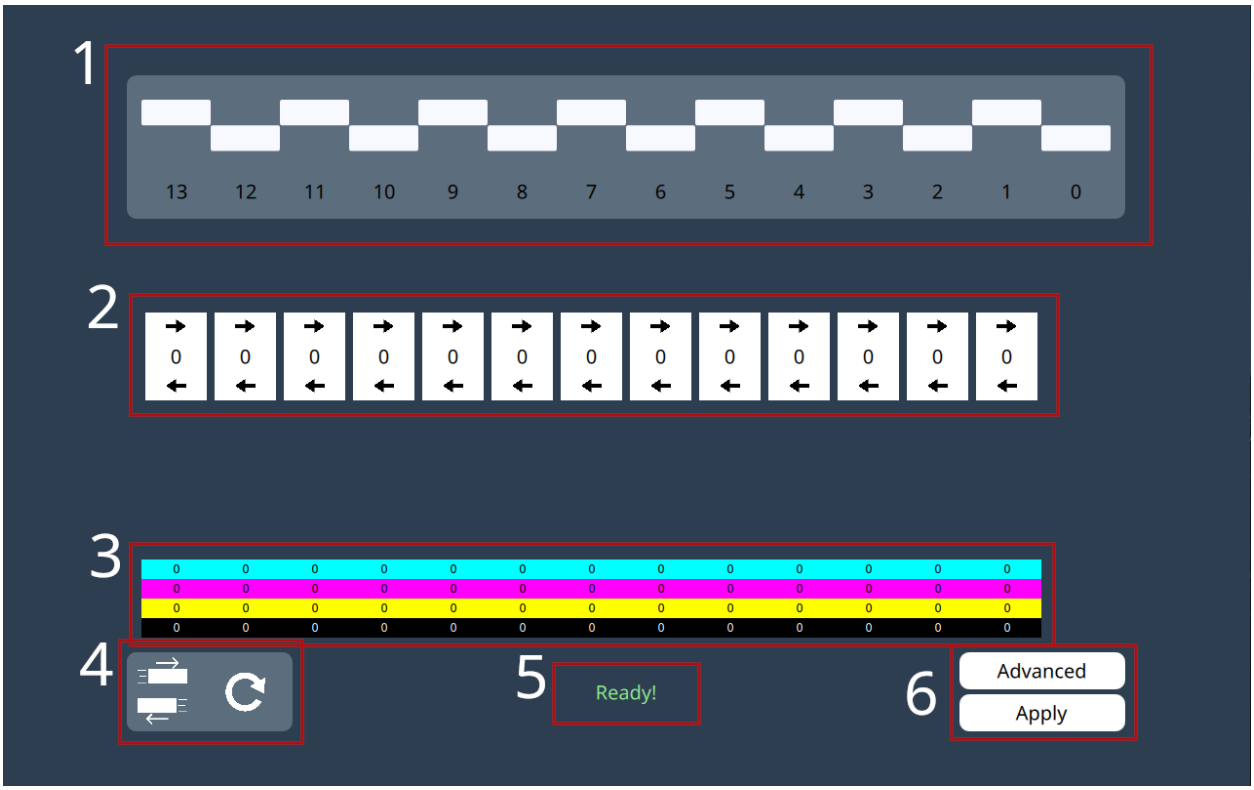
Die Adjustment Tool User Instructions

v1.0

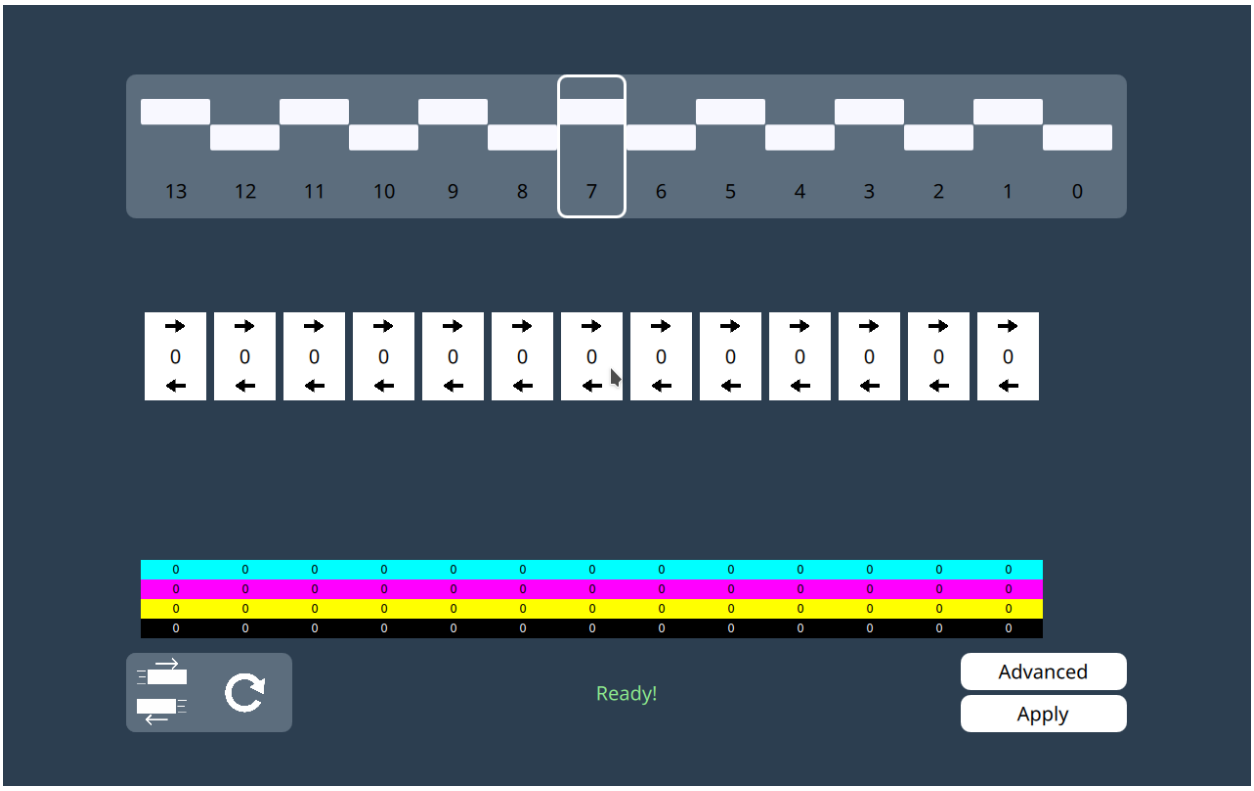
The purpose of this app is to move each color on each die in order to eliminate lines and gaps in the resulting print. Ink is sprayed through nozzles onto the media. These nozzles are microscopic in size and a large number of them is grouped into rectangles in a zigzag pattern. Each of these rectangles is a die. Each die can move from side to side independently of the two dice next to it.

Pictured below is the default window, which displays the basic menu.



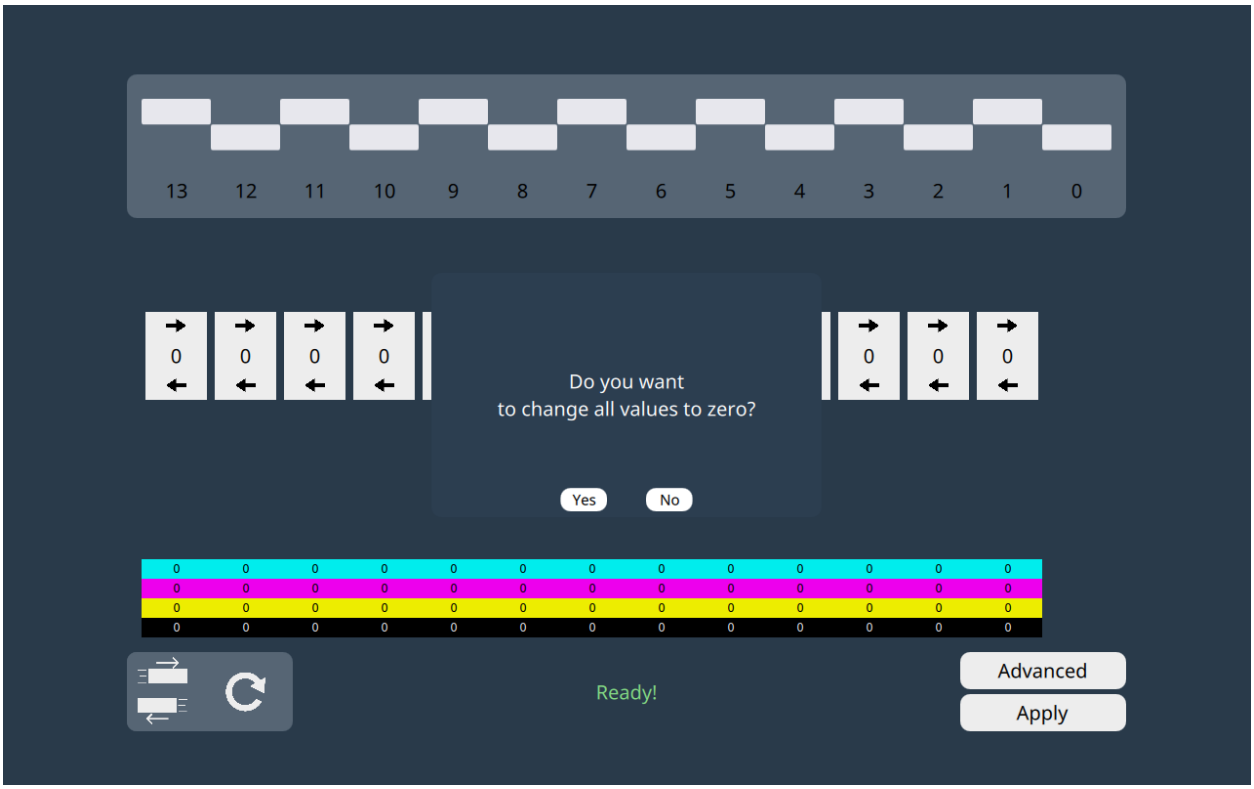
Box 1 shows all the dice with their corresponding numbers immediately below them. Die 0 is the furthest from the operator whereas die 13 is the closest to the operator.

Box 2 contains thirteen white rectangles. In each rectangle, there is a number which represents the location of the die relative to the die next to it. When hovering over one of these white rectangles, an outline will appear around the corresponding die in box 1 as shown in the picture below. The arrows pointing to the right will move a die to the right (away from the operator), and the arrows pointing to the left will move a die to the left (towards the operator). There is no rectangle that corresponds to die 0 because die 0 cannot be adjusted. It is assumed to be at the correct position by default.



Box 3 displays the values that are adjusted in the advanced menu, which will be shown later.

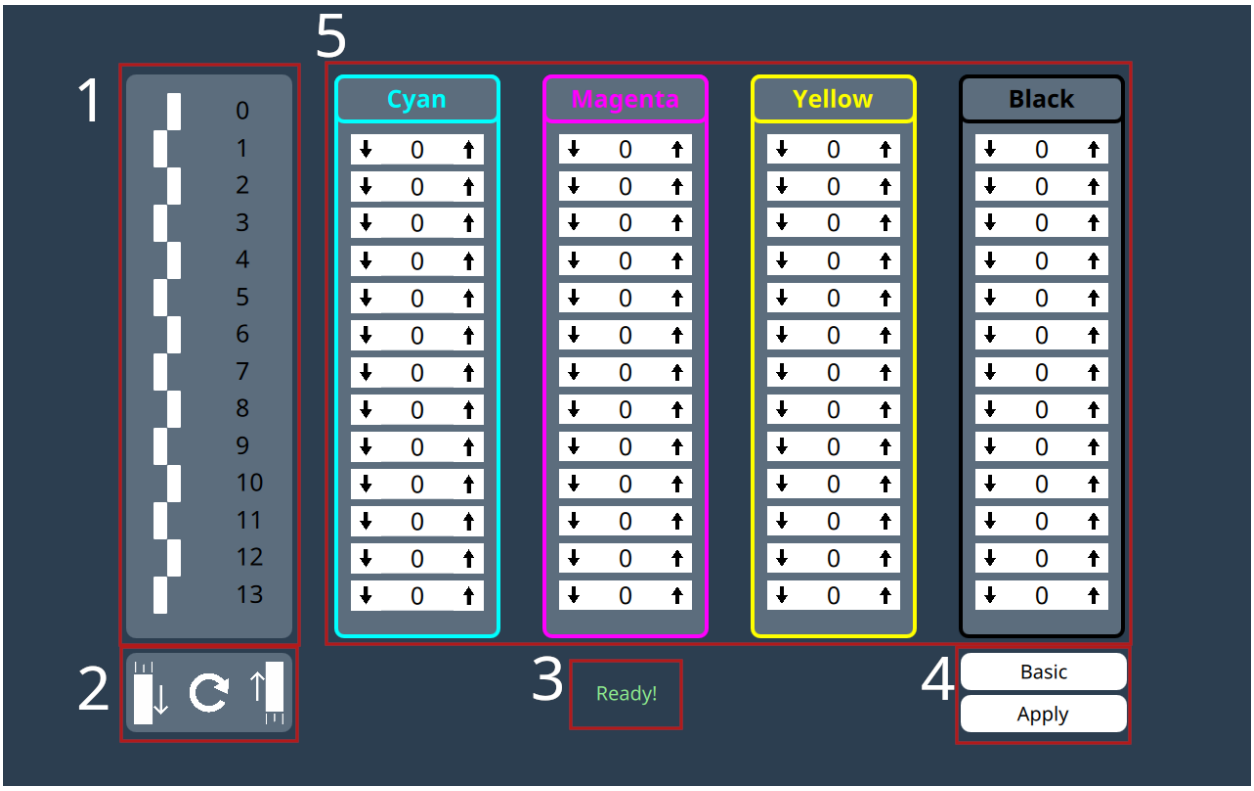
Box 4 contains three buttons. The button on the right, or the reset button, resets all dice locations to zero. When pressed, a pop up will appear as shown below. To make the pop up disappear, press “Yes”, “No”, or the escape key on the keyboard. If “Yes” is pressed, all values will be reset to zero. There is no way to undo this action. If “No” or the escape key on the keyboard are pressed, no values will change and the pop up will disappear. The other two buttons will move all dice away from or towards the operator (left or right respectively). The button on the top with the arrow pointing to the right will move all dice to the right, or away from the operator. The button on the bottom with the arrow pointing to the left will move all dice to the left, or towards the operator. There is no confirmation for these last two buttons.



Box 5 contains the status and will display green for success, white while working, and red when there is an error.

Box 6 contains two buttons. The “Advanced” button closes the basic menu, which is the default display when opening the app. The “Apply” button will send the data to the printhead to make the necessary adjustments. The relevant data will be sent to the printhead only when “Apply” is pressed.

Below is the Advanced Menu, which is accessed by pressing the “Advanced” button in box 6 after opening the app.



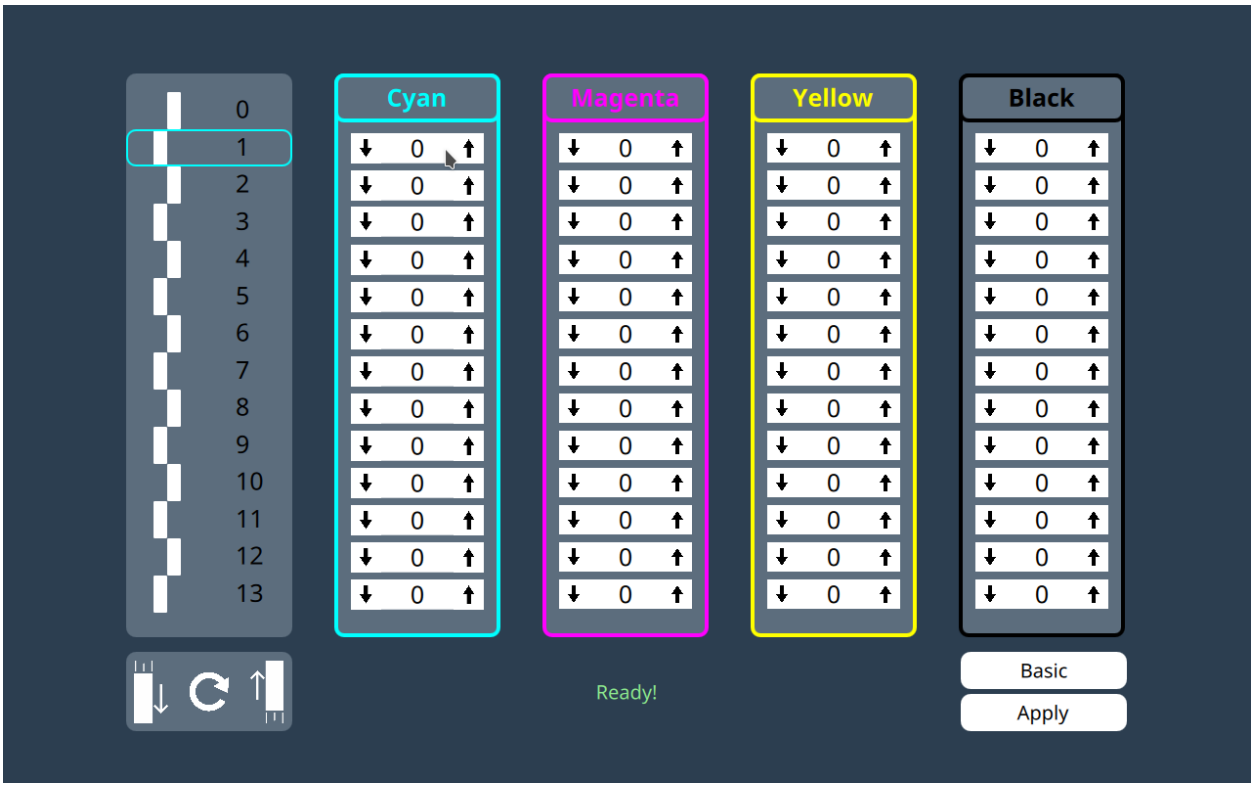
Box 1 shows all the dice with corresponding numbers. Die 0 is the furthest from the operator whereas die 13 is the closest to the operator.

Box 2 has the same buttons as box 4 in the basic menu. The reset button is now in the center. The button on the left with the arrow pointing down will move all dice down (towards the operator). The button on the right with the arrow pointing up will move all dice up (away from the operator).

Box 3 shows the same status as box 5 in the basic menu.

Box 4 contains the “Apply” button and the “Basic” button. Pressing “Basic” will display the basic menu which was displayed when the app was opened.

Box 5 displays the adjustments for each color on each die. The white rectangles are similar to the white rectangles in box 2 of the basic menu. When hovering over a rectangle, a border will appear around the corresponding die in box 1 (see the picture below, cursor is hovering over the cyan adjustment for die 1). The color of the border will match the color being adjusted. The arrows pointing up will move a color up (away from the operator). The arrows pointing down will move a color down (towards the operator).



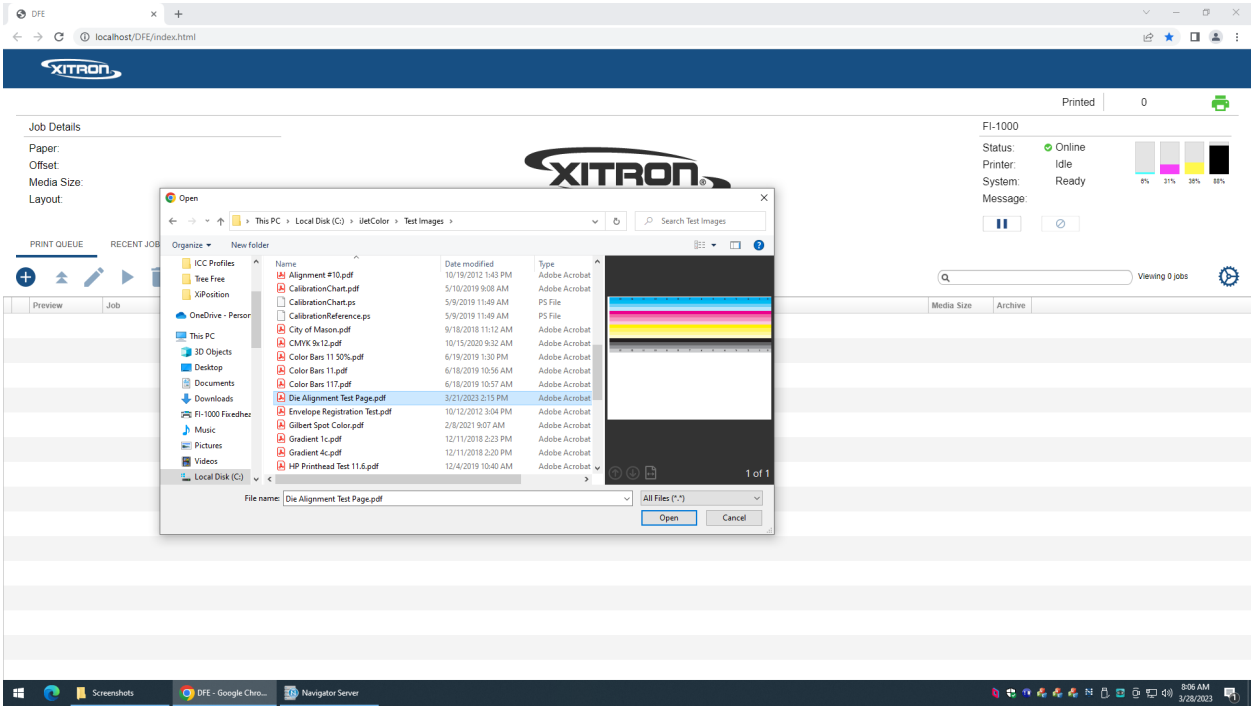
Before pressing “Apply” make sure the status of the printhead displayed by the DFE is online and ready. The app may hang if the printhead is not connected.

Use Case Example

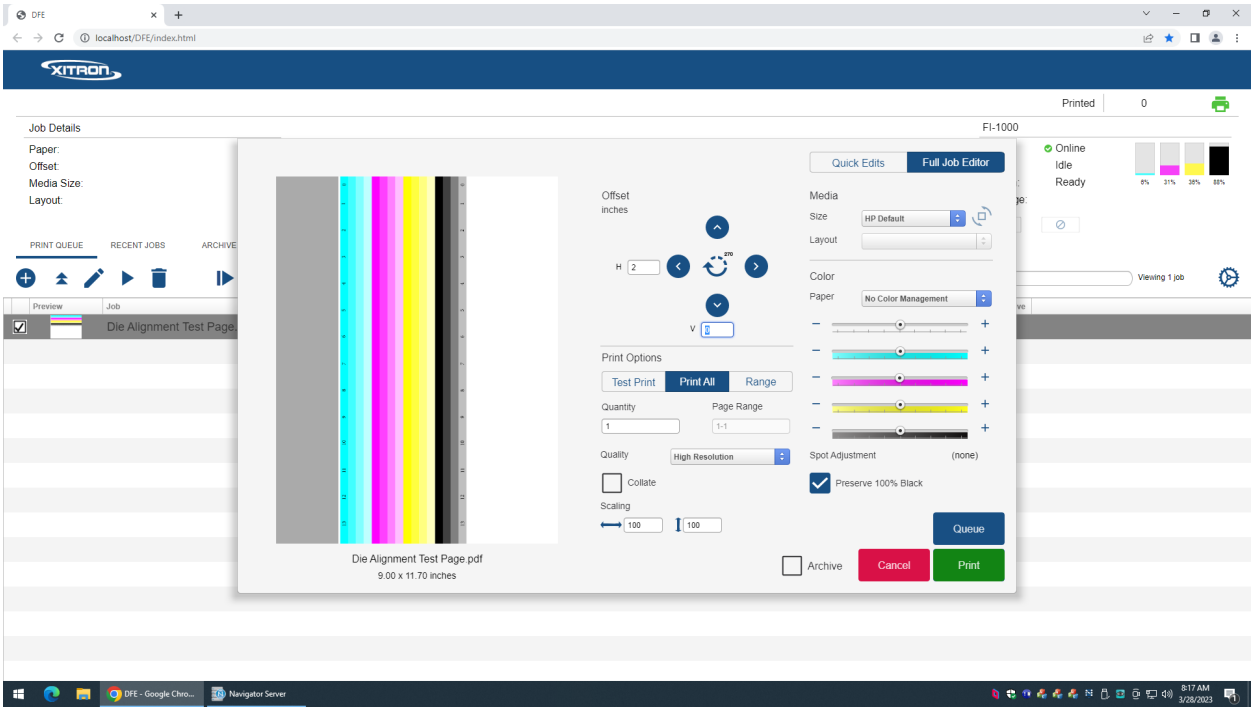
Here you will see how to adjust the dice to remove as many lines in the print as possible. Begin by opening the Die Adjustment Tool which is found in the Tools folder on the Desktop. When open, click the refresh button in the bottom left to change all numbers to 0. If the DFE displays the status of the printhead as online and ready, click Apply. The status (the text in the center bottom of the window) will turn white and display a working message. Wait until this text turns green and declares success before continuing. It should only take a few seconds.

The dice are numbered, but the gaps are not. But for the purposes of this document, if a gap/line is numbered, it is the gap/line on the right/top of the die of the same number. For example, line 1 is the gap between die 1 and die 0. Line 13 is the gap between die 13 and die 12.

Use the DFE to open Die Alignment Test Page.pdf, which is found in C:\iJetColor\Test Images.

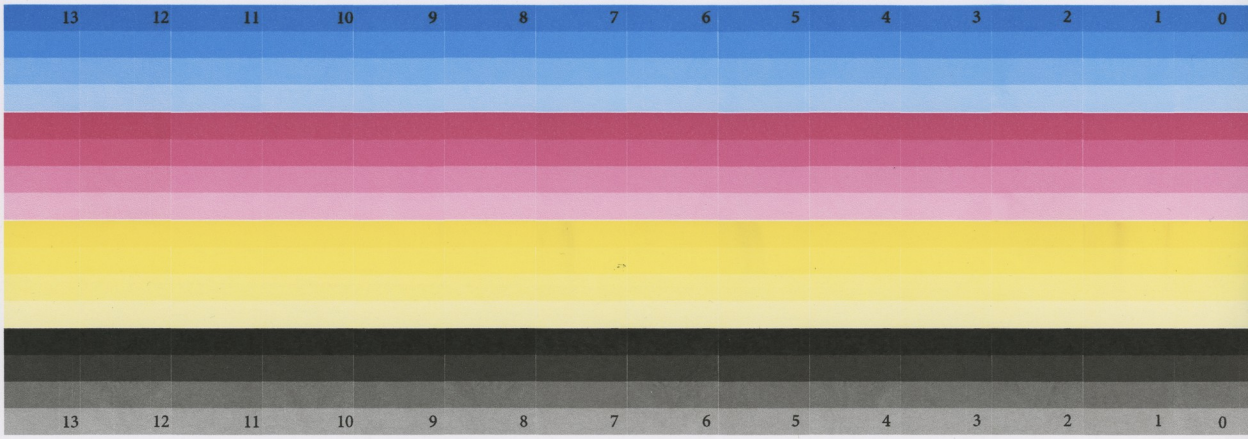


Add the job as follows:

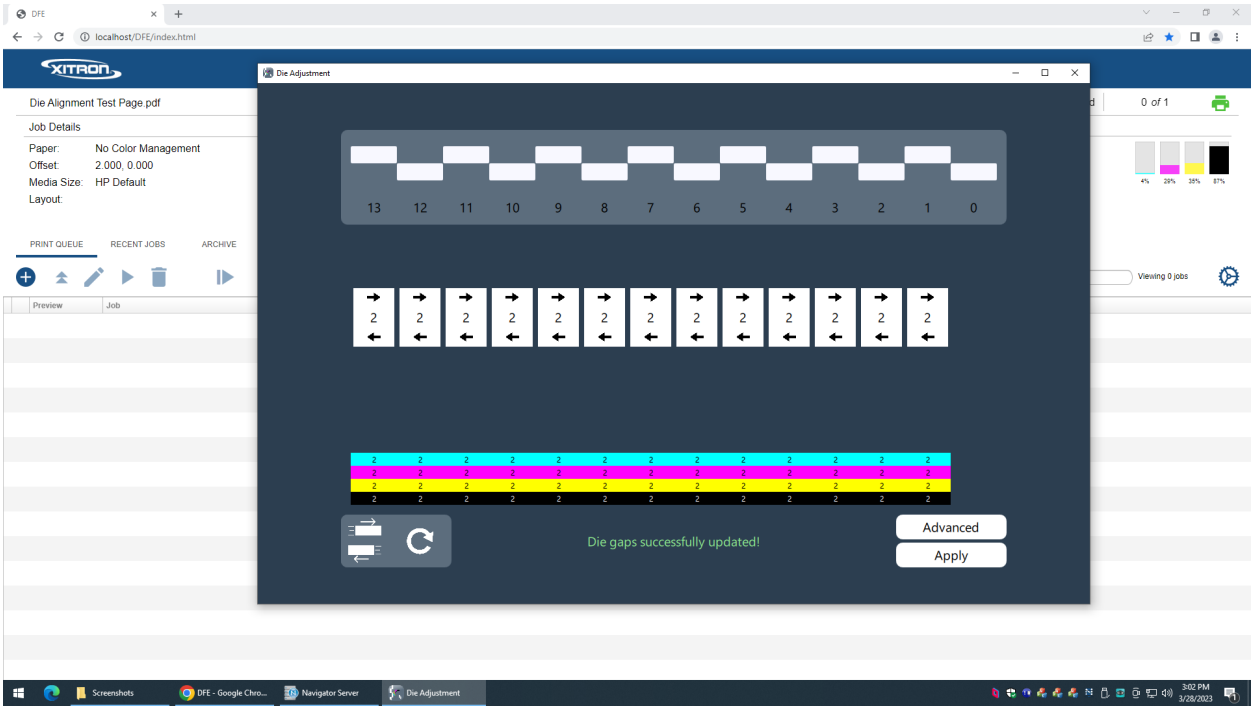


The job should be run with a 9x12 envelope with the flap side run against the fence on the alignment section. The cyan bars as shown in the image above should be printed on the leading edge of the envelope and offset horizontally by 2 inches. This offset should put the resulting print in the middle of the envelope. The color profile should always be No Color Management to avoid all four colors mixing together in each color bar. Print the job.

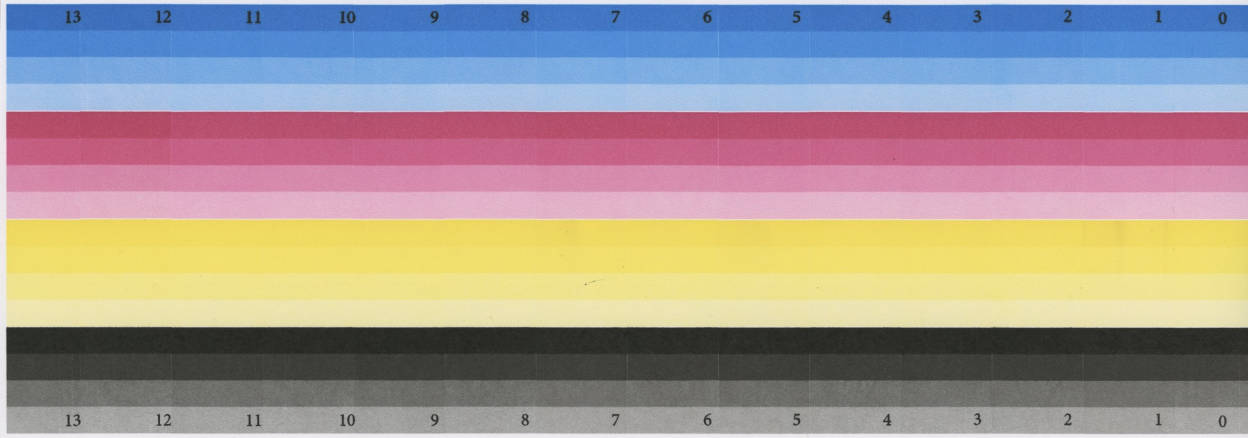
The result should look something like this:



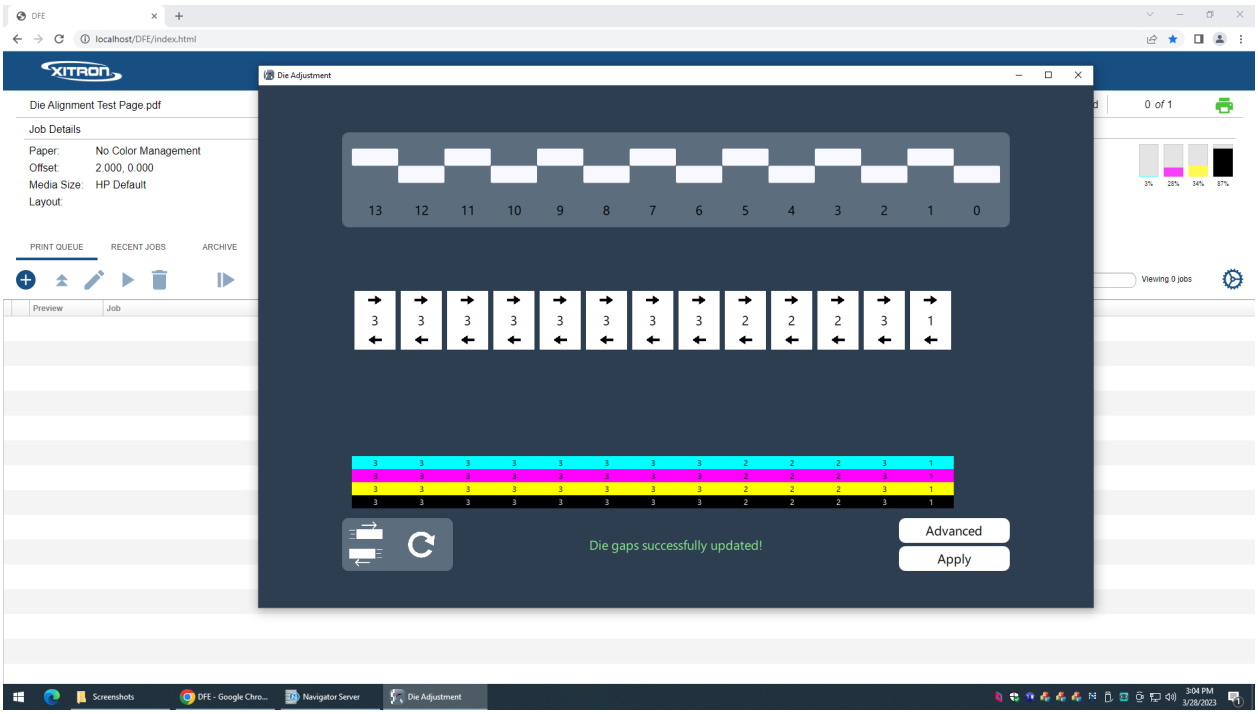
As you can see, all the gaps between the dice are noticeable. This means all dice should be moved right in the basic menu or up in the advanced menu. In the basic menu, click the die button in the bottom left rectangle that has an arrow immediately above it pointing to the right. Because all the gaps are so noticeable, go ahead and click that button twice. If the DFE shows the status of the printhead as online and ready, click Apply and wait a few seconds until it shows success before continuing. The numbers in the Die Adjustment Tool should now be as follows:



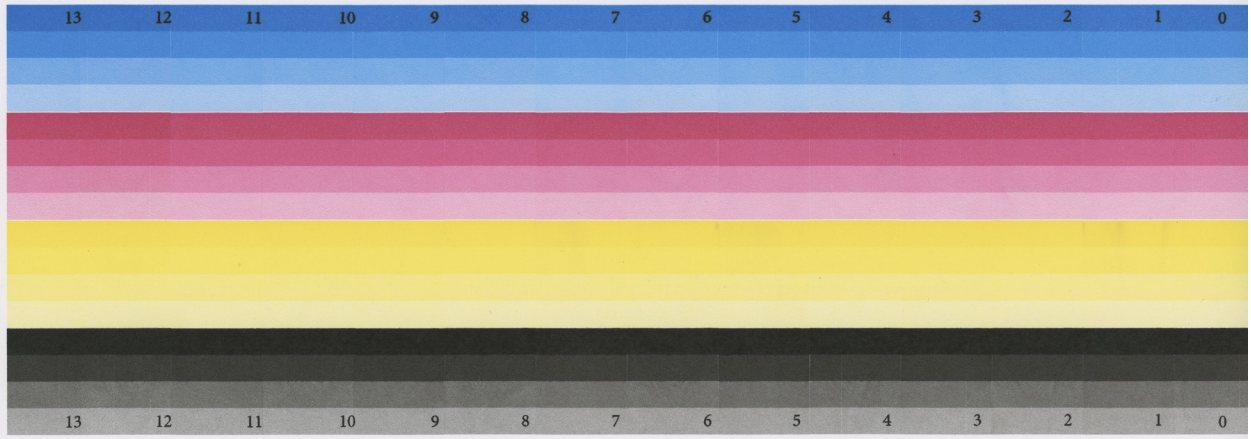
Print the Die Alignment Test Page again using the same job as you created before. The result may look something like this:



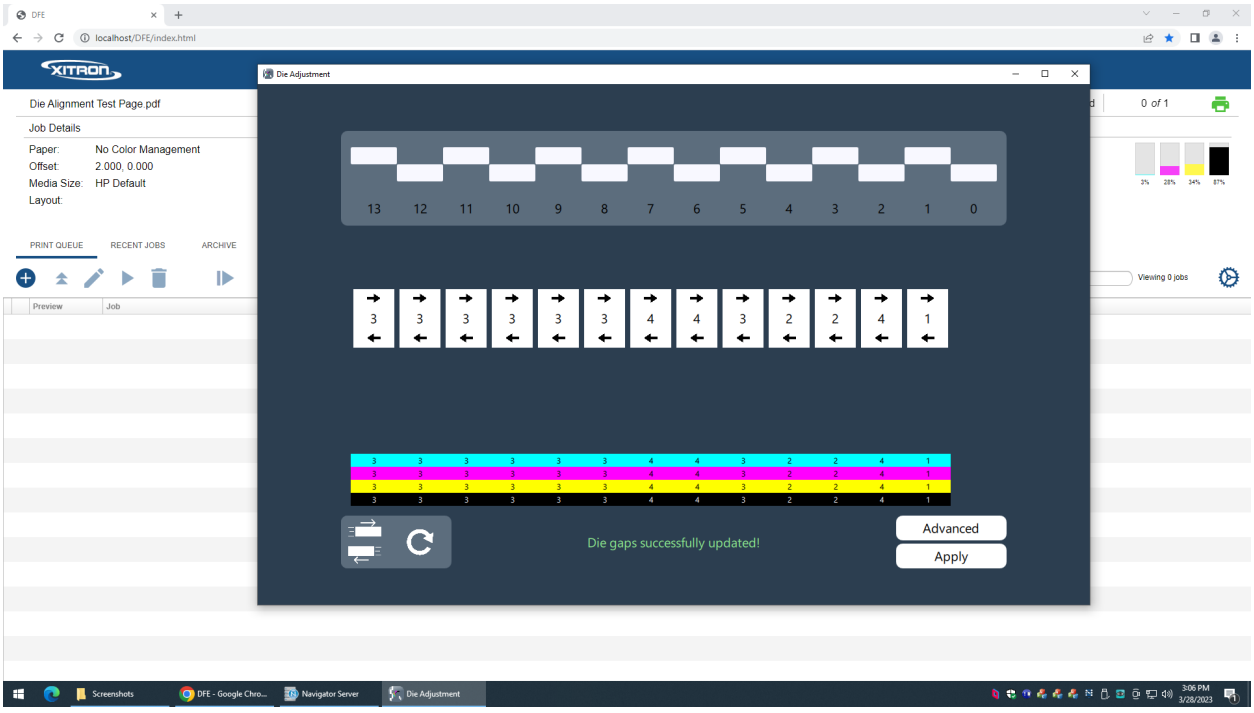
The gaps between all the dice are obviously much better. However, there are still some lines that need to be closed. Adjusting one die is easier than adjusting all four colors individually so stay in the basic menu and move a few dice. In order to know if a whole die should be moved, check the same gap in all four colors. Moving from right to left, the line 1 looks like an overlap instead of a gap. To fix this, move die 1 to the left. There is a small gap in cyan, magenta, black, and possibly yellow in line 2. Move die 2 to the right to close the gap. Most of the other gaps except line 3 are still very notificeable, so move dice 5 through 13 to the right but leave die 3 where it is. If the DFE shows the status of the printhead as online and ready, click Apply and wait a few seconds until it shows success before continuing. The numbers in the Die Adjustment Tool should now be as follows:



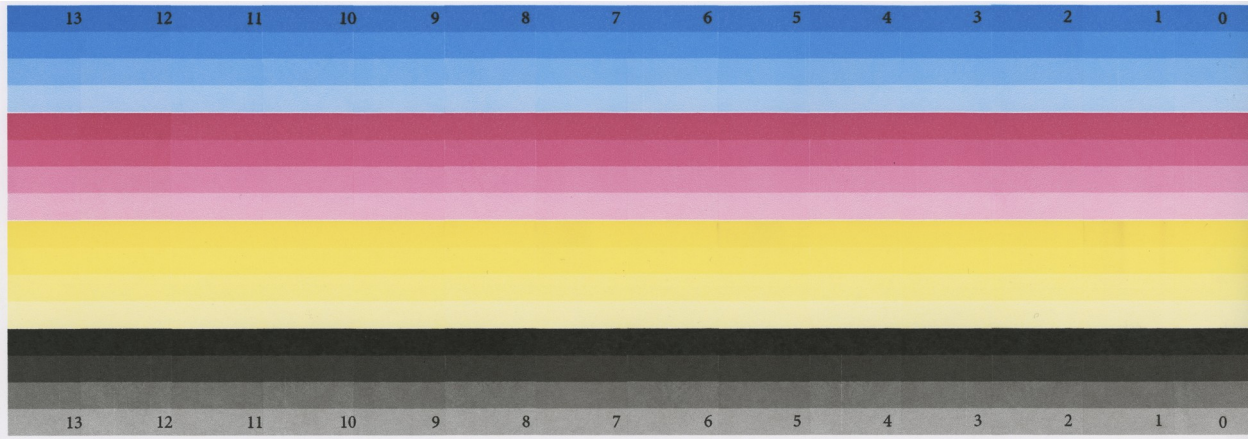
The result may be similar to the following image, though each use case will be different:



Moving from right to left, line 1 looks nice, so leave that for later. You may notice a line that looks like a gap in die 4. This is a normal streak that can appear often and is fixed by doing a mid-job service or a pen recovery. The most offensive lines are lines 2, 5, 6, and 7. To fix them, move dice 2, 5, 6, and 7 to the right as shown below:



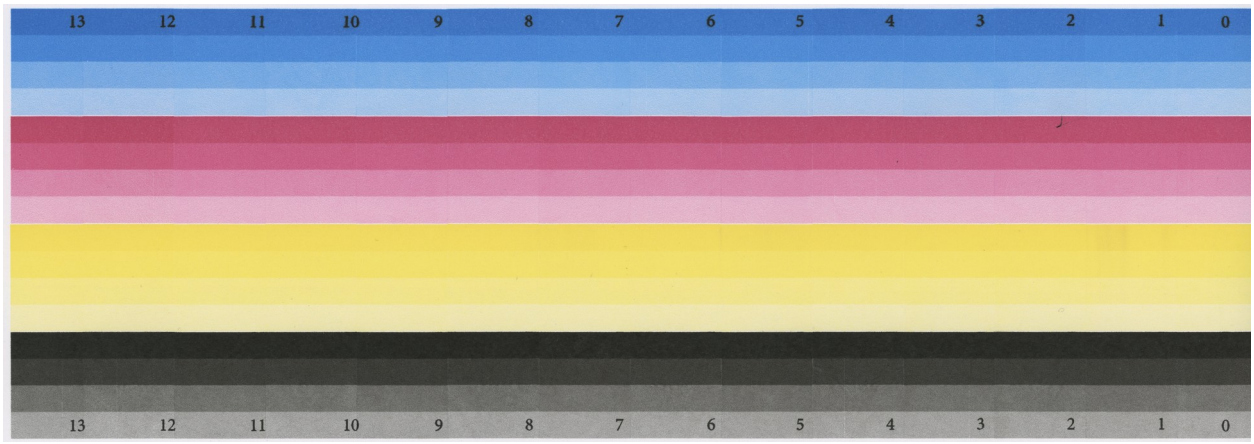
The fourth print should look better than the third:



This is as good as this file will print through the basic menu. You should be able to notice that none of the dice have the same visible gaps or overlaps in all four colors. Click Advanced in the bottom right of the Die Adjustment Tool to open the advanced menu. There are still quite a few gaps in cyan, a few in magenta, and a couple in black, but yellow looks solid.

After continuing to increment and decrement various numbers, the final result for this particular machine is as shown:

These values produced the following print:



Yellow is the only color that looks very solid, but this is normal and expected due to the limitations of the technology. The purpose was to remove as many gaps as possible without causing blatant overlaps between dice. The best way to tell if each color is as solid as possible is to squint at it. Squinting will help the eyes focus on how each color blends, rather than small details. If squinting makes each color bar look solid, though there may be slight inconsistency in color brightness as in the black in this example, the dice have been successfully aligned.