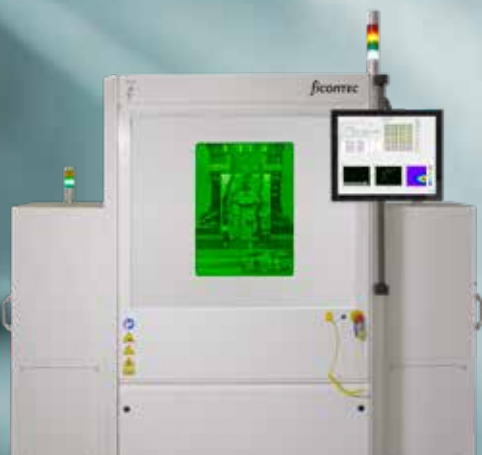


BONDLINE

B800 / B1200 / B1600



Automated precision die bonder for photonic devices, utilizing a new, configurable and modular system approach, complete with production-optimized housing layout. Made for cassette-to-cassette and in-line high-volume manufacturing, as well as for R&D & NPI.



NEW
Next-generation
In-line BONDLINE systems

Automated precision die bonder

BONDLINE systems are precision die bonder cells focused on passive high-resolution chip/die positioning coupled with thermal attachment (position-&-attach), with accuracies down to the micron and even sub-micron range. BONDLINE is intended for chip-on-submount (CoS), MEMS/MOEMS and sensor assembly, as well as for other optical components, including laser diodes and integrated hybrid PIC assemblies.

Feature-rich modules provide thermal management, multiple bond force modes and eutectic/laser soldering attachment capability, with high-end models providing optional automatic tool changing and wafer processing capability. The entire process is housed in an industry-proven design and is fully-automated, with control via a tried and tested software control interface.

Now, ficonTEC's new, next-generation in-line die bonder systems feature a redesigned, production(-line)-optimized platform (800, 1200, 1600). They are available either as an individual and versatile die bonder cell for existing production lines, or they can be daisy-chained as a series of task-optimized systems for extended production segments. In principal, even entire production lines can be envisaged.



Multiple In-line system line-up



Chip-on-submount bonding

Software Control

PROCESS CONTROL MASTER (PCM) is our user-friendly and process-oriented software control interface that is shipped with all turn-key systems and multiple machine configurations. PCM features an intuitive UI that includes all machine vision, high-resolution positioning and system management routines required to reliably and repeatably drive passive/active alignment and attachment/bonding process hardware.

PCM is already fully enabled for automated electro-optical test and characterization tasks and employs AI-based Deep Learning capability for chip facet defect recognition and classification. PCM also monitors and logs single or multiple production line performance and can even sync parallel lines remotely.



High-level function interface simplifies programming

BONDLINE

B800 / B1200 / B1600

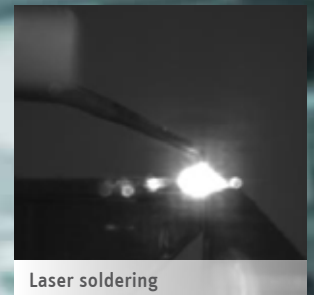


Key features

- ✓ Fully-automated precision die bonder
- ✓ Camera-based alignment (optional sub- μm)
- ✓ Eutectic bonding or selective laser soldering
- ✓ Precise, adjustable bond force control
- ✓ Optional post-bond measurement
- ✓ Chip & wafer-level handling/processing
- ✓ OCR for component tracking & traceability



Eutectic soldering



Laser soldering



Camera-based alignment



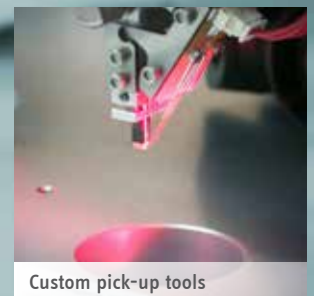
Flip-chip module

General tasks & applications

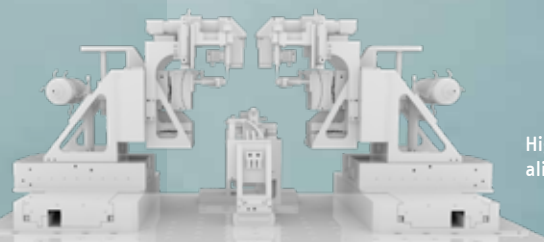
- Chip-on-submount, chip-to-chip bonding
- MEMS/MOEMS and sensor assemblies
- BioMedical devices
- Miniature laser assemblies
- PICs, hybrid integrated photonics



Bond force control



Custom pick-up tools



High-precision alignment unit

Flexible, modular & (re-)configurable

- State-of-the-art feed IN/OUT options
- FAB & HVM-ready – scalable and parallelizable
- Single systems slot into existing production lines
- Daisy-chain multiple systems for production segments
- Operate, monitor and sync parallel lines remotely
- Add and/or swap modules to re-configure & re-purpose

What we do

ficonTEC is a recognized market leader for automated assembly and testing systems for high-end opto-electronic components and photonic devices, including PICs. Considerable process capability and dedicated assembly technologies have been accumulated in serving requirements for telecom and datacom, high-power diode laser assembly, micro-optical systems, sensing from bio-med to automotive to IoT, and more.

A unique and modular approach to production equipment design means that each system delivered is the automated and optimized embodiment of a customer-defined process.

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Core system specifications	 B800	 B1200	 B1600
Motion system	gantry system with minimum 6-axis high-precision alignment*	gantry system with minimum 6-axis high-precision alignment* or cantilever system w/o multi-axis system	cantilever system with minimum 6-axis high-precision alignment*
Handling options	single conveyor	single or dual conveyor	
Wafer capable	no	up to 6"	up to 12"
Machine vision	standard/dual positioning and observation camera options		
Feed options	suitable for Jedec or Auer boats, or for customer trays		
Software features	ergonomic, flexible and powerful process software – extended operator-less control – remote control server option		
Physical features	rugged steel-base production cell - access door lifts vertically without affecting footprint		
Minimum connections	400 VAC (or country specific), air/vacuum, 100 Mbit/s network		
Cleanroom compliance	ISO 6**		
Dimensions (w x b x h, mm)	800 x 1200 x 1600/2000	1200 x 1200 x 1600/2000	1600 x 1200 x 1600/2000
Weight (typ., kg)	1300	1800	2500

* alternative multi-axis configurations optional ** others available on request

BONDLINE die bonder systems are suitable for in-line applications in high-volume manufacturing (HVM), including multiple production lines operating in parallel and in sync, optionally via remote control. Custom systems, special purpose cells and robotic systems can be flexibly designed and incorporated to suit customer requirements.