

## CLP 521 / 621 / 631 Sensor Calibration & Adjustment

This document explains the process of calibrating and adjusting the media sensors on the CLP 521, 521Z, 621, 621Z, 631 and 631Z printers.

The same document can be found on our web site at:

[http://www.citizen-europe.com/support/info/bc\\_faq\\_jm-calibrate.htm](http://www.citizen-europe.com/support/info/bc_faq_jm-calibrate.htm)

Usually there will be no need to calibrate the printer if you are using standard labels with common 'yellow' backing paper. Calibration is normally only required for the more unusual media.

Section headings:

- ◆ [Selecting the sensor type](#) (See Through or Reflective)
- ◆ [Calibrating the default "See Through" sensor for labels](#)
- ◆ [Calibrating media in "Reflective" mode.](#)
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## Selecting the sensor type: “See Through” or “Reflective”

The printer’s default setting is “See Through” which is designed for standard labels. If you are using labels, you can skip this section.

- ◆ See Through is also known as “Label Gap” or “Transparent”
- ◆ Reflective is also known as “Black mark”, “Black Reg Mark” or “Black Line”.

To switch between sensor types

- Turn ON the printer holding the top 3 buttons (**PAUSE**, **FEED** and **STOP**)
- The printer will power up with the Power, Print and Condition lights ON.
- Press and hold the **MODE** button. While keeping it depressed, press and release the **STOP** button.
- Depending on sensor type:
  - If the printer is now in **Transparent** mode the buzzer sounds **once**
  - If the printer is now in **Reflective** mode the buzzer sounds **twice** and the Print LED flashes.

**Note:** For normal labels, the mode would be “See Through” (by default) and therefore the buzzer sounds once. The Condition LED is lit at all times.

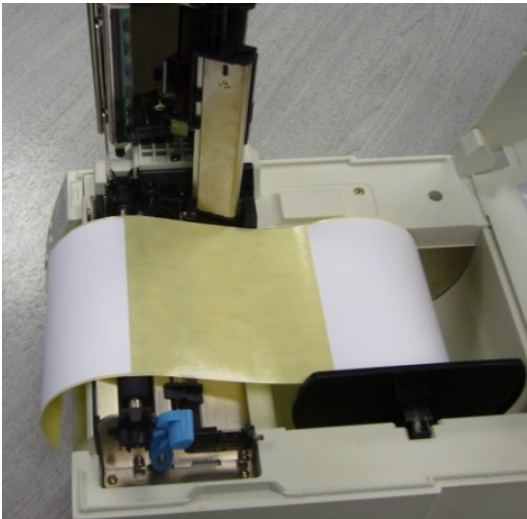
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## Calibrating using the printers default “See Through” setting.

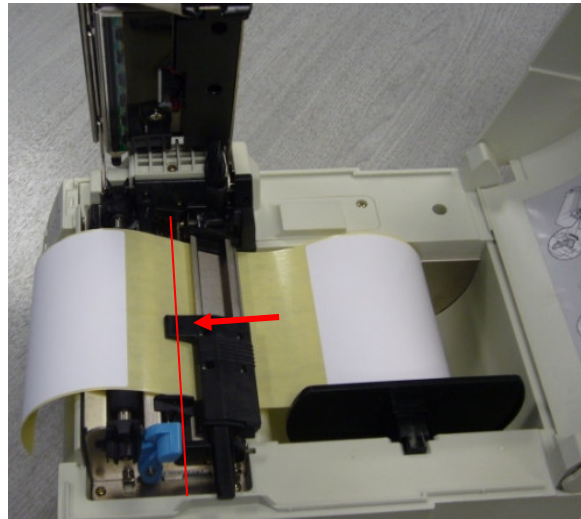
**This is for use with standard labels with backing paper.**

Load the paper in the printer making sure the leading edge of the label is hanging over the front of the printer and with the second label removed from the backing paper as shown in the photos. Close the upper sensor arm and then the print head.

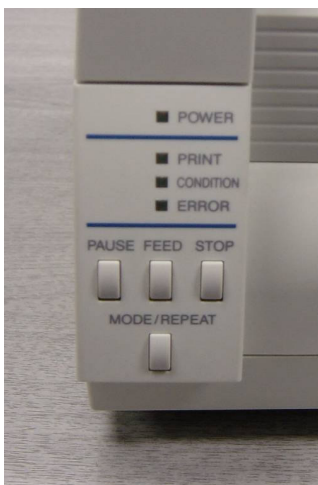
**Label removed**



**Upper sensor arm closed**



We have shown a CLP 521 here but the process is the same for the CLP 521, 621, 631 and their Z variants. The only thing to remember, when opening the print head on the 621 and 631 printers the sensor arm stays down over the label, where the 521 the sensor arm raises automatically with the print head. The red line is the “Sensor Line”. On all printers there is now a white triangle to help with the sensor line up process. [See Easy Set](#) up etc on the last page of this document)



- Load the paper as shown above and close the mechanism.
- Turn ON the printer holding the top 3 buttons (**PAUSE**, **FEED** and **STOP**)
- The printer will power up with the Power, Print and Condition lights ON.
- Press and hold the **MODE** button. While keeping it depressed, press and release the **PAUSE** button.
- The printer will move the paper about 1cm making a slight buzz at the same time. The condition light will flash briefly and the Print light goes off while the paper is moving.
- The calibration is now complete. If there are no error messages, press the **STOP** button to save the changes and the printer resets.

This process is called “Automatic Sensor adjustment” in the user manual and can be found on pages 35/36 CLP 521, 40/41 CLP 621. A similar process is called “Auto Cal mode” on the 8301 and 9000 series. [Back to the top](#)

## Calibrating media in “Reflective” mode

First ensure the printer is in “reflective mode”, as described above.

- Install the media to be calibrated ensuring that the black mark is at least 3cm away from the media sensor’s “line” and close the mechanism.
- Turn ON the printer holding the top 3 buttons (**PAUSE**, **FEED** and **STOP**)
- The printer will power up with the Power, Print and Condition lights ON.
- Press and hold the **MODE** button. While keeping it depressed, press and release the **PAUSE** button.
- The printer will move the paper about 1cm making a slight buzz at the same time. The condition light will flash briefly and the Print light goes off while the paper is moving.
- The calibration is now complete. If there are no error messages, press the **STOP** button to save the changes and the printer resets.

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## Calibrating media in “Notch” or “Hole” mode.

First ensure the printer is in “see through” mode (default), as described above.

- Make sure the upper and lower sensors line up with the notch or hole and with themselves. You may find you do not even need paper in the printer for this process. Close the mechanism.
- Turn ON the printer holding the top 3 buttons (**PAUSE**, **FEED** and **STOP**)
- The printer will power up with the Power, Print and Condition lights ON.
- Press and hold the **MODE** button. While keeping it depressed, press and release the **PAUSE** button.
- The printer will move the paper about 1cm making a slight buzz at the same time. The condition light will flash briefly and the Print light goes off while the paper is moving.
- The calibration is now complete. If there are no error messages, press the **STOP** button to save the changes and the printer resets.

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## Possible Error Messages & Reasons

If the printer is unable to complete the adjustment, it moves the paper a slightly longer distance (usually 2 or 3 cms) and then the Error and Condition lights flash.

Usually the error is caused by the upper and lower sensors being mis-aligned. Please refer to the later section "[Easy Media Sensor Adjustment](#)".

Once the problem is fixed, usually repositioning the paper sensors, too ensure they line up, the Auto Calibration function can be repeated.

If the media is very thin, very thick or even an unusual colour, it can sometime confuse the automatic adjustment process. Generally, we would recommend you contact your dealer or Citizen for further information on advanced configuration information.

**Unable to Calibrate the printer**, no mater what you do? Follow this link to the document; [Calibrate Desktops printers with special or unusual backing paper](#).

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## Performing a Self Test

After performing the calibration, the simplest way to see if it was successful is to restart the printer and then press the **FEED** button. Each successive press of the **FEED** button will advance to the start of the next piece of media.

To perform a **printing** self-test, follow the procedure. The self-test is designed to print on two square labels approximately 100mm x 100mm in size.

- Turn the printer ON holding the **FEED** button.
- Printer will beep. Print led will flash slowly. Release the button at this point.
- Note: if you leave your finger on the **FEED** button the Print led will start to flash faster and the self test will be done using continuous paper mode rather than single labels.
- First page prints a test page with among other things the word "TEST PRINT"; second page is a series of graduated grey scales to ensure all elements are firing correctly.
- If the label size is larger the printer will print on two separate pages anyway, smaller and it may print over several labels, ignoring page breaks.

**Please note - This is the only test that looks at the paper sensor, making sure it is working correctly. It is a very good idea to do this test as it also checks the print quality.**

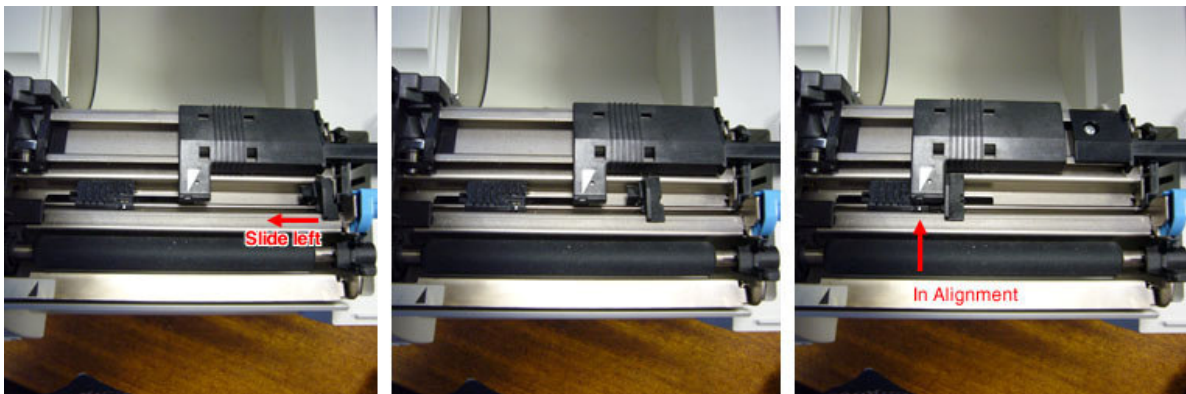
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## Easy media sensor adjustment and alignment.

As an additional aid to setting up the paper sensors. It is now possible on the CLP 621/631 and also on the CLP 521 printers manufactured from the CLP 621 introduction, to use the "right media guide" to automatically align the upper and lower media or paper sensors.

You will have seen that the upper sensor arm, shown below, has a white triangle and the lower sensor a small white mark, this is to make alignment easier. Line the two up and the sensors are perfectly in line

However we have also modified the 'right media guide' (the piece of plastic used to set the right margin). So now, if you slide the right media guide against the sensors, it pushes them together and keeps them perfectly in alignment. The best way to see it, is to try it! Ideal when using media/labels that are less than (2 inches) 50mm wide.



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