Sawatec LSM-200 and HP-401-Z User Manual

Version of 2020-01-04.

1. Introduction

This user manual explains how to operate the Sawatec LSM-200 manual coater and the Sawatec HP-401-Z hotplate for the coating and drying/curing of SU-8 or polyimide (PI) films.

2. Login

- Login on "Z01 Sawatec LSM200" or "Z01 Sawatec HP401Z" with CAE on zone 01 accounting computer.
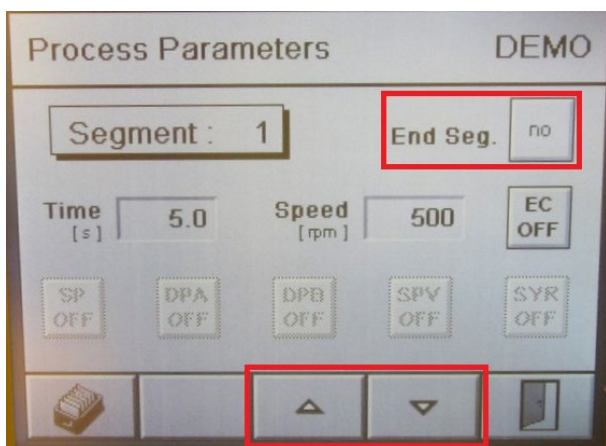
Z01 Sawatec HP401Z Hotplate for Soft-bake

Z01 Sawatec LSM200 Coater for negative resist

3. Sawatec LSM-200 coater operation

- First, users should edit the spin profile recipe according to the SU-8 or PI runcards.

- Recipe edition is accessed through the Sawatec touch-sensitive panel by pressing the following very intuitive ☺ sequence:

 → →

- Next, users will be able to edit the **Time [s]** and **Speed [rpm]** of all segments. Up/Down arrows are used to cycle through the segments.

- For the last step (usually segment N°8), make sure to activate **End Seg. YES** so that following segments are ignored.

- After edition, users can save (and later load) the recipe, with a name and description, by pressing this icon:
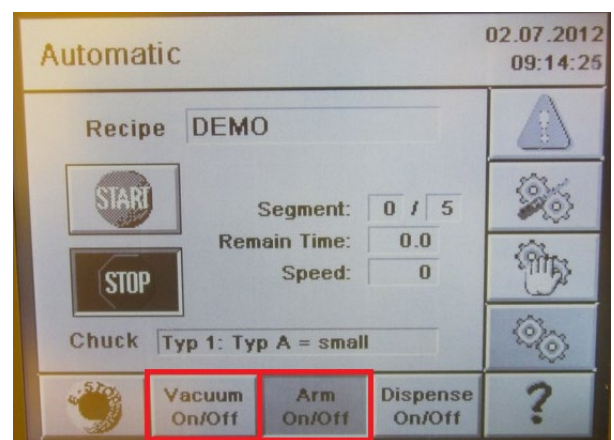

- After edition, users can go back in the menus with the "door" icon:

- Next, users will access the menu to start the spin-coating process with:
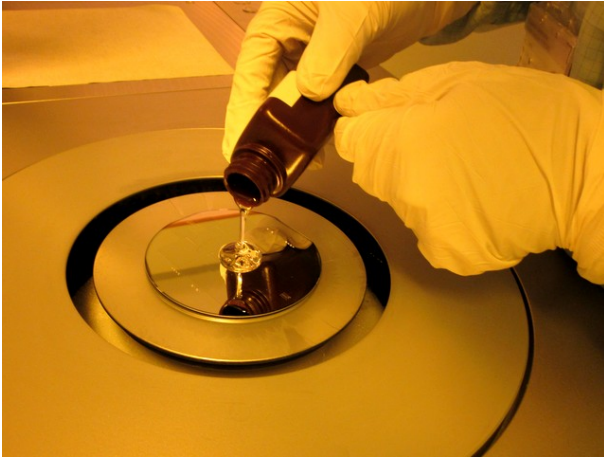

- Before going further, always check that the "Arm" button is ON (greyed out) so that the cover glass will cover the bowl during spin-coating.

- It is recommended to activate the "Vacuum" and check that the wafer chuck vacuum is close to -0.8 Bar.

- The SU-8 or PI resists are dispensed directly from the bottle. The resist pool should be approximatively 5cm diameter.

- Make sure that the cover glass is not obstructed by any objects and start the process:

- Wait for process completion. The cover glass will move back to standby position. The wafer is then ready to be transferred to the hotplate.
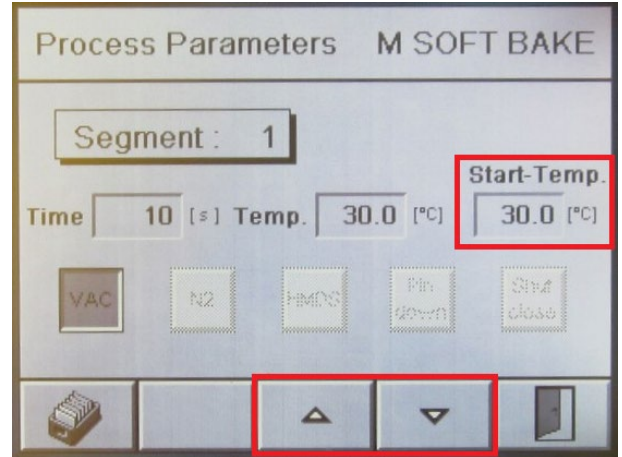
4. Sawatec HP-401-Z hotplate operation

- Before transferring wafers to the hotplate, always double check that the actual temperature is not too high (from previous processed).

- Wafers are loaded on pins. Maximum 5 wafers are processed in the same batch.

- First, users should edit the softbake or PEB profile recipe according to the SU-8 (or PI) runcards.

  Note: For PI baking, a "fast" softbake process at 65° and 105° is generally preferred. It is done on the free-to-use Süss hotplates close to the Sawatec units.

- Recipe edition is accessed through the Sawatec touch-sensitive panel by pressing the following very intuitive ☺ sequence:

- Next, users will be able to edit the **Time [s]** and **Temp. [°C]** of all segments. Up/Down arrows are used to cycle through the segments. The 1st segment will have both starting and final temperatures, and it will be generally used to do a RT relaxation before softbaking.

- For the last step (usually segment N°4 or N°5), make sure to activate **End Seg. YES** so that following segments are ignored.

- After edition, users can save (and later load) the recipe, with a name and description, by pressing this icon:

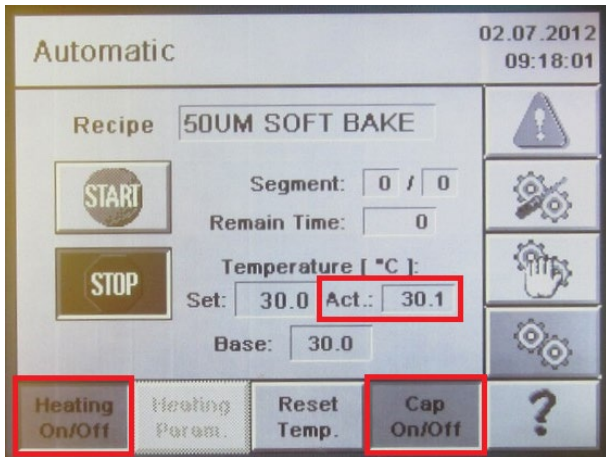- After edition, users can go back in the menus with the "door" icon:

- Next, users will access the menu to start the spin-coating process with:

- Before going further, always check that the "Heating" and "Cap" buttons are ON (greyed out) so that the heating will be ON and the cap will close providing vapour confinement and exhaust during the bake.

  In addition, make sure that the actual temperature is less than 5°C difference from the programmed starting temperature os the system will give an alarm.

- Start the bake process:

- Wait for process completion. The cap will open when done. The wafer is then ready to be stored in your box ready for the next step.

  Note: The Sawatec hotplate does not have any active cooling so cooling down can take longer than programmed. It is safe to remove wafers when the temperature is < 70°C.

- Clean the working place properly.

- When done, logout with CAE on zone 01 accounting computer.