



SUSS IMPRINT LITHOGRAPHY EQUIPMENT

UV-SFT8

STAMPS FOR NANO- AND MICRO-IMPRINT PROCESSES

SUSS MicroTec's UV-SFT8 stamp fabrication tool represents a table top solution for manufacturing high quality composite working stamps for imprinting, accompanied by a UV-LED unit. The stamp fabrication tool is available for the SUSS MA/BA Gen4 *Pro* and MA/BA Gen4 Mask Aligner. The stamps are used for a large variety of imprint applications in the field of LED, MEMS/NEMS, micro-optics, augmented reality and optoelectronic sensors.

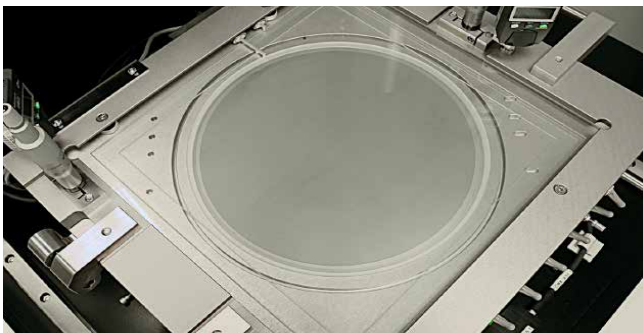
The traditional method of stamp production is based on thermal curing. This method can require curing times of up to several hours. In order to accelerate the production process and increase throughput, new stamping materials have been developed which can be cured using UV light. With this new procedure it is possible to reduce the manufacturing time of the stamps to only a few minutes.

With its high UV-light uniformity of $\pm 2.5\%$, the system yields homogeneously cured stamps and in turn high structure fidelity.

The tool offers great flexibility due to its compatibility with a large variety of UV curable stamp materials, which allows integration with various applications from R&D to HVM.

An optional system for puddle dispense is available for the radially symmetrical propagation of the stamp material. In addition, the dispensing system allows the application of a controllable amount, saving material and reducing waste.

The tool is field upgradable from conventional thermal systems to UV-LED.



HIGHLIGHTS

- + Reduction of curing time
- + Usage of proven UV-LED exposure technique
- + Compatibility with a large variety of UV curable stamp materials
- + Field upgradable from traditional thermal systems to UV-LED
- + Optional system for puddle dispense





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TECHNICAL DATA

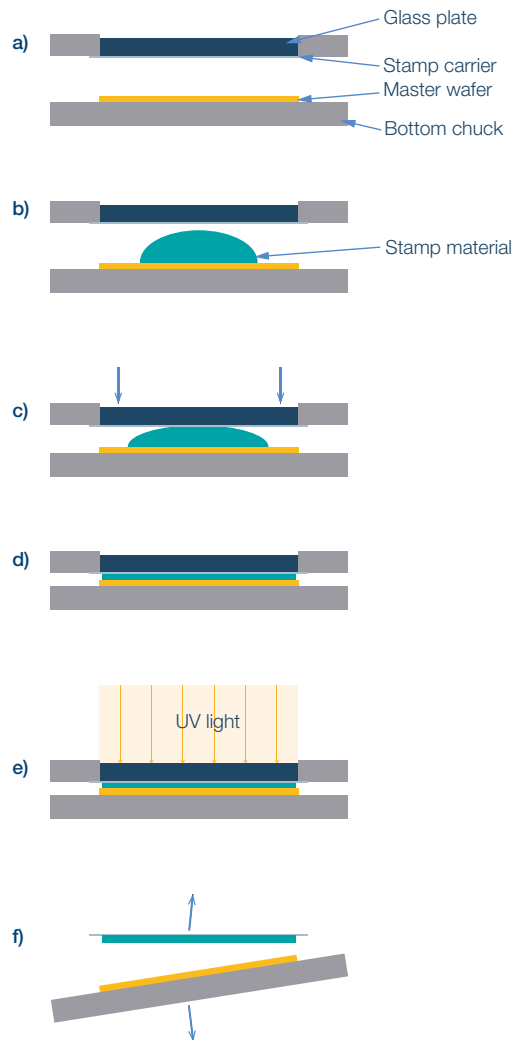
| GENERAL | |
|---------------------|--------------------------------|
| Master Sizes | 2", 3", 100mm, 150mm and 200mm |
| Stamp Carrier Sizes | 200x200mm and 240x240mm |
| UV-LED UNIT | |
| Light Uniformity | ±2.5% |
| Light Intensity | 100mW/cm ² |
| Exposure Area | up 200x200mm and 200mm round |
| UTILITIES | |
| Vacuum | -0.06MPa |
| Compressed Dry Air | 0.5MPa |
| Power | 100-240V~, 50/60Hz |
| Available for | MA/BA Gen4 Pro, MA/BA Gen4 |

STAMP FABRICATION PROCESS

A puddle of uncured stamp material is dispensed on the master located at the bottom chuck of the UV-SFT (b). A parallel gap reduction between the master and the stamp carrier, which is fixed on the glass plate, leads to a radial propagation of the stamp material (c and d). As a last step, the stamp material is cured by light (e) and separated (f). The UV-SFT is compatible with the largest choice of UV curable materials for stamp manufacturing which have been designed for working stamps by different chemical suppliers. Tooling options for master sizes ranging from 2" to 8" and different carrier materials such as glass or foils can be used in the UV-SFT8. The master should be slightly larger in diameter than the imprint substrates.

Data, design and specification depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously. Illustrations, photos and specifications in this brochure are not legally binding. SUSS MicroTec reserves the right to change machine specifications without prior notice.

STAMP FABRICATION PROCESS



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