

# CL2000

Adaptable Die Bonder Platform



***ficonteC***  
micro assembly machines

# CL2000 Adaptable Die Bonder Platform

The CL2000 multi-purpose die bonder is a system designed for customers in the semiconductor and photonics packaging market. It can be configured to a wide range of tasks in a wide range of production environments.

The base system provides everything needed for a tremendous range of applications. A pre-configured high precision gantry motion system carries the tools for die bonding or testing. Of course the machine is designed for industrial production environments. In combination with a selection of a variety of functional modules the system becomes your individual production cell.

## Powerful Machine and Process Software

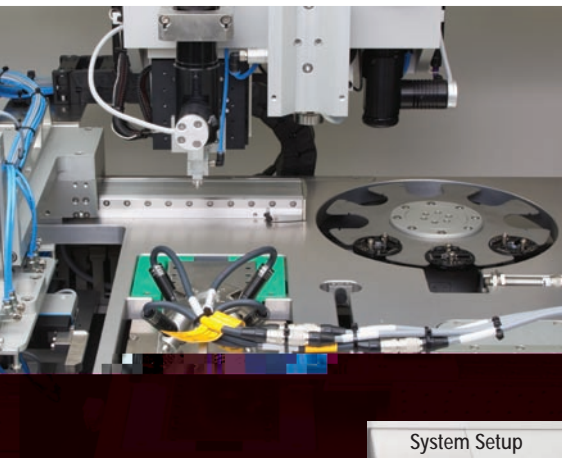
- Remote service and control via internet
- Freely programmable machine processes
- User friendly user interface
- Line based process programming
- Recipe based management of process parameters
- Algorithms for active assembly
- SQL data base based storage of process parameters and component data
- Flexible data import and export
- Component tracking
- Same software on all ficonTEC machines for consistent look and feel of machine programming and operation

## High Precision Die Attach

With the special bond head the CL2000 is perfectly suited for chip bonding. A specifically designed die handler holds the die while a dedicated bond camera observes the chip and the bond position on the substrate concurrently. This offers alignment distances during the assembly process for best bonding accuracy.

## Fields of Usage

- Si-Photonics components
- Sensor assemblies
- Medical devices
- MEMS/MOEMS
- Miniature lasers
- Hybrid assemblies
- LED print heads
- High power LEDs



System Setup



Machine, CL2000

Modules	Feature	
Material Handling	<ul style="list-style-type: none"> <li>• Cassette-to-Cassette</li> <li>• In-Line</li> <li>• Conveyor</li> <li>• Robot loading</li> <li>• Tape and reel feeding</li> <li>• SMEMA Interfacing</li> <li>• Manual trayloading</li> </ul>	
Laser Soldering	<ul style="list-style-type: none"> <li>• Fast soldering process for chips</li> <li>• E.g. COS (Chip on Submount)</li> <li>• Fiber coupled light delivery</li> <li>• Laser Class 1 operation</li> </ul>	
Heating Plates	<ul style="list-style-type: none"> <li>• Conduction heating by heating plates</li> <li>• For soldering processes or thermal curing applications</li> <li>• Flexible temperature PID control of heating profile</li> <li>• Up to 450°C</li> <li>• Different oven sizes available</li> </ul>	
Co-planarity Unit	<ul style="list-style-type: none"> <li>• For highest performance of chip to substrate parallelism</li> <li>• Especially suited for larger dies</li> <li>• Metrology for displacement</li> <li>• Actuation for correction of bond line uniformity</li> </ul>	
Tool Changer Magazine	<ul style="list-style-type: none"> <li>• For the automatic change of handling tools</li> <li>• Tool magazine with up to 8 positions</li> </ul>	
Wafer Processing	<ul style="list-style-type: none"> <li>• Handling table to process dies from or to wafers or wafer foil (BlueTape)</li> <li>• For up to 200 mm wafers</li> <li>• Ink dot detection</li> <li>• Wafer map reading and generation</li> <li>• Damage free die ejector</li> </ul>	
Flip Chip Unit	<ul style="list-style-type: none"> <li>• For flipping chips during the assembly process</li> <li>• Smooth operation</li> <li>• No chip smashing</li> </ul>	
Dispensing Unit	<ul style="list-style-type: none"> <li>• For the dispensing of e.g. epoxies</li> <li>• Controlled from within machine process</li> </ul>	
UV Curing Unit	<ul style="list-style-type: none"> <li>• For the illumination with UV light</li> <li>• E.g. for curing of UV epoxies</li> <li>• One (standard) or up to four illumination spots</li> <li>• Controlled from within machine process</li> </ul>	
Bonding Force Control	<ul style="list-style-type: none"> <li>• Closed-loop bond force control</li> <li>• For delicate components (GaAs, InP, MEMS)</li> <li>• For consistent bond result</li> <li>• Controlled from within machine process</li> </ul>	
Pick-up Tool (PUT)	<ul style="list-style-type: none"> <li>• Different PUTs available</li> <li>• Glass, steel, rubber, plastic chosen for best application</li> <li>• Operated with vacuum</li> </ul>	

## CL2000 General Specifications

Bonding Accuracy	+/- 2 microns, 3 sigma (with HP bond head)
XY Motors	Linear motors with glass scales encoders
Lateral Travel	450 mm x 450 mm x 100 mm (XYZ)
Lateral Resolution	100 nm
Θ Travel	270°
Θ Resolution	10 arcsec
Force Control	0 g .. 250 g (optional 0 g - 2000 g)
Vision System	Edge detection, pattern match, shape match
Lighting	Ring or coaxial, programmable intensity; Color depending on application
Component Gripper	Vacuum tool or mechanical tweezer (different material and sizes)
System Calibration	Auto calibration
Eutectic Bonding	Up to 450°C, programmable heating profiles
Formic Acid Supply	Formic Acid Gas generator available as option
Dispensing	Dispense pattern freely programmable
Software	Process Control Master
Clean Room Compliance	ISO 6
Connections	<ul style="list-style-type: none"> <li>• 400 VAC</li> <li>• 6 bars compressed air</li> <li>• - 700 mbars vacuum</li> <li>• 100 Mbit/s network</li> </ul>
Dimensions (approx.)	1.8 m x 1.5 m x 2 m (wdh) excl. human interface terminal
Weight (approx.)	1.8 t
Human Interface Terminal	2 monitors, keyboard, trackball

## What we do

ficonTEC designs and produces automated production equipment for the assembling or testing of components.

We are the market leader in the field of equipment for the assembly or test of micro-optics or opto-electronics such as laser diode manufacture, medical technology, security and military engineering, as well as telecommunications.



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## ISO 9001 Certification

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