

FINEPLACER® matrix ma

Semi- automatic Die Bonder



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The FINEPLACER® matrix ma is a semi- automatic bonder providing a stable, high accuracy solution for a broad range of component and substrate sizes, and a bonding area up to 300mm.

Incorporating an ergonomic approach to bonder design, this state- of- the- art platform, combines application modularity within an open hardware and software environment.

Supporting a virtually unlimited field of applications including flip chip bonding, photonics and wafer level packaging, this system uses numerous die bonding technologies which ensures compatibility with future technologies as users transition from R&D into production.

Highlights*

- Placement accuracy 3 µm
- Components from 0.1 mm x 0.1 mm to 150 mm x 150 mm
- Substrate sizes up to 350 mm x 350 mm
- Supports wafer sizes up to 300 mm
- Closed loop force control
- Real time contrast optimization with LED lighting
- Low maintenance, easy service access as a design priority
- Fast conversion from die bonder to rework station

Features

- Automated processes
- Overlay vision alignment system (VAS) with fixed beam splitter
- Integrated Process Management (IPM)
- Real time process observation camera
- Process transfer from system to system
- Virtually unlimited range of advanced bonding technologies

Benefits

- Hands- off die placement, user independent process operation
- Outstanding placement accuracy and instant operation without adjustments
- Synchronized control of all process related parameters: force, temperature, time, flow, power, process environment and illumination
- Immediate visual feedback reduces process development time
- Process transfer from R&D to production saves time, guarantees reliable results
- ROI savings - one machine for all applications

Technologies

- Thermocompression bonding
- Thermosonic bonding
- Ultrasonic bonding
- Soldering (AuSn / eutectic, Indium, C4)
- Adhesive technologies
- UV curing / thermal curing
- Bump bonding
- Copper pillar bonding
- Mechanical assembly

Applications

- Flip chip bonding (face down)
- Precise die bonding (face up)
- Laser diode, laser diode bar bonding
- Optical engines, VCSEL/ photo diode bonding
- LED bonding
- Micro optics assembly
- MEMS/ MOEMS/ sensor packaging
- 3D packaging
- Wafer level packaging (W2W, C2W)
- Chip on glass, chip on flex

Technical Specifications

Placement accuracy:	3 µm
Field of view (min) ¹ :	1.2 mm x 0.9 mm
Field of view (max) ¹ :	15.7 mm x 11.9 mm
Component size (min) ¹ :	0.1 mm x 0.1 mm
Component size (max) ¹ :	100 mm x 100 mm
Theta fine travel:	± 2°
Z- travel	10 mm
Working area ¹ :	310 mm x 197 mm
Bonding force (max) ² :	500 N
Heating temperature (max) ^{1,2*} :	400 °C

Modules & Options

- Ball Array Placement Module
- Bonding Force Module
- Chip Heating Module
- Die Flip Module
- Die Pick- up Module
- Dispenser Module
- Formic Acid Module
- Multi- Tray Support
- Optics Shifting
- Process Gas Module
- Process Video Module
- Table Motorization
- Scrubbing Module
- Substrate Heating Module
- Ultrasonic Module
- UV Curing Module

Notes: