Semiconductor equipment. Core components. FLC.

FLC Company & Product Guide

Founded in 2020, FLC develops semiconductor and display equipment and components. We focus on equipment development, domestic component manufacturing and custom engineering.

Company	FLC Inc.
Established	July 20, 2020
Representative	Jungbum Woo
Business registration number	179-88-01958
Address	FLC Inc., 74-10 Geumgok-ro, Jiksan-eup, Seobuk-gu, Cheonan-si, Chungcheongnam-do, Republic of Korea
Main phone	+82-41-537-8115
Email	semiclover@withflc.com

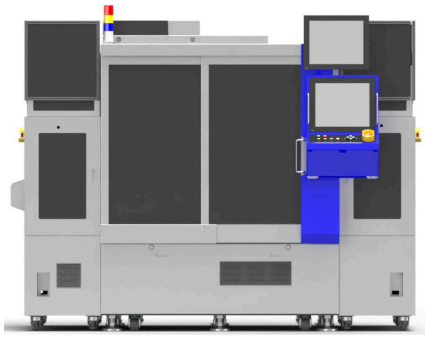
Business areas

- Semiconductor equipment
- Process parts & tools
- Ceramics & materials

Revised October 26, 2026 / Product information as of 2026.09.23. Based on FLC Product items. Development targets are not completed supply specifications. Contact us to confirm current availability and application conditions. Actual specifications depend on your equipment and process.

Stack Die Bonder

ZSD-1



A die bonder for precision thin die stacking and automatic tool changes

Picks individual dies from a wafer and bonds them to a substrate. Dual pickup and dual bond heads support NAND and DRAM stack die bonding processes.

Model	ZSD-1
Dimensions (W × D × H)	2,567 × 1,659 × 1,950 mm
Die thickness / stack	30 µm / 32 Stack
Bonding accuracy	XY ±4 µm @ 5σ / θ ±0.05° @ 5σ
Throughput	DRAM 4K UPH / NAND 3K UPH
Thin Die Ejector	VMS (Full Auto Control) / EMS
Head configuration	Bond Head Dual / Pick-up Head Dual

Options & customization

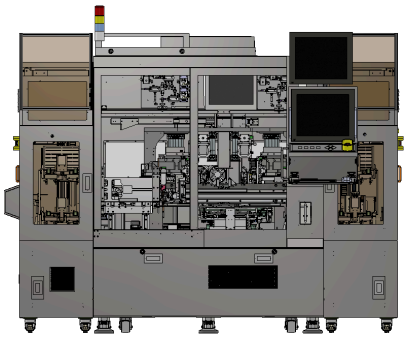
Discuss needle and needleless multi-stage configurations, plus collet changes for bond heads, pickup heads and the middle stage.

The source states that development and production quality qualification are complete. Throughput and accuracy depend on die, substrate and stacking conditions; confirm application conditions before adoption.

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HBM TC·Hybrid Bonder

TC / Hybrid



Bonding equipment development for HBM stacking

Chip-to-wafer TC and hybrid bonding equipment under development for HBM packaging, considering die handling, bonding and thermal control together.

TC bonding target applications	HBM3E / HBM4
Hybrid bonding target applications	HBM5 / HBM6
Development scope	Die handling / Bonding / Thermal control

Options & customization

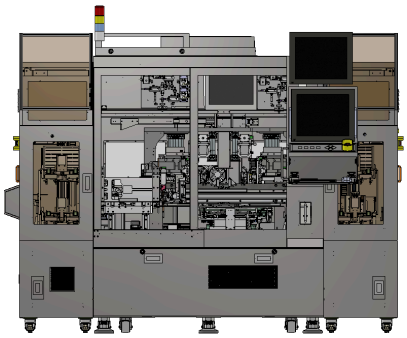
We review joint development and application feasibility for the stacking structure and thermal conditions of your process.

HBM generation support is a development target, not an indication of completed commercial availability. Contact us for schedules and evaluation conditions.

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2.5D·FO-WLP Bonder

MCPD-1



High-precision bonding equipment for advanced packaging

Under development for applications including 2.5D and FO-WLP. Face-up and face-down configurations are being reviewed for different die and substrate conditions.

Model	MCPD-1
Target processes	2.5D / FO-WLP / HBM·CoWoS·PLP
Die size (target)	1–30 mm
Die loading (target)	12-inch wafer / Optional tray and tape & reel
Face-down accuracy (target)	XY ±1 μm @ 3σ · Local Alignment
Heater (target)	Stage RT–150 ℃ / Head RT–450 ℃
Bond force options (target)	0.5–50 N / 2–200 N / 10–500 N
Development target	Q3 2027

Options & customization

We review flux dipping, tool parallelism adjustment, automatic changes and substrate-specific configurations.

These figures are development targets from the presentation. Final supply specifications and timing may change with development and evaluation results.

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PKG Saw Singulation Equipment

Saw Singulation



Saw singulation equipment for package cutting and sorting

Separates molded substrate packages into individual units and sorts them. Uses dual spindle and dual chuck table configurations.

Dimensions (W × D × H)	4,365 × 1,870 × 1,900 mm
SAW Offset	XY ±0.05 mm @ 3σ
Throughput (source figures)	DRAM 28K / NAND 25K UPH · BIN Sorting
Spindle speed	20,000–60,000 RPM
Saw Head / Chuck Table	Dual / Dual
Options in development	AI Vision / OHT and AMR support · Target Q2 2027

Options & customization

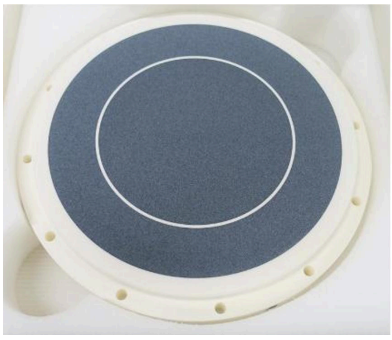
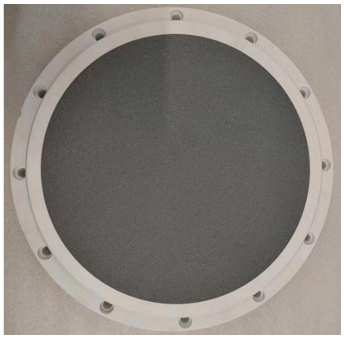
Package dimensions, sorting conditions, blade/chuck change configurations and logistics automation are reviewed individually.

Confirm equipment availability and the implemented scope of each option during consultation. AI Vision and OHT/AMR support are development items in the source presentation.

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Back Grind Parts

Chuck Table / Wheel

Chuck tables and related parts for wafer back grinding

We support the supply and custom specification review of manufacturer products including chuck tables, grinding wheels and robot pick handles for your equipment and wafer conditions.

Product configuration	Chuck Table / Grinding Wheel / Robot Pick Handle
Wafer size	8-inch / 12-inch
Equipment compatibility review	DISCO / TSK families · Confirm by specific model
Customization items	P.C.D hole / Cooling water inlet positions

Options & customization

We check the equipment model and shipment date, chuck drawings and cooling water inlet position to assess compatible specifications.

Manufacturer supply scope and compatibility require model-specific consultation. Wafer processing accuracy and TTV are evaluated under actual process conditions.

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Automatic Thin Die Ejector

EMS / Hood Type



An ejector for thin die separation and component changeovers

A core die bonder component that separates thin dies from a wafer. A common body, device-specific detachable hood and one-touch change structure support different equipment and process conditions.

Applications	NAND / DRAM / HBM Thin Die
Structure	Common body + Device-specific hood
Drive configuration	Single-axis motor / Four-axis motors
Review conditions	Die dimensions/thickness / Bumps / Motion / Equipment model

Options & customization

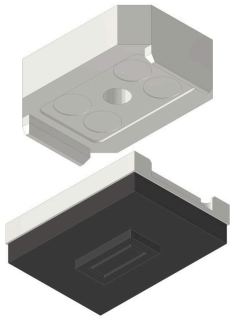
Hood and ejector structures are designed for thin die pickup conditions, bump surfaces and equipment motion. Existing kit improvements can also be discussed.

Development is complete and production use is documented in the source. Die thickness and pickup performance require review for the target device and equipment.

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Magnetic Collet & Automatic Change Parts

M-Collet



Magnetic collets for die pickup and bonding

One-touch magnetic holders and collets provide tools for die characteristics and usage positions, with automatic change structures and a range of vacuum patterns.

Product configuration	Magnetic holder / Collet / Automatic change parts
Reference holder configuration	14 × 19 Fixed Type
Usage positions	Pick-up Head / Bond Head / Middle Stage
Selection criteria	Die dimensions/thickness / Hardness / Material / Surface resistance / Coating

Options & customization

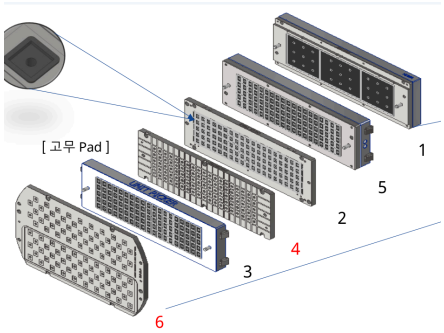
We review HBM and flip chip tools, vacuum holes and line patterns for your process. Part codes and detailed drawings are available through consultation.

Development is complete and production use is documented in the source. Equipment mounting structures and automatic change compatibility are checked individually.

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Saw Singulation Conversion Kit

Custom Conversion Kit



Saw conversion kits for equipment and package specifications

Pickers, chuck tables and other changeover components for package cutting are designed around equipment structures and product dimensions.

Components 1–2	Strip Picker / Chuck Table
Components 3–4	Unit Picker / Dry Block
Components 5–6	Turn Table Picker / Turn Table
Review conditions	Package dimensions / Layout / Equipment structure / Vacuum and transfer conditions

Options & customization

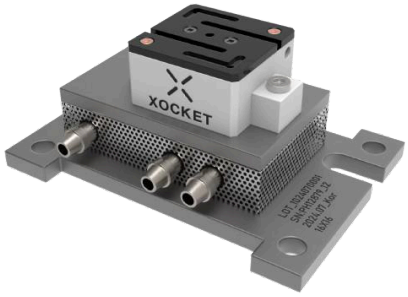
Discuss kit fabrication for new package changeovers and component structure modifications for existing equipment.

Production use is documented in the source. Numbers 1–6 in the illustration correspond to the components in the specification table.

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Ceramic Pulse Heater

Ceramic Heater



Ceramic heaters for rapid heating and cooling in bonding

Ceramic pulse heaters are being developed for semiconductor packaging processes such as TC bonding. Thermal control characteristics and process conditions are evaluated together.

Applications	HBM Chip / Flip Chip / ACF Bonding
Evaluation criteria	Temperature range / Heating and cooling cycle / Durability
Development stage	Sample evaluation

Options & customization

Discuss sample evaluation based on heater geometry, target temperature, heating/cooling cycle and process environment.

Heating and cooling performance depends on test conditions including heater size and cooling method. Specifications are provided after confirming evaluation conditions.

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Ceramic P&P Tool

Pick & Place Tool



Ceramic pick & place tools for advanced packaging

Ceramic tools for HBM and 2.5D/3D packaging equipment. Development considers thermal conductivity, hardness and electrical properties for the process.

Applicable equipment	HBM / 2.5D·3D Die Bonder
Specification review	Material / Geometry / Contact design
Evaluation criteria	Thermal conductivity / Hardness / Surface resistance / Durability

Options & customization

Contact geometry, materials and electrical properties are reviewed for your bonding conditions.

In sample evaluation. Material values and service life are provided after confirming comparison criteria and test conditions.

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EMI Back Plate

PVD Sputtering Parts



Back plates for EMI shielding processes

We develop and supply back plates used in PVD sputtering equipment for semiconductor EMI shielding, reviewing target conditions and equipment mounting structures.

Application process	EMI Shielding / PVD Sputtering
Product configuration	Back plates for target-specific conditions
Specification review	Equipment / Target / Material / Dimensions / Mounting structure
Development history	Localized in 2022 / Supply agreement in 2023

Options & customization

Manufacturing specifications are reviewed against the target, equipment structure, material, dimensions and mounting conditions.

Development is complete and production use is documented in the source. Contact us to confirm applicable equipment and manufacturing scope.

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