FINEPLACER® femto 2 - Automatic Sub Micron Bonder for Product Development and Production

At Productronica 2015, Finetech is presenting its newest bonding platform FINEPLACER® femto 2 for the first time. The fully automatic system features a placement accuracy of up to ± 0.5 µm @ 3 Sigma and supports a wide range of assembly applications on chip and wafer level.

The FINEPLACER® femto 2 is suitable for clients from various branches, including Research & Development, semiconductor industry, communication and medical engineering, as well as sensor production. The FINEPLACER® femto 2 is a reliable companion as applications migrate from process and product development to automated low-volume/high-mix product environments. The whole production chain can be followed, starting from inspection, to characterization, packaging, final test and classification.

Process environment in cleanroom quality, new Vision Alignment System

The new generation of the femto-platform expands the proven technical base of the previous model with many improvements.

Finetech has equipped the FINEPLACER® femto 2 with a special machine enclosure. By eliminating external factors of interference, all process conditions can be precisely controlled and directly influenced. By means of filtration a safe process environment in cleanroom quality is achieved –regardless of the machine's operating site. Even highly demanding applications can be realized in a reproducible, highly precise and stable manner. At the same time, the operator is protected from laser or UV-source emissions, harmful gasses, and more.

The new Vision Alignment System FPXVisionTM was especially designed for particularly high precision requirements. Together with the improved pattern recognition it provides the user with extended possibilities regarding application flexibility and precision. Two stationary HD cameras provide the video feeds used for the overlay image, and specially developed optics ensure that the cameras' full resolution potential is tapped. Regardless the selected object field, always maximum resolution and real-time optimized camera images enable a uniform sharp representation of finest structures across the entire field of view, even with large components and substrates.

Numerous illumination options allow for a larger scope of variations when working with different materials and surfaces.

Configurations for applications of any kind

Like all bonding systems by Finetech, the FINEPLACER® femto 2 can be individually configured. Its modular architecture allows retrofitting the machine at any time according to the requirements of added applications and technologies. A wide range of process modules allows integrating a great variety of bonding technologies, such as numerous soldering methods, gluing and curing, thermo-compression bonding and thermo-sonic or ultrasonic bonding.

The wide range of supported applications includes, among others, flip chip bonding (face down), die bonding (face up), assembly of opto-electronic components like laser diodes, laser bars, LED, VCSEL, photodiodes and micro-optics, 2.5D and 3D packaging of MEMS, MOEMS and sensors, bump bonding, copper pillar bonding or chip-on-glass and chip-on-flex applications.

The FINEPLACER® femto 2 supports working with components in sizes from 0.05 x 0.05 mm² to 100 x 100 mm².

Fast process development, full process access, optional manual operation

The user independent process operation of the FINEPLACER® femto 2 ensures stability, precision and optimal yield. At the same time, Finetech has developed a machine concept that's paying special attention to a straightforward process management and full process access.

In addition, the open machine architecture supports fast process setup and teaching times. The FINEPLACER® femto 2 also offers manual operation routines which allow for intervening and modifying automatic processes, if required. A separate process camera is also very helpful in providing immediate visual feedback for a quick process development.

Another piece of importance is the new bonding and control software IPM Command. Completely revamped from the ground up, it allows for a logical and clearly structured process development on a modular library-based principle. In combination with the intuitive interface with touchscreen control and multi-gesture support a particularly ergonomic operation is possible.

World premiere at Productronica 2015

The new FINEPLACER® femto 2 will be officially presented for the first time during Productronica 2015 from November 10th to 13th. All interested visitors may stop by the Finetech Micro Assembly booth for a first-hand experience of the automatic die bonder platform.