EVG 150 coater/developer User Manual

Version of 2025-04-02.
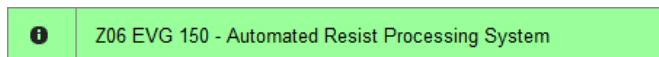
1. Introduction

This manual explains how to operate the EVG 150 automatic coater/developer equipment.

2. Login on CAE

Login with your "CMi" username and password on the Zone 06 CAE accounting computer.

Select the "EVG 150 – Automated Resist Processing System"

Z06 EVG 150 - Automated Resist Processing System

3. Login and checking the tool status in EVG CIMFramework

Note: All the EVG equipment in Zone 6 are using a unified GUI program platform called EVG CIMFramework.
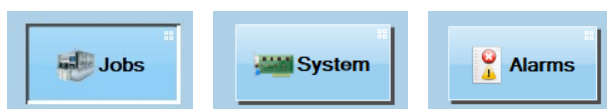

EVG CIMFramework
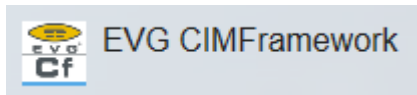
The operating procedure will be very similar on all tools.

The first operation will be to login on the UI software with username: **op** and password: **op**
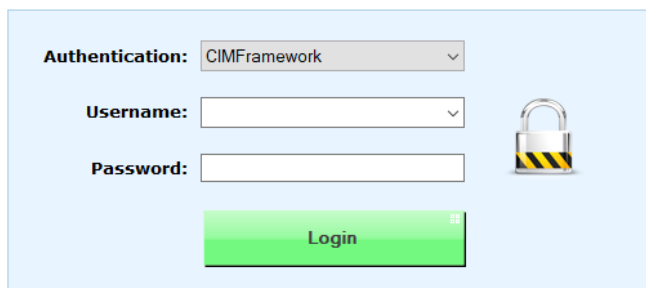
At the bottom of the user interface, different tabs are available, but only **"Jobs"**, "System" and "Alarms" will be useful to EVG150 operators.

Before starting any operation with the tool, please check:

1) Check that the status of all modules is OK: In *"Jobs"* → *"Module Overview"*, check that the status of all modules (load ports, spin and bake modules, robot, etc…) is "green". See, for instance, coater A and robot status below.

2) Check that there are no active alarms: The last activated alarm will show as a red banner on top of the UI.

08:16:30 Fab I/O Module: Equipment disabled by external digital input

In addition, the alarm symbol will show on the UI top-right side:


The full list of alarms, including the one which have been cleared will be visible by clicking on the "Alarms" button.

3) Check the status of all media (photoresist, solvent, developers) by

going to the following section: "System" → "Facilities" → "Tanks":

- Photoresists pumps are displayed on the right side of the UI. Make sure the status show "Full". If is shows "OK", please inform the staff as the PR bottle will need to be changed soon.
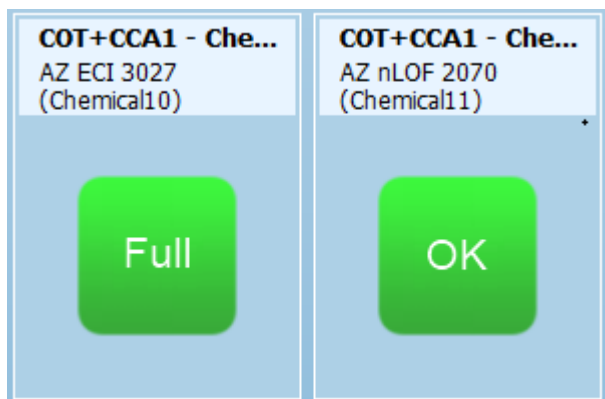
Photoresist pumps status: a) "Full" (left) → no action needed; b) "OK" (right) → the system can be used but the PR bottle will need to be exchanged soon.

- Solvent, Developer, Waste containers are monitor by the weight of the canister. Make sure to warn the staff when the scale goes into the "yellow" section.
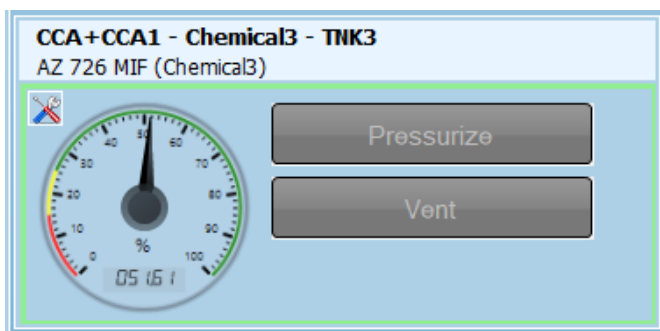
Media (AZ 726 MIF) canister at 50% level.

4. Loading wafers

The EVG150 features two load ports (LP1 & LP2). By default, load ports are assigned to:

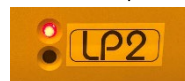- Load port N°1 : coating
- Load port N°2 : development

Please pay attention to the two LEDs that highlight the load port status:
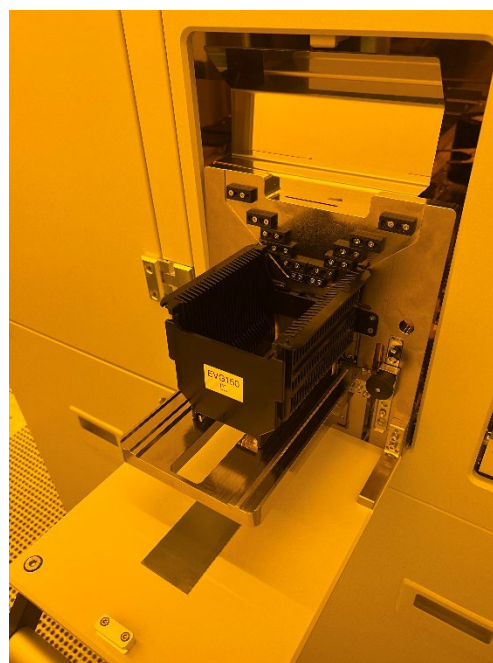
- **Green** LED = Load port is unlocked and can be opened.

- **Red** LED (during operation) = Load port is locked and cannot be opened.

If the load port status LED is green, it can be opened using the handle:

Pick up the cassette and load up to 25 wafers. Make sure that the wafer flat is not positioned in the front of the cassette, as it may create issues with the laser scanning unit.
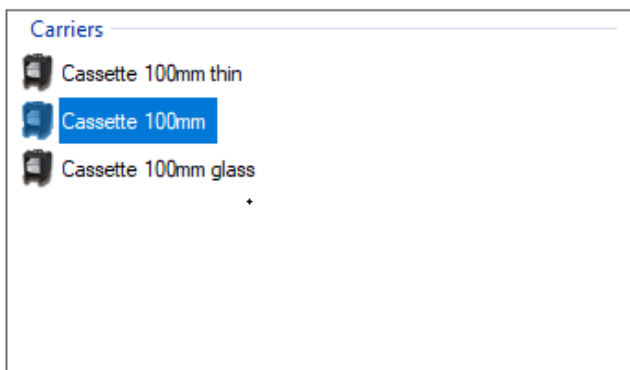
Close the load port and scan the cassette by right-clicking the load port in the UI and selecting "Load Carrier".
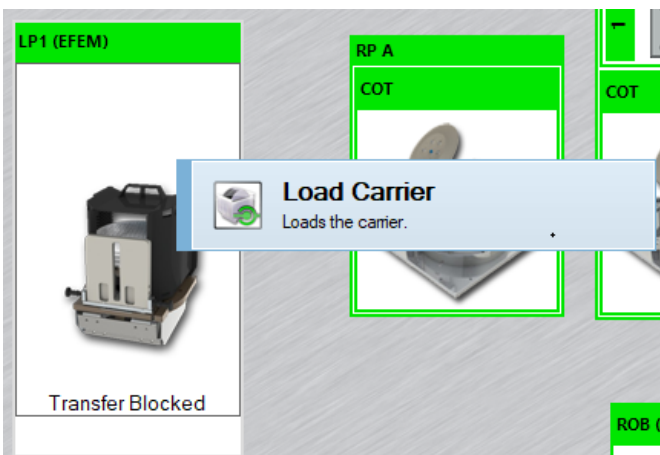

The UI will prompt a new window for material selection.

Select the correct profile:

- Cassette 100mm: standard opaque wafers (silicon, …), 525um thick.

- Cassette 100mm thin: double-side polished wafers, ≤ 380um thick
- Cassette 100mm glass: standard 515um thick transparent wafers

The equipment will proceed with a laser scan of the cassette. Make sure all wafers are found correctly, and in particular that there are no double-slotted or cross-slotted wafers. Then, validate with "OK".
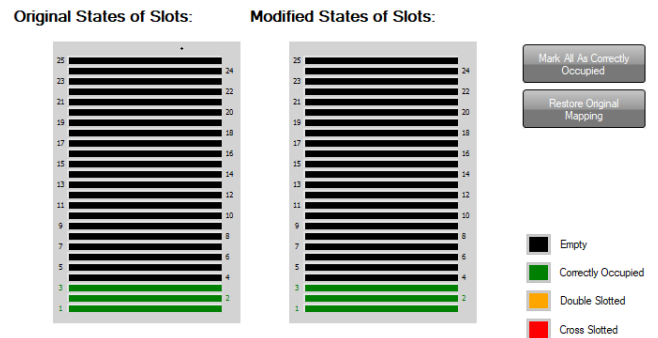
Scanned cassette with 3 wafers correctly detected

After scanning, the carrier will be locked (red LED)

5. Starting a batch

Jobs are started by pressing the "Add Job" button on the left side of the UI.

An explorer-like window will pop up. Standard recipes are stored in different folders depending on the process (coating, development, misc.…), module (coater A, B or C) and wafer size:

1) CMi.COATING.4in.A: Photoresist coating in the coater A → AZ 1512 HS, AZ ECI 3007, AZ nLOF2020.

2) CMi.COATING.4in.B: Photoresist coating in the coater B → AZ ECI 3027, AZ nLOF 2070, AZ P4K AP.

3) CMi.COATING.4in.C: Bottom layers coating in the coater C → LOR 5A, LOR 15C, XHRiC-16.

4) <u>CMi.COATING.4in.C_A</u>: Double layer processes for lift-off (LOR) or with BARC layer (XHRiC) combined with positive photoresists (AZ 1512, AZ ECI 3007, …)

5) <u>CMi.DEVELOPMENT.4in</u>: Development sequences

Coating options are:

- <u>Surface preparation</u>: HMDS, dehydrate or none
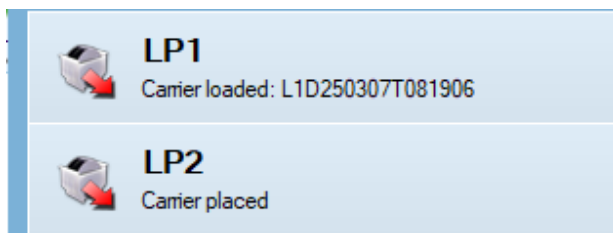- <u>Solvent clean</u>: standard or edge bead removal (EBR)

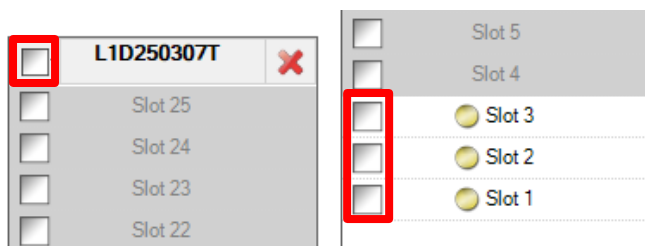After selection of the recipe, users will proceed by clicking on "NEXT":
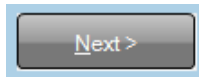
In the following window, users will need to assign wafers. This is done by clicking on:

Carriers that have already be scanned are identified as "loaded" and the one that are in place but not scanned yet are "placed". Select the appropriate carrier.
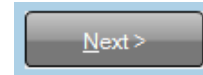

Wafers are selected in the next window, individually or all together (with the top button) by ticking the checkboxes.

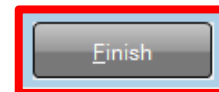*Selection of the whole carrier (left) or individual wafers (right)*

After selection of the wafers, users will proceed by clicking on "NEXT" one more time:

A summary of the process will be presented, together with a validation check.
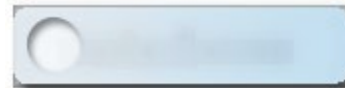

Recipe OK. Click Finish to start process job.
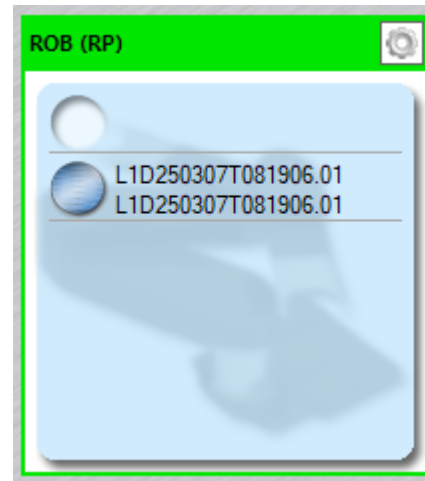
Proceed with:

The process will start and can be monitored in the *"Module Overview"* window:
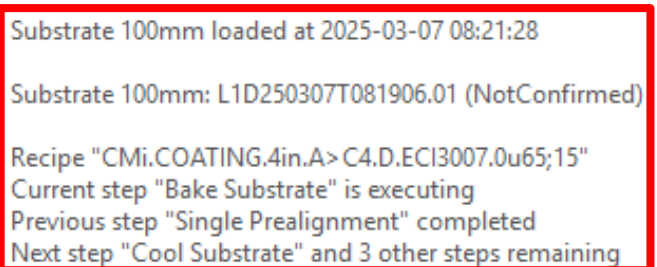
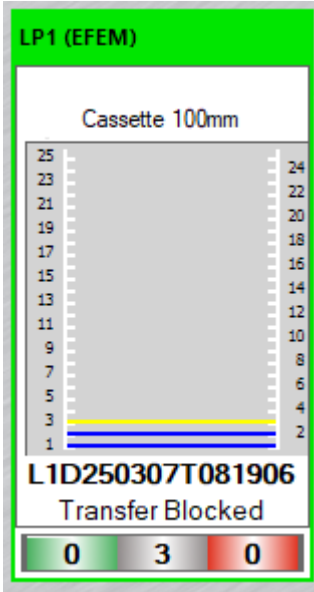- Modules that are active but not occupied are shown as:

- On modules that are occupied, the wafer ID can be seen:

- A contextual status is shown when hovering over a wafer with the mouse:

Substrate 100mm loaded at 2025-03-07 08:21:28

Substrate 100mm: L1D250307T081906.01 (NotConfirmed)

Recipe "CMi.COATING.4in.A>C4.D.ECI3007.0u65;15"
Current step "Bake Substrate" is executing
Previous step "Single Prealignment" completed
Next step "Cool Substrate" and 3 other steps remaining

- Pay attention to the status of each wafer in the cassette:

Color code:

Yellow: the wafer is in the cassette, waiting for pick-up

Blue: the wafer is in process inside the machine

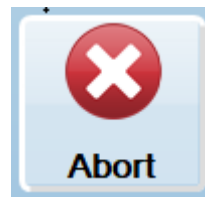Green: the wafer is back in the cassette, with process complete

- When all wafers are processed, the status of the cassette switch to "Ready to unload" and the load port can be opened to remove the carrier.

Process interruption options:

The "Stop" button will interrupt the loading of wafers in the machine. Wafers that are already in will complete processing.

The "Abort" button will interrupt all active processes and robot movement. **Only use in case of serious safety risks for the tool (e.g. broken wafer).**

Note: At any time, the information about the batch duration can be found in the "*Job Overview*":

Name	Recipe	State	Progress	Remaining Time
⚙ CJ_20250307_082057		Executing		10min
⚙ PJ_20250307_081938	CMi.COATING.4in.A>C4.D.ECI3007.0u65;15	Processing		10min
≡ Material Input 1				
L1D250307T081906.01		In Process		05min
L1D250307T081906.02		In Process		08min
L1D250307T081906.03		Needs Processing		10min