Karl Suss MA150 Mask Aligner

How can a user hurt themselves? How can a user hurt the tool?

A qualified user should be able to:

1. Identify personal safety hazards associated with the tool and what precautions are taken to prevent an accident from occurring.
2. Identify hazards to the tool and what precautions are taken to prevent an accident from occurring.
3. Operate the tool safely and proficiently.
4. Recover from simple errors.
5. Demonstrate knowledge of the processes performed with the tool.
6. Know the appropriate uses of the tool.

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- Personal Safety Hazards
  - Ultraviolet Radiation – The aligner has a mercury arc ultraviolet light source. Do not look into the direct light area without wearing special UV light protection.
  - Mechanical Hazards - Keep all body parts and objects out of the path of moving parts on the mask aligner. Do not operate with guards out of place or try to bypass interlocks. Broken pieces of silicon wafers very sharp and slivers may puncture or cut the skin.

- Hazards to the Tool
  - Acetone - Do not clean the aligner with acetone. IPA/De-ionized water solutions are acceptable to use.
  - Contamination - Handle wafers only in a clean atmosphere, use wafer tweezers and appropriate cleanroom & ESD techniques. Wafers need to be clean and kept free of contamination as much as possible. It is a good idea to inspect the backs of the wafers as well as the mask for any resist that could gum up the system.
  - Wafer Size – Make sure that the aligner is set up for the wafer size that you need to use. Have SMFL Staff change the chuck.
  - Computer – The system computer should be **off** when the lamp is being turned on or off.
  - Removing Lenses – Never remove the permanent lenses. Only the optional filters may be removed.

- Operating Tool
  - Users should be able to:
    - Start the system, including service chase set up.
    - Load and unload a filter.
    - Measure photo intensity.
    - Load a mask.
    - Load a wafer.
    - Load a program.
    - Edit and save a program.

        - Expose a wafer

    - Reservations – If not present at stated start time, tool is reserved for 15 minutes and is then considered open for general use.

- Simple Errors
    - Screen Lock Up – A locked up screen may be reset by cycling the computer power switch.
    - Wafer Loading – Proper manual loading of a wafer.

- Processes
    - A qualified user should be familiar with:
        - Contact aligning
        - Materials being used

- Appropriate Tool Use
    - Use caution when doing a hard contact exposure because the wafer may stick to the mask.
    - Irregular substrate sizes and wafer pieces may only be done with SMFL approval.
    - Only wafers with clean backs may be processed.