

n.variXX-series



---

AUTOMATIC SINGLE WAFER CLUSTER SYSTEMS

# RESIST COATER/DEVELOPER SYSTEMS

## AUTOMATED SYSTEMS WITH VARIOUS TYPES OF PROCESSING MODULES

- Application: priming, spin/spray coating, developing, ebr 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 tower for hot- & cool-plates or HMDS-priming hotplates
  - EBR module (for wafer with flat or notches)
- 22" color touch screen for easy operation
- Up to two electric media arms per module with different types of nozzles
- PR dispense systems for low and high viscosity
- Vacuum end effector (flip function optional)
- Pre-Alignment station (optional)
- I/O-Station open cassette, SMIF or FOUP loadports
- External media cabinets for different chemicals

## SYSTEM DESIGN

- System frame made of powder-coated stainless steel
- Lockable, transparent doors for process area
- Emergency stop button at systems front
- Signal tower with light sections for visualization of the system status
- Adjustable leveling feet and transport wheels
- General design to meet ISO class 4

HIGH FLEXIBILITY COMBINED WITH EXCELLENT UNIFORMITY AND PROCESS REPEATABILITY

# MICROCLUSTER SYSTEMS DESIGNED FOR HIGH VOLUME THROUGHPUT



## CONTROL UNIT

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

- User-friendly operator interface GUI with 22" touch screen monitor
- Programmable process parameters: dispense arm motion, media flow, spin speed and N2 blow
- 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
- Perfectly suitable 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 effect
- Automatic splash ring or shutter
- 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 TOWER

### MULTIPLE STACK WITH SLOTS FOR HOT-, COOL-, VPO-PLATE OR RELAX STATION

- Temperature tower for:
  1. Hotplates
  2. Vapor prime (HMDS) with edge grip handling
  3. Coolplates with TCU
  4. UV-curing
- Programmable temperature range up to 250°C
- Nitrogen purge
- Hotplate with electronic driven lift pins

Optional: With proximity balls



## I/O STATIONS & SUBSTRATE HANDLING

1. FOUP-loadports with mapper
2. Open cassette stations
3. SMIF-loadports
4. Wafer alignment (AOF)

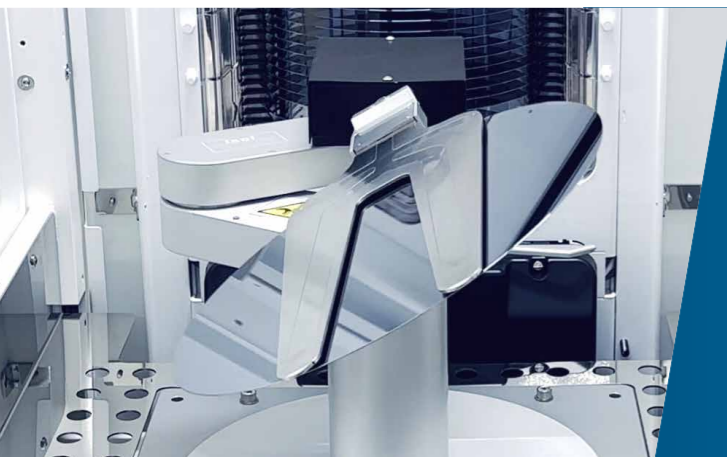


## GENTLE WAFER FLIP MODULE 180°

On the Wafer end effector or on a separate Flip module.

## OPTIONS

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





## MEDIA STORAGE CABINETS

### VARIOUS MEDIA CABINETS & TANK DESIGNS

- For manual filling or via bulk-systems
- Media cabinet includes up to 4x 10 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 Ø300mm 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. 2.0bar, max. 3.0bar
Exhaust process area:	60-180m <sup>3</sup> /h*
Drain:	To waste tank with high level sensors or to the facility drain* *chemical and process related



# TEMPORARY BONDING FOR INDUSTRIAL MANUFACTURING

The fully automatic stand-alone system was designed for temporary bonding of individual substrates onto rigid carriers. This process provides mechanical support for the further handling of very thin, sensitive substrates and flexible plastic materials. The unified and repeatable mounting process is ideal for applications such as CMP, grinding, polishing and etching.

The n.varixx 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 uniform TTV. Loading and unloading is done manually. Optionally, you can equip the system with an automatic handling system. The temporary bonding process is executed automatically.

## AUTOMATED TEMPORARY BONDING PROCESS SYSTEM

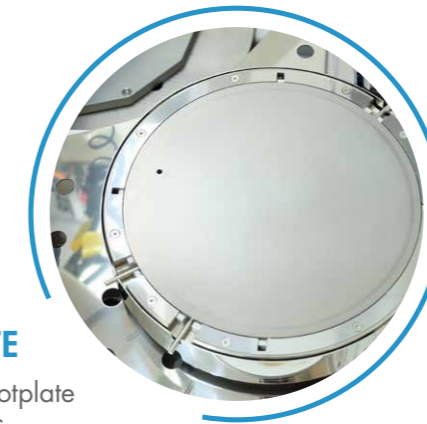
- Application: temporary bonding
- Wafer sizes up to Ø300mm and square substrates up to 230 mm x 230 mm (9" x 9")
- 22" color touch screen for easy operation
- Integrated hotplate up to 200 °C
- High accuracy of wafer and carrier alignment
- Vacuum end effector with flip function
- I/O-Station open cassette, SMIF- or FOUP-loadports
- Compatible with silicon, compound and glass materials

### Additional options:

- FFU / HEPA filter
- Vacuum pump

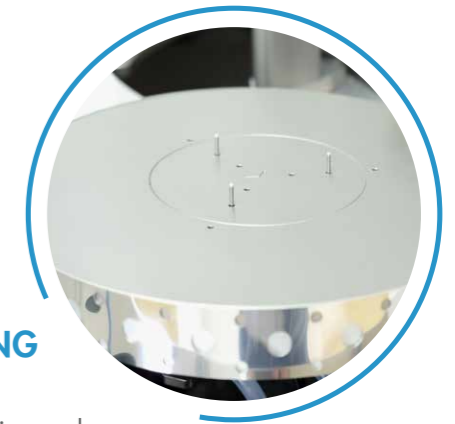


ADJUSTABLE CONTACT PRESSURE VIA USER-FRIENDLY CONTROL UNIT



### HOTPLATE

Integrated hotplate up to 200 °C



### COOLING PLATE

With lift pins and vacuum channels



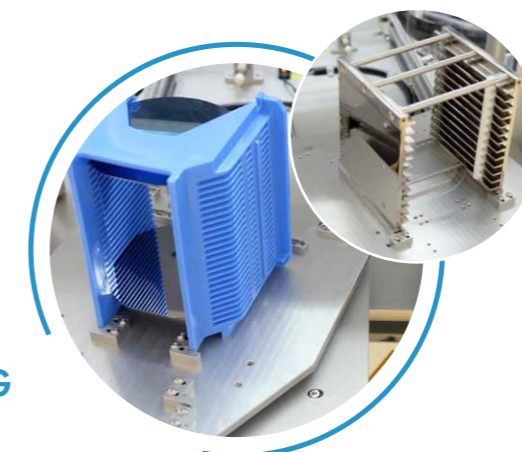
### END-EFFECTOR

With 180° wafer flip



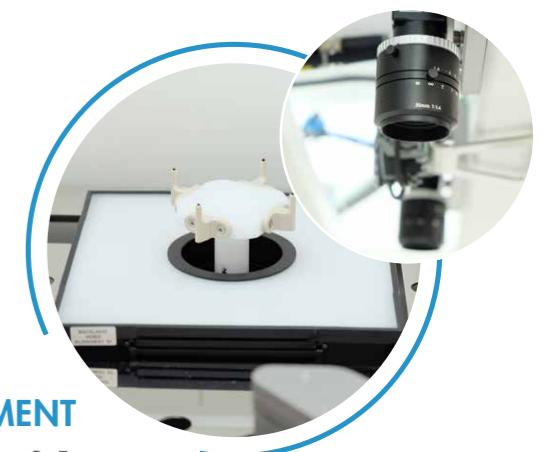
### HANDLING

Via robot transfer



### LOADING STATION

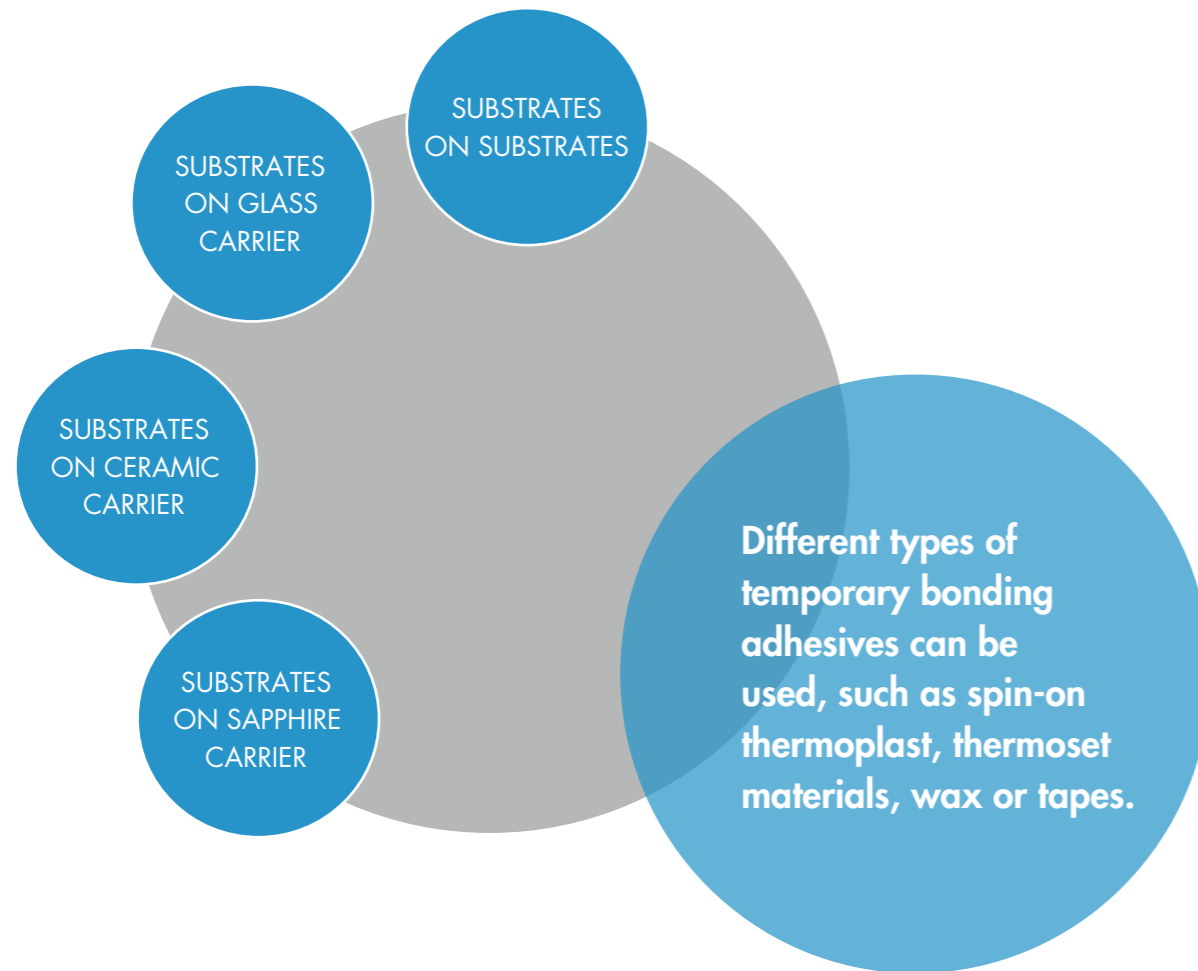
Up to 300 mm cassettes, SMIF- or FOUP-loadports



### ALIGNMENT

Cycle time <2,5 sec and measuring via CCD sensor

# TEMPORARY BONDING OF SUBSTRATES ONTO DIFFERENT TYPES OF CARRIERS



## TECHNICAL DATA

### GENERAL

Substrate size:	Up to Ø300 mm or 230 mm x 230 mm (9" x 9")
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 <i>*depending on wafer and tool size</i>

### REQUIREMENTS

Power:	400 VAC / 3 Phase / N / PE / 60 Hz
CDA:	8 bar ± 2 bar
Vacuum:	-0,8 bar
Exhaust cabinet:	50 - 150m <sup>3</sup> /h* <i>*chemical and process related</i>



# NOTION

S Y S T E M S



## HEADQUARTER

---

Notion Systems GmbH  
Werkstr. 2  
68723 Schwetzingen  
GERMANY

☎ +49 6202 57877-0  
☎ +49 6202 57877-99

sales@notion-systems.com  
www.notion-systems.com



## SINGEN

---

Notion Systems GmbH  
Josef-Schüttler-Str. 2  
78224 Singen  
GERMANY

☎ +49 7731 16995 0  
sales@notion-systems.com

## USA

---

Lab14 Inc.  
400 TradeCenter, Suite 4850  
Woburn, MA, 01801  
USA

☎ +1 (857) 298-8204  
info@lab14.group

## SINGAPORE

---

Lab14 Singapore Pte Ltd.  
#02-08 CleanTech One. 1  
Cleantech loop, 637145  
SINGAPORE

☎ +65 9170 5979  
info@lab14.group

