OPERATING PROCEDURES for MJB3

Rev. 11/13/2001

Pre-Check

1. Assemble clean mask and PR-coated wafers for exposure.
2. Switch **ON** the nitrogen and compressed air located on the manometer box. The box is on table top next to aligner.

Power up

1. Press the **POWER** button on the aligner.

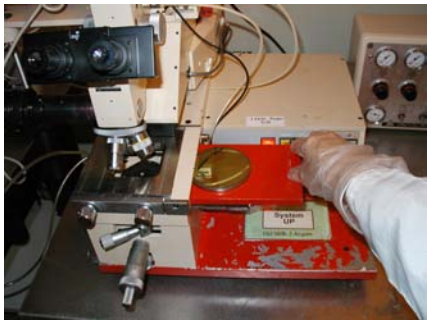
Exposure Lamp Ignition

1. Under the table locate the control box. Flip the green **POWER** switch to **ON**.
2. Press the **CONTROL SWITCH** so that the **IN** status LED is **OFF**.
3. Press the **DISPLAY** switch so the **WATTS** status LED is **ON**.
4. Press the green **LAMP** switch ***in and hold*** until the **LAMP ON** status LED is **ON**, then release the switch.
5. Wait 15-20 minutes for the display to stabilize at 194 Watts.
6. Select **CHANNEL 1** or **CHANNEL 2** by toggling the channel switch.
   Channel 1 exposure will be 5.5 mW/cm2.
   Channel 2 exposure will be 8.5 mW/cm2.
7. Press the **CONTROL SWITCH** so that the **IN** status LED is **ON**. This action locks in the desired channel.
8. Press the **DISPLAY** switch so the **mW/cm2** status LED is **ON**. The display will read 0.00 until you are doing an exposure.

Loading Mask

1. Loosen the two knobs on the clamp and remove the maskholder.
2. Place the maskholder on a flat surface with vacuum groove up.
3. Check that the **MASK VACUUM** button on the front panel is **OFF**.
4. Position the mask on the holder with the chrome pattern side up.
5. Press the **MASK VACUUM** button.
6. Invert the maskholder with the mask and reinsert into the stage.
7. Clamp the maskholder by tightening the two knobs.

Loading Substrate

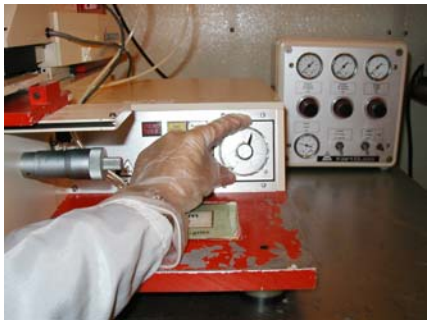


1. Place the substrate on the chuck covering all the vacuum holes.
2. Push the transport slide with wafer on chuck to the left until it reaches the stop.
3. Rotate the **CONTACT LEVER**, the top lever located on the left side of aligner, counterclockwise to bring the substrate in contact with mask. The **CONTACT** light on panel will illuminate.

Aligning the Substrate to the Mask

1. Turn on the microscope illumination switch to │. Adjust eyepieces and magnification.
2. Pull the **SEPARATION LEVER** toward the front the aligner. The **SEPARATION** light on the panel will illuminate.
3. Use the **X**, **Y** and θ micrometers to align the substrate to the mask.
4. When you have a satisfactory alignment, push the **SEPARATION LEVER** back until the light goes out and the **CONTACT** light is illuminated.

Exposure



1. The timer is located on the right side of the front panel.
2. Select the multiplier on the inner knob to S, 10S, M, 10M, H or 10H.
3. The scale for the timer is 0 to 3. Turn the pointer to a setting. The exposure time is determined by multiplying the pointer setting by the multipler set.
4. Press the **EXPOSURE** button and the lamp housing will glide forward, the shutter will open, and the wafer will be exposed for the time set.
5. After exposure is complete, rotate **CONTACT LEVER** toward the front, slide transport to right, and remove substrate from the chuck.

SHUT DOWN

1. Loosen the two knobs on the maskholder clamp.
2. Slide the maskholder out of the aligner and set on flat surface with mask facing up.
3. Push the **MASK VACUUM** button to release the mask.
4. Remove and store mask.
5. Power **OFF** the aligner on the front panel.
6. Power **OFF** the nitrogen and compressed air on the manometer box.
7. Power **OFF** the lamp on the control box located below the table.
8. **Complete the equipment logbook.**