

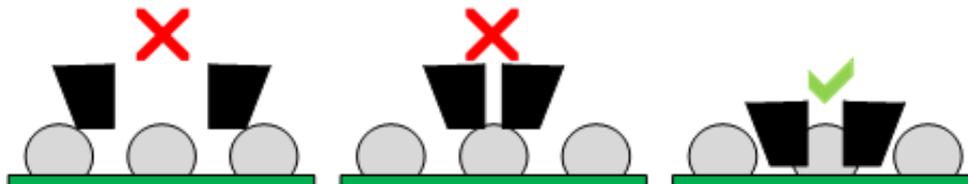


How to test bonds » Cold Bump Pull (CBP) » setting up and doing a test

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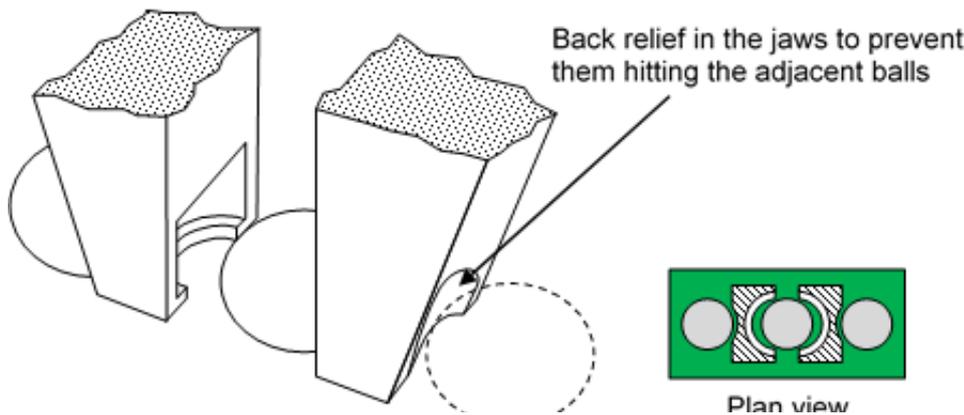
7. Setting up and doing a test

i. Alignment jaw opening and back relief



The jaw opening must be set such that they do not hit the bump or others around it when they descend to grip

The first stage of doing a test is the alignment of the jaws to the bump. This comprises of the jaw opening and then centering the jaws above the bump.



If the bumps are very close to each other you have to either shear them away or use jaws with back relief.

The jaw opening must be set such that they do not hit the bump or others around it when they descend to grip.

If the bumps are very close to each other you have to either shear them away or use jaws with back relief.

ii. Jaw alignment in X, Y and Z

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XYZTEC Netherlands

J.F. Kennedylaan 14-B
5981 XC Panningen
Netherlands ([map / route](#))
Tel: +31-77-3060920
Fax: +31-77-3060919
sales@xyztec.com
support@xyztec.com

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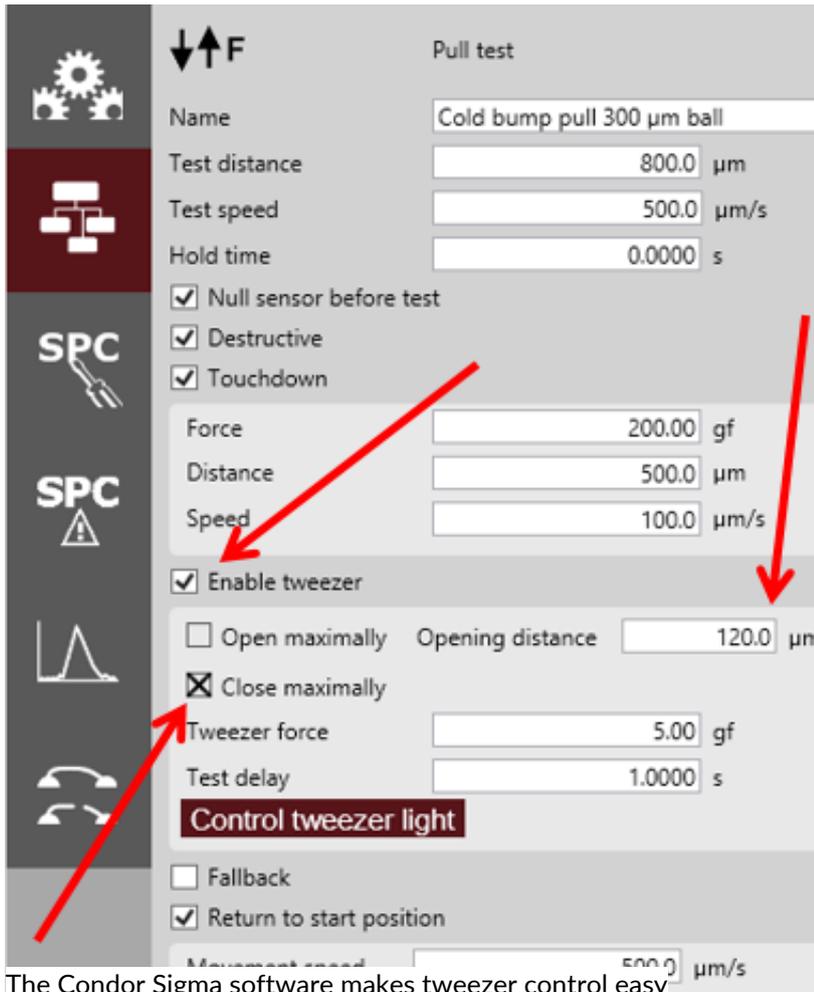
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Technology leader in bond testing worldwide



The Condor Sigma software makes tweezer control easy

Set the test method to “return to the start position”.

Before starting a test the jaws must be aligned over the bump. First set the Z height so the bottom of the jaws is just above the tops of the bumps. The closer they are the easier it is to make the alignment in X and Y, but be sure you have sufficient clearance not to touch the highest bump. As you have set the method to return to the start position this height will remain when you align for the next test.



CBP plan view. Once you have set the height, align over the bump so the cavities are concentric with it.

Once you have set the height, align over the bump so the cavities are concentric with it.

First click the “Enable tweezer” checkbox.

Uncheck the “Open maximally” checkbox

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Adjust the "Opening distance" in the method so that tweezers does not hit the adjacent balls.

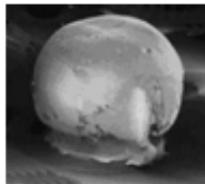
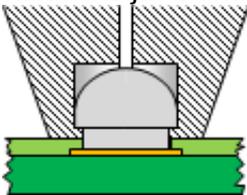
iii. Grip force and getting used to X and Y alignment

Warning: do this next step very carefully!

1. Set "Tweezer force" of the test method of the tweezers to 5 grams (or near equivalent in your chosen units) closing force.
2. Press the special function key to manually close the jaws.
3. The two jaws will not close completely.
4. Open the jaws by pressing the special function button.
5. Increase the closing force by another 5 grams and close again.
6. Repeat this until the jaws just touch.
7. This is the force required to just close the jaws. Additional force from here will be that which reforms the ball.
8. The closing force to reform a ball varies due to its size and construction.
9. When testing closing forces start from the force that just closes the jaws and increase it by 10g.

To get used to the X and Y alignment and to set an initial jaw closing force you need to do a test close on a bump. Choose a bump and align over it. Then manually slowly drive down to just touch the substrate.

1. Press the special function button to close the jaws.
2. Wait 5 seconds and open press the special function button to open them.
3. Raise the jaws and look at the amount of reforming.



Step 4: You want to get slightly less reforming than in these pictures. This is called "under reformed".

4. You want to get slightly less reforming than in these pictures. This is called "under reformed".
5. As the closing force is low it will probably not be much so increase the closing force by another 10g, close and wait 5 second again.
6. Repeat until you have slightly under reformed.

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sales@xyztec.com
support@xyztec.com

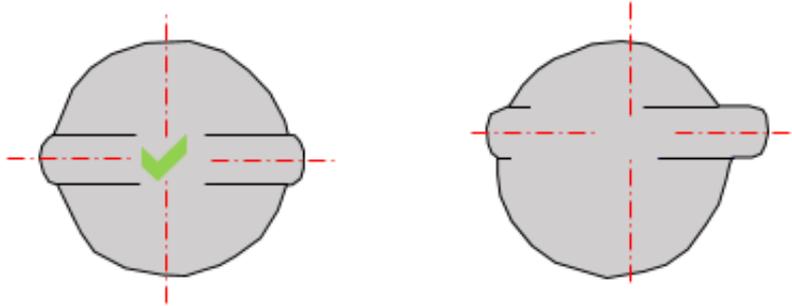
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Now by observing the bump look at your XY alignment: in X and Y

Now by observing the bump look at your XY alignment.

Try reforming another bump and again look at your XY alignment. Repeat until you are happy with the result and know how to align the jaws.

Continue to read:

Previous page: [Jaw quality](#)

Next page: [Closing time](#) / [Landing force and alignment height](#) / [Optimizing the test](#) / [Test speed](#)

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