



Semiconductor System Reconditioning

Upgrades, Refurbishment & Repairs



Repair, Recondition, Retrofit & Upgrade

Extend the Life of Your Wet Process Systems, SRDs & Chem Delivery Systems

MEI can extend the usable life of your wet processing equipment, from wet systems and dryers, to processes and plumbing. Our wet process system retrofits, reconditioning and upgrade work includes manual wet benches, and semi-automated or fully automated processing equipment, SRDs and chemical delivery systems.

Reasons to Recondition

- Save money by extending useful life
- Improve throughput or yield
- Refurbish unsupported equipment
- Upgrade automation, motion and/or robotic controls
- Accommodate larger wafers
- Improve ergonomics
- Upgrade chemical systems and processes
- Upgrade electrical systems
- Improve ventilation and safety features

Used Semiconductor Equipment & Support System Retrofits

MEI's high quality, custom work upgrading used semiconductor equipment can include:

- Repair—with replacement or retrofitted parts
- Refurbish and Recondition—with existing design and function, but restoring to good working order
- Retrofits—changing robots, baths, software, etc.
- Upgrades and Overhauls—to add new or improved features

MEI Upgrades and Repairs the Following Brands:

- | | |
|------------------------|-------------------------|
| • Akrion/SMS | • Chemical Safety Tech. |
| • Amerimade | • Semitool (STI) |
| • Bold | • UltraFab |
| • BPS | • Universal Plastics |
| • SCP | • Universal Systems |
| • SEZ | • Verteq |
| • Santa Clara Plastics | • Others |

And Spin/Rinse Dryers:

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|------------|----------|
| • Semitool | • Verteq |
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MEI's Line of Wet Processing Systems

- **Evolution**
In-line, fully-automated, high throughput, wet processing systems
- **Revolution**
Rotary, automated, multiple-step, modular, wet processing systems
- **Advancer (and Advancer Gemini)**
Semi-automated, single-step, modular, wet processing systems
- **Achiever**
Manual wet benches, fume hoods and parts cleaning benches

MEI Products & Services

- Wet Process Systems
- Chemical Delivery & Handling Systems
- IDX Control Automation Software
- Used Semiconductor Systems Reconditioning
- Cleanroom Safety & Ergonomic Equipment
- Field Repair & Service

Used System Upgrades & Reconditioning

Retrofit Unsupported Equipment

Save money and keep your system in use by retrofitting, refurbishing, reconditioning or upgrading it with MEI's custom capabilities.

- Replace failing parts
- Replace obsolete components
- Upgrade equipment and material
- Completely redesign a system within the confines of its current shell and footprint

Automation, Motion Control or Robotics

- Upgrade from manual to semi-automatic
- Upgrade, rebuild or refurbish robots and robotic controllers to improve process control and usability
- Install new controls with IDX Automation Software
- Upgrade operator process interface, making it easier for operators to learn and use
- Providing better process monitoring and control
- Providing easier access and maintenance of the tool
- Add control systems—PLC and cell controllers
- New robots with off-the-shelf parts

Ergonomic Upgrades

We have worked extensively with tool operators, maintenance technicians and safety/ergonomic engineers to develop what we feel are best-in-class ergonomic solutions.

- New loading systems allow operators to move product in and out of the equipment more ergonomically
- Ergonomic screens with swingarm positioning and touchscreen controls create a more accommodating user interface



Accommodate Larger Wafers

- Increase wafer size up to 300 mm



Software Upgrades



Before: Obsolete Controller & Old Robot

Wet Process & Chemical Delivery System Upgrade & Retrofit Examples

- New robot & robot arms
- Wafer size or wafer carrier changes
- Process & chemistry changes
- Software upgrade
- New FM4910 upgraded enclosures
- Add in-line heater & safety circuits
- Exhaust enhancements
- Chemical spiking



Custom Process & Chemical Tanks



Refurbished SRD



Upgraded Pneumatics

Used System Upgrades & Reconditioning



Motion Control Upgrades

Chemical Systems & Process Upgrades

- Refurbish or replace chemical tanks and baths
- Modify process layout of chemical and rinse tanks
- Change materials to quartz, PTFE, Halar and Teflon
- Upgrade controls, plumbing and electronics
- Integrate megasonics, ultrasonics, nitrogen or mechanical agitation
- Upgrade to FM4910 enclosures
- Add MEI IDX Automation Software for process control
- Upgrade level sensors
- Add scales to include mixing capability
- Add chemical spiking and/or concentration monitoring and control
- Convert from manual fill to bulk fill



After: Touchscreen Single-point Control in New Robot

Electrical Upgrades

MEI is a UL certified panel manufacturer.

- Alterations to meet new standards or codes
- Add in-line heaters and heat exchangers
- Include heater/chillers, enclosures, pumps and compressor, and probes, sensors and switches
- Add temperature control, including heater circuit control and safety circuits

Ventilation and Safety Upgrades

- Exhaust collars
- Exhaust rerouting and monitoring
- Fire suppression upgrade
- Visible and audible alarms
- Tank lids, fume control and enclosures
- Condensing systems

Spin Rinse Dryers (SRD) Upgrade & Retrofit Examples

New FM4910 upgraded enclosures
Motor rebuilds & replacements
New controllers
Bowl & rotor electro polishing
Heater replacements
Rotor refurbishing & replacements
Rotor balancing
New door seal



New Electrical Panels—UL Listed



Ergonomic Cassette Handling



Automated wet bench with new IDX controls



MEI, LLC
3838 Western Way NE
Albany, OR 97321

[www.meillc.com/
custom_retrofits_and_upgrades.asp](http://www.meillc.com/custom_retrofits_and_upgrades.asp)

Phone 541-917-3626
Toll free 877-858-3270
Fax 541-917-3623
Sales 541-704-2424
Sales Fax 541-917-0174

Repair & Service

MEI provides service and support for both upgraded and original wet process equipment. We also offer repair and support service for strategic customers for many brands and OEM equipment.

In addition to repairing operational failures, MEI has an array of field service capabilities designed to keep your wet process tools in service and operating at high throughput levels. Our capabilities range from full service contracts with field service technicians at your site on a daily basis, to hourly or by-the-job fees charged on a case-by-case basis. You will find our technicians to be knowledgeable, professional and responsive, usually able to be at your site and troubleshooting within 24-hours or less. We also provide preventative maintenance services on a contract basis and will be happy to provide you, free of charge, an audit of your existing tools complete with maintenance and upgrade recommendations.

Warranty Option

Most MEI reconditioning work is performed with a 1-year warranty. Multi year warranties are available as options on some types of system upgrades and retrofits.

Fully Supported:

- Full start-up, testing, and training available
- MEI's technical services ensure the best possible operation and process results from wet process improvements.



Award Winning Service & Support

MEI provides award winning service and support. We focus on anticipating and satisfying our customer needs by becoming partners in their success. This commitment shows: MEI has been selected as Supplier of the Year by Analog Devices for 2003, 2004, 2005, 2006 and 2007. Based on an exacting supplier rating program, the ADI Supplier Awards recognize those suppliers who distinguish themselves in multiple categories, including consistent, outstanding performance and continuous improvement; strategic contribution to ADI's technology and market leadership; anticipation and delivery of cost reduction initiatives; and exemplary commitment to manufacturing excellence.