



## Condor Sigma W12



The Condor Sigma W12 is the ideal solution for 300mm (12 inch) wafer testing

## Ideal solution for 300mm (12 inch) wafer testing

- Precision shear testing and Cold Bump Pull (CBP)
- **Big bump removal** to prepare for wafer probing
- Bump sizes down to 20µm
- Available with or without **wafer handler (EFEM)**
- XY mapping coordinates key in function
- Grading run functionality
- **Up to 4 USB Tweezers in 1 RMU**
- Easy positioning, alignment
- High resolution cameras with high and low magnifications
- Fastest throughput of wafer bump testing in the world
- 500mm X-stage and 370mm Y-stage, throat depth 400mm
- Integrated report editor and flexible data export
- Reach 100% of the 300mm wafer without repositioning the wafer on the chuck
- Blower and vacuum tool cleaning unit

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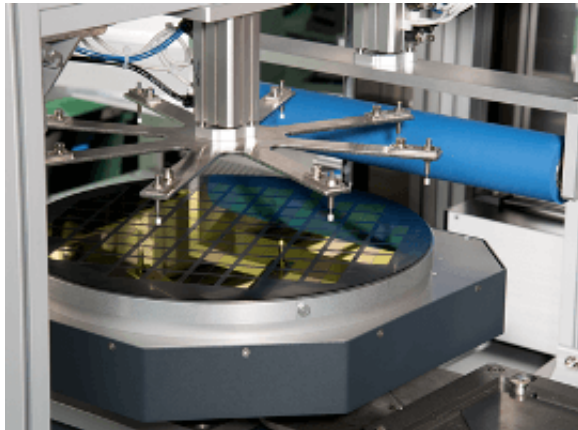
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### **Bond testers**

- Condor *Sigma*  
- Condor *Sigma Lite*  
- Condor *Sigma W12*  
- Condor *150HF*

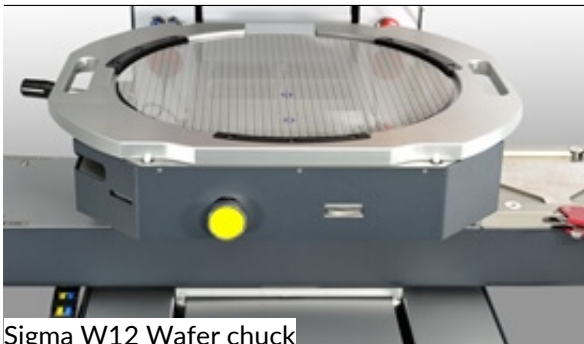
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Wafer pusher and wafer chuck cleaner besides the wafer loading arm

- Wafer chuck with safety interlocks and 360 degree rotation
- Wafer carrier mechanically locked when vacuum is turned on
- Complies with JEDEC JESD22-B117A, JEDEC JESD22-B115, JEITA EIAJ ET-7407 and IPC-9708 standards
- Also suitable for 200mm (8 inch) and other wafer sizes
- 24 bit ADC resolution, 10kHz sampling frequency
- Compatible with Revolving Measurement Unit (RMU) and single heads
- **SECS/GEM protocol**
- Wafer pusher to test warped wafers
- Unparalleled 0.075% accuracy



Sigma W12 Wafer chuck

The Condor Sigma W12 is specifically designed for precision shear testing and Cold Bump Pull (CBP) on wafer or at wafer level. The system has the largest X/Y and fastest stages available in the industry, to reach all positions on the wafer with the tool and cameras in record speed. The 30nm resolution linear encoders ensure accurate positioning.

The Condor Sigma automation features ensure rapid testing of randomly selected positions on the wafer. Fiducial mark recognition can guarantee a high repeatability. Cameras also assist the operator to perform grading. The grading run functionality enables quick grading after a sequence of tests.

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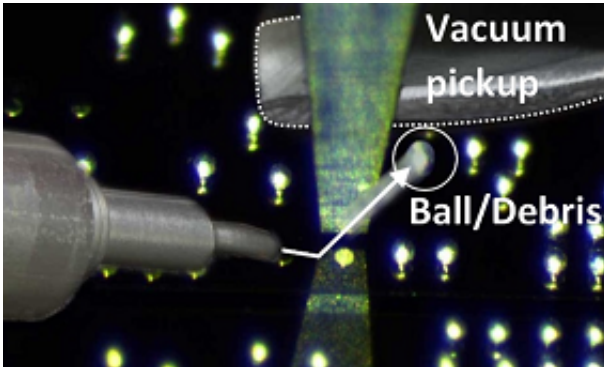
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Blower and vacuum tool cleaning unit mounted around the shear tool. The unit is not connected to the cartridge, but to the machine frame.

The Condor Sigma W12 can be equipped with up to two perpendicular cameras and a camera mounted on a trinocular microscope. We recommend using a low and a high magnification camera for best positioning and grading. A second monitor can show (live) camera images for ease of operation.

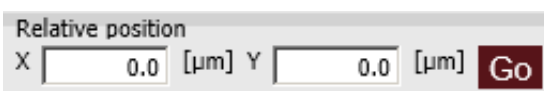
## Big bumps

To prepare for wafer probing, big bumps need to be removed by shearing them off and cleaning any debris. Fully programmable vision algorithms are used to check if big bumps are successfully removed.

## Revolving Measurement Unit

Compatibility with the XYZTEC **Revolving Measurement Unit (RMU)** ensures that you can switch between test types and tools with the press of a button. Unused sensors (cartridges) are protected within the machine. The RMU can hold up to 6 sensors in any combination, **including up to 4 USB Tweezers**.

## XY mapping



The Condor Sigma W12 software allows the operator to quickly and accurately jump to the next test point

The XY mapping function enables the operator to quickly and accurately move from position to position on the wafer by keying in a relative move. Naturally, the Condor Sigma W12 is equipped with 30nm resolution linear encoders, ensuring 0,5µm repeatability.

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Together with the market leaders of wafer handling equipment we offer a fully integrated and automated solution

## Wafer handlers (EFEM)

The Condor Sigma W12 can be integrated with various types of wafer handlers (Equipment Front End Module, EFEM). Integration transforms the bond tester into a fully automated system.

We offer leading edge products for up to 300 mm equipment frontend module platforms.

Among our customers are the world's top 4 semiconductor packaging houses, which require high precision, fully automated, low vibration, maximum throughput, warped wafer testing and extensive safety features.

The Condor Sigma W12 features automatic wafer size detection, PID controlled centered lift pins for with guaranteed secure wafer loading and un-loading.

Please [contact us](#) for more information and your specific wishes. We have experience with various wafer handler suppliers.

## SECS/GEM

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Among other protocols, XYZTEC offers SECS/GEM communication directly in the **Condor Sigma software** or via an EFEM. Contact XYZTEC for more information and options for your factory.

## Videos of the W12 in action

**Condor Sigma bond tester integrated in Rorze wafer handler for fully automatic 300mm wafer testing**

[Video not included in PDF: [click here to view online](#)]

**Ideal solution for 300mm (12 inch) wafer testing**

[Video not included in PDF: [click here to view online](#)]



Condor Sigma W12 with a calibration jig fitted

## Specifications

[Click here](#) to **check the specifications** and see whether the Sigma W12 is the right system for you, or if you should select a different Condor system.

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Condor Sigma W12 sideview

## Contact us

Did we catch your attention? Please [contact us](#) for more information, to request a demonstration or a quotation.

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