

ABM, INC.

High Resolution Table Top Mask Alignment and Exposure System

SYSTEM DESCRIPTION

The ABM aligner is a reliable mask alignment and exposure system that delivers accurate, repeatable operation and the flexibility you require. The system can accommodate a wide range of materials and processes from odd sized substrates, small piece parts and wafers/substrates up to 8", with exposures in Near UV, Mid UV and Deep UV. Mask alignment module can be configured with fixed level or planarizing (Wedge Compensation) vacuum chucks for precise front or backside alignment for both contact or proximity printing applications. Available alignment optics range from low magnification single-field stereo zoom microscopes to low/high magnification single or splitfield microscopes with CCTV or dual CCD alignment systems for visible/infrared alignment.



Aligner with Dual CCD Alignment Optics

INCLUDED FEATURES

- Stationary mask alignment module
- Uniform/collimated 350 watt UV lightsource with intensity controlling power supply
- 6" x 6" exposure beam with 365/400 nm output
- Microscope motion with X, Y locking
- One each, vacuum mask holder and chuck

APPLICATIONS

- High resolution printing (with vacuum contact)
- Near-UV: 0.6 μm , Mid-UV: 0.4 μm , DUV: 0.2 μm
- R&D, advanced development, pilot production and production
- Ceramic substrates, silicon, GaAs, LiNb, InP and other semiconductor materials
- Backside (infrared) alignment
- MEMS
- Biomedical

ALIGNMENT MODULE SPECIFICATIONS

Vacuum Chuck Motions

X, Y, Z and Theta

Z Motion Travel

.250 inches

Proximity Adjust

Adjustable in 2.5 micron increments

Mask Rotation (manual motion)

up to 90 degree

Mask Sizes

interchangeable up to 9" x 9"

Mask Frame Assembly

lift: pneumatic up/down

Alignment accuracy

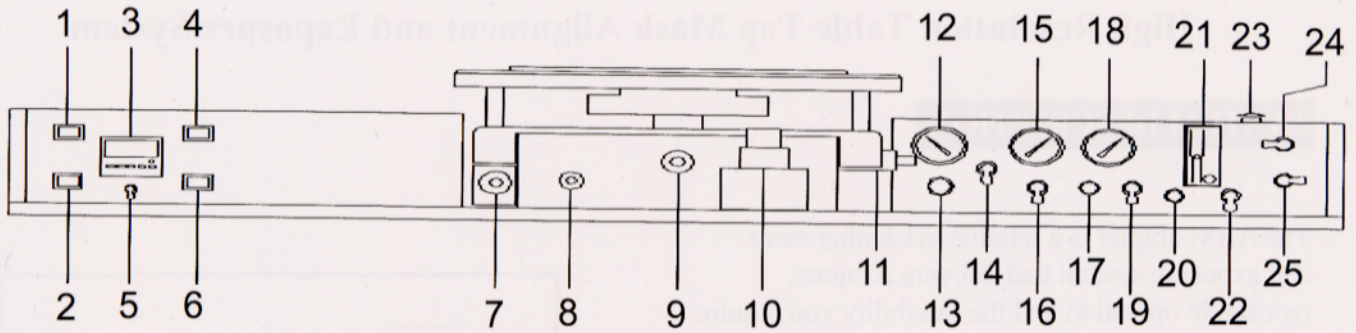
Frontside: better than .5 micron

Backside: 2 micron

Pneumatic Controls

Substrate, Mask, Contact, Cont Adj, Chuck Lock, N2, N2 Adj

OPERATOR CONTROLS

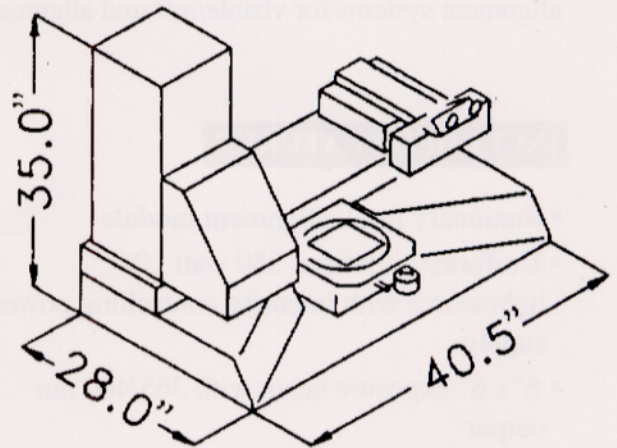


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|-------------------------|-----------------------------|---------------------------|
| 1. System Power | 9. Chuck Y Motion | 17. Contact Vacuum Adjust |
| 2. Auto Expose | 10. Chuck Z Motion | 18. Contact Vacuum |
| 3. Exposure Timer | 11. Chuck X Motion | 19. Contact, On/Off |
| 4. Shutter, Manual Test | 12. Mask Vacuum | 20. N2 Adjust |
| 5. Auto Expose On/Off | 13. Mask, On/Off | 21. N2, Flow |
| 6. Stop/Reset | 14. Mask Frame, Raise/Lower | 22. N2, On/Off |
| 7. Chuck Theta Motion | 15. Substrate Vacuum | 23. EMO |
| 8. Chuck Lock, On/Off | 16. Substrate, On/Off | 24. Align/Home |
| | | 25. Home/Expose |

FACILITIES AND LAYOUT SPECIFICATION

- 110-220 VAC, 8 Amp
- CDA, 50 PSI, 1/4" One-touch fitting
- Vacuum, 27" Hg(continuous), 1/8" Barb fitting
- N2, 10 PSI, 1/4" One-touch fitting

Approximate Shipping Weight: 350 lbs



SYSTEM OPTIONS

- 8.0" Alignment/Exposure Capability
- 500-2000 Watt MUV/DUV Exposures
- Splitfield Microscopes up to 500X
- Single-Field Microscopes up to 600X
- Infrared/Visible Alignment Systems
- Differential Micrometers, X,Y & Theta
- Model 150 Digital Intensity Meter
- Custom Vacuum Chucks
- 200-2,000 Watt NUV Exposures
- Single-Field Zoom Microscopes
- CCTV Alignment Systems
- Fine Mask Rotation
- Vibration Isolation Tables
- Various Wavelength Probes