



HEIDELBERG μ PG101 - 3 μ m Standard Operating Procedure



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.

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<p>1. BADGER: Enable the tool in badger</p>	
<p>2. VERIFY SYSTEM STATUS: Start μPG101 Exposure Wizard software. Wait for the stage initialization.</p>	





3. LOAD DESIGN:

Once the initialization is done, Press 'Next' to load the design.

Prepare the design in dxf, bmp, or cif format. Maximum design size is 100 mm x 100 mm.

Load your design. Then, type the appropriate unit. (e.g. 1000 if μm is your unit on the design.)

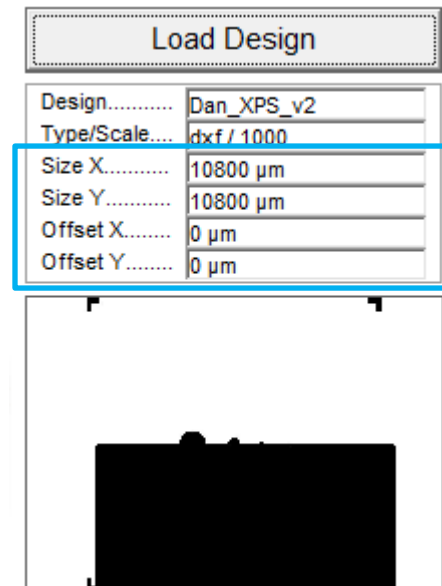
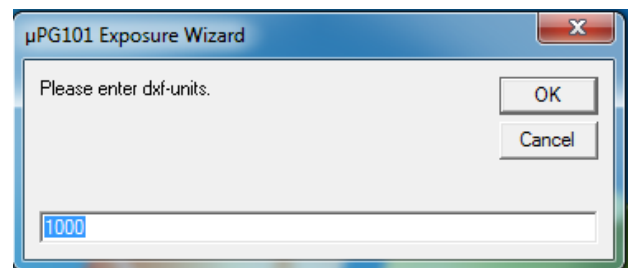
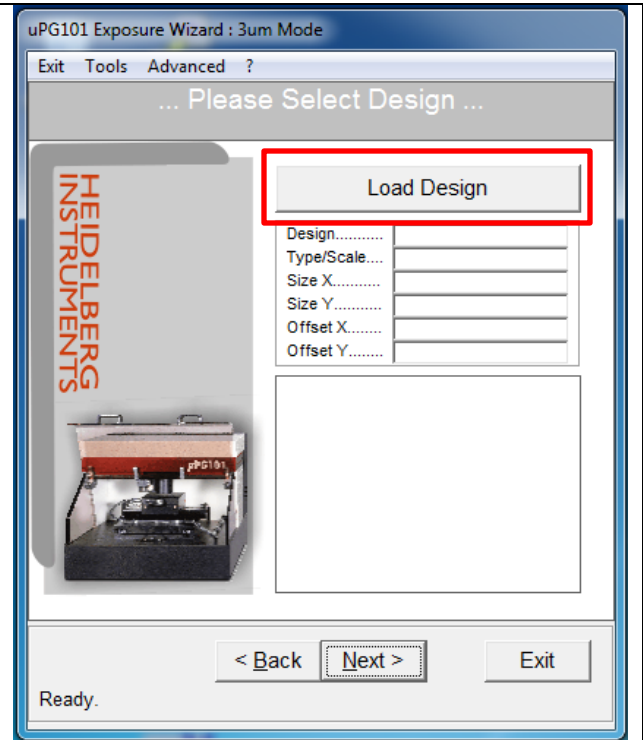
Check the size of your design to make sure you choose the correct scale.

The origin (0,0) is recommended to be at the center of your design, which will give you zero offsets in x and y.

If the origin (0,0) of the design is not located in the center of the design, you can use the 'Automatic Centering' function at the **step 6** OR you can set up the 'Manual Offsets' at the **step 7**.

NOTE: The design is supposed to be displayed in the preview window. Currently, it doesn't present all.

Click 'Next'





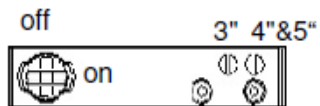
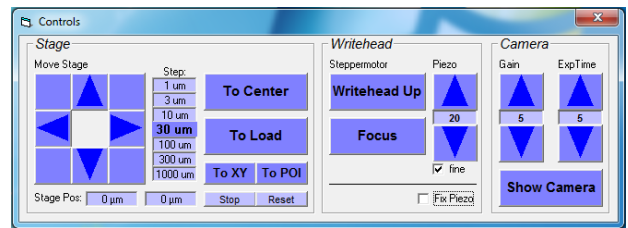
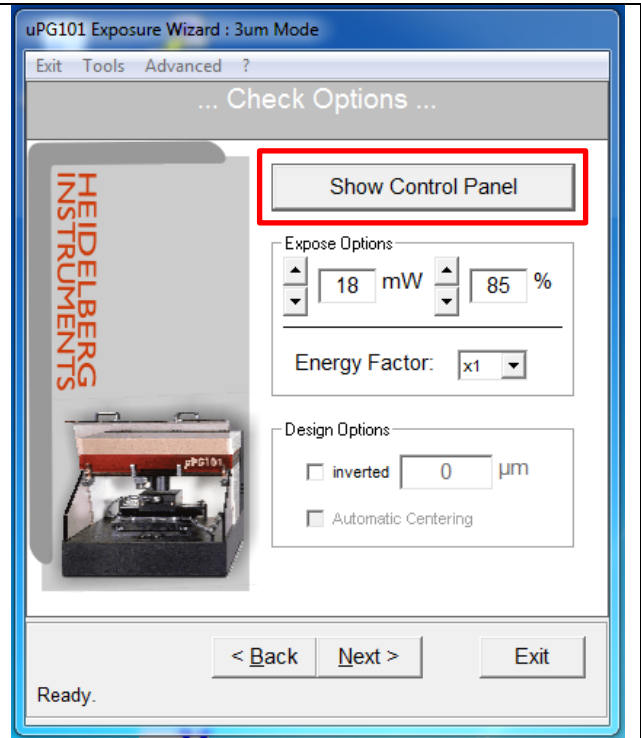
4. SUBSTRATE LOADING:

Press Show Control Panel.

Click 'To Load' to load your mask.
Wait until all movement has finished.
Open the cover lid, load the mask,
and turn on the vacuum.
Close the lid and click 'To Center'.

If your substrate is smaller than the regular 5" mask, you can select the vacuum region using the adjustment screws. The minimum substrate size is 2".

Note that x-axis corresponds to a backward-forward movement, while the y-axis corresponds to a left-right movement when standing in front of the machine.



selected: deselected:





<p>5.</p>	<p>FOCUS:</p> <p>On the control panel, click 'Focus' first. The write head moves down until the focal point on the substrate surface.</p> <p>Then, change piezo setting to 36 and enable 'fix piezo' checkbox.</p>	
<p>6.</p>	<p>SET EXPOSURE PARAMETERS:</p> <p>Exposure power settings and energy factor can be changed. The parameters for the regular mask with S1800 resist is available on the desktop note. Please check the most updated parameters.</p> <p>Filter selection knob is on the right side of the tool. This should be 'OFF'.</p> <p>*If the origin (0,0) of the design is not located in the center of the design, 'Automatic Centering' will appear.</p> <p>**Inverted design option is available. The limits of the exposure field are defined by the outmost structures, when the frame is set 0 μm. The maximum value for the frame is 10 mm.</p> <p>Click 'Next'</p>	



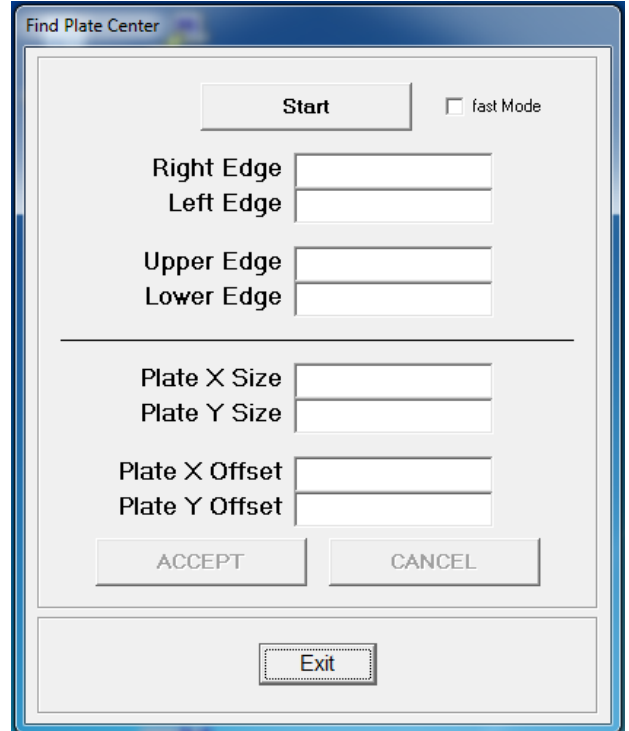
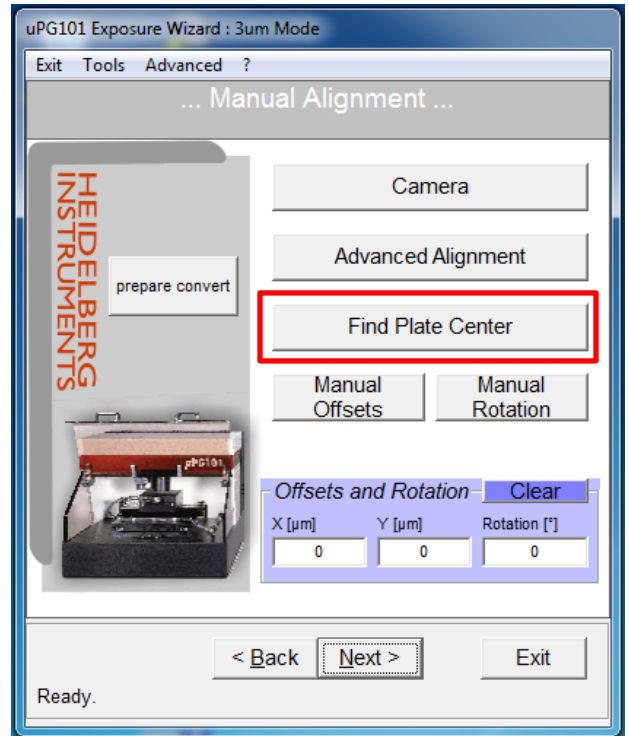


7. FIND PLATE CENTER:

Press 'Find Plate Center'. Enable 'fast mode' checkbox and click 'Start'.

This will find the center of the plate automatically. This step can be skipped if you are writing on the regular 5" mask.

When the automatic measurement is done, press 'ACCEPT'.





	<p>*If the origin (0,0) of the design is not located in the center of the design AND you choose not to enable the 'Automatic Centering', here you can add 'Manual Offsets' for x and y.</p> <p>Click 'Next'</p>	
<p>8.</p>	<p>EXPOSURE: Enable 'Auto Unload after Exposure'.</p> <p>'Uni-Directional Mode' is recommended for the better resolution. This will result in a longer exposure time.</p> <p>Review the name of the design, exposure parameters, and the offset positions.</p> <p>Then, press 'Expose'.</p> <p>The exposure status including the estimate remaining time will be shown online in the window.</p>	
<p>9.</p>	<p>UNLOADING: If the auto-unload was selected, the write lens is automatically retracted and the stage is in the unloading position after the exposure is finished.</p>	





	<p>Switch off the vacuum. Please allow one or two minutes until the plate is released from the vacuum.</p> <p>Close the cover lid. Click 'Exit Wizard'.</p> <p>NOTE: If you want to write another design, please close and restart the software since the computer is experiencing the memory issue.</p>	
<p>10.</p>	<p>BADGER LOGOUT: Don't forget to disable the tool in badger after you're done.</p>	

