



USB Tweezers performing cold bump pull (CBP)

## Condor Sigma » Tweezers

- Support **Electrically actuated (USB Tweezers)**
  - Virtually any application
  - Intelligent jaws
  - Exchange tips within seconds
  - Built-in LED lighting
  - Controllable in **automation**
- Mechanically actuated tweezers
- Pneumatically actuated tweezers
- Up to 6 different tweezers can be mounted on one RMU
- Up to 4 USB Tweezers in 1 RMU
- Quick change jaws for different applications
- **CBP Jaw Cleaner**

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## XYZTEC Tweezer solutions

Many bond strength tests require a means to grip the part so that the strength of its bond can be tested. In many of these applications the geometry and force of the grip must be precisely controlled to ensure sufficient load can be applied to the bond without the act of gripping affecting the bond itself.

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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*

This is page 1/6  
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Advanced method settings screen when using Condor Sigma

To cater for this the **Condor Sigma** offers a wide variation of tweezers with both a precise gripping action and the flexibility to suit a wide range of applications. Each of the 6 RMU positions can be equipped with manually controlled tweezers, while one RMU position is dedicated for an air controlled and/or electric (USB) controlled tweezers.



When mounted on a Condor Sigma pull sensor, you can detect touchdown on your sample

## Electrically actuated

### USB Tweezers

XYZTEC offers a unique electrically actuated micro grippers solution: USB Tweezers ([download PDF flyer](#)). The features include a powerful software, fully programmable closing force and positioning, a built-in adjustable light source and easily exchangeable tips. Designed especially for solder ball pull, thick wire pull, thin wire pull and ribbon peel test.

### Virtually any application

The system is designed to be compatible with the commonly used Condor series: **Sigma** and **Classic**. This ensures consistency in your measurement results between different testers. The USB tweezers are fitted to a standard pull sensor.

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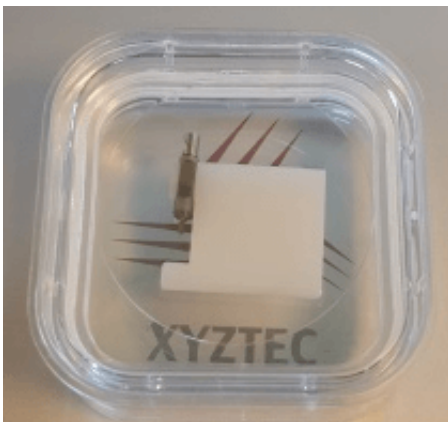


Highly reproducible stud pull tests by using the Sigma as a pick and place machine

This sensor can also be used to sense when the tips of the jaws touch your sample and can be used to land with a programmable force. However, the USB Tweezers are a stand-alone device and can be used with other systems and virtually any application.

## Intelligent jaws

The gripping jaws (tweezers with tips) are driven by a built-in closed loop 3-phase brushless micro drive to accurately open or close. The jaw actuators incorporate a strain gauge to precisely measure and control the gripping force.



USB Tweezer tips are shipped with safety in mind

The gripping force can be programmed and will be maintained throughout the test with a force control loop. Similarly, the position of the jaws is known and controlled via the closed loop micro motor. This also enables programmable control of the closing and opening positions.

## Exchange tips within seconds

A thumbscrew allows for quick and easy exchanging of tips. The tips ship from XYZTEC to you in

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### Bond testers

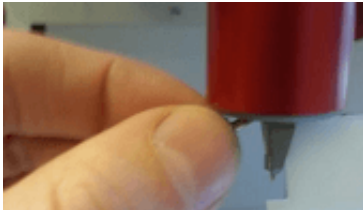
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This is page 3/6  
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a safe case and already mounted in a bracket. This bracket later enables the operator to place the tips in the USB Tweezer and tighten the fixation screw without ever touching the fragile tips by hand.



Minimal risk of damage when replacing tips

There is a standard range of tips to suit many different applications, for example gold wire pull or aluminium ribbon peel. Custom tip designs for application specific requirements are also possible.

## Built-in LED lighting

The tweezers come complete with built-in high intensity LED light source. The power and control of the tweezers is delivered by one USB connection to the machine or computer.



Exchange tips of USB Tweezers within seconds

## CBP Jaw Cleaner

During use solder builds up in the cavity in cold bump pull (CBP) jaws. This reduces their grip efficiency and affects the quality of your measurements. Cleaning the cavities is very difficult and small ball cavities can be damaged easily. [Click here to find out more information about XYZTEC's patented solution: the CBP Jaw Cleaner.](#)

## Specifications

Maximum clamping force	7 kgf
Adjustable clamping force	0-7 kgf
Maximum pull force	10 kgf
Average closing time	1 s
Adjustable LED brightness	0-100 %
Rotation stroke	±90 °

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Programmable closing force	yes
Programmable opening position	yes
Easy exchange of tips	yes
Interface	USB
Compatible with Condor Sigma	yes
Compatible with Condor Classic	yes
Supports Microsoft Windows XP, Vista, 7 and 8, 32 and 64 bit systems	

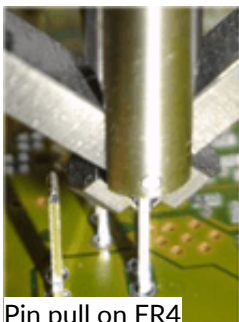
Specifications subject to change without prior notice.



Mechanical tweezer for forces up to 50 kgf

## Mechanically actuated tweezers

The XYZTEC mechanically actuated tweezers are developed for high force pull tests. Tests with forces up to 500 N / 50 kgf can be performed. Typical applications are pull tests on electrical connections like studs, connectors or even pulling off entire devices. The tool can handle objects up to 3 mm thickness.



Pin pull on FR4

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This is page 5/6  
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The compact design can handle up to 500N although the maximum force is limited by the type of jaws used. The tweezers initially generate a small gripping force that increases during a test under the action of the applied load. Jaws have to be matched to the type of test. For this there are a number of standard jaws available but customized jaws can also be provided.

## Specifications

Maximum clamping force 100 kgf  
Adjustable clamping force 50 kgf  
Please contact us for further specifications

## Pneumatically actuated tweezers

Especially for the **Condor Sigma** XYZTEC also offers pneumatically actuated tweezers. These are designed for the most commonly used cold bump pull applications and are compatible with other solutions on the market.



USB Tweezers case

## Contact us

Did we catch your attention? Please **contact us** for more information or to request a demonstration or a quotation.

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