megasonic & atomizing nozzle
- BSR nozzle (adjustable in position and angle)
- Vacuum- or low contact centrifugal force chucks
- Spin motor with wobble function
- Automatic splash ring lift or standard
- Media supply by pressure canister or pump systems

SPRAY MODULE

- For low and medium viscosity
- Uniform deposition of media via line-by-line
- 6-axis robot unit with X-Y-Z movement
- Syringe dispense system
- Suitable to install one ultrasonic spray nozzle
- Sealed nozzle drip pan
- Process control and data analysis

TEMPERATURE MODULE

FOR HOTPLATES OR VPO-PLATES

- Temperature module for:
  1. Hotplates
  2. Vapor prime (HMDS) with edge handling
- Programmable temperature range up to 250 °C
- Nitrogen purge
- Hotplate with electronic driven lift pins

Optional: With proximity balls

SYRINGE

MOTORIZED DISPENSING SYSTEM

- Dispensing of small media volumes
- Continuous dispense for µl/sec or any ml/sec
- Syringe made of glass or single-use syringe of plastic
- Different syringe sizes available:
  10ml, 20ml, 50ml, 100ml and 200ml
- Servo motor-controlled syringe piston
- Programmable dispense & suck-back volume and rates

SEMI-AUTOMATIC SYSTEMS FOR LAB APPLICATIONS

OPTIONS

1. Customized chuck & inlay design
2. Temperature controlled dispense line
3. External media cabinets for supply or waste tanks

MEDIA STORAGE CABINETS

VARIOUS MEDIA CABINETS & TANK DESIGNS

- For manual filling or via bulk-systems
- Media cabinet includes up to 4x10 liter chemical tanks
- Electrical cabinet mounted on the top
- Media can be heated or temperature stabilized
- Tank Materials: SS, PP, HDPE, PVDF, ECTFE
- Tank sizes: 10, 20, 40 liter

TECHNICAL DATA

GENERAL

Substrate size:	Up to Ø300 mm or 230 mm x 230 mm (9" x 9")
Motor spin speed:	Max. 10.000 rpm, programmable in 1 rpm steps*
Step time:	1 up to 999.9 sec, in 0.1 sec steps
System frame:	Made of powder-coated stainless steel, adjustable feet & transport wheels

**Depending on chuck design, substrate weight and load*

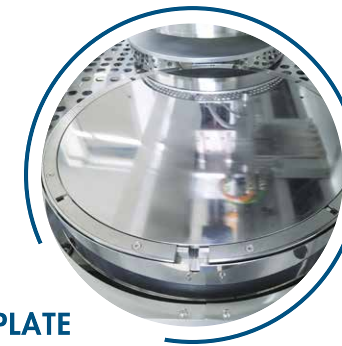
REQUIREMENTS

Power:	400 VAC / 3 Phase / N / PE / 50 Hz
CDA:	8 bar ± 2 bar
Vacuum:	-0,8 bar
Nitrogen:	4.5 ± 0.5 bar
DI-Water:	min. 2.0 bar, max. 3.0 bar
Exhaust process area:	60-180m³/h*
Drain:	To waste tank with high level sensors or to the facility drain*

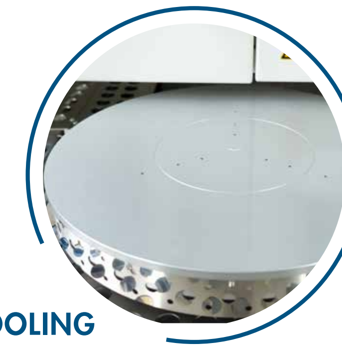
**Chemical and process-related*

TEMPORARY BONDING FOR LABORATORIES AND R&D FACILITIES

The semi-automated loading and unloading system was designed for temporary bonding of individual substrates onto rigid carriers. This process provides mechanical support for processing very thin, delicate substrates and flexible plastic materials. A simple mounting process that is ideal for applications such as CMP, grinding, polishing, etching and lithography.
Our semi-automatic temporary bonding system has an integrated heating plate that can heat the carrier and substrates up to 200 °C and achieves void free bonds with ideal uniformity (TTV).



HOTPLATE
Integrated hotplate up to 200°C



COOLING PLATE
With lift pins and vacuum channels

WAFER HANDLING
Via vacuum transporter

ALIGNMENT
Contactless measurement alignment

LOADING DRAWER
Up to Ø 300 mm wafers

UNLOADING DRAWER
Up to Ø 300 mm wafers

FEATURES

SEMI-AUTOMATED TEMPORARY BONDING PROCESS SYSTEM

- Application: Temporary bonding
- Wafer sizes up to Ø 300 mm
- 22" color touch screen for easy operation
- Integrated hotplate up to 200 °C
- High accuracy of wafer and carrier alignment
- Manual loading and unloading
- Compatible with silicon, compound and glass materials

Additional options:
- Wafer/Carrier transfer arm
- Manual center aligment tool
- FFU / HEPA filter

MANUAL TOOL FOR LABORATORY EXPERIMENTS WITH THE SAME BASIC FUNCTION AS LARGE SYSTEMS

TECHNICAL DATA

GENERAL

Substrate size:	Up to Ø300 mm
Temperature Range:	Up to 200 °C, adjustable in 1°C steps
Accuracy of temperature:	±1°C at 100 °C
Applied Pressure:	Max. 3.000 N*
System frame:	Made of powder-coated stainless steel, adjustable feet & transport wheels
Hot/Cool plate:	Micro-polished stainless steel and anodized aluminum

**depending on wafer and tool size*

REQUIREMENTS

Power:	230 VAC / 3 Phase / N / PE / 60 Hz
CDA:	8 bar ± 2 bar
Vacuum:	-0,8 bar
Exhaust cabinet:	50 - 150m³/h*

**Chemical and process related*

DEBONDING DESIGNED FOR R&D AND LOW VOLUME PRODUCTION

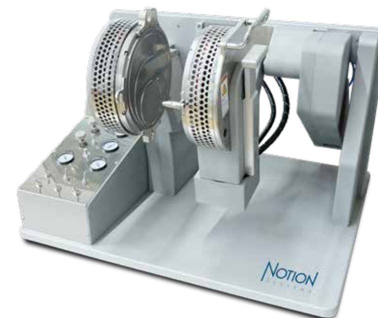
This thermal slide debonding system was designed for separating temporarily bonded and processed wafer stacks consisting of a wafer, a carrier and a temporary interlayer adhesive. Debonding tool together with thermal influence achieves a careful and smooth demounting of the thinned wafers from the carrier.
Our manual demounting system is available for 4 different wafer sizes up to ∅ 300 mm.

Qualified wafer materials including silicon, compound and glas materials, covering a broad spectrum of semiconductor materials.

MANUAL DEBONDING PROCESS SYSTEM

- Application: Debonding
- Wafer size from pieces up to ∅ 300 mm
- Safe thin wafer handling
- Debonding with adjustable force
- Embedded heaters on wafer and carrier plates
- Temperature range adjustable up to 200°C
- Temperature uniformity of +/- 0.5°C
- Adjustable vacuum line to protect fragile/sensitive wafers
- Manual loading and unloading

Compatible with silicon, compound and glass materials.



DEBONDING DEVICE SUPPORTS THERMAL SLIDE SEPARATION

COMPATIBLE MATERIALS
SILICON, COMPOUND AND GLASS

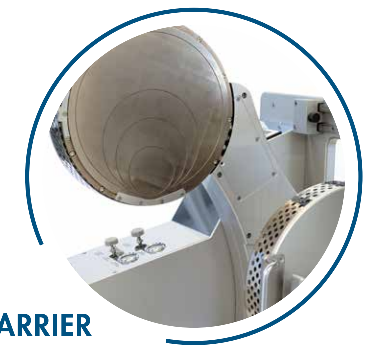
DEBONDING OF BACKSIDE GRINDED/THINNED AND POLISHED WAFERS ONTO DIFFERENT TYPES OF CARRIERS:

- Wafer on wafer
- Wafer on glass carrier
- Wafer on sapphire carrier
- Wafer on ceramic carrier

Different types of debonding adhesives can be used, such as spin-on thermoplast, thermoset materials, wax or tapes.

TEMPERATURE CONTROLLER

WAFER PLATE



CARRIER PLATE

TECHNICAL DATA

GENERAL

Substrate size:	Up to ∅300 mm
Temperature Range:	Up to 200 °C, adjustable in 1°C steps
Accuracy of temperature:	±1 °C at 100 °C
Housing:	Made of micro-polished stainless steel and anodized aluminum

REQUIREMENTS

Power:	230 VAC / 3 Phase / N / PE / 60 Hz
CDA:	8 bar ± 2 bar
Vacuum:	-0,8 bar

NOTION
SYSTEMS

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