

SB6 – Suss Microtec SB6 substrate bonder

Version of 2017-08-11. Get the latest one at cmi.epfl.ch/packaging/files/SB6/SB6.manual.pdf

1. Introduction

This user manual explains how to operate the Suss SB6 substrate bonder with manual preparation of the fixture. For fixture preparation with fine alignment in the MA/BA6 machine, please refer to the appropriate manual.

2. Login & System Initialization

- Login for “Suss SB6 – vacuum anodic bonder” on the zone 6 accounting computer.

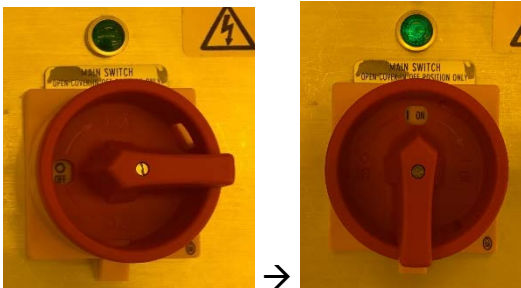
Z06 Suss SB6 - Vacuum anodic bonder

- Before operating the tool, check on the maintenance logbook that the actual configuration matches your request. If it is not the case, contact the CMi staff.

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A = Anodic / G = Glue (Su8, cyclotene) / P = Parylene / E = Eutectic

- Turn the main power switch to ON.



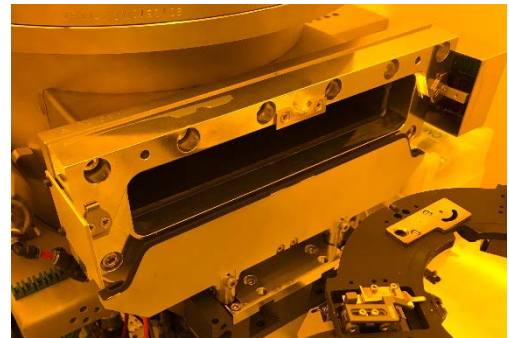
- Immediately press the green “power ON” button.



- Start the computer at the rear of the tool, wait for Windows NT startup and open your session with “ctrl+alt+del”. Login information is found on the computer screen.
- Wait for SB6 user interface GUI bootup. Login on the software with common user account.



- The system initialization ends with a safety open/close test of the load-lock door.

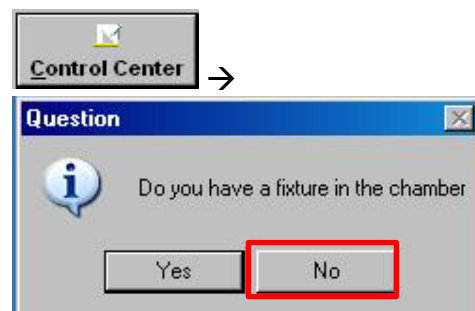


N.B. Errors during this test such as “membrane error” indicates that the “power ON” button was not pressed at the correct time. In addition, users can check the communication “KSD” icon in the taskbar:



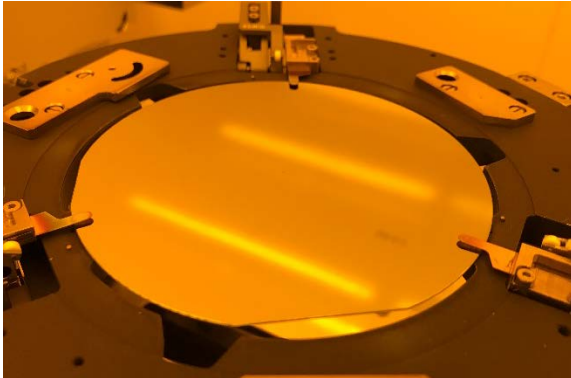
In case of initialization failure, turn off the computer, the main power switch and restart the procedure.

- Before starting operation, open the *Control Center*. Answer **NO** to <<fixture inside yes/no>> question.

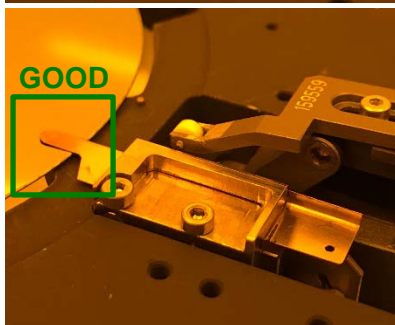
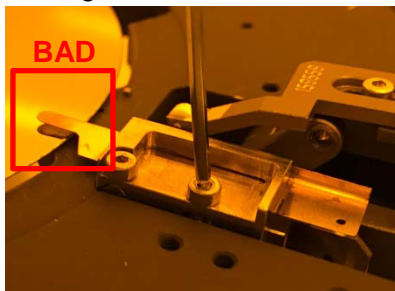


3. Manual Fixture Preparation

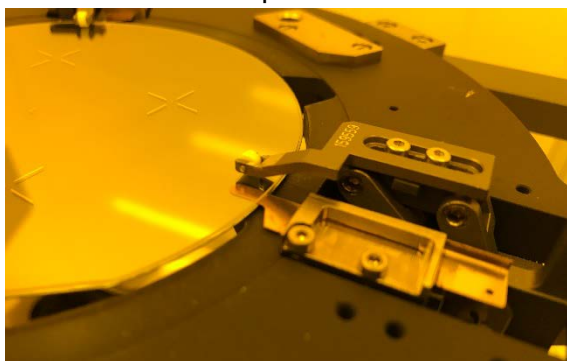
- Place the first wafer (silicon) on the fixture, surface to be bonded “up”, and then insert the spacers. Make sure the flat is not located near the three contact points.



- Adjust the spacers height according to your wafer thickness using the appropriate tooling and turning the second screw :



- Place the second wafer (glass) on top of the first one, surface to be bonded “down”, and then insert the clamps.



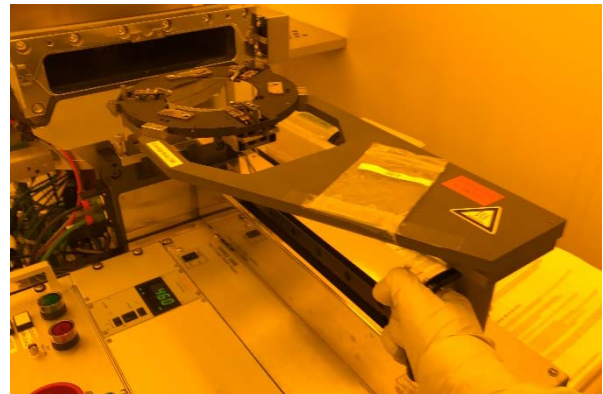
- Place the fixture correctly on the loading arm.

4. Loading/Unloading the fixture

- From the *Control Center*, click on “Load” and wait for the action “Move slide inside”, then push the loading arm inside.



Make sure to push (and pull) the loading arm using the handle!



- Once the “in” end-switch is reached, click on “Move” to automatically lift the fixture from the arm.



- When the tool asks, move the loading arm to the “out” end-switch and then click on “Finish” to complete the loading process. Unloading is possible at this time. Always remember :

Black font = Waiting for next “click” action.

Blue font = Tool is working for you, please wait

Red font = Tool is waiting for the operator to move correctly the loading arm up to the end-switch

5. Starting and Monitoring

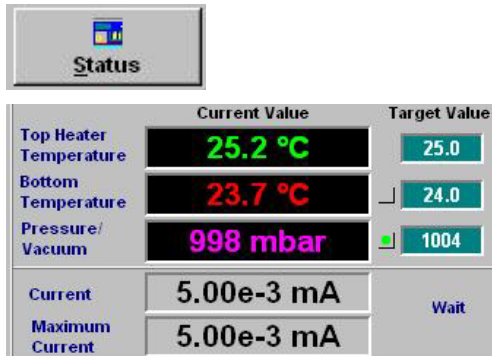
- From the *Control Center*, click on “Download Recipe” and load your file.



- If the fixture is properly loaded, users can now start the bonding sequence by clicking “Start”.



- From the *Status* window, users can monitor the process in real time: Target parameters, actual parameters, timer, including the current step main information.

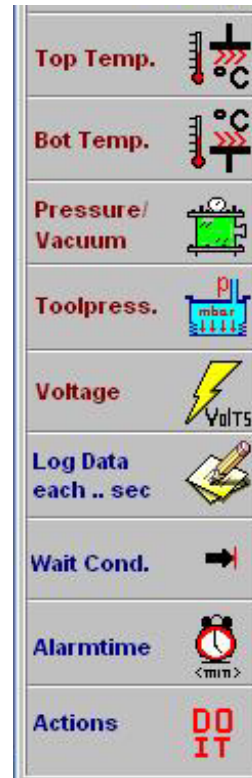
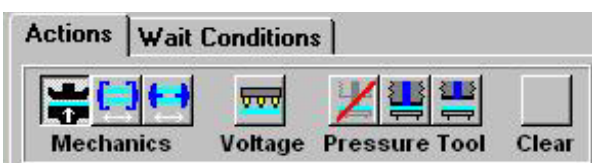


6. Unloading and Shutting down

- The “Unload” option turns to active once the recipe is finished AND temperature is below 150 °C. Proceed similar to the loading procedure to take the fixture out of the process chamber.
- To shut down the tool, start by closing all windows “Recipe“, “Status“, “Control Center“.
- Press “Exit” to quit the GUI.
- Shut down the windows session PC.
- Wait for the computer to be completely off and rotate the main power switch to OFF.
- Logout of the tool from the CAE computer

7. Recipes edition

- From the *Recipe* window, users can monitor view and edit any recipes.
- Use the “Text” option to view the recipe in a text print-friendly format.
- Use the “Edit” option to view each process step in a table and modify the recipes. It is recommended to ask the lithography staff for advice before doing modifications.
- Users can set targets and limits for all five parameters in each step, as well as “wait conditions”, “login interval”, “alarm time” and “actions” (removing spacers & clamps, moving pressure plates in contact, etc...).



- In case of modifications, make sure to use the “Check” button to verify the integrity. A window will show your “Errors” (recipe cannot be started) and “Warnings” (recipe can be started).



8. Troubleshooting

- Starting temperature error: In case the recipe does not start and the bottom temperature is stuck below the starting temperature setting 25°C, click on “Maintenance” go to controllers → bottom temperature. Set the target temperature to the actual value, the recipe will now start properly.