Small Footprint, Multi-Step Processing

MEI's Revolution multi-step wet processing systems combine ease of process control with a rotary robot design and precision engineering to create powerful, flexible tools with minimal fab footprints.

Rotary Robot for Minimal Fab Footprint
- 2–5 position, 2-axis design
- Multiple process tanks
- 150–300mm wafers
- Optional tank lids
- Pressure or optical tank level monitoring
- Quick dump rinse options

Versatile
- Multiple etch, strip and clean applications
- Easy recipe configuration
- Chemical spiking, dosing and fill options
- Acid and solvent models
- 2–5 process tanks
- Integrated Marangoni dryer

Performance and Yield with IDX Flexware
- Flexible
- Configurable
- Precise
- SECS/GEM compliant
- Touch-screen interface
- Simultaneous multiple lots and recipes

Applications
- FEOL Resist Strip
- RCA Clean
- BEOL Resist Strip
- InGaP-GaAs Etch
- Post CMP Clean
- Prediffusion Clean
- Oxide Etch
- SWP Clean
- Developer
- Nitride Etch

Designed for: Productivity  ■  Safety  ■  Reliability  ■  Configurability  ■  Low Cost  ■  Maintenance Friendly
**Process Tanks and QDR**
Features for Optimum Performance
- 2–5 tanks
- Megasonic or ultrasonic bath
- Heater (including solid state), chiller and dryer options
- Chemical spiking, in-tank blending, filtration concentration monitoring, bulk fill, agitation, DI flush and drain options
- PVDF, stainless, quartz, halar or natural poly
- Optional tank lids
- Pressure or optical tank level monitoring
- QDR tank with sparger bar spraying method, shared facilities, robust dump cylinder

**Integrated Dryer Option**
- Technology node 200nm
  - Best particle performance on hydrophilic surfaces
- Compatible with processing Teflon cassettes
- Slow drain Marangoni process
- Static wafer lifter to minimize water contact marks
- Dry cycle time 15–20 min
- 10–20 ml IPA per cycle

**System Options**
Custom Designed for Your Process
- 100–300mm wafer Sizes
- Input/output queues or manual loading
- Acid/base or solvent: Choice of FM4910 (Halar, CPVC, PVDF), polypropylene or stainless steel
- Chemical spiking, recirculation, and filtration
- Manual pour chemistry via deck mounted cup or chemical spiking reservoir
- End effector materials PVDF/PTFE, halar, quartz or stainless
- Fire suppression (available upon request)

**Additional Options**
- Heater/chiller/in-line/blanket/external
- Queue info
- Custom end effector dual sizes
- Integrated Marangoni dryer

**Superior Process Control**
- SECS/GEM compliant
- Recipe editor
- Advanced process controls
- Unlimited user/permission levels
- Easy-to-use, touch-screen interface
- Error logging and data graphing
- Barcode reader compatibility
- Remote access compatible
- I/O monitor displays status

**Analog Control**
Analog sensing enables software to control:
- In-tank blending
- Blending ratio creation
- Control DI water inject
- Control temperature
- Recirculation flow
- Spiking volume
Custom Designed
- MEI partnership design process
- MEI application solutions
- Custom tank, material and configuration
- Solid works modeling

Flow Modeling
- Fume capture
- Minimal exhaust

Chemical Spiking, Dosing and Bulk Fill Options
- Bulk fill via system request
- In-tank mixing
- Concentration monitors and controls
- Metering pump reservoir dispense
- Spiking flow rate monitoring

Rotary Robot
- Robust, versatile, serviceable
- 2–5 position
- 2-axis design
- 4 sec transfer speed
- Product size driven custom end effector
- Variable speed agitation
- “Off the shelf components”
- Field proven
### Typical Configurations (Other configurations available)

<table>
<thead>
<tr>
<th>Layout/Footprint</th>
<th>Classic-3</th>
<th>Radial-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Static Tank Size</td>
<td>Dual 200mm</td>
<td>Single 200mm/Dual 150mm</td>
</tr>
<tr>
<td>Max Recirculated Tank Size</td>
<td>Single 200mm/Dual 150mm</td>
<td>Single 150mm</td>
</tr>
<tr>
<td>Concurrent Lots Processed</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Exhaust</td>
<td>Top or Bottom</td>
<td>Bottom</td>
</tr>
<tr>
<td>Available Tank Lids</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Available Mega/Ultra Sonics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Maintenance Access</td>
<td>Back</td>
<td>Back</td>
</tr>
<tr>
<td>Available Spiking</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### General Specifications
- **Shell style:** Single shell fully integrated design.
- **Shell material:** Choice of FM4910 (Halar, CPVC, PVDF), polypropylene or stainless steel.
- **Agitation:** Standard
- **Filter Recirculation:** Standard
- **Facilities:** Bottom-back mounted plenum drains, top or back exhaust connections available, low exhaust requirements; shared facilities and electronics. UL compliant electrical components.

### Typical Facility Table (Will change to specifications)

<table>
<thead>
<tr>
<th>Description</th>
<th>Connection</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2 Supply</td>
<td>3/8” Swagelok</td>
<td>40–60 PSI @ 5–7 SCFM</td>
</tr>
<tr>
<td>CDA Supply</td>
<td>1/2” Swagelok</td>
<td>60–80 PSI @ 15–30 SCFM</td>
</tr>
<tr>
<td>Cold Di Water Input</td>
<td>1” Flaretek</td>
<td>45–60 PSI 10–20 GPM</td>
</tr>
<tr>
<td>Front Plenum Rinse Drain</td>
<td>2” Male Pipe</td>
<td>N/A</td>
</tr>
<tr>
<td>Back Plenum Drain</td>
<td>3/4” Flaretek/2” Male Pipe</td>
<td>N/A</td>
</tr>
<tr>
<td>Process Tank Drain</td>
<td>3/4” Flaretek</td>
<td>N/A</td>
</tr>
<tr>
<td>Cold Di Return</td>
<td>1/2” Flaretek</td>
<td>N/A</td>
</tr>
<tr>
<td>Process Exhaust</td>
<td>10” Duct</td>
<td>250–650 CFM @ 1” Static <em>Minimum</em></td>
</tr>
<tr>
<td>Plumbing Compartment Exhaust</td>
<td>4” Duct</td>
<td>100–200 CFM @ 1” Static <em>Minimum</em></td>
</tr>
<tr>
<td>Hot Di Input (Module 1 only)</td>
<td>1” Flaretek</td>
<td>Connect to Water Heater</td>
</tr>
<tr>
<td>Chem Bulkfill</td>
<td>3/4” Flaretek</td>
<td>N/A</td>
</tr>
<tr>
<td>Electrical Input</td>
<td>5-Wire</td>
<td>208V 45A–100A FLA</td>
</tr>
<tr>
<td>Ozone Injection</td>
<td>1/4” Swagelok</td>
<td>N/A</td>
</tr>
<tr>
<td>CO2 Connection</td>
<td>TBD</td>
<td>C02 Bottles Per Fire System Spec</td>
</tr>
</tbody>
</table>

#### Designed for Reliability
- Limited PM requirements
- Field proven reliability
- Semi-S2 compliance
- Durable “off the shelf” components
- Nitrogen purged electrical compartments
- Designed to provide MTBF > 1,500 hours – E1092

#### Low Cost of Ownership
- Extended tank life
- Improved process control
- Reduced DI water usage
- Reduced chemistry usage
- Easy installation

#### Designed for Safety
- Semi-S2 third party inspection optional
- FM4910 material standard
- S8 compliant
- UL/NFPA79/NEC
- CE optional

---

**MEI's Award Winning Service and Support**

MEI Global Field Service Team
- Final test and verification
- Standard one year parts and labor warranty
- Two year optional warranty
- Full field service support, on-site warranty coverage
- On-site training provided