FINEPLACER® matrix ma
Semi- automatic Die Bonder

The FINEPLACER® matrix ma is a semi-automatic bonder representing the latest development from Finetech. Encompassing the “Built to be Best” philosophy, this system points the way forward for the Finetech product family.

Incorporating a new ergonomic approach to bonder design, this state-of-the-art platform, with large working area and high placement accuracy, combines application modularity within an open hardware and software environment.

Supporting a virtually unlimited field of applications and numerous bonding technologies, the system 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 12” *
- 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*

* depending on configuration and application
## 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
- Thermosonic
- Ultrasonic
- Soldering (AuSn, C4, Indium, eutectic)
- Adhesive technologies
- Curing (UV, thermal)
- Mechanical assembly

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

## Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement accuracy:</td>
<td>3 µm</td>
</tr>
<tr>
<td>Field of view (min)(^1):</td>
<td>1.2 mm x 0.9 mm</td>
</tr>
<tr>
<td>Field of view (max)(^1):</td>
<td>15.7 mm x 11.9 mm</td>
</tr>
<tr>
<td>Component size (min)(^1):</td>
<td>0.1 mm x 0.1 mm</td>
</tr>
<tr>
<td>Component size (max)(^1):</td>
<td>100 mm x 100 mm</td>
</tr>
<tr>
<td>Theta fine travel:</td>
<td>± 2°</td>
</tr>
<tr>
<td>Z- travel</td>
<td>10 mm</td>
</tr>
<tr>
<td>Working area(^1):</td>
<td>310 mm x 197 mm</td>
</tr>
<tr>
<td>Bonding force (max)(^2):</td>
<td>500 N</td>
</tr>
<tr>
<td>Heating temperature (max)(^1,2):</td>
<td>400 °C</td>
</tr>
</tbody>
</table>

## Modules & Options
- Bonding Force Module
- Chip Heating Module
- Die Flip Module
- Dispenser Module
- Formic Acid Module
- Optics Shifting
- Process Gas Module
- Process Video Module
- Substrate Heating Module
- Ultrasonic Module
- UV Curing Module

## Notes:
* depending on configuration/application, \(^1\) standard value, other values on request, \(^2\) optional modules