These instructions are intended for reference only, and will *not* replace the thorough training required for proper system operation. Contact a clean room staff member with questions or to report a system problem.
1. Enable the tool in **BADGER**

**Monday-Wednesday Noon Bosch process only!**

**Wednesday-Sunday – SiO2/SiN/Si shallow etch.**

**Allowed Materials:**
- CMOS compatible materials and standard resists only
- Cr, W, Pt
- Al, Ti, Pd - Allowed but must be covered during entire etch

**Never Allowed:**
- No high vapor pressure materials, Pb, In, ITO, etc,
- No Au, Ag, Cu
- No glasses/microscope slides (fused silica, quartz, sapphire only)
- No III-V materials
- No Li containing compounds

All other materials must consult with staff
2. **VERIFY SYSTEM STATUS**

Select “pumping” from the SYSTEM pull down menu to display the vacuum system schematic. The load lock should be $< 4 \times 10^{-2}$

The main chamber should be at high vacuum $< 5 \times 10^{-6}$ with the roughing pump and turbo running. Click on *Accept* to clear any alerts that may be displayed; contact a lab staff member or super-user if accepting an alert does not allow you to continue with your run.

3. **PRE CLEAN AND CONDITIONING (Not mandatory)**

Make sure there is a wafer in the load lock, before you run the clean recipe. **Do not** start any recipe without a wafer inside.

You can use as a carrier: Si wafer, fused silica, quartz or Sapphire.
Under the “Process” tab, click on Recipes, select load, a pop-up message will appear if you want to overwrite the current recipe, you should select Yes. Highlight the clean process recipe OPT- Clean O2/SF6 and Run.

Accept the yellow alert when it appears, marking the end of the process.

4. VENT THE LOAD LOCK
On the pumping page click ‘stop’ and then ‘vent’.
### 5. INSTALL SAMPLE

When the loadlock is fully vented, open the lid by pulling the handle. Place your wafer or mount your sample on a carrier wafer using Fomblin oil (located next to the computer).

Close the loadlock lid and press Evacuate to pump down the loadlock. If your wafer has a flat, make sure to mount your wafer that the flat is between the two screws (see picture).
6. **DEFINE PROCESS**

Select your recipe and load. Edit operating parameters as necessary by right-clicking on the recipe step and changing parameter values as required, select ok to finish editing a step. You cannot save a recipe in Users level.

Contact staff if you want to save your recipe.

7. **RUN PROCESS**

Select ‘Run’ to initiate the
| **process. The tool will automatically pump down and run the process. Accept the yellow alert that appears when the process is completed.** |
| **8. VENT THE SYSTEM**  
On the pumping page click ‘stop’ and then ‘vent’ the loadlock. |
| **9. RETRIEVE SAMPLE**  
When the loadlock is fully vented, open the chamber and retrieve your sample/wafer. Clean the carrier wafer from fomblin oil if needed – take the carrier wafer to the Litho hoods area and remove the fomblin with IPA and return it back to the tool. Before pumping down don’t forget to leave a carrier wafer in the chamber. Evacuate the loadlock. |
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<tr>
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<th><strong>RUN CLEAN RECIPE</strong></th>
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<td>10.</td>
<td>Run a clean recipe. To determine for how long you should run the recipe, you should watch the plasma color changes to pink, and also monitor the valve position, when it’s clean it should be &lt;36.7.</td>
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<th><strong>RETURN TO NORMAL</strong></th>
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<td>11.</td>
<td>Leave the tool as you found it. Loadlock under vacuum. Do not leave the tool before the cleaning recipe finished. Clean the carrier wafer from fomblin oil if needed – take the carrier wafer to the Litho hoods area and remove the fomblin with IPA and return it back to the tool. Always leave a carrier wafer inside the loadlock. Cleanup the area, do not leave swabs or dirty wipes next to the tool.</td>
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12. **BADGER LOGOUT:** Don’t forget to disable the tool in badger after you’re done.