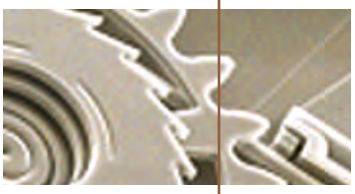
OAI MEMS Tools



The OAI Model 8000 is an advanced, high-performance mask aligner and exposure tool that delivers ultra precise, front and back side, sub-micron alignment and resolution for the most demanding bulk and surface MEMS applications.

Applications

Sensors
Biomedical
Micro optics
Opto-mechanical
Microwave
Microfluidics

Options

Dual end effector
nuv/muv/duv Lightsource
UV cure bonding
Contact-free leveling

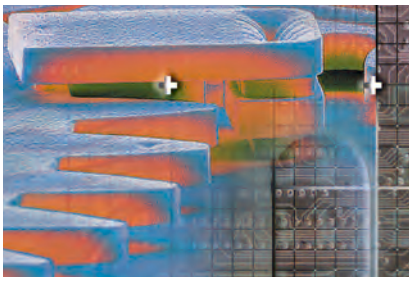
The Model 8000 system is available in manual or fully automated versions and is capable of performing sub-micron, level-to-level alignment. It's flexible design allows printing on various substrates ranging in size from 50mm to 200mm. The exposure system is compatible with photoresist in Near, Mid or Deep UV range.

The automated version is designed primarily as a full production tool; the manual version is well adapted to low volume production, short-run engineering, or R&D applications. The OAI Model 8000 is a versatile tool that is designed for a wide variety of process applications. With its proven, modularized design, the Model 8000 delivers the high scalability required to accommodate changing process parameters.

The Model 8000 may be used in proximity, contact or vacuum modes. In proximity mode the OAI Model 8000 exposes the substrate using a programmable proximity separation between substrate and mask. This gap is programmable over a wide range and may be adjusted in increments of one micron. In soft contact mode, the system brings the substrate into very soft contact with the mask. In hard contact mode, the substrate is placed in soft contact with the mask and N_2 is applied to the back side of the substrate. In vacuum mode, the user selects the appropriate vacuum force for the chosen substrate, thus optimizing printing performance. Other notable features include auto pre-aligner, intensity controlling power supply, advanced auto-align vision system and a modular, low-maintenance design.

We invite you to compare the OAI Model 8000 Mask Aligner to any comparable tool offered by the industry's leading manufacturers. Dollar-for-dollar the OAI Model 8000 delivers the best price/performance ratio of any mask aligner available.

OAI



OAI offers an extensive family of cost-effective MEMS, Microfluidics, Nano Imprint, Nanotechnology and Semiconductor tools and equipment including UV Lightsources, Wafer Bonders and Custom solutions.

UV Lightsources

OAI's freestanding UV exposure systems may be configured for near, mid or deep UV spectra. Systems include intensity control, dual wavelength sensors and precision exposure timer.

Wafer Bonders

This flexible, stand-alone, anodic/fusion bonder is an excellent choice for MST, MEMS and many other microengineering applications.

Custom Solutions

OAI can serve as a technology partner offering semiconductor and MEMS equipment solutions for unique or unusual applications.

General Specifications

Model 8000 Mask Aligner System

Substrate Size	Round or square up to 200mm
Mask size	3"x3" up to 10"x10"
Exposure System	
Lamp power	350W, 500W, 1000W, 2000W, 5000W
Intensity (8" field @ 365nm)	20mw/cm^2 (1000W), 40mw/cm^2 (2000W)
Uniformity	Better than ±5%
Resolution	Proximity mode 3.0µm Contact mode <1.0µm
Exposure Modes	proximity, soft, hard, vacuum
Exposure Gap	1-1500µm
Gap Adjustment resolution	1µm
Alignment System	
Alignment Accuracy	0.5µm topside, 1.0µm backside
Alignment Gap	up to 1500µm
Alignment Range (X,Y)	±3mm
Alignment Range (Ø)	±3°
Mechanical Resolution	0.1µm
Alignment Microscopes	
Microscope Type	Dual zoom, CCD TV camera
Magnification	Approx. 30X - 210X
Illumination	Solid state LED
Cost of Ownership	
Throughput	>100wph
MTBF	>1500 hours
MTTR	<4 hours
Uptime	>95%
Consumables	
Vacuum	25"HG
Nitrogen	20 PSI
Power	208V, 60Hz, 20A, 3-phase
UV Lamps	
Dimensions	
HxWxD	72"x56"x43"
Weight	1,200 lbs.

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