finetech

FINEPLACER® sigma

Advanced Sub-Micron Bonder

Unrivaled Flexibility for Research & Prototyping

- Reproducible sub-micron placement accuracy
- Pattern recognition for software verified alignment
- Large bonding area

0.5 µm

Wide range of supported component sizes

Synchronized control of all process related parameters

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

UHD vision alignment system with FPXvision™

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

Features	Benefits
Numerous bonding technologies (adhesive, soldering, thermocompression, ultrasonic)	Real flexibility by combining various technologies within one system to work on diverse projects
In-situ process observation in HD	Immediate visual process feedback for fast and easy process quality verification
3-color LED illumination	Excellent contrast values with different materials for best visibility and recognition
Data/media logging and reporting function	Comprehensive process documentation and traceability of process parameters for analysis
Full process access & easy visual programming with touch screen interface	Fast composition of process sequences and intuitive process implementation
Ultra low bonding force	Bonding forces down to 5 g to ensure the handling of very fragile components
Process module compatibility across Finetech platforms	Transfer of qualified process parameters between systems.
Individual configurations with process modules	Machine solutions tailored to your application requirements
Wide range of controlled bonding forces	Use low or high bonding forces within one system to meet the requirements of various bonding technologies
Sequence control with predefined parameters	Get your process steps in the right order of an intuitive and guided process flow

Technologies

» Sintering
» Thermocompression bonding
» Thermo- / ultrasonic bonding
» Soldering / eutectic soldering
» Adhesive bonding
» Precision vacuum die bonding

Processes

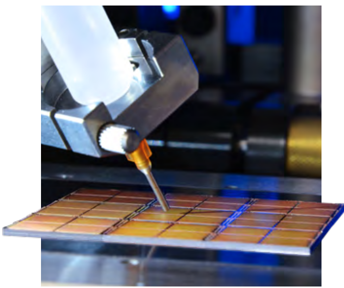
» Flip chip bonding (face down)
» Precise die bonding (face up)
» Wafer level packaging (FOWLP, W2W, C2W)
» 2.5D and 3D IC packaging (stacking)
» Multi chip packaging (MCM, MCP)
» Chip on Glass (CoG)
» Chip on Flex / Film (CoF)
» Glass on glass
» Flex on board
» Chip on Board (CoB)

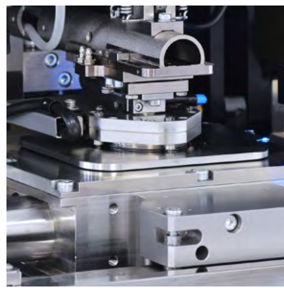
Applications

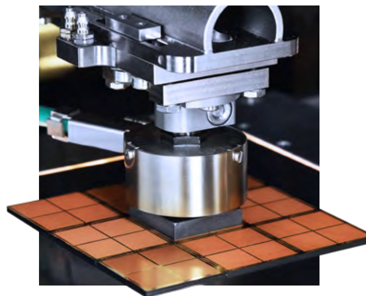
» Visual image sensor assembly
» Single Photon detector assembly
» X-Ray detector assembly
» IR detector assembly
» µLED (array) assembly
» e-beam module assembly
» Acceleration sensor assembly
» Gas pressure sensor assembly
» Generic MEMS assembly
» Ultrasonic transceiver assembly
» High-power laser module assembly
» Ink jet print head assembly
» Generic MOEMS assembly
» Laser diode assembly
» Laser diode bar assembly
» Mechanical assembly
» Micro optics assembly
» VCSEL/photo diode (array) assembly
» Micro-optical bench assembly
» Optical Sub Assembly (TOSA/ROSA)

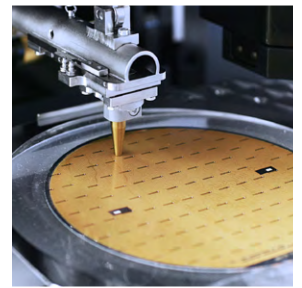
Modules & Options

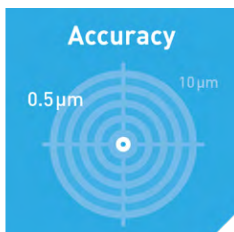
- » Bonding Force Module (automatic)
- » Chip Heating Module
- » Component Presentation
- » Die Eject Module
- » Die Flip Module
- » Direct Component Printing Module
- » Dispense Module
- » Formic Acid Module
- » Manual Dipping Unit
- » Mask Generator "Scaled"
- » Motorized Z Table
- » Process Gas Module
- » Process Gas Selection
- » Process Video Module
- » Substrate Heating Module
- » Substrate Support
- » Tool Tip Changer
- » Ultrasonic Module
- » UV Curing Module
- » Vacuum Chamber Module

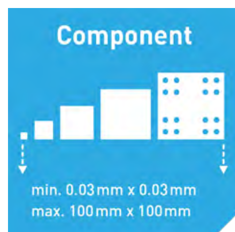

Dispense Module

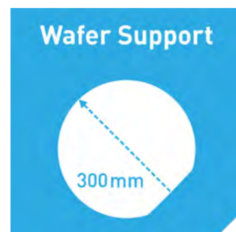

Vacuum Chamber Module

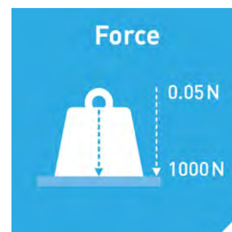

Chip Heating Module


Die Eject Module





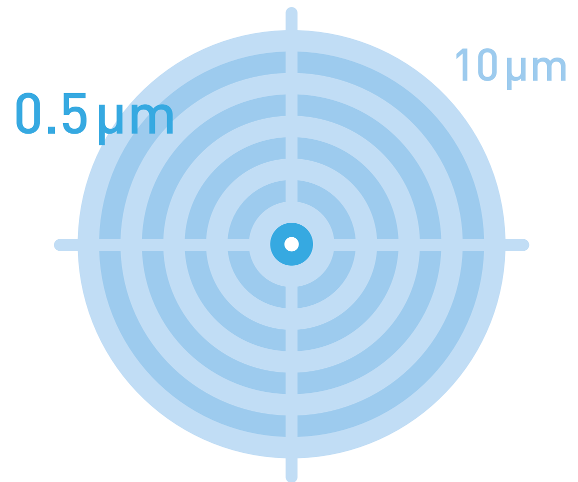




How We Understand Accuracy

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 the FINEPLACER® sigma for a variety of applications, ranging from simple chip-to-submount to complex module assemblies with very high accuracy requirements. Easy manual operation makes the system also an ideal fit for low-quantity research samples."

Lars Schellhase
Ferdinand-Braun-Institut

Technical information and specifications are subject to change without prior notice
© Finetech GmbH & Co. KG