

PDMS SOLITEC 5100 SPINNER SOP

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INTRODUCTION

When using PDMS it is importuned to use a spinner. The spinner insures that the PDMS thickness is consistent for every wafer you process. Using a spinner also allows for a more uniform PDMS surface without raised features. This document outlines how to properly use PDMS spinner.

PREPARATION

Make sure aluminum foil is lined properly in drain pan to catch excess waste. Replace aluminum foil if it is extremely contaminated.

PROCEDURE

1. Log in to FOM, it will turn on the main power for the tool.
2. Clean substrate and perform a dehydration bake on the substrate *(Optional)*.
3. Make sure the main vacuum is on to the cleanroom, and then open the wall-mounted vacuum valve to the spinner.
4. Make sure the main nitrogen is on in the cleanroom and set to approximately **60 PSI**.
5. Check to make sure the spinner motor purge regulator is adjusted to **20 PSI**. This regulator is located inside the unit.
6. Choose the appropriate chuck size (2", 3", 4") and place firmly on the spindle mount. It should slide into the special grooves to insure proper alignment.
7. Turn **ON** the spinner by pressing the **POWER** button. The power button should illuminate.
8. Place substrate onto the vacuum chuck and visually align.
9. Turn on vacuum by pressing the **VACUUM** button. The vacuum light should go off. If it does not, then you do not have proper vacuum between the chuck and wafer. Turn off **SPREAD** select. Set ramp speed to 800. Set the speed on the **SPIN** select to 50. Set cycle time for the spin select to 20 seconds

NOTE: Spin Speed range: 250-8000 RPM Spin Acceleration Range: 1K-40K RPM/SEC.

10. Press the **START** button on the controller. The substrate should start to rotate slowly (about 200 RPM). This should give some indication of the alignment of the substrate.
 - If the substrate is not centered properly on the chuck:
 - a. Hit the **STOP** button to stop the spin process.
 - b. Turn **OFF** the vacuum to the chuck.
 - c. Realign the wafer.
 - d. Turn the vacuum back **ON**.

- If the substrate is centered correctly (i.e. no wobbling motion), allow the spinning process to finish.
11. Press the **SPREAD** button to turn on the spread cycle.
 12. Set the desired spindle speed for the spread cycle and the desired time (in seconds) for the cycle time.
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 14. Place the cover over the drain pan. **NEVER** operate the spinner at high speeds without cover!! It is dangerous.
 15. Press the **START** button and observe the RPM's on the digital display. Adjust **RPM** settings if needed. It is ok to change RPM settings during the spinning cycle.
 16. Once you are happy with the selected **SPREAD** and **SPIN** settings. It is time to spin material onto your wafer. Select spinning material. If using HMDS, cover entire wafers with HMDS and repeat the spinning process. If using resist, cover approximately 30% of your wafer and repeat spinning process.
 17. Once the process is done, examine the wafer for a streak-free uniform film.
 18. Turn off the vacuum supply going to the chuck and remove the wafer.
 19. If the aluminum foil is extremely full of spinning waste, replace the aluminum foil with new aluminum foil. Dispose of the old aluminum foil properly.
 20. Turn **POWER** off to the spinner.
 21. Close wall-mounted vacuum and nitrogen lines (*Optional*).
 22. Log off from the tool in your FOM account.