

High Flexible die Bonder-System



HFB-System 1000

Semi-automatic Die Bonder-System in rigid granite frame arrangement with a high bond force capability, second Z - axis and with a beam splitter optics for accurate alignment.

- Bond force up to 1000N
- Second Z - axis
- HMTPA (high magnified two point alignment)
- Free programmable automated bond process
- Network ready (RDS)
- Cycle time <5s

Application area

The HFB-System is a versatile Die Bonder-System designed for micro assembly applications like diffusion bonding or high contact density flip chip bonding. With the integrated dual imaging optics in combination with the programmable Z-axis this system is well suited for reproducible bonding of electronic and opto-electronic components. A physically generated overlay live image allows the operator in combination with a user friendly program interface to intuitively perform the component alignment and bonding. A second Z-axis can be used for load or unload of single or bonded devices, dispensing, dipping or stamping without tool exchange. This arrangement guarantees a maximum of stability at high bond forces as well as a maximum working range using minimal footprint. Available options such as different heating plates, heated pick up tools, ultrasonic module or dispenser further extend the usability of the system. The HFB-system supports all topical and future connecting technologies and applications in the area of micro systems technology.

Applications

- sinter/ diffusion bonding
- high contact density Flip Chip Bonding
- CoS (Chip on Submount)
- MEMS / MOEMS assembly
- sensor assembly
- assembly of optical components (photo diodes, laser diodes)
- assembly of lenses and lens array's
- Laser bar bonding
- Wafer bonding
- assembly of mechanical components
- sorting of components
- assembly of medical parts

Technologies

- thermo-compression bonding (eutectic bonding, Au/Au bonding, Au/Sn bonding, Cu/Cu bonding)
- ultrasonic - or thermosonic bonding
- adhesive bonding
- dispensing
- dipping
- stamping
- UV-curing

Options

- HMTPA (high magnified two point alignment)
- different light sources
- ultrasonic module
- dispensing / stamping
- UV-curing
- heated pick-up tools
- heating plates with and w/o vacuum structure
- Coplanarity tools
- process gas chamber
- process gas suction
- support plate with vacuum
- input-/output station with or without vacuum
- HD inspection camera

Technical specifications

- rigid granite frame arrangement
- beam splitter optics
- fully programmable bond process
- air cushion table with micrometer screws for x- and y-axis
- levelable and height adjustable bond stage
- HD camera with optical zoom
- bond force: 0.1 - 1000N
- positioning accuracy: 3 micron
- maximum component size 25mm x 25mm
- maximum substrate size 175mm x 175mm
- working area: 175mm x 150mm
- open frame for process gas suction

Data sheet

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| Voltage: | 230 V, 50 Hz, 2 A |
| Weight: | 250 kg |
| Connections: | Power cable IEC-60320 C13 Compressed air (6 mm pipe); Pressure: 4.5 bar – 5.0 bar <ul style="list-style-type: none"> • ISO 8573-1:2000[1:4:2] N ₂ (6 mm pipe); Pressure: 4,5 bar – 5,0 bar Vacuum (6mm pipe); Pressure: -0.6 bar – -0,8 bar HDMI Type A (adjustment camera& inspection camera) 2x Option 9-pin D-Sub Ethernet RJ45 Cat.6 (touch panel & data storage) |
| Travel range Z: | 60mm |
| Travel range micro meter screw X: | 10mm |
| Travel range micro meter screw Y: | 10mm |
| Travel range Phi (Z stage) | 360° (incl. heated pick up tool) |
| Tool specifications | Shaft diameter (mm): Ø3 h6 Shaft length (mm): 12 Overall length (mm): 20 (focusable including component) |

