



# Automated Linear Transfer **DETAILS**

## FLEXIBLE TRANSPORT SYSTEM (FTS)

- Easily integrated with ballroom or inline process flows worldwide
- Adaptable to variable process times and throughputs via configurable, "Lego-like" building blocks
- Excellent particle mitigation
  - Shields surround lower carriage area
  - Shields on carriage and chamber form a labyrinth seal to contain particles
  - Rail area can be vacuum purged in each zone
- Windows-based environment seamlessly interfaces with YES's new software framework
- No vacuum robot required

## IN-SITU ENDPOINT DETECTION TECHNOLOGY (OPTIONAL)

- Enovasense Laser non-destructive, non-contact in-situ head
- Realtime endpoint detection for precise control
- Multiple metals can be measured

## HIGHEST SOLVENT PROCESSING SAFETY STANDARDS

- All stainless-steel structures with diamond-wired safety glass on front windows and FM4910-rated clear CPVC on rear windows
- Use of intrinsically safe barriers for all sensors and high/low voltage devices
- Nitrogen purge of all electrical and lighting compartments
- Extensive grounding of parts, pumps, and panels
- Complete fire detection and suppression system (third-party design) licensed and compliant with Factory Mutual requirements, Class I Div1 and Class I Div2
- Advanced fume mitigation exhaust designs

## TANK DESIGN

- Four-corner overflow weir paths for superior contamination control
- Chemistry is recirculated, temperature-conditioned, and concentration-controlled within tank
- Optional spray rinse during transfer prevents unwanted build-up of chemical residues

### FEATURES

### BENEFITS

Immersion system with programmable fluid-flow controls	Ability to fine tune chemical flow for optimum exchange rate and can prevent foaming action when surfactants are added
Inline heating with predictive temperature control	Improves development rate and uniformity
Reclaim system capability	Reduces cost of ownership
Multiple tank materials available	Matched to customer's preferred chemistries
Multiple inline filtration systems	Independent recirculation systems reduce filter clogging and improve strip performance. Allows progressive resist thickness removal and incremental reduction in filtration pore size down to 0.1µm
High temperature processing (80°-125°C)	Provides flexibility to utilize various chemistries as well as an increase in removal rate
Laminar chemical flow	Prevents non-uniformity front to back and within panel
Multiple drying solutions available	Customized design as needed to eliminate staining caused by incomplete drying process

## Yield Engineering Systems, Inc.

Call: **1-510-954-6889** (worldwide) or **1-888-YES-3637** (US toll free)

[yieldengineering.com](http://yieldengineering.com)



PROCESS SOLUTIONS, EQUIPMENT AND SERVICES

# Automated Linear Transfer (ALT)

## Wet Process Surface Prep System for Wafers, Polysilicon Chunk & Custom Substrates



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# Automated Linear Transfer (ALT)

## Wet Process Surface Prep System for Wafers, Polysilicon Chunk & Custom Substrates



The versatile, modular ALT system is the result of years of wet processing experience unmatched in the industry. It is a proven and trusted choice for a wide range of in-line processes – from SC1, SC2, and pre-diffusion cleans to metal etch, acidic processes, and resist strip.

Engineered to address the customer's specific requirements, the flexible ALT platform can be configured for manual load, semi-automatic load, or fully automatic operation. ALT's proven immersion technology offers greater thermal uniformity, reduced chemical usage, and uniform chemical exposure, while its unique all-side overflow baths minimize surface contamination.

ALT system modules incorporate the finest quality components and construction. Options include: FM-4910 cleanroom-certified plastics and ULPA (Ultra Low Particulate Air) filtration to remove 99.999% of particles greater than or equal to 0.1 µm. Stainless steel modules are available for solvent-based processes.

### MANUAL LOAD DESIGNS

- Operator loads process cassettes
- Recipe-based automatic transfer
- Single or multiple cassettes to match throughput need
- Multi-diameter options
  - 100 mm: up to 4 cassettes
  - 150 mm: 1, 2 or 3 cassettes
  - 200 mm: 1, 2 or 3 cassettes
- Available in stainless for solvent based processes
  - Resist stripping
  - Organic cleans
- Composite structures
- Loading alcoves

### SEMI-AUTOMATIC LOAD DESIGNS

- Operator loads transport cassettes
- Incoming cassette is tilted from vertical to horizontal position
- Tool transfers wafers to process cassettes or fixtures
- After processing, wafers are placed back in cassettes and tilted to vertical position for operator pick up

### FULL AUTOMATIC LOAD

- 300 mm with dual load ports
- 200 mm with SMIF-pod port
- Single-wafer robotic wafer transfer
- RFID lot tracking available
- SECS/GEM compliance (optional)

### 300 MM INTERFACE

- Single or dual FOUP loadports
- Single-wafer robot arm
- Custom PFA process cassette with reduced pitch available
- Tilter achieves vertical wafer orientation
- Dual loadports and dual dryers for high throughput

### CASSETTELESS ALT

- Wafers are automatically transferred from incoming FOUP or cassette
- Single wafer transfer for 300 mm
- Full lot (25 wafer) transfer for 200mm
- Cassetteless processing provides
  - Best fluid dynamics with no "shadowing"
  - Less chemical drag-out
  - Cleanest process
- Exclusive design is robust, with no compression force applied to wafers

### SERVICEABILITY

- Full visibility service panels
- Dedicated drains for fluoride wastes or precious metal reclaim
- Segregated enclosures
- Modular wiring and piping

### STANDARD REAR SERVICE CONFIGURATION

- Clear access panels on electrical and pressure piping
- Dedicated exhaust ports with gauge for each module
- Single point connection for DI, N2, CDA, bulk chemicals
- Main power disconnect

### PROCESS CONTROL

- Variable, recipe-controlled flow rates in all baths
- Predictive bath temperature controls