

OAI MODEL 5000

PROXIMITY/CONTACT MASK ALIGNER AND EXPOSURE SYSTEMS.



*Aligner utilizes electronic
joy-stick controlled X, Y, and
Theta motion with 0.1
micron repeatability*



*OAI Model 5000 Systems
feature a graphical,
easy-to-learn, easy-to-use
Windows® interface.*

The versatile OAI Model 5000 Mask Aligner and Exposure System is a high-performance proximity/contact mask aligner designed to deliver ultra precise, sub-micron alignment and printing resolution. This automated system can perform sub-micron, level-to-level alignment and printing on substrates ranging in size from 50mm to 300mm.

The 5000 is ideal for both standard front side contact/proximity exposure as well as thick photoresist exposure for wafer packaging. Applications include III-V & II-VI device fabrication, thin-film displays and heads, MCM interconnect, micromachining, standard silicon wafers, hybrid substrate, and wafer bumping for packaging applications. Feature for feature the OAI Model 5000 is the most advanced yet cost-effective approach for a wide variety of applications.

As an economical adjunct or alternative to projection and stepper technology, the Model 5000 bridges the substrate size gap quickly and easily. The system is built on a Windows® platform, and the user-friendly interface enables the operator to input functional parameters in either manual (engineering) or automatic modes. Self-diagnosis circuitry and low maintenance design contribute to ease of operation and significantly lowered cost-of-ownership.

The OAI Model 5000 is a superb blend of economy and technology.



**OAI MODEL 5000
MASK ALIGNER AND
EXPOSURE SYSTEM**

APPLICATIONS

Front side proximity/contact

Thick photoresist & wafer bump

Thin film hybrids

OAI

FEATURES

50mm to 300mm capability
 Near UV, Mid UV, Deep UV capability
 Submicron level-to-level alignment
 High efficiency, uniform exposure system
 Windows® NT platform
 Intensity controlled power supplies
 Automated robotic wafer handling
 Easy-to-use graphical interface
 User definable operational parameters
 Low maintenance modular design
 Interchangeable mask and substrate holders
 Non-contact prealignment
 Automatic alignment
 Dual focus for thick photoresist

BENEFITS

- Versatile, Cost effective production exposure system
- Flexible software will accommodate multiple process parameters
- Operates in both production and development modes for micromachining, short run engineering and production.
- Submicron alignment capability
- Fast change over for masks and substrates
- Back-side alignment

GENERAL SPECIFICATIONS

Mask Alignment Tooling System.

Motions (Substrate chuck)	X, Y, Z & Theta
Mask rotation	Yes
Mask Theta	better than $\pm 5^\circ$
Mask size	Up to 14" x 14"
Mask retention	Vacuum and mechanical clamp
Chuck motion control	Variable-rate electronic joy stick
X, Y precision	To 0.1 micron increments (stepped motor)
X, Y range	$\pm 6\text{mm}$
Theta range	$> \pm 3^\circ$
Z motion	$\pm 0.1 \mu\text{m}$
Z step resolution	$\pm 0.5 \mu\text{m}$
Substrate size	To 300mm diameter
Printing capability	Proximity, Soft, Soft-Hard Vacuum Contact
Printing resolution*	Proximity: $3\mu\text{m}$ Soft contact: $1\mu\text{m}$ Hard contact: submicron
Prealignment capability	$\pm 25 \mu\text{m}$ in X-Y and 0.5° in Theta

*Using high-quality masks, substrates, positive resist and proper processing techniques.



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