QUINTEL MASK ALIGNER

POWER UP PROCEDURE

The QUINTEL is powered up using the procedure below (see figure on page 2):

1. Turn on nitrogen supply using the valve located behind the aligner
2. Turn on the switchbox (MV 200) located on top of the monitor
3. Turn on the monitor
4. Turn on the UV power supply and press the START switch. Voltmeter will read 50V after a few seconds.
5. Turn on the aligner power switch
6. Set microscope setting to MIC

POWER DOWN PROCEDURE

The QUINTEL is powered down using the procedure below (see figure on page 2):

1. Set microscope setting back to OFF
2. Turn off the UV power supply
3. Turn off the aligner using the keypad and display:
   a. Press ENTER to display the main menu
   b. Press #6 (Power Off) and press ENTER.
4. Turn off the monitor
5. Turn off the switchbox MV200
6. Close the nitrogen supply valve
SETTING UP QUINTEL PARAMETERS:

1. Press **ENTER** to display the main menu.
2. To set expose time (see table below):
   - select the *ExpTime* parameter by pressing #1
   - press **INSERT** and use the keypad to input the required expose time
   - press **ENTER** to accept the input
   - press **ENTER** to go back to the main menu

3. To set printing (exposure) options (see table below):
- select the PrMode parameter by pressing #2
- select the required printing (exposure) mode using the keypad. (asterisk appears next to selected printing mode)
- press ENTER to go back to the main menu

**PARAMETERS FOR COMMONLY USED PHOTORESISTS:**

<table>
<thead>
<tr>
<th>PHOTORESIST</th>
<th>EXPOSURE TIME</th>
<th>PRINTING OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipley 1813</td>
<td>5 seconds</td>
<td>Pressure Contact</td>
</tr>
<tr>
<td>Shipley 1818</td>
<td>5 ~7 seconds</td>
<td>Pressure Contact</td>
</tr>
</tbody>
</table>

**EXPOSING WAFERS**

1. Power up the machine and review/change the expose parameters as necessary.
2. Using the right hand joystick control, center the chuck in the mask holder opening.
3. Loading the mask:
   - place mask, pattern side down, on top of the mask holder
   - align the edges of the mask against the mask stops at the left rear
   - press MASK VACUUM to hold mask in place
   - using the left hand joystick control and the microscope controls locate the mask alignment marks in their respective fields on the monitor
   - press MASK VACUUM and rotate the mask against the stops if further alignment is required
   - upon satisfactory positioning press MASK VACUUM to hold the mask in place
4. Loading the substrate:

- pull tray out and position a substrate on the chuck
- pre-align the wafer by aligning the wafer flat to the pre-align block
- press **LOAD** on the lower right panel and flip the pre-align block back
- push the tray in
- coarse align the wafer by using the right hand joystick control and the **COARSE ALIGN** button (located on the lower left panel)
- \( \theta \) motion is controlled with the left hand micrometer control
- for fine wafer alignment, do not press the coarse align button when using the right hand joystick control
- press **CONTACT** on the lower left panel once satisfactory positioning is achieved
- zoom the objectives to a higher power and verify the alignment accuracy
- adjust alignment if required by pressing the **SEPARATE** button on the lower left panel and re-aligning as necessary
- press **CONTACT** on the lower left panel once satisfactory positioning is achieved (repeat re-alignment steps as necessary to achieve acceptable alignment)
- press the **EXPOSE** button on the front right panel to initiate expose
- pull tray and unload wafer when display reads **UNLOAD WAFTER**