

## Operating instructions for mask aligner MA6

### Turn "On" the Mask aligner

1. Check whether the lamp is "ON". If it is "Off":
2. Open N2 flow and turn the Main Power Switch on.
3. Turn the controller to "ON", and wait until "READY" appears on the display. Press on "CP" (Constant power) - display will show "Wait". Wait until you see "Start" on screen, and then press "Start". It will ignite the exposure lamp-Display will show "LAMP COLD". Wait until you will see the power (350 W).
4. Turn the power switch on the front panel clockwise into "ON". The display message says: "Ready for start-press load button". Press on "LOAD" button and wait for the machine initiation.

### Before starting to work

Check the following parameters:

1. Compressed Air: 5 bar.
2. Nitrogen: 1 bar.
3. Vacuum: ~ 0.8 bar.

### Define of exposure parameters

1. Make sure you are on the right program. If not, press on "Select program" to choose the desired mode (right and left arrows to move between the parameters), and when you done press on "Select program" again.
2. Press on "Edit parameter" key to edit the parameters. Change the parameters (right and left arrows to move between the parameters, and up and down arrows to change the parameter value), and when you done the press on "Edit parameters" again.

### Load mask

1. Press "Change mask". If mask holder is inside the mask aligner Pull the mask holder out carefully, flip it 180 degrees, and put it on the left tray outside.
2. Choose the appropriate mask holder, and make sure that the plug is in the vacuum hose.

3. Put the mask on the holder against the holder pins, and press "**Enter**" to turn ON the vacuum.
4. Flip the mask holder in 180 degrees, move holder inside the machine, and press "**Change Mask**" to lock the holder inside the machine.

## **Load wafer**

Press "Load". Display will be "Pull slide and load substrate onto chuck". Pull the wafer loading chuck completely, insert the proper chuck, and place your sample. Press "**Enter**" to turn on the vacuum. The display will be "Move slide into machine and confirm with enter". Move slide in the machine and confirm with enter. If your sample does not cover all vacuum holes, MA6 will report "Loss of vacuum". Press "**Enter**" to proceed without vacuum.

## **Alignment**

1. If you want to use top side alignment check that TSA button is on, and if you want to use back side alignment check that BSA button is on.
2. Focus by using z movement knob placed at the microscope side.
3. Align the substrate to the mask using the three knobs (X, Y, and rotation). When properly aligned, press "**alignment check**" to bring the substrate in to contact.

## **Exposure**

Press on "**Exposure**" button. The wafer will be exposed by your program. When exposure is done the mask aligner will unload your sample automatically. Pull the chuck out completely and unload your sample. Press on "**Enter**".

## **Unload wafer**

Press on "**Unload**" button. Wait for the screen display "Unload substrate from the slide". Pull the chuck out completely and unload your sample. Press on "**Enter**".

## **Unload Mask**

1. Press "Change Mask" and the mask holder will unlock. Pull out the mask holder, rotate it by 180 degrees, and put it on the left tray.
2. Press on "Enter" to release vacuum.
3. Take the mask and press on "Change mask" again. If you get any warning press "Enter" again.