

FINEPLACER® femto pro

Automatic Multi-Purpose Bonder

The Efficient Solution for Advanced Packaging

- » Multi-chip capability
- » Numerous bonding technologies (adhesive, soldering, ultrasonic, thermocompression)
- » Wide range of controlled bonding forces



Modular machine platform allows in-field retrofitting during entire service life

Automatic placement accuracy calibration

Placement accuracy of 2 µm @ 3 Sigma

Wide range of component presentation (wafer, waffle pack, gel-pak®)

Large bonding area

Ultra low bonding force

Features

Various bonding technologies in one recipe

Wide range of supported component sizes

Overlay vision alignment system (VAS) with fixed beam splitter

In-situ process observation in HD

Full process access and easy programming

Data/media logging and reporting function

Synchronized control of all process related parameters

Integrated scrubbing function

Fully automatic and manual operation

Excellent price performance ratio

3-color LED illumination

Benefits

Real flexibility to implement new technology approaches

One bonding platform supports a broad spectrum of applications

Precise visual alignment of large chips and substrates

Immediate visual process feedback for fast and easy process quality verification

Flexible and intuitive process composition allows implementing complex applications with little training effort

Comprehensive process documentation and traceability of process parameters for analysis

Maximum process control and reproducibility

Void reduction and improved surface wetting condition for optimized soldering quality

Fully manual mode available for fast and easy R&D work without any programming

High accuracy and process flexibility over the entire service life enable endless possibilities to bring your vision to life

Excellent contrast values with different materials for best visibility and recognition

Technologies

- » Thermocompression bonding
- » Thermo- / ultrasonic bonding
- » Soldering / eutectic soldering
- » Adhesive bonding
- » Laser-assisted bonding

Processes

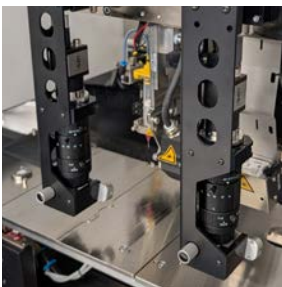
- » Flip chip bonding (face down)
- » Precision die bonding (face up)
- » Wafer level packaging (FOWLP, W2W, C2W)
- » 2.5D and 3D IC packaging (stacking)
- » Multi chip packaging (MCM, MCP)
- » Chip on glass (CoG)
- » Chip on flex/ film (CoF)
- » Glass on glass
- » Flex on board
- » Chip on board (CoB)

Applications

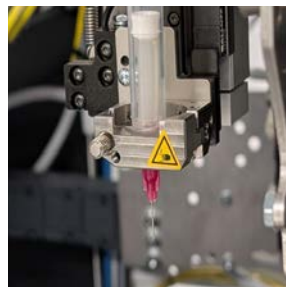
- » Laser diode assembly
- » Laser diode bar assembly
- » Lens (array) assembly
- » High-power laser module assembly
- » Optical Sub Assembly (TOSA/ROSA)
- » VCSEL/photo diode (array) assembly
- » Generic MEMS assembly
- » Micro optics assembly
- » Single Photon detector assembly
- » Gas pressure sensor assembly
- » Acceleration sensor assembly
- » Ultrasonic transceiver assembly
- » NFC device packaging
- » Mechanical assembly

Modules & Options

- » Automatic Dipping Unit
- » Automatic Tool Changer
- » Chip Heating Module
- » Component Presentation
- » Die Eject Module
- » Die Flip Module
- » Dispense Module
- » Flip Chip Test Module
- » Formic Acid Module
- » Handling Module
- » HEPA-Filter
- » Height Sensor (Laser)
- » ID Code Reader
- » Laser Activation Module
- » Laser Bottom Heater
- » Lifting Door
- » Manual Dipping Unit
- » Optics Shifting
- » Process Gas Module
- » Process Gas Selection
- » Substrate Heating Module
- » Substrate Support
- » Ultrasonic Module
- » UV Curing Module



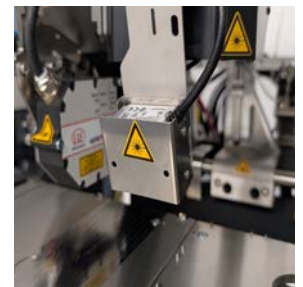
Multiple process cams for quick process development and detailed observation.



Various methods to dispense adhesive, flux and paste.



Prepared for multiple tool solutions. Ergonomic tool access.



Integrated high resolution 2D code reader ensures traceability in production.



Accuracy

2 μ m @ 3 Sigma
10 μ m

Component

min. 0.05 mm x 0.05 mm
max. 40 mm x 40 mm

Substrate

300 mm x 150 mm

Force

0.05 N
1000 N

Operation

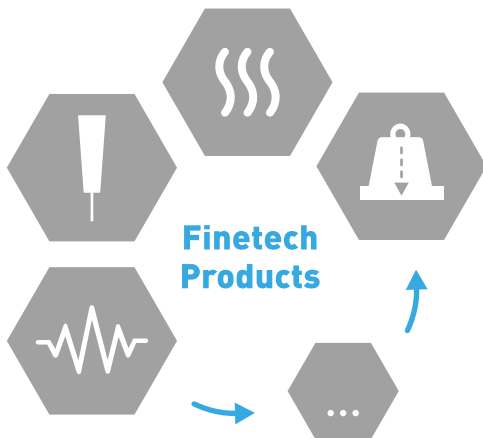
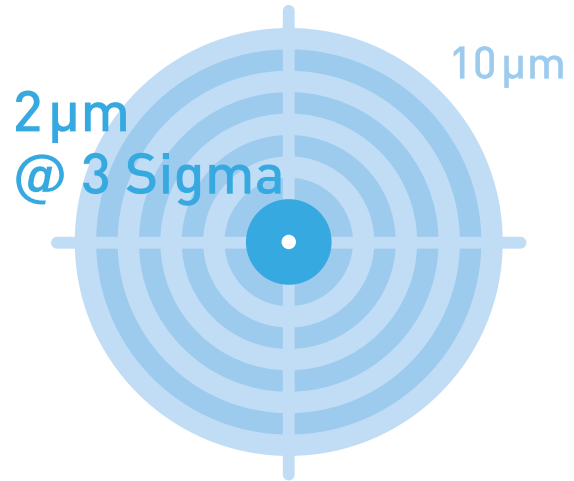
manual semi automatic automatic

How We Understand Accuracy

For assembly systems in packaging technology, so-called die bonders, the specified placement accuracy is an essential key figure for classification. However, it is often not clear which accuracy is meant and how or when it is measured. Therefore, Finetech relies on a transparent and verifiable method description of how the accuracy of our placement and assembly systems is measured and specified. This technical paper explains the context as well as the influencing factors of accuracy and shows which conclusions the customers can draw for themselves from the specified accuracy of Finetech products, but also those of other manufacturers.



[Download the paper here:](#)



Modularity Pays Off

Due to a large number of available process and function modules, the FINEPLACER® supports a particularly wide range of applications. When starting out, this flexibility enables configurations tailored exactly to the current needs. Moreover, the system can be adapted to new tasks over its entire service life, which is an integral part of the machine concept. Modules can be easily combined or exchanged, which increases the flexibility of the system and safeguards the investment in the long term.

Customer Feedback

"We use a Finetech die bonder for complex flip chip, sensor and opto-electronics applications, along with co-development of new assembly processes for leading semiconductor customers. The bonder has allowed us to help customers develop, optimize, verify and enhance many state-of-the-art technologies."



Dhiraj Bora
CEO & President, Silitronics