



## Sigma HF/L/XL

### Higher force, higher speed, larger working area

A new era has begun in bond testing with our new test systems capable of applying accurate shear, pull and push forces for automotive battery applications and applications requiring a larger working area or higher forces up to 1000 kgf.

#### Setting new standards

XYZTEC makes it possible to test higher forces and large test volumes with higher speed up to 500 mm/s with the new Sigma L, XL and HF. A range of tooling ensures precise load application to the test point. Quick release sample clamping options ensure accurate testing together with flexible rapid load and unloading of multiple (customized) workholders.

#### Easy to use

This bond tester is fitted with full safety guarding that allows production line flexibility and ease of use. Access points are designed to protect the operator and provide ergonomic access for easy sample loading.

#### Eliminate human error

Minimize handling risks by testing and analysing **fully automatically**. Set references for fiducial marks and program comprehensive automation positions and commands from the camera.

#### Higher force, higher speed, larger working area

Higher forces or a larger test area, this highly configurable bond tester can do it all. Read the differences between the versions Sigma HF, L and XL below.

## Sigma HF

### High Force bond tester for forces up to 1000 kgf



Most rigid test head in the industry for forces up to 1000 kgf.

An ideal test tool for IGBT power modules and other high force applications with a test volume of 500 mm in X and Y combined with 200 mm in Z. The system offers superior flexibility with sensors for shear, push and pull forces from several grams up to 1000 kgf.

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#### Other offices

- Germany
- Taiwan
- Thailand
- United Kingdom
- USA: California
- USA: Massachusetts
- [Distributors](#)

#### Bond testers

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

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The open Sigma head interface is suitable for either a high force single head measurement unit (SMU) for forces up to 500 kgf or a SMU for forces up to 1000 kgf.



Unique 360° head design with up to five mounted cameras

Its unique head design includes full 360° shear tool rotation with vectored shear direction guarantees a system stiffness of 0.1 mm / 1000 kgf tool to work holder. High force bond strengths are measured with an accuracy of 1%.

Easy positioning and programming is possible with up to five high speed 6 megapixel cameras on a 360° rotational head. Optionally the Sigma HF can be equipped with 3 side-view or front-view tool cameras for perfect tool alignment and up to 2 perpendicular fiducial cameras for sample clamping detection using fiducial mark recognition.

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## Sigma L and XL

### Large area bond testers for large area applications



Sigma XL with an extra Large working area of 500x500x200mm

The Sigma L and XL are especially developed for large area applications such as automotive battery testing and high force applications that involve larger products such as battery packs and large Panel Level Packaging (PLP). A larger working area makes flexible positioning of **multiple customized workholders** at the same time possible.

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Six sensors RMU, up to 200 kgf: Changing cartridges manually no longer required

The main difference between the Sigma L and Sigma XL is the size of the working areas. The Sigma L has a test volume of 500 mm in X and Y combined with 200 mm in Z and the Sigma XL is worlds biggest bond tester with a maximum test volume of 500 mm in X and 800 mm in Y combined with 200 mm in Z.

XYZTEC makes no compromises when it comes to accuracy. As the standard Sigma these giants are the best choice featuring its unparalleled 0.075% accuracy and its state of art **Revolving Measurement Unit (RMU)**. The RMU can be configured with six sensors in any combination of pull, push or shear and goes from tiny forces up to a maximum of 200 kgf. The sensors are permanently and safely fixed to the machine, requiring no warm up time and are always ready to test at the simple click of button.

The standard configuration contains a rigidly fixed **perpendicular automation camera** at a small offset from the test point with a choice of 3 magnifications and optical resolutions down to 1.5  $\mu\text{m}$ . Unique to the RMU, a second perpendicular camera can be added to select multiple magnifications.

## Other innovative solutions

- **Self-aligning shear tool (patented)**
- **Deep access tool** to enable complex sample architecture
- **Tweezers**, USB fully programmable or mechanical with optional pneumatic actuation

## Specifications

[Click here](#) to **check the specifications** and compare the Sigma HF, Sigma L, Sigma XL and the other Sigma systems.

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## Contact us

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

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