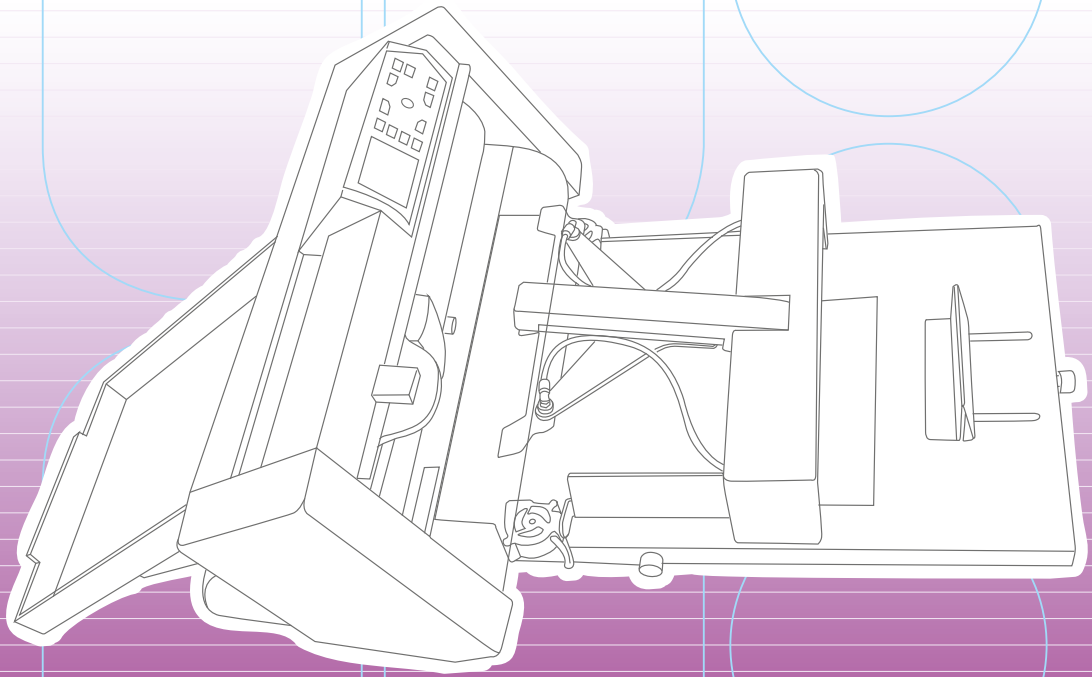
intec PRINTING SOLUTIONS | colorcut

Digital die-cutting for sheet labels and packaging

User Guide - English



Intec ColorCut User Guide - Table of Contents

The Intec ColorCut CC500 has been designed primarily to cut sheet labels effectively.

There are also additional functions enabling the management of die cutting sheet material, using cross cut (Cut through) and dashed cut features, so that greeting cards, POS and packaging board material may be also cut.

The ColorCut solution consists of 2 parts.

Hardware

An Intec Digital Cutting Engine

A high resolution CCD Camera for registration and accurate positioning

An Automatic sheet feeding system for up to 100 sheets of media

A Paper exit Tray

and

Software

The ColorCut Vision control software lets you cut lines or paths created from packages such as CorelDraw or Adobe Illustrator.

Your files must contain two reference marks, known as SMARTmarks (Described later in this manual).

The high resolution CCD video camera included in your ColorCut hardware detects the i-Vision SMARTmark in a fraction of a second and adapts the cut path to any variations in the origin, scale or skew distortion of the print.

The software runs with the operating systems Windows 7, 8, 10.

Most of old Windows XP computers can be used, but not all of them.

Please use this guide to set up your ColorCut and to assist you in designing and cutting your files.

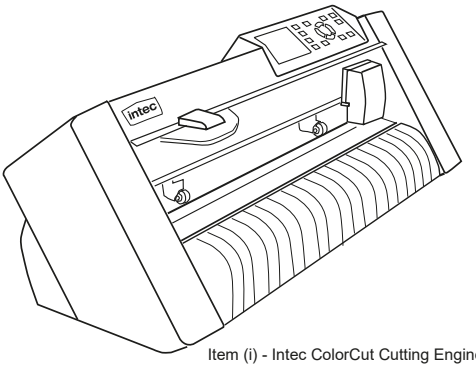
UNPACKING THE CONTENTS OF THE COLORCUT

Your Intec ColorCut is packed in 2 boxes.

The first box contains the Intec ColorCut Cutting engine. (Item (i))

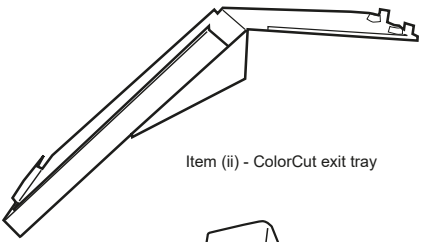
The second box contains:

The ColorCut Exit tray (ii)
The ColorCut Feeder (iii)
And the power adaptor, plus USB cables, manual and drivers. (iv)



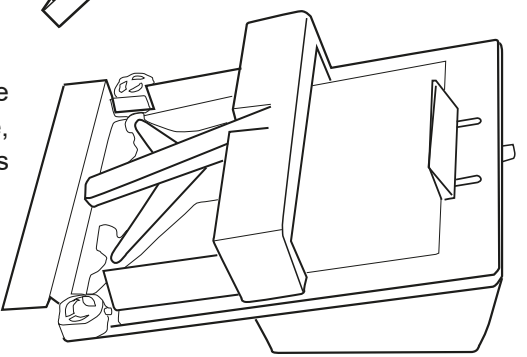
Item (i) - Intec ColorCut Cutting Engine

The ColorCut Exit tray sits under the ColorCut engine, take care to position the vertical tabs under the recesses on the front of the cutting engine.



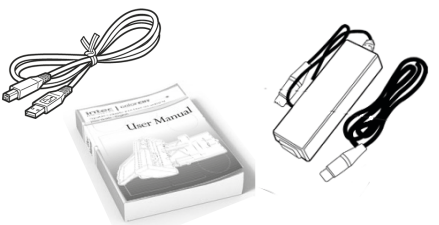
Item (ii) - ColorCut exit tray

The ColorCut Auto-Feeder, clips on to the front of the Intec ColorCut cutting engine, and lines up next to paper size guides along the front left edge.



Item (iii) - Intec ColorCut Auto-Feeder

The final items found inside the small box in the second box contains the power adaptor that powers the Feeder, and the power cables for the adaptor. Plus you will find the Mini USB cable that connects the USB hub integrated under the feeder to your computer. Also in addition a USB cable to connect the Intec Cutting Engine to the integrated USB Hub under the feeder.

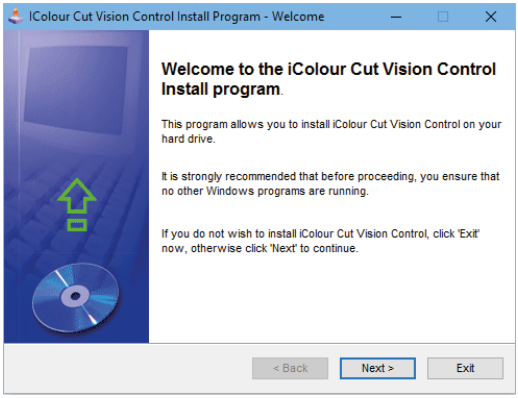


Item (iv) - Manuals, USB & Power Cables

INSTALLATION OF THE COLORCUT VISION CONTROL SOFTWARE

The ColorCut Vision control software for the Intec ColorCut is supplied on the included CD, however it may also be downloaded from our website http://www.intecprinters.com/support/downloads/colorcut-cc500

Please run the installation program:
Setup for Colour Cut Vision Control.exe

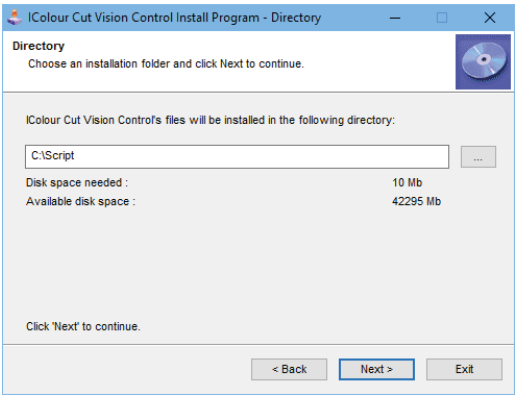


The setup's program requires various confirmations for the installation of the program.

On some computers you could be asked the system administrator's password to execute the installation, in the case you do not have this information; contact the technician who administrates your system.

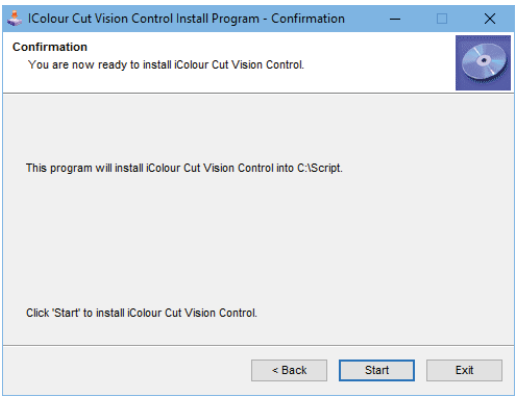
INSTALLATION OF THE SOFTWARE (CONT)

The software will install into the C:\Script folder on the root of your hard-disk.



Please do not change the installation folder.

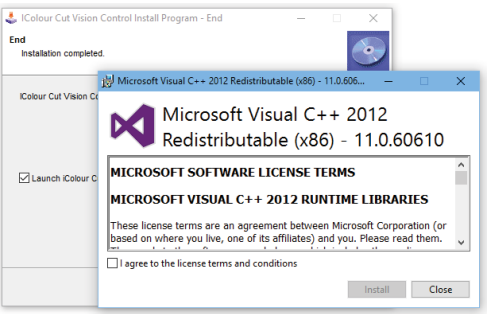
Simply click the [NEXT>] button.



Then click [Start] to start the installation.

At the end of the installation, the installer will prompt you to install the Microsoft Visual C++ re-distributable libraries (if they are not already installed).

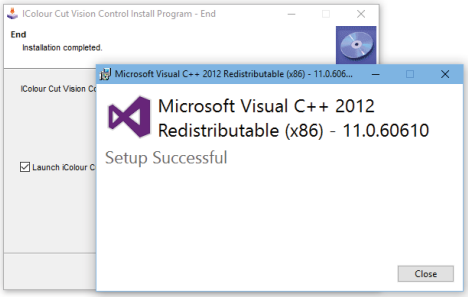
Simply click the check box 'AGREE' and then click the [INSTALL] button.

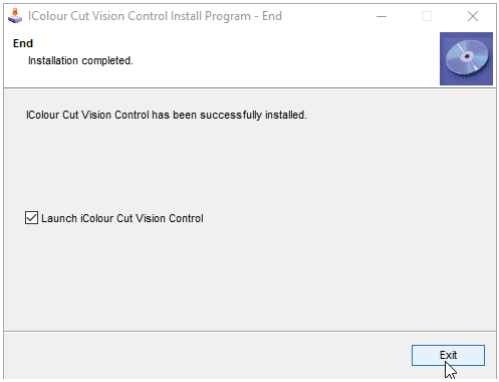


INSTALLATION OF THE SOFTWARE (CONT)

When the installation has finished.

Click the [CLOSE] button.





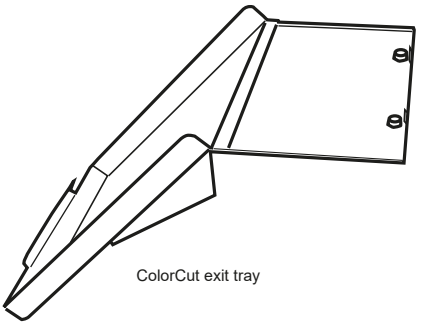
Click the the [EXIT] but.

The ColorCut's program icon - "Colour Cut Vision Control" will be created on the desktop and a short-cut in the Windows Start Menu.

Your application is now installed and each time you launch the application, you will see the ColorCut Splash screen.

ASSEMBLY OF YOUR COLORCUT CC500

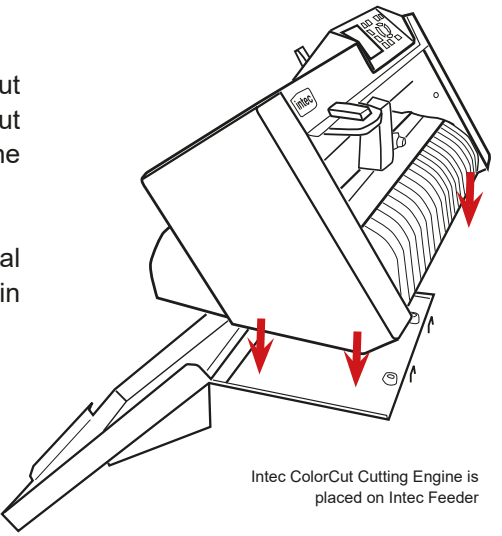
Place the ColorCut exit tray on a suitable desk or table, allowing the feed table to hang over the edge of the table.



ColorCut exit tray

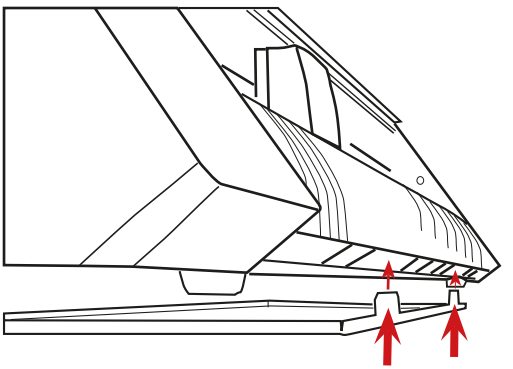
The ColorCut Exit tray sits under the ColorCut engine, gently lower the Intec ColorCut Digital cutting engine onto the end of the Output feed table.

Note, the weight of the Intec ColorCut digital cutting engine, will hold the output tray in place.



Intec ColorCut Cutting Engine is placed on Intec Feeder

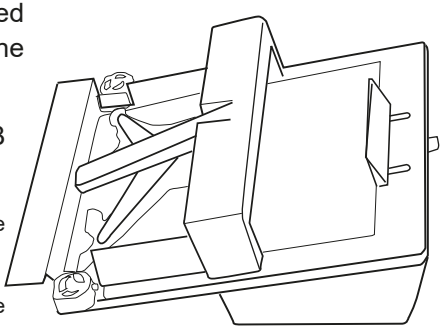
The front of the feed table has vertical tabs that extend up to recesses in the Intec Digital Cutting engine. Take care to position the vertical tabs under the recesses on the front of the cutting engine.



Close up of front of ColorCut Digital Cutting engine with vertical tabs from feed table locating into place

SETTING UP THE COLORCUT FEEDER
CABLE CONNECTIONS

The last item to connect is the feeder, but you need to make the USB connections before aligning the feeder.



The Intec ColorCut system requires 3 USB connections.

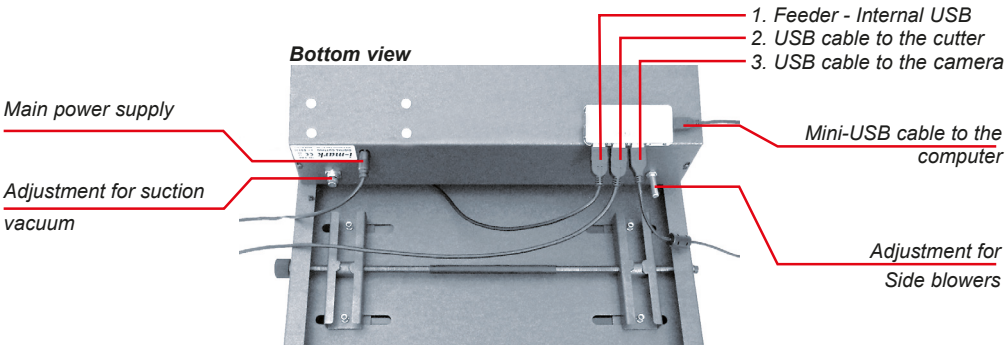
(1) The ColorCut feeder requires a USB connection (the integrated cable is under the base of the feeder).

(2) The Intec Digital Cutter engine requires a USB cable (supplied in the box).

(3) The high resolution i-Vision CCD camera used for the Intec vision registration system utilises a USB connection (Integrated to the camera).

To avoid requiring 3 USB ports, and to simplify connection, on the underside of the feeder you will find an integrated USB hub this enables you to connect all your Intec ColorCut USB connectors into one unified cable to connect to your Computer.

Turn your Intec ColorCut feeder upside down and connect the cables as shown.

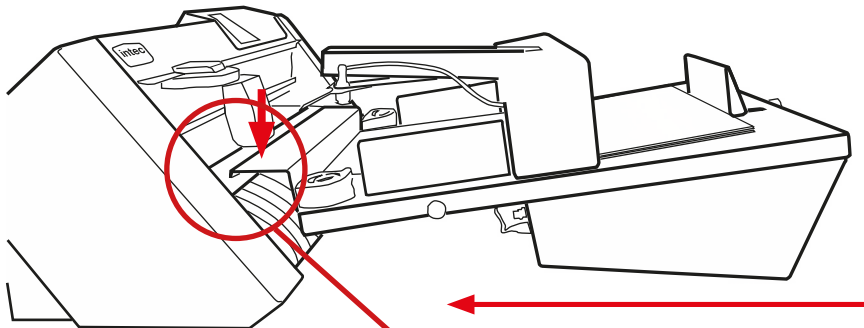


The connections of the usb cable do not follow any given position, however the additional mini usb cable (also supplied) fits only in the side connector, this is the cable you should connect to your PC.

Note the position of the Adjustment for the suction and for the adjustment of the side blowers.... then turn your Intec ColorCut feeder back the correct way to align it to your Intec Digital cutting engine.

SETTING UP THE COLORCUT FEEDER
ALIGNING THE FEEDER

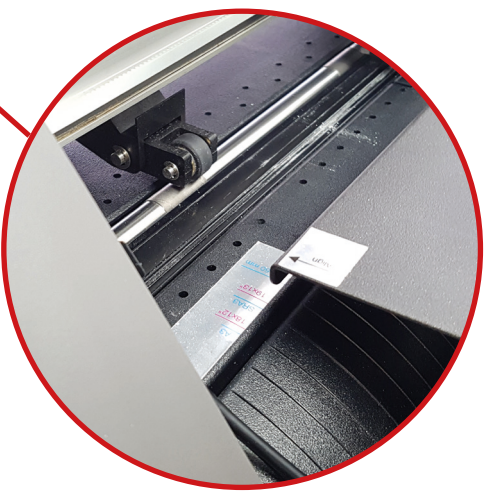
Place the Intec ColorCut Feeder in-front of the Digital Cutting engine.



The lead edge of the Intec Feeder has a lip.

On the edge of this, there is an alignment arrow.

On the intec ColorCut Digital cutter you will find a slot, that the lip from the feeder will clip into.



Gently drop the feeder's lip into the slot on the cutter. Then slide the feeder's alignment arrow to the size of the media you will use.

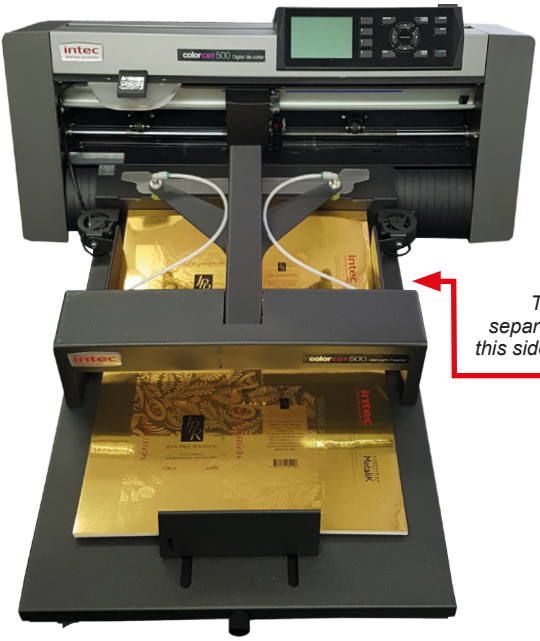
For Calibration, the supplied media is SRA3. Therefore on initial set-up you must align the feeder to SRA3 for the calibration process.

SETTING UP THE COLORCUT FEEDER
AIR SEPARATION SYSTEM AND ADJUSTMENT

The Intec ColorCut feeder has a capacity of approx 100 sheets of media depending upon your substrate thickness.

To reduce the risk of multiple sheets being fed, the ColorCut feeder includes an air separation system (using dual side mounted fan blowers) to help start to separate your media.

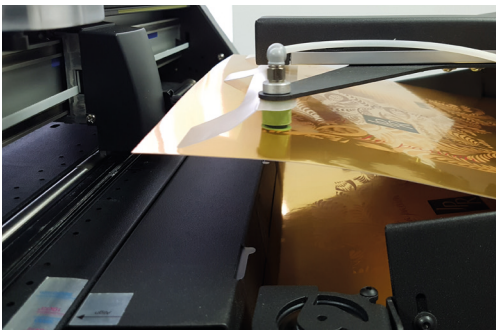
Standard paper type label media does not require any special attention, therefore you can leave the separation blower speed at minimum (Or even turn it off). Polyester label media may suffer form static and slightly higher air separation may be required.



The adjustment from the air separation system is located on this side, just under the feed table.

SETTING UP THE COLORCUT FEEDER
VACUUM FEED AIR ADJUSTMENT

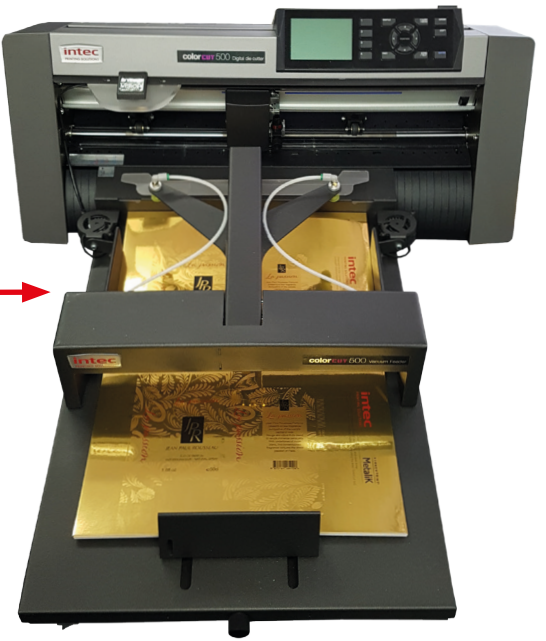
In addition the the air separation, and similar to a lithographic printing press. The Intec ColorCut uses a pneumatic style feed system. (using vacuum force through suction cups).



For thin or porous papers, it may be necessary to decrease the aspiration pressure for the vacuum feed by rotating the control knob counter clockwise (See below).

If heavier stocks such as card-stock are not lifted by the suction cups you can increase the vacuum force by rotating the suction adjustment counter-clockwise.

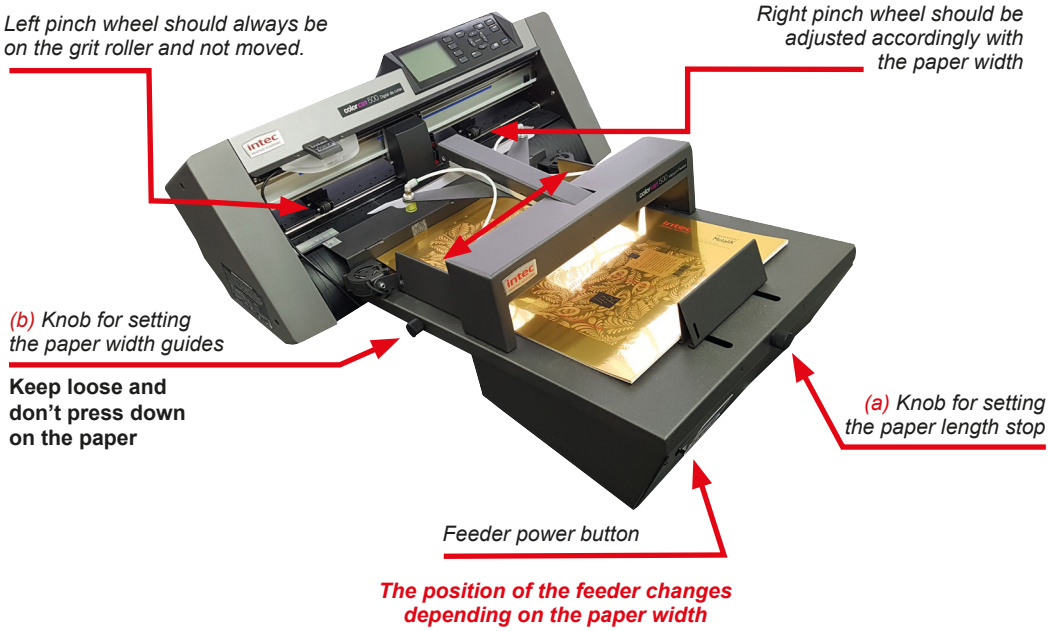
The adjustment from the vacuum force is located on this side, just under the feed table.



SETTING UP THE COLORCUT FEEDER
PAPER SIZE/FORMAT ADJUSTMENT

When loading paper or label stocks. Place the sheets in the feeder, and adjust the back stop by turning the knob for paper length (a). (Do not restrict the paper, leave it slightly loose).

The adjust the knob for paper width (b). (Again do not restrict the paper).



If your paper width changes, then in addition to adjusting the paper width guides (b) (which are self centring). You will also need to adjust the position of the feeder using the paper size alignment guide on the front of the feeder (c). (Shown tot he right)

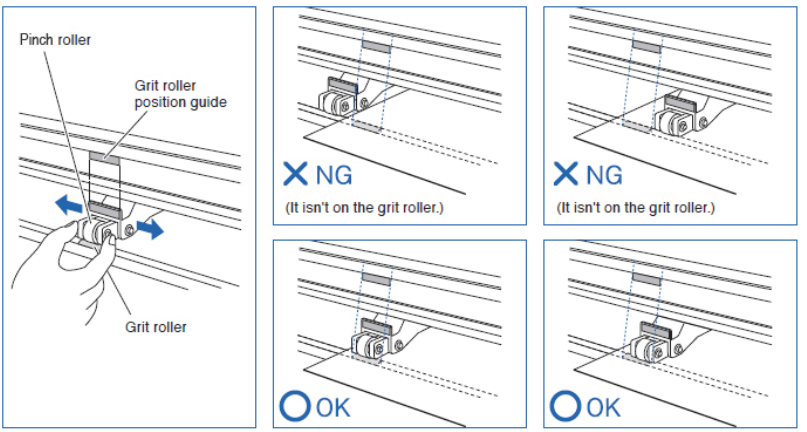
This is because the CCD i-Vision Camera position is FIXED, as is the left Pinch wheel. So, you must leave the left side of your paper static and adjust the position of the right pinch wheel for wider or narrower papers (see next page).

After adjusting the paper guides width with the knob, you should advance manually one sheet in order to verify the position under the pinch rollers.

NOTE: The pinch rollers MUST sit over the grit rollers.

Typically the Left Pinch wheel is not moved, instead you adjust/slide the feeder to ensure the left side of the sheet is correctly under the 'static' left pinch wheel.

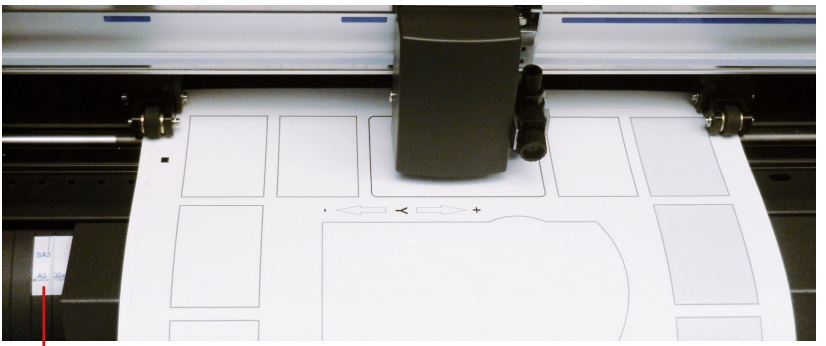
Then adjust the right pinch rollers so that they are positioned above both the media and the grit rollers.



TOP TIP

If you need to move the right Pinch wheel to suit your media size, the relocation of the pinch roller must be made only when the lever is lowered.

Once you have relocated the right pinch wheel to accommodate your media, lift up the lever to engage the rollers.



A format indicator on the left gives an indicative position for the border of the feeder for some formats.

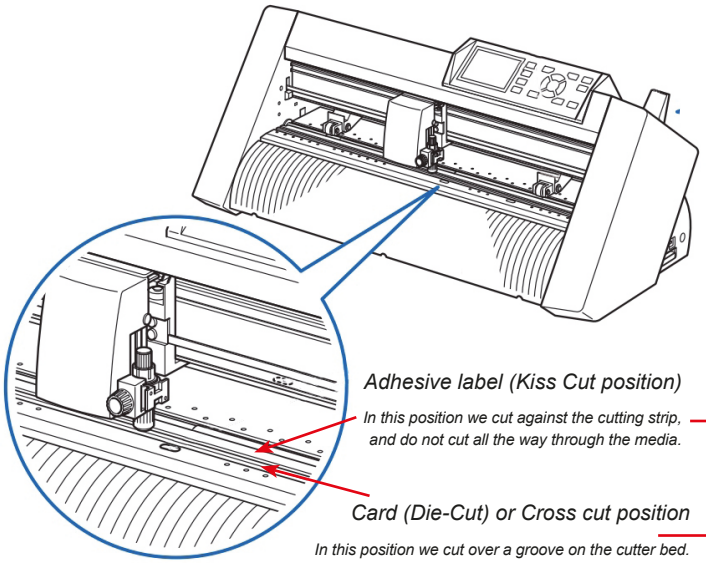
CUTTING OPTIONS - BLADE POSITIONS

The Intec ColorCut Digital Cutting engine uses a contour cutting system.

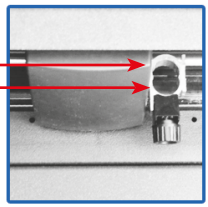
The cutter has a dual position blade holder enabling two different types of cutting.

(i) **Kiss Cut (For adhesive labels)**
In this mode, you cut over a cutting strip which provides a surface to cut against, and you ONLY cut the top layer of your substrate.
You do not cut all the way through the media.

(ii) **Die Cut / Cross Cut** (For Packaging or Cutting all the way through substrates)
In this mode, you cut over a groove which provides a recess so the knife can cut through your substrate and not cut into the machine.
In this mode you DO cut all the way through the media.



The blade holder can be inserted in two different positions



Out of the box, the Blade tool has been set up to cut labels (It is in the Kiss Cut position, rear), nearest the exit tray and the knife exposure set to the correct setting for label stocks. You need to leave the blade in this position for making an alignment calibration on the Intec Digital Cutting engine or for cutting labels.

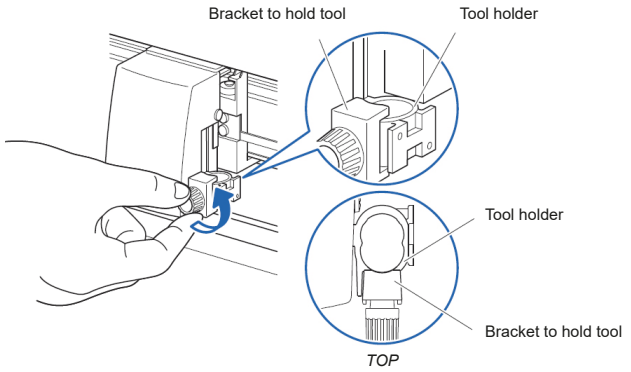
However if you have already performed a calibration and wish to Die-cut card, you will need to adjust the knife position to the front position (Nearest the feeder) and you will need to adjust the blade exposure.

TOP TIP

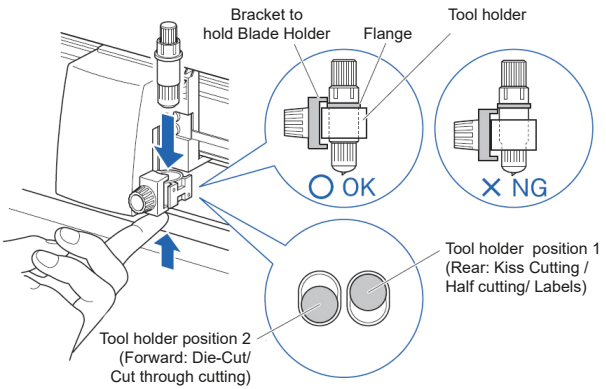
To save adjusting knife depth when switch between labels and card stock, you can order a second blade holder and blade.
Then simply adjust one for labels and the other for card.

CHANGING BLADE POSITIONS

1. Loosen the tool holder screw.



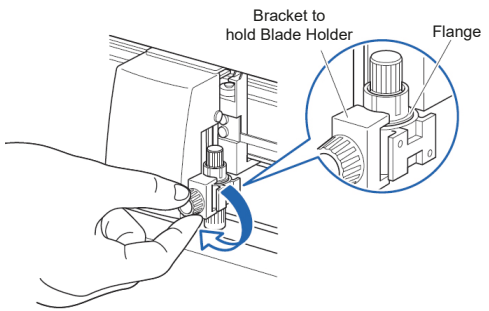
2. While pushing up the holder, push until its flange completely touches the upper part of the holder.



IMPORTANT NOTE:

When using kiss cutting (for labels), place the Blade Holder in Tool Holder 1 position (backward), and when using Die-cut (Card cutting), set the blade holder in Tool Holder 2 position (forward).

3. Make sure that the tool bracket is engaged on the Blade Holder's flange, and then tighten the screw.



Removing the Blade Holder

When removing the Blade Holder, turn it counter-clockwise to remove the Blade Holder.

DAILY OPERATION START-UP

1. Turn on the ColorCut Cutter **[1]**

2. Turn on the Feeder **[2]** , then you should check the following:

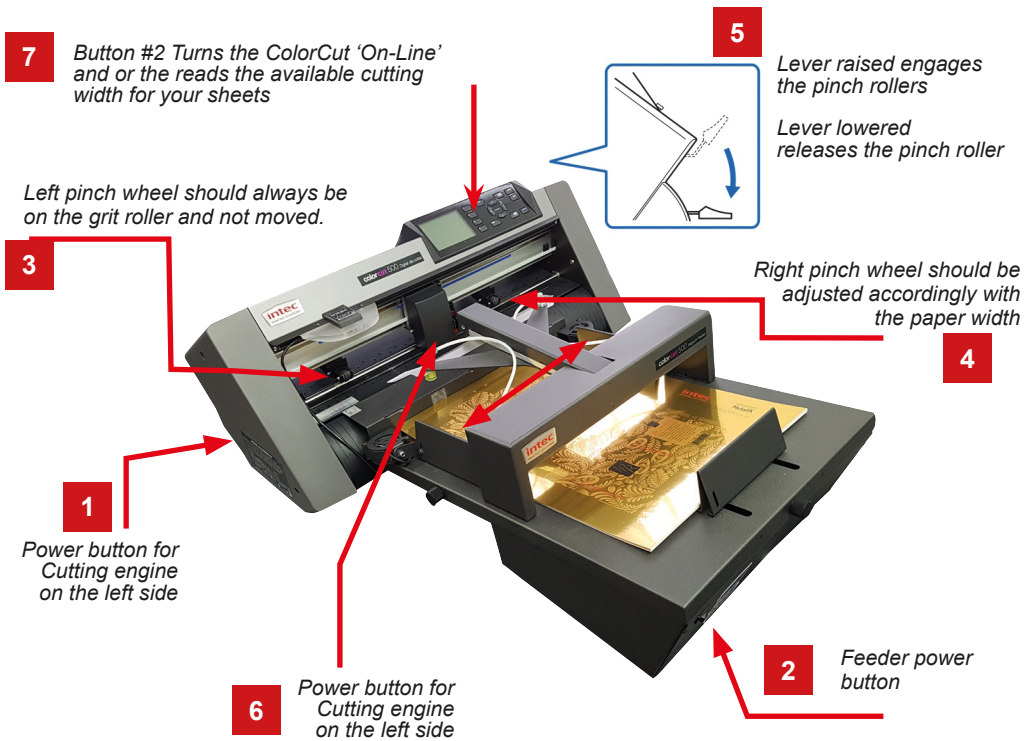
3. The left pinch roller **[3]** is in a fixed position and should not be moved, otherwise you will receive an error message on the display of the cutter.

4. When starting up, check and adjust the right pinch roller **[4]** position ensuring it is correctly positioned for your paper width (see previous page on setting pinch wheels).

5. Check the media Level **[5]** is raised (the pinch wheels are down).

6. Check the blade holder **[6]** is in the correct position for the type of media you are going to cut.*.

7. Press **[7]** Button #2 on the cutting engine's control panel to activate the Intec Digital Cutting engine and place it 'On-Line' and ready to cut..



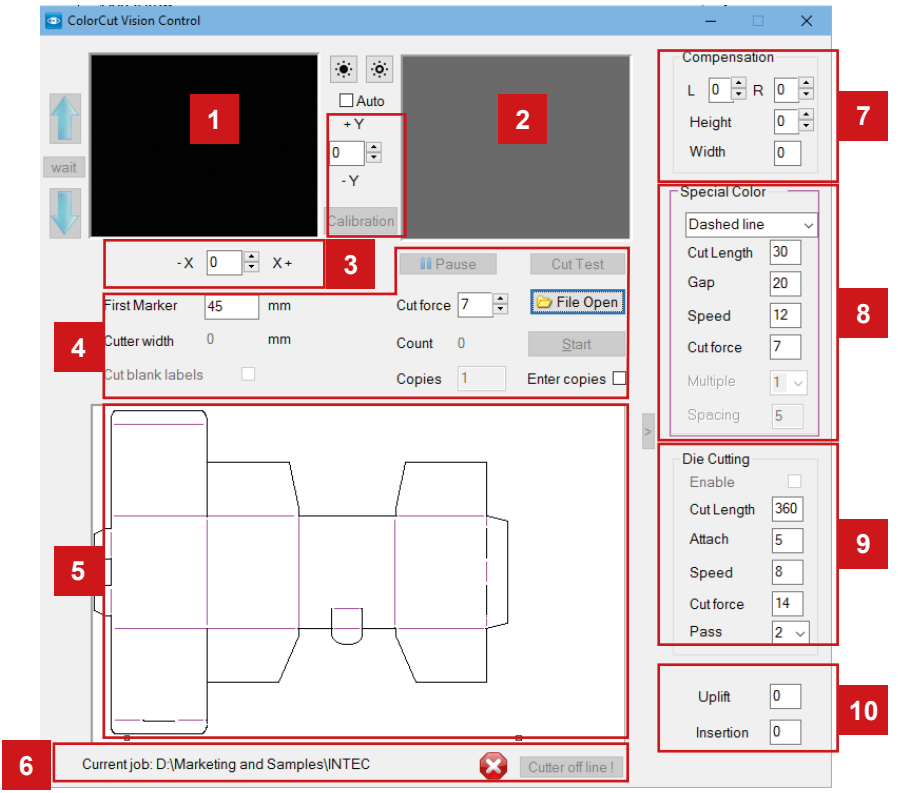
* The default position for the Blade holder upon delivery is in the label cutting position ready for making an alignment calibration or for immediately cutting sheet labels.

The ColorCut i-Vision software handles all the functions for the automation of the digital cutting process.

It can import files saved in either AI format from Adobe Illustrator or EPS format from CorelDraw.

Several options are available to set the proper cutting parameters.

Specific parts of the software panel are dedicated to the optical camera and the mechanical movement of the feeder.



1. Current camera view.

2. Last optical measurement shot.

3. Calibration commands.

4. Common commands area.

5. Preview area.

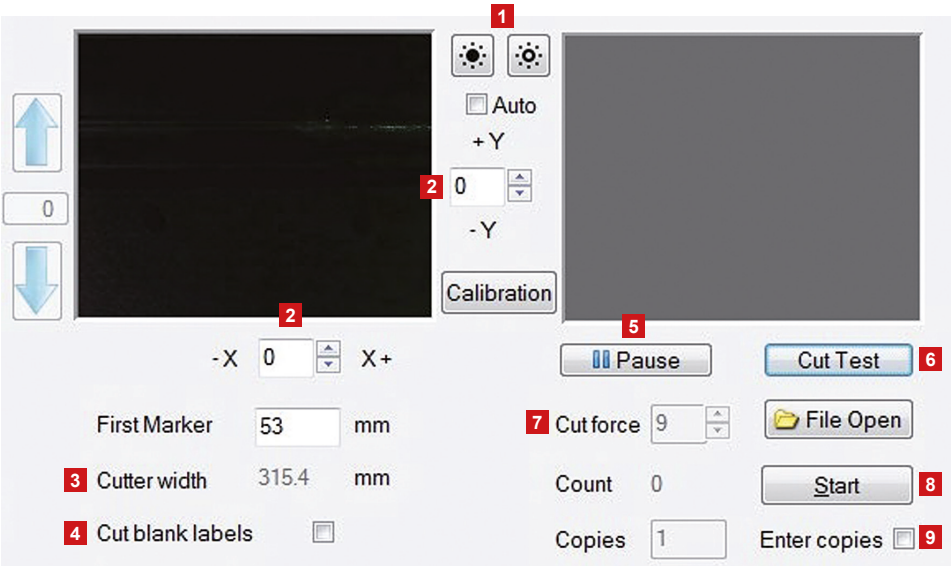
6. Status bar.

7. Compensation tool.

8. Special color panel. Active when a magenta line is used on the graphics file.

9. Die cutting panel.

10. Mechanical movement adjusting.



1. The camera brightness adjustments may be useful when operating on critical luminosity conditions (poorly illuminated rooms).

2. X & ***Y*** Enables you to make fine adjustment of the cut position, the values are in tenth of millimetres. (i.e. 1mm is entered as 10).

3. The ***"Cutter width"*** is read automatically by the ColorCut Cutting engine, the number shown is the maximum cut width available to the cutter. The value depends on the position of the pinch rollers on the Intec Digital cutting engine (Do not set the rollers too wide, when they are right on the edge of your media thinner paper stocks may 'buckle' when loading. However if you set the wheels to far from the edge, you will restrict your cutting area to ONLY inside the wheels).

4. The ***"Cut blank labels"*** option disables use of the CCD system for registration, and so allows you to cut without reading the black-marks.
Note: You still have to put the black-marks on the graphics even though they are not read. Please be aware that when using this option the cutting position is approximate.

5. The **"*Pause*"** button stops temporarily the job you can press the same button that become "Resume" to continue the job.

6. The **"*Cut Test*"** button sets the current mode parameters and allows you to cut a single sheet for a test. This enables you to adjust the cut force and the alignment between the graphic and the cut path before you execute the work.

7. The ***"Cut force"*** value sets the pressure of the blade on the cutting plotter.

8. The ***"Start"*** button launches the work and counts the labels cut on the "*Count*" box.

9. If you select the ***"Enter copies"*** option you can enter the number of copies to execute on the ***"Copies"*** box.

NOTE: It is strongly recommended to use the "*Cut test*" button before the automatic execution of the work. (In particular, if you have changed your cutting mode from Die-cut to kiss-cut labels, the CUT TEST button MUST be used, as it will update the cutting mode and send the new parameters to the Intec Digital Cut engine for the changed knife position. Failure to use this before executing a job with the START button can cause TAGs used during Die-Cutting to then be placed on labels so they don't peel out easily, or may cause the cut to be offset by 5mm.)
In addition, CUT TEST allows you to check the cut alignment and the cutting force. Since the blade gradually looses its sharp edge during the work, you have to check and set a cut force for a clean cut of the adhesive media.

Cut Test also enables you to check and verify that the label peel perfectly and that the blade has only slightly marked the liner (not cut through).

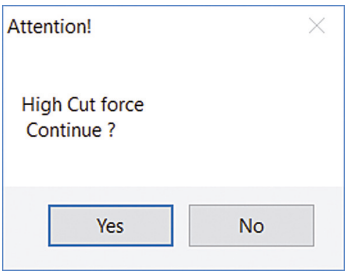
When you are cutting hundreds or thousands of sheets, remember check the cut quality each time you put a new load of sheets on the feeder.

Please be aware that when the blade is new the correct cut force setting for an adhesive media should vary between 6 to 9.

If you can cut through the label below setting 6 , you have too much blade exposed and you should adjust the amount of blade exposed or you may damage the cutting strip.

If you set a force higher than 14 you will get a warning message when you press "*Cut test*" or "*Start*" :

Cut force too high - Continue ?



This is an informative message, you can press "*OK*" to continue.

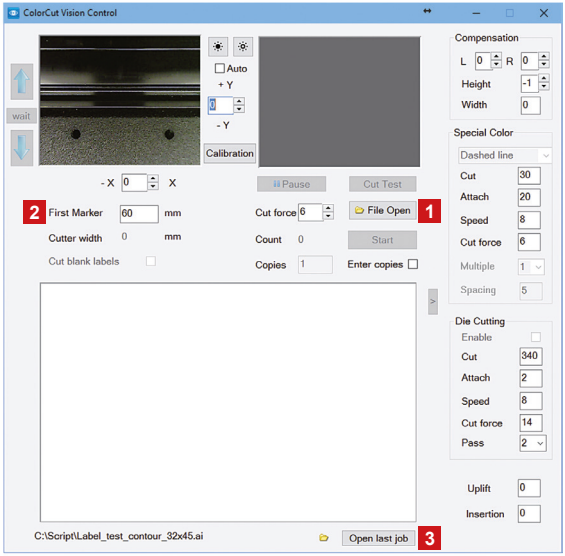
If you are using a standard adhesive media, when you exceed a cut force of 14, it is time to replace the blade or at least to check if you have a spare one to replace soon.

OPENING A FILE

1 The "***File Open***" button is placed centrally on the software panel.
If you try to open a file in Illustrator (.ai) format has not been saved in Illustrator 8 format you will see the message: "*Graphic file not saved correctly*"

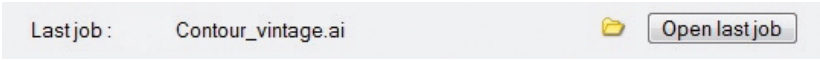
2 The "***First Marker***" value is the distance between the side of the left marker to the border of the sheet. This setting accepts a tolerance of about 5mm (0.2"), if the value is completely wrong the first marker does not stop in a central position under the camera.

If the Intec i-Vision Registration can not see the marker with 5mm of the centre of the window then you will get the error: "*Marker not found*"



Always check the distance from the edge of your printed sheet to the first marker if you see this error.

3 The button "***Open last jobs***" is a short-cut to open the last file used in a previous session. The name of the last file, when available, is reported beside.



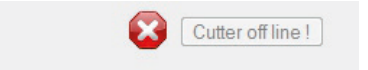
You have now setup your ColorCut and explored the basics of the software interface. Before you can use the Cutter for the first time, you must calibrate the cutter with the prints supplied with your device and with the Cutline file already prepared for you.

Follow the guide on Calibrating your cutter, in the event of an error, the typical Status and error messages can be found on the following page.

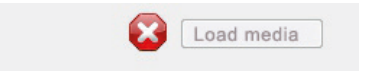
STATUS AND ERROR MESSAGES

After you have loaded a file for cutting, the status bar changes and there you find the name of the current job and the status of the cutting plotter.

If you get the message "***Cutter off line!***" it means that the cutting plotter is not available at all.
Turn on the plotter and make sure that the USB cable is connected before continuing.

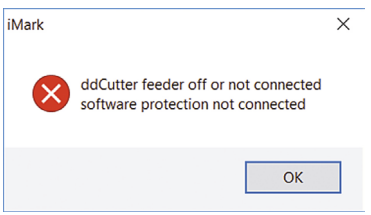


If you get the message "***Load Media***" it means that the cutting plotter is connected but it is not ready to use, there is the message "*Load media*" on the display of the Intec ColorCut Digital cutting engine..

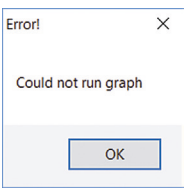


You have to raise the media lever and press button **#2** on the cutting plotter panel.

When "*Cutter ready*" is displayed the "*Cut Test*" and "*Start*" buttons are enabled.



When you press the button "*Cut test*" or "*Start*" and you get the message error: "**ddcutter not connected**".
Check the feeder is powered on, turn on the power switch of the feeder, and check that the green light on the switch is on. If you continue to have this message check the USB connection.



The error message "***Could not run Graph"*** is normally displayed when you try to launch multiple instances of the software. Close all instances and launch ONLY open one instance of the software.
It is also possible to see this message if the camera is not connected to the computer.
When you check the USB connection you have to verify that the camera is connected to the USB hub and the USB cable is properly connected on the computer and on the hub side.

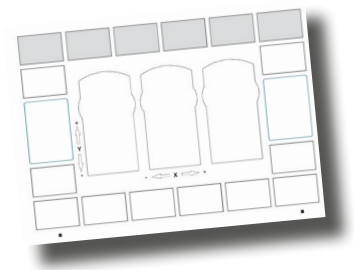
CALIBRATING YOUR COLORCUT FOR ACCURATE CUTTING.

PRINT AND CUT ALIGNMENT METHODS

At installation of your Intec ColorCut* it is necessary to calibrate the i-Vision CCD registration system for the print and cut alignment.

This corrects the cutting position in relation to the printed sheet.

There are two methods available for calibrating the cut alignment.
(i) Interactive Method (Manual Calibration)



The interactive method (Also known as the manual method) uses the printed sheets supplied with your ColorCut (with shapes rectangles etc. shown left).
In this method you cut the sheets then make adjustments to move the cut line over the shapes by adjusting any error in the horizontal or vertical direction.

The cutline file is already installed in the 'C:\Script' folder as part of the Installation of the Intec ColorCut software. (For a step-by-step guide see Manual Calibration Method following)

(ii) Automated Calibration

This method uses the black label sheets (also supplied with your ColorCut).
This is a more simple method which cuts a square first, (which you then remove) then the CCD i-Vision system identifies the cut area in relation to the feed.

(For a step by step guide see Automated Calibration Method following)

Both methods are easy to use but work in two different ways.
The Automated calibration method is quick and effective, however the interactive method enables you to see the cut line and in relation to a shape intended to be cut so while more involved, it can provide a greater level of confidence that your labels can be cut accurately.

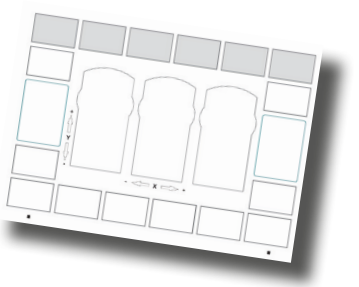
We recommend using the Interactive method initially to get comfortable with the settings, after this you can use the automatic method for speed. (If you have any difficulties you can always use the Automatic method for the initial setup too) After calibrating your cutter follow the guide to daily start up, and how to design your cut lines.

IMPORTANT: Calibration is always done with the blade in label cutting position/Kiss Cut position. (Blade should be in rear position nearest the exit tray)

* *Occasionally your alignment may need to be recalibrated particularly if you have adjusted your pinch wheel positions or moved your Intec Digital Cutting engine.*

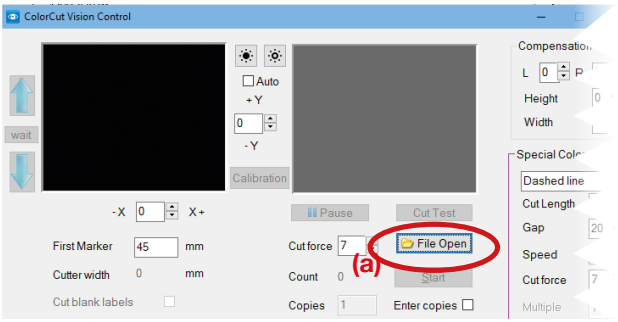
PERFORMING AN INTERACTIVE ALIGNMENT CALIBRATION

Your Intec ColorCut was supplied with several printed sheets shipped in the feeder (with shapes rectangles etc. shown left). *



This is the Manual Calibration Template.

As part of the software installation process, the cutline file to cut these is installed in folder 'C:\Script'.**



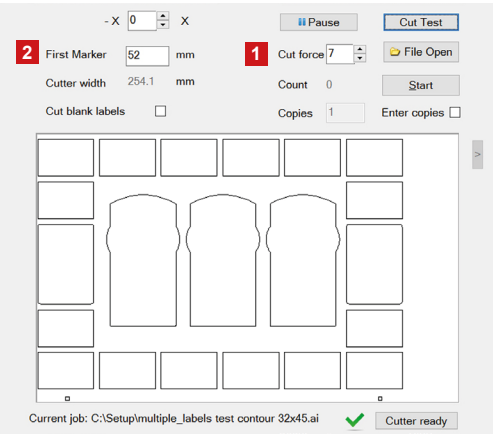
Open the cut file using your ColorCut Vision Control software by clicking the :

[FILE OPEN] button (a).

Browse to your C:\Script folder and click on the file:

multiple_test contour 32x45.ai

A preview of the Cutline should appear in the job preview window.



Ensure your CUTFORCE **[1]** is set to between 7 and 9 (Start with 7).

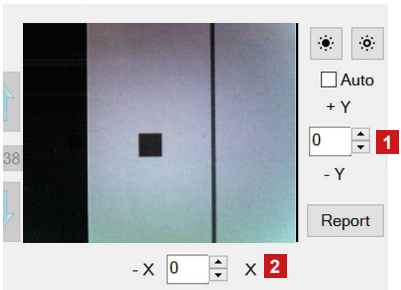
Enter a value for the FIRST MARKER **[2]** this is the distance between the first marker and the left edge of the sheet. The measure is in millimetres.(approx 50 - 54mm normally on the supplied sheets).

And click the [CUT TEST] button.

TOP TIP

If the [CUT TEST] button is greyed out and the CUTTER WIDTH Value shows 0 or if there is a RED X in the lower section of the screen under the preview window, then your Intec Digital Cutter is Not Connected or Not Ready.
Check your Intec Cutting engine is connected, turned on, the lever is in the UP position (to lower the pinch rollers), and you have pressed Button #2 on the cutter to place the cutter into READY mode. (This is when it reads the width and then sends it to the software.)

** These sheets can be re-printed if required using the print file supplied on the CD alternatively you can download the files from our ftp site in the Drivers & Downloads / ColorCut section.*
Print File = "multiple_test contour 32x45 (20mm).PDF ", Cut File = "multiple_test contour 32x45 (20mm).ai
*** IF you downloaded the print file to reprint your calibration sheets, please note it has been updated, since the one supplied with your system AND therefore you will need the new cut file as well, as this is different to the pre-installed one, copy the new one into your C:\Script folder..*

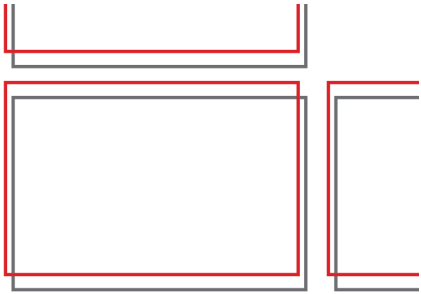


In the Video camera preview window you will see the first marker appear. It should be almost central. If it is slightly out then the system will compensate for any origin error up to 5mm.

TOP TIP

If you receive an error, 'Timeout' marker could not be read. And the marker can be seen at the top of the preview window, then reduce the First marker value by 10mm. If the market can be seen at the base of the window, then increase the first marker value by 10mm. Note: When calibration is complete any error is corrected.

Once your sheet has been cut, remove the sheet from the paper exit tray and look at the cut line in relation to the printed shapes.



See the example left.

The BLACK lines are the printed shape.

The RED lines are intended to show what the cutter actually cut.

The Y adjustment next to the preview window allows you to adjust and set the vertical position of the cut line

By increasing the Y you move the actual cut upwards.
By decreasing the Y you move the actual cut downwards.

The X adjustment allows you to adjust and set up the horizontal position of the cut line

By increasing the X you move the actual cut to the right.
By decreasing the X you move the actual cut to the left.

For accuracy, all values are entered in tenths of millimetres.

i.e. In the case above your actual cut line is:
0.5mm to the left than the desired cut line, so we enter 5 in the X box to move it right. And also 2mm higher than the desired cut line, so we enter -20 on the Y box to move it lower.

After the adjustments are made, make a final test by pressing the start button. Pressing the "*Start*" button memorizes the values, resetting them as the new baseline value and so further adjustments of x & y will start from this new default "zero" value.

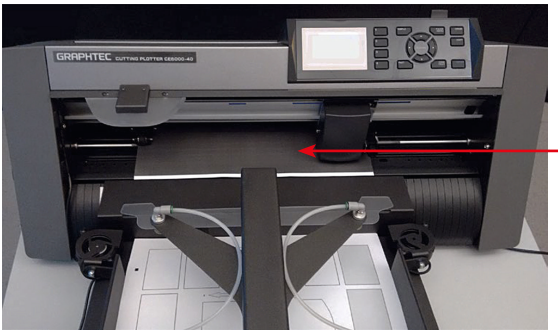
Small variations can be inserted also during operation; every variation will be effective from the next sheet.

PERFORMING AN AUTOMATIC ALIGNMENT CALIBRATION

The "*Calibration*" button enables an automatic calibration without the need for you to measure any cut offset or enter values. Instead the automatic calibration uses a cut-peel-measure procedure to find the proper alignment between printed graphics and cut path.

To perform the automatic calibration you must manually insert one of the black adhesive sheets provided.*

Lower the media lever, insert manually the sheet , rise the lever and press the key **#2** on the panel.



The sheet must be in a central position between the pinch rollers.

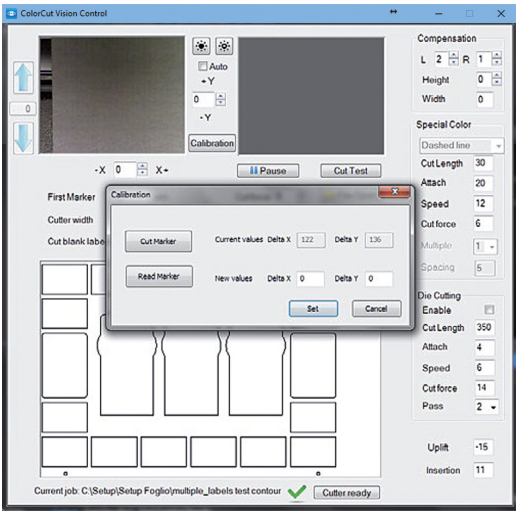
You can align it with the edge of the feeder to keep it straight.

**If the black adhesive sheets for the calibration procedure are not available you can print the file caliblack.pdf available among the sample files.*

From the ColorCut Vision control application press the "*Calibration*" button

Pressing the Calibration button will display the 'Calibration' dialogue window.

This window will display the current offset value for the calibration alignment, A [**Cut Marker**] button and a [**Read Marker**] button. Also an entry area for the new values as a result of the calibration and a [**SET**] button.
Press the "***Cut Marker***" button.

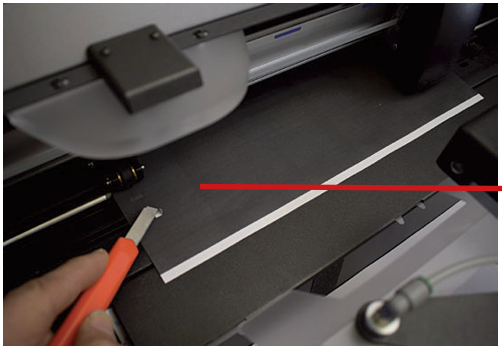


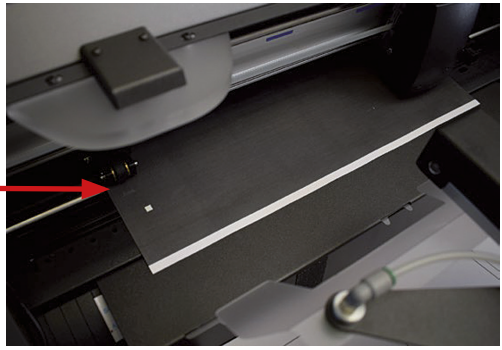
The Intec ColorCut digital cutter will cut a small square on the black sheet you loaded manually.

NOTE: DO NOT MOVE OR REMOVE THE SHEET AFTER IT IS CUT.

AUTOMATIC ALIGNMENT CALIBRATION (CONT)

Using a craft knife, remove the small square adhesive that was cut to expose the white liner





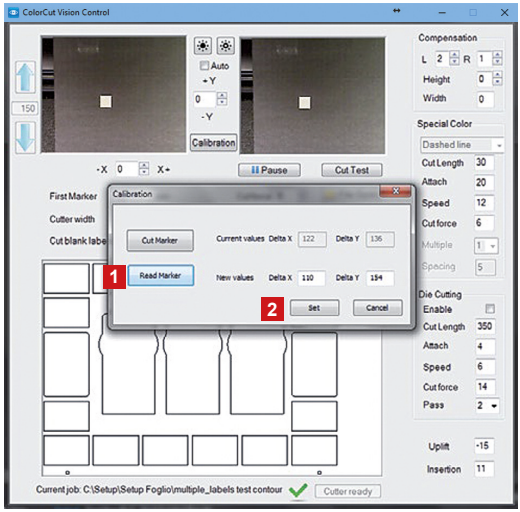
Next Press the "***Read Marker***" ***[1]*** button to read the calibration values.

The ColorCut engine will then automatically read the values that are specific for the camera installed on your cutting engine and enter them for you.

You can review the values if you wish.

Then simply press "***Set***" **[3]** you store the values.

Calibration is complete.

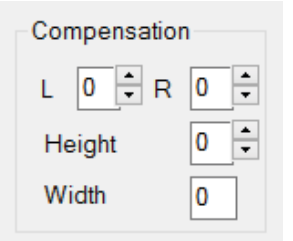


Remove the calibration sheet by lowering the media lever.

TOP TIP

Don't forget to you have to raise the media lever, and press the key **#2** on the panel to place your ColorCut Digital cutting engine into the READY mode so you can start cutting your jobs, if you want to check the calibration then you can cut a sample sheet to check the alignment.

The i-Vision registration system on the Intec ColorCut uses two SMARTmarks providing data points for Origin, Scale and Skew. This delivers high precision near the SMARTmarks. With the X & Y adjustment within the calibration settings, you can reach the maximum precision along the bottom part of the print.



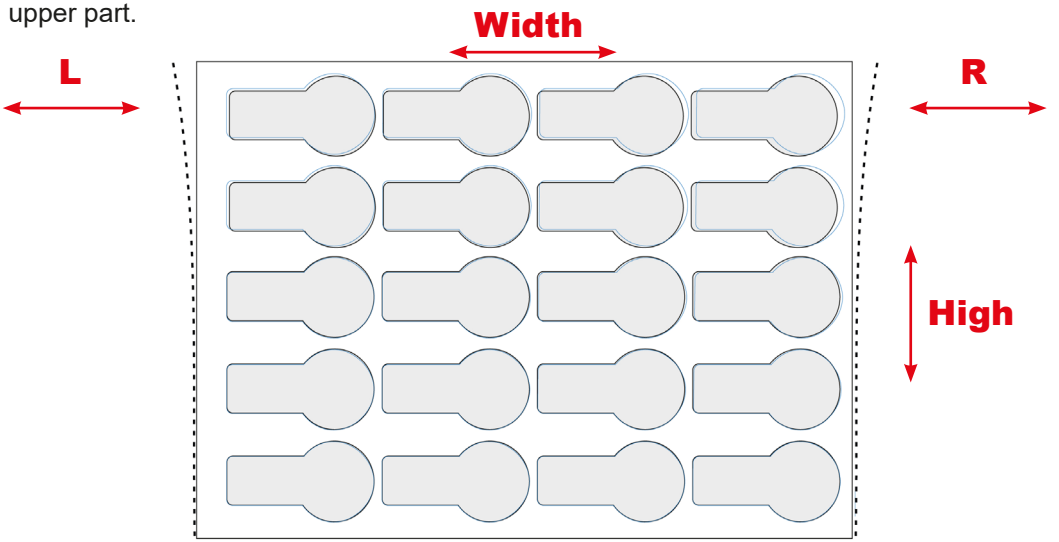
However in some cases digital prints can be affected by some distortions, therefore the COMPENSATION control provides some additional settings which can be useful to adjust other distortions on your prints.

The distortions are often constant for each printer.

The L parameter adjusts the cut position in the upper left area.
The R parameter adjusts the cut position in the upper right area.

The "*Height parameter*" expands the cut path the height.

The values are in tenths of a millimetre.
You have to cut a test sheet and check any error between the cut and print on the upper part.



In the picture the cut path on the upper part of the print is too low and shifted to the right on the upper right corner. In this case you have to set 2 on the Height box and -6 on the R box.

*NOTE: The parameter **Width** is only used when you cut without the detection of the SMARTmarks (Cut Blank Sheets, or in Blade Creasing Mode). When cutting with detection of the SMARTmarks any Width errors are compensated for by the registration system detecting the error distance between the SMARTMARKS.*

The Width adjustment enables you to expand or reduce the cut path on the width of your sheet.

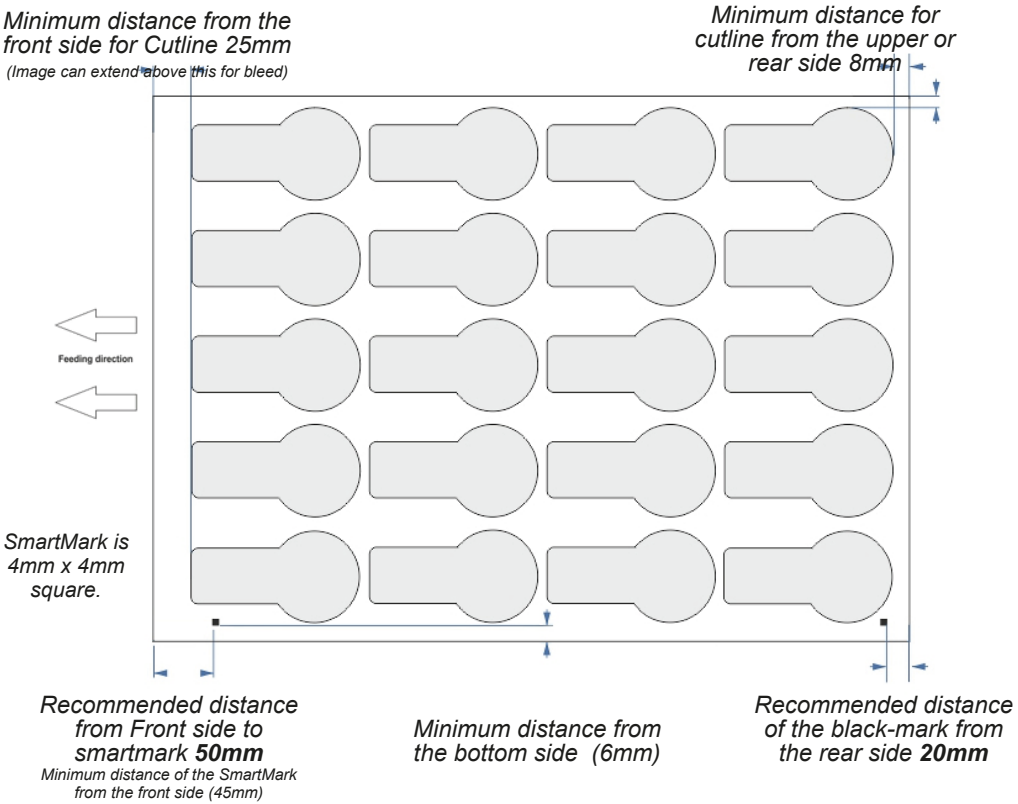
CREATING YOUR CUT FILES
EXPLANATION OF THE SMARTMARKS

Your files must contain two reference marks, known as SMARTmarks, the ColorCut's high resolution i-Vision video camera detects the SMARTmarks in a fraction of a second and adapts the cut path to any variations in the origin, scale or skew distortion of the print.

The first smartmark, provides the origin of the job and is placed 50mm from the lead edge of the sheet. The second, provides width/scale and skew parameters, and is positioned 20mm from the tail of the sheet.

Most of digital printers can print up to 5mm (0.2") from the border of the sheet, we recommend a minimum distance of 6mm (0.23") between the black-mark and the bottom border of the sheet.

Each Smart Mark is 4mm x 4mm square, and should be 100% K black (Not CMYK black) and should have no outline.



CREATING YOUR CUT FILES

SMARTMARKS - MINIMUM DISTANCE TO GRAPHIC ELEMENTS

The minimum distance between the SMARTmark and the printed graphics is 5mm (0.2”). If the graphics on your job are too close to the SMARTmark you can get the error: “*Marker not found*” because the i-Vision registration system won’t be able to distinguish your registration mark from the graphics content on your print.

Therefore we recommend you do not to place artwork within 6mm of the SmartMarks.

CUTLINE - MINIMUM DISTANCE TO LEAD EDGE OF SHEET.

Also, please note above the minimum distance for the Cutline from the front side (Lead Edge) of the sheet.

> If the IF a cutline is too close to the lead edge of the sheet then the ColorCut engine will reverse the sheet out of the pinch rollers while trying to cut the line. When the ColorCut engine subsequently tries to advance the sheet for the next cut line element, it may no longer accurately feed your sheet and may skew the rest of your cutlines.

There are two blade positions (One for Labels and one for Die-Cut), the blade positions are 5mm offset. Therefore, the minimum margin you should allow between the lead edge of the sheet and your Cutline is:

25mm when Die-Cutting (Cut through)
and
20mm for KissCut (Labels)

GRAPHICS FILE DESIGN

When printing you don't want your cut lines to appear on your printed sheet Equally when cutting you don't want to confuse the cutter with lines that may be in your printed design. But, in both cases, you need the have available the registration marks.

Therefore it is advisable to organize the graphic design in different layers:

- **One or more layers for the main graphics (The Printed artwork).**
- **One layer for the contour (The lines to be cut).**
- **One layer for the SmartMarks (The marks that are used for registration).**

Before sending the file for printing you should enable the graphics layer and the SmartMark layer.

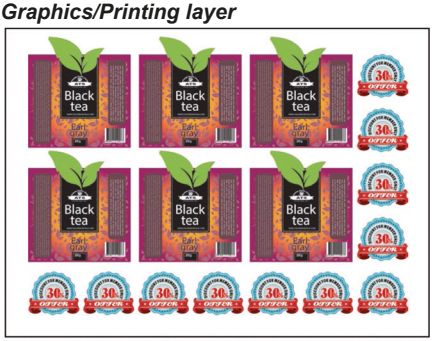
TOP TIP The most common error is to print all the layers including the cutline (contour) layer that make the prints unusable in most of cases.

Similar commands are available in Adobe Illustrator and CorelDraw to enable and disable the layers.

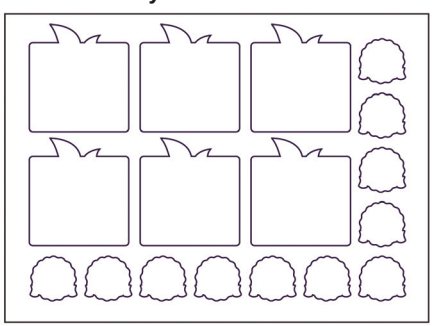
In the pictures shown on this page there is an external frame to indicate the border of the sheet making it easier for you to see the page. Note: That this is for illustration purposes only.

Also please note: When you open some PDF format files directly in Illustrator or CorelDraw, very often you may also find an external frame on the graphics. You will need to delete the external frame if it exists, for the file to operate correctly with the ColorCut i-Vision software.

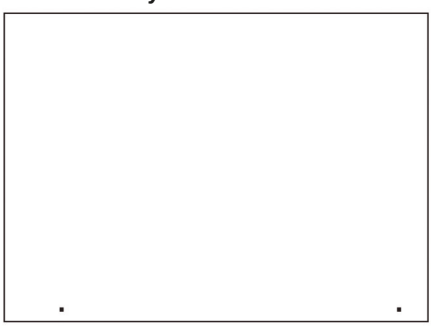
Graphics/Printing layer



Cut contour layer

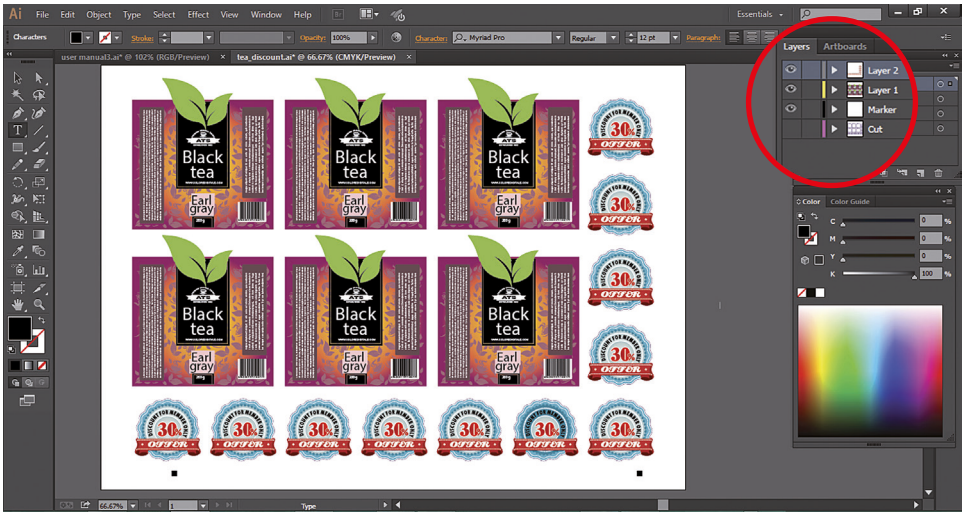


SmartMarks layer



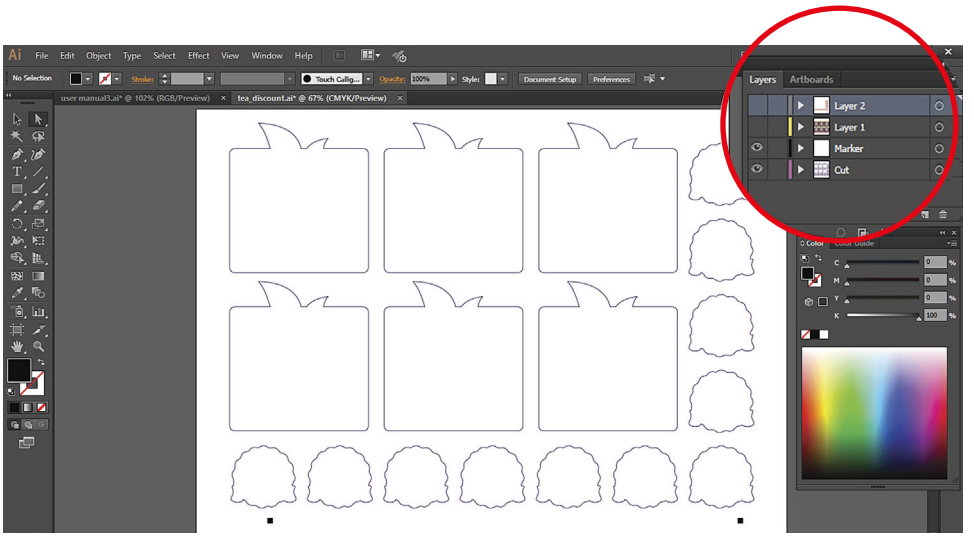
LAYERS FOR PRINTING

In this example, the main graphics layers and the markers layer are active.
The cut contour layer is disabled.
This drawing is ready for printing.



LAYERS FOR CUTTING

In this example, the main graphics layers are disabled.
The cut contour layer and the markers layer are active.
This drawing is ready for cutting.
If you used the guidelines, remember to hide or remove them before saving.



PRINTING THE ARTWORK / GRAPHIC FILE

The printed file for use with ColorCut i-Vision Control Software must contain two square registration marks of 4mm size (SMARTmarks) and your artwork, (The cutlines should not appear on your printed job - when using Adobe Illustrator, or CorelDraw you can use layers control, for the Cutline and the Artwork, then hide the cutline before printing.

The 2 SMARTmark registration marks must be located at the bottom of the graphics.

You can use every version of both Adobe Illustrator and CorelDraw.

Remember your SMARTmarks must be placed at least 6 mm from the printed graphics, to avoid reading interferences (see *EXPLANATION OF THE SMARTMARKS Pg 31)*.

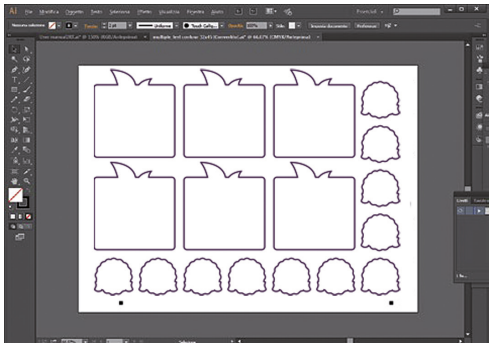
Artwork for print

FILE PROPERTIES FOR CUTTING

The black SMARTmarks must be objects at the bottom of the graphics.
You can design jobs in every version of both Adobe Illustrator and CorelDraw.

The graphics must be saved in horizontal (landscape) view.

Your Cut Lines should be **100% K**. You do not have to use a particular thickness for the cut profile.



If you wish to use a second line for creasing/ scoring or for perforated lines. Use the color **100% Magenta**. Lines in magenta color are treated separately on i-Vision software, enabling to change cutting depth/pressure for these lines, or to change the type of cut.

GRAPHIC FILE COMPATIBILITY

The Intec ColorCut i-Vision Control software can open files in the following formats:

EPS exported from CorelDraw.

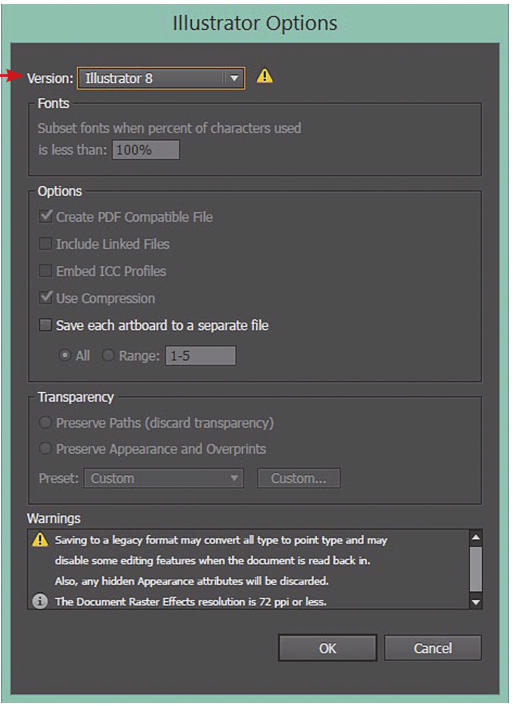
AI saved from Adobe Illustrator *(in v.8 Format)*.

Please ensure when saving your cut lines you ensure there are no guides or rulers on the page, and that there are no boarders on the page. Then ensure you save in one of the above formats.

ADOBE ILLUSTRATOR EXPORT

While you can use any version of Illustrator including Illustrator CC2016, when saving in your Adobe Illustrator package, **you must save the cut path and the black-marks in Illustrator 8 format.**

Use the drop-down VERSION menu under the save option to save the cutline backwards to Illustrator 8 format.



TOP TIP

While you can design and save your artwork files with different layers, we recommend that saving the cut line as a separate file, without the artwork hidden on a different layer as this will increase file opening speeds.

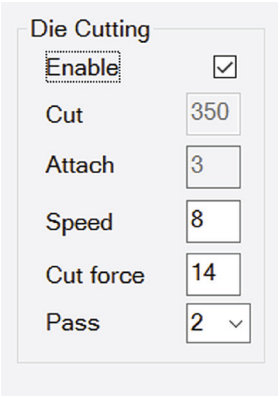
It is recommended therefore, that you save/export cut files as v8 Illustrator files with a different name from the main file containing the full graphics.

e.g. complete graphic file: acme_labels.ai
cut file: acme_labels_contour.ai

COREL DRAW EXPORT

From CorelDraw you have to export in EPS format.
You can export by using the option ‘Selection only’ to save the contour and markers only.

CUTTING CARDBOARD OR HEAVY PAPER (DIE-CUTTING)



In addition to cutting labels, The Intec ColorCut has a dual knife/blade position. The standard position of the blade holder, places your knife over the cutting strip, this is used for kiss cutting labels. However, moving the blade holder to the front position (Nearest the feeder) places the cutting blade over a specific groove, enabling Die-Cutting / substrate to be cut through.

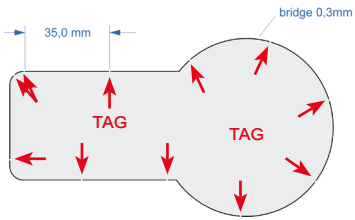
This provides the additional functionality of cutting cardboard. As a guide, the usable paperweight ranges from 120 to 350 grams (35 to 80 lbs.). Thinner or thicker papers can be tested to verify the usability but are not certified by Intec.

If you are cutting heavy paper or card, you MUST enable the Die-Cut function. (By checking the enable box as shown left).

As your media moves, it is necessary to hold in place the cut pieces. In order to 'retain' these cut pieces, a 'Tag' is automatically placed along the cutline which holds the waste material in-place allowing the user to 'pop' the shape out after cutting.

Under the Die-Cut dialogue box, there are several options.

The "*Cut Length*" parameter identifies the length of cut where the blade perforates completely (Cuts through) the card/paper.



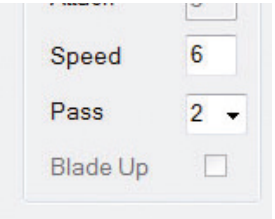
The "*Attach*" parameter is the 'TAG' or NODE (the part that holds the shapes in place) where the blade rises without cutting.

The values are expressed in tenths of a millimetre, in the following example, the stretch of the cross cut is 35.0 mm, and the TAG 'bridge' is 0.3 mm.

Select the "*Enable*" check box for cross cutting.

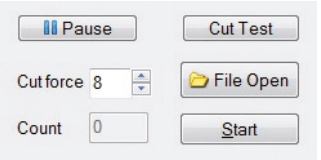
NOTE: To modify the parameters, you have to disable the Die-Cut then make the modifications.
Select "*Enable*" again to confirm.

CUTTING CARDBOARD OR HEAVY PAPER (CONTINUED)



The speed should be set on a low value range from 5 to 15. This way, you do not stress the blade too much and will not affect the cutting speed.

It is preferable to use two passes, it allows you to use a lower cut force (below 20); you get a cleaner cut and less blade wear.

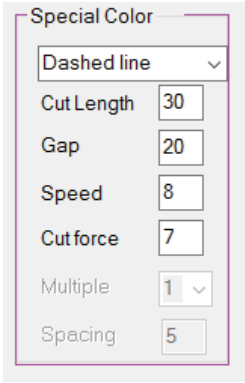


After any changes you have to press "*Cut Test*" for the first sheet, this sets all the parameter on the ColorCut Digital Cutting Engine and allows you to check the cut quality.

If you are cutting thin cardboard, leave 30 or more millimetres between the pinch roller and the cut path so the remaining paper is strong enough to enable the movement of the sheet.

SPECIAL COLOR PANEL

The "**Special Color**" panel allows a separate cutting control for lines designed using the color magenta in your graphics file.



When you design your jobs including a 100% magenta line in your graphic, it is recognised by the ColorCut i-Vision software and the "**Special color**" panel is enabled. You can see these lines on the preview they are drawn in magenta on the whilst all the other colors are drawn in black.

The SPECIAL COLOR MAGENTA lines are processed/cut before the rest (cut lines in black) of the graphics, so designing your jobs using the special Color cutline provides a separate control over Speed and Cut force.

The special color lines can be handled in different modes:

Dashed line (Default mode)

Used in two ways.

i) When producing labels, to either create perforated / dash cut line for a 'tear' area on labels such as Label sleeve on lip balm, or anti-tamper label on lid of jar that extends down the side of jar.
(For labels - Knife position is in KissCut mode i.e. the Knife is in the Rear position over cutting strip).
Or,

ii) When producing packaging or Point of Sale items (POS), to either create perforated / dash cut line for a 'fold' or adapted to create a smooth lighter cut acting as a score for folds.
Position of cuts is based upon the blade being position in the Die-Cut position (Front position, near feeder - over cutting groove for cut through application)

Plain cut (Requires optional Cutting Mat)

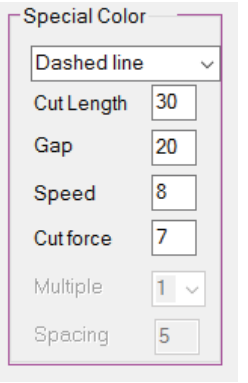
Used to combine label cutting with the ability to cut through.
Position of cuts is based upon the blade being position in the Kiss-Cut position

Blade creasing

Enables you to cut from the rear of the sheet to avoid lighter cuts used for fold lines from cutting through your printed face and opening up the card to reveal the lighter fibres in dark areas. Note: This disables the Vision registration system so accuracy is reduce, however this function assists by flipping your cut line automatically for you as you are cutting on the reverse of your sheet.
(Front position, near feeder - over cutting groove for cut through application)

USING THE DASHED LINE FEATURE

If you select Dashed line in the drop down options under the Special Color settings. Then the ColorCut will treat all 100% magenta Colored lines separately from the black lines.

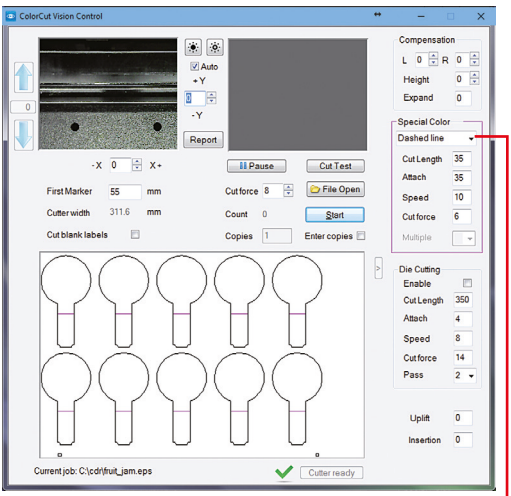


Even though the line is drawn a a solid 100% magenta line, the controls for Cut length and Gap enable you to alter the cutting properties from a solid line to a perforated line.

Cut Length is the section of the line cut by the blade.
Gap is the part of the line where the blade lifts up.

CREATING TEAR LINES ON LABELS WITH DASHED LINE FUNCTION

Therefore IF your blade is in Label cutting (Kiss Cut) position, then you can use the Special Color option to create a lighter cut or a perforated cut on your label specifically for 'tear' away areas on labels. See example 1 below.



In this sample a dashed line is cut on a label for a fruit jam jar. It allows the label to rip easily the label when opening. (Often used a a tamper indicator)

The values used for Cut Length and Attach are 10ths of millimetres

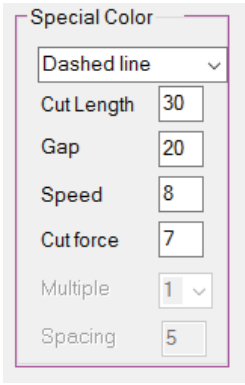
Here **Cut Length** is set to 35 (3.5mm) and the **Gap** is set to 35 (3.5mm).

So the ColorCut will produce a 3.5mm dashed cut line.

NOTE: The **CutForce** is set to 6, so this is less force than used to cut the labels, so the dashed area will not completely cut through.

The Cut force can be the same or greater than the force used to cut your labels, however be-careful not to cut too deep or you will damage your cutting strip. Do not use the knife in this position for cutting through card. See *USING THE DASHED LINE FEATURE*

CREATING PERFORATED LINES ON CARD WITH THE DASHED LINE FUNCTION



The Dashed line function creates added capabilities when you are using the Die-Cutting mode with the Knife in the Front position (Nearest to the feeder).

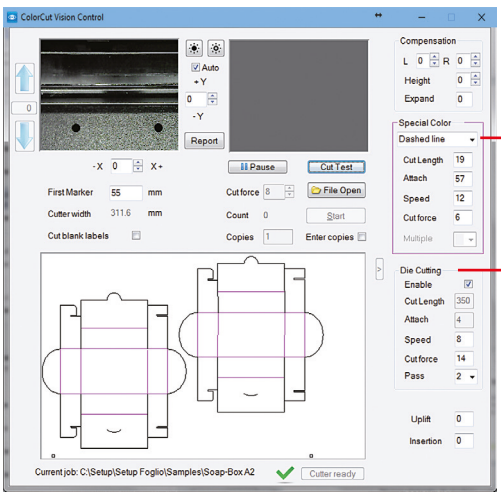
If you select Dashed line in the drop down options under the Special Color settings. Then as with the Kiss-Cutting knife position, the ColorCut will treat all 100% magenta Colored lines separately from the black lines.

This means you the lines drawn in Magenta, can have a Dashed or Perforated effect applied to them, even though the line is drawn a a solid 100% magenta line, the controls for Cut length and Gap enable you to alter the cutting properties from a solid line to a perforated line. The cut force can be increased and because in Die-Cut mode your knife is positioned over the groove there will be no damage to your cutting strip.

Cut Length is the section of the line cut by the blade.
Gap is the part of the line where the blade lifts up.

You can change these parameters to have extended slits or tiny dashes.

CREATING SOLID SCORE LINES ON CARD WITH THE DASHED LINE FUNCTION



The dashed line is used as folding line in a couple of boxes. It is cut before of the die cut.

For this job enable the Die cutting option and place the blade holder on the outermost position so you can avoid to damage the cutting mat.

Whilst a perforated line/dashed line can be used as a fold line, there are times when a straight cut, or score would be preferential. This can is also set in the **Dashed line** option. (Do Not use the *Straight Cut* option as this is intended for a different purpose).

As the **Cut Length** is the section of the line cut by the blade, instead of using 35 or a small value increae this to the length of the longest line (i.e.2000)
This will make clean scores 200mm in length.
Gap is the part of the line where the blade lifts up, but if all your score lines lines are shorter than 200mm, then there will be no lift of the blade or perforation in your line. And your cut will be quicker.

Selecting “Plain Cut” under the “**Special color**” section is used to KissCut labels (cutting through only the top sheet of a label) and then applies additional pressure/cut force to cut through the sheet completely (using the die-cut parameters).

This mode should ONLY be used with the optional Cutting Mat as in this mode, the positioning of the cut knife is over the cutting strip (the blade in KissCut position - the Rear position).

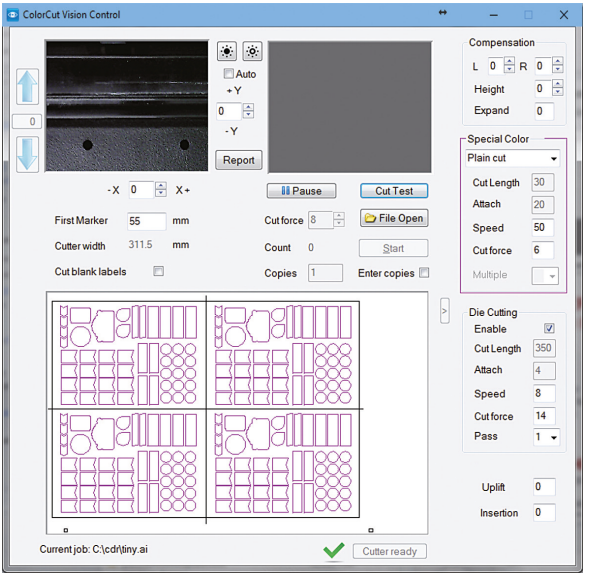
If you do not use the optional Cutting matt under your label adhesive, then as the blade cuts all the way through the media - your cutting strip will be damaged.

If you do not have the optional Cutting mat, then this kind of job could be otherwise worked in two phases:

First cut the label contour,

then reinsert the sheets in to the feeder,

and move the blade holder to the die cut position

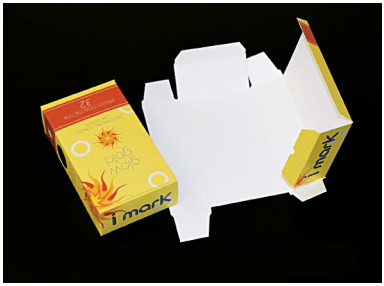


The small labels with magenta contour are cut first.

Then the die cutting pass allows to separate the sheets.

IMPORTANT:
The Magenta Lines must be 100% MAGENTA.

Using the Blade Creasing Feature you can crease and cut from the reverse side of your job.



In addition the ColorCut will simulate the creasing using multiple parallel passes of the blade at reduced force.

As both the blade creasing function and cutting are carried out on the reverse side / back of the print, please be aware that the camera does not read the SMARTmarks, instead it detects the border and the corner of the sheet.

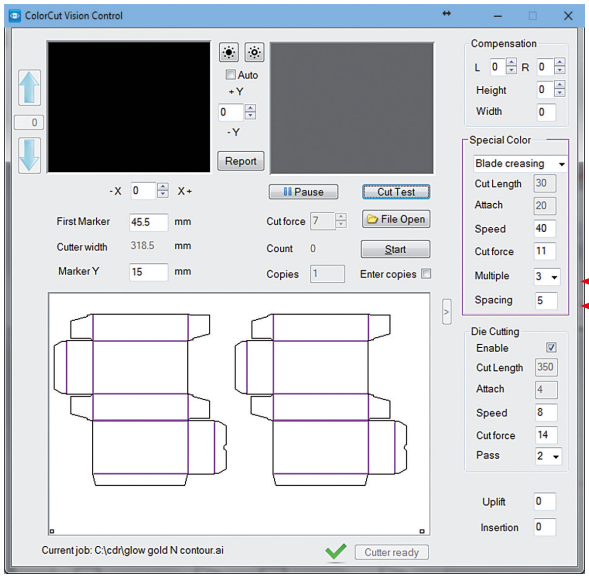
The accuracy of your cutting and creasing depends on the repeatability of the position of the print on the sheets, and the accuracy of your digital printer. If the accuracy on your printer is good, then you can reach a value around 1mm (0.04") so ensure the graphics are designed accordingly to mask/eliminate any movement.

In addition as you will place the sheet in the feeder upside down, the Intec ColorCut software will flip your image for you to reflect the cutline required upside down. It does using your Smartmark as the origin point. For this reason you have to measure the distance of the black-mark from the border with a ruler.

You have to measure only once the distance, this method works well only with high quality and high accuracy digital printers which deliver a very accurate print position on the sheet.

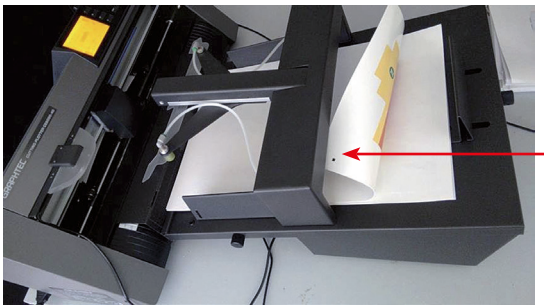
distance of the marker from left border

distance of the marker from bottom



The small labels with magenta contour are cut first.

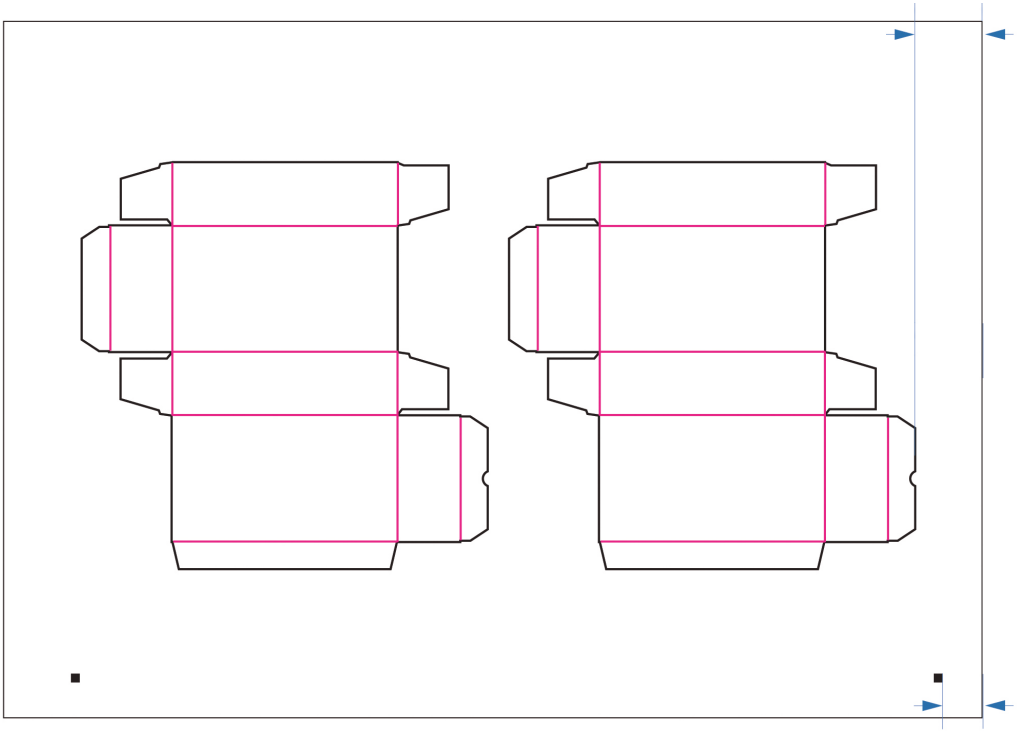
Then the die cutting pass allows to separate the sheets.



Having measured the position of the SMARTmarks relative ot the sheet edge, ensure you load the sheet with the print face down and ensure you place the side with the black-marks on the camera side.

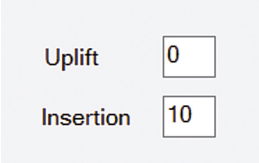
Since the sheets are loaded upside-down the specifications regarding the maximum cutting area and black-marks are different to those used on the front-side mode.

The minimum distance of the cut path from the right border is 0.99” (25mm)



The distance of the black-mark to the right border must be 0.79” (20mm) or less

FEEDER ARM ADJUSTMENTS

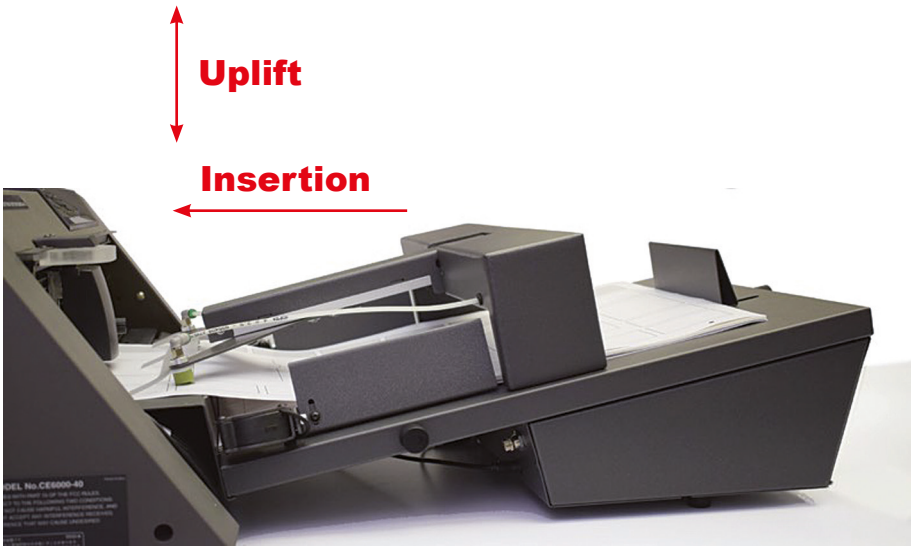


On the right bottom corner of the software window there are two settings for controlling the movement of the insertion arm.
Uplift controls the height of the arm when inserting the sheet.

Insertion control how much the suction cups have to push the sheet into the plotter.
If the insertion is too short the sheet is not pinched by the rollers.
If insertion is too deep the sheet may bend during the insertion resulting not flat during the cutting process.

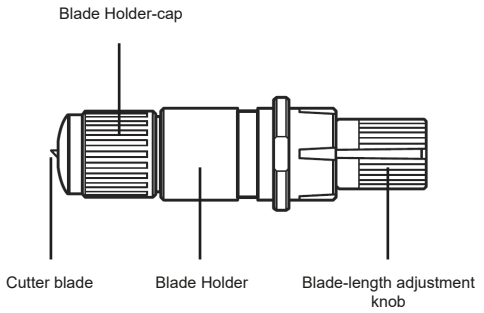
The values are expressed in tenth of millimeter.

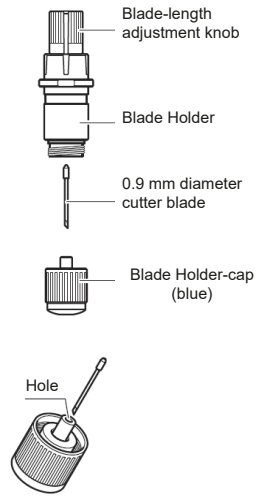
Some small variations may be useful to adapt the movements to the quality of the paper.
Thick paper may require to add some insertion.
Adhesive media curled downward may need a positive Uplift value.



SETTING THE BLADE DEPTH (EXPOSURE)
THE BLADE HOLDER

The ColorCut cuts using a cutter blade mounted in a Blade Holder. There are two different Blade Holders to suit the diameter of the cutter blade to be mounted (the 0.9 mm cutter Blade Holder (is BLUE) and is provided as a standard accessory).
Ensure you mount the cutter blade in the corresponding cutter Blade Holder.



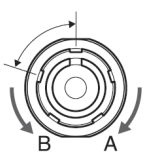


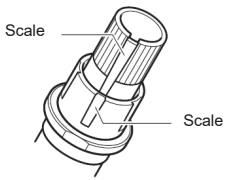
CAUTION:
To avoid bodily injury, handle cutter blades with care.

WARNING: It may result in damaging the cutter blade or the cutting mat if the blade is extended too much. Make sure the blade length is set less than the thickness of the media.

Adjust the blade length by turning the blade-length adjustment knob. Turn the knob in direction “A” to extend the blade, or in direction “B” to retract the blade. When the knob is turned by one scale unit, the blade moves approximately 0.1 mm. One full turn of the knob moves the blade approximately 0.5 mm.

Cutter blade moves approximately 0.1 mm turning one scale unit





HOW TO REPLACE CUTTING STRIP

CAUTION:

Please turn off the power when replacing the cutting strip. Please move the tool carriage to "A" position allowing for ease of work.

1. Remove the cutting strip.

-The cutting strip is attached to the cutting base (fig.1)

-Please remove only the cutting strip from the cutting strip base from the location shown by the highlighted selection (A) (fig.1)

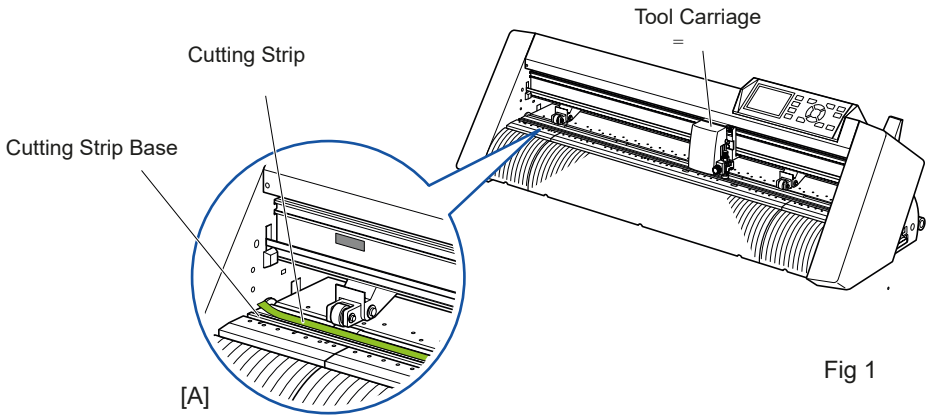
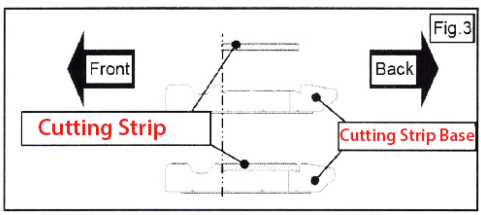


Fig 1

- After removing the cutting strip, please make sure that there is no adhesive tape or other adhesives left on the cutting base.
- Please clean the cutting strip base before installing the new cutting strip.
- Installing the cutting strip with the remaining adhesive may affect cut quality.

2. Installing the cutting strip.

- Fit the cutting strip with the front cutting base grooves (fig.3) and attach it from the location shown by the arrow (A) (fig.1) while peeling off the release paper.



TROUBLE SHOOTING

Issue	Possible cause(s)	Remedy
[CUT TEST] or [START] buttons not available	No connection to the ColorCut Media Lever is not raised No #2 button has not been pressed.	Check USB and Power connections Raise Media Lever Ensure media lever is raised and press Button #2 on display of cutter.
Media loads, but 'buckles' on the sides while loading.	Pinch rollers are too wide	Check position of Pinch rollers. See Page 16. They should NOT be right on edge of sheet as this can cause sheets to buckle up when loading. Make sure outer shoulder of wheel is along edge of sheet.
Media loads, but hits pinch rollers and crumples slightly.	Insertion Force is too high.	See pg 45 (Insertion) reduce this value to 0.
Media starts to load, but looks to hit Tool Carriage while loading and crumples.	Although it looks like it hit the Tool Carriage, it actually probably got caught on the grove below it, causing it to roll up into the tool carriage	Some printers leave a slight down curl on the lead edge of the sheet causing the sheet to get stuck in the cutting groove. Try curling the lead edge of the sheet fractionally up.
Sheet did not load.	Vacuum pressure too low and vacuum did not pick up sheet. Sheet was picked up, and advanced to pinch rollers, but pinch rollers did not grab media	See Page 14, increase vacuum pressure. See Page 45, increase insertion value (10^{th}s of mm) to increase the force of which the sheet was pushed into the feeder. (Normally required for Die-Cut applications, but not labels)
Marker Not Found. Time Out (Applies to 1st Marker)	The 1st Smart Mark on the sheet can not be found (But can be seen at TOP of preview window) The 1st Smart Mark on the sheet can not be found (But can be seen at BOTTOM of preview window) The 1st Smart Mark on the sheet can not be found (No mark can be seen in preview window)	The First Mark, should appear in the Preview Window, in the centre. If not you will see this error. Check FIRST MARK measurement, does actually equal the measurement from the lead edge of the sheet to the top of the first black SMARTmark on your printed job. If it does, then your calibration may not have been performed correctly or has been adjusted in error. Re-Calibrate your system (Pg 25) but if the SmartMark is above centre then reduce the value you enter into the FIRST MARKER box by 10mm. if it is BELOW centre, then increase the value in the FIRST MARKER box by 10mm. If this does not work or IF the mark can not be seen in the preview, then ..... (Continued on following page)

TROUBLE SHOOTING

Issue	Possible cause(s)	Remedy
Marker Not Found. Time Out (Applies to 1st Marker)	The 1st Smart Mark on the sheet can not be found - Continued from previous page	Click the 'EYE' icon top corner of the screen, and Click 'COLORCUT VISION CONTROL' at the bottom of the menu. Set the above values: - Marker: 50 - Delta X: 95 - Delta Y: 109 Click SET button and close this window Load into the feeder the sample test sheets included with the unit. Import the cutting file "multiple_labels test contour 32x45.ai" (Found in the C:\Script folder of your computer) Flag the box "auto" beside camera preview for the camera auto adjstment Set 55 as value for "First Marker" Now click on "cut test" (If Marker is High on the preview screen reduce the value of the FIRST MARKER until it is in centre of screen)... if it is low in the preview screen then reduce the value until it is seen. Once it has finished cutting the job, take the sheet and using a ruler find the correct X and Y adjustment to move the cut in the right position required. This values have to be set on X and Y box. Pay attention 1mm is 10 (so, if you want to move of 3,5mm the value will be 35) Now, click on "Start" It will load the sheet (If you had to edit the First market position then an error will come up. Close the window error and click on "Stop" Now set "First Marker" correctly - the position of the first black mark printed on the sample sheet.) Click on "Start"and now the unit is set to work properly with any printed sheet. Pay attention, now in order to optimize better the cut position on your printed media you might need to adjust a little X and Y value a little more.

TROUBLE SHOOTING

Issue	Possible cause(s)	Remedy
Marker Not Found. Time Out (Applies to 2nd Marker)	The 1st Smart Mark on the sheet is read but then second SMARTmark can not be read.	Check your artwork, and measure the position of the second Mark on the sheet, then check your Cutting line artwork, is the distance the same? Normally this happens if the PRINT has been printed with FIT to PAGE on, and the change is more than 10mm. If so, the SMARTMmark does not match the position on the cutline. Reprint your artwork WITHOUT scaling or FIT to page on.
Cut is not in the correct place on the width, but is on the length.	Cut is okay lengthwise but not width wise. - Page was printed from Acrobat with 'FIT TO PAGE' enabled.	Your printed sheet was printed from Acrobat with FIT to page on, (and the scale effect Acrobat applied is small, so your page printed, and the scaling error for the length was detected by the software and COMPENSATED for BUT, there is no adjustment mark for width and the software did not know your page had been printed with scaling on the width, so length cuts okay but width is out. Reprint your page without scaling applied.
Cut is not in the correct place on the width, but is on the length.	Cut is okay lengthwise but not width wise.	Perform a calibration (Page 25)
SmartMark is read, but cutline is in the wrong position (any direction)	Your cutter has not been calibrated Someone has moved the feed table, or has adjusted the position of the LEFT pinch wheel.	Perform a calibration (Page 25) Check left Pinch wheel, then Perform a calibration (Page 25)